

## ***Appendix 3-B***

*Murray River Coal Project: Geochemistry Baseline Report*

MURRAY RIVER COAL PROJECT

**Application for an Environmental Assessment Certificate / Environmental Impact Statement**

# MURRAY RIVER COAL PROJECT Geochemistry Baseline Report



# MURRAY RIVER COAL PROJECT GEOCHEMISTRY BASELINE REPORT

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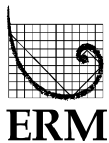
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Prepared for:



HD Mining International Ltd.

Prepared by:



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# Executive Summary



# Executive Summary

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ERM Consultants Canada Ltd. (ERM Rescan) was retained by HD Mining Ltd. (HD Mining) to conduct environmental baseline studies in support of permitting the Murray River Coal Project (the Project), a proposed metallurgical coal mine in British Columbia. The metal leaching/acid rock drainage (ML/ARD) characterization program was designed to support planning for the management of overburden, waste rock, raw coal, clean coal and middlings, coarse coal reject (CCR) and partings, and fine reject (tailings) for the proposed Project. The objective of this report is to provide an ML/ARD assessment based on available geochemical characterization results. This report summarizes data collected between 2010 and February 2014, and provides an assessment of the ML/ARD potential for various geologic materials.

The Project proposes to mine the D, E, F, G/I and J seams of the Lower Cretaceous Gates Formation, using longwall mining, a form of underground coal mining where coal is extracted in large panels. Over an estimated 25-year mine life, 4.8 million tonnes per annum (Mtpa) of total saleable coal is planned, with an underground mine capacity of 6.0 Mtpa of raw coal.

Geochemical characterization of materials sampled from drill core and bench-scale coal processing was completed using standard ML/ARD assessment techniques. The ARD potential of samples was classified using sulphide net potential ratio (SNPR), where samples with an SNPR of less than 2.0 were classified as potentially acid-generating (PAG), and samples with an SNPR of greater than or equal to 2.0 were classified as not potentially acid-generating (nPAG).

## Waste Rock

A total of 176 drill core samples of overburden and from the Hasler, Boulder Creek, Hulcross, and Gates formations, were submitted for acid-base accounting (ABA) testing. Paste pH values of samples were dominantly neutral to alkaline. Sulphur concentrations and neutralization potential (NP) values were highly variable among formations, and as a result SNPR values were also variable. High sulphide sulphur concentrations were observed in mudstones and siltstones from the Hasler and Hulcross formations, and conglomerates from the Boulder Creek and Gates formations. High carbonate mineral content and NP values were observed in most Gates Formation samples. Mineralogical analysis by Rietveld X-ray Diffraction (XRD) determined the bulk of carbonate mineral content to comprise dolomite-ankerite, with calcite and siderite also observed.

Approximately 50% of waste rock samples submitted for ABA testing were classified as PAG. Approximately 59% of the expected mass of waste rock is predicted to be PAG. Variability between units was high. The units with the highest potential for ARD were the Hasler Formation (86.7% of samples classified as PAG) and the Hulcross Formation (90.3% of samples classified as PAG). Boulder Creek Formation samples had a moderate potential for ARD (30.0% of samples classified as PAG), and samples from the Gates Formation had a low potential for ARD (18.5% of samples classified as PAG). Overburden also had a low proportion of PAG samples, with one sample classified as PAG out of seven samples collected.

Short term shake flask extraction (SFE) leachate tests were performed on 51 samples of overburden and waste rock material. Dissolved aluminum, arsenic, selenium, and vanadium concentrations were above BC 30-day mean or maximum water quality dissolved or total guidelines for multiple samples from each formation. Dissolved chromium, iron, and antimony concentrations were also above guidelines in several samples. Overall, the units with the most elements with concentrations above BC guidelines were the Boulder Creek and Upper Gates formations. Selenium was elevated in both solid phase and leachate for several samples.

The metal release rates for Murray River waste rock were assessed by nine ongoing laboratory kinetic humidity cell tests and four ongoing field leach barrels. Of the seven PAG humidity cells, three mudstone humidity cells from Hasler Formation have become acid-leaching, with lag times of approximately one to three years, and one humidity cell of Boulder Creek Formation conglomerate has become acid-leaching with a lag time of approximately 0.8 years. The remaining three PAG cells, from the Hulcross Formation, are predicted to become acid-leaching within the next six months. Two nPAG humidity cells from the Upper Gates Formation are not predicted to become acid-leaching. Selenium leach rates in waste rock humidity cells were approximately correlated with sulphide sulphur content. The highest selenium leach rates were observed in the acidic Boulder Creek Formation humidity cell (HC4). In field barrel leachate, dissolved aluminum, arsenic, chromium, copper, iron, selenium, and zinc frequently exceeded BC guidelines.

### Coal

A total of 156 samples of coal material were submitted for ABA testing, including 11 raw coal, 11 clean coal, 115 CCR, and 19 tailings samples. Samples were typically near-neutral to alkaline. Sulphide sulphur concentrations were below 1.0% in the majority of samples. Sulphur concentrations were typically highest in D seam, and were higher in tailings than CCR or raw coal. Inorganic carbon concentrations, carbonate mineral content, and NP values were typically highest in G/I seam, and lowest in E seam. Approximately 46% of coal samples were classified as PAG. The coal seams with the highest potential for ARD were D seam (67.6% of samples classified as PAG) and E seam (60.0% of samples classified as PAG). F and J seams had a moderate potential for ARD, with 35.1% and 45.7% of samples, respectively, classified as PAG. G/I seam had the lowest potential for ARD (17.4% of samples classified as PAG).

A total of 28 coal samples were submitted for SFE leachate tests. Dissolved aluminum, arsenic, selenium, and vanadium had concentrations above BC dissolved or total guidelines in all coal seams. Dissolved cadmium and antimony concentrations were also frequently elevated. E seam samples had the highest number of elements with concentrations above guidelines, and G/I seam samples had the fewest elevated elements. Selenium and cadmium were elevated in both solid phase and leachate for several samples.

The metal release rates for Murray River coal materials were assessed by eight ongoing laboratory kinetic humidity cell tests. As of May 2014, a further 10 humidity cell tests had been running for 10 weeks. No Project coal humidity cells had produced acidic leachate at this time. Estimated lag times based on waste rock humidity cells and other regional coal projects predict E seam and J seam CCR humidity cells will become acid-leaching with lag times of 4.9 to 8.7 years. Lag time predictions will be further refined with the onset of acidic conditions in the new humidity cells, several of which are PAG. Tailings and CCR humidity cells typically had higher sulphate leach rates than raw coal or clean coal humidity cells. Selenium leach rates correlated with initial selenium concentrations in coal samples, but not with initial sulphide sulphur content.

Overall, CCR and tailings material from D and E seams contains the highest potential for ML/ARD. As these are the first two seams to be mined under the current mine plan, the reject pile will evolve from higher to lower ARD potential over time. Similarly, the earliest waste rock to be excavated (from the Hasler, Boulder Creek, and Hulcross formations) represents the material with the highest potential for ML/ARD.

# Acknowledgements

## Acknowledgements

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# Glossary and Abbreviations

## Glossary and Abbreviations

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Terminology used in this document is defined where it is first used. The following list will assist readers who may choose to review only portions of the document.

<b>ABA</b>	Acid-base accounting
<b>adjSNPR</b>	Adjusted sulphide net potential ratio
<b>AP</b>	Acid potential (based on sulphur species)
<b>ARD</b>	Acid rock drainage
<b>CaCO<sub>3</sub></b>	Calcium carbonate
<b>CPP</b>	Coal Preparation Plant
<b>CCR</b>	Coarse Coal Reject
<b>FLB</b>	Field leach barrel
<b>Gpt</b>	Grams per tonne
<b>HCl</b>	Hydrochloric acid
<b>HCT</b>	Humidity cell test
<b>HD Mining</b>	HD Mining International Ltd.
<b>ICP-MS</b>	Inductively coupled plasma - mass spectroscopy
<b>Kg</b>	Kilogram(s)
<b>M</b>	Metre(s)
<b>MEND</b>	Mine Environmental Neutral Drainage
<b>Mg</b>	Milligram(s)
<b>ML</b>	Metal leaching
<b>mL</b>	Millilitre(s)
<b>MMER</b>	Metal Mining Effluent Regulations
<b>Mtpa</b>	Million tonnes per annum
<b>NaOH</b>	Sodium hydroxide
<b>nPAG</b>	Not potentially acid-generating
<b>NP</b>	Neutralization potential measured or calculated
<b>NPR</b>	Net potential ratio (ratio of NP to AP)
<b>PAG</b>	Potentially acid-generating
<b>Ppm</b>	Parts per million



## GEOCHEMISTRY BASELINE REPORT

<b>PRC</b>	Peace River Coalfield
<b>ROM</b>	Run-of-mine
<b>SAP</b>	Sulphide acid potential (AP based on sulphide [ $\% \textit{ sulphide sulphur} \times 32.25$ ])
<b>SFE</b>	Shake flask extraction leachate test
<b>SNPR</b>	Sulphide net potential ratio (NPR calculated with AP based on sulphide [ $\textit{bulk NP} / \textit{SAP}$ ])
<b>T</b>	Tonne(s)
<b>XRD</b>	X-ray diffraction
<b>XRF</b>	X-ray fluorescence

# 1. Introduction

# 1. Introduction

---

The Murray River Coal Project (the Project) is a proposed coal mine development in British Columbia, located approximately 12.5 km southwest of the town of Tumbler Ridge (Figure 1-1). HD Mining International Ltd.'s (HD Mining) proposed underground coal mine will produce metallurgical coal at a rate of up to 6 million tonnes per annum (Mtpa). This report presents the results to date of the geochemical characterization program at the Project.

## 1.1 OBJECTIVES

Geochemical baseline studies have been carried out by ERM Consultants Canada Ltd. (ERM Rescan) on behalf of HD Mining since 2010. The geochemical program focussed on the characterization of coal material from the target coal seams, as well as the continuing characterization of waste rock both overlying and between the coal seams.

The objective of the metal leaching (ML) and acid rock drainage (ARD) characterization program for the Project was to generate and interpret geological and geochemical data to support development of ML/ARD management plans and surface water quality modelling, for the environmental impact assessment (EIS).

## 1.2 REGULATORY FRAMEWORK

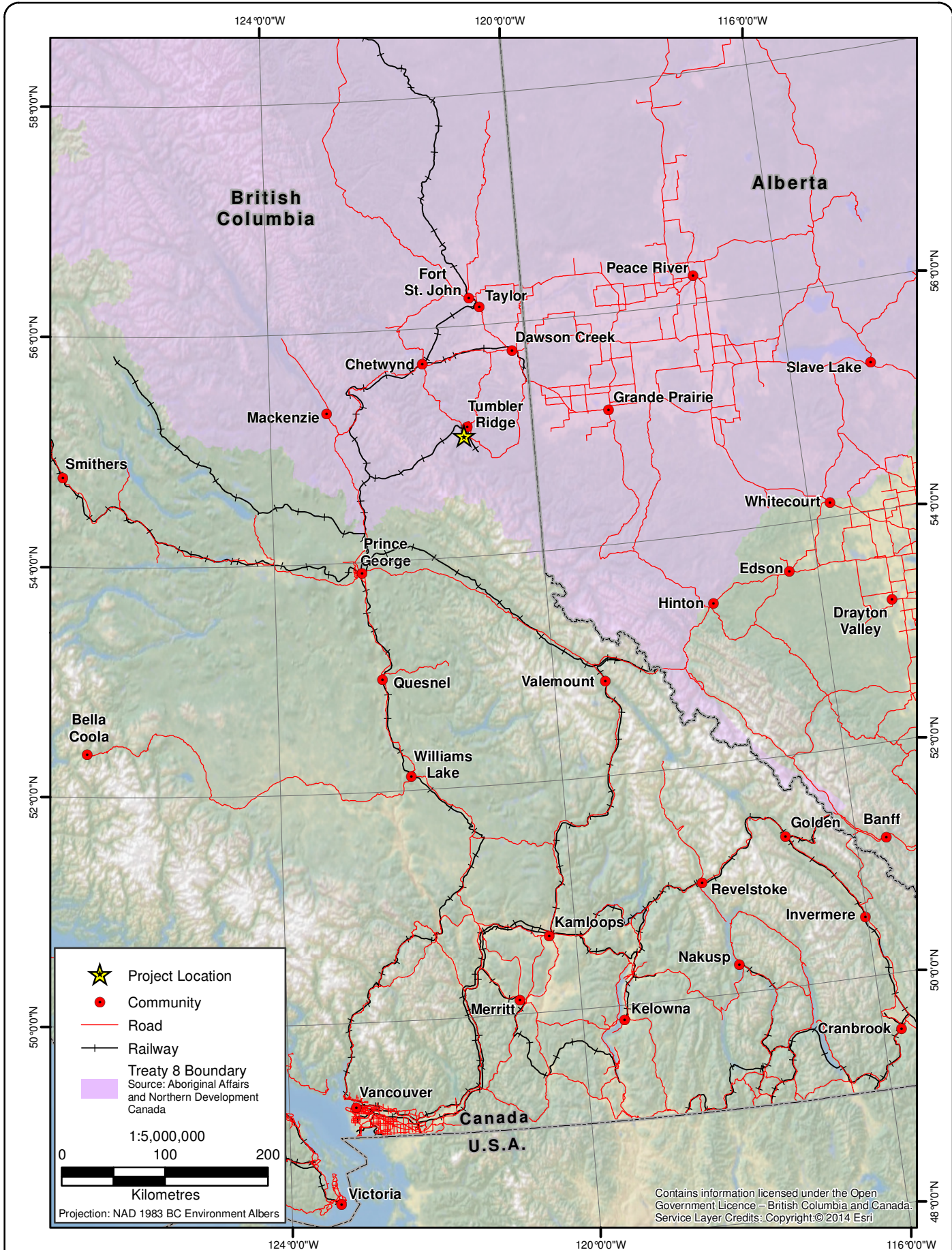
Whenever significant bedrock or unconsolidated material will be excavated or disturbed, an ML/ARD program must be conducted so that, if necessary, prevention, mitigation and monitoring plans can be implemented.

The guiding BC provincial and federal principles for ML/ARD applicable to the long-term environmental management of the proposed Project include:

- the prevention of ML/ARD. Prevention should be achieved through prediction, appropriate design, and effective implementation of appropriate mitigation strategies throughout the life of the proposed Project;
- the demonstration that the proposed mitigation strategies meet the environmental objectives for the proposed Project and are compatible with the proposed Project plan and site conditions;
- the ML/ARD potential is evaluated on a site-specific basis; and
- the requirement for water discharge into the receiving environment to meet applicable Provincial and Federal water quality guidelines.

In British Columbia, mining activities are regulated under the *Mines Act* (1996) and the Health, Safety and Reclamation Code for Mines (BCMEMP 2008). Part 10 of the Health, Safety and Reclamation Code contains requirements for acid rock drainage and metal leaching prediction and prevention and reporting. Prediction, prevention and mitigation of ML/ARD in British Columbia are further guided by the following documents:

- *Draft Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia* (Price 1997);



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**MURRAY RIVER COAL PROJECT**

### Project Area

**Figure 1-1**

- *Policy for Metal Leaching and Acid Rock Drainage in British Columbia* (BCMEM and BCMELP 1998);
- *Guidelines for Metal Leaching and Acid Rock Drainage at Minesites in British Columbia* (Price and Errington 1998);
- *List of Potential Information Requirements in Metal Leaching/Acid Rock Drainage Assessment and Mitigation Work*. MEND Report 5.10E (Price 2005); and
- *Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials* (Price 2009).

The general principles, policies, guidelines and recommended methods were applied as appropriate to this assessment of the ML/ARD potential for the proposed Project.

## 2. Geology

## 2. Geology

---

The regional and local geology and stratigraphy are outlined in the following sections. The purpose of this chapter is to place the Project scale geological features into the context of a regional setting, and lay the foundation for how geology influenced the characterization program. The geology description provided in this report is primarily drawn from technical documents prepared for the Murray River Bulk Sample design (Norwest 2010) and for the Environmental Assessment Certificate Application for the nearby Hermann Mine (Western Canadian Coal 2007).

### 2.1 REGIONAL SETTING

The Project is located within the Peace River Coalfield (PRC) in the eastern foothills of the Canadian Rocky Mountains of north-eastern British Columbia (Figure 2.1-1). The western margin of the Foothills belt is usually classified as the easternmost major fault that thrusts Palaeozoic strata over Mesozoic strata. The eastern margin is a series of en echelon thrust faults that separate the Foothills from the gently dipping strata of the Alberta Plateau (Holland 1976). The Foothills belt is characterized by folded and faulted Mesozoic sediments. The deformation within the Foothills belt is variable; decreasing in complexity toward the eastern margin. Deformation within the Rocky Mountains consists of complicated folding and faulting. The regional trend of both fold axes and thrust faulting is northwest to southeast, with fault planes dipping to the southwest. In the Foothills belt, the dip of regional axes tends to be 20° or less with local folds and undulations varying significantly from this value.

In the PRC, there are two main coal-bearing units: the Gates Formation and the Gething Formation. Both Lower Cretaceous units were subjected to varying degrees of burial prior to the Laramide deformation and mountain-building episodes (orogeny) that took place approximately 40 to 70 Ma when the Pacific and North American tectonic plates collided. The Laramide Orogeny increased the overall maturity of the coal seams. The regional stratigraphic succession exposed in the PRC ranges from Upper Jurassic to Lower Cretaceous (Figure 2.1-2 and Table 2.1-1). It consists primarily of inter-tonguing clastic lithologies of both marine and continental origin. Most of the coal bearing strata was deposited in a deltaic environment.

### 2.2 LOCAL SETTING

#### 2.2.1 Stratigraphy

Figures 2.1-2 and 2.2-1 illustrate the stratigraphic sequence of units within the Project area and the relative locations of the coal seams of interest. The stratigraphy is discussed in more detail below, from oldest to youngest.

##### 2.2.1.1 Gething Formation (*Bullhead Group*)

The Gething Formation consists of alternating units of fine- to coarse-grained, brown, calcareous, carbonaceous sandstones, mudstones, conglomerates and shales. Conglomeratic beds increase towards the base of the formation. The upper contact is defined by a thin bed of pebble conglomerate followed by thick glauconitic sandstone.



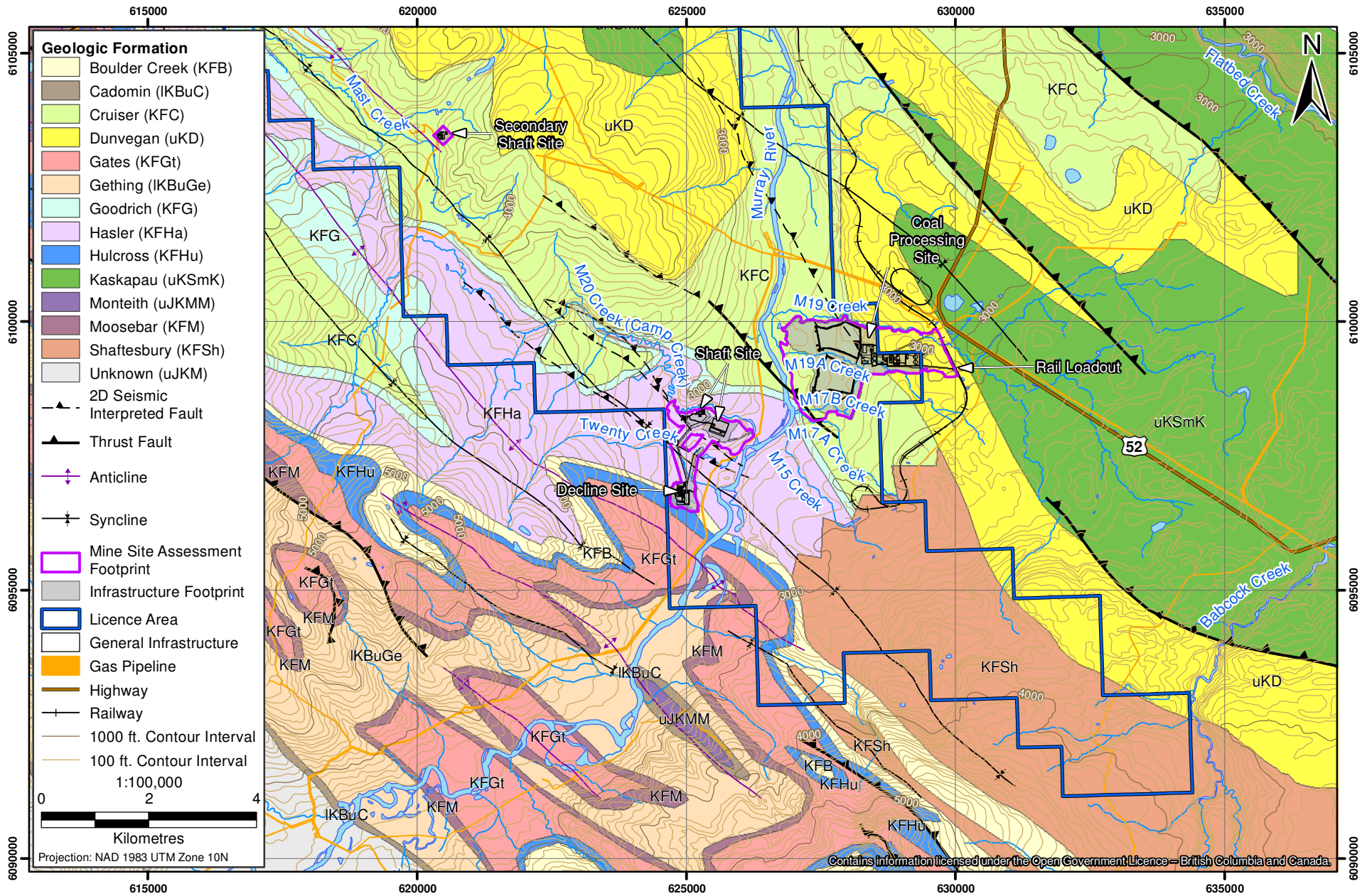


Figure 2.1-1



**MURRAY RIVER COAL PROJECT**

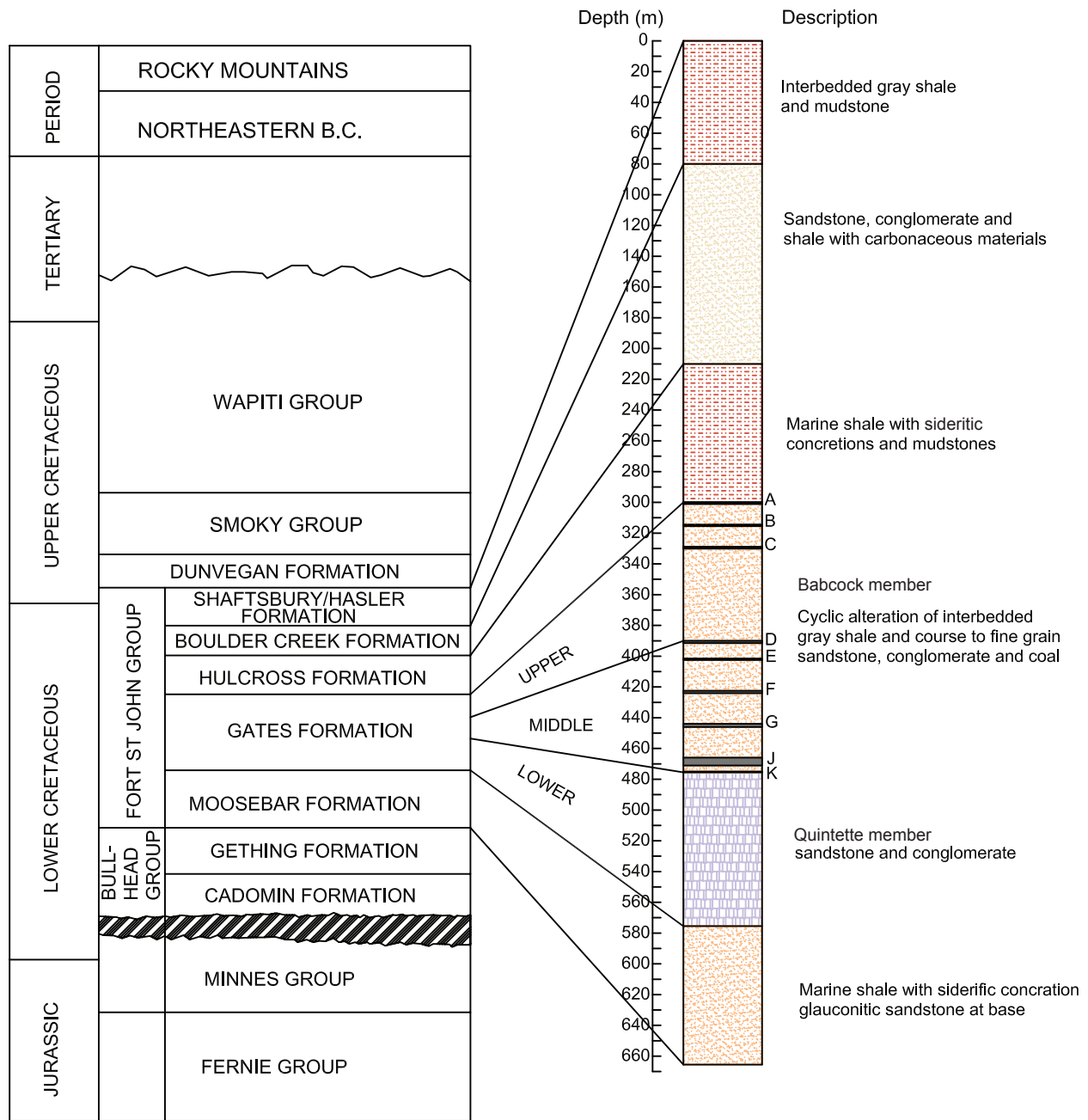
### Regional Geology of the Project

Figure 2.1-1





**Figure 2.1-2**  
**Regional Stratigraphic Section of Upper**  
**Jurassic-Tertiary Units of NE British Columbia**



LEGEND	
	Shale / Mudstone
	Sandstone
	Shale / Sandstone
	Coal
	Sandstone / Conglomerate

**Table 2.1-1. Upper Jurassic-Upper Cretaceous Stratigraphy of NE British Columbia**

Series	Group	Formations	
Upper Cretaceous	Wapitipi		
	Smoky	Puskwaskau Badheart Muskiki Cardium Kaskapau Dunvegan	
Lower Cretaceous	Fort St John	Cruiser Goodrich Hasler Boulder Creek Hulcross Gates Moosebar	
		Bullhead	Gething Cadomin
		Minnes	
	Upper Jurassic	Fernie	

#### 2.2.1.2 *Moosebar Formation (Fort St. John Group)*

The basal sequence of the Moosebar Formation is a dark grey to black marine shale with sideritic concretions, bentonite, and siltstone. The upper parts comprise banded or fissile sandy shale, very fine-grained sandstone, and sandstone intercalated shale. This transition is a pro-deltaic (highstand systems tract) transition from marine sediments to the massive continental sandstones that mark the overlying Gates Formation. The Bluesky Member is a chert pebble conglomerate that is found locally at the base of the Moosebar Formation.

#### 2.2.1.3 *Gates Formation (Fort St. John Group)*

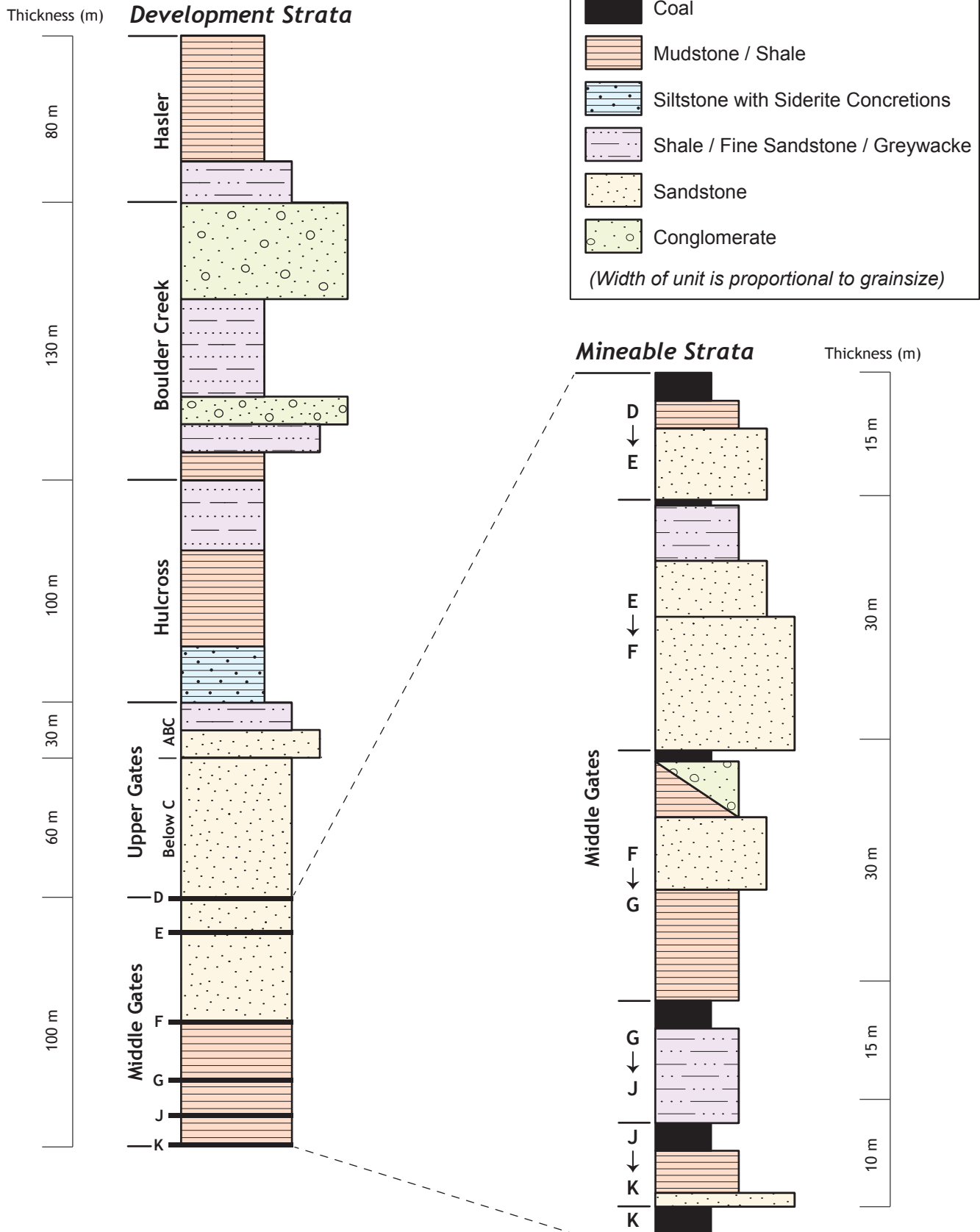
Conformably overlying the Moosebar Formation is the Lower Cretaceous Gates Formation. The lower portion of the formation is termed the Quintette or Torrens Member and consists of massive, light gray, medium-grained sandstone, with minor carbonaceous and conglomeratic horizons.

This lowest member is overlain by several cyclical sequences of coal deposition that occur over a stratigraphic interval of approximately 80 m. This is informally referred to as the Middle Gates. Each cycle normally begin with laminated, medium- to fine-grained sandstones at the base, giving way to carbonaceous shale that is overlain by coal. Coal seams developed in the lowermost cycle can show greater seam thickness and continuity. Typically the D through K seams are targeted for mining, when of the appropriate thickness. Individual coal seams within the higher cycles may coalesce to form a single seam. For example, the G and I seams are typically referred to as the G/I seam.

The lower portion of the Upper Gates Formation is massive, medium- to coarse-grained sandstone. This is in turn overlain by a predominantly shale sequence containing two to three poor coal cycles (A-C) with intercalating sandy shale and very fine sandstone. A very thin bed of chert pebbles with ferruginous cement marks the contact of the Upper Gates Formation with the overlying marine sediments of the Hulcross Formation.

Figure 2.2-1

Idealized Stratigraphic Section for the Project



### 2.2.1.4 Hulcross Formation (Fort St. John Group)

The Lower Cretaceous Hulcross Formation is dominated by dark grey marine shale approximately 100 m thick (lowstand systems tract). The base of the formation is more homogeneous and arenaceous, and can contain sideritic concretions. The upper portion of the formation is dominated by thinly laminated interbeds of siltstone and very fine-grained sandstone, a few kaolinitic beds have also been observed. The Hulcross Formation is usually distinguished from the Moosebar Formation by the absence of glauconitic sandstones at the base of the Hulcross Formation.

### 2.2.1.5 Boulder Creek Formation (Fort St. John Group)

Conformably overlying the Hulcross Formation is a 130 to 200 m thick sequence of shale, greywacke, and conglomerate that makes up the Boulder Creek Formation. At deposition the energy of the system increased over time resulting in alternating medium to fine-grained sandstone and shale in the middle of the formation and massive conglomerate and conglomeratic sandstone in the upper portions of the formation.

### 2.2.1.6 Hasler Formation (Fort St. John Group)

The Hasler Formation is alternatively known as the Shaftsbury Formation further towards the plains to the east. The basal layer is frequently pebbly, overlain by siltstone. The bulk of the unit is silty dark grey marine shale with sideritic concretions with a minor sandstone and pebble conglomerate component.

Above the Hasler Formation are the Goodrich and Cruiser formations that form the uppermost units in the Fort St. John Group. The Fort St. John Group is overlain by the Dunvegan Formation and the Smoky Group. According to regional geology maps the Hasler, Cruiser, and Dunvegan formations make up the majority of bedrock in the property.

## 2.2.2 Structural Geology

The Project is located in the eastern Foothills belt, and as a result the property is less faulted and tightly folded than neighbouring coal properties to the west. The Mesa thrust, a major northwest striking thrust structure, occurs between three to seven kilometres southwest of the property boundary. The Mesa thrust and associated en echelon faulting has uplifted the Gates Formation coal seams to the southwest, allowing other properties in the area such as Quintette to operate as open-pit mines. The property lies on the downthrust side of the fault, and consequently the Gates Formation coal seams are much deeper.

As illustrated in Figure 2.1-1, several northwest trending thrust faults traverse the property. Figure 2.2-2 contains a cross-section approximately perpendicular to several of the faults crossing the property. The locations of several faults, either determined through seismic interpretation or inferred from geology, are illustrated, in addition to the typical property structure and stratigraphy.

## 2.2.3 Coal Seams

The coal seams of interest at the Project are contained within the Lower Cretaceous Gates Formation. The main workable coal seams are D, E, F, G/I, and J seams. Although the K seam and the Gething Formation are a target for operating mines in the region, at Murray River they are considered too deep to mine.

Seams D and E are thin or moderately-thick, F and J are moderately thick, whereas G and I are very thin. The distance between the coal seams is 80 to 120 metres. In order to achieve the mine's production capacity, seams F and J are the main mining seams. Seams D and E are the auxiliary mining seams.



The main workable seams within the Middle Gates Formation are described below.

### 2.2.3.1 *Coal Seam D*

Seam D is the first workable seam. The roof is generally composed of mudstone with overlying conglomerate. The seam is continuous with good quality coal, but the coal thickness can vary significantly from tens of centimetres to more than 5 m. The average thickness is 2.12 m.

### 2.2.3.2 *Coal Seam E*

Seam E is located 15 to 30 m underneath seam D. The interburden between seams D and E is siltstone and fine-grained sandstone. Seam E thickness ranges from several centimetres to 8 m, with an average thickness of 2.32 m.

### 2.2.3.3 *Coal Seam F*

Seam F lies about 20 m beneath seam E. It is a continuous, thick coal seam with good quality coal. There are most likely multiple-layer sub-seams within this seam. The thickness is between 0.67 m and 7.07 m with an average of 3.46 m.

### 2.2.3.4 *Coal Seam G/I*

The G and I seams are typically referred to as the G/I seam, as the two seams are often coalesced. This seam is continuous, stable and partly workable at a variety of thickness from 0.40 m to 3.52 m. The average thickness of this seam is 1.60 m.

### 2.2.3.5 *Coal Seam J*

Seam J is located 20 m underneath seam G/I. It is also the thickest and most widely distributed seam. The thickness is from 2.60 m to 9.20 m with an average of 6.19 m.

## 2.3 SUMMARY

The Murray River Coal Project is located within the PRC in the eastern foothills of the Canadian Rocky Mountains of north-eastern British Columbia.

The Project area is composed of a stratigraphic sequence of sedimentary units, ranging from marine shale to coarse sandstone and conglomerate. The major coal-bearing units are the Lower Cretaceous Gething and Gates formations.

The workable coal seams of interest for the Project are seams D, E, F, G/I, and J within the Middle Gates Formation. Of these, F and J are the principal mining seams, being the seams with the most continuous thickness and quality of coal.

### 3. Mining Context

## 3. Mining Context

---

### 3.1 REGIONAL CONTEXT

The Project is located within the PRC, an area with a long history of metallurgical grade coal open pit mining. Other projects in the area targeting the Gates Formation coal seams include the Trend and Roman mines (Peace River Coal Inc.), the Wolverine, EB Pit, and Hermann mines (Walter Energy, Inc.), and the Quintette Project (Teck Resources Ltd.). Figure 3.1-1 places the Project Regional Study Area (RSA) in context with neighbouring projects.

Where data is available, regional projects have been used as analogues for comparison with the Project. Coal seams in the Gates Formation have been traced and correlated between exploration sites in the PRC, allowing individual coal seams to be compared and independently characterized for ML/ARD potential. Most coal production in the region has occurred by open pit methods, due to the relative shallowness of the Gates Formation on the upthrust side of the Mesa thrust. Consequently, the Hasler and Boulder Creek formations are not well characterized at regional projects.

The ML/ARD characterization program at the Quintette Project concluded the following (SRK 2012):

- the Hulcross Formation was identified as potentially acid-generating (PAG);
- approximately 5 m of waste rock directly above the Middle Gates D seam were identified as PAG;
- Coarse coal reject (CCR) from D, F, and K seams was found to be PAG, with F showing the lowest potential for acid generation and K the highest;
- CCR from G and J seams was identified as having low sulphur content and classified as not potentially acid-generating (nPAG);
- No special management measures were identified as necessary for raw coal stockpiles; and
- Cadmium, zinc, and selenium were identified as elements of interest in waste rock leachate.

Classifications of ML/ARD potential at the Quintette Project were based on site-specific NP to acid potential (AP) ratios, where NP/AP ratios greater than 2.0 represented nPAG material, NP/AP ratios less than 1.0 represented PAG material, and NP/AP ratios between 1.0 and 2.0 represented an uncertain acid-generating potential.

The ML/ARD characterization program at Roman Mine concluded the following (Peace River Coal Inc. 2010):

- Waste rock was generally classified as nPAG, with low sulphur and high neutralization potential (NP). Waste rock material identified as PAG was:
  - Above D seam (Upper Gates Formation); and
  - Hanging wall and footwall layers within a metre of coal seams.
- Coal, CCR and tailings from F, G, and J seams were classified as nPAG. F and G were strongly nPAG, while J seam material had a mixture of PAG and nPAG; and
- Coal, CCR and tailings from D, E, and K seams were classified as PAG, with D seam having the strongest potential for acid generation.



Classifications of ML/ARD potential at Roman Mine were based on median NP to AP ratios of 2.0, and were consistent with classifications at the neighbouring Trend Mine.

The ML/ARD characterization program at Hermann Mine concluded the following (Western Canadian Coal 2007):

- Waste rock from the Hulcross Formation was predicted to be PAG;
- Waste rock from the Upper and Middle Gates formations was predicted to be predominantly nPAG, with the exception of samples adjacent to coal seams;

D seam was consistently classified as PAG at Quintette, Roman, and Trend mines, and G and J seams were consistently classified as nPAG. The greatest uncertainty was around seams E and F. Ongoing evaluation of ML/ARD potential was recommended at Roman Mine.

Both the Quintette and Roman projects identified selenium as an element of interest. The Quintette Project observed variability in selenium content when compared to the Trend Mine. Selenium concentrations at Roman Mine were comparable to those measured at Trend Mine.

Static and kinetic test results and ML/ARD predictions from the Roman and Quintette projects, made available as part of a data sharing agreement between HD Mining, Teck, and Peace River Coal, are discussed in the relevant sections of this report as analogues to Project results.

## 3.2 MINE PLAN

### 3.2.1 Permitted Operations

As part of exploration of the coal deposit, HD Mining applied for permitting to collect a 100,000 tonne bulk sample of coal, as detailed in the Waste Discharge Permit Application Technical Assessment Report (Rescan 2011). The purpose of the Bulk Sample program is to test the coal for use as coking coal, and to perform coal washability testing.

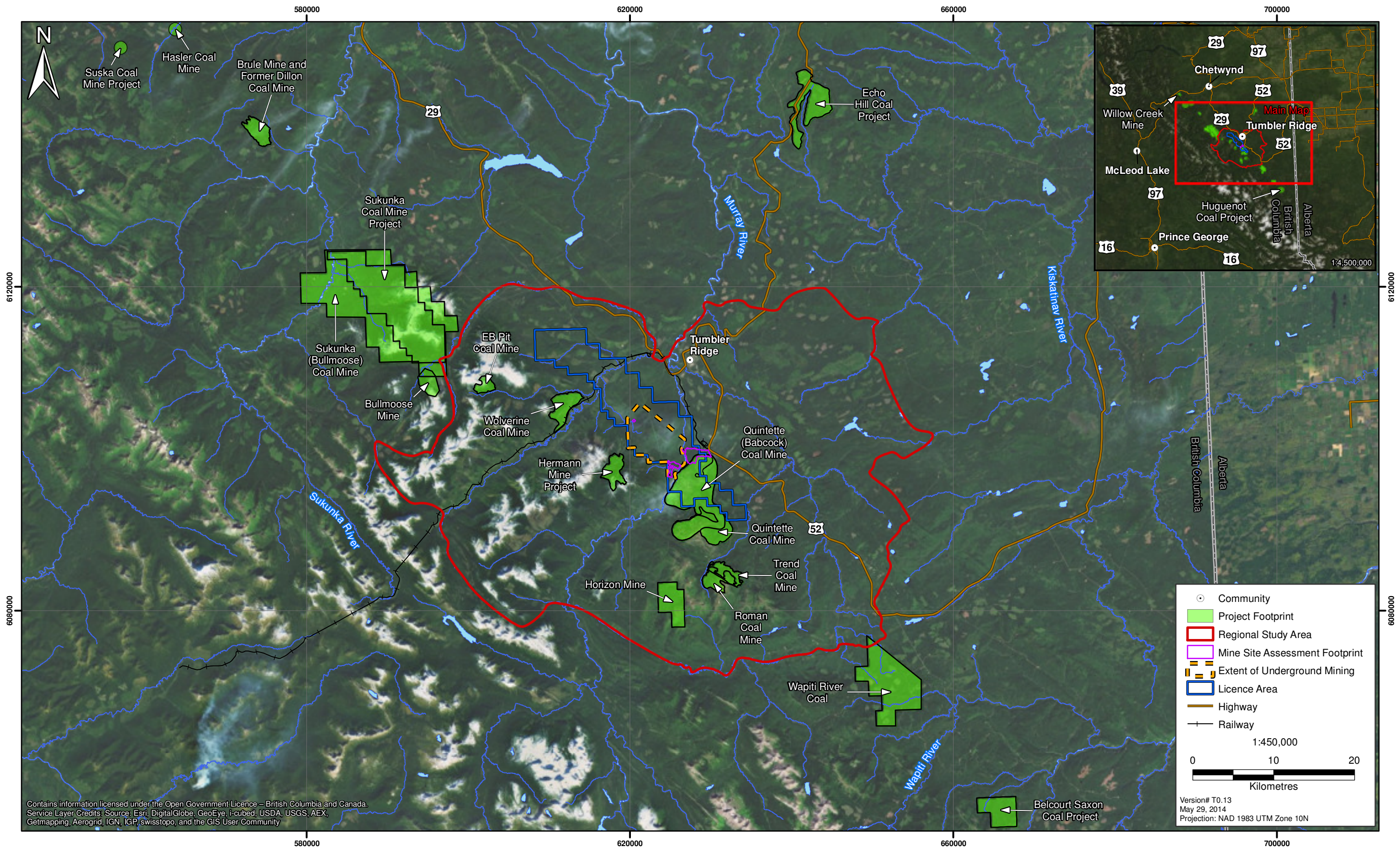
HD Mining received the following approvals from the BC Government:

- Coal Exploration Permit CX-9-44 (BC Ministry of Energy, Mines, and Petroleum Resources):
  - initially issued in December 2010,
  - amended in March 2012 to approve the Bulk Sample program;
- Approval AE105825 under the *BC Environmental Management Act* (BC MOE):
  - issued in February 2012, authorizes temporary discharge of effluent from the Murray River Bulk Sample initial surface preparation construction activity;
- Approval AE105878 under the *BC Environmental Management Act* (BC MOE);
  - issued in March 2012, authorizes discharge of effluents from the Murray River Bulk Sample construction and operation activities.

Permitted infrastructure associated with the Bulk Sample is divided between two areas. The North (shaft) area includes:

- a shaft;
- topsoil storage;





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● Community  
 ■ Project Footprint  
 ■ Regional Study Area  
 ■ Mine Site Assessment Footprint  
 ■ Extent of Underground Mining  
 ■ Licence Area  
 ■ Highway  
 ■ Railway  
 1:450,000  
 0 10 20  
 Kilometres  
 Version# T0.13  
 May 29, 2014  
 Projection: NAD 1983 UTM Zone 10N



**MURRAY RIVER COAL PROJECT**

**Figure 3.1-1**  
**Other Coal Projects in or near the Regional Study Area**



- a waste rock pile; and
- water treatment facilities, including a sediment pond and discharge structure to M20 creek.

The South (decline) area includes:

- a decline portal;
- a decline conveyor;
- a truck load-out;
- topsoil storage; and
- water treatment facilities, including a sedimentation pond and discharge infiltration galleries.

Following approval of mining equipment, underground development of the decline began in January 2014. Construction of the shaft is scheduled for 2015.

### 3.2.2 Proposed Operations

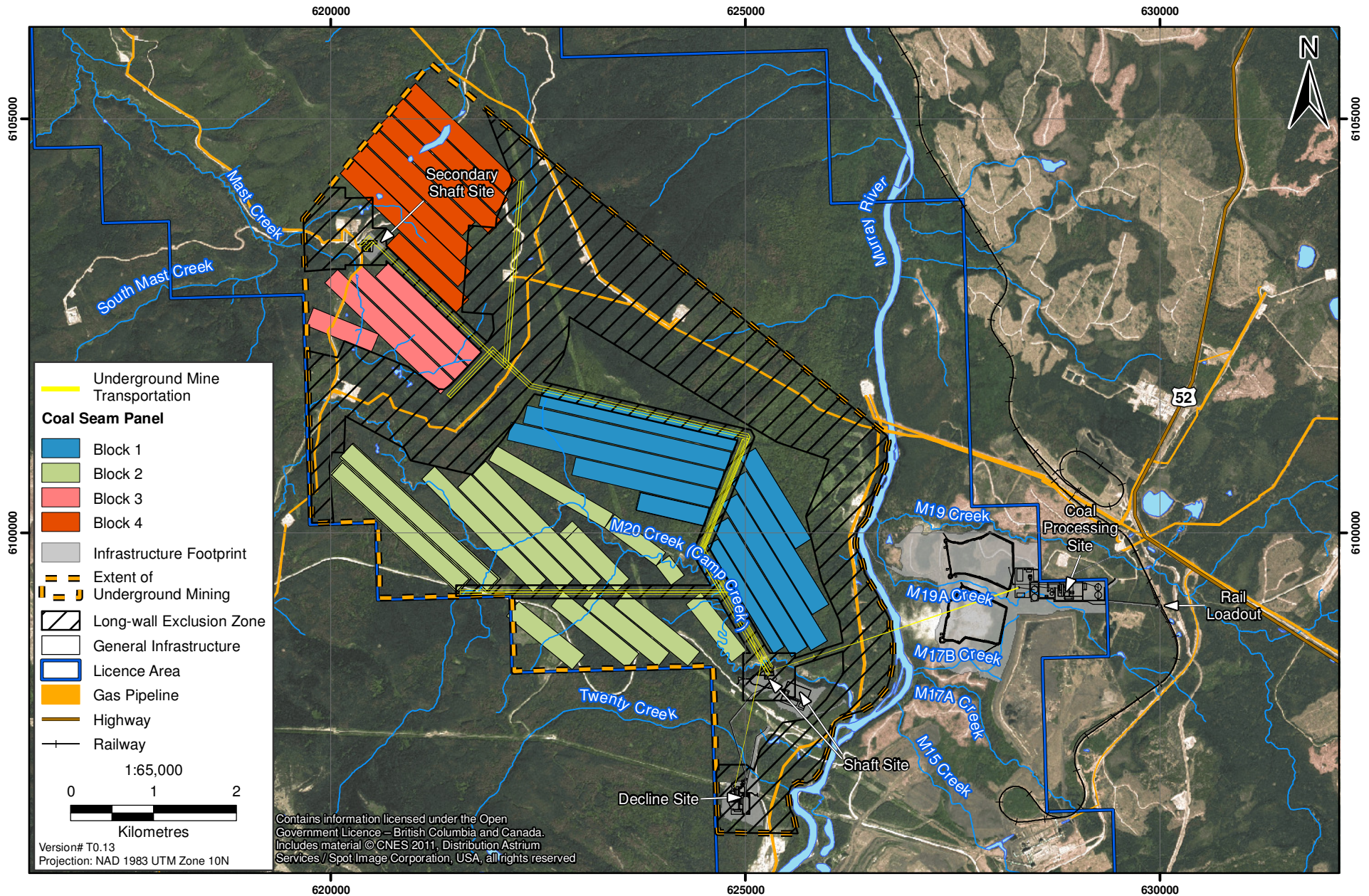
The Project will mine metallurgical coal from the targeted seams using longwall mining, a form of underground coal mining where coal is extracted in large panels (typically 1 to 3 km long and 200 to 400 m wide). Over an estimated 25-year mine life, 4.8 Mtpa of total saleable coal is planned, with an underground mine capacity of 6.0 Mtpa of raw coal. The extractable mineral reserve is 261.6 Mt. The planned underground mine layout and locations of infrastructure and stockpiles are laid out in Figure 3.2-1.

Initially, two declines and a shaft will be constructed to provide access to the coal seams from the surface. The decline currently under construction for the Bulk Sample will continue to be used for the full mine development, serving as the main entry for personnel and materials, as well as a fresh air intake. The shaft planned for the Bulk Sample will also continue to be used for the full mine development, serving as the return air for ventilation and secondary egress. A new production decline will be constructed from the Coal Preparation Plant (CPP) site toward the base of the shaft, and will serve as a primary means for hauling coal to the surface for processing. Later in the mine life, two more ventilation shafts will be sunk. For the construction of these declines and shafts, rock from above and between the coal seams will be excavated. These materials will be stored in a waste rock facility at the shaft site. Samples of waste rock from the different lithological units present were collected and analyzed to characterize the waste rock pile, as part of the ML/ARD characterization program as laid out in Section 4.1.

The underground area has been divided into four large coal blocks, with each block consisting of 10 to 30 panels at all levels of coal seams. Individual blocks and seams were analyzed as part of the geochemical characterization program to determine any potential spatial variability. Two longwall working faces will be mined simultaneously throughout the life of mine.

Coal will be mined underground and directed onto the surface by conveyors. At the surface, the raw coal will be stockpiled and then processed at the CPP. Once processed, clean coal and middlings will be directed to the rail loadout for transportation off-site. CCR, including hanging wall and footwall dilution rock and partings, will be co-mingled with tailings and stored in one of two CCR piles. Samples of raw coal, clean coal, middlings, CCR, partings, and tailings were collected and analyzed as a part of the ML/ARD characterization program, as laid out in Section 4.1.

The mine schedule is presented in Table 3.2-1, illustrating the current order in which the five coal seams are planned to be mined over the 25 year mine life. The majority of raw coal will be mined from F and J seams. D seam will only be mined during the first six years of operations. The ML/ARD potential of each coal seam is discussed in Section 5.2.



Underground Mine Transportation

**Coal Seam Panel**

- Block 1
- Block 2
- Block 3
- Block 4

Infrastructure Footprint

Extent of Underground Mining

Long-wall Exclusion Zone

General Infrastructure

Licence Area

Gas Pipeline

Highway

Railway

1:65,000

0 1 2

Kilometres

Version# T0.13  
Projection: NAD 1983 UTM Zone 10N

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Figure 3.2-1



MURRAY RIVER COAL PROJECT

### Planned Mine Layout

Figure 3.2-1



Table 3.2-1. Raw Coal Production Schedule

Year	Total Raw Coal Mined	All Mine Blocks					Block 1					Block 2					Block 3					Block 4				
		D	E	F	G/I	J	D	E	F	G/I	J	D	E	F	G/I	J	D	E	F	G/I	J	D	E	F	G/I	J
1	5.99	2.24				3.75	2.24				3.75															
2	5.99	2.24				3.75	2.24				3.75															
3	5.99	0.74	0.83	0.89		3.53	0.74	0.83	0.89		3.53															
4	5.83	0.76	1.48	3.59				1.48	3.59			0.76														
5	5.83	2.24		3.59					3.59			2.24														
6	5.88	0.29	1.95	2.44		1.20			2.44		1.20	0.29	1.95													
7	5.99		0.92	1.32		3.75					3.75		0.92	1.32												
8	5.99			2.24		3.75					3.75			2.24												
9	5.99			2.24		3.75					3.56			2.24		0.19										
10	5.99			2.24		3.75								2.24		3.75										
11	5.99			2.24		3.75								2.24		3.75										
12	5.99			2.24		3.75								2.24		3.75										
13	5.99			0.22	2.02	3.75								0.22	2.02	3.75										
14	5.99				2.24	3.75									2.24	3.75										
15	5.99				2.24	3.75									2.24	3.75										
16	5.94		2.19			3.75										3.75						2.19				
17	5.75		2.19	2.73		0.83										0.83						2.19				
18	5.69		2.19	3.50																		2.19				
19	5.73		1.73	3.42		0.58																1.73	0.44			
20	5.91			2.07		3.84																	2.07			
21	5.90			2.07		3.83																	2.07		0.41	
22	5.81			2.07		3.74																	2.07		3.74	
23	5.71			1.97		3.74																	1.97		3.74	
24	5.21			1.47		3.74																	1.47		3.74	
25	5.28			1.00		4.28					1.71												1.00		2.57	
Total	146.35	8.51	13.48	43.55	6.50	74.31	5.22	2.31	10.51	0.00	25.00	3.29	2.87	12.74	6.50	27.27	0.00	0.00	9.21	0.00	7.84	0.00	8.30	11.09	0.00	14.20
Proportion	100%	5.8%	9.2%	29.8%	4.4%	50.8%	3.6%	1.6%	7.2%	0.0%	17.1%	2.2%	2.0%	8.7%	4.4%	18.6%	0.0%	0.0%	6.3%	0.0%	5.4%	0.0%	5.7%	7.6%	0.0%	9.7%

Units: Mt

## 4. Methodology

## 4. Methodology

---

This chapter outlines the ML/ARD characterization methodology. There are three sections: the program design and objectives, the sample collection and distribution, and the geochemical characterization methods.

### 4.1 PROGRAM DESIGN AND OBJECTIVES

The geochemical program includes all overburden and rock that will be excavated or disturbed during development and mining operations. For the purposes of this report, it is divided into waste rock and coal.

Waste rock refers to all material that will be excavated during the development phase of the mine program, such as the construction of the shaft and decline. This includes:

- all rock above the Middle Gates Formation D seam (referred to as development stratigraphy in previous reports), and
- interburden material between Middle Gates Formation coal seams.

Coal material (minable stratigraphy) refers to all material from the Middle Gates Formation coal seams D, E, F, G/I, and J. This includes:

- raw coal;
- clean coal and middlings;
- CCR and non-coal rock from the roofs, partings, and floors of the coal seams; and
- tailings.

The objective of the ML/ARD characterization program was to generate and interpret geological and geochemical information for use in:

- mine planning;
- the development of the following management plans:
  - ML/ARD management plan,
  - Selenium management plan, and
  - Water management plan;
- inputs to the predictive water quality model; and
- environmental effects assessment.

The ML/ARD characterization program was designed using a phased approach. Consequently, this report presents the cumulative results, interpretation, and discussion of sampling and testing across multiple phases of the characterization program. This report includes previously reported results from 2010 and 2011 (Rescan 2012), as well as the results of all subsequent sampling and testing through to April 2014.



The testing program included the following analyses:

- ARD potential through acid-base accounting (ABA) by the modified Sobek and standard Sobek methods (Price 2009);
- Solid phase elemental analysis through whole rock (X-ray fluorescence; XRF) and trace element chemistry (inductively coupled plasma - mass spectrometry; ICP-MS);
- Mineralogical composition of select samples (X-ray diffraction with Rietveld refinement; XRD) and petrographic analysis (polished thin sections by reflected and transmitted light microscopy);
- leaching tests by a modified version of the shake flask extraction (SFE; Price 2009); and
- kinetic tests, including:
  - laboratory humidity cell tests (HCTs; Price 2009), and
  - on-site field leach barrels (FLBs).

Prior to 2011, ABA, ICP-MS, and SFE analyses were conducted at AGAT Laboratories of Mississauga, Ontario. Since 2011, ABA, ICP-MS, XRF, and HCT analyses have been conducted at Maxxam Analytics Inc. of Burnaby, BC. Leachate from the field leach barrels has been analyzed at ALS Environmental in Burnaby. XRD analyses were conducted at the Earth and Ocean Sciences Department of the University of British Columbia, and petrographic analyses of polished thin sections were produced by Mineral Services Canada of North Vancouver, BC. Analytical methods are detailed in Section 4.3.

A summary of the design basis for characterization of ML/ARD potential is provided in Table 4-1-1.

**Table 4.1-1. Metal Leaching and Acid Rock Drainage Characterization Program Design**

Mine Component	Geochemical Questions	Data Needed	Methods
Waste Rock	ML/ARD potential	ABA	Core sampling, paste pH, acid potential, neutralization potential, solid-phase elemental analysis
		Mineralogy	Rietveld XRD, optical microscopy
		Source of neutralization potential	Sobek, Modified, and Siderite Corrected neutralization potential, Rietveld XRD, calcium and magnesium content, and total and inorganic carbon content
Waste Rock	ML/ARD potential	Sulphur form interpretation	Sulphur species analysis and barium content
		Variability of characteristics between formations and lithology	Lithological composition of waste rock, ABA
		Contact water chemistry	Surface-soluble leaching
Raw Coal	ML/ARD potential	ABA	Core sampling, paste pH, acid potential, neutralization potential, solid-phase elemental analysis
		Mineralogy	Rietveld XRD, optical microscopy

(continued)



**Table 4.1-1. Metal Leaching and Acid Rock Drainage Characterization Program Design (continued)**

Mine Component	Geochemical Questions	Data Needed	Methods
Raw Coal ( <i>cont'd</i> )	ML/ARD potential ( <i>cont'd</i> )	Source of neutralization potential  Sulphur form interpretation	Sobek, Modified, and Siderite Corrected neutralization potential, Rietveld XRD, calcium and magnesium content, and total and inorganic carbon content  Sulphur species analysis and barium content
	Variability of characteristics between coal seams	Lithological composition of waste rock, ABA	Core sampling, ABA, and solid-phase elemental analysis
	Contact water chemistry	Surface-soluble leaching	Shake flask extraction and humidity cell
Clean Coal and Middlings	ML/ARD potential	ABA	Core sampling, paste pH, acid potential, neutralization potential, solid-phase elemental analysis
		Mineralogy	Rietveld XRD, optical microscopy
		Source of neutralization potential	Sobek, Modified, and Siderite Corrected neutralization potential, Rietveld XRD, calcium and magnesium content, and total and inorganic carbon content
		Sulphur form interpretation	Sulphur species analysis and barium content
	Variability of characteristics between coal seams	Lithological composition of waste rock, ABA	Core sampling, ABA, and solid-phase elemental analysis
Contact water chemistry	Surface-soluble leaching	Shake flask extraction and humidity cells	
Coarse Coal Reject and Partings	ML/ARD potential	ABA	Core sampling, paste pH, acid potential, neutralization potential, solid-phase elemental analysis
		Mineralogy	Rietveld XRD, optical microscopy
		Source of neutralization potential	Sobek, Modified, and Siderite Corrected neutralization potential, Rietveld XRD, calcium and magnesium content, and total and inorganic carbon content
		Sulphur form interpretation	Sulphur species analysis and barium content
	Variability of characteristics between coal seams	Lithological composition of waste rock, ABA	Core sampling, ABA, and solid-phase elemental analysis
Contact water chemistry	Surface-soluble leaching	Shake flask extraction and humidity cells	
Tailings (Fine Reject)	ML/ARD potential	ABA	Core sampling, paste pH, acid potential, neutralization potential, solid-phase elemental analysis
		Mineralogy	Rietveld XRD, optical microscopy

(continued)

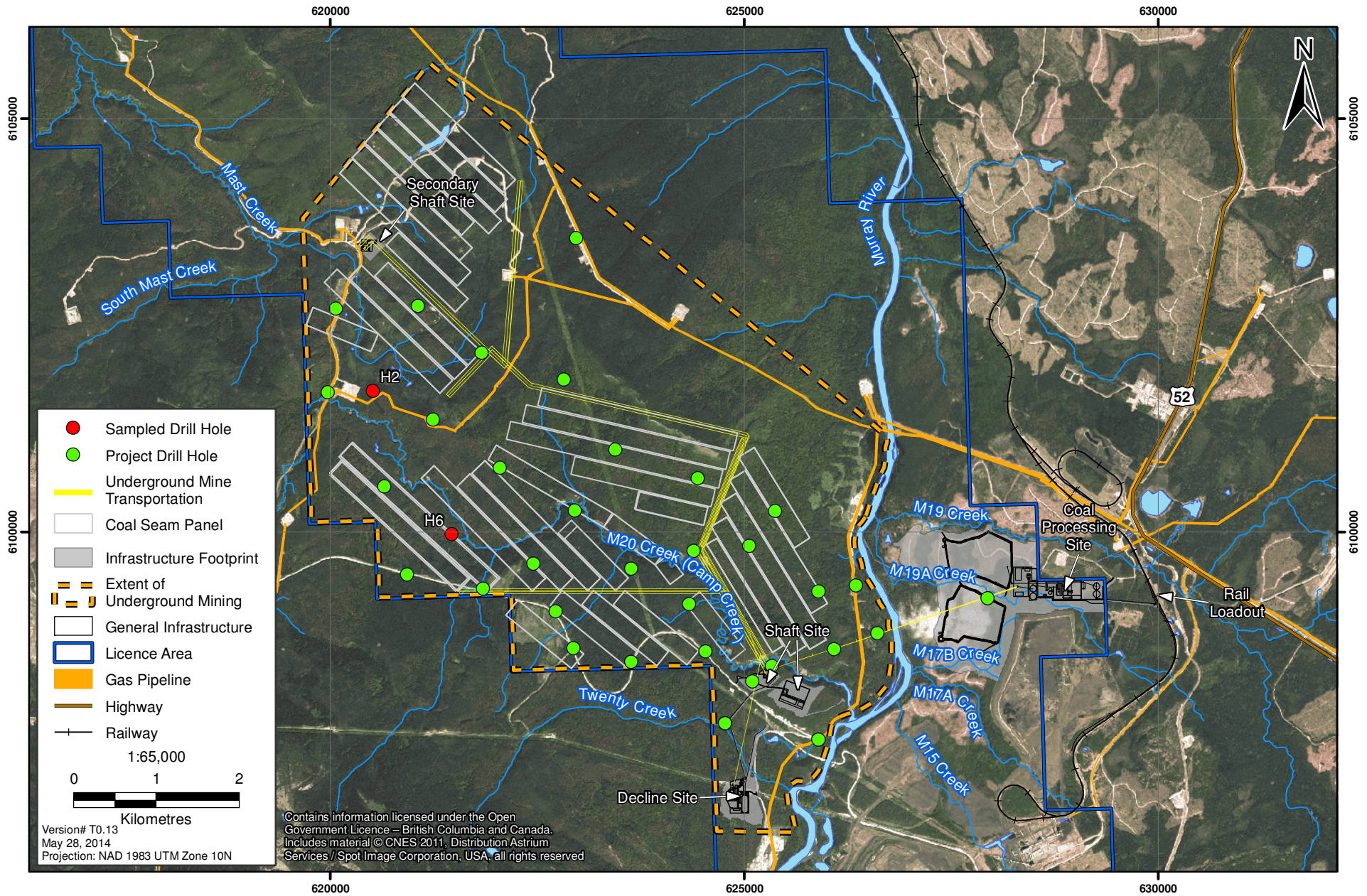
**Table 4.1-1. Metal Leaching and Acid Rock Drainage Characterization Program Design (completed)**

Mine Component	Geochemical Questions	Data Needed	Methods
Tailings (Fine Reject) (cont'd)	ML/ARD potential (cont'd)	Source of neutralization potential  Sulphur form interpretation	Sobek, Modified, and Siderite Corrected neutralization potential, Rietveld XRD, calcium and magnesium content, and total and inorganic carbon content  Sulphur species analysis and barium content
	Variability of characteristics between coal seams	Lithological composition of waste rock, ABA	Core sampling, ABA, and solid-phase elemental analysis
	Contact water chemistry	Surface-soluble leaching	Shake flask extraction and humidity cells

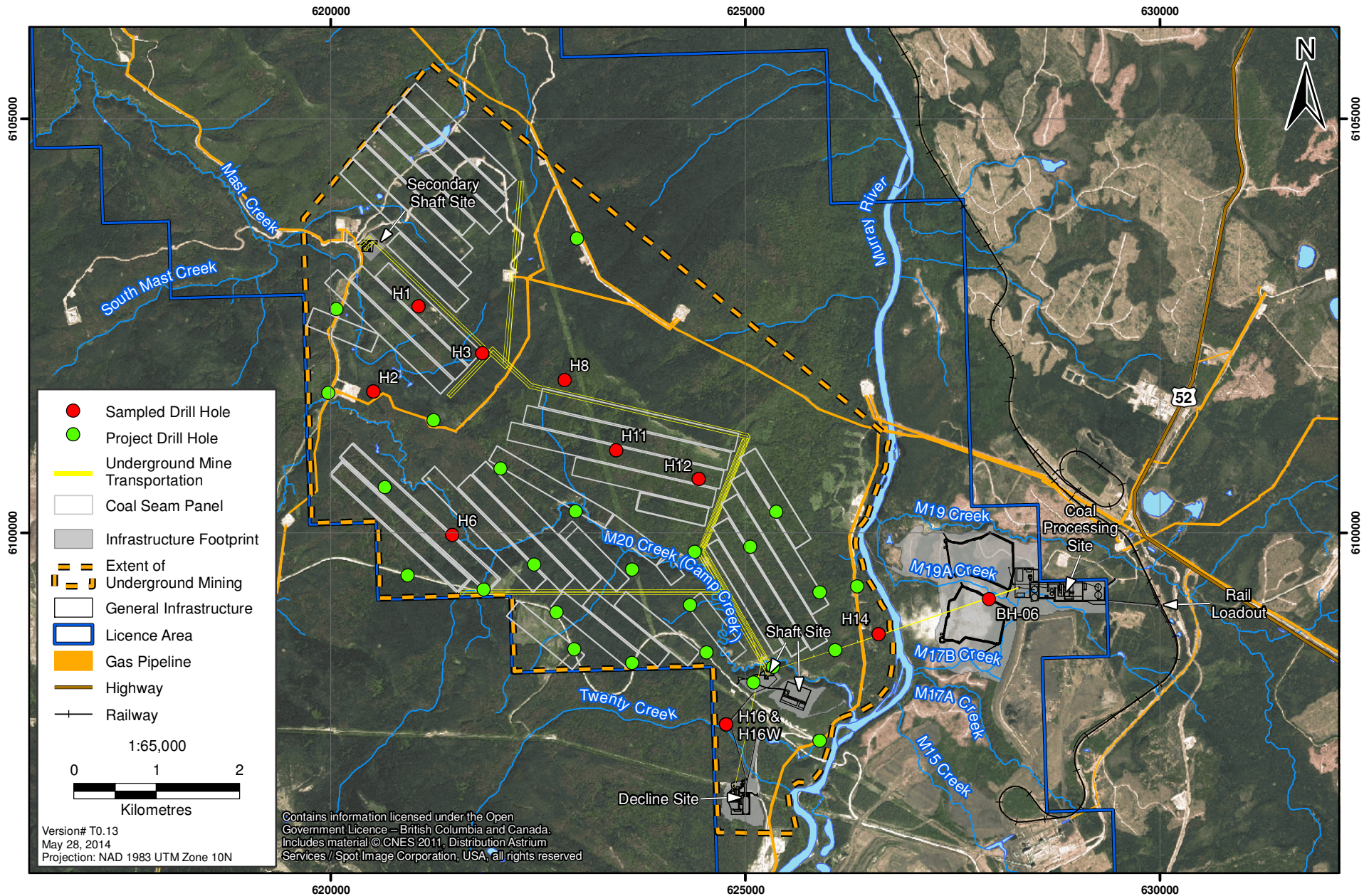
The locations of drill holes where ML/ARD prediction samples were collected are shown in Figures 4.1-1 to 4.1-11. Samples were collected for static and kinetic analyses as laid out in Table 4.1-2. Phase 4 samples collected from the service decline during construction will not be discussed in this report as analyses are ongoing.

**Table 4.1-2. Summary of 2010 to 2014 Geochemical Baseline Program**

	Date	ABA Samples Analyzed	Other Analyses	Laboratory	Drill Holes Sampled
Phase 1	November 2010	67	-	AGAT	H1, H6, H10, H15, H18
Phase 2	December 2010	20	-	AGAT	H1, H2, H3, H6, H8, H9, H10, H11, H12, H14, H15, H16, H16w, H17, H18, H19, H21
	January 2011	ten (resubmitted Phase 1 samples)	-	Maxxam	
	February - May 2011	112	12 HCTs and four FLBs initiated	Maxxam	
	June 2011	one (raw coal)	-	Maxxam	
	May 2012	-	one (raw coal) HCT initiated	Maxxam	
Phase 3	March 2013	ten (Upper Gates Formation)	-	Maxxam	H1, H3, H5, H6, H7, H8, H9, H10, H13, H14, H15, H16, H16w, H18, H19, H20, P1C44, P1C46, P1C47, P1C49, P1C50, P1C51, shaft pilot hole, groundwater monitoring borehole BH-06
	April 2013	19 (coal material from seams D, E, F, and J from the shaft pilot hole)	-	Maxxam	
	May 2013	-	four (CCR and tailings) HCTs initiated	Maxxam	
	August 2013	ten (Hasler Formation, east of Murray River)	-	Maxxam	
	November 2013	87 (coal material from Phase 1 and 2 drill holes)	-	Maxxam	
	February 2014	-	ten (clean coal, CCR, and tailings) HCTs initiated	Maxxam	
Phase 4	2014	Ongoing sampling of service decline material for geochemical inventory	-	Maxxam	Production decline









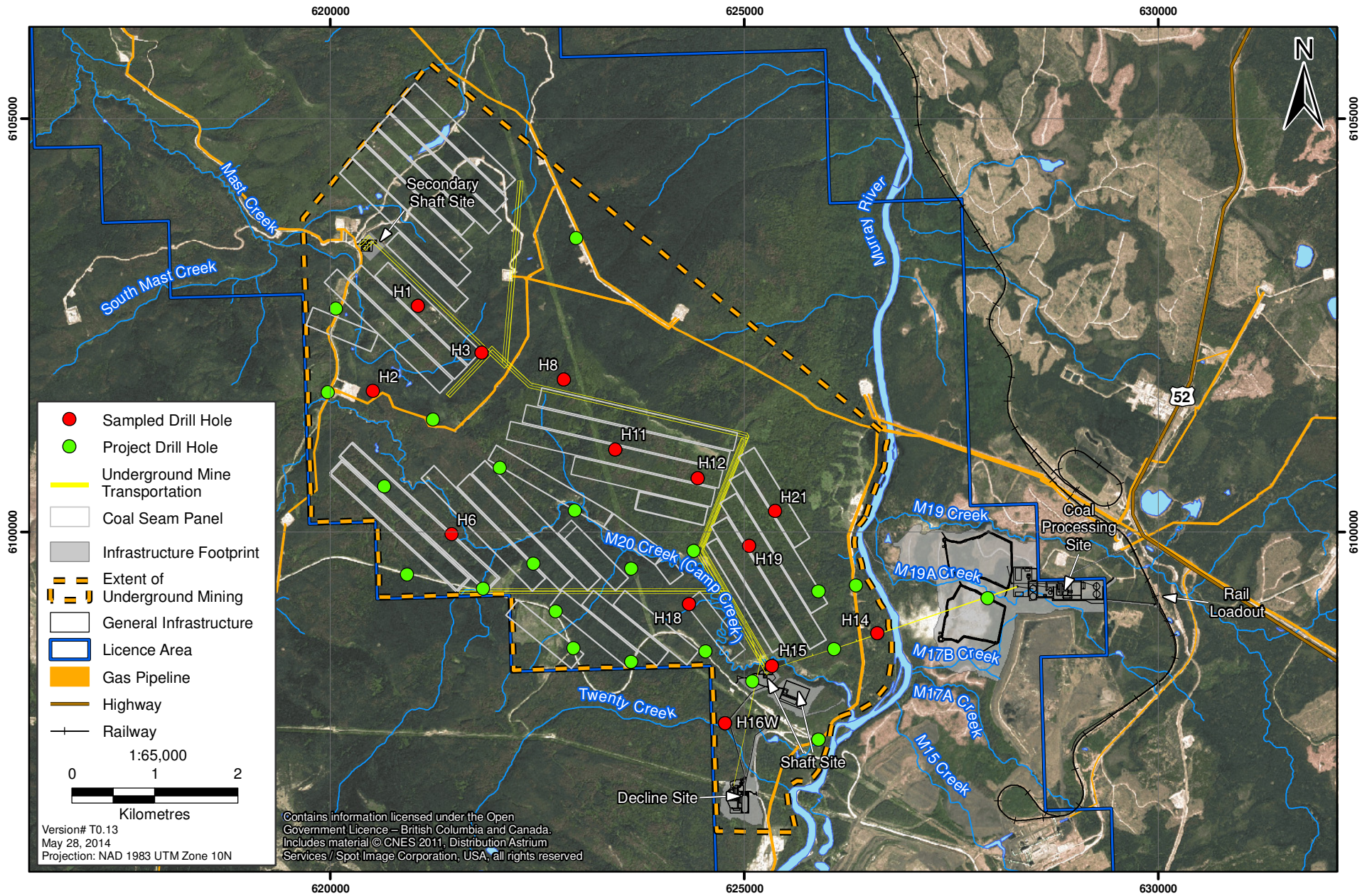


Figure 4.1-3



MURRAY RIVER COAL PROJECT

### Boulder Creek Formation Sampling Locations

Figure 4.1-3





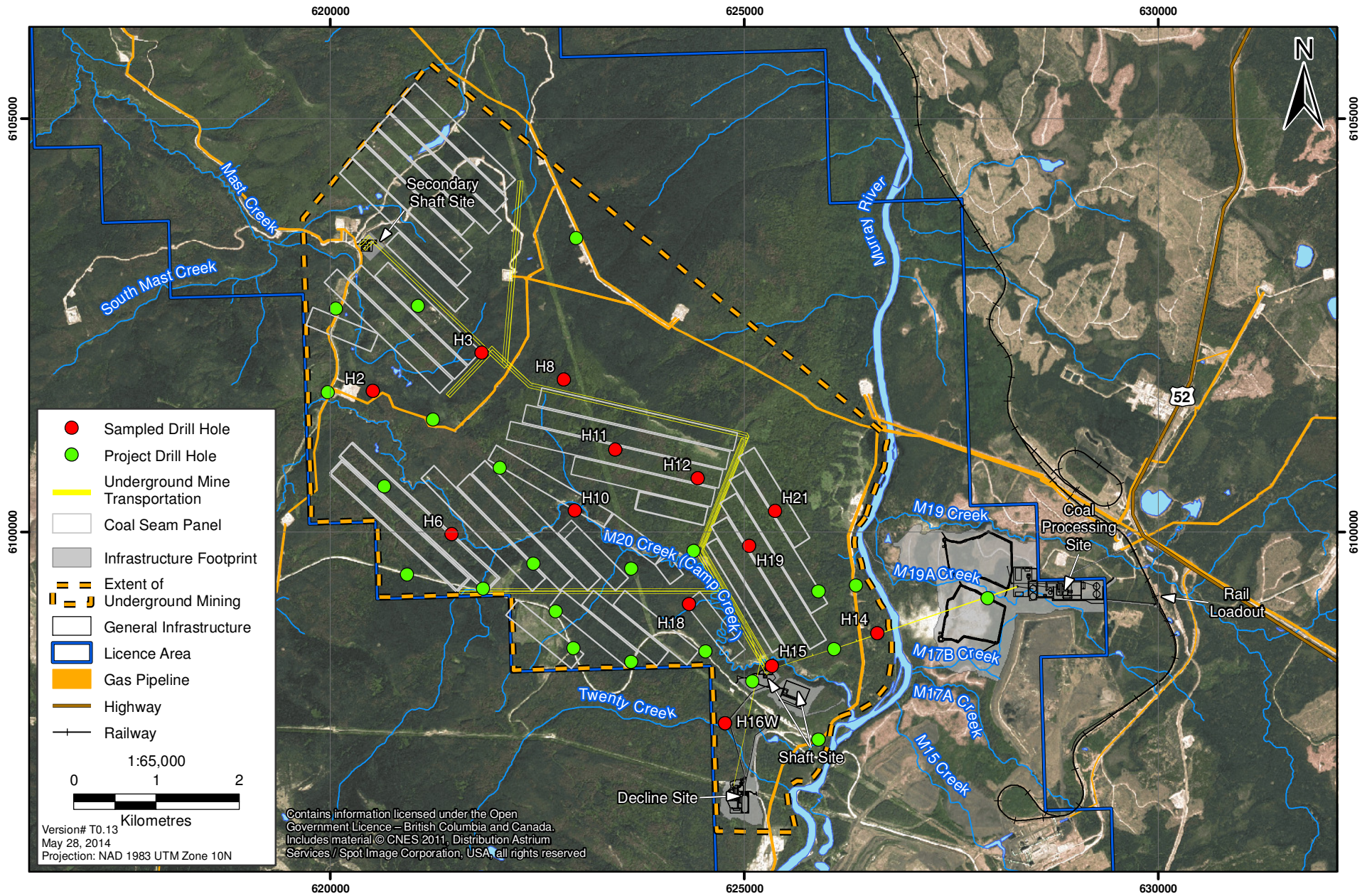


Figure 4.1-4



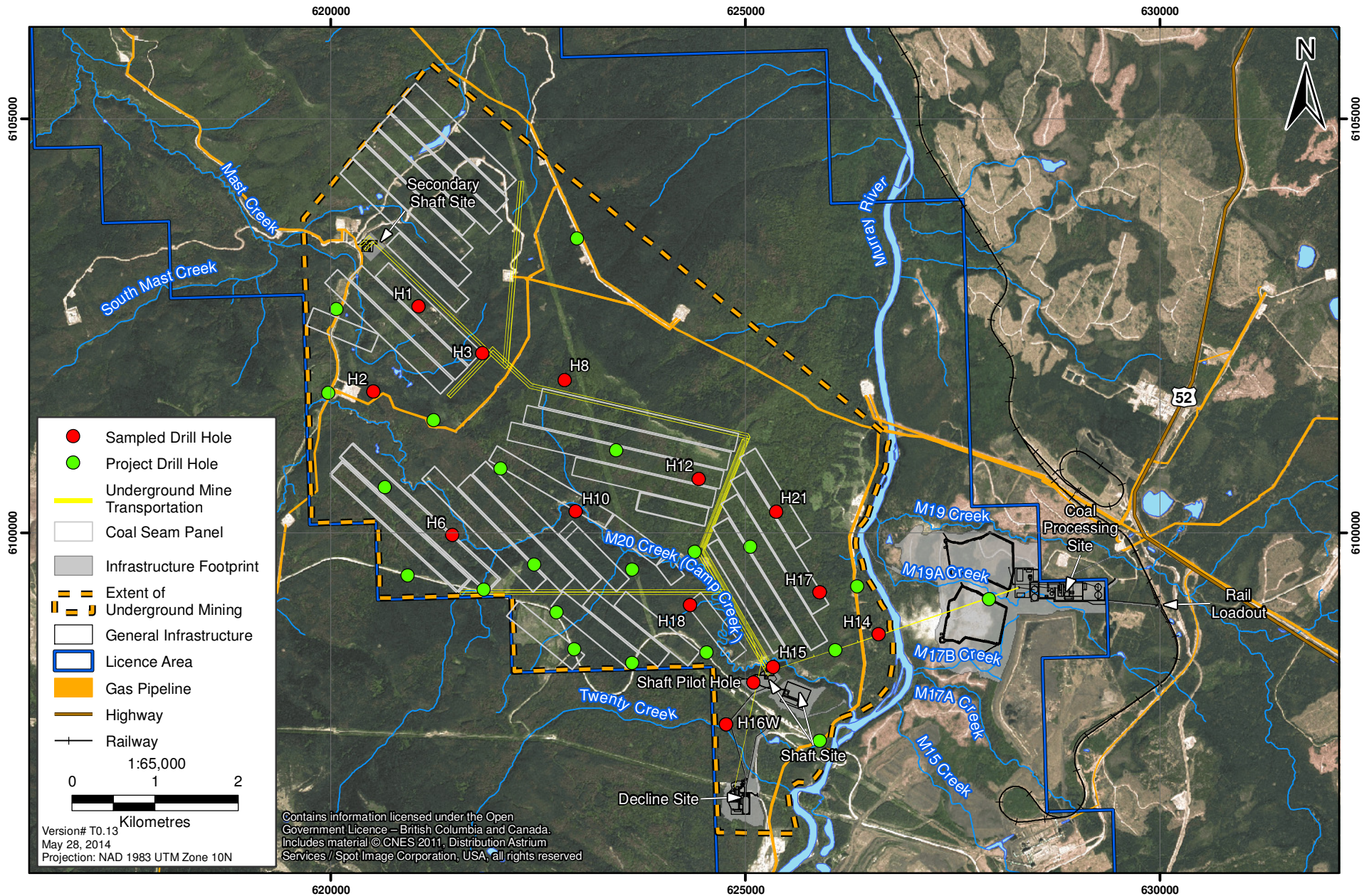
MURRAY RIVER COAL PROJECT

### Hulcross Formation Sampling Locations

Figure 4.1-4









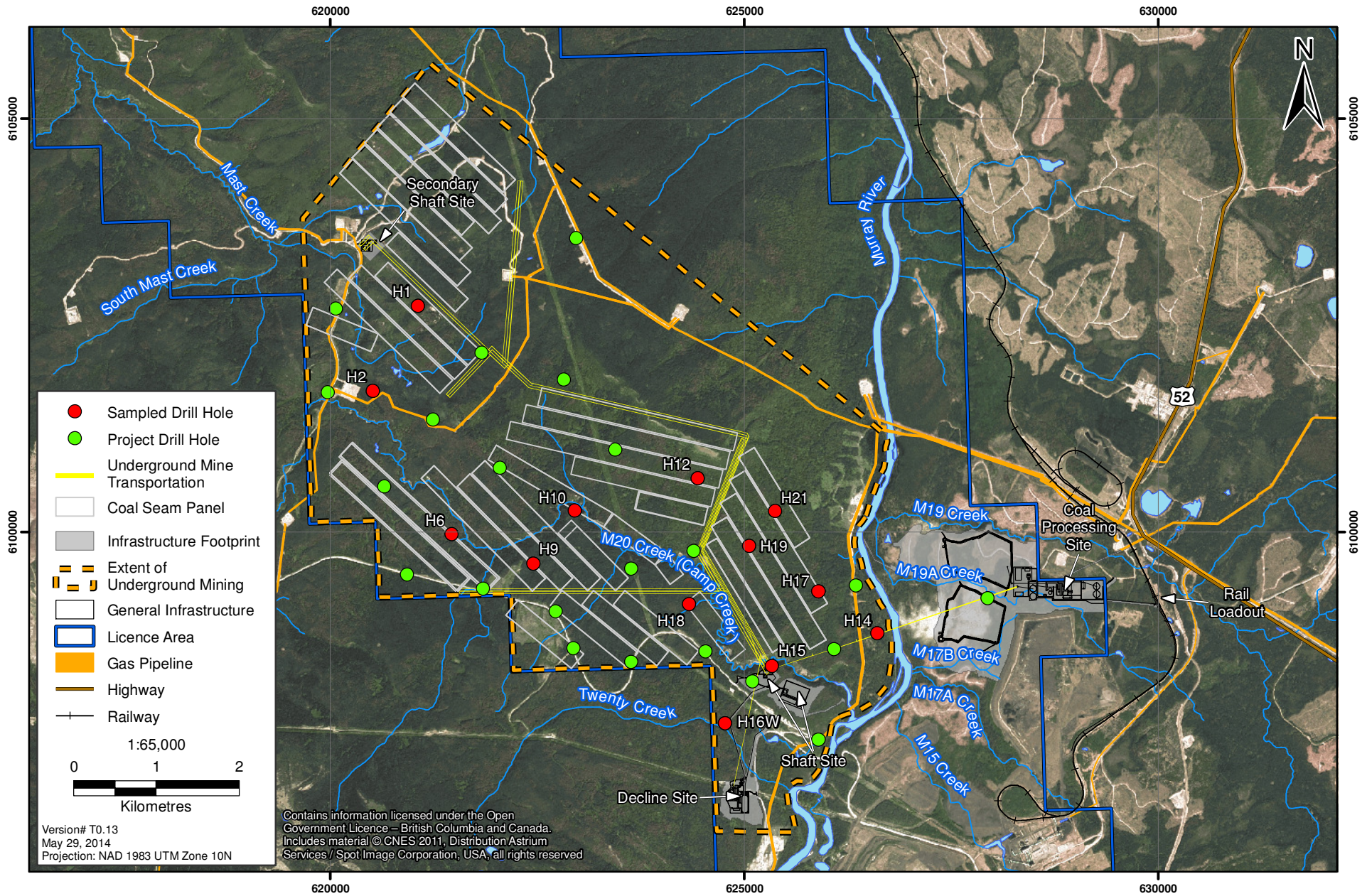


Figure 4.1-6



MURRAY RIVER COAL PROJECT

### Middle Gates Formation Interburden Sampling Locations

Figure 4.1-6





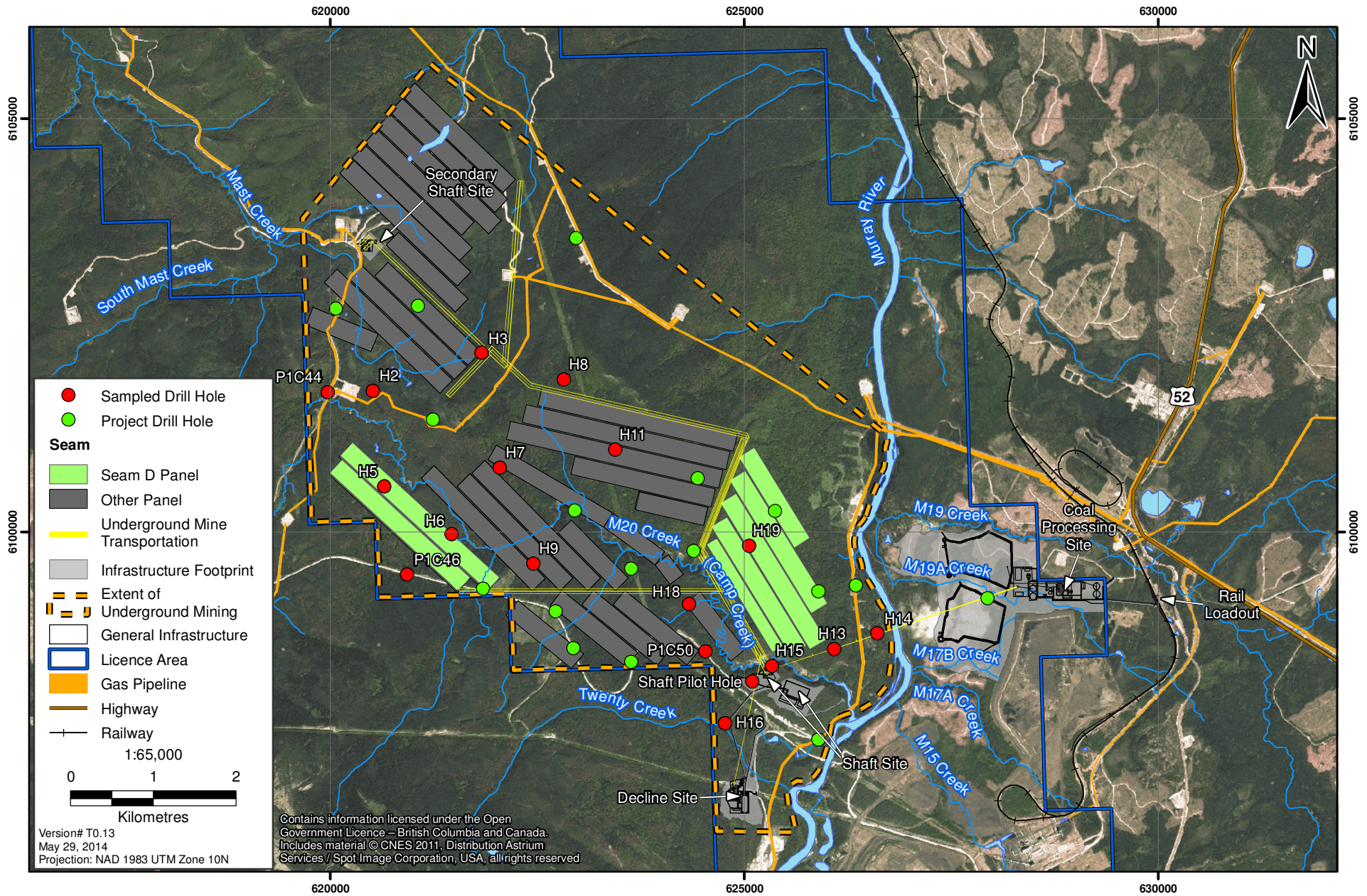


Figure 4.1-7



MURRAY RIVER COAL PROJECT

### Middle Gates Formation D Coal Seam Sampling Locations

Figure 4.1-7





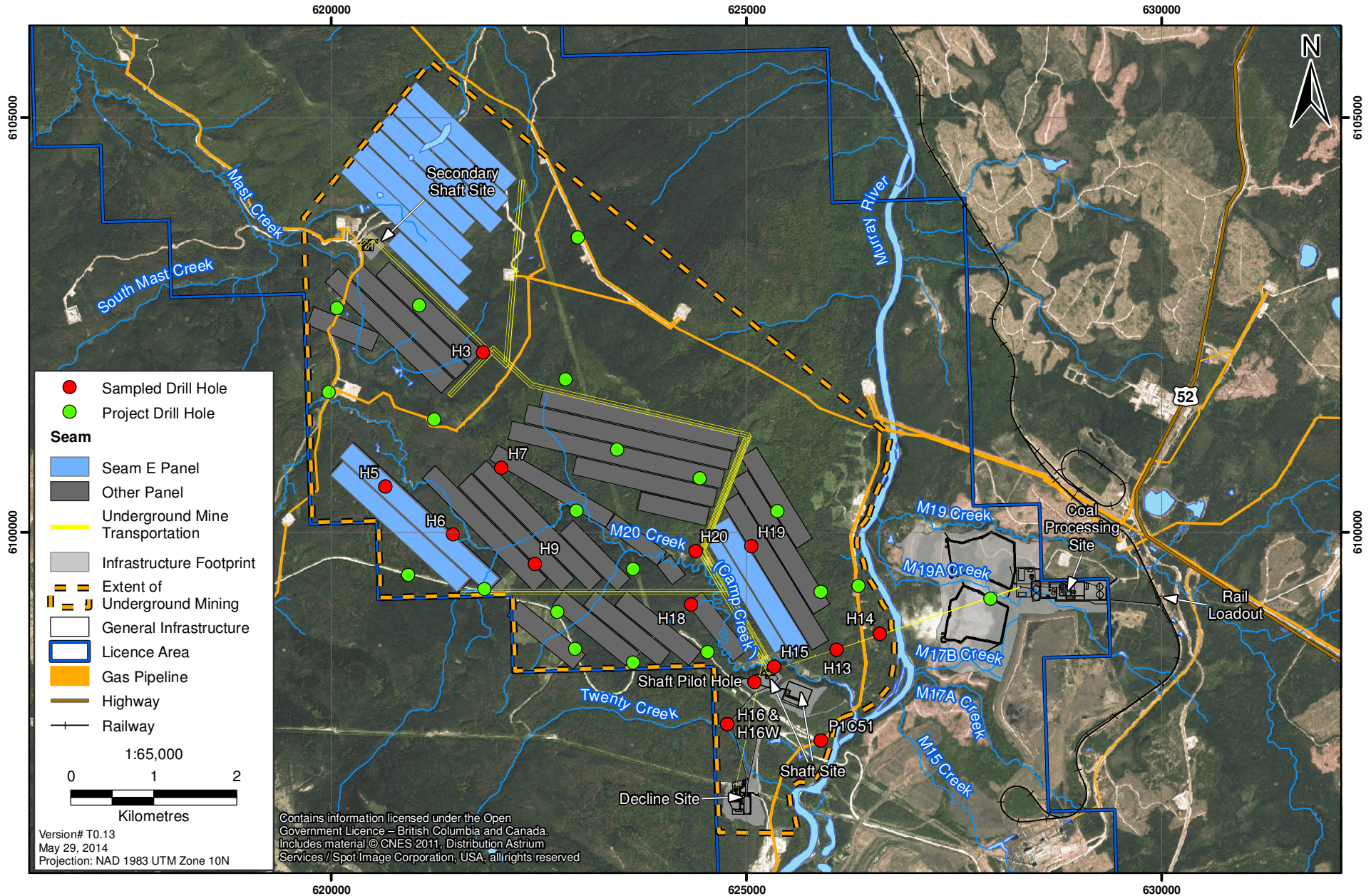


Figure 4.1-8



**MURRAY RIVER COAL PROJECT**

### Middle Gates Formation E Coal Seam Sampling Locations

Figure 4.1-8





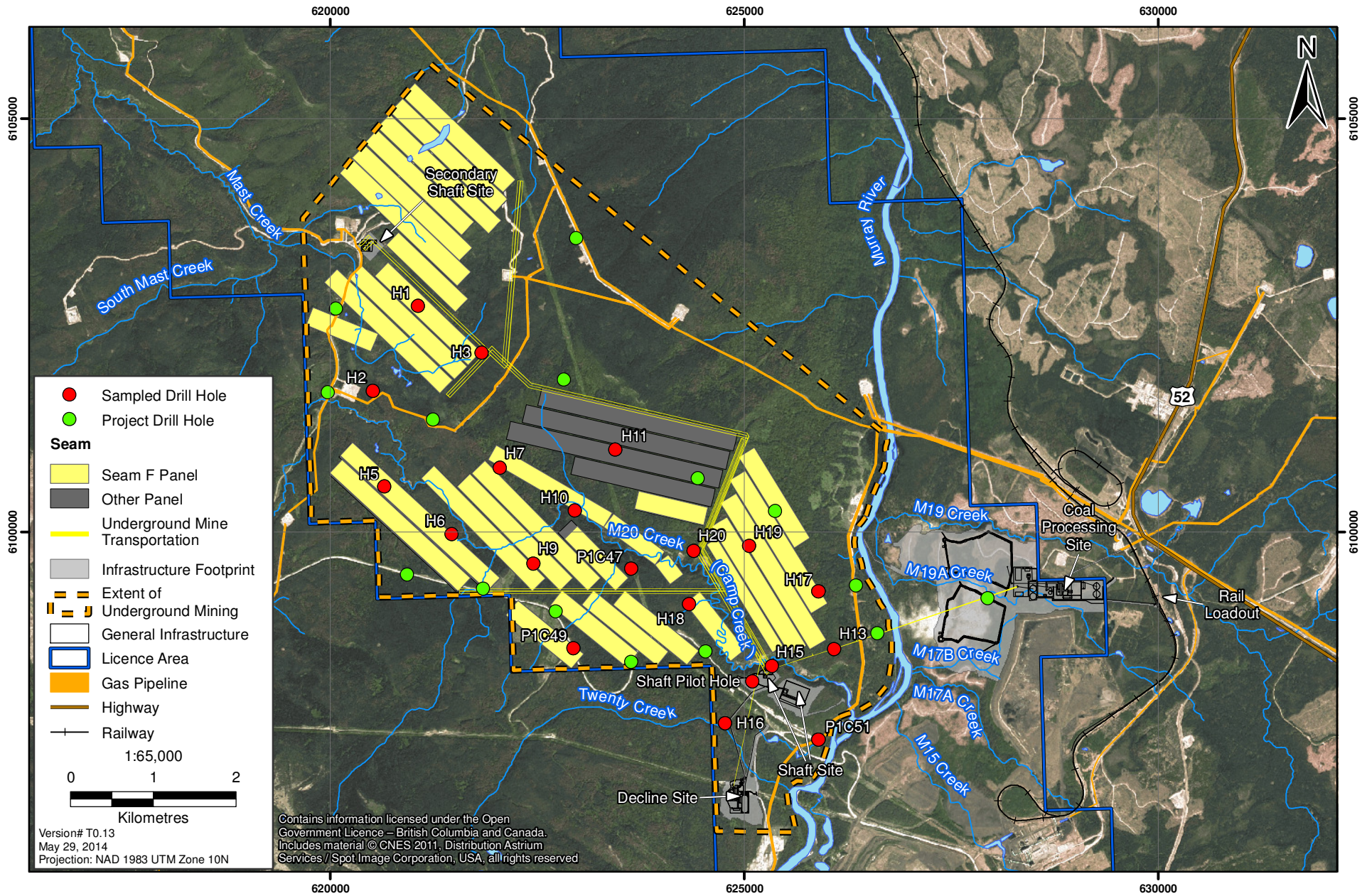


Figure 4.1-9



MURRAY RIVER COAL PROJECT

### Middle Gates Formation F Coal Seam Sampling Locations

Figure 4.1-9





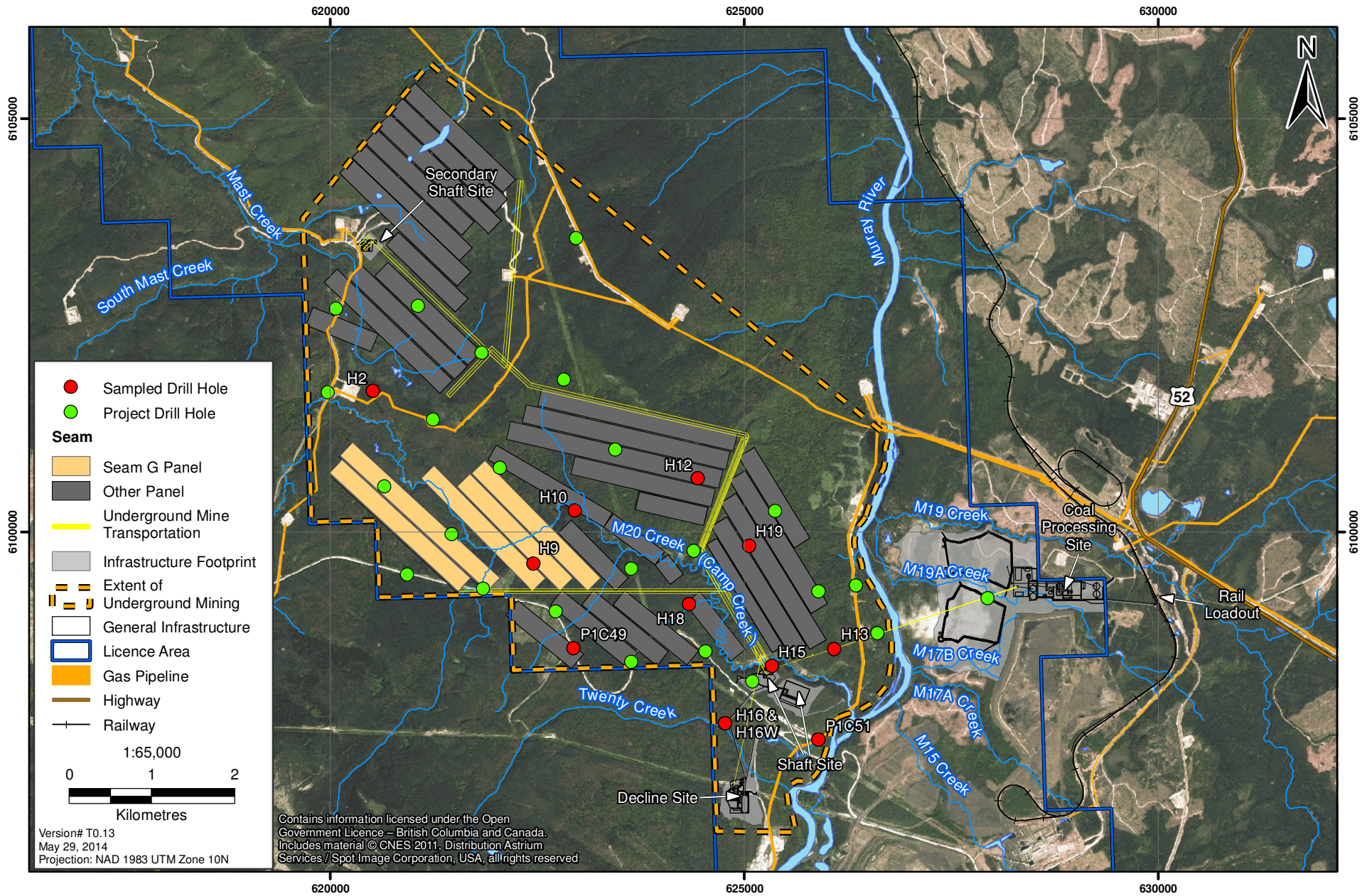


Figure 4.1-10



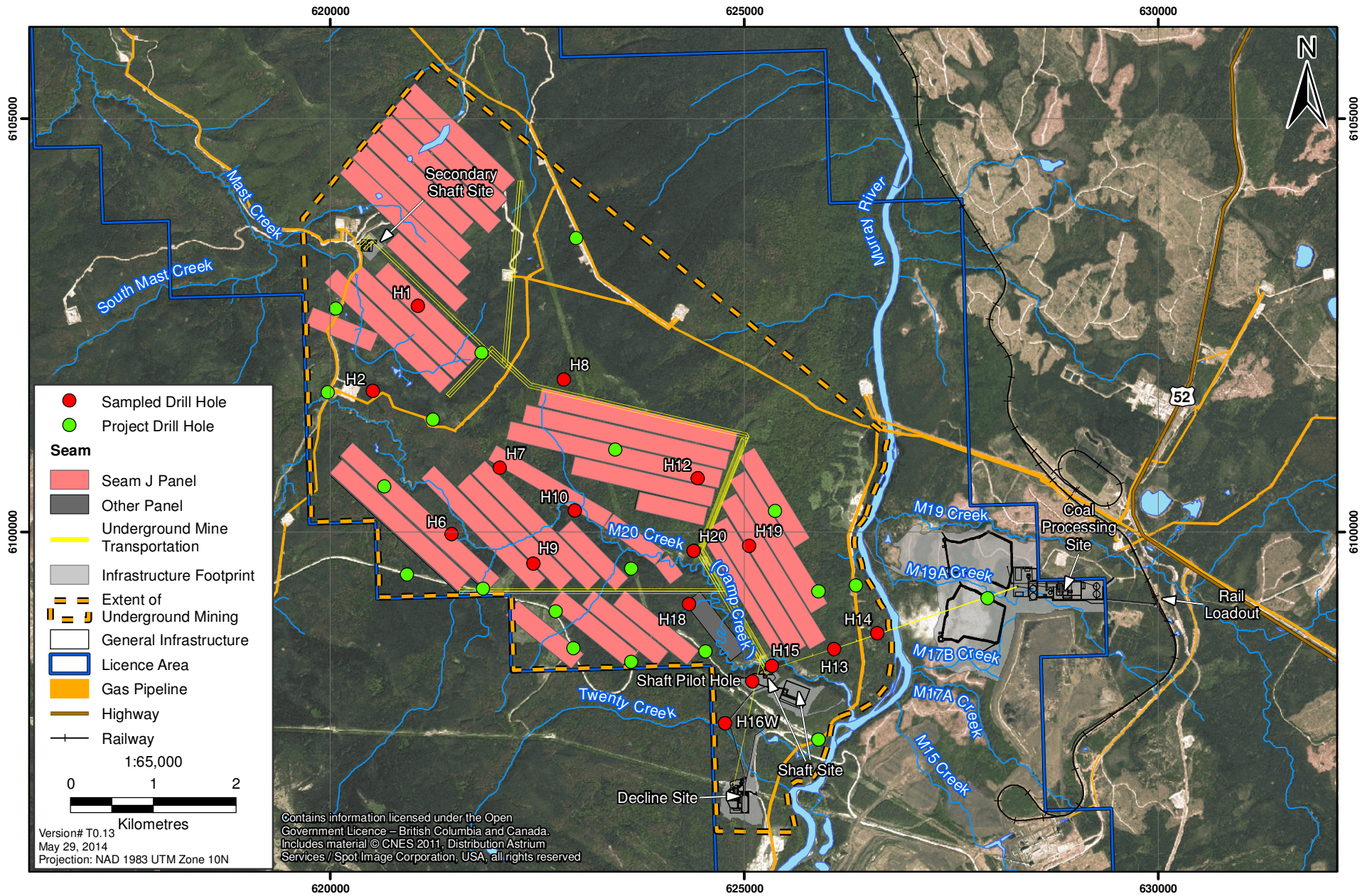
MURRAY RIVER COAL PROJECT

### Middle Gates Formation G/I Coal Seam Sampling Locations

Figure 4.1-10







## 4.2 SAMPLE COLLECTION AND DISTRIBUTION

The following sections lay out the collection and distribution of geochemical samples based on the material type.

### 4.2.1 Waste Rock

For the purposes of this report, waste rock comprises all material overlying the Middle Gates D seam, in addition to Middle Gates interburden between the targeted coal seams. One hundred and seventy-six waste rock samples were collected between 2010 and 2013, including samples from the Hasler, Boulder Creek, Hulcross, and Gates formations, and seven overburden samples. The distribution of samples by formation is presented in Table 4.2-1, along with the different analytical techniques performed on waste rock samples.

**Table 4.2-1. Summary of Number of Samples and Analytical Methods for Characterization of Waste Rock at Murray River**

Formation	Acid-base Accounting	Elemental Abundance	Whole Rock XRF	Rietveld XRD	Optical Mineralogy	Shake Flask Extraction	Humidity Cell	Field Leach Barrel
Overburden	7	7	3	-	-	4	-	-
Hasler	45	45	24	6	3	5	3	1
Boulder Creek	30	30	22	5	1	7	1	1
Hulcross	31	31	22	4	3	9	3	1
Upper Gates	32	32	9	2	2	11	2	1
Middle Gates Interburden	22	22	10	-	-	10	-	-
Below Middle Gates J	9	9	1	-	-	5	-	-
<b>Total</b>	<b>176</b>	<b>176</b>	<b>91</b>	<b>17</b>	<b>9</b>	<b>51</b>	<b>9</b>	<b>4</b>

- indicates analysis not performed for indicated formation.  
Samples include testing from 2010 to December 2013.

In 2013, 20 waste rock samples were collected from two drill holes. Samples included ten Hasler Formation samples from the east side of the river, collected to help in determining the horizontal variability of stratigraphy.

Waste rock samples were collected from drill core. Representative intervals were selected based on drill logs, and sampled by ERM Rescan or HD Mining personnel. Two to five kilograms of whole core were collected, resulting in approximate sample intervals of 0.5 to 1.5 m in length.

Waste rock will be excavated for construction of the shafts and declines. Material will be stored in a waste rock pile at the surface, with some material stored at the CCR site or underground. The ML/ARD waste rock sampling program focused on characterizing the different formations that will be exposed and stored at surface. Table 4.2-2 outlines the mass of waste rock material that is expected to be excavated during construction of the shafts and declines.

As indicated in Table 4.2-1, nine samples have been collected to date from below the Middle Gates J coal seam, including samples from the partings of the K seam and from the Lower Gates Formation. As the Project does not target any seams below the J seam for mining, material from below the J seam will not be excavated or included in the waste rock pile, and so the results from these samples will not be discussed in later sections.

**Table 4.2-2. Summary of Mass of Excavated Waste Rock by Formation**

	Overburden	Hasler	Boulder Creek	Hulcross	Gates	Total
Production Decline	0.70	98.87	16.32	12.32	13.52	141.73
Service Decline	2.09	71.04	-	5.13	24.77	103.03
North Site Shaft	0.87	13.07	14.05	9.91	15.46	53.36
Western Shafts	27.66	54.88	11.76	15.46	75.35	185.12
<b>Total</b>	<b>31</b>	<b>238</b>	<b>42</b>	<b>43</b>	<b>129</b>	<b>483</b>
<b>Proportion</b>	<b>6.5%</b>	<b>49.2%</b>	<b>8.7%</b>	<b>8.9%</b>	<b>26.7%</b>	<b>100.0%</b>

Source: HD Mining, pers. comm., 24 April 2014

Units: kt

#### 4.2.2 Coal

For the purposes of this report, coal material comprises all material from coal seams D, E, F, G/I, and J in the Middle Gates Formation. This is broken out into raw coal, clean coal (including middlings), CCR (including internal partings and the roof and floor of the coal seams), and tailings. Table 4.2-3 outlines the mass of coal material that is expected to be mined from the Middle Gates Formation coal seams. Table 4.2-4 presents the number of coal samples collected from each seam, including samples from multiple seams that were composited due to sample size.

**Table 4.2-3. Summary of Mass of Coal Material by Seam**

	D	E	F	G/I	J	Total
Clean Coal	5.96	9.44	30.49	4.55	52.02	102.45
CCR	1.79	2.83	9.15	1.37	15.61	30.73
Tailings	0.77	1.21	3.92	0.59	6.69	13.17
<b>Total Raw Coal</b>	<b>8.51</b>	<b>13.48</b>	<b>43.55</b>	<b>6.50</b>	<b>74.31</b>	<b>146.35</b>
<b>Proportion</b>	<b>5.8%</b>	<b>9.2%</b>	<b>29.8%</b>	<b>4.4%</b>	<b>50.8%</b>	<b>100.0%</b>

Source: HD Mining, pers. comm., 2 April 2014

Units: Mt

**Table 4.2-4. Summary of Coal Samples by Coal Seam**

Coal Seam	Raw Coal	Clean Coal	CCR	Tailings	Total
D Seam	4	2	28	4	38
E Seam	1	2	14	3	20
F Seam	3	3	27	4	37
G/I Seam	2	-	18	3	23
J Seam	1	3	27	4	35
D-E Seam <sup>†</sup>	-	1	-	-	1
D,E,F,J Seam <sup>†</sup>	-	-	-	1	1
E-F Seam <sup>†</sup>	-	-	1	-	1
<b>Total</b>	<b>11</b>	<b>11</b>	<b>115</b>	<b>19</b>	<b>156</b>

<sup>†</sup> Composite sample from multiple seams

- indicates analysis not performed

The following sections detail the coal sample preparation procedures, and the distribution of samples for raw coal, clean coal, CCR, and tailings.



4.2.2.1 Coal Sample Preparation

Samples of coal seam parting, roof, and floor material were collected from drill core alongside Middle Gates Formation interburden samples. Representative intervals adjacent to coal seams were selected based on drill logs, and sampled by ERM Rescan or HD Mining personnel. Sampling procedures were the same as detailed in Section 4.2.1 for waste rock sampling.

Bench-scale coal washing was completed at GWIL Industries, Birtley Coal and Mineral Testing in Calgary, AB. Raw coal drill core samples were crushed to pass 50 mm screens. Additional screening was completed at 1 mm and 0.25 mm. The 50 mm x 1 mm and the 1 mm x 0.25 mm was washed by gravity separation (float sink) at specific gravities of 1.4 and 1.7 to produce clean coal, middlings, and CCR. The 0.25 mm x 0 was frothed at 10% pulp density with 0.667 kg/t of 10:1 Kero: MIBC to produce fine clean coal and tailings. Float/sink processing of coal samples is illustrated in Plate 4.2-1, and the clean coal produced is illustrated in Plate 4.2-2. Samples were subsequently submitted to Maxxam Analytics for static testing.



Plate 4.2-1. Float/sink coal processing of F seam material.



Plate 4.2-2. F seam clean coal.



#### 4.2.2.2 Raw Coal

During mining operations, raw coal will be transported from the mining face via conveyors through the underground workings, up the decline to the surface. At the surface, raw coal will be stockpiled prior to processing at the coal preparation plant.

To characterize the ML/ARD potential of the raw coal stockpile, 11 drill core samples were collected and analyzed between 2011 and 2013. The distribution of raw coal samples between seams is presented in Table 4.2-4. Table 4.2-5 lists the different analytical techniques performed on raw coal samples.

**Table 4.2-5. Summary of Number of Samples and Analytical Methods for Characterization of Raw Coal**

Coal Seam	Acid-base Accounting	Elemental Abundance	Whole Rock XRF	Rietveld XRD	Humidity Cell
D Seam	4	4	-	-	-
E Seam	1	1	-	-	-
F Seam	3	3	1	1	1
G/I Seam	2	2	-	-	-
J Seam	1	1	-	-	-

- indicates analysis not performed

#### 4.2.2.3 Clean Coal and Middlings

At the coal preparation plant, raw coal will be crushed, and then flow through a series of sizing processes. From there, clean coal and middlings will be directed to the rail loadout and transported off-site.

Eleven samples of clean coal and middling material were collected in 2013. Due to limited available mass, one sample was composited from D and E seam material. The distribution of clean coal samples between seams is presented in Table 4.2-4. Table 4.2-6 lists the different analytical techniques performed on clean coal samples.

**Table 4.2-6. Summary of Number of Samples and Analytical Methods for Characterization of Clean Coal and Middlings**

Coal Seam	Acid-base Accounting	Elemental Abundance	Whole Rock XRF	Rietveld XRD	Shake Flask Extraction	Humidity Cell
D Seam	2	2	1	1	2	1
E Seam	2	2	1	1	2	1
F Seam	3	3	-	-	3	
G/I Seam	-	-	-	-	-	
J Seam	3	3	-	-	1	
D-E Seam†	1	1	-	-	1	

† Composite sample from multiple seams

- indicates analysis not performed

#### 4.2.2.4 CCR and Partings

After crushing and separation at the coal preparation plant, oversized reject material will be stored in the CCR area.

To assess the ML/ARD potential of the CCR stockpile, 62 CCR samples were collected and analyzed in 2013 from processed coal seam material. Due to limited available mass, one sample was composited from E and F seam material. As the coarser-grained siltstone and mudstone encompassing the coal seams will be mined out and included in the coarse rejects pile, 53 samples of parting material analyzed during Phase 1 and 2 sampling were included with the CCR samples. Parting material includes all non-coal rock in contact with the coal seams—roofs, floors, and internal lenses of coarser-grained rock.

The distribution of CCR samples between seams is presented in Table 4.2-4. Table 4.2-7 lists the different analytical techniques performed on CCR samples.

**Table 4.2-7. Summary of Number of Samples and Analytical Methods for Characterization of Coarse Coal Reject**

Coal Seam	Acid-base Accounting	Elemental Abundance	Whole Rock XRF	Rietveld XRD	Optical Mineralogy	Shake Flask Extraction	Humidity Cell
D Seam	28	28	10	8	1	4	3
E Seam	14	14	2	2	1	1	2
F Seam	27	27	9	4	-	4	2
G/I Seam	18	18	7	3	-	2	2
J Seam	27	27	9	4	1	7	2
E-F Seam <sup>†</sup>	1	1	-	1	-	1	1

<sup>†</sup> Composite sample from multiple seams  
 - indicates analysis not performed

#### 4.2.2.5 Tailings

At the coal preparation plant, thickened and dewatered fine tailings material produced from the flotation cells will be co-mingled with the CCR material and included in the CCR stockpile. Therefore, to characterize the coarse rejects pile accurately, tailings samples would also need to be characterized for their ML/ARD potential. To this end, 19 tailings samples were collected and analyzed in 2013. Due to very limited available mass of tailings, one sample was composited from material from D, E, F, and J seams; the masses of tailings from each seam are summarized in Table 4.2-8. Several samples were also composited from multiple drill holes within the same mine blocks.

**Table 4.2-8. Distribution of Composite Tailings Sample by Coal Seam**

Coal Seam	Mass of Tailings (g)	Proportion
D	311.0	66.6%
E	102.0	21.8%
F	5.2	1.1%
J	49.0	10.5%
<b>Total</b>	<b>467.2</b>	<b>100.0%</b>

The distribution of tailings samples between seams is presented in Table 4.2-4. Table 4.2-9 lists the different analytical techniques performed on tailings samples.

**Table 4.2-9. Summary of Number of Samples and Analytical Methods for Characterization of Tailings**

Coal Seam	Acid-base Accounting	Elemental Abundance	Whole Rock XRF	Rietveld XRD	Humidity Cell
D Seam	4	4	-	1	-
E Seam	3	3	-	1	-
F Seam	4	4	-	1	-
G/I Seam	3	3	1	1	1
J Seam	4	4	1	1	1
D,E,F,J Seam <sup>†</sup>	1	1	-	1	1

<sup>†</sup> Composite sample from multiple seams  
 - indicates analysis not performed

### 4.3 GEOCHEMICAL CHARACTERIZATION METHODS

Samples from the Murray River Coal Project have been analyzed using several geochemical characterization methods. Laboratory analyses employed for characterization include static, leachate, and kinetic testing. The following sections outline the different analytical tests used to characterize waste rock and coal samples.

#### 4.3.1 Static Tests

Static tests are designed to characterize a sample at a moment in time, and are typically used to determine bulk chemical characteristics of samples. Static tests that were conducted on Project samples include ABA, whole rock analysis by XRF, solid phase elemental analysis by ICP-MS, and mineralogical testing by Rietveld XRD and optical petrography. Static results were used to determine the ML/ARD potential of waste rock, raw coal, CCR, and tailings material, to assist in planning for rock stockpiling during construction and operations.

##### 4.3.1.1 Acid-base Accounting

ABA testing is a set of analytical methods that provide data on the AP and NP of a sample. Table 4.3-1 outlines the ABA parameters used in the geochemical characterization of the Project. Additional parameters were calculated from the measured parameters and are presented in Table 4.3-2.

##### Paste pH

Paste pH was conducted on all samples. If samples had undergone weathering and sulphide oxidation prior to analysis, then paste pH values less than 6.0 were measured, indicating acidity was previously generated and net acidity stored within the sample.

##### Sulphur Species and Acid Potential

The analytical methods for determining total, sulphate, and sulphide sulphur are presented in Table 4.3-1.

Sulphide sulphur was calculated as well as measured (Table 4.3-2). As barium was frequently present at several hundred to a thousand parts per million in ICP-MS testing, and barite was identified for one sample in Rietveld XRD, the contribution of barite to sulphate sulphur was considered in the calculation for sulphide sulphur.

Table 4.3-1. ABA Parameters, Analytical Methods, and Uses

Measured Parameter	Acronym	Units	Analytical Method	Use in ABA
Paste pH	-	pH units	pH of a slurry of solid sample and de-ionized water	Determination of stored acidity; Unavailable NP calculation
Total sulphur	S	% S	Leco furnace	Total acid potential
Sulphide sulphur	S <sub>2</sub>	% S	React with nitric acid to remove carbonate and measure residue by Leco furnace	Sulphide acid potential
Sulphate sulphur	SO <sub>4</sub>	% S	React with hydrochloric acid to remove soluble sulphate minerals and measure residue by Leco furnace	Indication of the potential amount of sulphide sulphur that has oxidized Used as alternate check method for sulphide sulphur
Total carbon	C	% C	Leco furnace	Alternate measure of potential NP associated with carbon-bearing minerals
Inorganic carbon	Inorg C	% C or % CO <sub>2</sub>	React with hydrochloric acid to remove carbonate and measure residue by Leco furnace	Alternate measure of potential NP associated with carbonate-bearing minerals
Sobek bulk NP	NP	kg CaCO <sub>3</sub> /t	React with hydrochloric acid at near boiling for 2-4 hours	Standard method of measuring bulk NP
Modified Sobek bulk NP	Mod NP	kg CaCO <sub>3</sub> /t	React with hydrochloric acid at 20° C for 24 hours	Alternative method of measuring bulk NP
Siderite corrected NP (Skousen NP)	-	kg CaCO <sub>3</sub> /t	React with hydrochloric acid, filter, add hydrogen peroxide, and boil filtrate	Modifies Sobek NP to correct for Fe and Mn carbonate contribution to NP

Table 4.3-2. Calculated ABA Parameters

Parameter	Acronyms	Units	Calculation
Sulphide sulphur	S[S <sub>2</sub> ]CALC	%	%S(S <sub>2</sub> )CALC = total sulphur - sulphate sulphur - barium-bound sulphate sulphur
Barium-bound sulphate sulphur	S-BaSO <sub>4</sub>	%	%S-BaSO <sub>4</sub> = Ba (ppm) × 0.0001 × 32.06/137.37
Total Acid Potential	TAP	kg CaCO <sub>3</sub> /t	TAP = %total sulphur × 31.25
Sulphide Acid Potential	SAP	kg CaCO <sub>3</sub> /t	SAP = %sulphide sulphur × 31.25
Adjusted Modified NP	AdjNP	kg CaCO <sub>3</sub> /t	AdjNP = Modified NP - Unavailable NP
Total Carbon NP	Total C NP	kg CaCO <sub>3</sub> /t	Total C NP = %C × 10 × 100.09/12.01
Inorganic NP	Inorg NP	kg CaCO <sub>3</sub> /t	Inorg NP = %CO <sub>2</sub> × 10 × 100.09/44.01
Iron corrected Inorganic NP	Fe-corr Inorg NP	kg CaCO <sub>3</sub> /t	Fe-corr Inorg NP = Inorg NP - ((%Fe - (%S <sub>2</sub> × 119.98/32.07) × (55.85/119.98)) × 10 × 115.85/55.85)
Calcium NP	Ca NP	kg CaCO <sub>3</sub> /t	Ca NP = (%Ca × 10,000) × (100.09/40.08)/1,000
Calcium-Magnesium NP	CaMg NP	kg CaCO <sub>3</sub> /t	CaMg NP = ((%Ca+%Mg) × 10,000) × (100.09/40.08)/1,000
Sulphide Net Potential Ratio	SNPR	Unitless	SNPR = Modified NP / SAP
Adjusted SNPR	adjSNPR	Unitless	adjSNPR = Adjusted NP / SAP

Sulphate sulphur values were low in comparison to measured and calculated sulphide sulphur, and consequently the AP of samples was calculated from sulphide and total sulphur (Table 4.3-2). Sulphide sulphur by nitric acid reaction was not measured for all samples, and was frequently lower than the calculated sulphide sulphur. For the calculation of AP, calculated sulphide sulphur was used, except where measured values exceeded calculated sulphide sulphur.

Calculation of AP is affected by the presence of non-iron sulphide minerals. For example, oxidation of one mole of arsenopyrite ( $\text{FeAsS}$ ) results in four moles of acid ( $\text{H}^+$ ) compared to two moles of acid for pyrite ( $\text{FeS}_2$ ) per mole of oxidized sulphide sulphur. Rietveld XRD analysis only identified iron sulphides (pyrite and marcasite), and only traces of arsenopyrite were identified by optical microscopy. The calculation of AP used in this report assumes the standard two moles of acid is released when one mole of sulphide sulphur is oxidized.

### Carbon Species

Total carbon, organic carbon, and inorganic carbon or  $\text{CO}_2$  were determined by a Leco induction furnace method (Price 2009), as laid out in Table 4.3-1.

### Neutralization Potential

Neutralization potential was measured for all samples using the modified Sobek bulk NP. Standard Sobek bulk NP was also measured for some samples. Modified NP is considered more conservative than Sobek NP, which can overestimate the amount of NP that is readily available for neutralizing reactions. For samples where both NP methods were used, the modified NP was frequently lower than the NP produced by the Sobek method.

Siderite (iron carbonate,  $\text{FeCO}_3$ ) was identified in some samples by Rietveld XRD. The presence of siderite can affect the NP of samples, as the iron released through dissolution produces acidity. Consequently, siderite corrected NP (Skousen et al. 1997) was analyzed for samples with siderite content. As siderite corrected NP values determined by this method were predominantly greater than modified NP values, modified NP was considered more conservative and siderite corrected NP results were not used to determine NP. Corrections for siderite content are discussed in Section 5.

In addition to the NP methods discussed above, NP can be calculated from measured total carbon and inorganic carbon. Both methods assume that the carbon phases are from carbon associated with carbonate mineral phases. Due to the extremely high levels of organic carbon in the coal-bearing rock, the use of total carbon as a proxy for carbonate carbon was not appropriate and will not be discussed further in this document. Inorganic carbonate NP (Inorg NP, Table 4.3-2) provides a good representation of the readily available NP for rapidly produced acidity. Although inorg NP is more reactive, aluminosilicate minerals can provide an important source of NP to neutralize moderate to low pH leachate produced in low volumes. The contribution of carbonate and silicate minerals to NP is discussed in Section 5.

#### *4.3.1.2 Whole Rock and Solid Phase Elemental Analysis*

There are various “whole rock” analyses available to determine the abundance of elements in samples. Geochemical characterization of Project materials used ICP-MS analyses after aqua regia digestion and XRF whole rock analysis.

For total metals analysis, a prepared sample was digested with a 3:1 mixture of hydrochloric and nitric acids, commonly referred to as an aqua regia digestion. The residue was topped up with dilute hydrochloric acid and analyzed by ICP-MS.

Whole rock analysis was performed by lithium metaborate fusion followed by XRF analysis for major oxides.

Sample results were assessed by comparing the 75th percentile to three times the average crustal abundance of an equivalent rock type (Price 1997). This screening tool provides a check to determine which elements may be of concern based on solid phase concentrations. However, solid phase concentrations of elements do not always correlate with release rates.

### 4.3.1.3 Mineralogy

Mineralogical analysis is conducted to determine minerals of interest that may contribute to AP or NP. Waste rock and coal samples selected for humidity cells (see Section 4.3.3), in addition to other samples of interest, were analyzed for quantitative mineralogical composition by Rietveld XRD. The XRD analyses were carried out at the Department of Earth and Ocean Sciences, University of BC. Samples were reduced to < 10 µm through grinding. X-ray diffractograms were refined using the Rietveld method.

All nine waste rock humidity cell samples and three CCR humidity cell samples were analyzed by optical microscopy on polished thin sections, under transmitted and reflected light. Analyses were performed by Mineral Services Canada of North Vancouver, BC. Thin section examination enabled the identification of major silicate, carbonate, and sulphide minerals.

### 4.3.2 Leachate Tests

Leachate tests were conducted to determine the potential of short term surface soluble dissolution and subsequent release of parameters. The analysis for soluble constituents was carried out on a sub-set of samples by leachate extraction using the SFE procedure (Price 2009). The leachate concentrations were compared to BC MOE water quality guidelines.

### 4.3.3 Kinetic Tests

Kinetic tests are performed on a sample to determine the release rates of various parameters. These tests can be run under field or laboratory conditions and can range in scale from 1 kg to hundreds of tonnes with cm- to m-scale sized substrate. The ML/ARD characterization program included both laboratory humidity cells tests and on-site field leachate tests. Static test results guided the selection of kinetic test samples. Results from these tests were used in developing design criteria and management plans for waste rock and coal material storage, and to provide source terms for water quality modelling.

#### 4.3.3.1 Humidity Cells

Humidity cell kinetic tests were constructed from 1 kg of crushed material (80% of material passing 6 mm sieve) in accordance with the MEND procedure (Price 2009). For the initial leach cycle of the waste rock samples, 750 mL of nanopure water was added with the leachate drain closed. After one hour the cell was drained, the volume recorded and the leachate submitted for analysis. Each cell was operated on a seven day cycle. For the first three days, dry air was passed through the cell. For the next three days, humidified air was passed through the cell from a humidifier. On the seventh day of the cycle the airflow was disconnected and the leaching cycle repeated using 500 mL of nanopure water. The leachate volume was recorded and the sample submitted for analysis. Plate 4.3-1 illustrates the typical set-up for waste rock and coal humidity cells.

Analysis of humidity cell leachate included pH, conductivity, acidity, alkalinity, sulphate, fluoride, chloride, and dissolved metals. Metal release rates from weekly flushes were used to predict contact water chemistry.



*Plate 4.3-1. Coarse coal reject humidity cell HC14 during first flush.*

Nine waste rock and three parting humidity cells were initiated between February and April of 2011, with the objective of characterizing the ML/ARD potential of the major formations at the Project (Hasler, Boulder Creek, Hulcross, Upper Gates, and Middle Gates formations). In May 2012, one coal humidity cell was initiated, and in May 2013 an additional three CCR humidity cells were constructed. One of these (HC17) was constructed with 500 g of crushed material, due to sample size limitations, and leachate volume was scaled accordingly.

In May 2013, a tailings humidity cell was also constructed, from a composite of tailings material from D, E, F, and J seams. The tailings humidity cell followed the same procedure as the rest, with a few modifications due to finer grain size and limited mass of tailings material. Shorter and wider acrylic tubing was used to allow timely flow through the finer grained material, and the mass of the cell was reduced to 390 g to account for limited available sample mass. Consequently, the weekly leaching cycle used 195 mL of nanopure water, rather than the standard 500 mL. Plate 4.3-2 shows the set-up of tailings humidity cell HC15.

In February 2014, ten additional coal samples were selected for humidity cell construction, including six CCR, two raw coal, and two tailings samples. The new humidity cells were planned to fill in gaps in the existing kinetic program, and were designed principally to target seams and Sulphide Net Potential Ratio (SNPR) values currently not represented by the operating humidity cells.

Waste rock humidity cells were selected to represent the different formations that will be encountered while constructing the access shafts and declines for the mine. Coal humidity cells were selected to represent the material that will be mined and stockpiled at the property, both in the raw coal stockpile and the coarse reject pile. Samples were selected from a range of available coal seams, to increase the representivity of the kinetic testing program. Where multiple samples were available from the same seam, an attempt was made to select a range of SNPR values. Generally, the target was to select at least one sample with low NP/high AP (low SNPR), and one sample with median NP, AP, and

SNPR values. This allowed for a more comprehensive characterization of the material. Where a cell was targeted to contain material that is likely to be acid-generating, a sample with low NP was selected to try and reduce the lag time to the onset of acidic drainage conditions. Details of the currently operating Project humidity cells are laid out in Table 4.3-3, and details of the new humidity cells initiated in February 2014 are presented in Table 4.3-4.



Plate 4.3-2. Tailings humidity cell HC15 during first flush.

The representivity of the humidity cell program, including the cells initiated in 2014, is laid out in Table 4.3-5 and 4.3-6, demonstrating the range of SNPR values represented by waste rock and coal humidity cells, respectively.

#### 4.3.3.2 Field Leach Barrels

Aqueous concentrations from on-site FLBs are used for the prediction of future drainage from waste rock stockpiles. The kinetic data obtained from on-site FLBs represents scaled-up leach rates compared to the laboratory humidity cell tests.

Four waste rock field barrels were initiated on the property in the second week of May 2011. Material was selected from the Hasler, Boulder Creek, Hulcross, and Upper Gates formations. Core material was collected from a variety of depths and drill holes to obtain a representative composite sample, as presented in Table 4.3-7. The drill core samples were crushed to a nominal one inch size, and placed inside open-topped HDPE barrels, as illustrated by Plate 4.3-3.

Under field conditions, precipitation (rain and snow) falls onto the barrels and water migrates through the drill core material to the base of the barrel. Leachate drains through a pipe near the base of the barrel and is collected in a 20 L bucket for sample collection. The leachate was sampled three times a year in 2011, 2012, and 2013, and analyzed for the same suite of parameters as the humidity cells, at ALS Environmental in Burnaby, BC.



Table 4.3-3. Characteristics of Operating Project Humidity Cells

Humidity Cell Identification	Formation	Sample Type	Coal Seam	Date Started	Number of Weeks (May 1, 2014)	Mass of Cell (g)	Weekly Flush (mL)	Paste pH	Modified NP (kg CaCO <sub>3</sub> /t)	Sulphide-Sulphur (%)	Sulphide Net Potential Ratio	Selenium (ppm)	ARD Potential <sup>†</sup>
HC7	Hasler	Waste Rock	n/a	Feb-2011	167	1000	500	8.86	4.9	0.24	0.7	1.0	PAG
HC8	Hasler	Waste Rock	n/a	Feb-2011	167	1000	500	8.50	23.6	0.78	1.0	0.7	PAG
HC9	Hasler	Waste Rock	n/a	Feb-2011	167	1000	500	8.84	5.0	1.82	0.1	1.5	PAG
HC4	Boulder Creek	Waste Rock	n/a	Feb-2011	167	1000	500	8.42	7.4	2.68	0.1	2.0	PAG
HC10	Hulcross	Waste Rock	n/a	Apr-2011	159	1000	500	9.39	22.3	1.33	0.5	2.3	PAG
HC11	Hulcross	Waste Rock	n/a	Apr-2011	159	1000	500	9.23	29.5	1.06	0.9	2.3	PAG
HC12	Hulcross	Waste Rock	n/a	Apr-2011	159	1000	500	9.42	23.7	1.44	0.5	2.3	PAG
HC1	Upper Gates	Waste Rock	n/a	Feb-2011	167	1000	500	8.48	55.6	0.72	2.5	1.1	nPAG
HC6	Upper Gates	Waste Rock	n/a	Feb-2011	167	1000	500	8.80	170.0	1.24	4.4	1.3	nPAG
HC5	Middle Gates	CCR	D	Feb-2011	167	1000	500	8.04	8.5	0.17	1.6	0.4	PAG
HC14	Middle Gates	CCR	D	May-2013	50	1000	500	8.79	33.5	0.25	4.3	2.1	nPAG
HC2	Middle Gates	CCR	E	Feb-2011	167	1000	500	8.26	16.8	1.73	0.3	1.2	PAG
HC3	Middle Gates	CCR	J	Feb-2011	167	1000	500	8.56	13.7	0.53	0.8	3.4	PAG
HC17	Middle Gates	CCR	J	May-2013	50	500	250	9.56	124.0	0.01	396.8	1.2	nPAG
HC16	Middle Gates	CCR	E-F (composite)	May-2013	50	1000	500	9.44	81.5	0.01	521.6	1.8	nPAG
HC15	Middle Gates	Tailings	D,E,F,J (composite)	May-2013	50	390	195	8.17	28.0	0.59	1.5	1.6	PAG
HC13	Middle Gates	Raw Coal	F	May-2012	100	1000	500	9.95	25.6	0.06	12.7	2.2	nPAG

<sup>†</sup> ARD potential is based on Sulphide Net Potential Ratio (SNPR), where SNPR ≥ 2.0 = nPAG, SNPR < 2.0 = PAG

**Table 4.3-4. Characteristics of Middle Gates Formation Coal Humidity Cells Initiated February 2014**

Humidity Cell Identification	Sample Type	Coal Seam	Number of Weeks (May 1, 2014)	Mass of Cell (g)	Weekly Flush (mL)	Paste pH	Modified NP (kg CaCO <sub>3</sub> /t)	Sulphide sulphur (%)	Sulphide Net Potential Ratio	Selenium (ppm)	ARD Potential <sup>†</sup>
HC19	CCR	D	12	1000	500	8.60	11.5	0.79	0.5	2.6	PAG
HC20	CCR	E	12	1000	500	8.91	10.0	0.11	2.8	2.4	nPAG
HC21	CCR	F	12	1000	500	8.55	3.8	0.59	0.2	2.2	PAG
HC22	CCR	F	12	1000	500	9.01	10.5	0.12	2.7	2.7	nPAG
HC23	CCR	G/I	12	1000	500	9.38	84.5	0.28	9.5	1.3	nPAG
HC24	CCR	G/I	12	500	250	8.68	5.5	0.32	0.6	1.7	PAG
HC25	Clean Coal	D	12	500	250	8.29	11.3	0.69	0.5	0.4	PAG
HC26	Clean Coal	E	12	500	250	9.24	6.5	0.37	0.6	0.4	PAG
HC27	Tailings	G/I	12	250	125	8.37	75.5	0.38	6.3	1.5	nPAG
HC28	Tailings	J	12	250	125	8.34	24.0	0.48	1.6	2.2	PAG

<sup>†</sup> ARD potential is based on Sulphide Net Potential Ratio (SNPR), where SNPR ≥ 2.0 = nPAG, SNPR < 2.0 = PAG

**Table 4.3-5. Sulphide Net Potential Ratio Ranges of Waste Rock Humidity Cells by Formation**

Formation	SNPR < 2	SNPR ≥ 2
Hasler	3	-
Boulder Creek	1	-
Hulcross	3	-
Upper Gates	-	2
<b>Total</b>	<b>7</b>	<b>2</b>

**Table 4.3-6. Sulphide Net Potential Ratio Ranges of Coal Humidity Cells by Coal Seam**

Coal Seam	Raw Coal Sulphide Net Potential Ratio		Clean Coal and Middlings Sulphide Net Potential Ratio		CCR Sulphide Net Potential Ratio		Tailings Sulphide Net Potential Ratio	
	< 2	≥ 2	< 2	≥ 2	< 2	≥ 2	< 2	≥ 2
D	-	-	1 <sup>a</sup>	-	2 <sup>a</sup>	1	1 <sup>b</sup>	-
E	-	-	1 <sup>a</sup>	-	1	2 <sup>ab</sup>	1 <sup>b</sup>	-
F	-	1	-	-	1 <sup>a</sup>	2 <sup>ab</sup>	1 <sup>b</sup>	-
G/I	-	-	-	-	1 <sup>a</sup>	1 <sup>a</sup>	-	1 <sup>a</sup>
J	-	-	-	-	1	1	2 <sup>ab</sup>	-
<b>Total</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>7</b>	<b>5</b>	<b>1</b>

<sup>a</sup> includes one new humidity cell initiated in February 2014

<sup>b</sup> humidity cell composited from samples of more than one coal seam

**Table 4.3-7. Summary of Material in Field Leach Barrels**

Barrel	Drill Holes
Hasler	H2, H3, H8, H14, H16W
Boulder Creek	H2, H3, H8, H14, H16W
Hulcross	H2, H3, H8, H11, H20
Upper Gates	H2, H3, H11, H20



*Plate 4.3-3. Field leach barrel configuration at Murray River property (June 2013).*

## 5. Results and Discussion

## 5. Results and Discussion

The following sections summarize and discuss the results of the ML/ARD characterization program. Waste rock and coal results are discussed independently. Full tables of results, statistics, and graphs are available in the appendices.

### 5.1 WASTE ROCK

Waste rock will be excavated during construction of the shafts and declines. The locations of waste rock samples are displayed in Figure 4.1-1 to Figure 4.1-6. Overburden and waste rock static, leachate, and kinetic test results are in Appendix 1 to 7.

Although results for overburden samples are presented alongside waste rock results, overburden and soil metals are discussed in more detail in *Murray River Coal Project: 2010 to 2012 Soils and Terrain Baseline Report* (Rescan 2013).

#### 5.1.1 Static Results

The mass of each formation to be excavated during construction of decline and shafts, and the proportions of total waste rock and overburden, are summarized in Table 5.1-1. Also presented are the number of drill core samples collected from each formation for static testing.

**Table 5.1-1. Waste Rock Samples and Proportions of Excavated Mass by Formation**

	Overburden	Hasler	Boulder Creek	Hulcross	Gates	Total
Number of samples	7	45	30	31	54	167
Mass of waste rock (kt)	31	238	42	43	129	483
Proportion of waste rock	6.5%	49.2%	8.7%	8.9%	26.7%	100.0%
kt per sample	4.47	5.29	1.40	1.38	2.39	2.89

Source: HD Mining, pers. comm., 24 April 2014

Four different broad lithologies were identified in waste rock by drill logs, differentiated by grain size. The majority of samples collected and analyzed were classified as mudstone, with the exception of the Boulder Creek Formation, in which the majority of samples collected were sandstone. The distribution of lithologies in samples within each waste rock formation is presented in Table 5.1-2.

**Table 5.1-2. Proportion of Waste Rock Samples by Lithology for Each Formation**

Formation	Number of Samples	Mudstone	Siltstone	Sandstone	Conglomerate
Hasler	45	60%	38%	2%	0%
Boulder Creek	30	27%	20%	47%	7%
Hulcross	31	74%	19%	3%	3%
Upper Gates	32	38%	25%	34%	3%
Middle Gates	22	59%	18%	18%	5%

Note: values rounded to the nearest whole number

The geochemical variation in waste rock was explained more by differences in formation than by lithology. This conclusion is illustrated in Figure 5.1-1, which shows the variability in sulphide sulphur

and modified NP. Lower sulphide content and higher NP were generally observed in sandstone samples when compared with finer-grained material. However, the geochemical variation between mudstone and siltstone samples was controlled more by formation than by lithology—higher sulphide and lower NP values were generally observed in mudstone and siltstone samples from the Hasler and Hulcross formations compared to the Gates Formation, as illustrated in Figure 5.1-2. As the geochemical characterization of waste rock is more dependent on formation than lithology, results in this section are presented primarily by formation.

Samples collected from the Hasler Formation on the east side of the Murray River are presented separately from the rest of the Hasler Formation samples, to identify spatial variability across the Hasler Formation.

Selected samples were inspected for mineralogy by Rietveld XRD and microscopy. The majority of minerals identified were quartz, feldspar, and hydrated aluminosilicates such as illite and muscovite, as summarized in Table 5.1-3. Varying abundances of carbonate and sulphide minerals were identified, as discussed below.

**Table 5.1-3. Average Mineral Abundance of Waste Rock Samples by Formation**

Formation	Quartz and Feldspar	Hydrated Aluminosilicates	Carbonate			Sulphide	Others
			Calcite	Dolomite and Ankerite	Siderite		
Hasler - West (n = 4)	69%	27%	0%	1%	1%	2%	0%
Hasler - East (n = 2)	66%	30%	1%	0%	1%	3%	1%
Boulder Creek (n = 5)	67%	25%	1%	2%	3%	1%	1%
Hulcross (n = 4)	67%	27%	0%	2%	0%	3%	0%
Upper Gates (n = 2)	62%	19%	1%	11%	1%	3%	1%

*Note: Values rounded to the nearest whole number*

Overburden and waste rock ABA and elemental abundance results are in Appendix 1. Appendix 2 contains Rietveld XRD results and optical mineralogy reports.

#### 5.1.1.1 Paste pH

Paste pH values of less than 6.0 indicate that sulphide oxidation has resulted in net acidity being stored in the sample, and are therefore considered acid generating at the time of analysis.

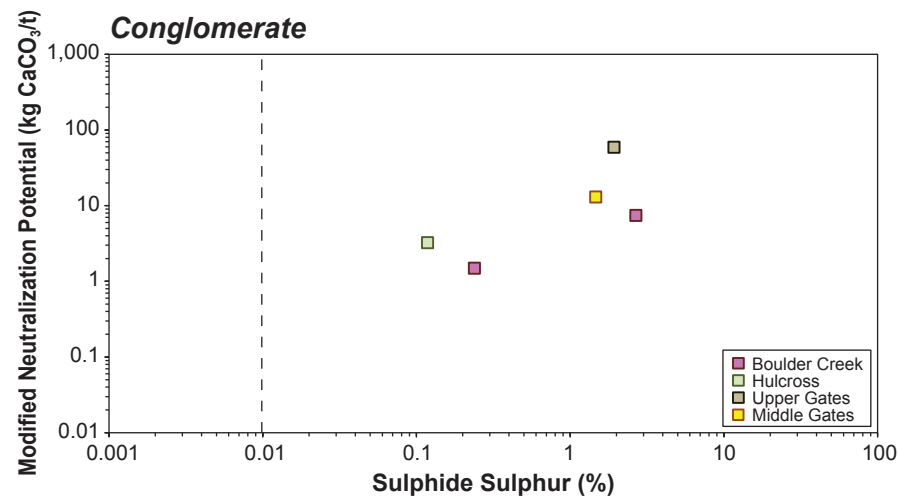
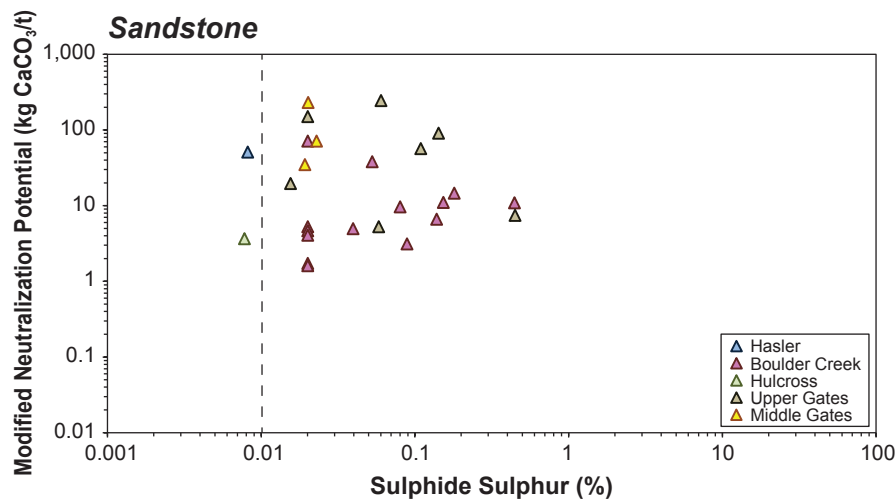
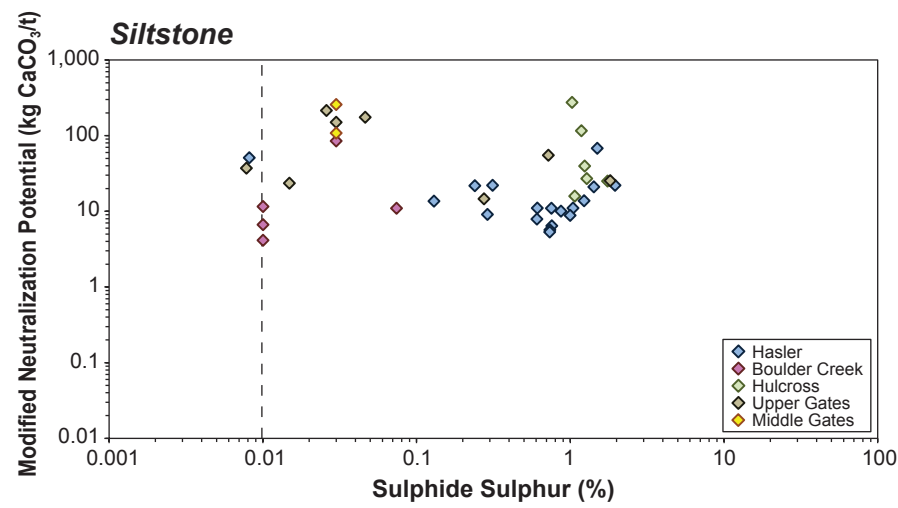
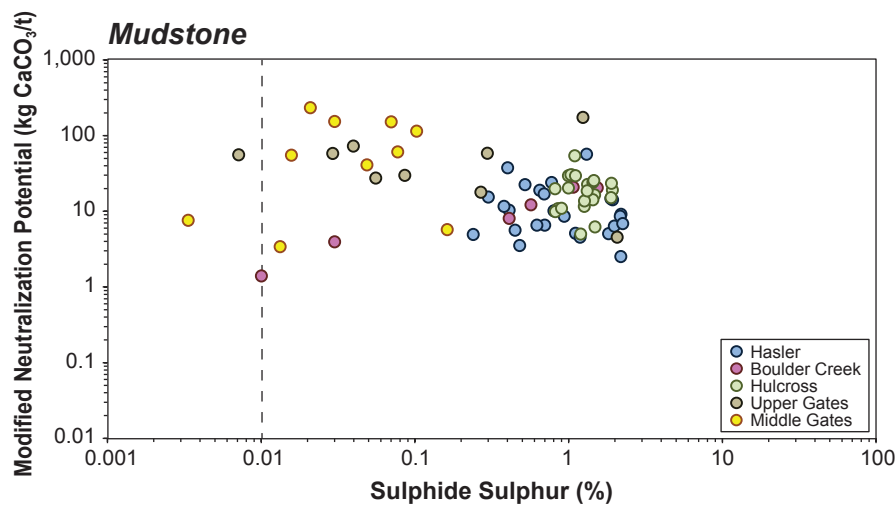
Paste pH values in the Project waste rock samples were dominantly neutral to alkaline, as presented in Table 5.1-4. Three waste rock samples had slightly acidic paste pH values of 5.6 to 5.7: two overburden samples and one from the Boulder Creek Formation. The acidic (pH < 6.0) samples represent less than two percent of total waste rock samples, indicating that the majority of Project samples had no stored acidity. Minimum pH values in other formations ranged from 6.5 to 8.6, and maximum pH values ranged from 9.2 to 10.0. Values of pH were relatively consistent across all formations, with median values of 8.2 to 9.5. The statistical ranges of pH values in waste rock are presented graphically in Figure 5.1-3.

#### 5.1.1.2 Sulphur Species and Acid Potential Sources

Total sulphur concentrations in waste rock samples were highly variable among formations, as presented in Table 5.1-5. Total sulphur content ranged from below the detection limit (0.02%) to 2.74%. The highest median sulphur concentrations were measured in the Hasler (East) and Hulcross formations, with median total sulphur concentrations of 1.97% and 1.26%, respectively, indicating a high potential for acid generation. The statistical ranges of sulphur values in waste rock are presented graphically in Figure 5.1-3.

Figure 5.1-1

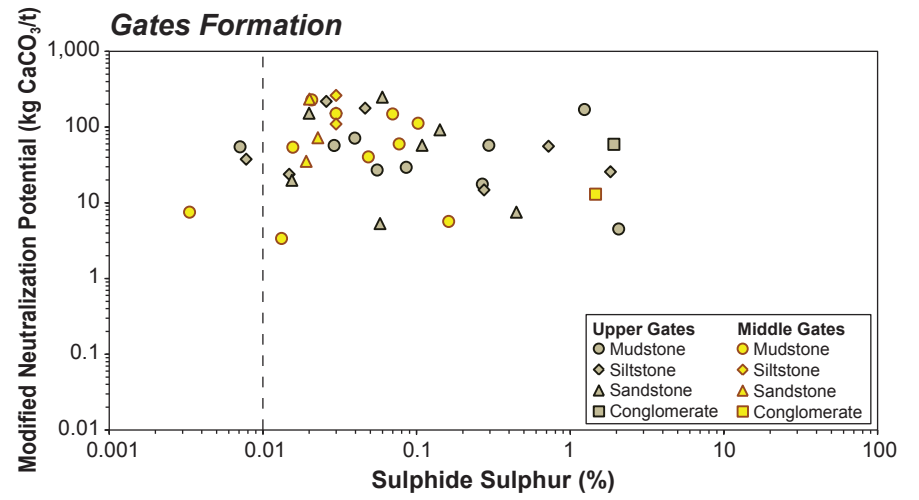
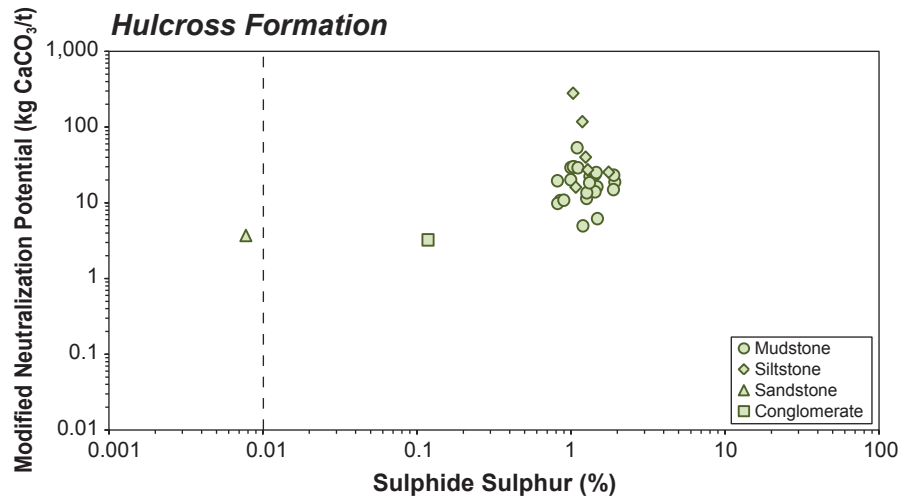
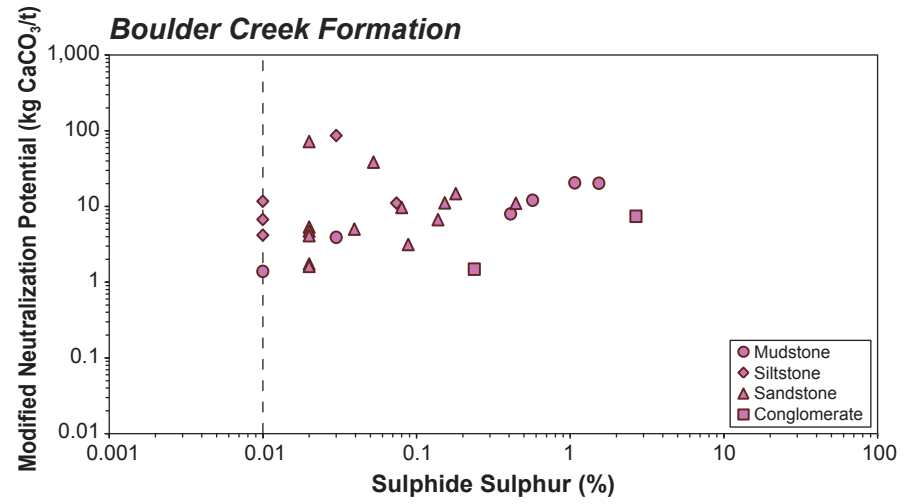
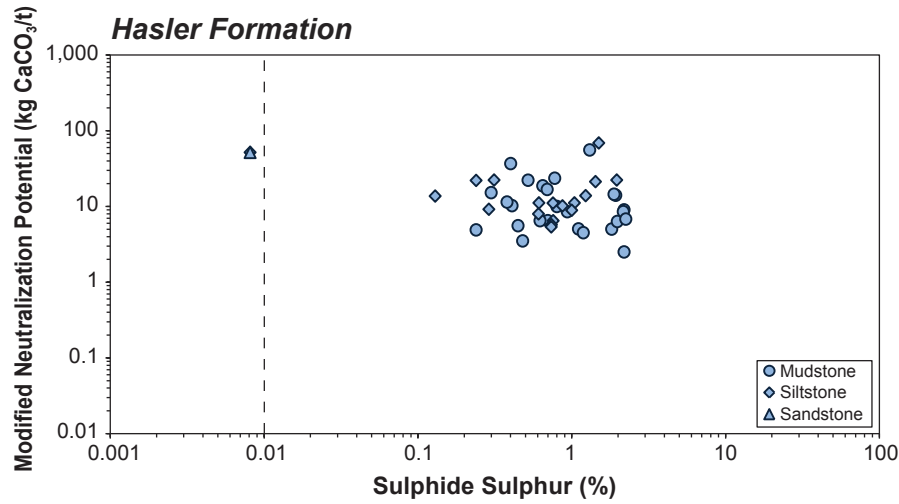
Modified Neutralization Potential vs. Sulphide Sulphur for Waste Rock by Lithology



Notes: One-half the detection limit was used where data was reported at or below the detection limit.  
Dashed lines indicate the detection limit for sulphide sulphur (0.01%).

Figure 5.1-2

Modified Neutralization Potential vs. Sulphide Sulphur for Waste Rock by Formation

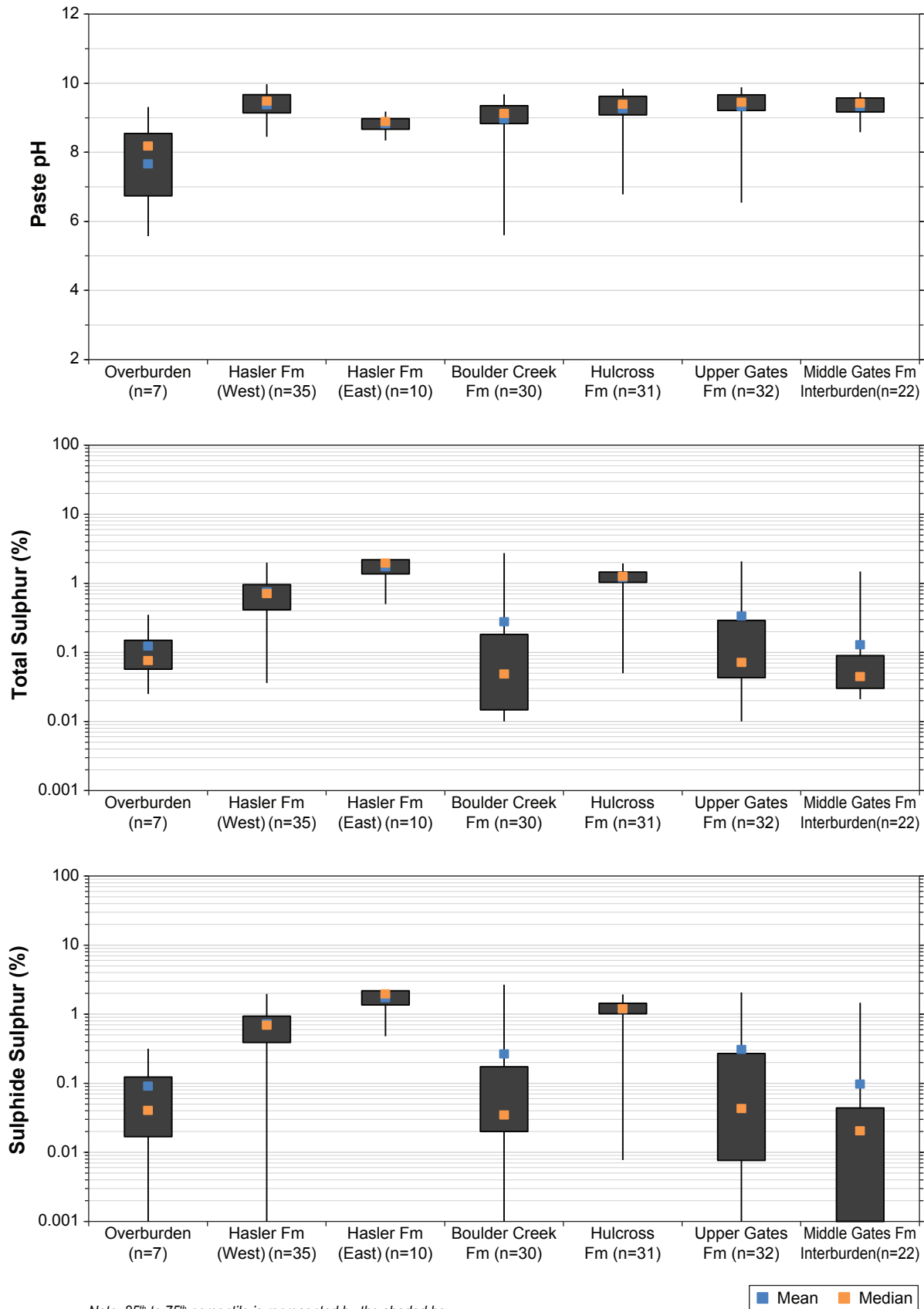


Notes: One-half the detection limit was used where data was reported at or below the detection limit.  
Dashed lines indicate the detection limit for sulphide sulphur (0.01%).



Figure 5.1-3

Statistical Summary of Paste pH, Total Sulphur, and Sulphide Sulphur Results for Waste Rock by Formation



Note: 25<sup>th</sup> to 75<sup>th</sup> percentile is represented by the shaded box.

**Table 5.1-4. Statistical Summary of Paste pH Values of Waste Rock by Formation**

Formation	Min	25th	Mean	Median	75th	Max
Overburden (n = 7)	5.6	6.7	7.7	8.2	8.5	9.3
Hasler- West (n = 35)	8.5	9.1	9.4	9.5	9.7	10.0
Hasler- East (n = 10)	8.3	8.7	8.8	8.9	9.0	9.2
Boulder Creek (n = 30)	5.6	8.8	9.0	9.1	9.3	9.7
Hulcross (n = 31)	6.8	9.1	9.3	9.4	9.6	9.8
Upper Gates (n = 32)	6.5	9.2	9.3	9.5	9.7	9.9
Middle Gates Interburden (n = 22)	8.6	9.2	9.3	9.4	9.6	9.7

Units: pH unit

**Table 5.1-5. Statistical Summary of Total Sulphur Values of Waste Rock by Formation**

Formation	Min	25th	Mean	Median	75th	Max
Overburden (n = 7)	0.03	0.06	0.12	0.08	0.15	0.35
Hasler- West (n = 35)	0.04	0.42	0.75	0.71	0.96	1.99
Hasler- East (n = 10)	0.50	1.37	1.73	1.97	2.20	2.26
Boulder Creek (n = 30)	0.01 <sup>†</sup>	0.01 <sup>†</sup>	0.28	0.05	0.18	2.74
Hulcross (n = 31)	0.05	1.03	1.21	1.26	1.46	1.94
Upper Gates (n = 32)	0.01 <sup>†</sup>	0.04	0.34	0.07	0.29	2.08
Middle Gates Interburden (n = 22)	0.02	0.03	0.13	0.04	0.09	1.48

<sup>†</sup> Value is half of analytical detection limit

Units: percentage by weight

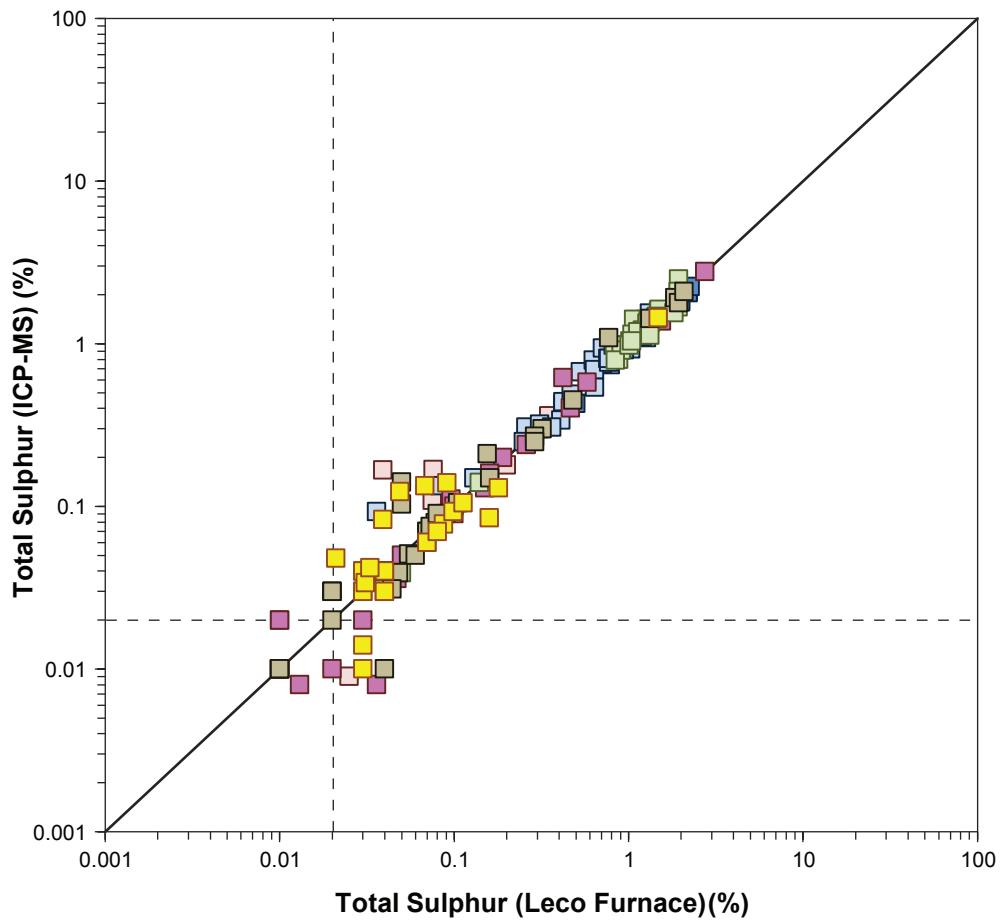
Elemental abundances of total sulphur content indicated sulphur was elevated in the Hasler, Boulder Creek, and Hulcross formations when compared with three times the crustal abundance of sulphur in shale.

Sulphide sulphur concentrations were measured from the residue after nitric acid reaction, and were also calculated by subtracting measured and barium-bound sulphate sulphur, as detailed in Section 4.3.1. Organic sulphur content has been noted as a concern at other regional projects, such as the Roman Mine, as calculated sulphide sulphur does not correct for organic sulphur content. To account for the effects of organic sulphur, total sulphur concentrations measured by Leco furnace were compared with sulphur content measured by ICP-MS following aqua regia digestion, which does not digest organic sulphur forms. A strong correlation was observed (Figure 5.1-4), indicating that organic sulphur does not represent a substantive fraction of the total sulphur content. Consequently, as sulphide sulphur measured by nitric acid reaction can underestimate sulphide concentrations, the maximum of measured and calculated sulphide sulphur values was used to represent sulphide sulphur content.

Sulphide sulphur concentrations in waste rock were highly variable both among and within formations, as presented in Table 5.1-6. The highest mean and median sulphide sulphur values were observed in the Hasler Formation (east of the Murray River), and the Hulcross Formation. The greatest variability in sulphide sulphur concentrations was observed in the Boulder Creek Formation, where sulphide sulphur values ranged from below detection to 2.68%. Sulphide sulphur concentrations were generally highest in mudstones and siltstones from the Hasler and Hulcross formations, and conglomerates from the Boulder Creek and Gates formations. Concentrations were generally lowest in sandstones from all formations. The statistical ranges of sulphide sulphur in waste rock are presented graphically in Figure 5.1-3. Cumulative frequencies of sulphide sulphur in waste rock are presented in Figure 5.1-5.

Figure 5.1-4

Total Sulphur by ICP-MS vs. Total Sulphur by Leco Furnace for Waste Rock by Formation

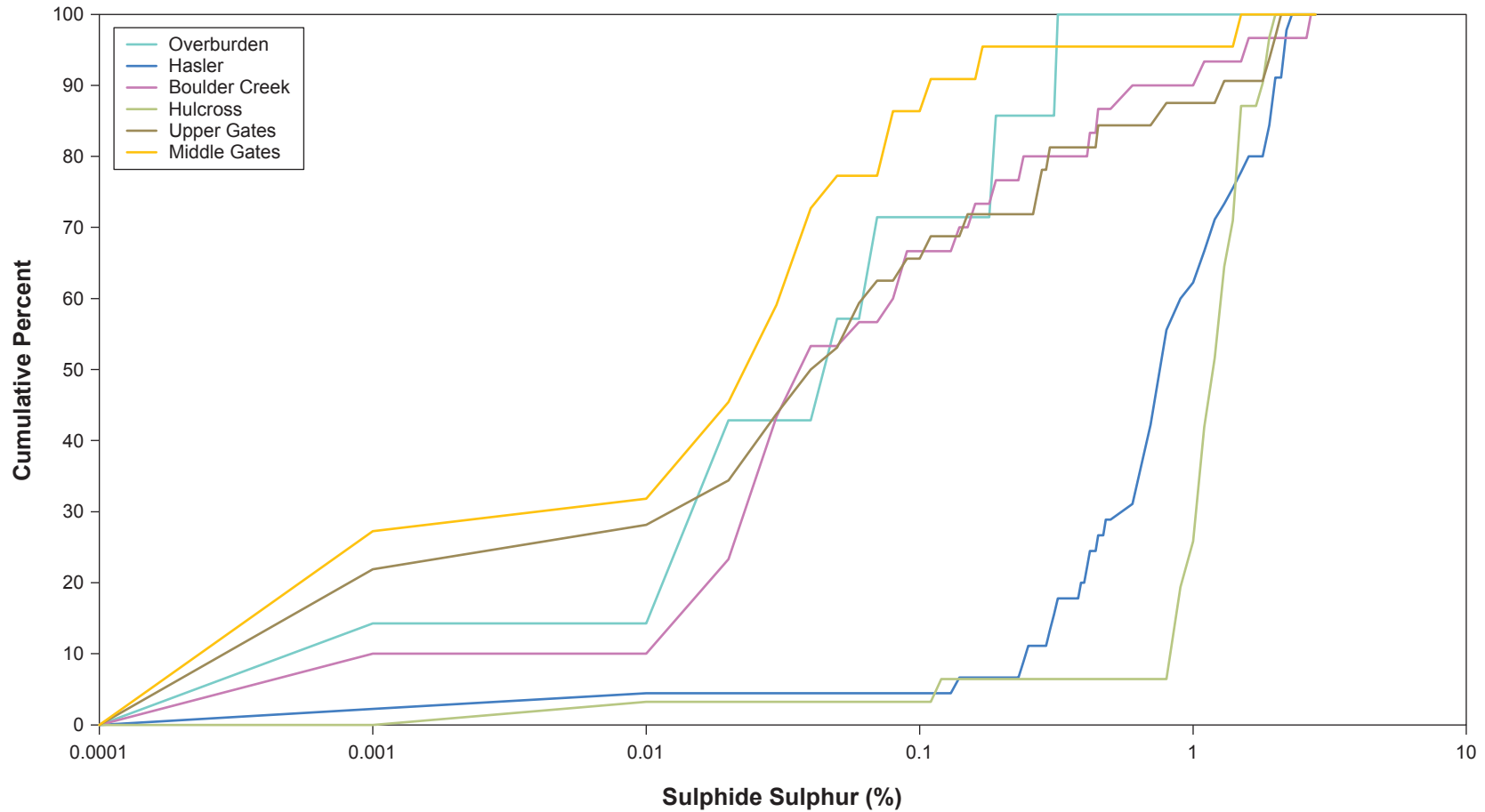


Overburden	Hasler (West)	Hasler (East)	Boulder Creek
Hulcross	Upper Gates	Middle Gates Interburden	

Note: One-half the detection limit was used where data was reported at or below the detection limit.  
Dashed lines indicate the detection limit for total sulphur (0.02%).

Figure 5.1-5

Cumulative Frequency of Sulphide Sulphur  
Results for Waste Rock by Formation



**Table 5.1-6. Statistical Summary of Sulphide Sulphur Values of Waste Rock by Formation**

Formation	Min	25th	Mean	Median	75th	Max
Overburden (n = 7)	0.01 <sup>†</sup>	0.02	0.09	0.04	0.12	0.32
Hasler- West (n = 35)	0.01 <sup>†</sup>	0.39	0.73	0.69	0.94	1.97
Hasler- East (n = 10)	0.48	1.36	1.72	1.96	2.18	2.25
Boulder Creek (n = 30)	0.01 <sup>†</sup>	0.02	0.27	0.03	0.17	2.68
Hulcross (n = 31)	0.01	1.02	1.19	1.20	1.44	1.93
Upper Gates (n = 32)	0.01 <sup>†</sup>	0.01	0.31	0.04	0.27	2.07
Middle Gates Interburden (n = 22)	0.01 <sup>†</sup>	0.01 <sup>†</sup>	0.10	0.02	0.04	1.47

<sup>†</sup> Value is half of analytical detection limit

Units: percentage by weight

As indicated by Figure 5.1-6, sulphide sulphur and total sulphur are strongly correlated for samples with sulphur concentrations greater than 0.1%. Consequently, sulphide sulphur was used in acid potential calculations.

Sulphate sulphur concentrations were generally low, with median sulphate sulphur values at or below the analytical detection limit of 0.01% for all waste rock, with the exception of overburden. Summary statistics of sulphate sulphur values are presented in Table 5.1-7 for all waste rock. Generally, the highest sulphate sulphur content was observed in samples from the Upper and Middle Gates Formation.

**Table 5.1-7. Statistical Summary of Sulphate Sulphur Values of Waste Rock by Formation**

Formation	Min	25th	Mean	Median	75th	Max
Overburden (n = 7)	0.01 <sup>†</sup>	0.01 <sup>†</sup>	0.03	0.02	0.04	0.06
Hasler- West (n = 35)	0.01 <sup>†</sup>	0.01 <sup>†</sup>	0.02	0.01	0.02	0.09
Hasler- East (n = 10)	0.01 <sup>†</sup>	0.01 <sup>†</sup>	0.01	0.01	0.01	0.01
Boulder Creek (n = 30)	0.01 <sup>†</sup>	0.01 <sup>†</sup>	0.01	0.01	0.01	0.06
Hulcross (n = 31)	0.01 <sup>†</sup>	0.01 <sup>†</sup>	0.02	0.01	0.02	0.06
Upper Gates (n = 32)	0.01 <sup>†</sup>	0.01 <sup>†</sup>	0.02	0.01	0.03	0.09
Middle Gates Interburden (n = 22)	0.01 <sup>†</sup>	0.01 <sup>†</sup>	0.03	0.01	0.04	0.15

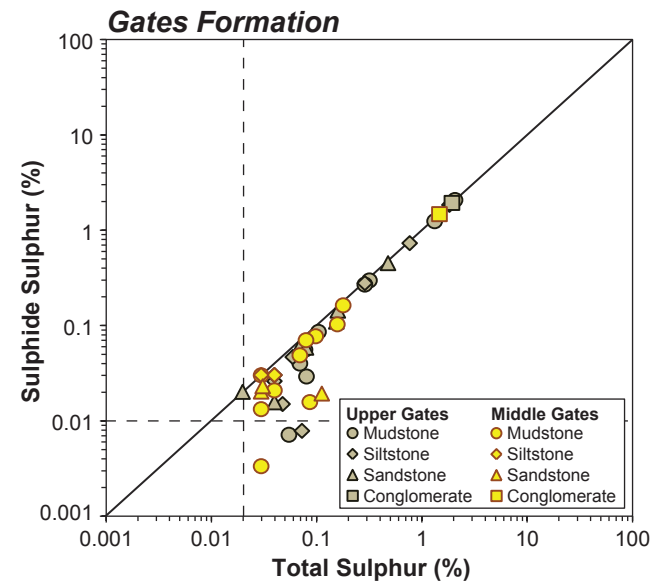
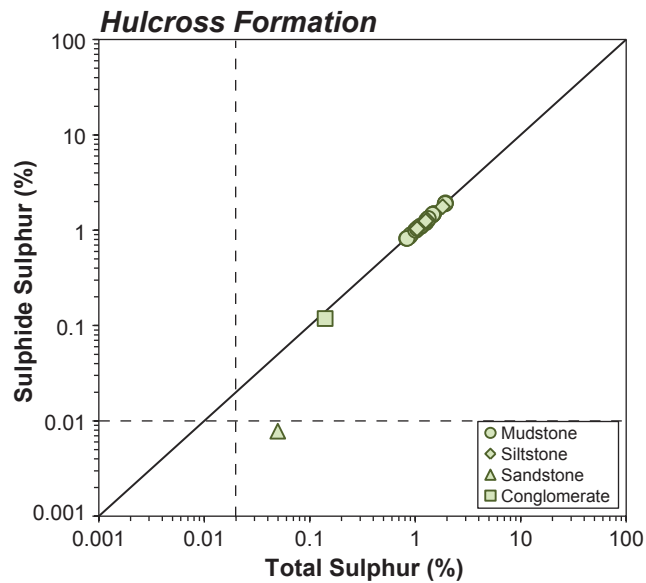
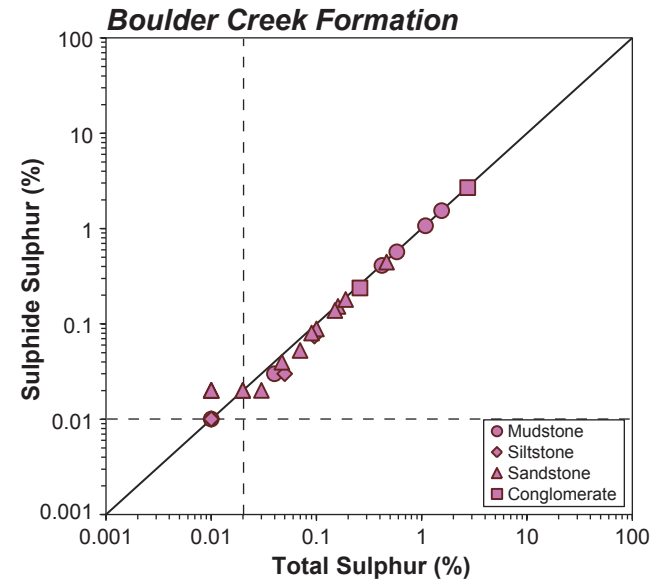
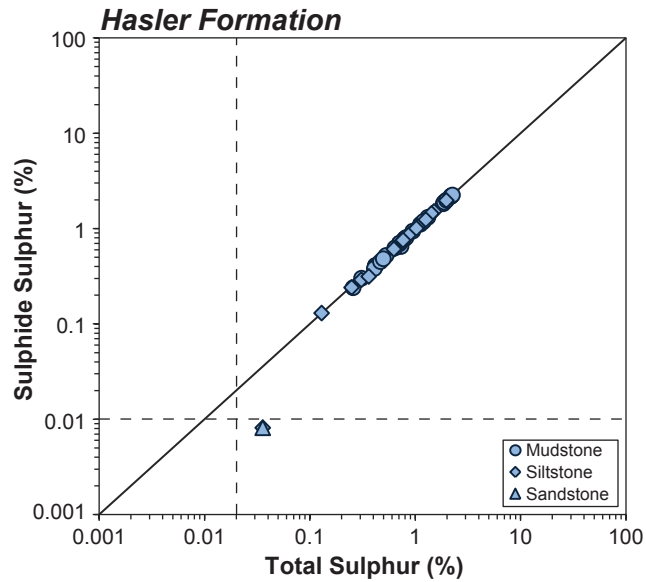
<sup>†</sup> Value is half of analytical detection limit

Units: percentage by weight

Rietveld XRD analysis of waste rock samples identified the presence of iron sulphide minerals in 16 out of 17 analyzed samples. Maximum iron sulphide content was observed in mudstones from the Hasler Formation, up to a maximum of five percent pyrite. Boulder Creek Formation samples had the largest variability in pyrite content, and demonstrated lithological controls on pyrite mineralization. Sandstone and siltstone samples had minimal traces of pyrite, and mudstone and conglomerate samples contained up to 2.5% pyrite. Pyrite and marcasite (both FeS<sub>2</sub>) were the only sulphide minerals identified by XRD analysis in Project waste rock samples. Mineralogical results of XRD analysis are presented in Table 5.1-3. Petrographic analysis by optical microscopy under reflected light also identified traces of arsenopyrite and pyrrhotite (Fe<sub>1-x</sub>S) in a few waste rock samples from the Hasler, Hulcross, and Upper Gates formations.

Figure 5.1-6

Sulphide Sulphur vs. Total Sulphur for Waste Rock by Formation



Notes: One-half the detection limit was used where data was reported at or below the detection limit.  
Dashed lines indicate the detection limit values for total sulphur (0.02%) and sulphide sulphur (0.01%).

### 5.1.1.3 Carbon Species and Neutralization Potential Sources

Bulk neutralization potential was assessed by the modified NP method for all Project samples. Modified NP values varied substantially among formations. Summary statistics of modified NP values are presented in Table 5.1-8, and Figure 5.1-7. The cumulative percentage distributions of modified NP are presented in Figure 5.1-8. Neutralization potentials were typically highest in samples from the Gates Formation, where 50 percent of samples had a modified NP of 55 or higher. Samples of overburden and from the Hulcross Formation had moderate NP, with NP values greater than 12 observed in 75 percent of samples. Lower NP values were measured in samples from Hasler and Boulder Creek formations, with the lowest median NP observed in the Boulder Creek Formation.

**Table 5.1-8. Statistical Summary of Modified Neutralization Potential Values of Waste Rock by Formation**

Formation	Min	25th	Mean	Median	75th	Max
Overburden (n = 7)	0.1	14.5	81.0	26.5	134.0	243.0
Hasler- West (n = 35)	4.9	7.2	17.2	11.1	22.0	68.8
Hasler- East (n = 10)	2.5	5.0	7.8	7.7	8.9	14.5
Boulder Creek (n = 30)	1.4	4.3	15.6	7.1	11.9	86.3
Hulcross (n = 31)	3.2	12.5	31.2	19.6	28.2	279.7
Upper Gates (n = 32)	4.5	22.8	75.2	55.3	106.9	247.9
Middle Gates Interburden (n = 22)	3.4	39.8	95.1	87.2	131.0	262.3

Units: kg CaCO<sub>3</sub>/t

Additional assessment of NP was performed by analyzing the various elements that are representative of carbonate mineral abundance and quantifying their contribution to NP. This included characterizing NP through carbon, calcium, calcium-magnesium, and iron content. The resulting NP values were compared to modified NP, as presented in Figure 5.1-9. The details of NP characterization methods are discussed below.

Organic carbon generally occupied a significant proportion of the total carbon content of waste rock samples, particularly in the Gates Formation. Therefore, inorganic carbon content was used for determination of ML/ARD potential, as described in Section 4.3.1. Summary statistics of inorganic carbon values are presented for waste rock by formation in Table 5.1-9. Values were variable, and frequently greater than 0.1%. The highest inorganic carbon values were measured in the Middle Gates Formation, up to 4.59%, with median inorganic carbon content also high in the Upper Gates Formation. The lowest carbon content was observed in Hasler Formation samples from east of the Murray River, where the maximum measured inorganic carbon was 0.17%.

**Table 5.1-9. Statistical Summary of Inorganic Carbon Values of Waste Rock by Formation**

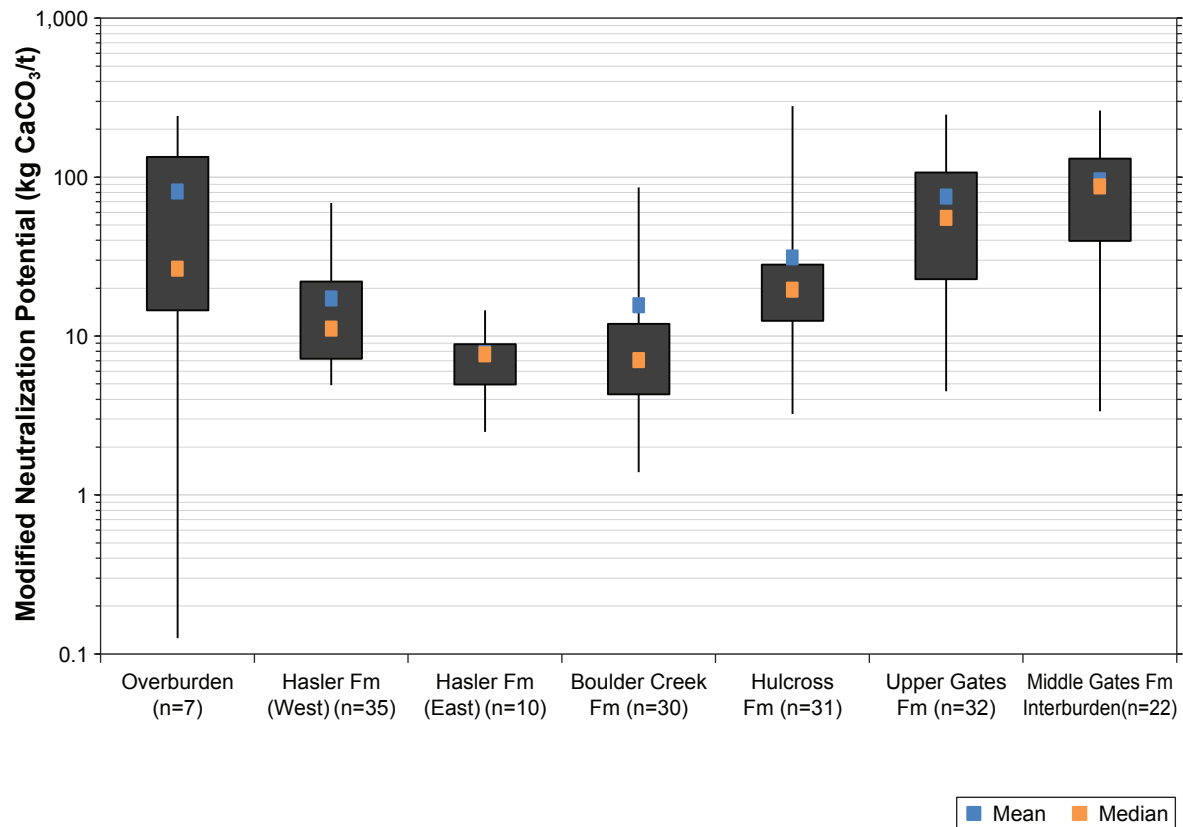
Formation	Min	25th	Mean	Median	75th	Max
Overburden (n = 3)	0.04	0.28	0.42	0.52	0.61	0.69
Hasler- West (n = 30)	0.01	0.08	0.34	0.32	0.49	1.30
Hasler- East (n = 10)	0.05	0.07	0.09	0.08	0.09	0.17
Boulder Creek (n = 23)	0.01	0.06	0.40	0.27	0.51	2.04
Hulcross (n = 22)	0.07	0.16	0.49	0.29	0.37	3.75
Upper Gates (n = 21)	0.04	0.53	1.42	1.06	2.45	3.53
Middle Gates Interburden (n = 12)	0.07	0.75	2.10	2.31	3.23	4.59

Detection limit = 0.02%

Units: percentage by weight

Figure 5.1-7

Statistical Summary of Modified Neutralization Potential Results for Waste Rock by Formation



Note: 25<sup>th</sup> to 75<sup>th</sup> percentile is represented by the shaded box.



Figure 5.1-8

Cumulative Frequency of Modified Neutralization Potential  
Potential Results for Waste Rock by Formation

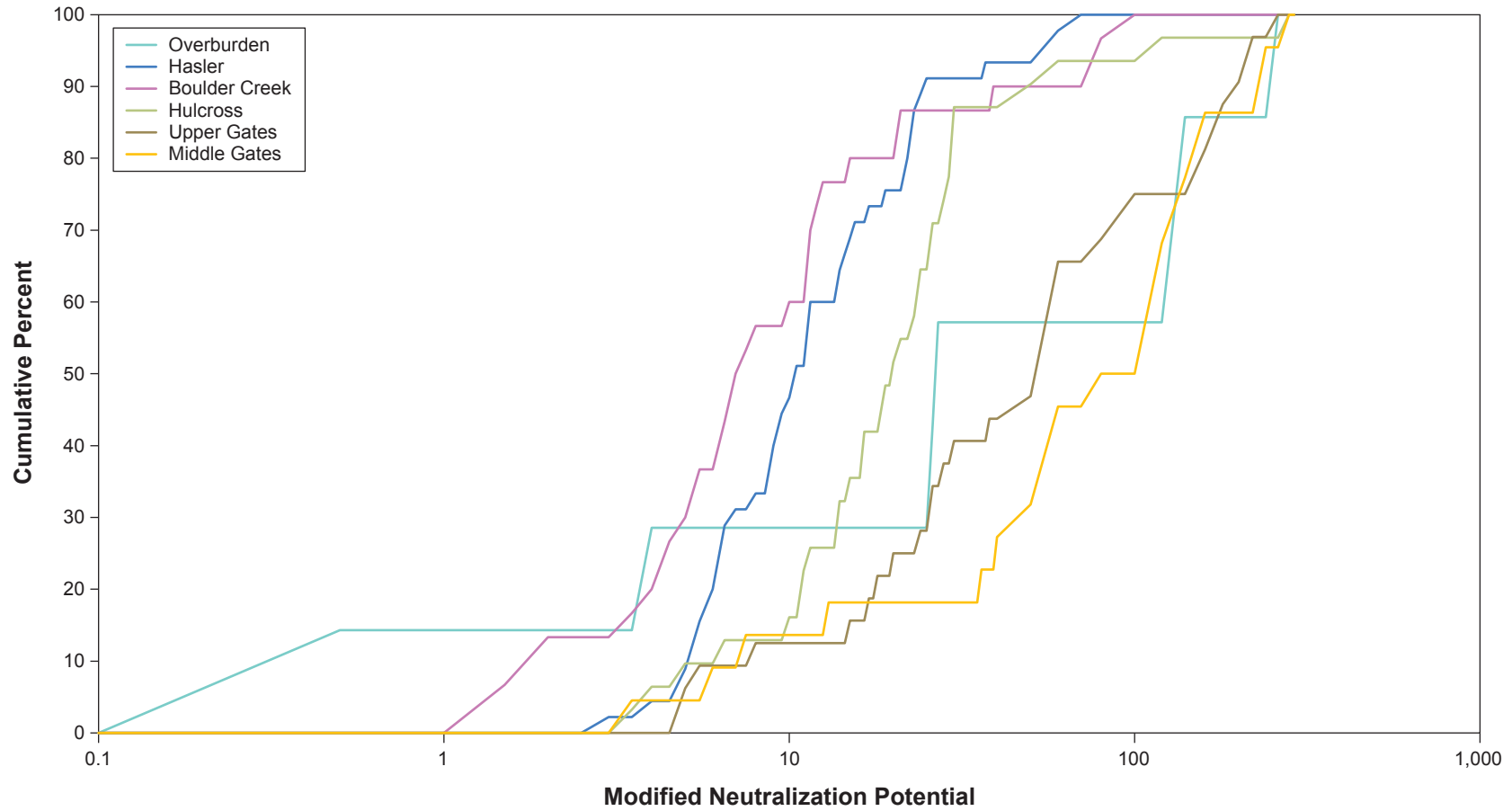
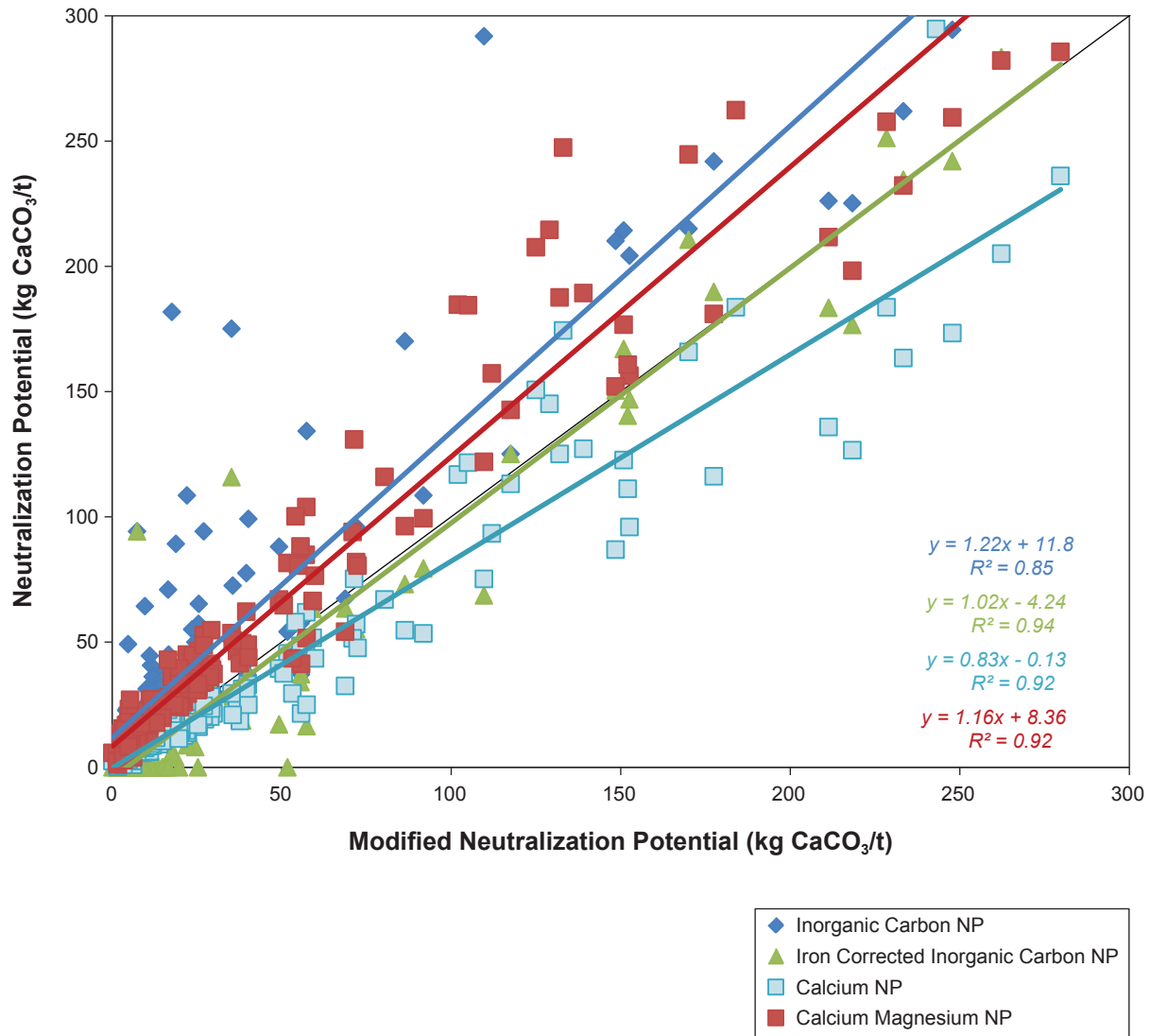


Figure 5.1-9

Inorganic Carbon, Iron Corrected Inorganic Carbon, Calcium, and Calcium-Magnesium Neutralization Potentials vs. Modified Neutralization Potential for Waste Rock by Formation



The contribution of inorganic carbon to the NP was assessed by calculating inorg NP values (see Section 4.3.1). Inorganic carbon NP is compared to modified NP in Figure 5.1-10. The inorg NP values were generally higher than modified NP, with the exception of some mudstone and sandstone samples at NP values less than five, and otherwise were well correlated. Samples from the Hulcross Formation had the best correlation between inorganic NP and modified NP, and the Boulder Creek and Hasler formations had the poorest correlations.

Inorganic carbon content was consistent with the observed mineralogy in waste rock samples (Table 5.1-3). While the bulk of mineral content, as identified by XRD analysis, comprised quartz and hydrated aluminosilicates (such as illite, muscovite, kaolinite, and clinocllore), the presence of carbonate minerals was noted in drill logs and measured by XRD (Table 5.1-7). Carbonate minerals identified by XRD include calcite ( $\text{CaCO}_3$ ), ankerite ( $\text{Ca}[\text{Fe}^{2+}, \text{Mg}, \text{Mn}][\text{CO}_3]_2$ ), dolomite ( $\text{CaMg}[\text{CO}_3]_2$ ), and siderite. The highest abundances of carbonate minerals were observed in samples from the Upper Gates Formation, whereas samples from Hasler and Hulcross formations contained only 1-2% carbonate, principally ankerite-dolomite and siderite.

Observations of carbonate mineral abundance by Rietveld XRD were consistent with inorganic carbon concentrations from the respective formations. Mineralogical analysis at the Project was also consistent with the observations at analogue projects in the area. At the Quintette Project, carbonate mineralogy was dominated by dolomite and siderite (SRK 2012). At the Roman Mine, several different carbonate minerals were observed by optical mineralogy, and Rietveld XRD analysis indicated the presence of calcite, dolomite, ankerite, and siderite (Peace River Coal Inc. 2010). The analyses showed good correlation with analytical measurements of total inorganic carbon, indicating a good quantification of carbonates by this method.

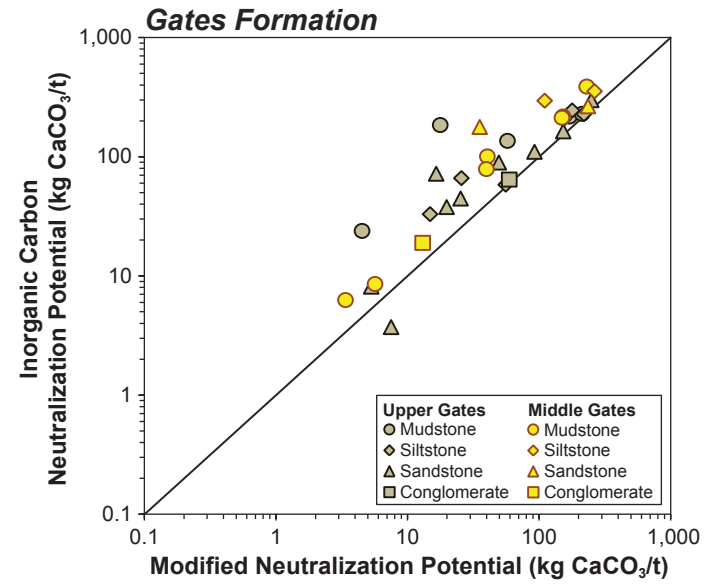
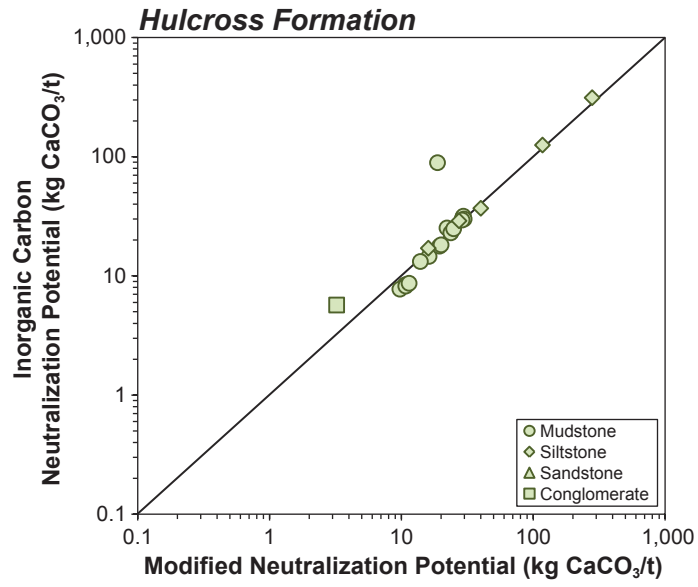
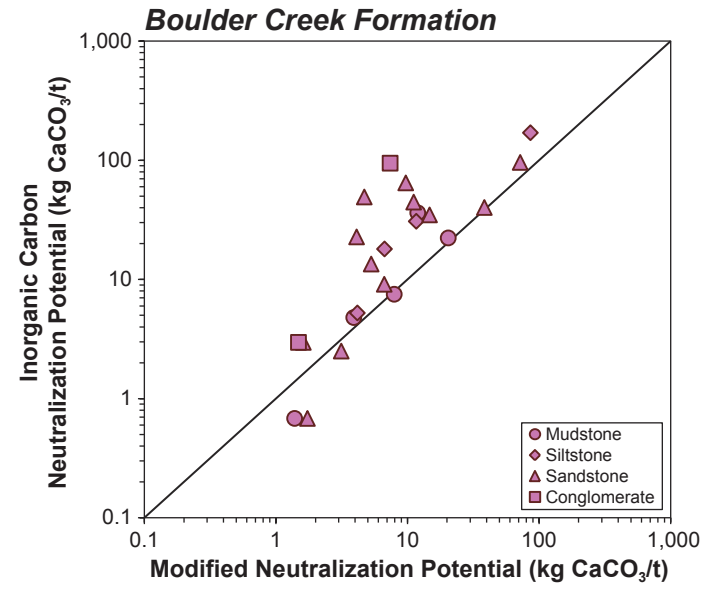
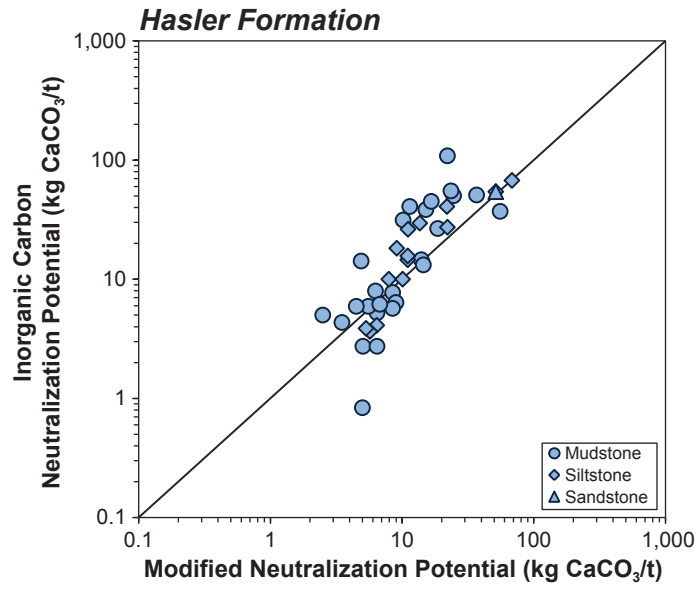
To correct for the presence of iron carbonates such as siderite and ankerite, the abundance of iron carbonate was calculated by subtracting the abundance of iron present in sulphide minerals (assuming all sulphide minerals to be iron sulphides, as determined by Rietveld XRD) from total iron analyzed by ICP-MS. Iron carbonate corrected inorganic carbon NP values correlated well with mineralogical iron carbonate percentages. Higher iron carbonate percentages were typically measured by XRD, likely due to normalization of the results by the lab to account for amorphous organic carbon. Iron carbonate corrected inorg NP values had the strongest correlation of the NP methods with modified NP ( $R^2 = 0.94$  for all waste rock samples), as presented in Figure 5.1-9, and also plotted closest to the 1:1 line. This relationship suggests a good quantification of NP by the modified NP and iron carbonate corrected NP, although the iron carbonate correction may overcorrect slightly for some samples.

Calcium (Ca) and calcium-magnesium (CaMg) NP values were also calculated, using ICP-MS analysis of calcium and magnesium abundance, to estimate the contribution of calcite and dolomite to NP. Calcium NP (Figure 5.1-11) and CaMg NP (Figure 5.1-12) were well-correlated with modified NP, although CaMg NP slightly overestimated NP compared to the other methods. This result may be due to the presence of magnesium and iron-bearing ankerite, which would contribute to magnesium abundance.

The CaMg NP values (derived from ICP-MS analysis of calcium and magnesium) and inorganic carbon NP values (derived from  $\text{CO}_2$  analysis by Leco furnace) were compared (Figure 5.1-13). At NP values higher than approximately 20, inorganic carbon NP values were typically higher than CaMg NP, indicating the presence of inorganic carbon sources other than calcite and dolomite, most likely siderite. At lower NP values, inorganic carbon content was typically lower than CaMg NP, likely due to the increased effects of calcium and magnesium bearing silicates such as anorthite ( $\text{CaAl}_2\text{Si}_2\text{O}_8$ ) in samples with low carbonate content. Iron carbonate corrected inorganic carbon NP values correlated strongly with CaMg NP ( $R^2 = 0.93$  for all waste rock samples).

Figure 5.1-10

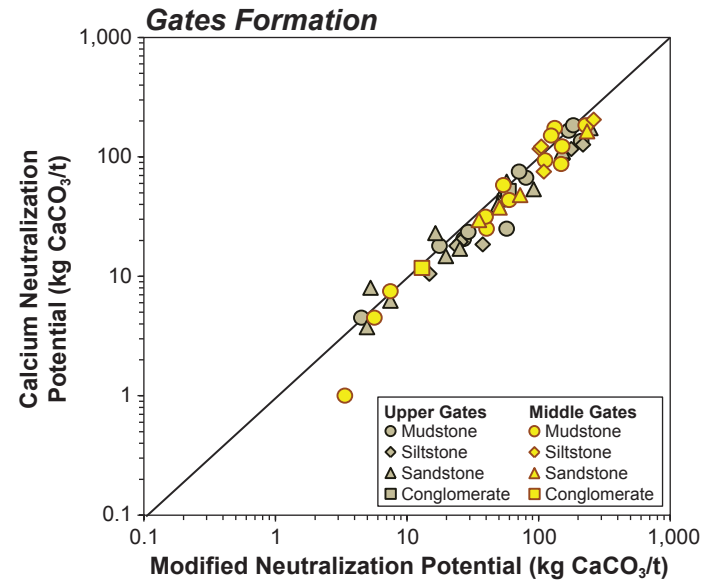
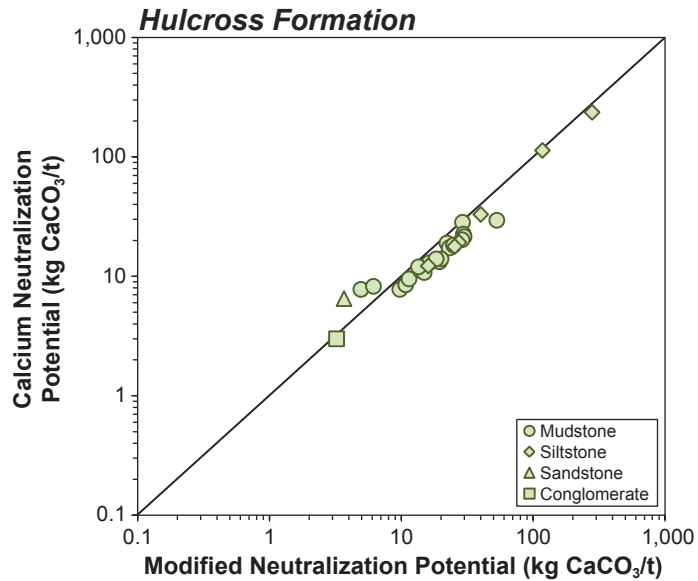
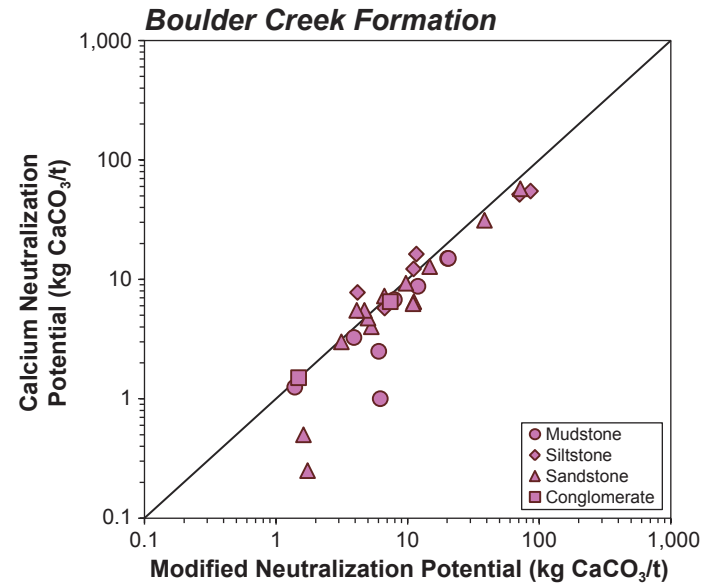
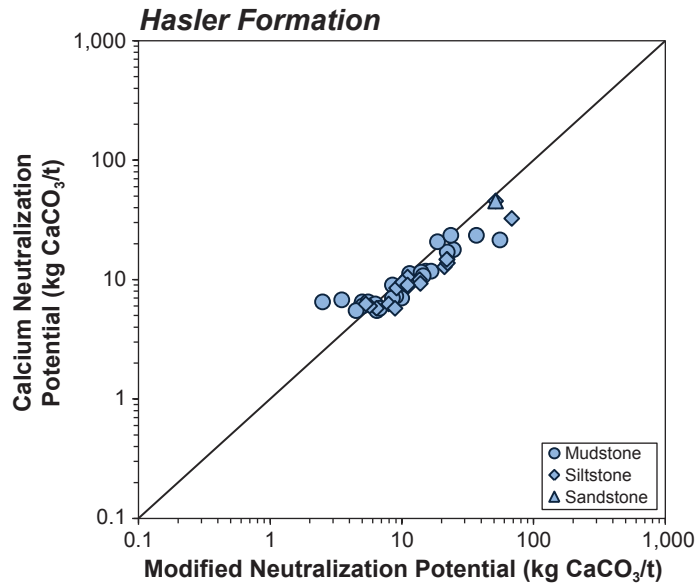
Inorganic Carbon Neutralization Potential vs. Modified Neutralization Potential for Waste Rock by Formation



Note: One-half the detection limit was used where data was reported at or below the detection limit.

Figure 5.1-11

Calcium Neutralization Potential vs. Modified Neutralization Potential for Waste Rock by Formation

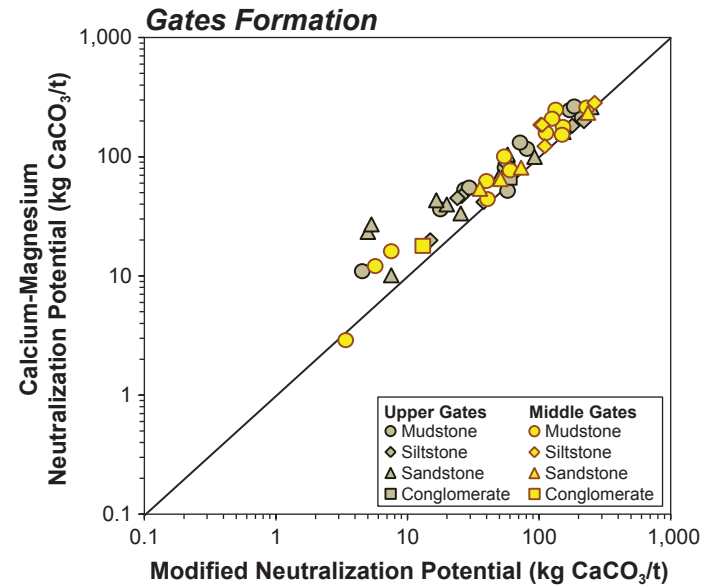
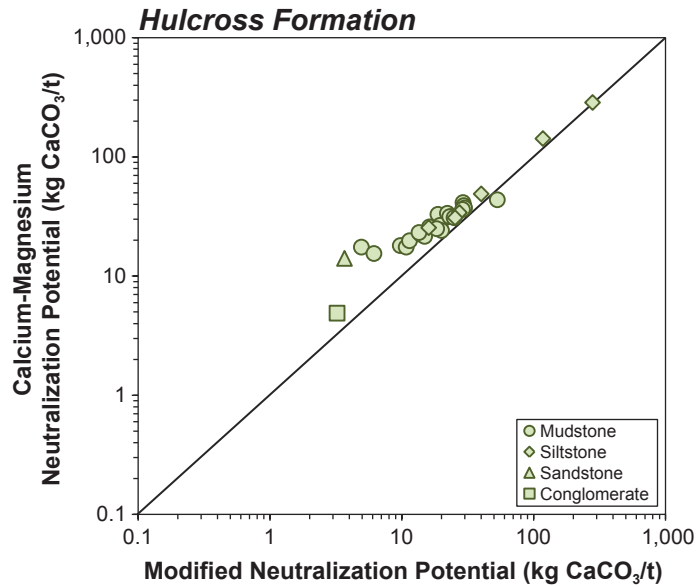
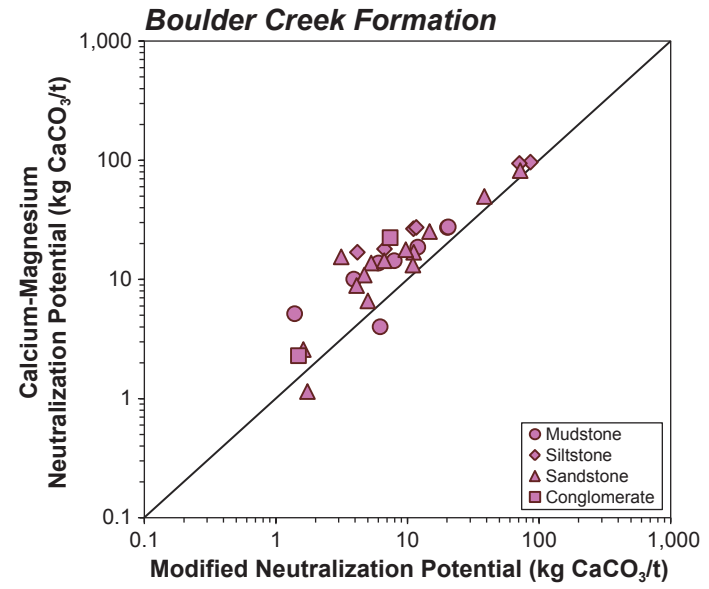
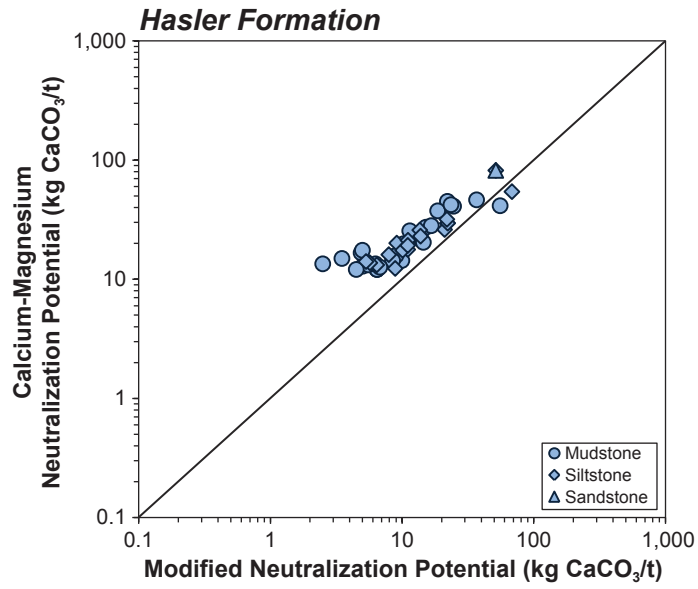


Note: One-half the detection limit was used where data was reported at or below the detection limit.



Figure 5.1-12

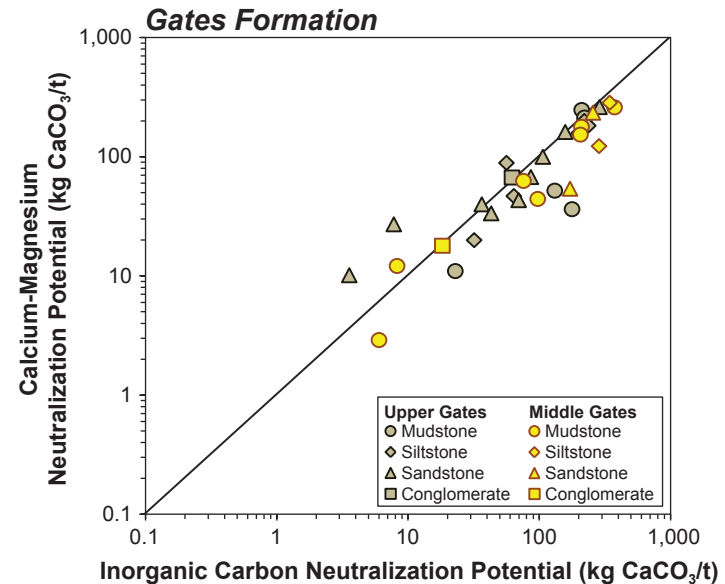
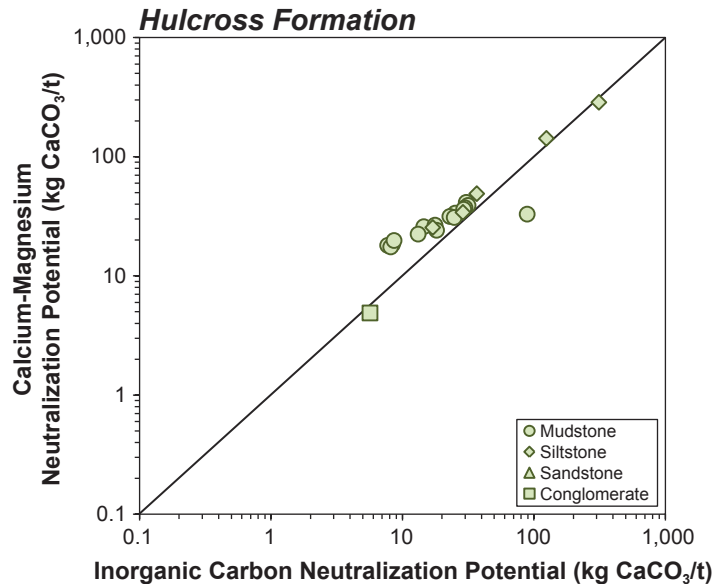
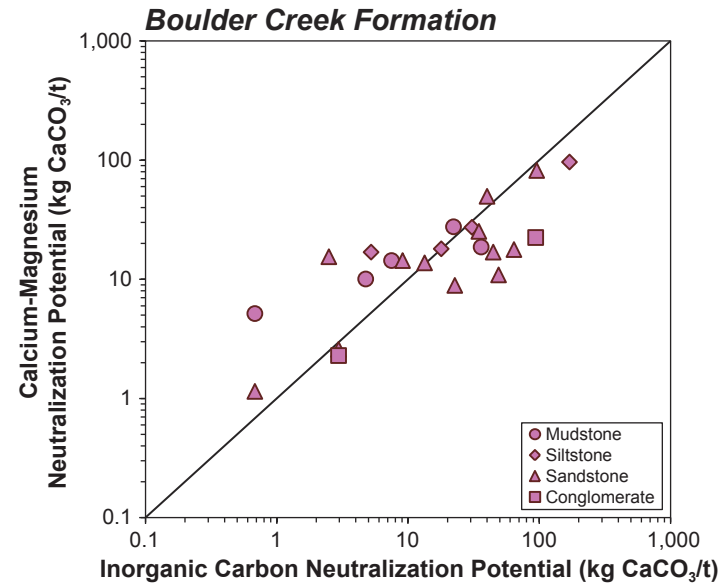
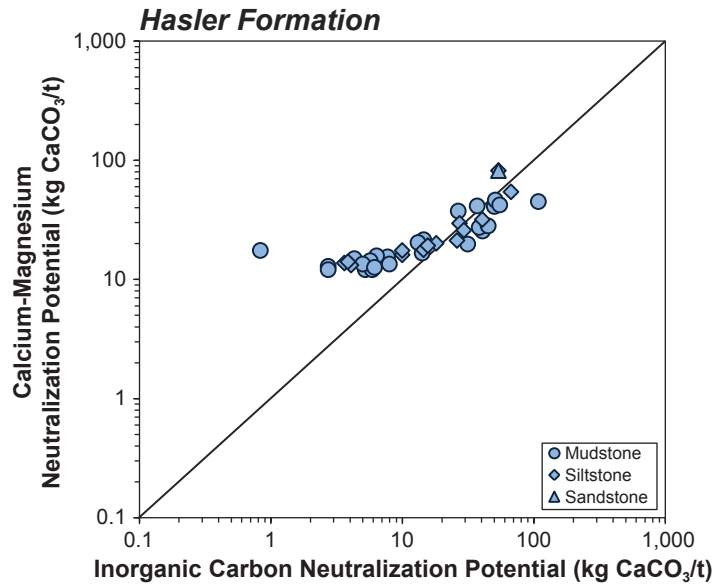
Calcium-Magnesium Neutralization Potential vs. Modified Neutralization Potential for Waste Rock by Formation



Note: One-half the detection limit was used where data was reported at or below the detection limit.

Figure 5.1-13

Calcium-Magnesium Neutralization Potential vs. Inorganic Carbon Neutralization Potential for Waste Rock by Formation



Note: One-half the detection limit was used where data was reported at or below the detection limit.

The strongest correlation between CaMg NP and inorganic carbon NP was observed in samples from the Hulcross Formation. This result was consistent with the Hulcross Formation having the lowest siderite content observed by XRD, indicating that dolomite and calcite had the largest contribution to inorganic carbon. The weakest correlations were observed in the Boulder Creek and Hasler formations. Boulder Creek samples that were analyzed by XRD contained an average of 3% siderite, and Hasler Formation samples typically contained siderite as the dominant carbonate mineral.

The different NP methods used are compared in Table 5.1-10. Typically, inorg NP had the lowest NP values once corrected for the presence of iron carbonates. Uncorrected inorg NP values were generally higher than those derived through any other method.

**Table 5.1-10. Comparison of Neutralization Potential Methods**

Formation	Modified NP	Inorg NP	Inorg NP - FeCO <sub>3</sub>	Ca NP	CaMg NP
Overburden (n = 7)	26	44	18	20	34
Hasler- West (n = 35)	11	26	4	9	21
Hasler- East (n = 10)	8	6	6	7	15
Boulder Creek (n = 30)	7	22	0	6	16
Hulcross (n = 31)	20	24	21	14	27
Upper Gates (n = 32)	55	88	23	42	67
Middle Gates Interburden (n = 22)	87	193	92	67	111

Units: kg CaCO<sub>3</sub>/t. Values are medians, rounded to the nearest whole number.

#### 5.1.1.4 Elemental Abundance

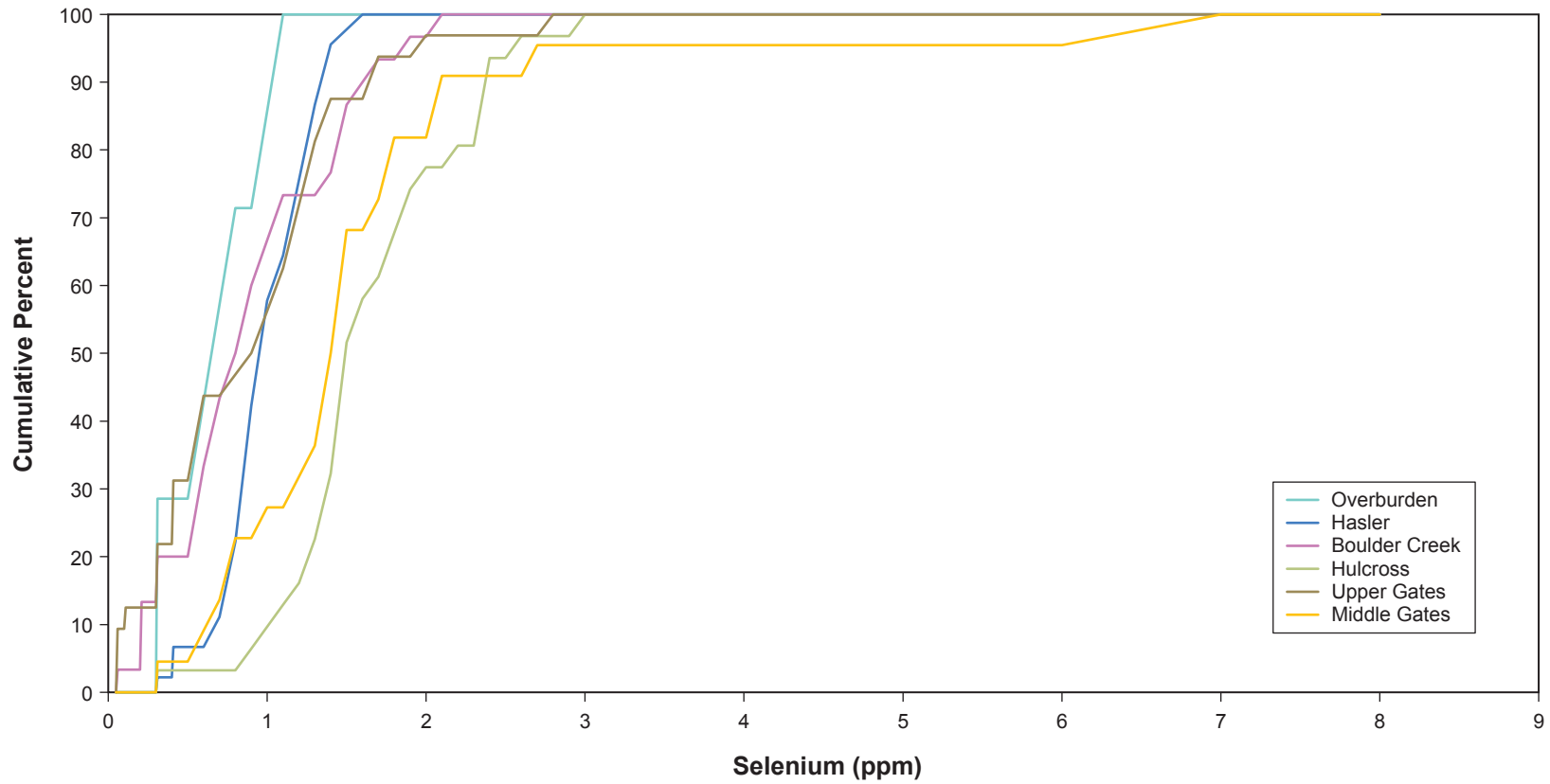
The 75th percentile of elemental abundance values of waste rock samples were compared to three times the average crustal abundances in sandstone and shale (Price 1997). Overburden samples were also compared to the average crustal abundances in clay, as overburden samples were frequently described as clay. The result indicates that in general there is the potential for any lithological unit to have elevated silver (Table 5.1-11). Sulphur was also elevated in the Hasler, Boulder Creek, and Hulcross formations, as discussed in Section 5.1.1.2. Selenium was elevated in overburden samples (when compared to clay), and in samples from the Hulcross Formation. Cadmium was elevated in the Upper Gates Formation, and in interburden samples from the Middle Gates Formation. The cumulative frequency of selenium abundance is presented in Figure 5.1-14. Statistical summary graphs of elemental abundance values of overburden and waste rock samples are presented in Appendix 3.

**Table 5.1-11. Summary of Elevated Elements in Solid Phase in Waste Rock by Formation**

Formation	Reference Lithology	Elevated Parameters
Overburden	Clay	Se
Hasler	Shale	Ag, S
Boulder Creek	Shale	Ag, S
Hulcross	Shale	Ag, S, Se
Upper Gates	Shale	Ag, Cd
Middle Gates Interburden	Shale	Ag, Cd

Figure 5.1-14

Cumulative Frequency of Selenium  
Results for Waste Rock by Formation





### 5.1.1.5 ARD Potential

The SNPR values for waste rock samples are presented in Table 5.1-12 and Figure 5.1-15. Samples from the Hasler and Hulcross formations typically had the lowest SNPR values. All samples from Hasler Formation east of the Murray River had SNPR values of less than 1.0, and over 75% of samples from Hasler and Hulcross formations had SNPR values less than 2.0. The majority of samples of overburden and from Boulder Creek and Upper and Middle Gates formations had SNPR values above 2.0. Overburden and Gates Formation samples had SNPR values higher than 2.0 in over 75% of samples.

**Table 5.1-12. Statistical Summary of Sulphide Net Potential Ratio Values of Waste Rock by Formation**

Formation	Min	25th	Mean	Median	75th	Max
Overburden (n = 7)	0.2	3.5	249.3	6.8	87.8	1555.2
Hasler- West (n = 35)	0.1	0.3	11.2	0.6	1.4	203.4
Hasler- East (n = 10)	0.0	0.1	0.2	0.1	0.2	0.3
Boulder Creek (n = 30)	0.1	1.2	29.9	4.1	19.5	454.4
Hulcross (n = 31)	0.1	0.4	1.4	0.5	0.9	15.2
Upper Gates (n = 32)	0.1	4.0	165.3	46.1	162.1	1352.3
Middle Gates Interburden (n = 22)	0.3	40.9	242.7	113.7	343.9	851.2

#### Analogue Static Testing

As detailed in Section 3.1, the ML/ARD characterization program at the Quintette and Trend mines (SRK 2012) identified the Hulcross Formation as PAG. This is consistent with the observations at the Project. Waste rock from the Middle Gates Formation was generally classified as nPAG at regional projects, which is also consistent with the Project observations.

Static testing results for sulphide sulphur, inorganic carbon NP, and selenium content at the Project were compared with values reported for the Quintette (SRK 2012) and Roman (Peace River Coal Inc. 2010) projects. Statistical summaries of these three parameters are compared in Table 5.1-13.

In the Hulcross Formation, sulphide sulphur values were typically higher and inorg NP values were typically lower in Project samples when compared with the Quintette Project. However, the Hulcross Formation is consistently classified as PAG at both projects.

Samples from both the Upper Gates and Middle Gates formations were strongly comparable between the Project and the Quintette Project, in both sulphide sulphur and inorg NP, indicating similar sulphide and inorganic carbon contents at both projects. Sulphide and carbon values were typically lower at the Roman Mine.

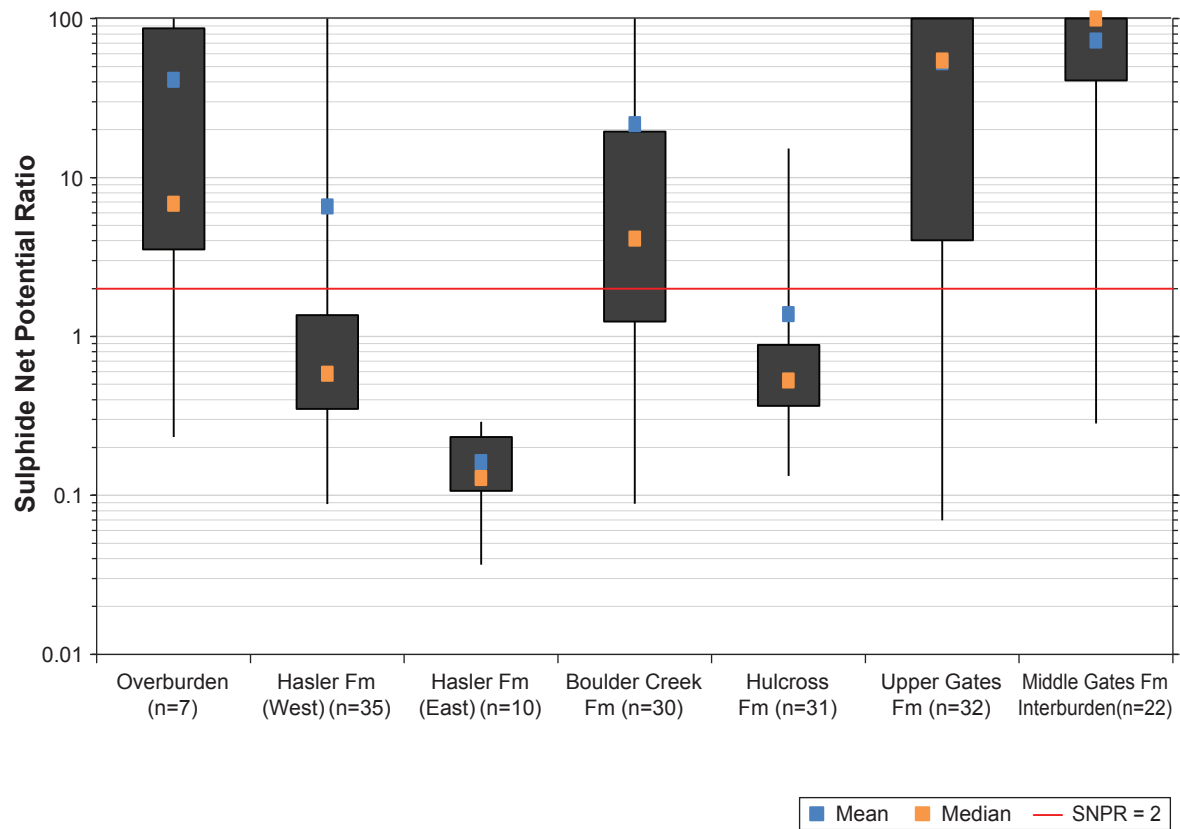
Selenium concentrations were strongly comparable in waste rock from all three projects. The highest selenium content was measured in samples from the Middle Gates Formation at the three sites.

#### SNPR Influences and Variability

The relationship between NP and AP is presented by formation in Figure 5.1-16. The correlation between sulphide sulphur and SNPR is much stronger than that between NP and SNPR, as can be seen in Figures 5.1-17 and 5.1-18. This indicates that the sulphur content of waste rock samples has a stronger influence over SNPR values than the NP. This relationship is most apparent in the Boulder Creek Formation, where a sulphide sulphur cut-off of 0.1% can be identified, above which samples were typically PAG. The exception is the Hulcross Formation, in which sulphide sulphur values are relatively consistent across a range of SNPR values.

Figure 5.1-15

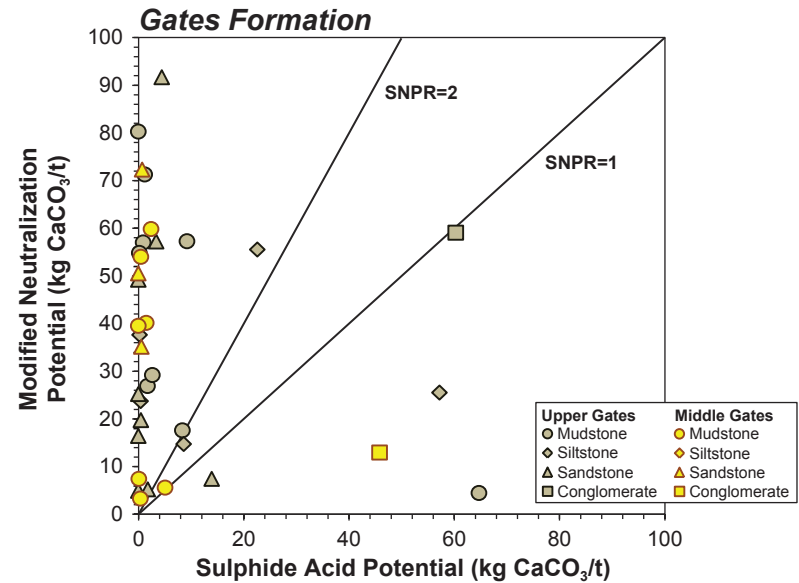
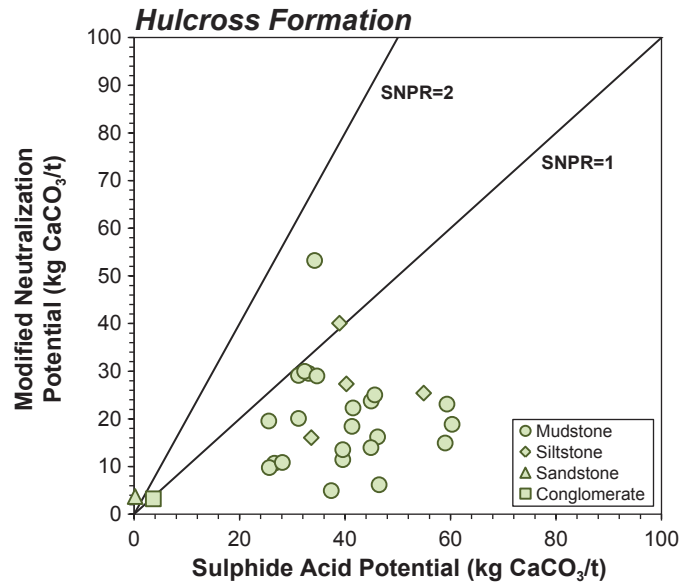
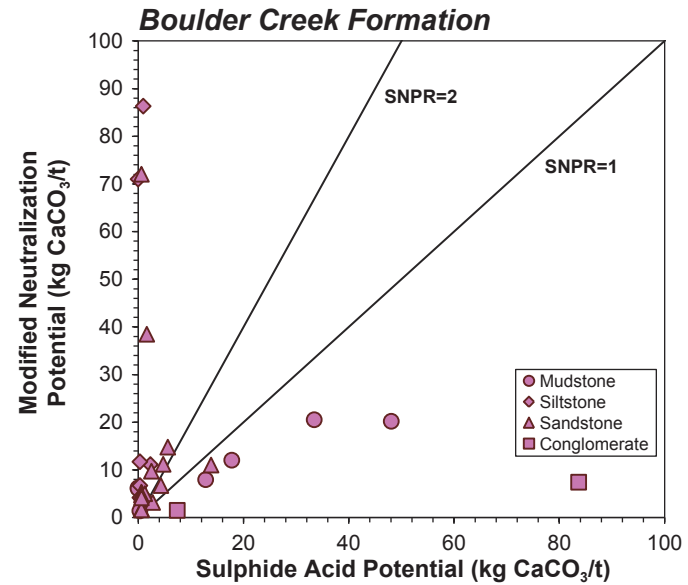
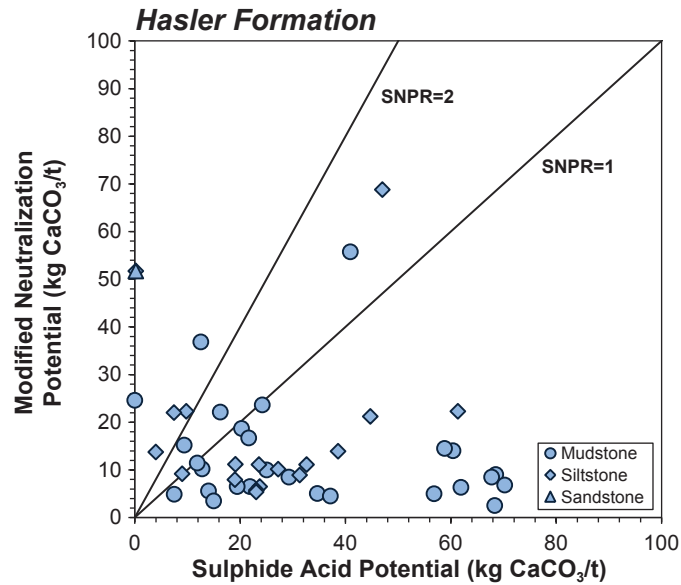
Statistical Summary of Sulphide Net Potential Ratio Results for Waste Rock by Formation



Notes: 25<sup>th</sup> to 75<sup>th</sup> percentile is represented by the shaded box.  
Where calculated sulphide sulphur was less than or equal to zero,  
SNPR values were capped at 100.

Figure 5.1-16

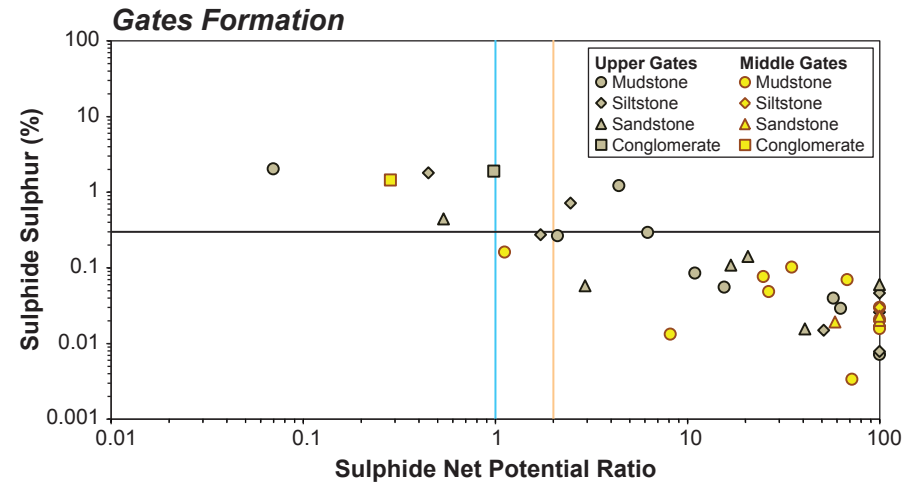
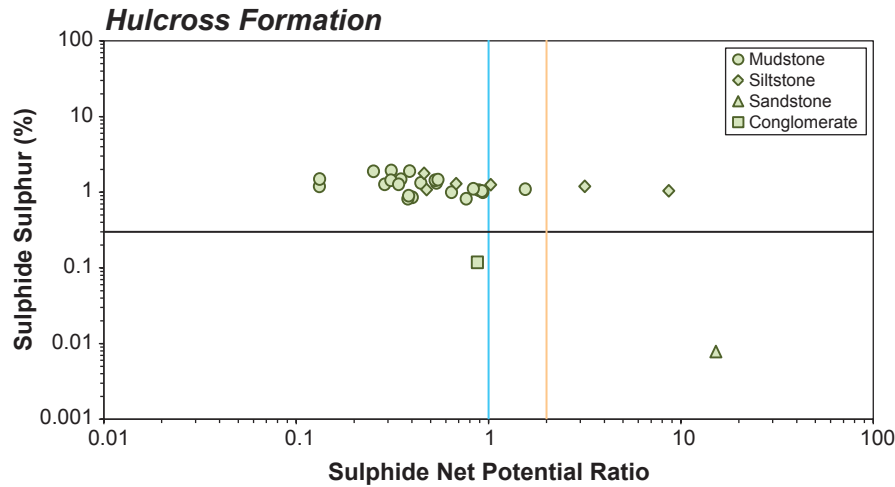
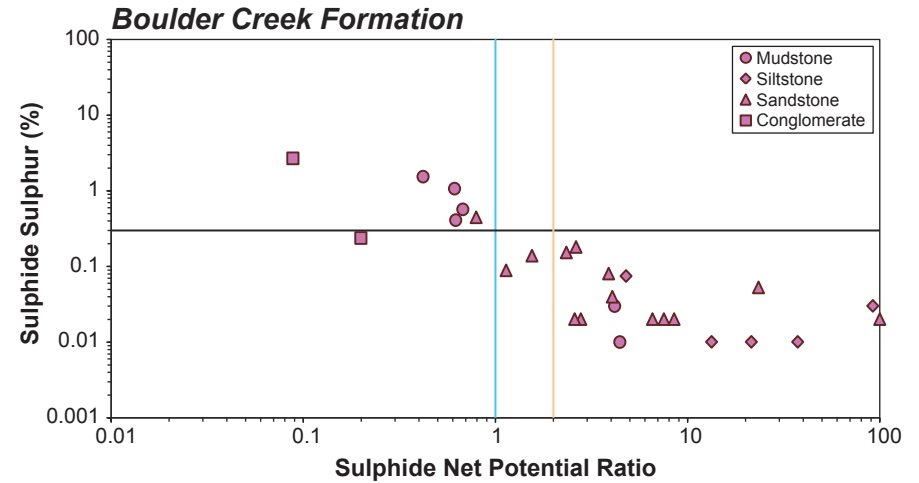
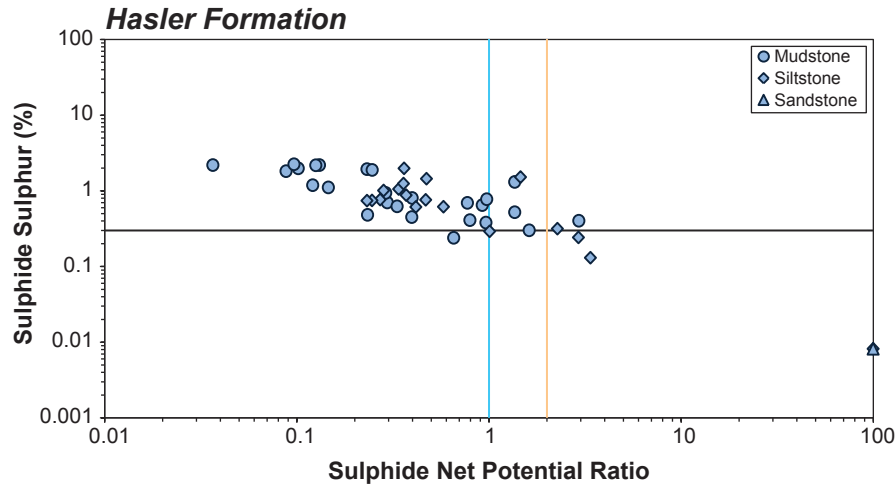
Modified Neutralization Potential vs. Sulphide Acid Potential for Waste Rock by Formation



Note: One-half the detection limit was used where data was reported at or below the detection limit.

Figure 5.1-17

Sulphide Sulphur vs. Sulphide Net Potential Ratio for Waste Rock by Formation



Notes: One-half the detection limit was used where data was reported at or below the detection limit.  
Where calculated sulphide sulphur was less than or equal to zero, SNPR values were capped at 100.

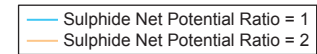
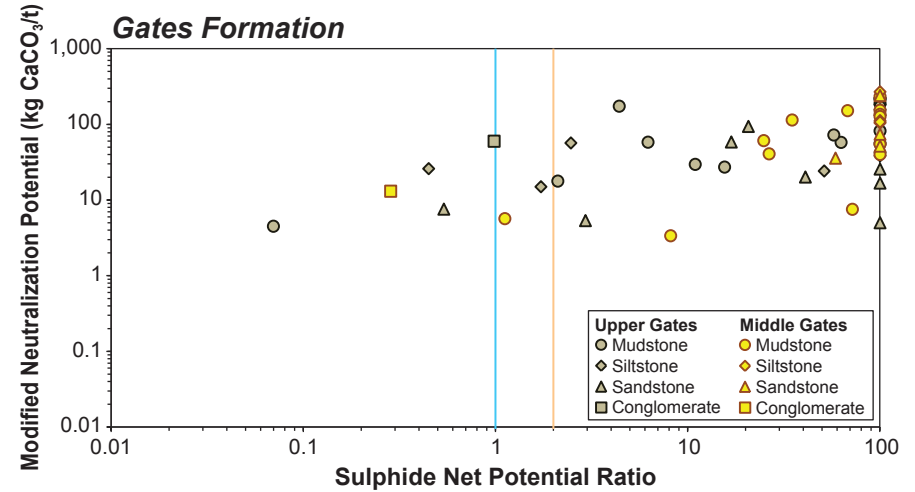
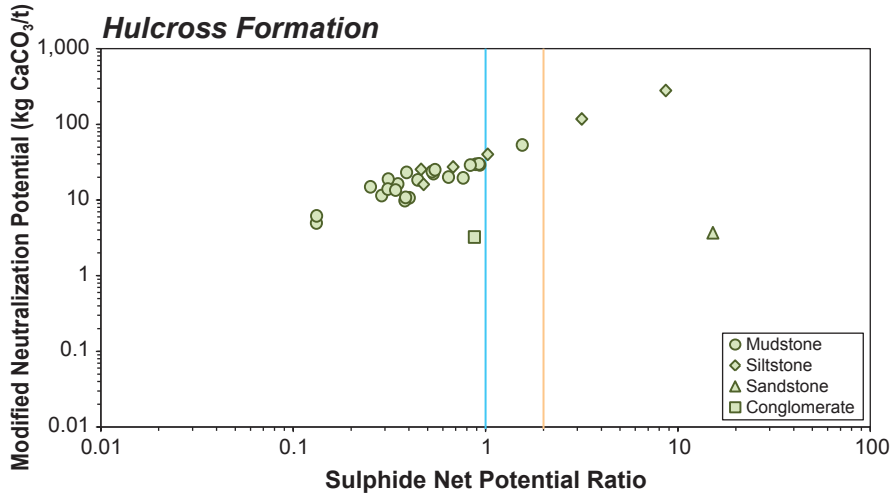
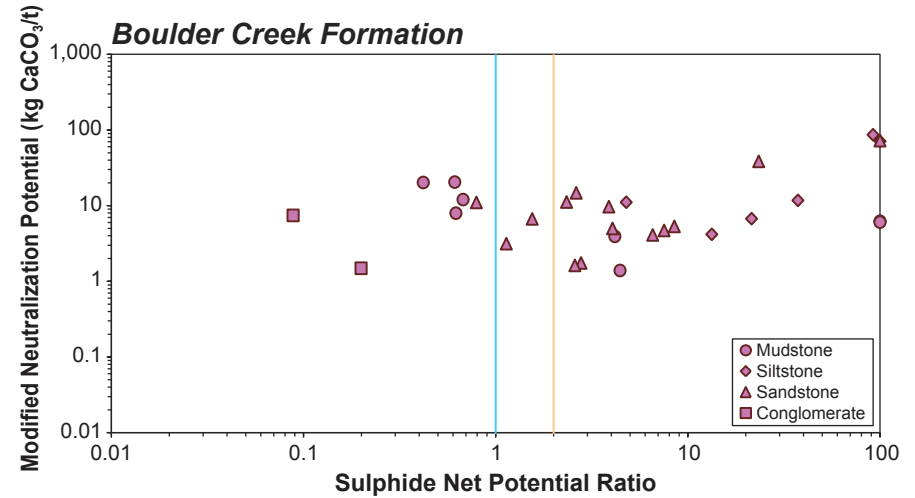
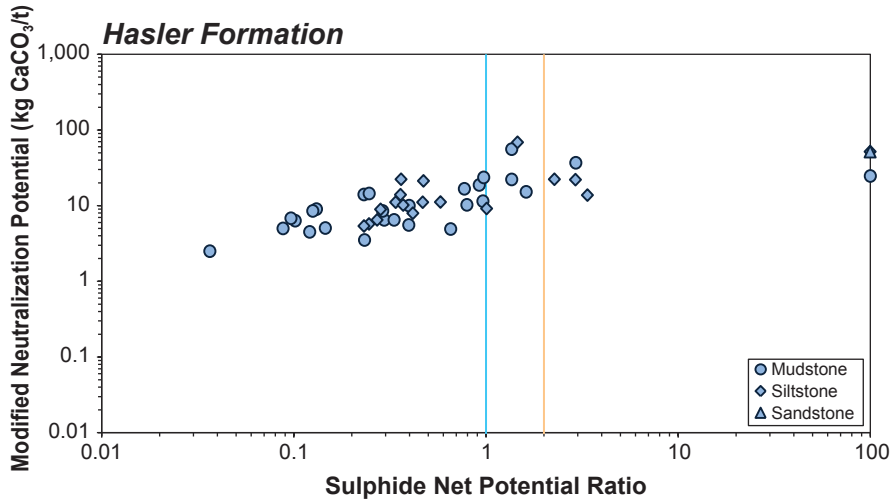


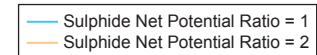


Figure 5.1-18

Modified Neutralization Potential vs. Sulphide Net Potential Ratio for Waste Rock by Formation



Notes: One-half the detection limit was used where data was reported at or below the detection limit.  
Where calculated sulphide sulphur was less than or equal to zero, SNPR values were capped at 100.



**Table 5.1-13. Statistical Summary of Sulphide Sulphur, Inorganic Carbon Neutralization Potential, and Selenium Values for Murray River, Quintette, and Roman Coal Projects Waste Rock by Formation**

	Sulphide Sulphur (%)			Inorg C NP (kg CaCO <sub>3</sub> /t)			Selenium (ppm)		
	Murray River	Quintette	Roman	Murray River	Quintette	Roman	Murray River	Quintette	Roman
<b>Hulcross Formation</b>	N = 31	N = 11	N = 0	N = 31	N = 25	N = 0	N = 31	N = 25	N = 0
Min	0.01	0.01	-	5.7	10.2	-	0.3	0.3	-
Median	1.20	0.22	-	23.9	81.0	-	1.4	1.1	-
Mean	1.19	0.34	-	41.2	86.4	-	1.6	1.2	-
Max	1.93	1.10	-	312.7	221.1	-	2.9	2.3	-
<b>Upper Gates Formation</b>	N = 32	N = 199	N = 39	N = 32	N = 199	N = 39	N = 32	N = 199	N = 39
Min	0.01	0.00	0.01	3.6	0.7	0.5	0.1	0.1	0.1
Median	0.04	0.08	0.04	88.0	72.1	0.9	0.9	0.4	0.3
Mean	0.31	0.32	0.09	118.4	76.4	7.2	0.8	0.6	0.4
Max	2.07	2.48	1.22	294.3	291.1	60.9	2.7	3.1	2.2
<b>Middle Gates Formation</b>	N = 22	N = 179	N = 38	N = 22	N = 179	N = 38	N = 22	N = 179	N = 38
Min	0.00	0.00	0.05	6.1	2.5	0.8	0.3	0.2	0.4
Median	0.02	0.05	0.08	192.6	198.5	75.4	1.4	1.3	1.9
Mean	0.10	0.25	0.10	174.7	182.0	140.5	1.5	1.7	1.7
Max	1.47	2.67	0.42	382.8	396.9	310	6.1	6.8	3.9

Conglomerate samples from all formations were PAG, including one sample of Boulder Creek conglomerate that had an acidic paste pH when analyzed. However, only five conglomerate samples have been analyzed to date. Conglomerate samples have been identified as having high sulphide content and low NP at other properties in the region, such as Upper Gates Formation conglomerates at the Roman Project.

Spatial variability was identified in the Hasler Formation, between samples collected on the west side of the Murray River (indicated in tables and figures as Hasler - West), and samples collected on the east side of the Murray River (Hasler - East). While samples on both sides of the river were potentially acid-generating, samples from the east side had generally higher sulphide sulphur content, lower NP, and higher proportions of pyrite identified by Rietveld XRD. As the boundaries between the Hasler Formation and overlying formations from the Fort St. John Group such as the Goodrich and Cruiser formations are currently undefined at the Project site, the Hasler Formation includes a variation of lithologically similar PAG units, which may account for this geochemical variability.

### 5.1.2 Leachate Tests

Leachate tests by SFE were performed on 51 samples of overburden and waste rock material. Dissolved metal concentrations were compared to the BC MOE water quality guidelines.

Dissolved aluminum concentrations exceeded BC 30-day average water quality guidelines for dissolved aluminum in the majority of samples from each formation. In the absence of dissolved metal guidelines for parameters other than aluminum and iron, dissolved concentrations of other metals in leachate were

compared to total metal guidelines. Where available, 30-day average guidelines were applied, otherwise concentrations were compared to maximum guidelines. Elements that were above guidelines are listed for each formation in Table 5.1-14. Dissolved arsenic, selenium, and vanadium concentrations exceeded total metal guidelines for multiple samples from each formation. Dissolved chromium, iron, and antimony also exceeded guidelines in several samples. Full leachate results are presented in Appendix 4.

**Table 5.1-14. Elements Above BC 30-day Mean Guidelines in SFE Leachate for Waste Rock by Formation**

Formation	Comparison to Total Metal Guidelines	Comparison to Dissolved Metal Guidelines
Overburden	As <sup>†</sup> , Fe <sup>†</sup> , Se, V, Zn	Al, Fe <sup>†</sup>
Hasler	Ag, As <sup>†</sup> , Sb <sup>†</sup> , Se, V	Al
Boulder Creek	As <sup>†</sup> , Cr <sup>†</sup> , Fe <sup>†</sup> , Sb <sup>†</sup> , Se, Tl <sup>†</sup> , V, Zn	Al, Fe <sup>†</sup>
Hulcross	Ag, As <sup>†</sup> , Cr <sup>†</sup> , Se, V	Al, Fe <sup>†</sup>
Upper Gates	Ag, As <sup>†</sup> , Cr <sup>†</sup> , Fe <sup>†</sup> , Sb <sup>†</sup> , Se, V, Zn	Al, Fe <sup>†</sup>
Middle Gates	As <sup>†</sup> , Cr <sup>†</sup> , Fe <sup>†</sup> , Sb <sup>†</sup> , Se, V	Al, Fe <sup>†</sup>

*Note: Concentrations were measured in leachate as dissolved metals. Elements are listed for each formation if dissolved concentrations were above BC guidelines for a minimum of one sample in that formation.*

<sup>†</sup> Concentration compared to maximum guideline

The formations with the most elements with concentrations higher than BC guidelines were the Boulder Creek Formation (Al, As, Cr, Fe, Sb, Se, Tl, V, and Zn all exceeded guidelines in at least one SFE sample) and Upper Gates Formation (Ag, Al, As, Cr, Fe, Sb, Se, V, and Zn all exceeded guidelines in at least one SFE sample).

Some elements elevated in the solid phase were also elevated in the leachate. This included selenium, which was elevated in both solid phase and leachate for overburden and Hulcross Formation samples; and silver, which was elevated in both phases in samples from the Hasler, Hulcross, and Upper Gates formations. Generally, the correlation between solid phase content and leachate concentration was very poor.

### 5.1.3 Kinetic Tests

#### 5.1.3.1 Laboratory Humidity Cells

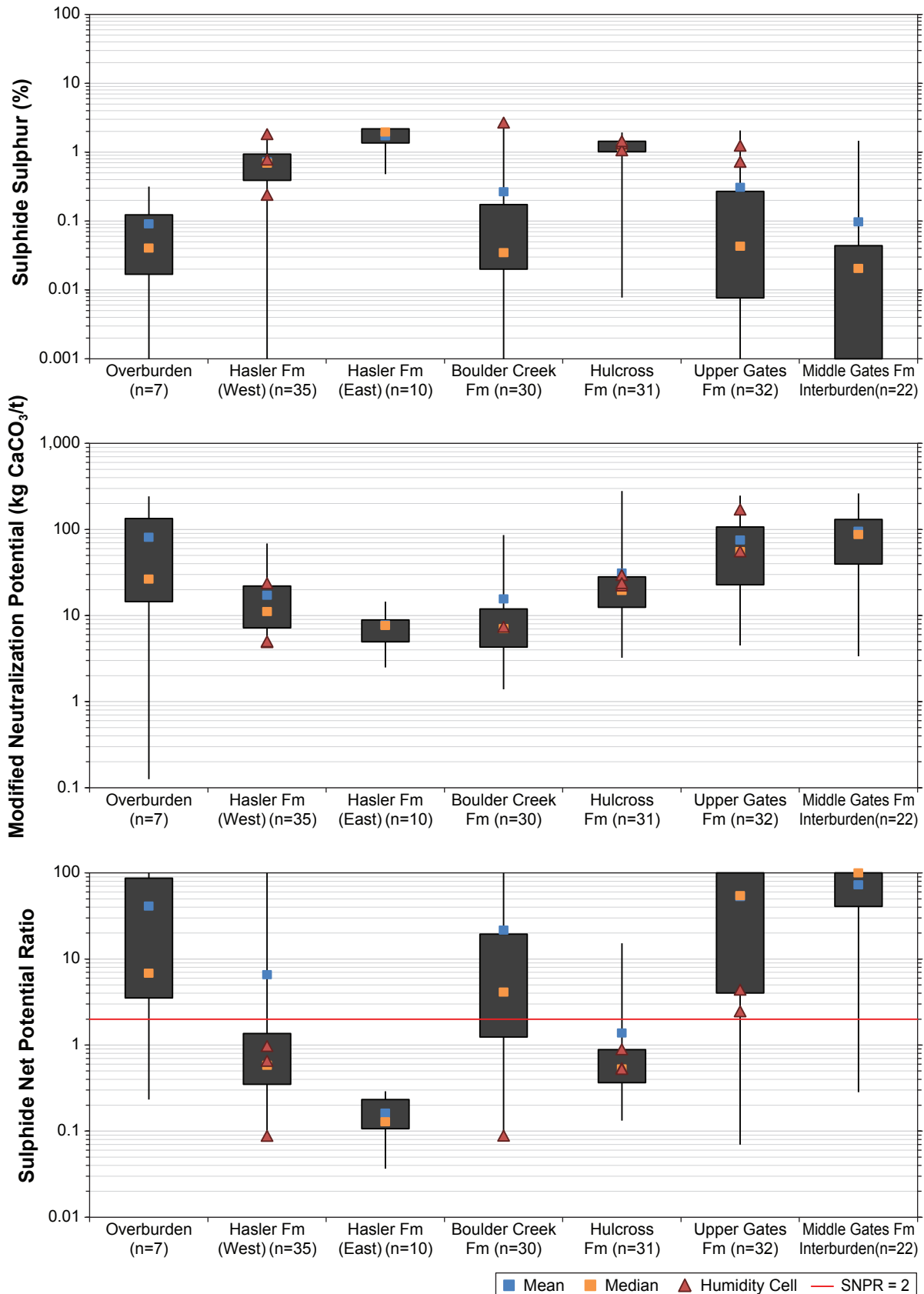
Humidity cells representing waste rock material that will be excavated during the construction of shafts and declines were initiated in 2011. The humidity cells include samples from the Hasler, Boulder Creek, Hulcross, and Upper Gates formations, as detailed in Section 4.3.3. Samples with low SNPR were generally selected for humidity cell construction. Figure 5.1-19 illustrates the representivity of the static results of the material tested in humidity cells compared to the distribution of the same formation. Waste rock humidity cells had all been running for a minimum of 150 weeks as of February 2014, with stable cells not terminated as requested by the BC Ministry of Energy and Mines (MEM).

The following discussion presents the results of the humidity cell leachate analyses for each deposit for:

- indicators of acid generation (pH, sulphate, acidity, and alkalinity);
- elements that contribute to acidity (aluminum, iron, and manganese);
- elements of interest (selenium, arsenic, and cadmium); and
- calcium and magnesium, which commonly occur in carbonate mineral phases and are associated with the neutralization potential.

Figure 5.1-19

Statistical Summary of Sulphide Sulphur, Modified Neutralization Potential, and Sulphide Net Potential Ratio Results for Waste Rock Compared to Individual Humidity Cells by Formation



Notes: 25<sup>th</sup> to 75<sup>th</sup> percentile is represented by the shaded box.

Where calculated sulphide sulphur was less than or equal to zero, SNPR values were capped at 100.



### Indicators of Acid Generation

Acid generation in the humidity cell leachate is indicated by decreasing pH, decreasing alkalinity, and increasing acidity. Humidity cell pH, alkalinity, and sulphate loadings are presented in Figures 5.1-20 to 5.1-22. Four humidity cells have recorded at least one pH value below 6.0 by the end of April 2014, indicating the onset of acidic conditions. These include one humidity cell constructed with conglomerate material from the Boulder Creek Formation (HC4), and three humidity cells of Hasler Formation mudstone (HC7, HC8 and HC9).

Hasler mudstone humidity cell HC7 recorded its first pH value below 6.0 at the end of April 2014, following alkalinity loadings dropping below detection limits at the end of January 2014. Sulphate loadings were stable and low for the previous 100 weeks, and acidity loadings were typically below detection limits. Initial total sulphur concentrations were lower in HC7 than the other two Hasler mudstone humidity cells, suggesting a reason for the lengthy time to the onset of acidity.

Three humidity cells constructed of mudstone from the Hulcross Formation saw a steady increase in sulphate release rates from weeks 85 to 155. Alkalinity and pH also dropped slowly over this period, with pH values between 7.1 and 7.4 at the end of April 2014.

Upper Gates Formation humidity cells (HC1 and HC6) maintained steady and high pH and alkalinity values after the first 35 to 40 weeks of leaching. Sulphate loadings remained lower than in any other humidity cells, and acidity leach rates were typically below detection.

### Elements Contributing to Acidity

Aluminum concentrations typically decreased over time (Figure 5.1-23). In the three acid-leaching humidity cells, aluminum leach rates increased rapidly after the cell went acidic. In humidity cell HC9, aluminum loadings levelled off after increasing for about 50 weeks (weeks 50 to 99), and began to decrease slightly. Iron and manganese, as well as most other metals, followed a similar pattern in HC9.

Iron concentrations in leachate, while variable, also decreased over time in the neutral-leaching humidity cells, and increased rapidly with acidity in cells with pH values below 6.0 (Figure 5.1-24). The highest iron leach rates were in the humidity cells with the highest initial sulphide sulphur concentrations.

Manganese concentrations in leachate increased over time in the humidity cells (Figure 5.1-25). The most rapid increases in manganese leach rates were observed in the acid-leaching humidity cells. Manganese loadings in the neutral leaching cells were characterized by increasing concentrations over the first 20 to 30 weeks, followed by levelling out or slow increases. More rapidly increasing manganese concentrations were observed in Hulcross Formation humidity cells HC10 and HC12 over the last 50 weeks before May 2014.

### Elements of Interest

Selenium has been noted as elevated in solid phase and leachate of Project samples, and is an element of concern in the region, as discussed in Section 3.1. Selenium leach rates decreased over the first 20 weeks of leaching and then reached steady state (Figure 5.1-26). Selenium release rates increased over weeks 35 through 85 for Hasler Formation humidity cell HC9, coinciding with a decrease in pH and increase in the loadings of most metals.

Selenium leach rates were greatest in Boulder Creek Formation humidity cell HC4, with average loadings of approximately 0.0014 over the last ten weeks of sampling. Selenium loadings were approximately correlated with sulphide sulphur content, as samples with higher initial sulphide sulphur concentrations typically had higher steady state selenium loadings. Steady state selenium loadings did not correlate with initial selenium content in waste rock humidity cells.

Figure 5.1-20

pH Values, and Sulphate and Alkalinity Production Rates for Hasler Formation Humidity Cells

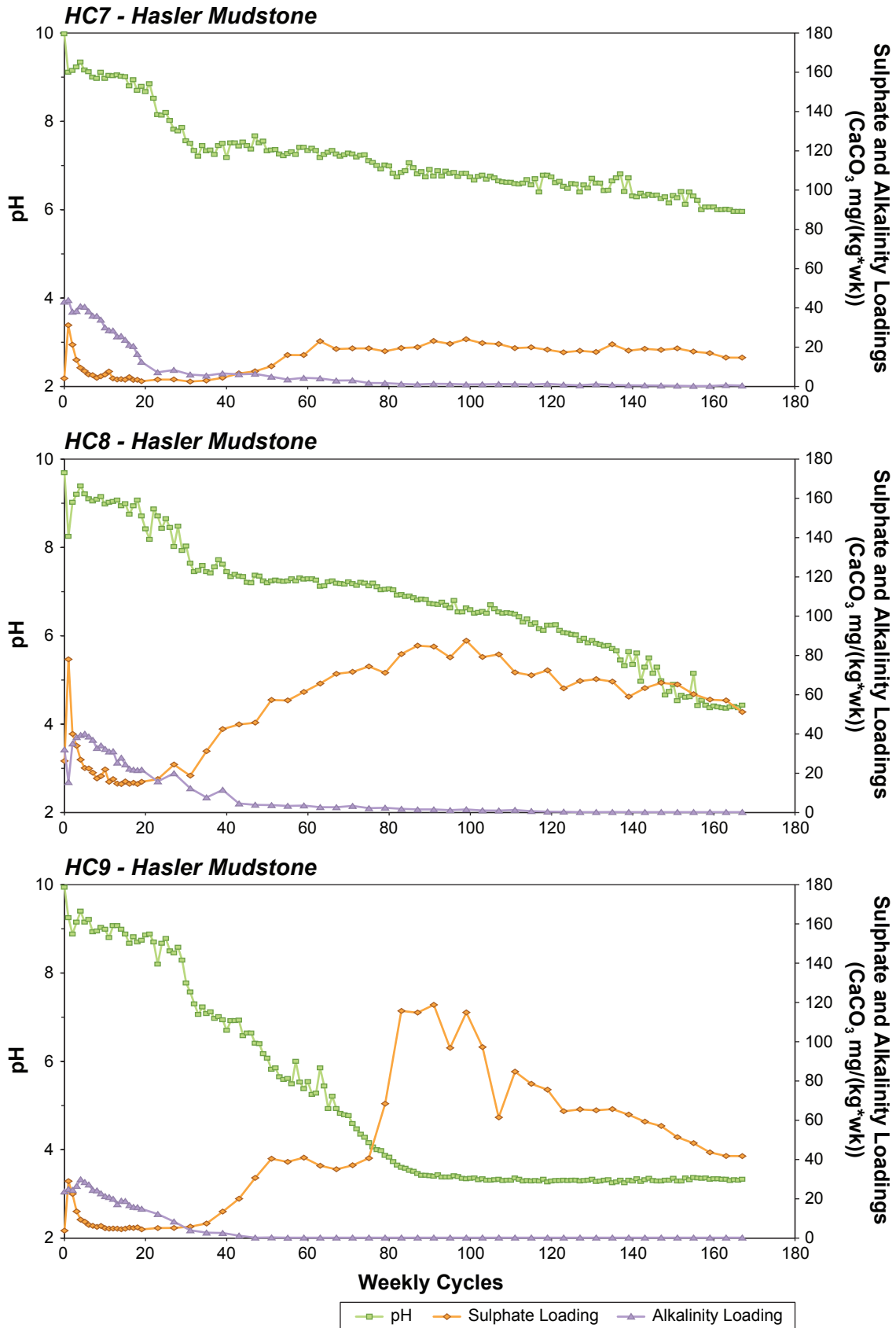


Figure 5.1-21

pH Values, and Sulphate and Alkalinity Production Rates for Hulcross Formation Humidity Cells

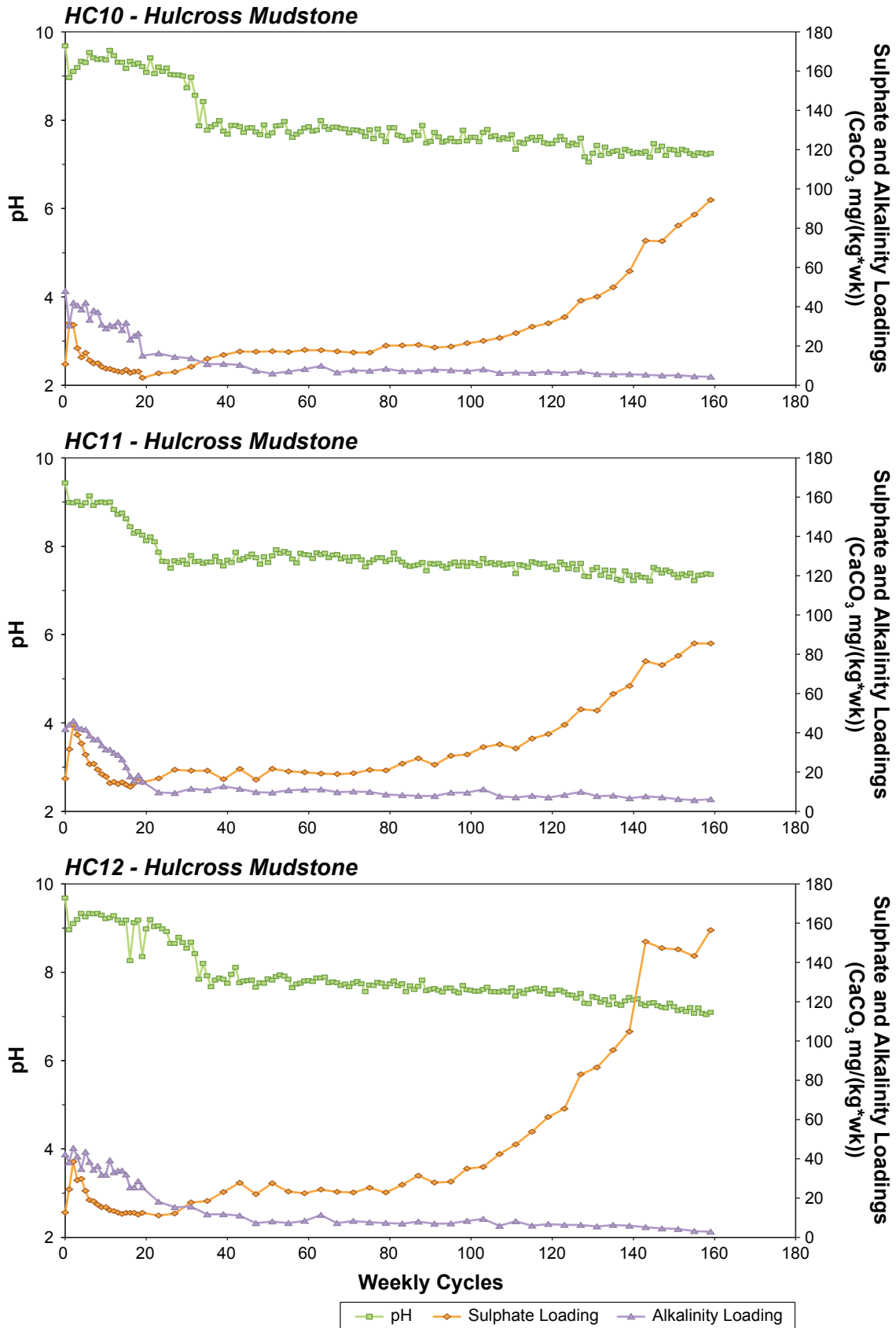


Figure 5.1-22

pH Values, and Sulphate and Alkalinity Production Rates for Boulder Creek and Upper Gates Formation Humidity Cells

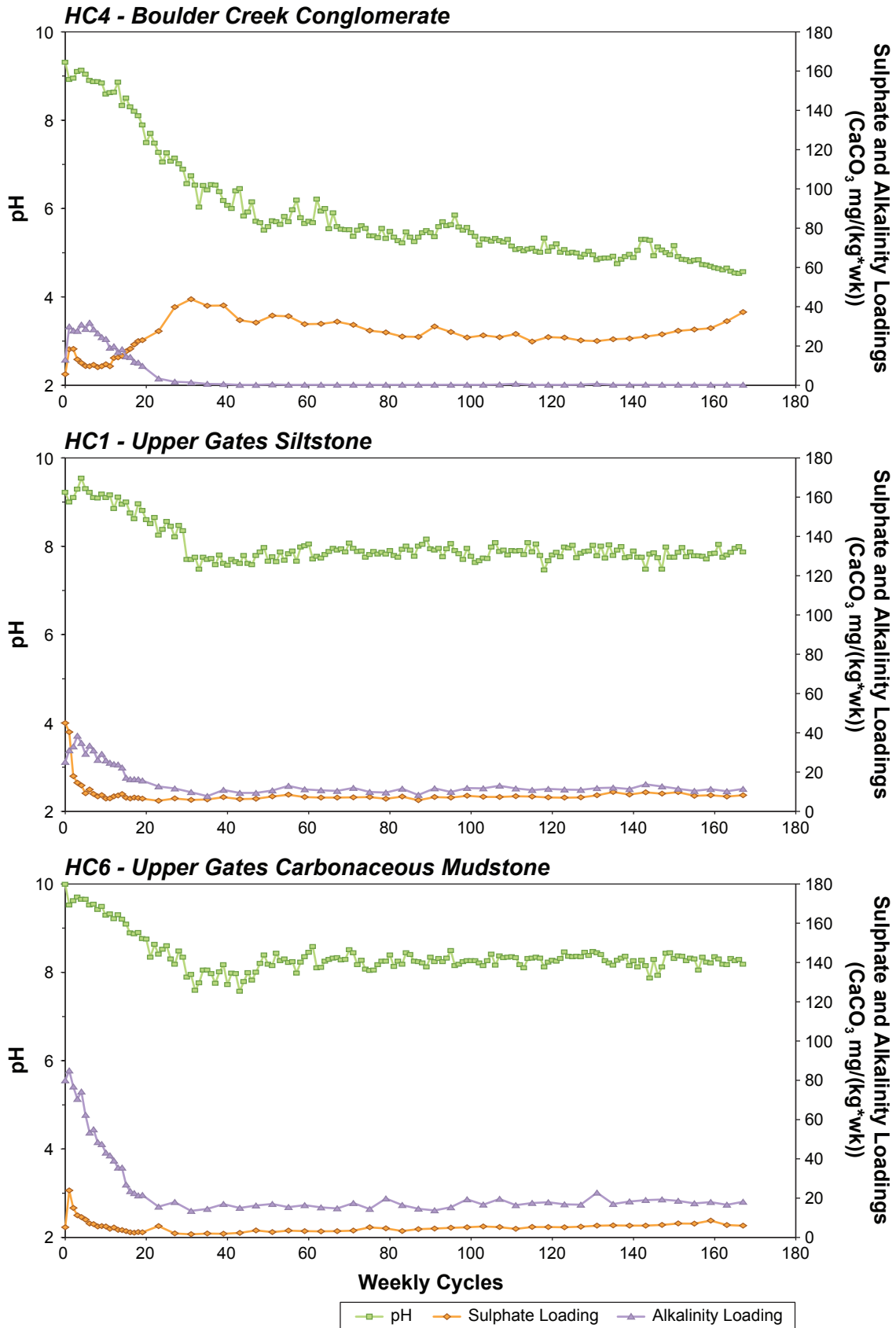




Figure 5.1-23

### Aluminum Production Rates for Waste Rock Humidity Cells by Formation

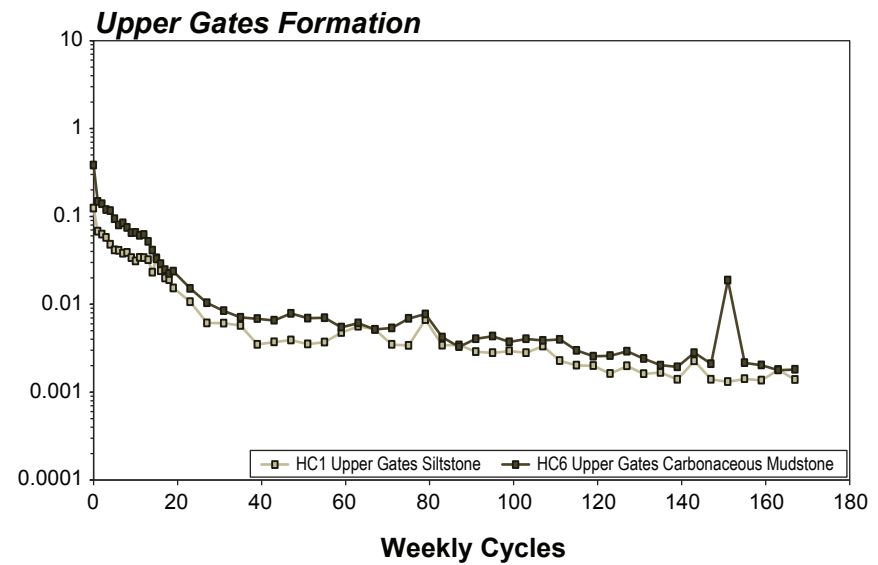
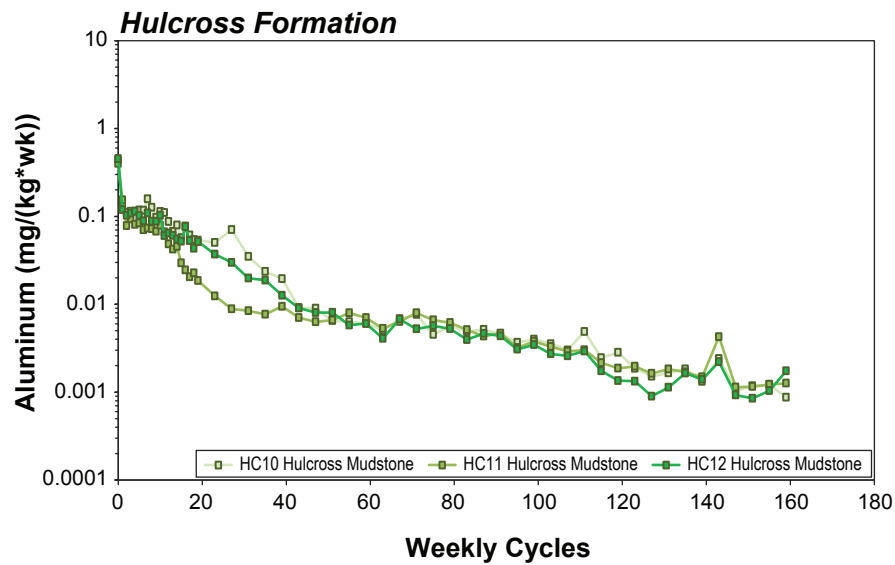
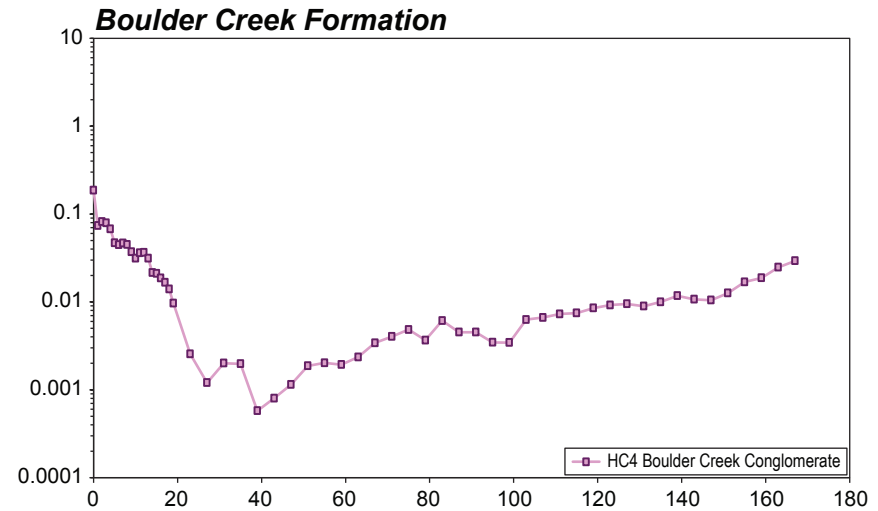
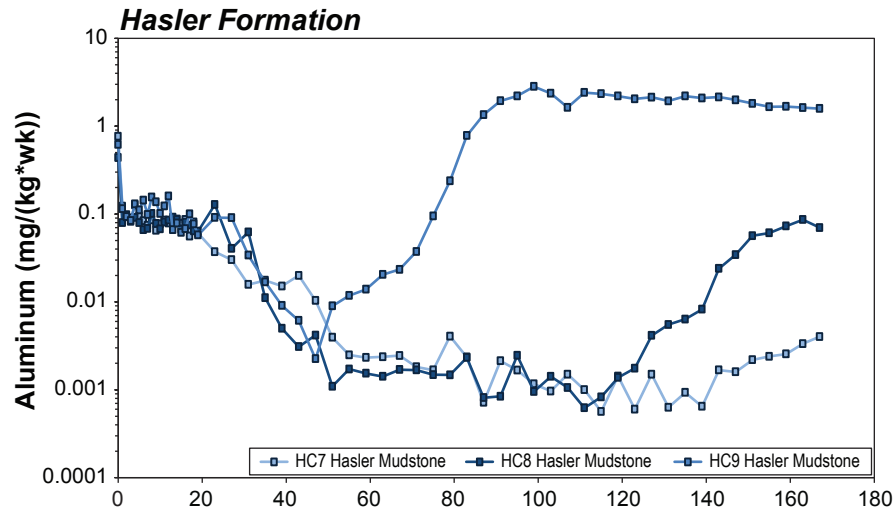


Figure 5.1-24

Iron Production Rates for Waste Rock Humidity Cells by Formation

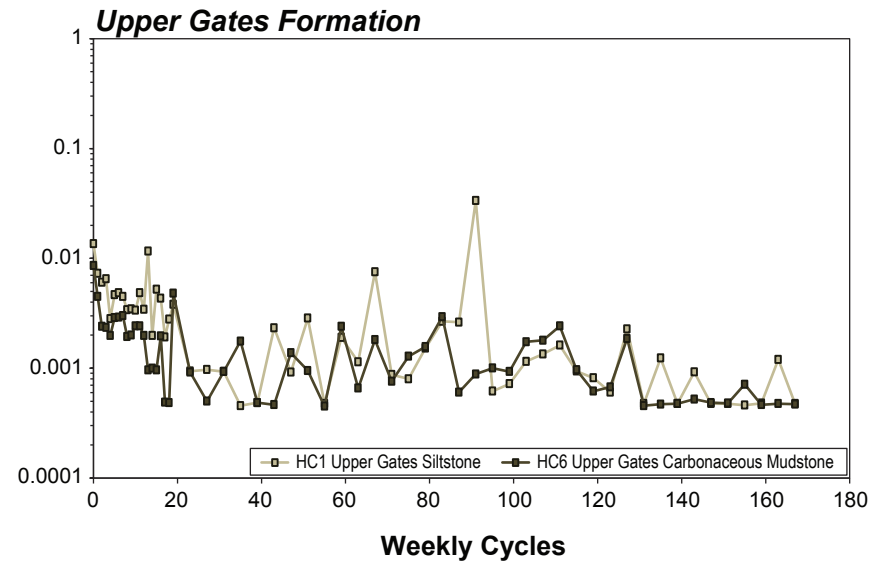
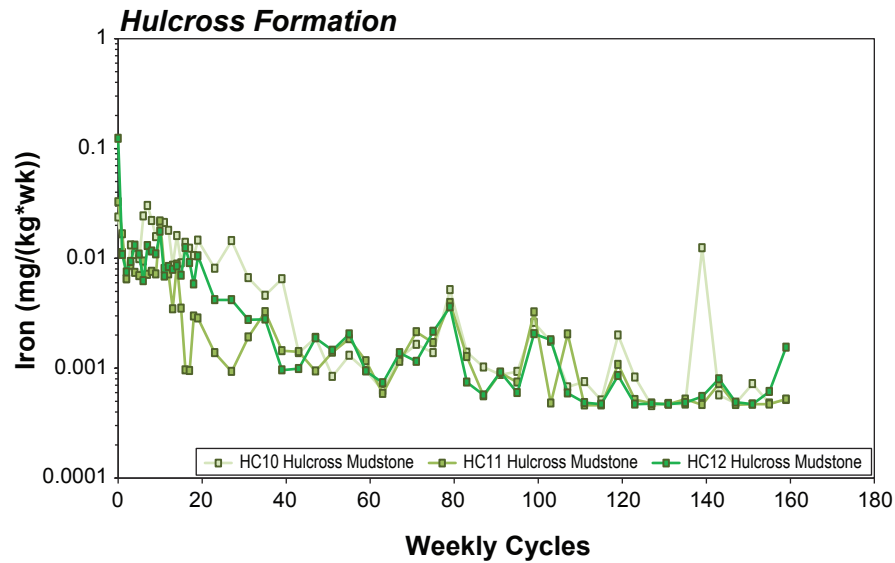
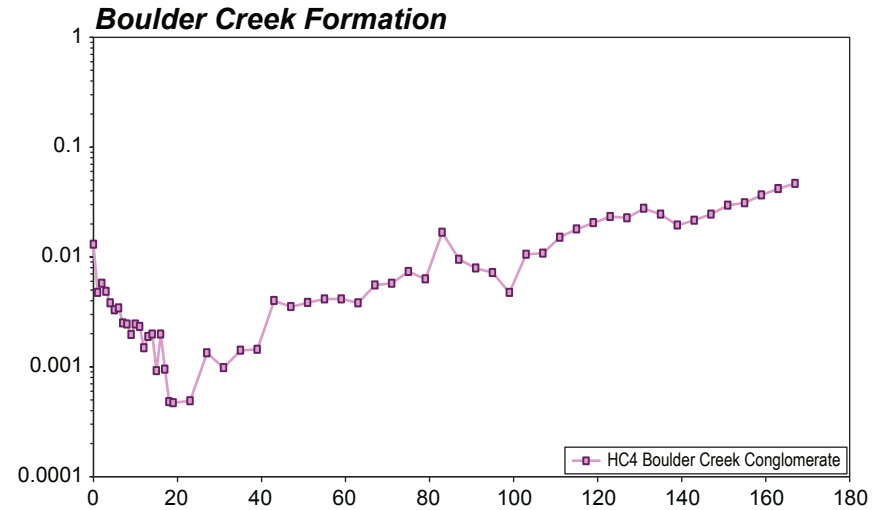
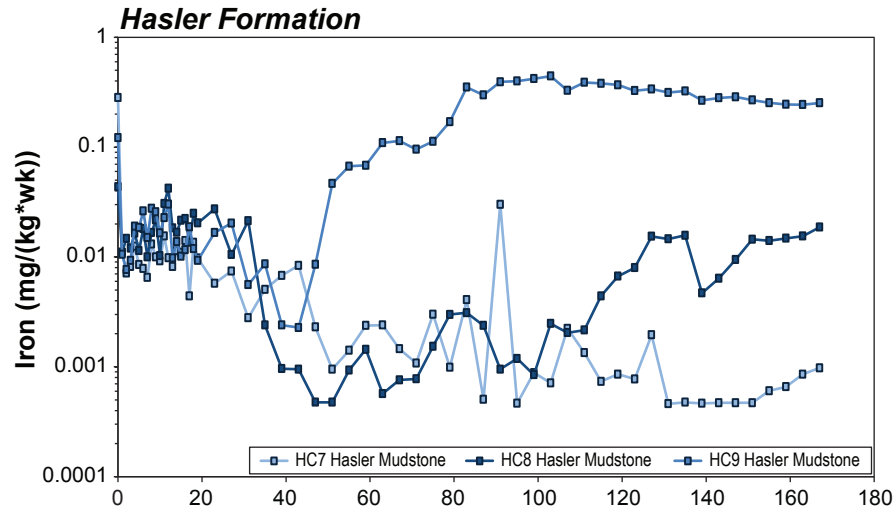


Figure 5.1-25

Manganese Production Rates for Waste Rock Humidity Cells by Formation

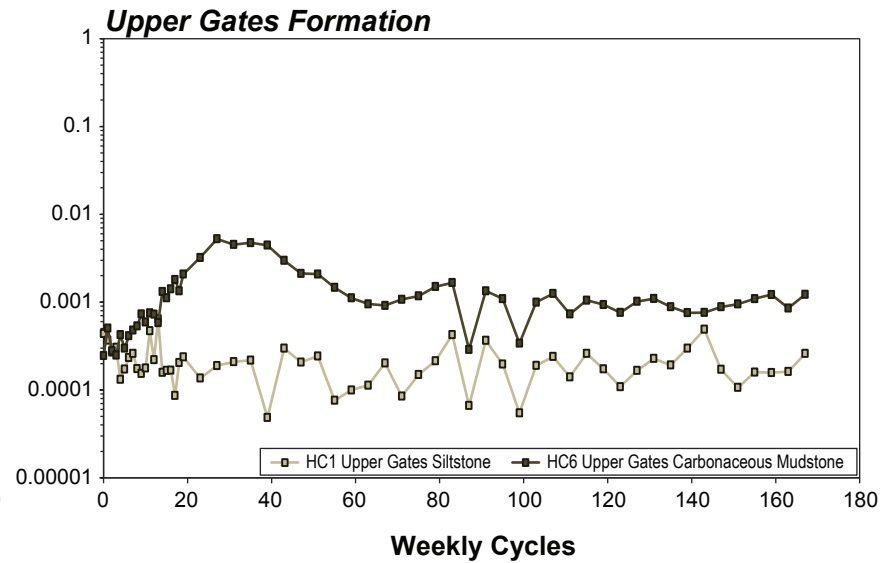
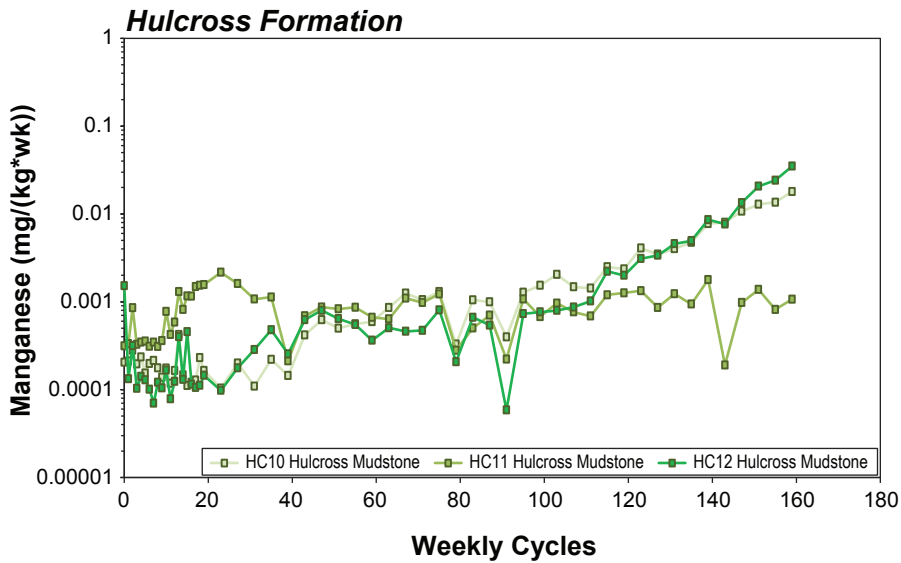
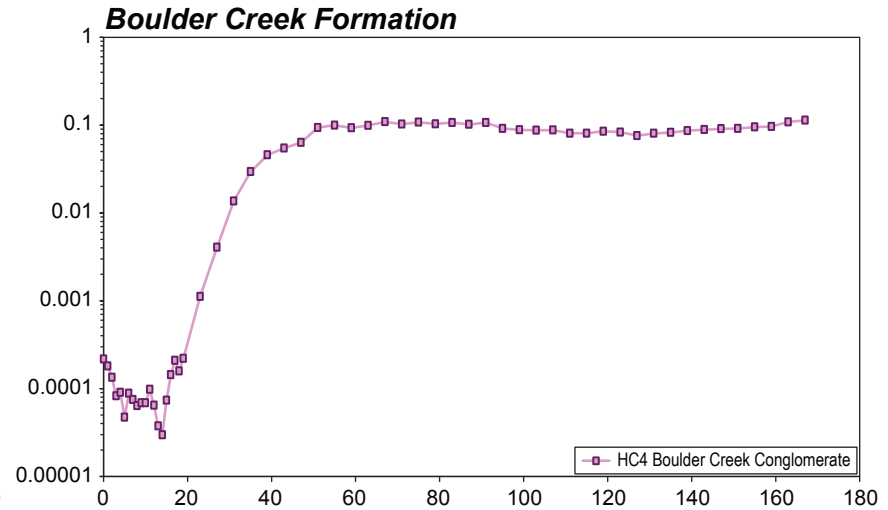
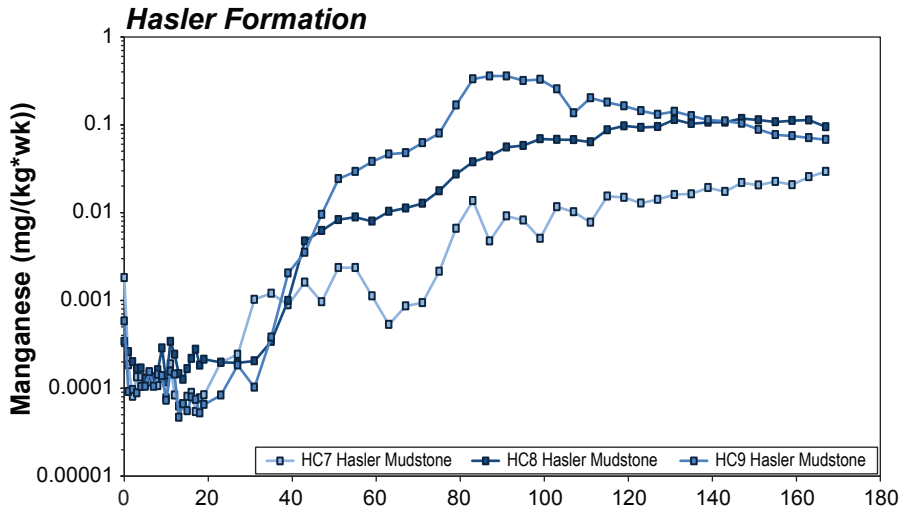
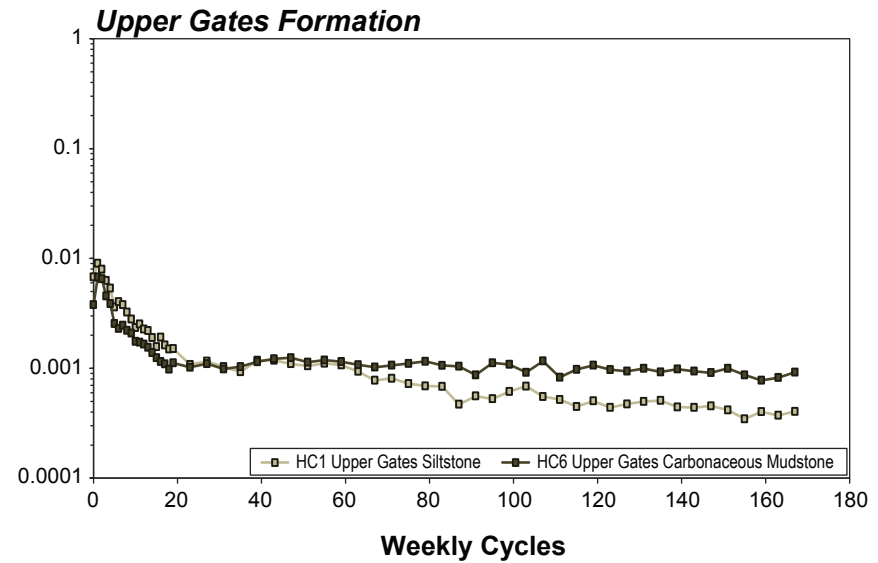
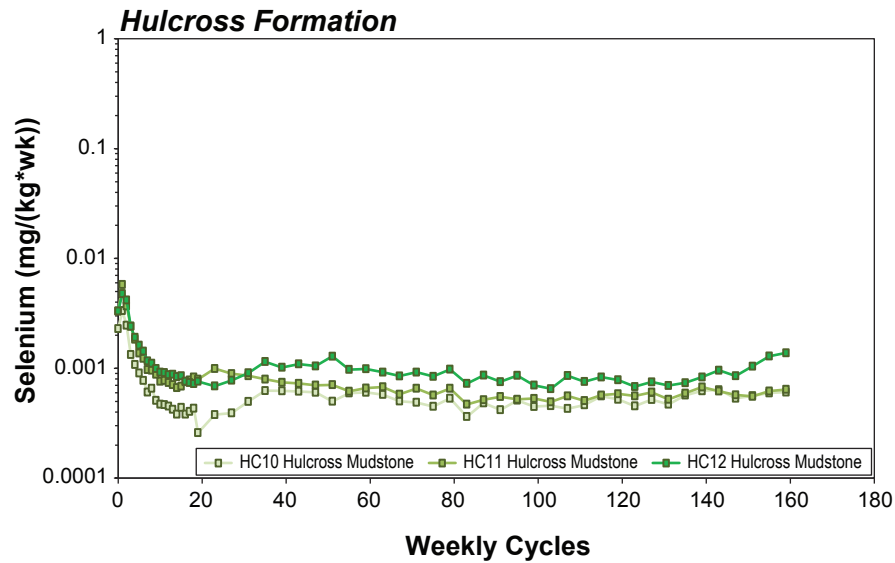
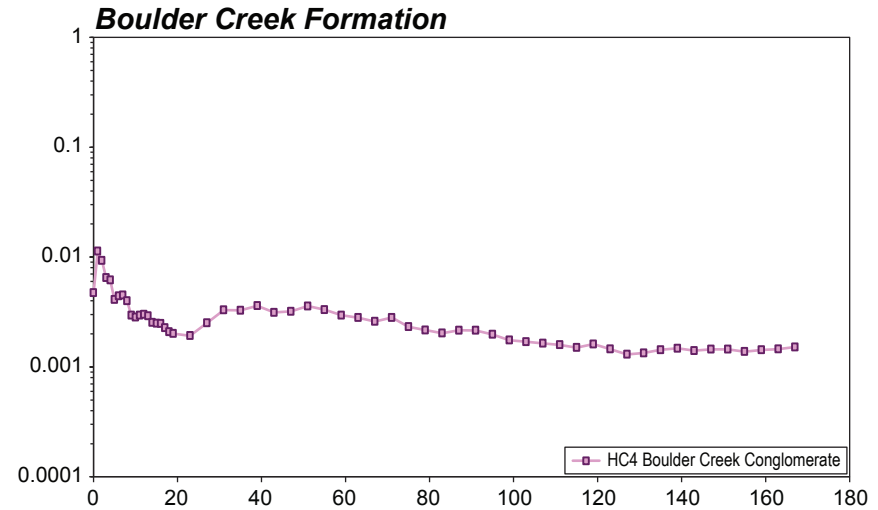
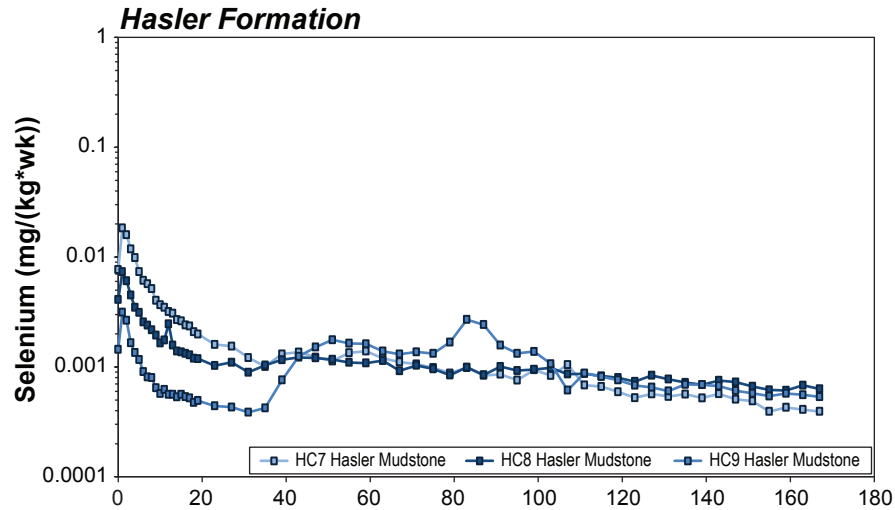


Figure 5.1-26

Selenium Production Rates for Waste Rock Humidity Cells by Formation



Arsenic concentrations frequently exceeded BC guidelines in SFE and FLB leachate, and consequently arsenic was inspected as an element of interest. Arsenic leach rates followed a similar pattern to selenium, decreasing more slowly for the first 40 weeks of leaching before levelling out in most cells (Figure 5.1-27). The exception was Hasler Formation cell HC9, in which an increase in arsenic loadings was observed in weeks 75 through 99.

Cadmium concentrations exceeded BC guidelines in FLB and HCT leachate, and solid-phase cadmium concentrations were also elevated in some Gates Formation samples. Cadmium leach rates fluctuated for the first 20 weeks of leaching before increasing (Figure 5.1-28). The exception was in the Upper Gates Formation humidity cells, in which cadmium loadings remained low. The most rapid increase in leach rates was observed in Boulder Creek Formation cell HC4, in which cadmium loadings increased by over two orders of magnitude between weeks 20 to 55, before levelling out and remaining high in subsequent weeks. Cadmium leach rates also increased substantially in HC9 in weeks 40 through 85, after which time cadmium loadings began to decrease.

A full suite of metals are analyzed during humidity cell operation. Full humidity cell results and graphs of loadings are presented in Appendix 5 and 6.

### Elements Associated with Neutralization Potential

Calcium release rates typically increased by one to two orders of magnitude over the first 30 to 50 weeks and remained steady afterwards (Figure 5.1-29). The exceptions were the three humidity cells of Hulcross Formation mudstone, in which calcium release rates increased from approximately week 90. This increase coincided with rising sulphate leach rates and decreasing pH in those humidity cells.

Magnesium release rates followed a similar pattern to calcium, which is consistent with the presence of calcium and magnesium in the form of dolomite (Figure 5.1-30).

The carbonate molar ratio is the ratio of moles calcium and moles magnesium to moles sulphate (below).

$$\text{Carbonate Molar Ratio} = (\text{Calcium (moles)} + \text{Magnesium (moles)}) / \text{Sulphate (moles)}$$

A value of approximately 1.0 indicates that the rate of sulphide oxidation, to sulphate, is approximately equal to the rate of carbonate consumption. Values below 1.0 indicate that sulphate production is outstripping carbonate consumption and is usually accompanied by leachate pH values less than 6.0.

Most Project waste rock humidity cells have carbonate molar ratios very close to 1.0, indicating that sulphate production and carbonate consumption are approximately equal (Figure 5.1-31). Carbonate molar ratios are above 1.0 in Upper Gates Formation humidity cells, and highest in the Upper Gates carbonaceous mudstone humidity cell (HC6), as a result of low sulphate production. Acid-leaching Hasler Formation humidity cell HC9 (pH < 3.5) has a carbonate molar ratio of approximately 0.5 over the last 30 weeks. The carbonate molar ratios of Hulcross Formation humidity cells HC10, HC11, and HC12 have decreased to approximately 1.0, in line with increasing sulphate loadings and decreasing alkalinity and pH, indicating that sulphate production is outstripping carbonate consumption. The three Hulcross Formation humidity cells are therefore likely to become acid-leaching in the near future.

### Lag Times

Laboratory HCT results were used to calculate lag times to the onset of acidic leachate in waste rock. The average rate of sulphate production in each humidity cell was calculated from the mean steady state sulphate loadings in humidity cell leachate. Sulphate production rates were used to derive NP consumption rates, assuming sulphate production to be driven by sulphide oxidation, and the produced acidity to be consuming NP.



Figure 5.1-27

**Arsenic Production Rates for  
Waste Rock Humidity Cells by Formation**

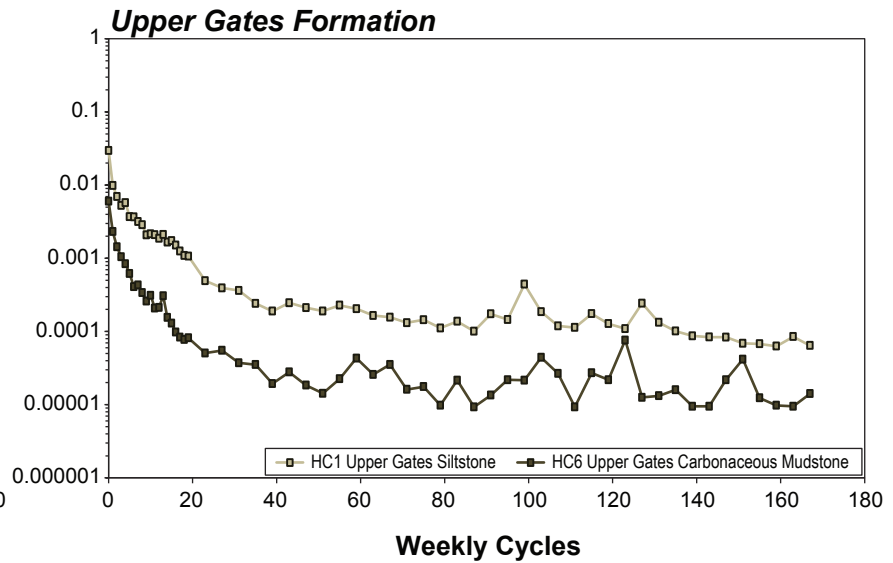
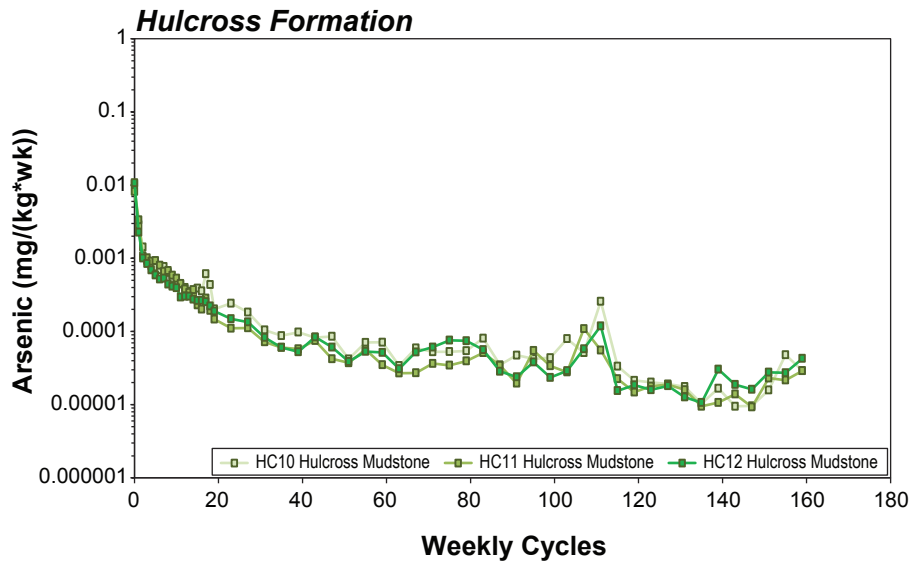
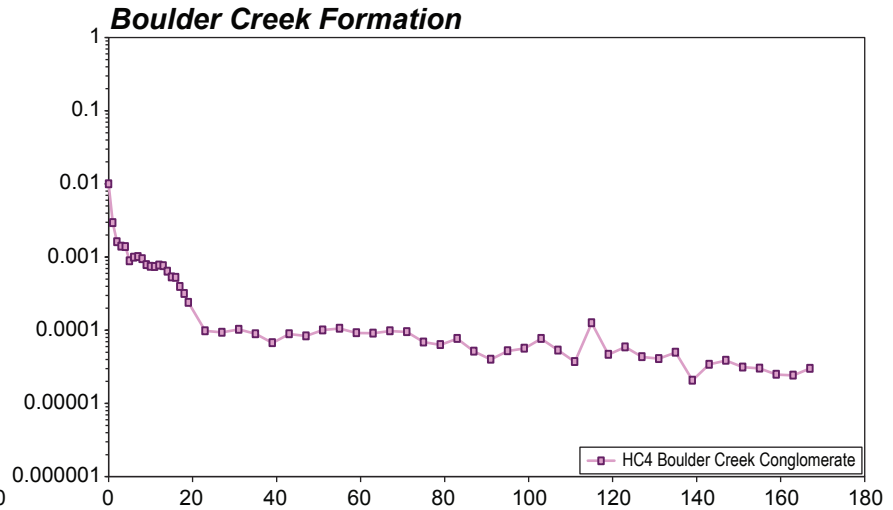
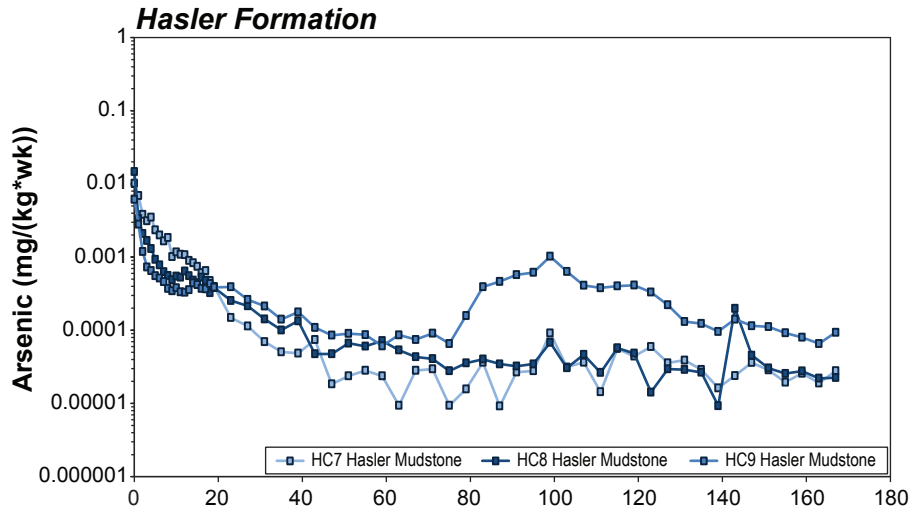


Figure 5.1-28

Cadmium Production Rates for Waste Rock Humidity Cells by Formation

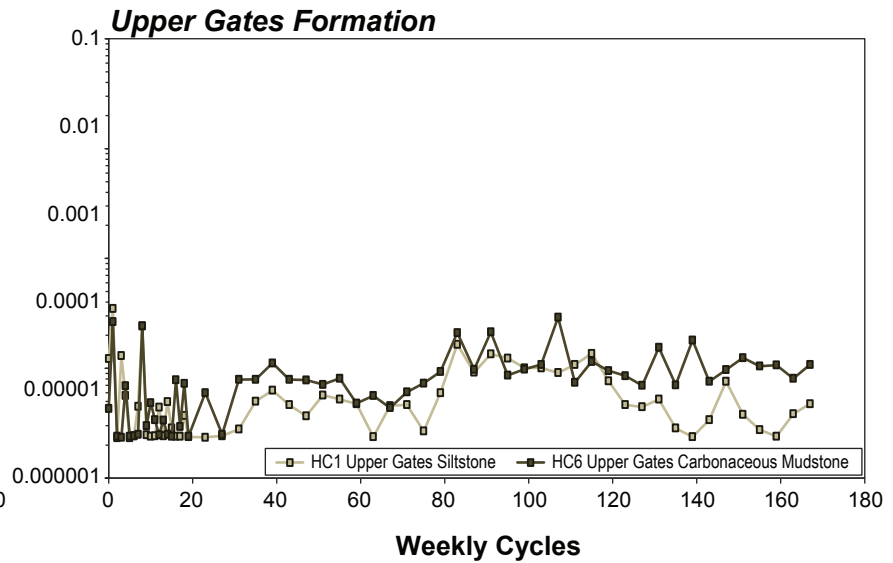
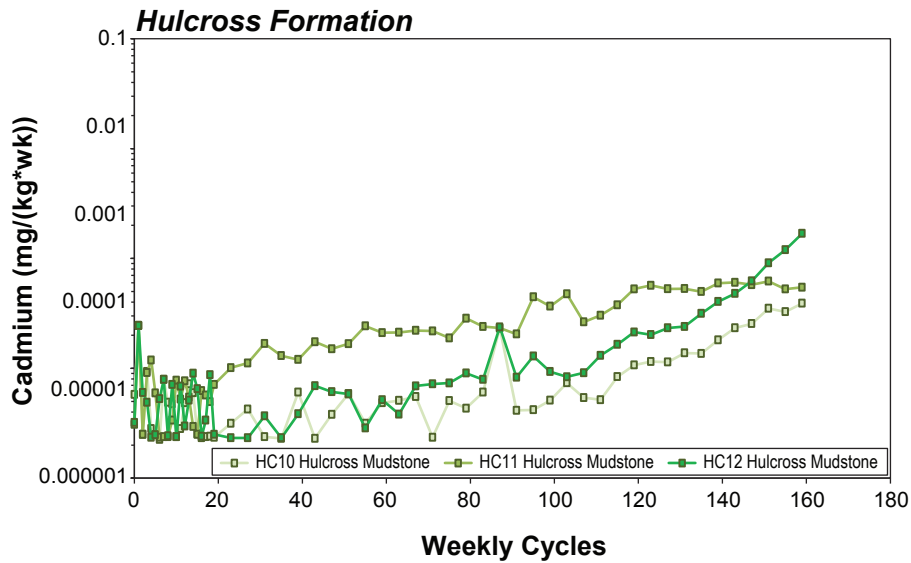
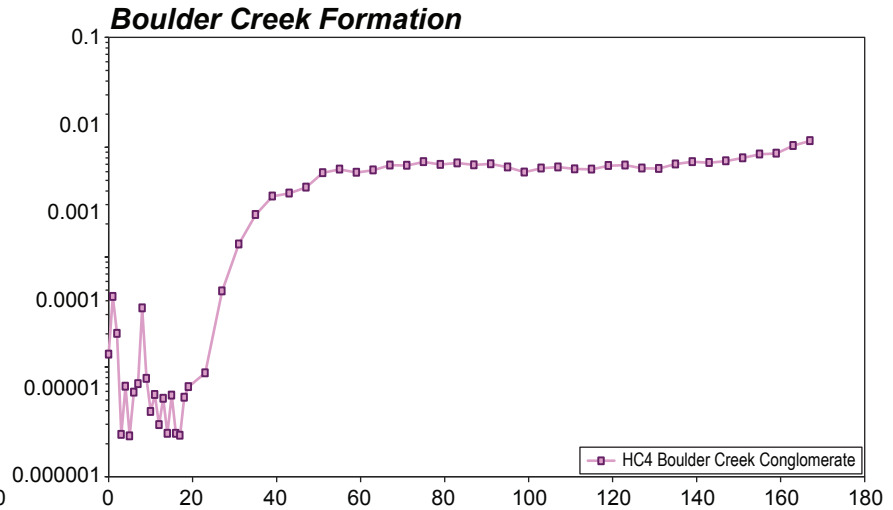
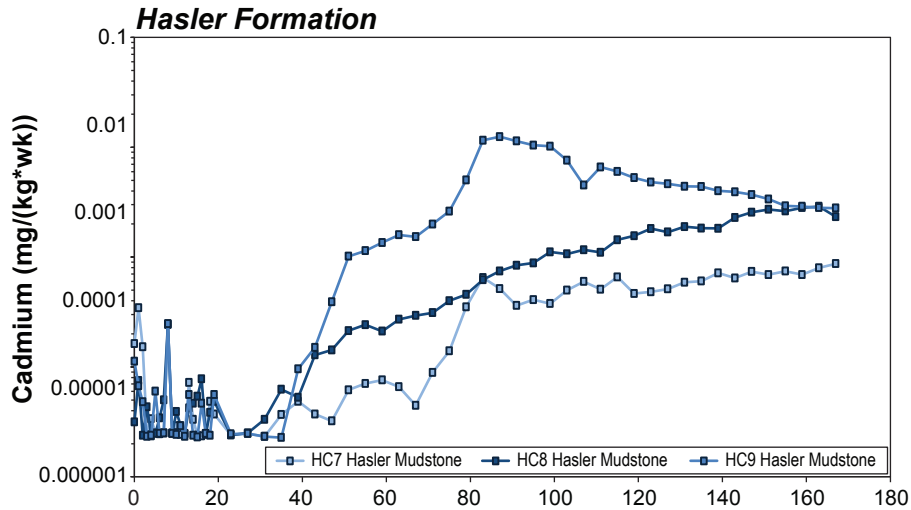


Figure 5.1-29

### Calcium Production Rates for Waste Rock Humidity Cells by Formation

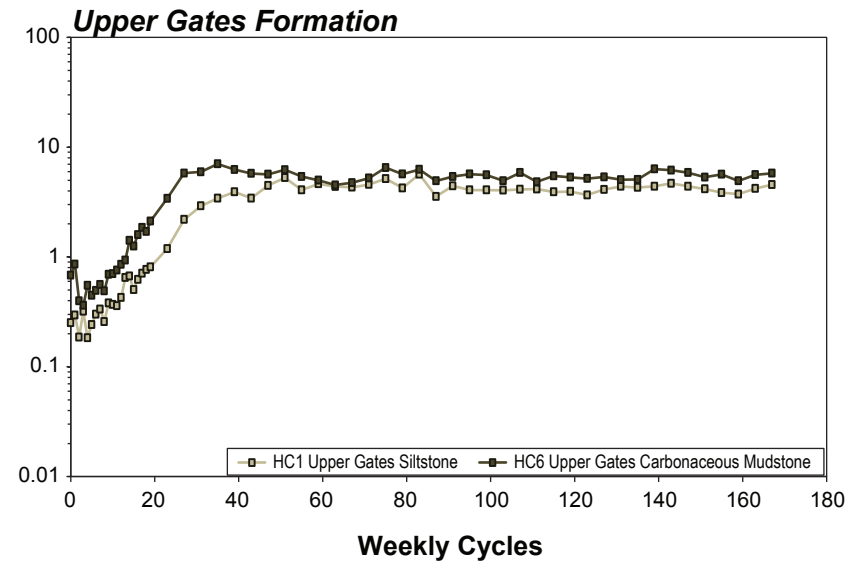
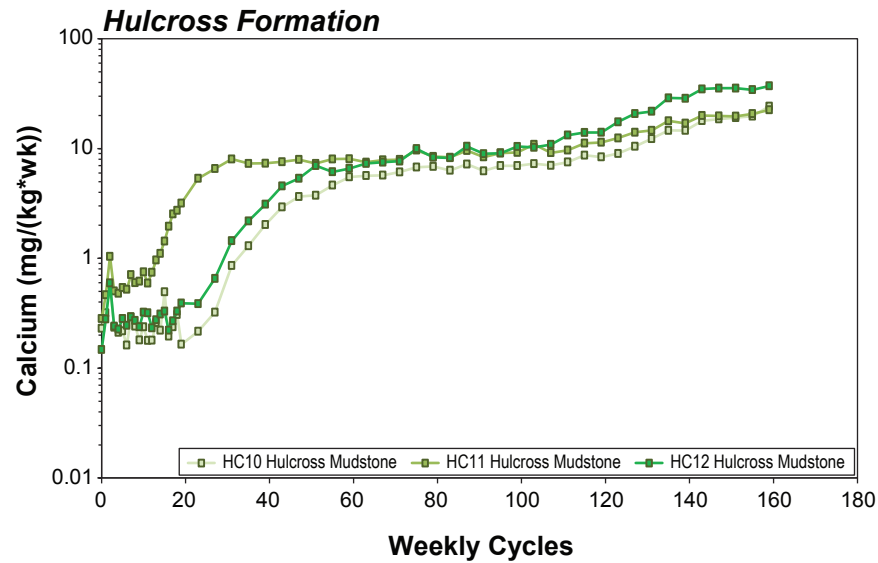
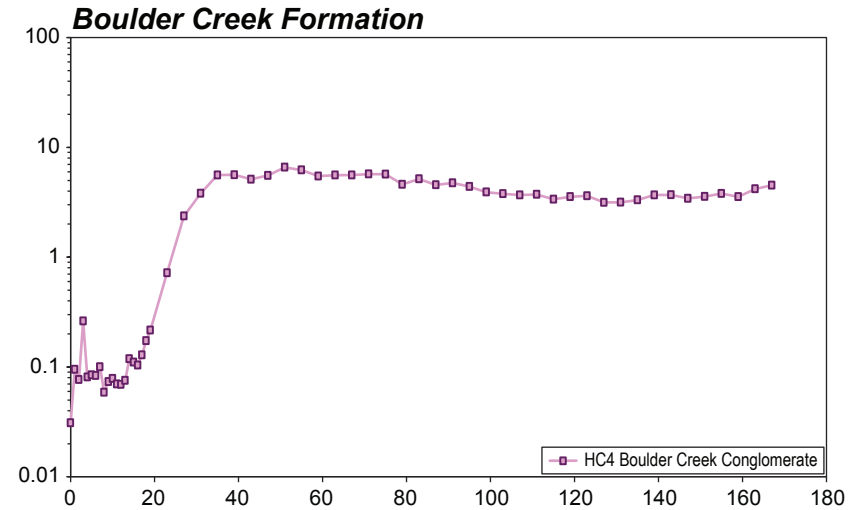
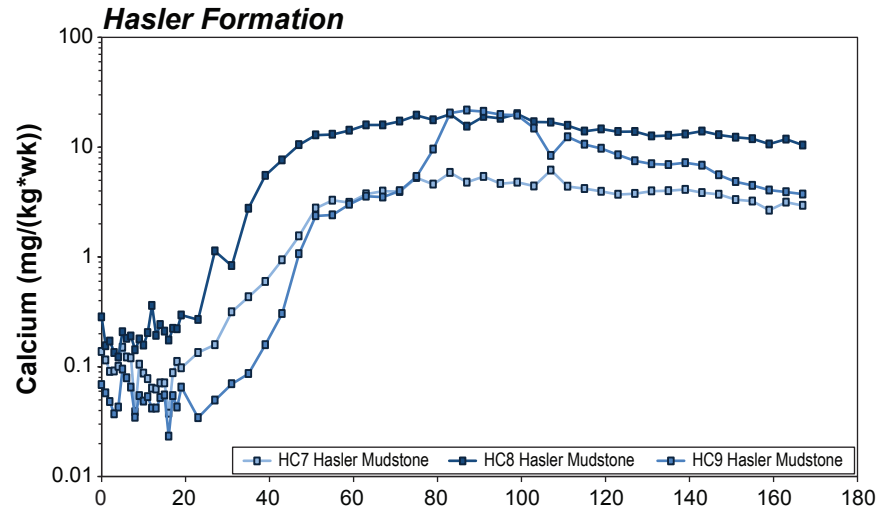


Figure 5.1-30

Magnesium Production Rates for Waste Rock Humidity Cells by Formation

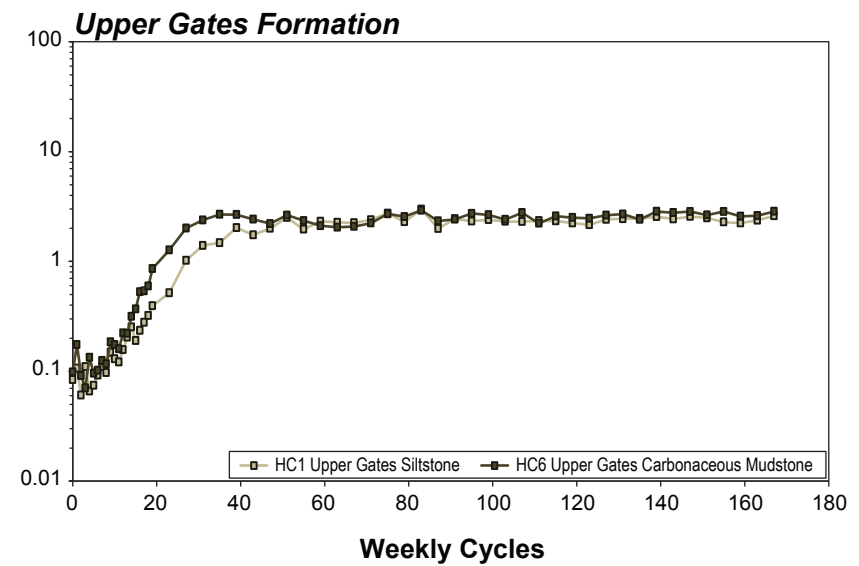
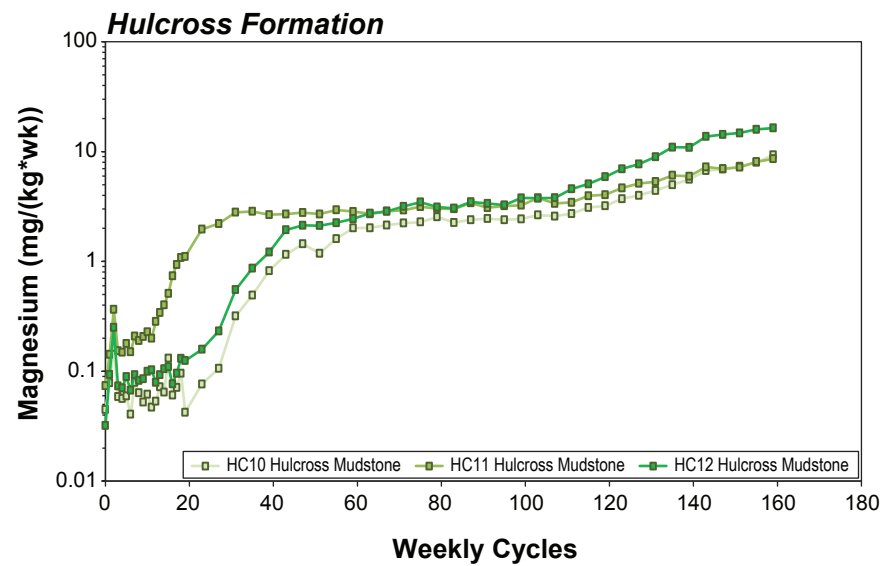
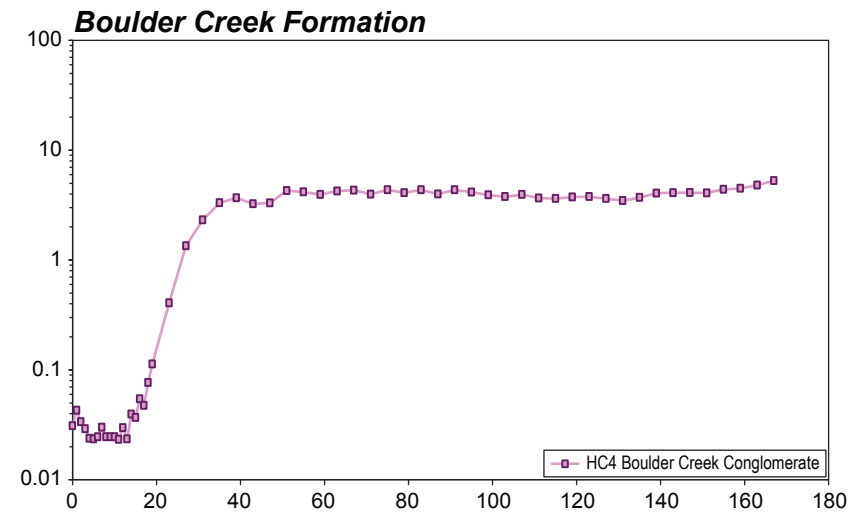
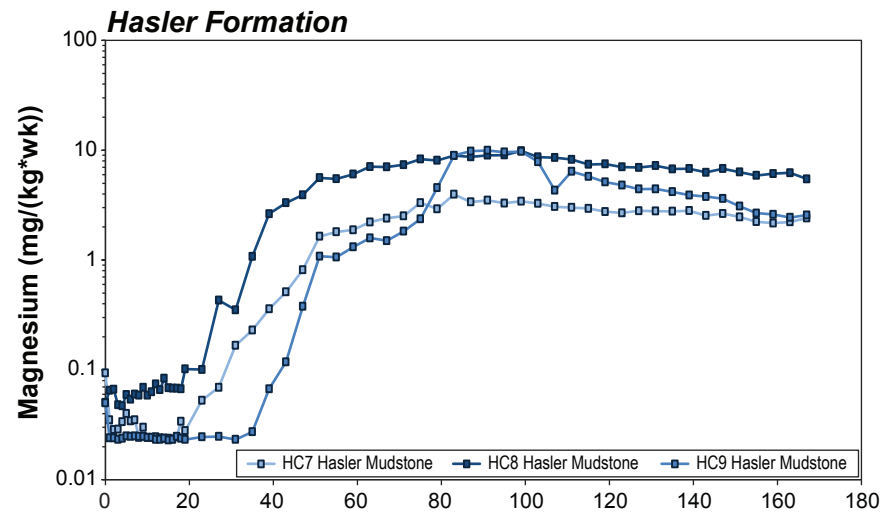
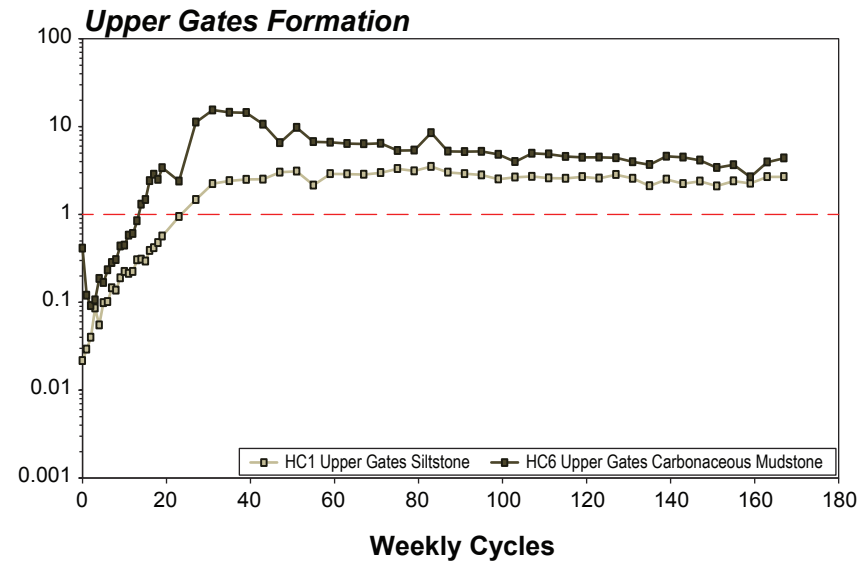
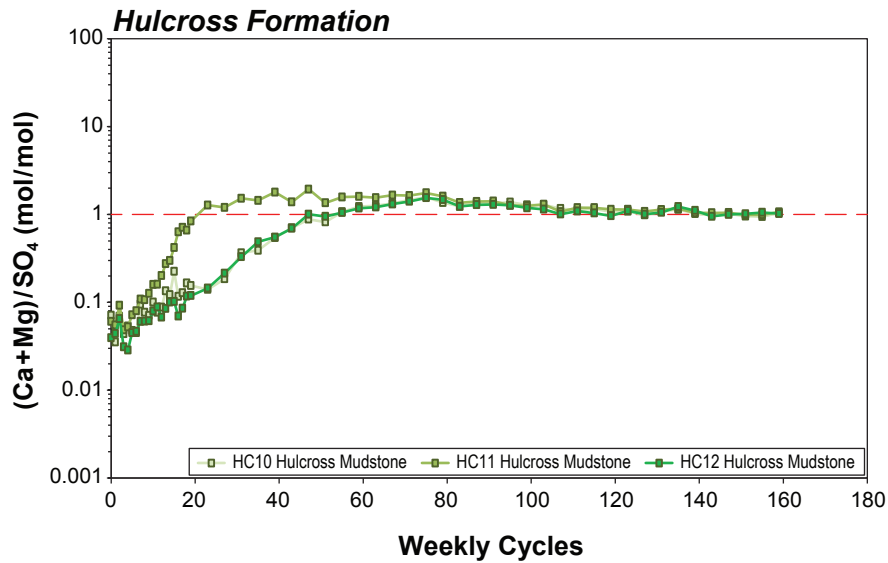
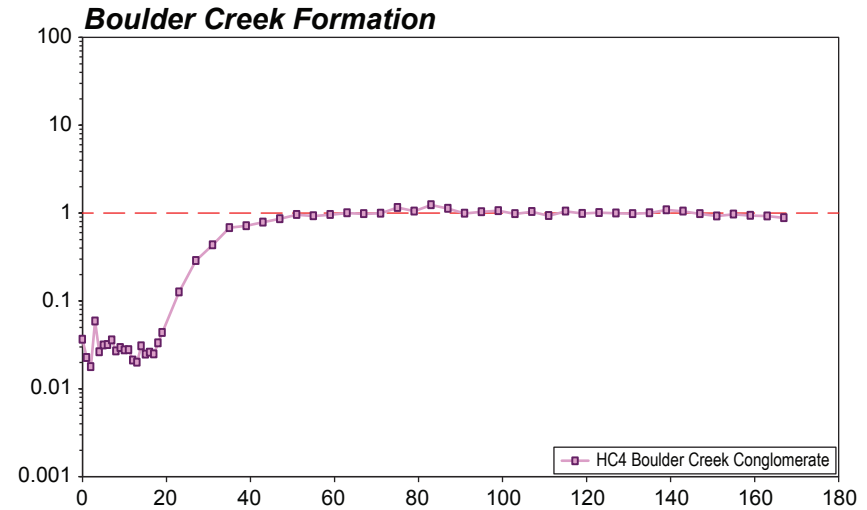
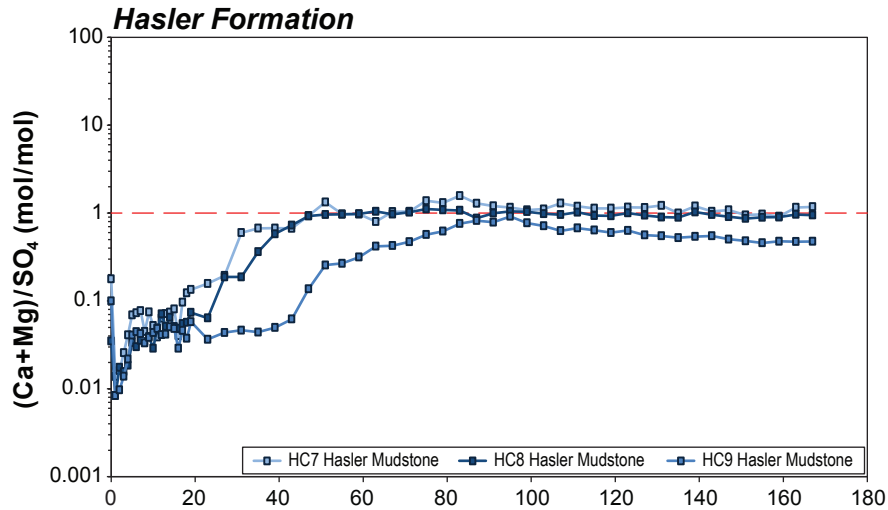


Figure 5.1-31

Carbonate Molar Ratios for  
Waste Rock Humidity Cells by Formation





The total sulphate produced and total NP consumed were subtracted from the initial sulphide sulphur and modified NP values respectively, to determine the amount of sulphide sulphur and NP remaining. These amounts were divided by the rates of sulphide production (equation 1) and NP consumption (equation 2) to estimate the time remaining until all sulphide sulphur and NP in the sample is depleted.

1. *Sulphide depletion (weeks) = [Initial S (mmol) - Total sulphate produced (mmol as S)] / [Rate of sulphate production (mmol/wk as S)]*
2. *NP depletion (weeks) = [Initial NP (mg CaCO<sub>3</sub>/kg) - Total NP consumed (mg CaCO<sub>3</sub>/kg)] / [Rate of NP consumption (mg CaCO<sub>3</sub>/kg\*wk)]*

If NP was predicted to become depleted before sulphide sulphur, then the sample was predicted to become net acid-generating upon depletion of NP; if sulphide sulphur was predicted to become depleted before NP, then the sample was not expected to become acid-generating. These calculated lag times were validated by comparison to laboratory data. Calculated lag times were typically longer than the times observed in humidity cells that have already become acid-leaching. This difference was likely due to the additional consumption of carbonate by other reactions than consumption by acidity produced through sulphate oxidation.

A correction factor was determined from the humidity cells that have already become acid-leaching. The predicted time to ARD onset was divided by a correction factor of 2.2 for mudstone and siltstone humidity cells. For the conglomerate humidity cell, a different correction factor of 6.1 was used, as the difference between predicted and observed times to ARD was greater than measured in mudstone and siltstone humidity cells. This result is consistent with the geochemical variability identified in static results between conglomerate samples and more well-sorted, finer-grained lithologies.

The predicted lag times to ARD onset are summarized in Table 5.1-15. For humidity cells that have become acid-leaching, the actual observed lag times are also included.

Of the currently acid-leaching humidity cells, the average length of time for PAG Hasler Formation mudstone samples to become acid-generating was 2.2 years. The PAG Boulder Creek Formation conglomerate humidity cell became acid-leaching in 0.8 years.

Leachate from PAG Hulcross Formation mudstone is predicted to become acidic after an average of 3.3 years. This prediction would indicate that the three Hulcross Formation humidity cells will become acid-leaching in the next few weeks, which is consistent with currently increasing sulphate loadings and decreasing alkalinity loadings in all three humidity cells. Calculated lag times will be compared to observed lag times when data are available to further refine the relevant correction factors.

Based on the high initial NP and low sulphate production rates, nPAG Upper Gates Formation humidity cells HC1 and HC6 are not expected to become acid-generating.

#### 5.1.3.2 *Field Leach Barrels*

Construction of the FLBs is outlined in Section 4.3.3. The leachate pH was not acidic for any FLBs after running for three years under site conditions, as presented in Figure 5.1-32. The concentrations of dissolved metals in the FLB leachate fluctuated between sampling events, but there was no significant overall change in metal concentrations since 2011. The exception was chloride, which steadily decreased with time in all four barrels (Figure 5.1-32). Volumes of leachate collected were frequently low, limiting the ability to test for parameters. If leachate volumes were low, dissolved metal concentrations were prioritized over total metals, resulting in a larger dataset of dissolved metal concentrations.

Table 5.1-15. Summary of Predicted and Observed Lag Times for Waste Rock Humidity Cells

Cell ID	Formation	Lithology	ABA Results				pH last 10 weeks pH unit	Average Sulphate Production Rate <sup>1</sup> (mmol S/kg/wk)	Time to Sulphide Depletion <sup>2</sup> (years)	Bulk NP Consumption Rate <sup>1</sup> (mg CaCO <sub>3</sub> /kg/wk)	Time to NP Depletion <sup>2</sup> (years)	Predicted Total Time to ARD Onset <sup>2</sup> (years)	Observed Time to ARD Onset (if applicable) (years)
			Sulphide-Sulphur (%)	NP kg CaCO <sub>3</sub> /t	TIC (% C)	SNPR unitless							
HC7	Hasler	Mudstone	0.24	4.9	0.17	0.66	6.11	0.17	8.9	16.9	6.1	2.8	3.2
HC8	Hasler	Mudstone	0.78	23.6	0.66	0.97	4.51	0.57	8.2	57.3	8.1	3.7	2.4
HC9	Hasler	Mudstone	1.82	5.0	0.01	0.09	3.34	0.45	23.9	45.2	2.0	0.9	1.0
HC4	Boulder Creek	Conglomerate	2.68	7.4	1.13	0.09	4.71	0.30	53.9	30.0	5.2	0.9	0.8
HC10	Hulcross	Mudstone	1.33	22.3	0.30	0.54	7.29	0.80	12.0	80.1	7.4	3.4	N/A
HC11	Hulcross	Mudstone	1.06	29.5	0.38	0.89	7.38	0.80	9.8	79.9	9.0	4.1	N/A
HC12	Hulcross	Mudstone	1.44	23.7	0.28	0.53	7.19	1.47	8.0	147.1	5.3	2.4	N/A
HC1	Upper Gates	Siltstone	0.72	55.6	0.69	2.46	7.82	0.08	53.3	8.2	131	not expected	N/A
HC6	Upper Gates	Carbonaceous Mudstone	1.24	170.0	2.58	4.39	8.25	0.07	101	7.5	439	not expected	N/A

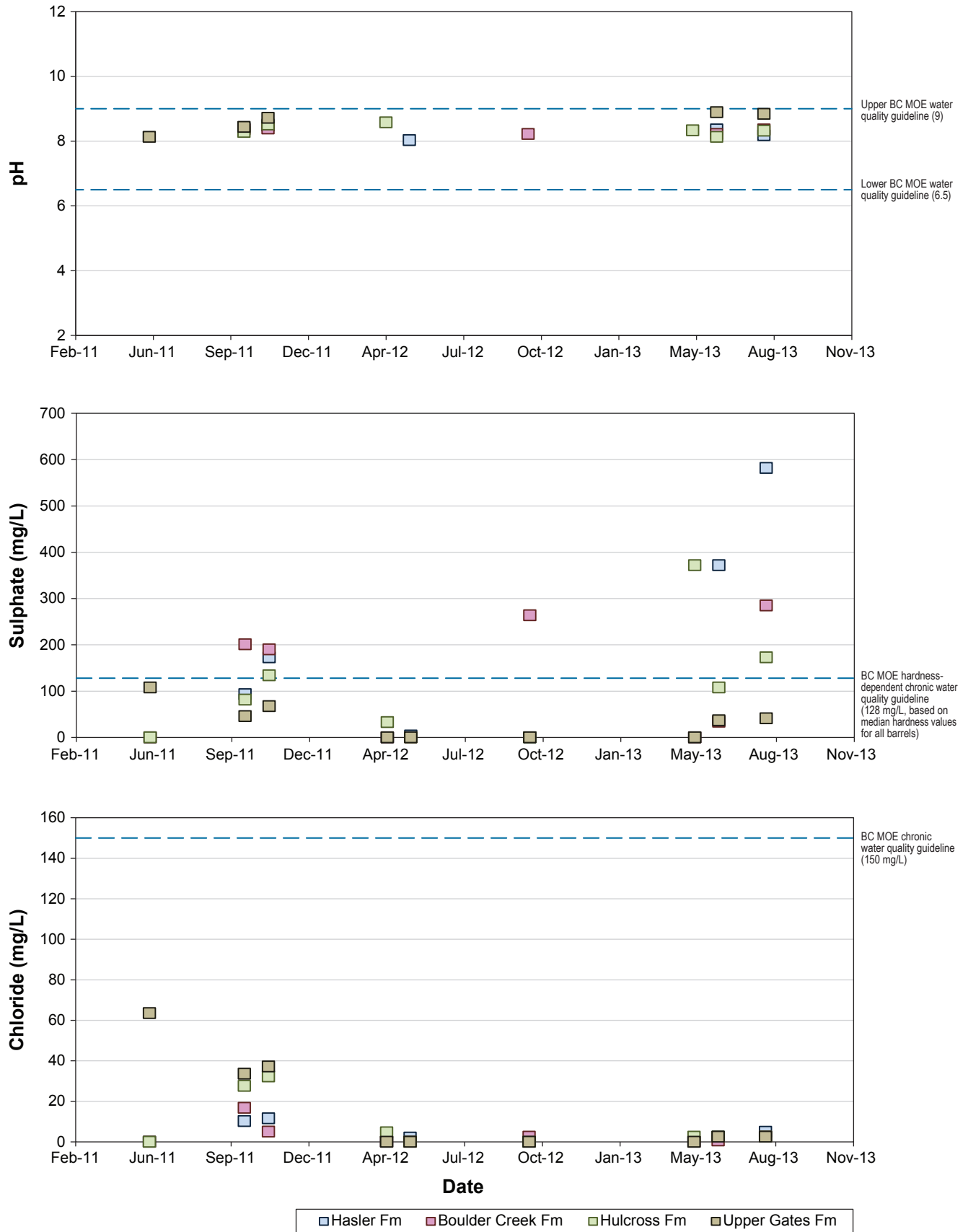
<sup>1</sup> Calculated from last 10 weeks of data

<sup>2</sup> Includes time that humidity cells have been running

Grey highlighted humidity cells were acid-leaching as of the end of April 2014

N/A = not applicable

**Figure 5.1-32**  
**Field Leach Barrel**  
**pH, Sulphate, and Chloride Results**



Dissolved metal concentrations in the leachate collection pails were compared to BC water quality guidelines for dissolved metals (where guidelines existed) or total metals. Dissolved aluminum, arsenic, chromium, copper, iron, selenium, and zinc frequently exceeded BC 30-day average or maximum water quality guidelines in FLB leachate (Figures 5.1-33 and 5.1-34).

Field leach barrel results are presented in Appendix 7.

#### 5.1.4 ML/ARD Potential and Mitigation

Sulphur content and NP varied significantly between different formations of waste rock, and as a result the ML/ARD potential of waste rock was variable. Sulphur was present typically as sulphide sulphur, with pyrite the dominant sulphide mineral. Calcite, dolomite, ankerite, and siderite were all identified as carbonate minerals present in waste rock, with dolomite typically more abundant than calcite, and siderite mostly identified in samples from the Boulder Creek Formation.

Based on analyses of ABA, elemental abundances, mineralogy, and humidity cells; waste rock from the Hasler and Hulcross formations is predicted to have a high potential to be acid-generating, principally due to high sulphide content. The results of the ML/ARD characterization program for waste rock are summarized in Table 5.1-16.

**Table 5.1-16. Waste Rock ML/ARD Characterization Summary**

Formation	Overburden	Hasler	Boulder Creek	Hulcross	Upper Gates	Middle Gates Interburden
Mass proposed waste rock (kt)	31	238	42	43	129	
Number ABA Samples	7	45	30	31	32	22
ARD Potential <sup>†</sup>						
PAG	14.3%	86.7%	30.0%	90.3%	15.6%	9.1%
nPAG	85.7%	13.3%	70.0%	9.7%	84.4%	90.9%
BC guideline exceedances in leachate from SFE	Al <sup>†</sup> , Fe <sup>‡</sup> , As, Se, V, Zn	Al <sup>†</sup> , Ag, As, Sb, Se, V	Al <sup>†</sup> , As, Cr, Fe <sup>‡</sup> , Sb, Se, Tl, V, Zn	Al <sup>†</sup> , Ag, As, Cr, Fe <sup>‡</sup> , Se, V	Al <sup>†</sup> , Ag, As, Cr, Fe <sup>‡</sup> , Sb, Se, V, Zn	Al <sup>†</sup> , As, Cr, Fe <sup>‡</sup> , Sb, Se, V
BC guideline exceedances in leachate from FLB	n/a	Al <sup>†</sup> , As, Cd, Cr, Co, Cu, Fe <sup>‡</sup> , Pb, Li, Hg, Se, Zn	Al <sup>†</sup> , As, Cd, Cr, Co, Cu, Fe <sup>‡</sup> , Li, Hg, Se, Zn	Al <sup>†</sup> , As, Cd, Cr, Co, Cu, Fe <sup>‡</sup> , Pb, Li, Hg, Se, Ag, V, Zn	Al <sup>†</sup> , As, Cd, Cr, Co, Cu, Fe <sup>‡</sup> , Pb, Li, Hg, Ni, Se, Ag, Zn	n/a
BC guideline exceedances in leachate from HCT*	n/a	Al <sup>†</sup> , Cd, Cr, Co, Cu, Ni, Zn	Al <sup>†</sup> , Cd, Co, Cu, Ni, Se, Zn	Cd, Se	Cd	n/a

<sup>†</sup>ARD potential is based on SNPR, where  $SNPR \geq 2.0 = nPAG$ ,  $SNPR < 2.0 = PAG$

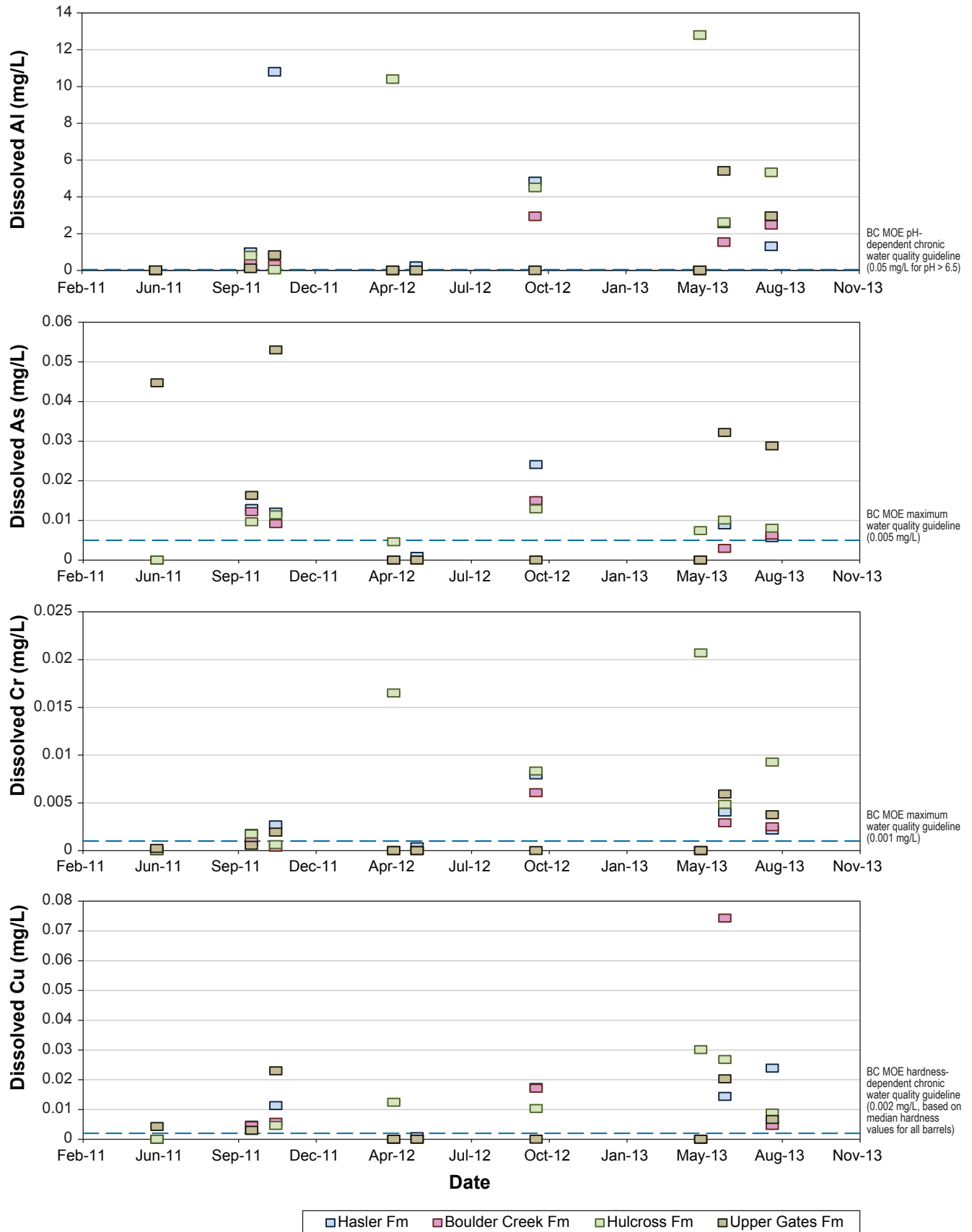
<sup>‡</sup> Concentration compared to dissolved phase guideline

\* HCT concentrations from steady state weeks were compared to guidelines

n/a = no data or samples available

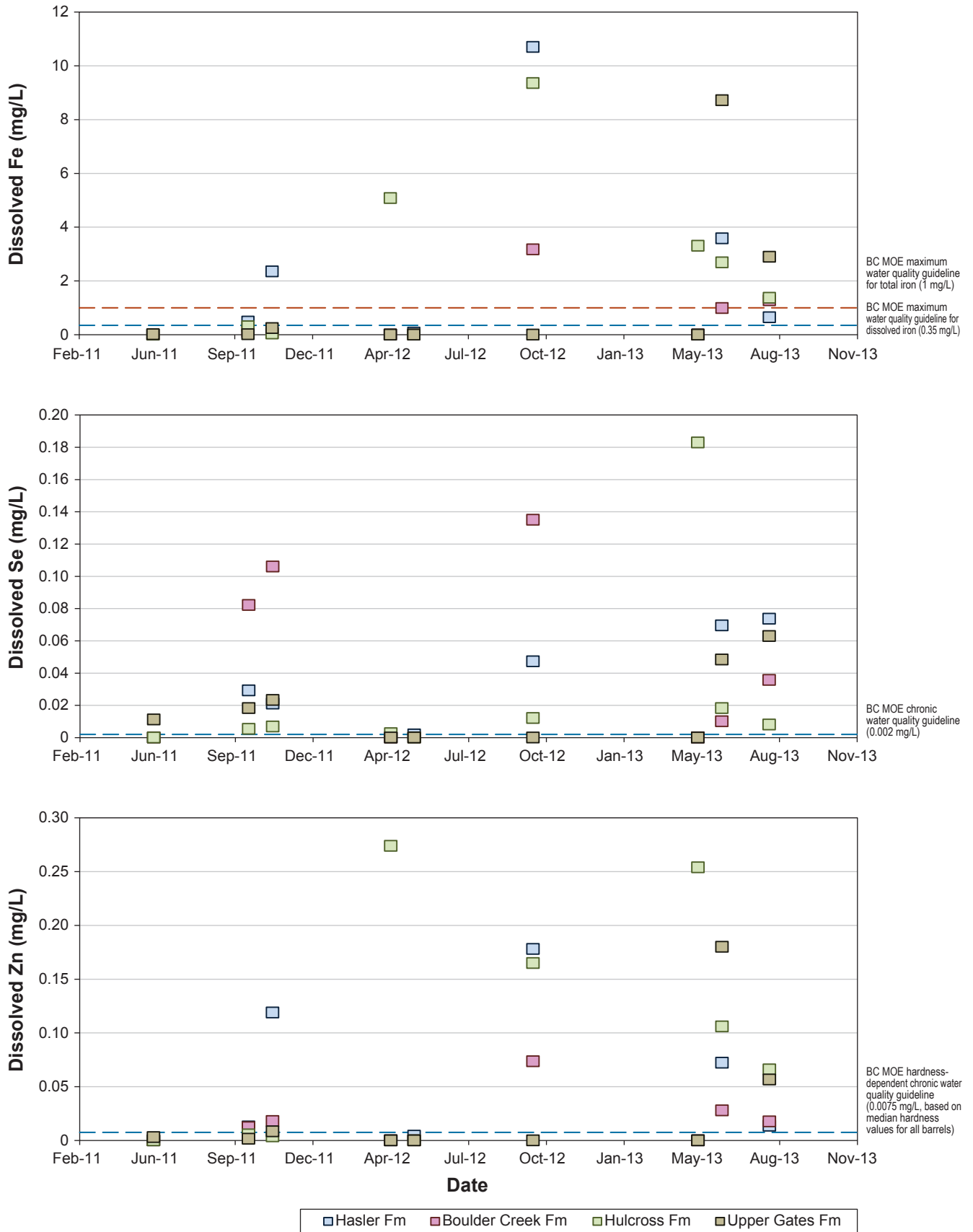
Waste rock from the Boulder Creek Formation showed the most variability in carbonate and sulphide content. Approximately 30% of Boulder Creek waste rock samples were predicted to be PAG, mostly mudstone and conglomerate samples with high sulphur content and low carbonate. Sandstone and siltstone samples from the Boulder Creek Formation typically had high SNPR values, suggesting the potential for segregation by lithology within this formation.

**Figure 5.1-33**  
**Field Leach Barrel Aluminum, Arsenic, Chromium, and Copper Results**





**Figure 5.1-34**  
**Field Leach Barrel**  
**Iron, Selenium, and Zinc Results**



The Gates Formation was high in carbonate and NP and typically had much lower sulphur concentrations than samples from the Hasler or Hulcross formations. Two humidity cells constructed from Gates Formation waste rock material maintained steady high pH and low sulphate leach rates after more than 150 weeks of flushing. The Gates Formation, including material above the D coal seam and interburden rock from between the targeted coal seams, appears therefore to have a low potential for acid generation. Over 90% of Middle Gates interburden samples were classified as nPAG (Table 5.1-15).

### 5.2 COAL

Raw, or run-of-mine (ROM) coal is the raw material that will be mined from the coal seams. During mining operations, raw coal will be transported from the mining face through the production decline to the surface, where it will be stockpiled prior to processing at the CPP. After processing, clean coal and middlings will be directed to the rail loadout and transported off the property, and coarse and fine reject material will be stored in a reject pile. The planned stockpile locations are illustrated in Figure 3.2-1.

Approximately 70% of the total mined coal is expected to be recovered as clean coal; coarse and fine rejects constitute the remainder. Approximately 70% of rejects are expected to be CCR, and 30% of rejects are expected to be tailings.

The locations of raw coal, clean coal, CCR, and tailings samples are displayed by coal seam in Figures 4.1-7 to 4.1-11. Appendix 8 contains the raw data for all coal samples.

The following sections discuss static, leachate, and kinetic results for coal samples, analyzing variability in ML/ARD potential between the different coal seams in the Middle Gates Formation.

#### 5.2.1 Static Results

The mass of raw coal expected to be mined from each coal seam is summarized in Table 4.2-3. The highest abundance of coal to be mined is in J seam, from which 75 Mt of raw coal is expected to be produced over the life the mine, for 51% of the total coal to be mined.

Coal sample results were analyzed by seam, by material, and by mine block. Variability between seams was typically greater than variability between different materials within the same seam. The most significant intra-seam variation was between clean coal and other materials. The bulk of coal samples collected were CCR and tailings. Results in the following sections are presented and discussed primarily by coal seam, with intra-seam variation noted where present.

Samples were also analyzed by mining block. Some tailings samples were composited from multiple drill holes within the same block due to small sample sizes. No significant trends in spatial variability were identified between samples of different mine blocks within the same coal seams.

Selected samples were inspected for mineralogy by Rietveld XRD. The majority of minerals identified were quartz, feldspar, and hydrated aluminosilicates such as illite and muscovite, as summarized in Table 5.2-1. Varying abundances of carbonate and sulphide minerals were identified, as discussed below.

Coal ABA and elemental abundance results are in Appendix 8. Appendix 9 contains Rietveld XRD results for coal samples.

##### 5.2.1.1 Paste pH

Measured pH values were typically neutral to alkaline. In all seams, tailings samples had slightly lower median pH values compared with other material. Paste pH values are summarized by seam and material in Table 5.2-2.

**Table 5.2-1. Average Mineral Abundance of Coal Samples by Seam**

Coal Seam	Quartz and Feldspar	Hydrated Aluminosilicates	Carbonate			Sulphide	Others
			Calcite	Dolomite and Ankerite	Siderite		
D (n = 9)	54%	39%	0%	2%	1%	3%	1%
E (n = 3)	65%	31%	0%	2%	1%	1%	1%
F (n = 6)	44%	53%	1%	1%	0%	1%	1%
G/I (n = 4)	49%	36%	2%	10%	1%	1%	1%
J (n = 5)	42%	45%	2%	4%	5%	2%	1%

Note: Values rounded to the nearest whole number

Clean coal samples were not included in calculation of average abundances per seam, as they contained ~95% amorphous material, assumed to be organic carbon.

**Table 5.2-2. Statistical Summary of Paste pH Values of Coal Seams by Material**

	Min	25th	Mean	Median	75th	Max
<b>D Seam</b>						
Raw Coal (n = 4)	7.6	-	8.4	-	-	9.2
Clean Coal (n = 2)	8.3	-	8.5	-	-	8.8
CCR (n = 27)	5.0	8.4	8.6	9.0	9.2	9.7
Tailings (n = 4)	7.5	-	7.8	-	-	8.0
<i>All D Seam (n = 37)</i>	<i>5.0</i>	<i>8.0</i>	<i>8.5</i>	<i>8.7</i>	<i>9.2</i>	<i>9.7</i>
<b>E Seam</b>						
Raw Coal (n = 1)	-	-	8.8	-	-	-
Clean Coal (n = 2)	8.9	-	9.1	-	-	9.2
CCR (n = 14)	8.3	9.0	9.1	9.2	9.3	9.4
Tailings (n = 3)	8.3	-	8.4	-	-	8.5
<i>All E Seam (n = 20)</i>	<i>8.3</i>	<i>8.7</i>	<i>9.0</i>	<i>9.1</i>	<i>9.3</i>	<i>9.4</i>
<b>F Seam</b>						
Raw Coal (n = 3)	8.3	-	9.1	-	-	10.0
Clean Coal (n = 3)	9.2	-	9.5	-	-	10.1
CCR (n = 27)	5.4	8.8	9.0	9.1	9.4	9.7
Tailings (n = 4)	8.2	-	8.4	-	-	8.5
<i>All F Seam (n = 37)</i>	<i>5.4</i>	<i>8.6</i>	<i>9.0</i>	<i>9.1</i>	<i>9.3</i>	<i>10.1</i>
<b>G/I Seam</b>						
Raw Coal (n = 2)	9.3	-	9.5	-	-	9.6
Clean Coal (n = 0)	-	-	-	-	-	-
CCR (n = 18)	8.6	8.9	9.2	9.3	9.6	9.7
Tailings (n = 3)	8.3	-	8.4	-	-	8.6
<i>All G/I Seam (n = 23)</i>	<i>8.3</i>	<i>8.7</i>	<i>9.1</i>	<i>9.3</i>	<i>9.6</i>	<i>9.7</i>
<b>J Seam</b>						
Raw Coal (n = 1)	-	-	9.0	-	-	-
Clean Coal (n = 3)	8.5	-	9.5	-	-	10.0
CCR (n = 27)	7.9	8.9	9.1	9.3	9.4	9.7
Tailings (n = 4)	8.3	-	8.5	-	-	8.8
<i>All J Seam (n = 35)</i>	<i>7.9</i>	<i>8.7</i>	<i>9.0</i>	<i>9.2</i>	<i>9.4</i>	<i>10.0</i>

- n < 6, value not calculated

While paste pH values were consistent between seams, acidic pH values were observed in two CCR samples. One sample from D seam had a measured paste pH of 5.0, and one sample from F seam had a measured paste pH of 5.4, indicating stored acidity in these two samples. The statistical ranges of pH values in coal samples are presented graphically in Figure 5.2-1.

#### 5.2.1.2 Sulphur Species and Acid Potential Sources

Total sulphur and sulphide sulphur concentrations in coal samples were variable, as presented in Figure 5.2-1. Total sulphur concentrations were correlated well with sulphide sulphur content in samples with greater than 0.05% sulphur (Figure 5.2-2), indicating that the majority of sulphur was in the form of sulphide sulphur in samples with high sulphur content. Summary statistics of sulphide sulphur values are presented in Table 5.2-3. Sulphide sulphur content ranged from below the detection limit to a maximum of 6.11% in a sample of CCR from the D seam. Average and median sulphur values were typically highest in tailings material, although the highest ranges of values were observed in CCR samples. In every seam, the maximum sulphide sulphur concentration was observed in a sample of CCR.

Total sulphur concentrations measured by Leco furnace were compared with sulphur content measured by ICP-MS following aqua regia digestion, which does not digest organic sulphur forms. The two analyses were well correlated for most samples at sulphur contents above 0.3%, as presented in Figure 5.2-2. The exception was clean coal, in which ICP-MS sulphur was lower than sulphur by Leco, indicating the presence of measurable organic sulphur in clean coal samples. Consequently, the maximum of measured and calculated sulphide sulphur were used to determine acid potential.

Sulphur concentrations in most samples were low to moderate. As illustrated in Figure 5.2-3, greater than 75% of samples in all seams contained less than 1% sulphide sulphur. The highest sulphide content was in the D seam, with up to 1.51% sulphide in tailings samples and up to 6.11% sulphide in CCR material. E and F seams typically had the lowest sulphur content.

Sulphate sulphur concentrations were low in most samples, generally at or below the detection limit value of 0.01% sulphur. The highest measured sulphate sulphur value was 0.08%, in CCR samples from the D and G/I seams. The highest mean sulphate sulphur concentrations were generally in clean coal samples.

Rietveld XRD analysis of coal samples identified the presence of iron sulphide minerals in 25 out of 31 analyzed samples (Table 5.2-1). D seam contained the highest average abundance of sulphide minerals, and E and F seams contained the lowest abundance of pyrite and marcasite. This was consistent with the results of the sulphide sulphur analyses.

#### 5.2.1.3 Carbonate Species and Neutralization Potential Sources

Bulk neutralization potential was assessed by the modified Sobek NP method for all coal samples. Modified NP values were variable among seams. Summary statistics of modified NP values are presented in Table 5.2-4, and Figure 5.2-4, and the cumulative frequency distributions by coal seam are presented in Figure 5.2-5. NP values were highest in samples from G/I seam, ranging from 5 to 233 kg CaCO<sub>3</sub>/t with a median value of 72 kg CaCO<sub>3</sub>/t. E seam samples typically had the lowest NP values, with NP values below 25 kg CaCO<sub>3</sub>/t observed in 95% of E seam samples. D, F, and J seams all had similar NP ranges, with median NP values between 15 and 21.

Additional assessment of NP was performed by analyzing the various elements that are representative of carbonate mineral abundance and quantifying their contribution to NP. Inorganic carbon NP, iron carbonate corrected inorg NP, Ca NP, and CaMg NP were compared to modified NP results, as presented in Figure 5.2-6.

Figure 5.2-1

Statistical Summary of Paste pH, Total Sulphur, and Sulphide Sulphur Results by Coal Seam

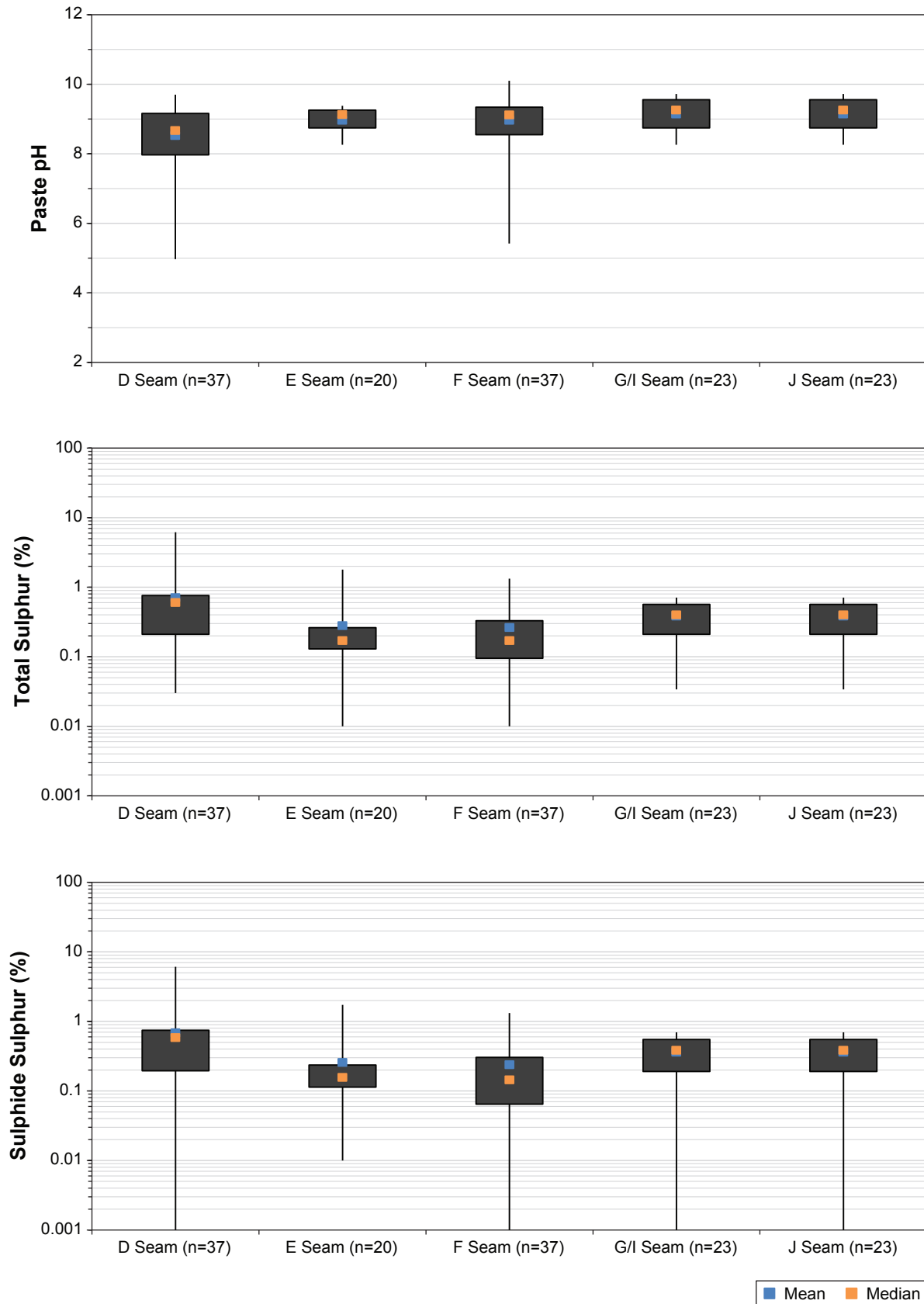
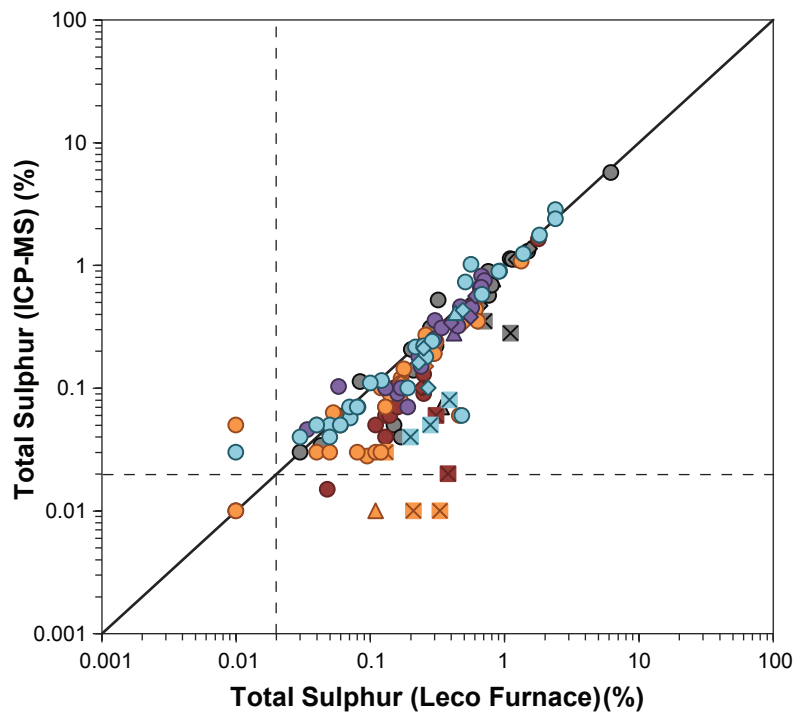
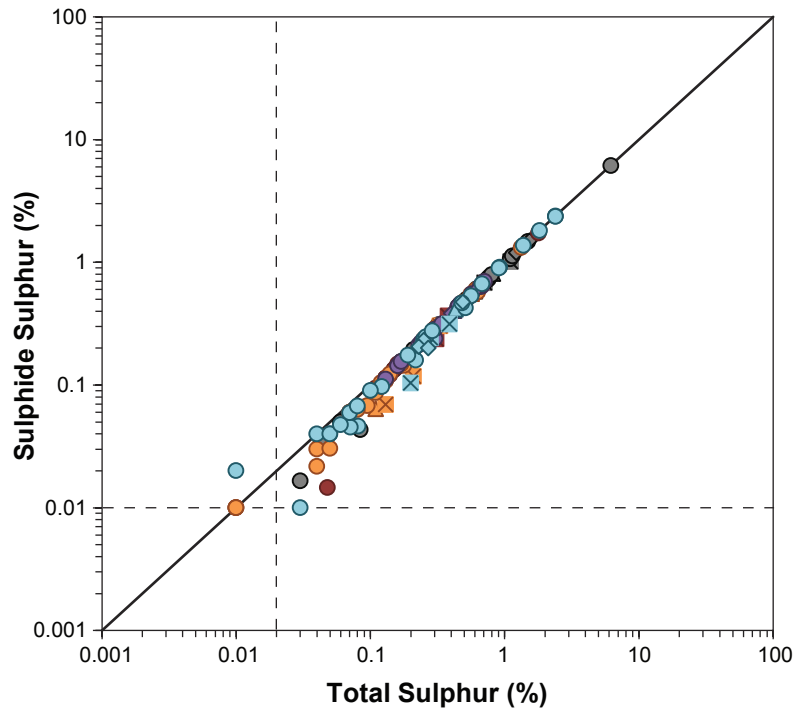




Figure 5.2-2

Sulphide Sulphur vs. Total Sulphur, and Total Sulphur by ICP-MS vs. Total Sulphur by Leco Furnace, by Coal Seam



▲ D Seam - Raw coal	⊠ D Seam - Clean coal	● D Seam - CCR	◆ D Seam - Tailings	▲ E Seam - Raw coal
■ E Seam - Clean coal	● E Seam - CCR	◆ E Seam - Tailings	▲ F Seam - Raw coal	⊠ F Seam - Clean coal
● F Seam - CCR	◆ F Seam - Tailings	▲ G/I Seam - Raw coal	● G/I Seam - CCR	◆ G/I Seam - Tailings
▲ J Seam - Raw coal	⊠ J Seam - Clean coal	● J Seam - CCR	◆ J Seam - Tailings	

Note: One-half the detection limit was used where data was reported at or below the detection limit.  
Dashed lines indicate the detection limit values for total sulphur (0.02%) and sulphide sulphur (0.01%).

Figure 5.2-3

Cumulative Frequency of Sulphide Sulphur Results by Coal Seam

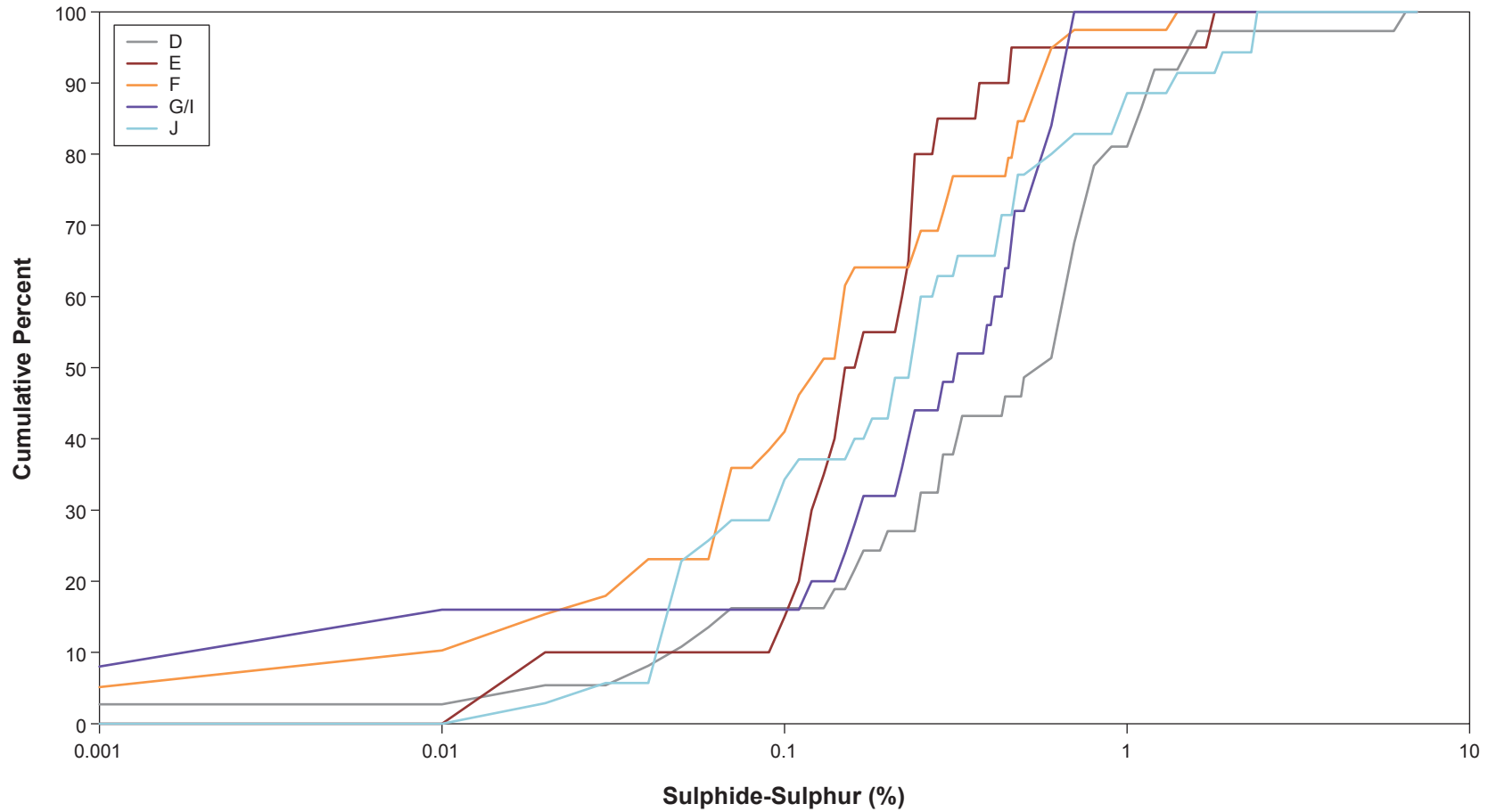
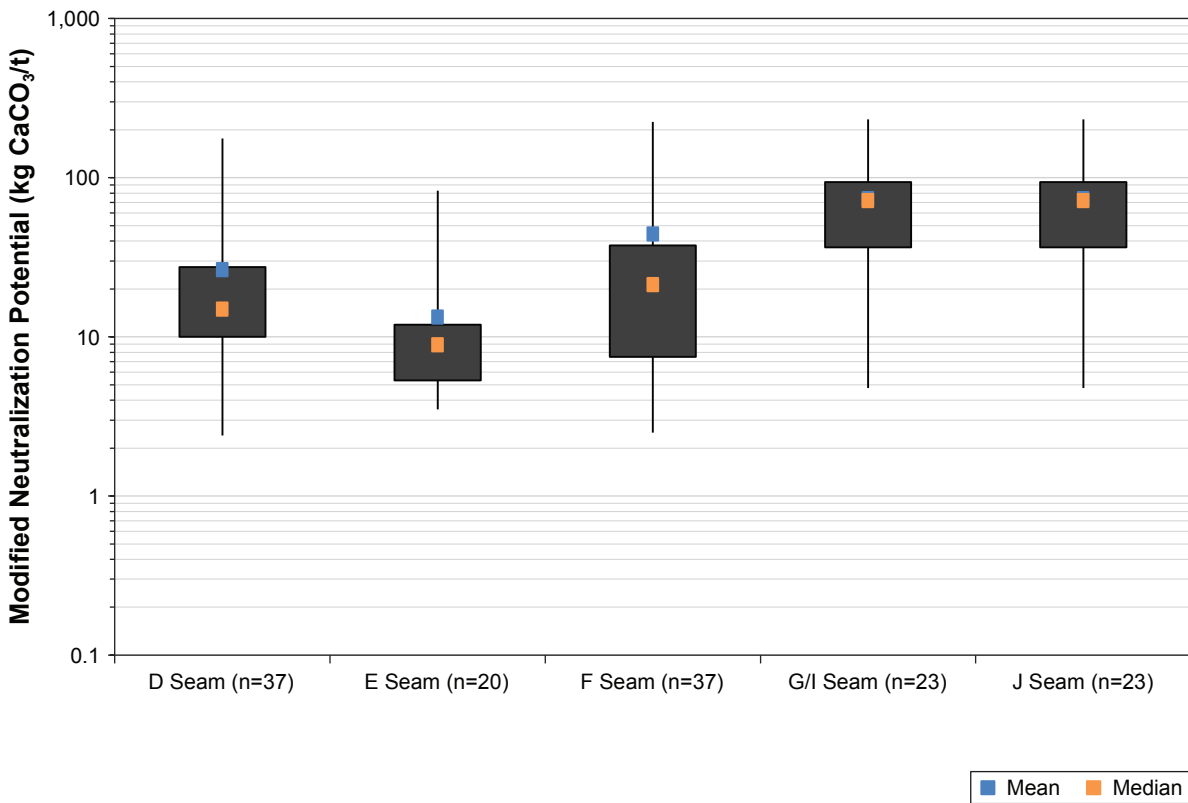


Figure 5.2-4  
Statistical Summary of Modified  
Neutralization Potential Results by Coal Seam



Note: 25<sup>th</sup> to 75<sup>th</sup> percentile is represented by the shaded box.

Figure 5.2-5

Cumulative Frequency of Modified Neutralization Potential Results by Coal Seam

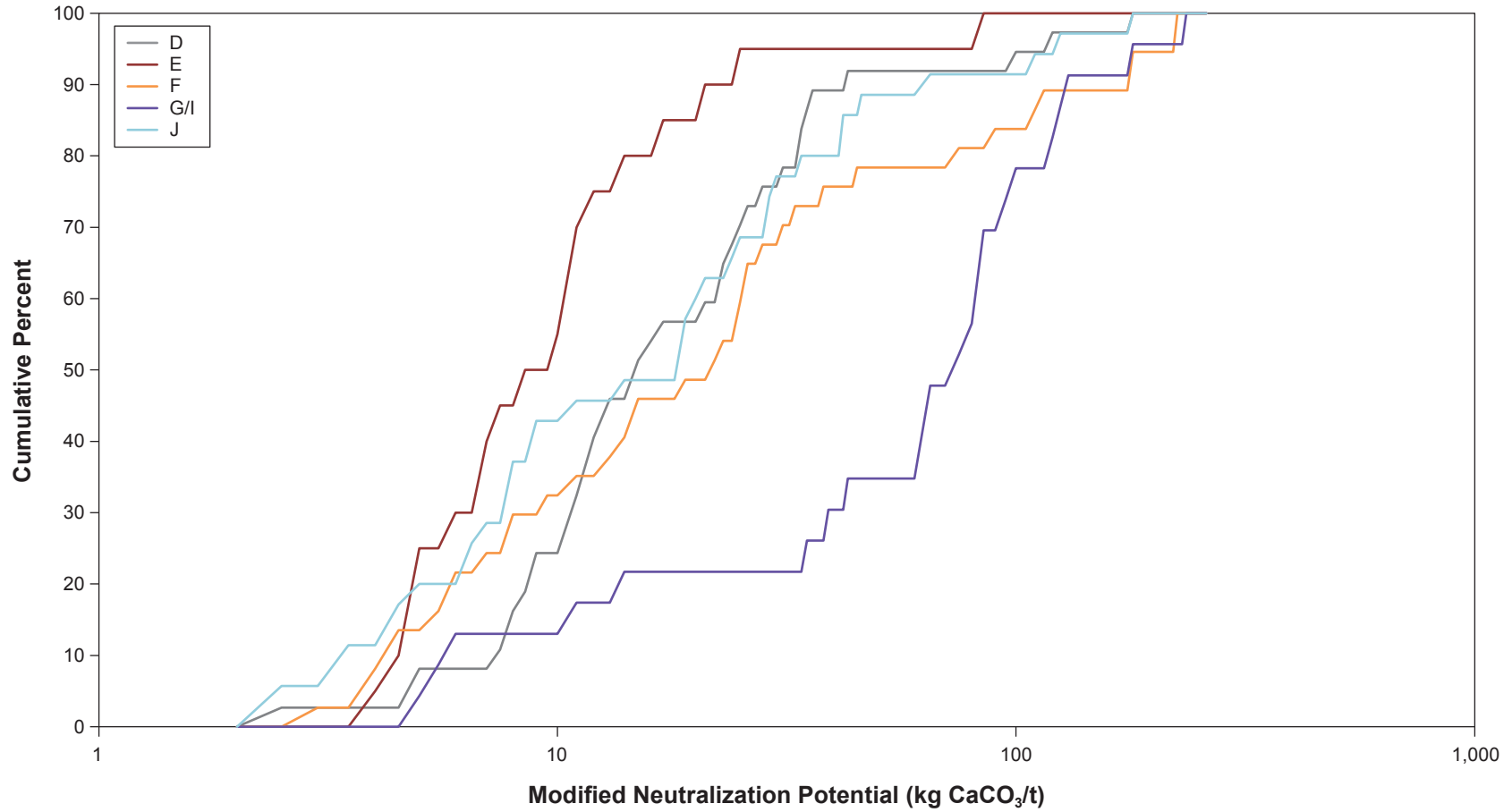


Figure 5.2-6

Inorganic Carbon, Iron Corrected Inorganic Carbon, Calcium, and Calcium-Magnesium Neutralization Potentials vs. Modified Neutralization Potential by Coal Seam

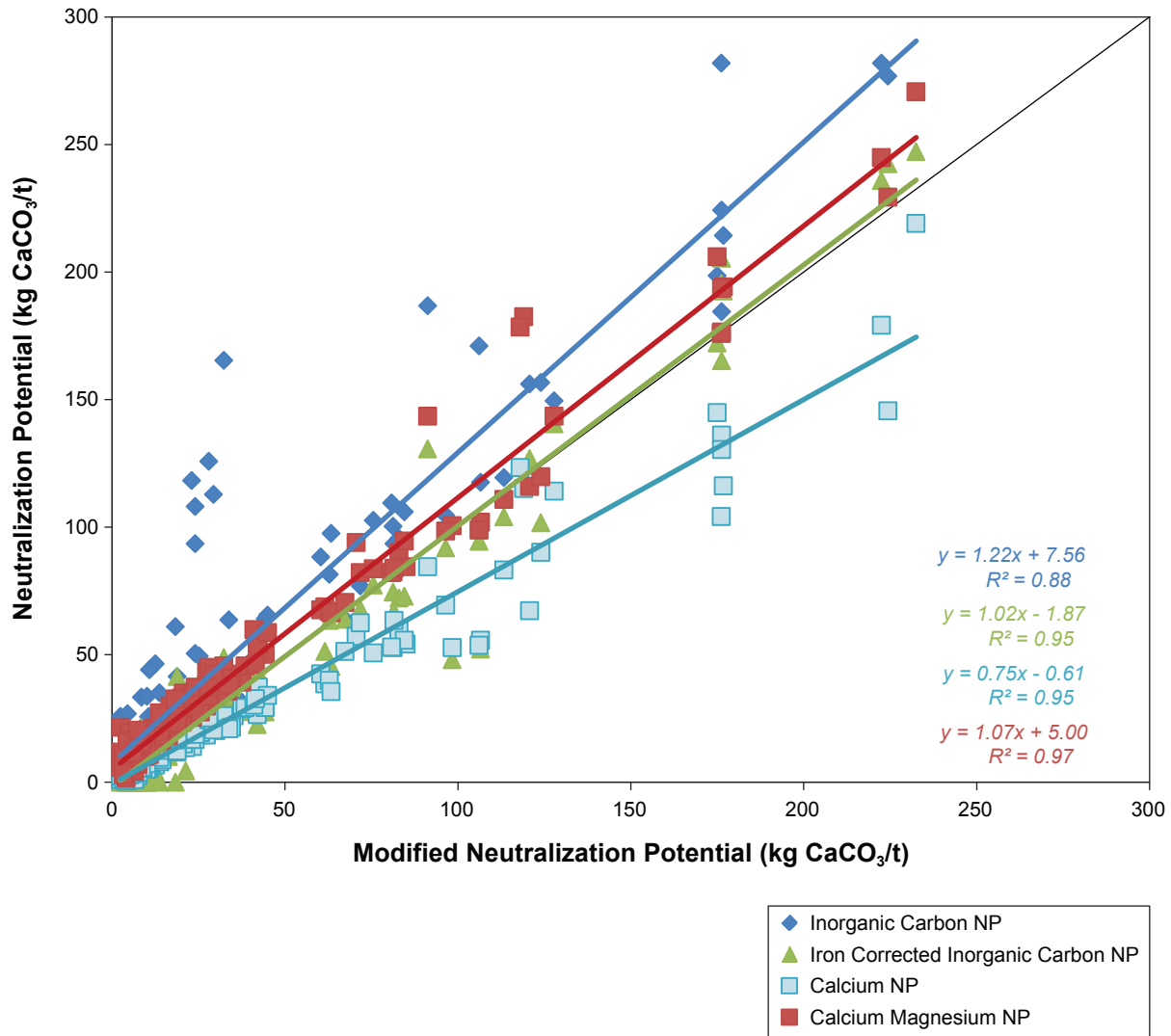


Table 5.2-3. Statistical Summary of Sulphide Sulphur Values of Coal Seams by Material

	Min	25th	Mean	Median	75th	Max
<b>D Seam</b>						
Raw Coal (n = 4)	0.28	-	0.50	-	-	0.81
Clean Coal (n = 2)	0.69	-	0.85	-	-	1.02
CCR (n = 27)	0.01 <sup>†</sup>	0.14	0.65	0.31	0.72	6.11
Tailings (n = 4)	0.64	-	1.01	-	-	1.51
<i>All D Seam (n = 37)</i>	<i>0.01<sup>†</sup></i>	<i>0.19</i>	<i>0.68</i>	<i>0.58</i>	<i>0.75</i>	<i>6.11</i>
<b>E Seam</b>						
Raw Coal (n = 1)	-	-	0.16	-	-	-
Clean Coal (n = 2)	0.24	-	0.30	-	-	0.37
CCR (n = 14)	0.01	0.11	0.26	0.13	0.20	1.73
Tailings (n = 3)	0.22	-	0.24	-	-	0.28
<i>All E Seam (n = 20)</i>	<i>0.01</i>	<i>0.11</i>	<i>0.26</i>	<i>0.16</i>	<i>0.24</i>	<i>1.73</i>
<b>F Seam</b>						
Raw Coal (n = 3)	0.06	-	0.26	-	-	0.56
Clean Coal (n = 3)	0.07	-	0.16	-	-	0.30
CCR (n = 27)	0.01 <sup>†</sup>	0.05	0.22	0.11	0.29	1.32
Tailings (n = 4)	0.15	-	0.38	-	-	0.67
<i>All F Seam (n = 37)</i>	<i>0.01<sup>†</sup></i>	<i>0.06</i>	<i>0.24</i>	<i>0.14</i>	<i>0.30</i>	<i>1.32</i>
<b>G/I Seam</b>						
Raw Coal (n = 2)	0.41	-	0.43	-	-	0.46
Clean Coal (n = 0)	-	-	-	-	-	-
CCR (n = 18)	0.01 <sup>†</sup>	0.16	0.33	0.26	0.53	0.70
Tailings (n = 3)	0.38	-	0.51	-	-	0.59
<i>All G/I Seam (n = 23)</i>	<i>0.01<sup>†</sup></i>	<i>0.19</i>	<i>0.36</i>	<i>0.38</i>	<i>0.55</i>	<i>0.70</i>
<b>J Seam</b>						
Raw Coal (n = 1)	-	-	0.42	-	-	-
Clean Coal (n = 3)	0.10	-	0.22	-	-	0.32
CCR (n = 27)	0.01	0.05	0.50	0.17	0.60	2.37
Tailings (n = 4)	0.20	-	0.28	-	-	0.48
<i>All J Seam (n = 35)</i>	<i>0.01</i>	<i>0.06</i>	<i>0.45</i>	<i>0.23</i>	<i>0.47</i>	<i>2.37</i>

- n < 6, value not calculated

<sup>†</sup> Value is half of analytical detection limit

Units: percentage by weight

Table 5.2-4. Statistical Summary of Modified Neutralization Potential Values of Coal Seams by Material

	Min	25th	Mean	Median	75th	Max
<b>D Seam</b>						
Raw Coal (n = 4)	7.5	-	15.1	-	-	30.0
Clean Coal (n = 2)	11.3	-	13.8	-	-	16.3
CCR (n = 27)	2.4	8.5	30.4	15.7	33.5	176.7
Tailings (n = 4)	10.0	-	17.1	-	-	24.0
<i>All D Seam (n = 37)</i>	<i>2.4</i>	<i>10.0</i>	<i>26.4</i>	<i>14.9</i>	<i>27.4</i>	<i>176.7</i>

(continued)



**Table 5.2-4. Statistical Summary of Modified Neutralization Potential Values of Coal Seams by Material (completed)**

	Min	25th	Mean	Median	75th	Max
<b>E Seam</b>						
Raw Coal (n = 1)	-	-	7.3	-	-	-
Clean Coal (n = 2)	6.5	-	8.0	-	-	9.5
CCR (n = 14)	3.5	4.8	14.2	8.3	13.1	83.0
Tailings (n = 3)	8.3	-	14.8	-	-	24.8
<i>All E Seam (n = 20)</i>	3.5	5.3	13.3	8.9	11.9	83.0
<b>F Seam</b>						
Raw Coal (n = 3)	5.5	-	12.3	-	-	25.6
Clean Coal (n = 3)	9.0	-	53.3	-	-	113.3
CCR (n = 27)	2.5	7.0	50.7	21.3	57.5	224.4
Tailings (n = 4)	12.0	-	18.1	-	-	24.0
<i>All F Seam (n = 37)</i>	2.5	7.5	44.2	21.3	37.5	224.4
<b>G/I Seam</b>						
Raw Coal (n = 2)	62.8	-	71.8	-	-	80.8
Clean Coal (n = 0)	-	-	-	-	-	-
CCR (n = 18)	4.8	19.0	76.4	76.6	112.6	232.5
Tailings (n = 3)	42.3	-	59.4	-	-	75.5
<i>All G/I Seam (n = 23)</i>	4.8	36.5	73.7	71.8	93.9	232.5
<b>J Seam</b>						
Raw Coal (n = 1)	-	-	29.3	-	-	-
Clean Coal (n = 3)	19.0	-	74.4	-	-	176.3
CCR (n = 27)	2.5	5.4	21.7	8.5	21.8	124.0
Tailings (n = 4)	18.3	-	32.2	-	-	45.0
<i>All J Seam (n = 35)</i>	2.5	6.7	27.6	18.3	28.7	176.3

- n < 6, value not calculated

Units: kg CaCO<sub>3</sub>/t

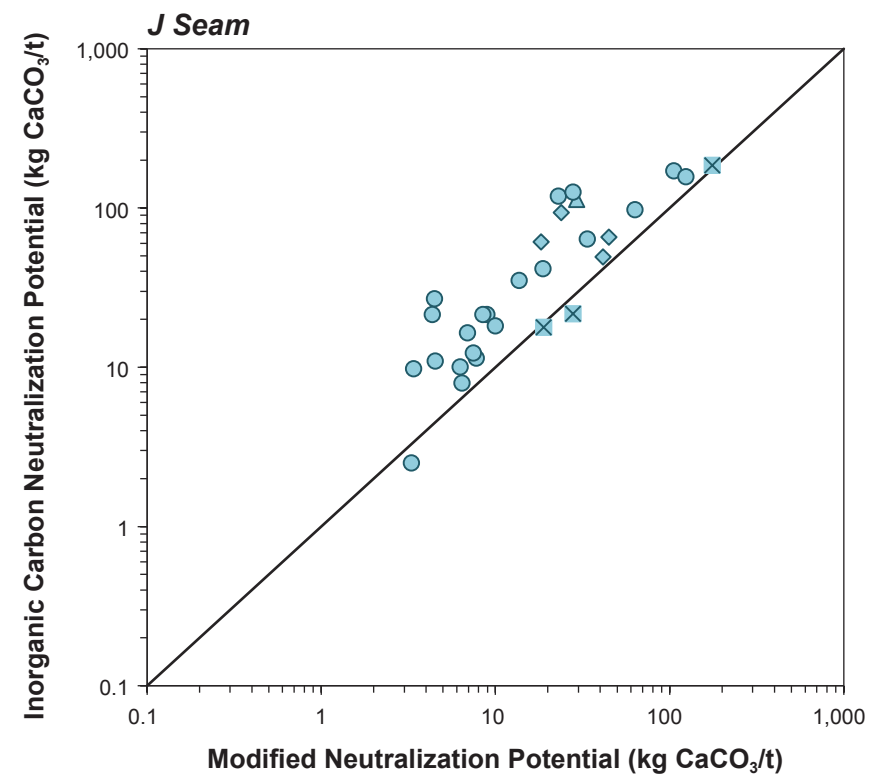
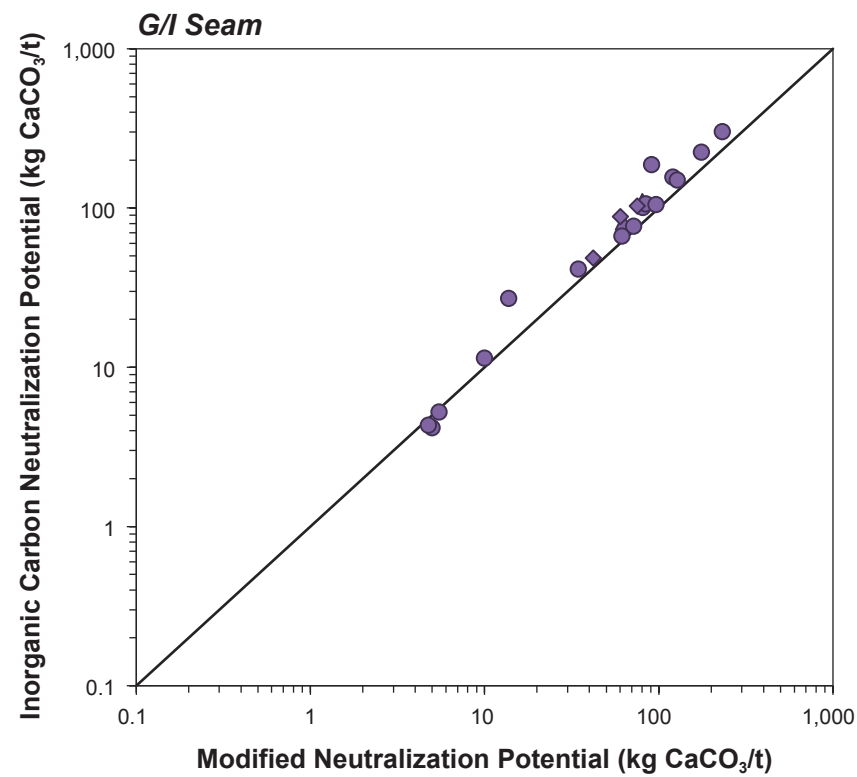
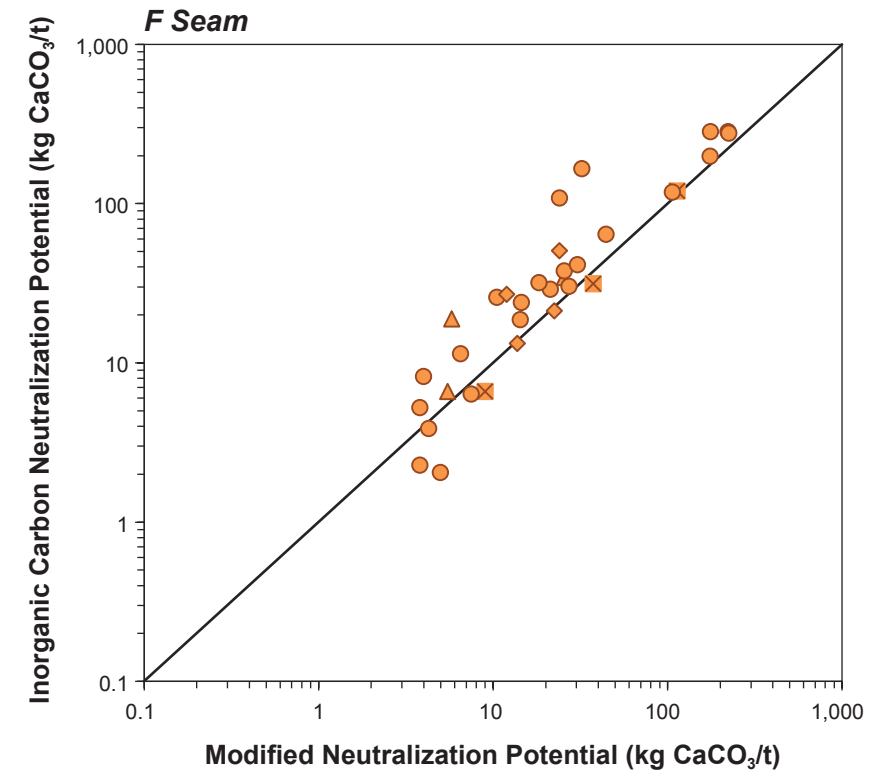
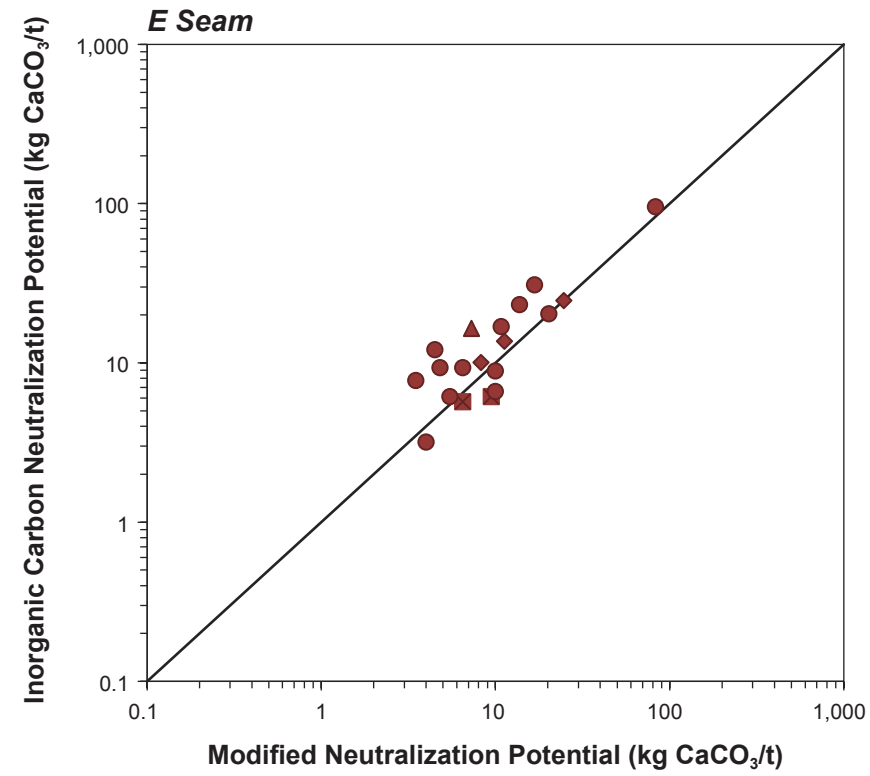
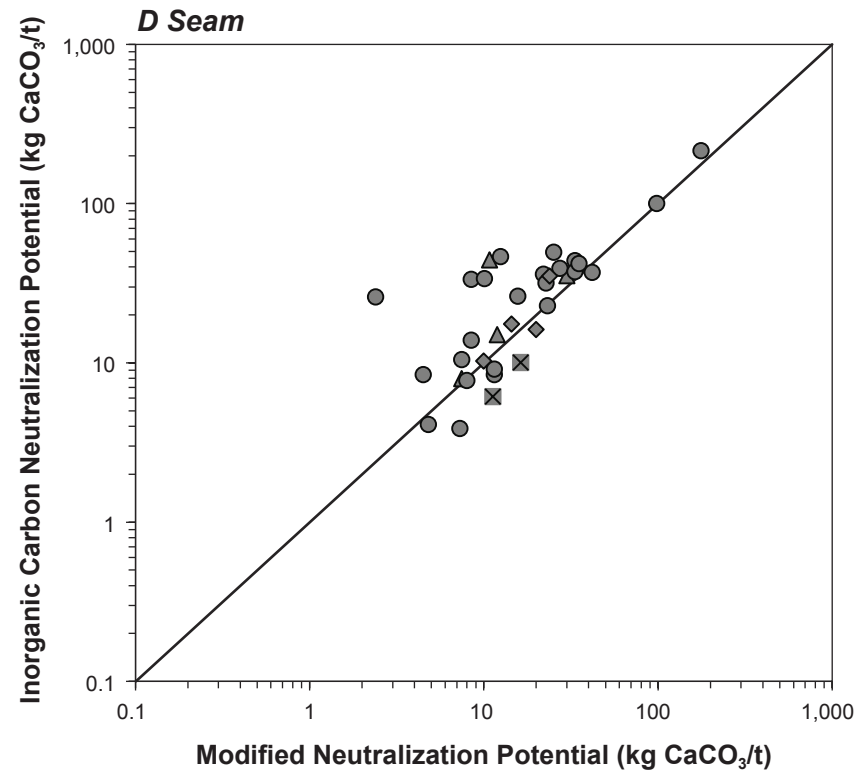
Organic carbon generally occupied a significant proportion of the total carbon content of coal samples, particularly in clean coal samples which had greater than 90% organic carbon. Therefore, total carbon was not used for determination of ML/ARD potential, and inorganic carbon content was used, as described in Section 4.3.1.

Inorganic carbon values were variable, as presented in Table 5.2-5, and frequently higher than 0.1%. The maximum inorganic carbon value was measured in a CCR sample from G/I seam (3.6%), with carbon concentrations generally also high in F and J seam samples. E seam samples typically had the lowest inorganic carbon content. Only one sample of E seam material contained inorganic carbon above 1.0%.

The contribution of inorganic carbon to the NP was assessed by calculating inorg NP values. Inorganic carbon NP is compared to modified NP for coal samples by seam in Figure 5.2-7. The inorg NP values were typically higher than modified NP above inorg NP values of 4.0, and were otherwise well correlated. G/I seam samples had the strongest correlation, indicating that most of the minerals containing inorganic carbon were contributing to NP. D seam had the weakest correlation between NP methods.

Figure 5.2-7

Inorganic Carbon Neutralization Potential vs. Modified Neutralization Potential by Coal Seam



	Raw Coal	Clean Coal	CCR	Tailings
D Seam	▲	■	●	◆
E Seam	▲	■	●	◆
F Seam	▲	■	●	◆
G/I Seam	▲	■	●	◆
J Seam	▲	■	●	◆

Note: One-half the detection limit was used where data was reported at or below the detection limit.

Table 5.2-5. Statistical Summary of Inorganic Carbon Values of Coal Seams by Material

	Min	25th	Mean	Median	75th	Max
<b>D Seam</b>						
Raw Coal (n = 4)	0.10	-	0.31	-	-	0.53
Clean Coal (n = 2)	0.07	-	0.10	-	-	0.12
CCR (n = 27)	0.05	0.12	0.44	0.39	0.48	2.57
Tailings (n = 4)	0.12	-	0.24	-	-	0.42
<i>All D Seam (n = 37)</i>	<i>0.05</i>	<i>0.12</i>	<i>0.38</i>	<i>0.31</i>	<i>0.45</i>	<i>2.57</i>
<b>E Seam</b>						
Raw Coal (n = 1)	-	-	0.20	-	-	-
Clean Coal (n = 2)	0.07	-	0.07	-	-	0.07
CCR (n = 14)	0.04	0.09	0.23	0.11	0.24	1.15
Tailings (n = 3)	0.12	-	0.19	-	-	0.29
<i>All E Seam (n = 20)</i>	<i>0.04</i>	<i>0.09</i>	<i>0.21</i>	<i>0.12</i>	<i>0.22</i>	<i>1.15</i>
<b>F Seam</b>						
Raw Coal (n = 3)	0.08	-	0.24	-	-	0.41
Clean Coal (n = 3)	0.08	-	0.63	-	-	1.43
CCR (n = 27)	0.02	0.12	0.92	0.36	1.35	3.38
Tailings (n = 4)	0.16	-	0.33	-	-	0.61
<i>All F Seam (n = 37)</i>	<i>0.02</i>	<i>0.14</i>	<i>0.76</i>	<i>0.35</i>	<i>0.77</i>	<i>3.38</i>
<b>G/I Seam</b>						
Raw Coal (n = 2)	0.98	-	1.14	-	-	1.31
Clean Coal (n = 0)	-	-	-	-	-	-
CCR (n = 18)	0.05	0.28	1.17	1.06	1.81	3.60
Tailings (n = 3)	0.58	-	0.96	-	-	1.23
<i>All G/I Seam (n = 23)</i>	<i>0.05</i>	<i>0.49</i>	<i>1.14</i>	<i>1.06</i>	<i>1.31</i>	<i>3.60</i>
<b>J Seam</b>						
Raw Coal (n = 1)	-	-	1.35	-	-	-
Clean Coal (n = 3)	0.21	-	0.90	-	-	2.21
CCR (n = 27)	0.03	0.14	0.57	0.26	0.76	2.05
Tailings (n = 4)	0.59	-	0.81	-	-	1.12
<i>All J Seam (n = 35)</i>	<i>0.03</i>	<i>0.20</i>	<i>0.66</i>	<i>0.32</i>	<i>1.12</i>	<i>2.21</i>

- n < 6, value not calculated

Detection limit = 0.02%

Units: percentage by weight

The frequent overestimation of NP by inorganic carbon methods compared with modified NP suggests the presence of iron carbonate minerals (such as siderite and ankerite), which contribute to inorganic carbon content but not to NP. To correct for these iron carbonates, the abundance of iron carbonate was calculated by subtracting the iron in sulphide minerals (assuming all sulphide minerals to be iron sulphides, as consistent with Rietveld XRD results) from the total elemental abundance of iron. The remaining iron was assumed to be from iron carbonate minerals, and the abundance of carbon in iron carbonate was subtracted from the total inorganic carbon content to derive an iron carbonate corrected inorganic carbonate NP value. These values are graphed against modified NP in Figure 5.2-8, showing the variation between seams.

Applying the iron carbonate correction improved the correlation between inorg NP and modified NP. The most notable difference was in samples from F and J seams, where the bulk of samples moved closer to the 1:1 ratio line. D and E seams were less affected by the correction. This result suggests that the higher inorg NP values observed in samples from F and J seams were a product of high siderite content. This is consistent with the Rietveld XRD analyses, which measured the highest siderite abundances in J seam samples. The results of XRD analysis for coal samples are presented in Table 5.2-3. Abundant calcite and dolomite were measured in G/I seam samples, consistent with the very good correlation between inorg NP and modified NP for G/I seam, which was not significantly affected by the correction for siderite.

Carbonate mineral abundance, as identified by Rietveld XRD analysis, was between 2% and 13% of the total mineral content in coal samples, and included calcite, dolomite, ankerite (identified in Rietveld XRD analyses as a solid solution with dolomite), and siderite (including calcian and magnesian siderite). The bulk of mineral content comprised quartz, feldspar, and hydrated aluminosilicates (such as illite, muscovite, kaolinite, and clinocllore). The exceptions were clean coal samples, which were identified as 95% amorphous organic carbon.

Calcium and CaMg NP values were calculated from elemental abundances of calcium and magnesium. Calcium NP values assume that all carbonate is present as calcite, and CaMg NP values assume it is present as magnesium carbonate (dolomite and potentially ankerite). Calcium NP values were typically lower than and well-correlated with modified NP (Figure 5.2-9), above modified NP values of 6 kg CaCO<sub>3</sub>/t. Calcium-magnesium NP and modified NP were similarly well-correlated (Figure 5.2-9), with CaMg NP values typically greater than modified NP. The correlation was strongest at NP values above 20. This result suggests that dolomite is a dominant contributor to NP.

As presented in Figure 5.2-6, iron carbonate corrected inorg NP, Ca NP, and CaMg NP values all had very strong correlations ( $R^2 > 0.95$ ) with modified NP, and iron carbonate corrected NP values plotted closest to the 1:1 line. This suggests a good quantification of NP by these methods, and that the most significant source of NP is from non-iron carbonate minerals.

The median values of the different NP methods discussed above are summarized by coal seam in Table 5.2-6. Calcium NP values are typically lower than CaMg NP values, indicating the prevalence of calcium-magnesium minerals such as dolomite over calcite. Inorganic NP values are typically high, as a result of iron carbonate minerals contributing to carbon content without contributing to NP. Once corrected for iron carbonate content, inorg NP values are close to modified NP.

**Table 5.2-6. Comparison of Neutralization Potential Methods for Coal Samples**

Coal Seam	Modified NP	Sobek NP	Inorg NP	Inorg NP - FeCO <sub>3</sub>	Ca NP	CaMg NP
D (n = 37)	15	16	26	14	13	21
E (n = 20)	9	11	10	9	6	11
F (n = 37)	21	20	29	18	13	27
G/I (n = 23)	72	75	88	68	51	82
J (n = 35)	18	30	27	18	12	27

Units: kg CaCO<sub>3</sub>/t. Values are medians, rounded to nearest whole number.

The NP results show that for coal, as with waste rock, the most accurate methods for measuring NP are modified NP or iron carbonate corrected inorg NP. Measuring only the inorganic carbon content of samples is not a recommended way of measuring NP as the presence of iron carbonates may result in an overestimation of NP. As iron carbonate content varies between coal seams, a universal correction to apply to inorg NP was not found.

Figure 5.2-8

Iron Carbonate Corrected Inorganic Carbon Neutralization Potential vs. Modified Neutralization Potential by Coal Seam

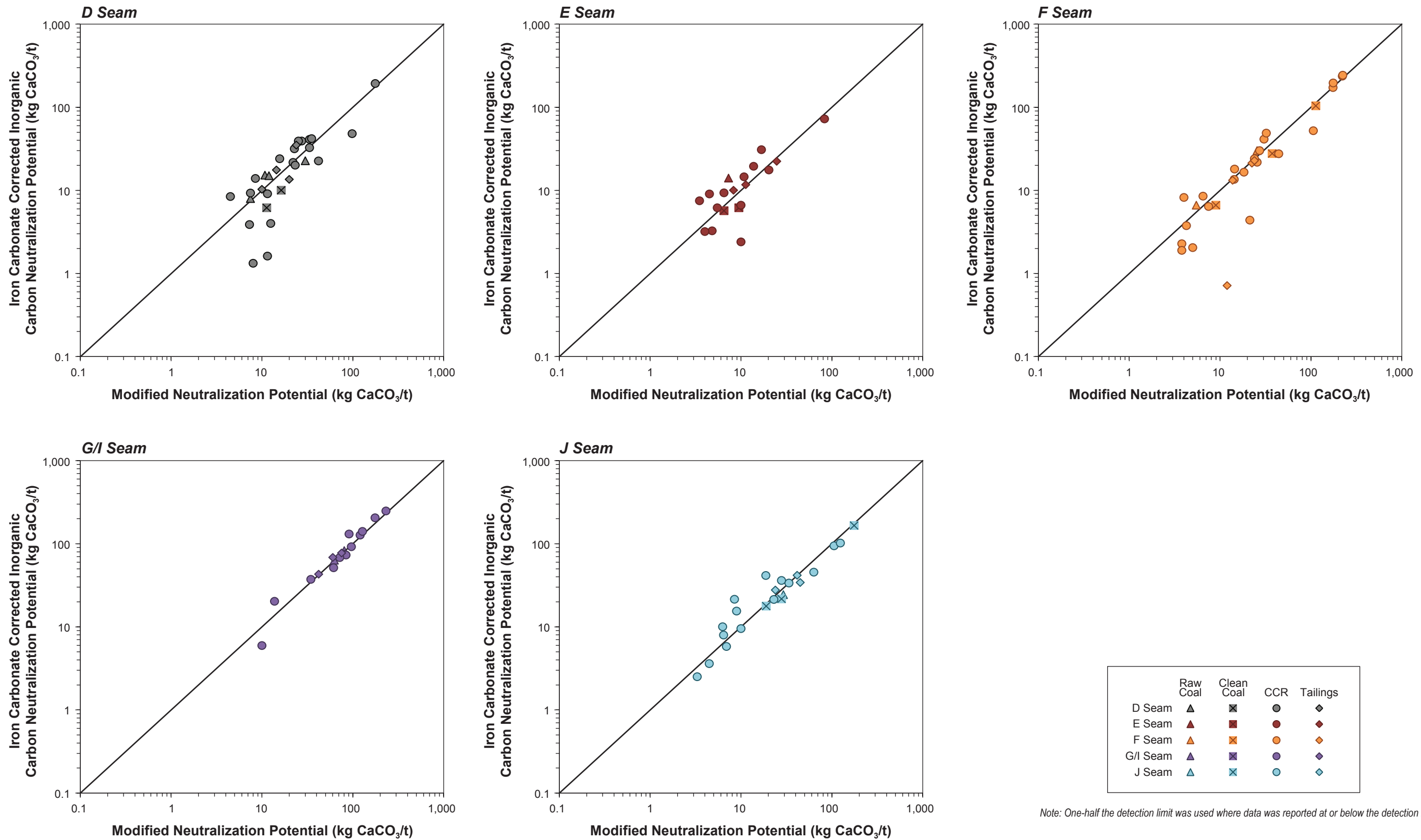
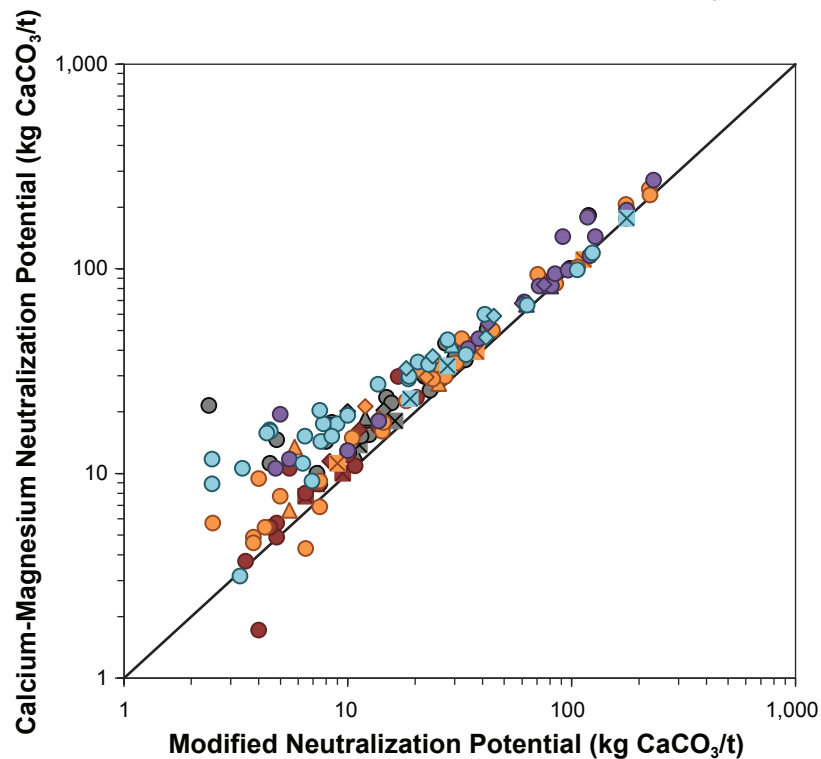
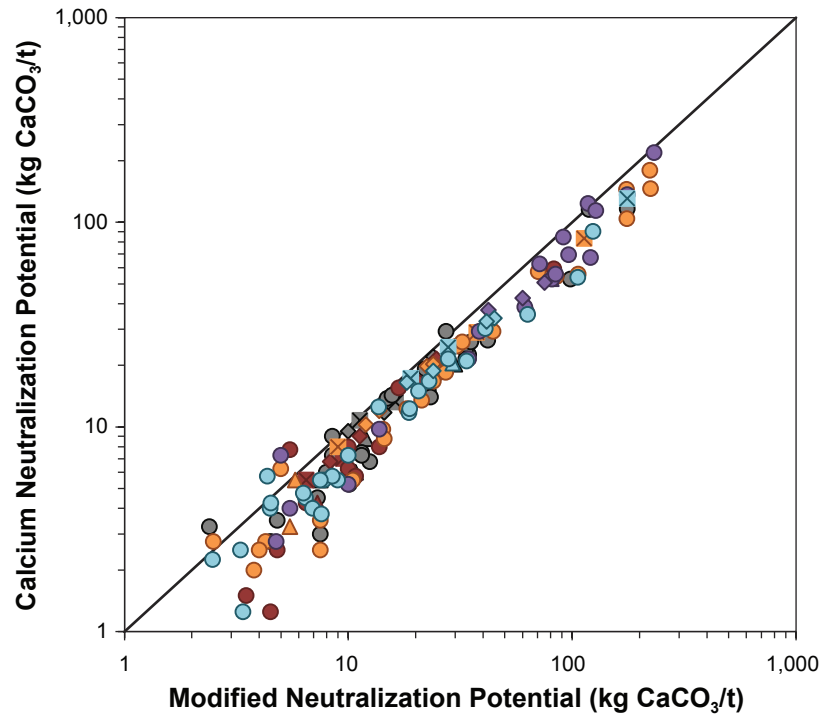


Figure 5.2-9

Calcium and Calcium-Magnesium Neutralization Potentials vs. Modified Neutralization Potential by Coal Seam



▲ D Seam - Raw coal	⊠ D Seam - Clean coal	● D Seam - CCR	◆ D Seam - Tailings	▲ E Seam - Raw coal
■ E Seam - Clean coal	● E Seam - CCR	◆ E Seam - Tailings	▲ F Seam - Raw coal	⊠ F Seam - Clean coal
● F Seam - CCR	◆ F Seam - Tailings	▲ G/I Seam - Raw coal	● G/I Seam - CCR	◆ G/I Seam - Tailings
▲ J Seam - Raw coal	⊠ J Seam - Clean coal	● J Seam - CCR	◆ J Seam - Tailings	

Note: One-half the detection limit was used where data was reported at or below the detection limit.



#### 5.2.1.4 Elemental Abundance

The 75<sup>th</sup> percentile of solid phase elemental abundance values of coal samples were compared to three times the average crustal abundances in sandstone and shale (Price 1997). The elevated elements were comparable between seams, as results indicated the potential for elevated silver, cadmium, and selenium in all coal seams (Table 5.2-7).

**Table 5.2-7. Summary of Elevated Elements in Solid Phase in Coal Seams by Seam**

Seam	Reference Lithology	Elevated Parameters
D	Shale	Ag, Cd, Se
E	Shale	Ag, Cd, Se
F	Shale	Ag, Cd, Se
G/I	Shale	Ag, Cd, Se
J	Shale	Ag, Cd, Se

The cumulative frequency of selenium abundance for coal samples is presented in Figure 5.2-10. The figure indicates that in D, E, and F seams, more than 50% of samples analyzed had selenium abundances greater than 2.0 ppm, while in G/I and J seams, less than 30% of samples analyzed had selenium values over 2.0 ppm.

Elemental abundances in each material were also compared with average crustal abundances, as presented in Table 5.2-8. When compared by material, the same elevated elements were identified in raw coal, CCR, and tailings (silver, cadmium, and selenium). However, clean coal samples were identified as possessing lower metal abundances than samples of any other material, with barium the only elevated parameter in clean coal when compared with three times the crustal abundance of shale. Statistical summary graphs of elemental abundance values of coal samples are presented in Appendix 10.

**Table 5.2-8. Summary of Elevated Elements in Solid Phase in Coal Seams by Material**

Material	Reference Lithology	Elevated Parameters
Raw Coal	Shale	Ag, Cd, Se
Clean Coal	Shale	Ba
CCR	Shale	Ag, Cd, Se
Tailings	Shale	Ag, Cd, Se

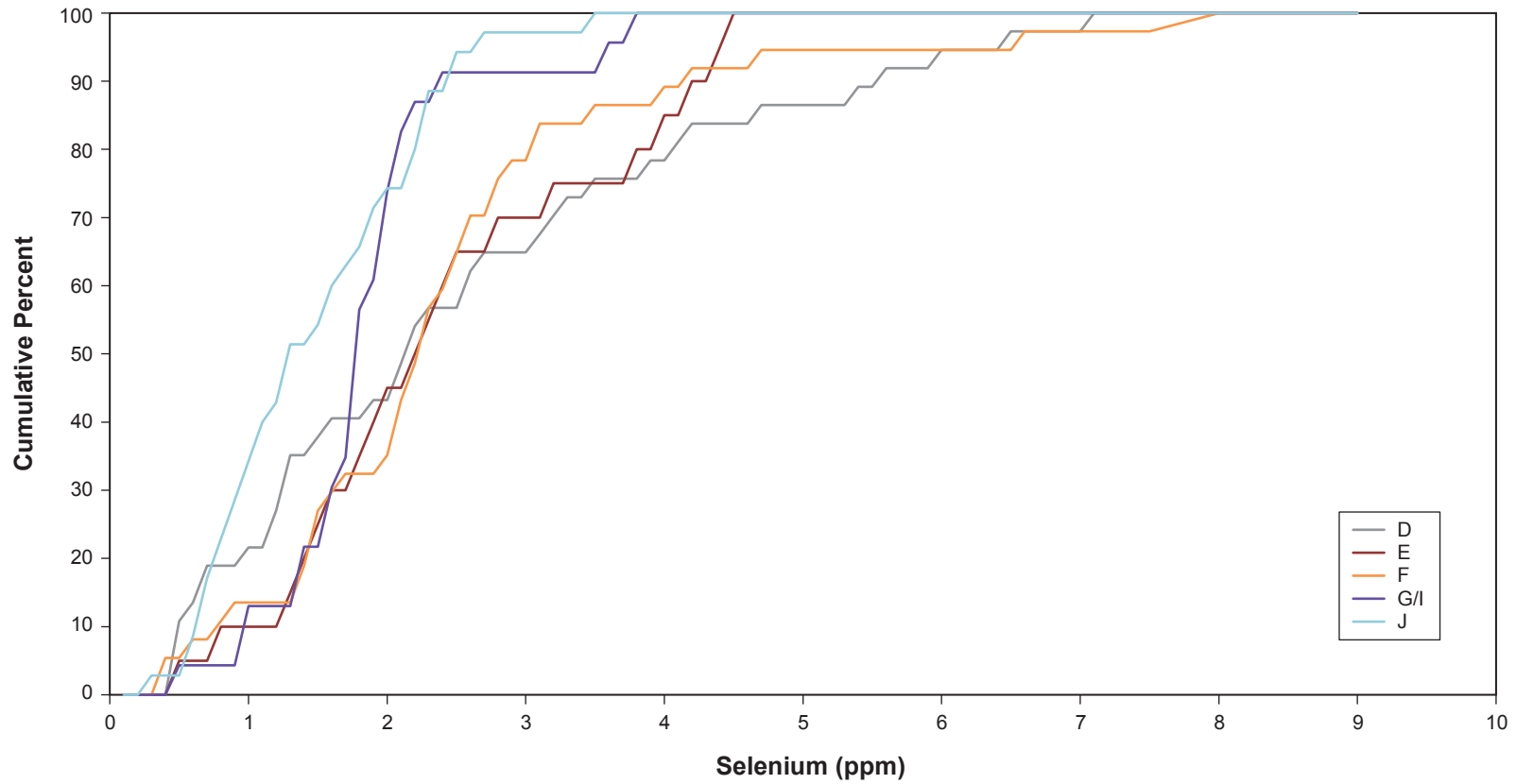
#### 5.2.1.5 ARD Potential

The SNPR values for coal samples are presented in Table 5.2-9. Sulphide Net Potential Ratio values were variable in all seams. The majority of samples in D seam had values below 1.0. More than 75% of samples from G/I seam had SNPR values greater than 3.0. The statistical ranges of SNPR values are presented graphically in Figure 5.2-11.

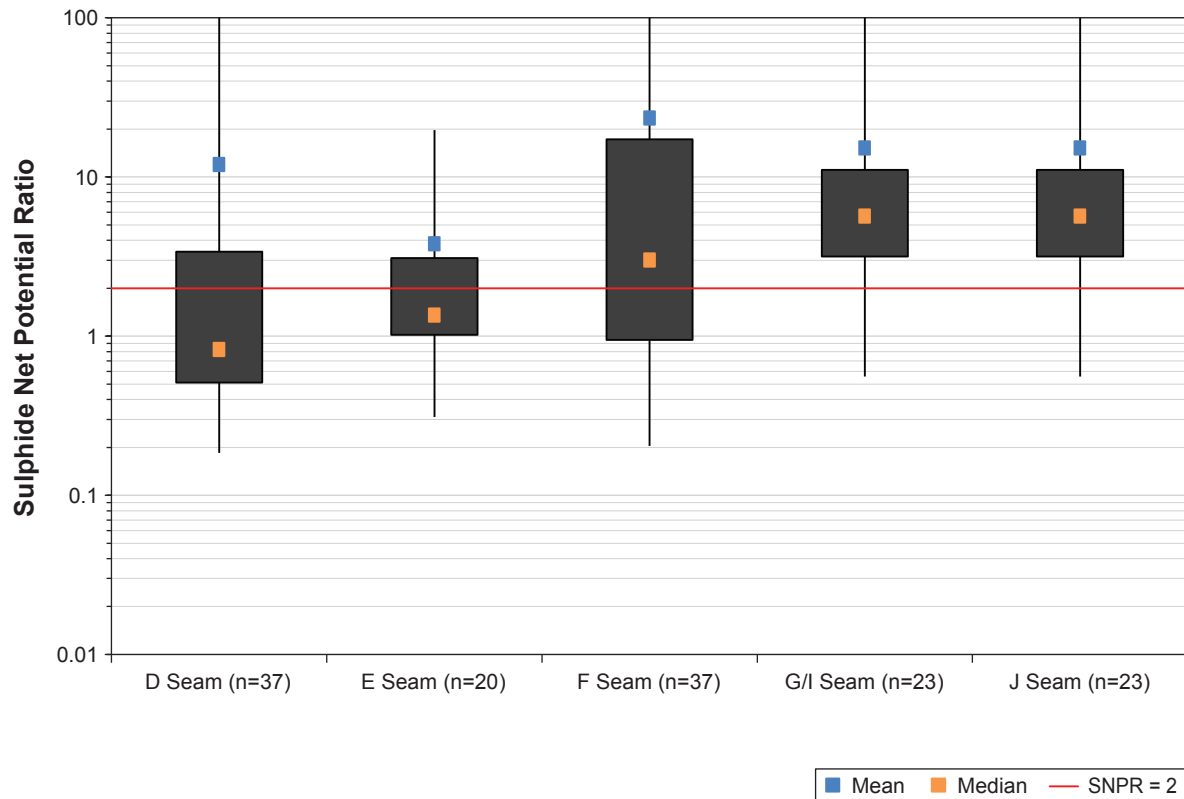
The relationship between NP and AP is presented by coal seam in Figure 5.2-12. The correlation between sulphide sulphur and SNPR is stronger than that between NP and SNPR in most samples, as can be seen in Figures 5.2-13 and 5.2-14. This indicates that the sulphur content of coal samples has a stronger influence over SNPR values than the NP. The exception is in G/I seam, which has a narrow range of sulphide sulphur concentrations and a much stronger control by NP on SNPR than other seams. Samples from seams other than G/I were typically PAG at sulphide sulphur values above 0.3%.

Figure 5.2-10

Cumulative Frequency of Selenium Concentration by Coal Seam



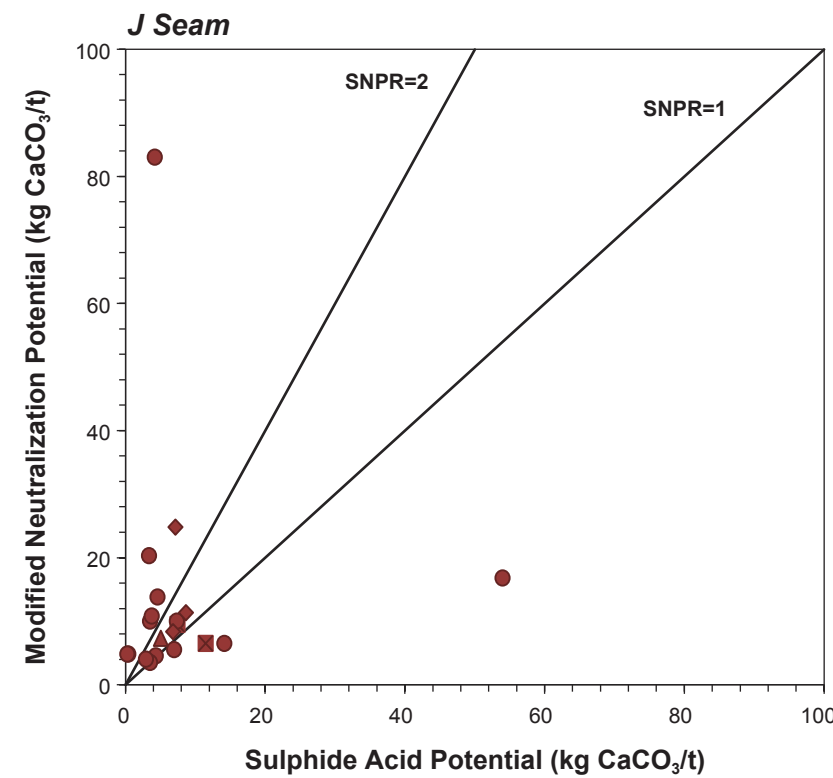
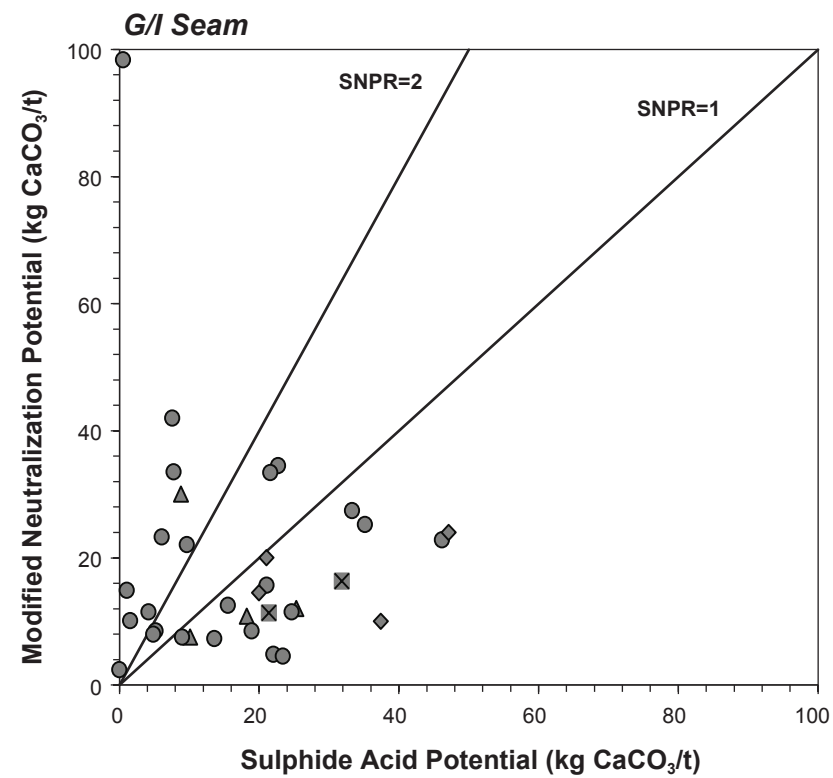
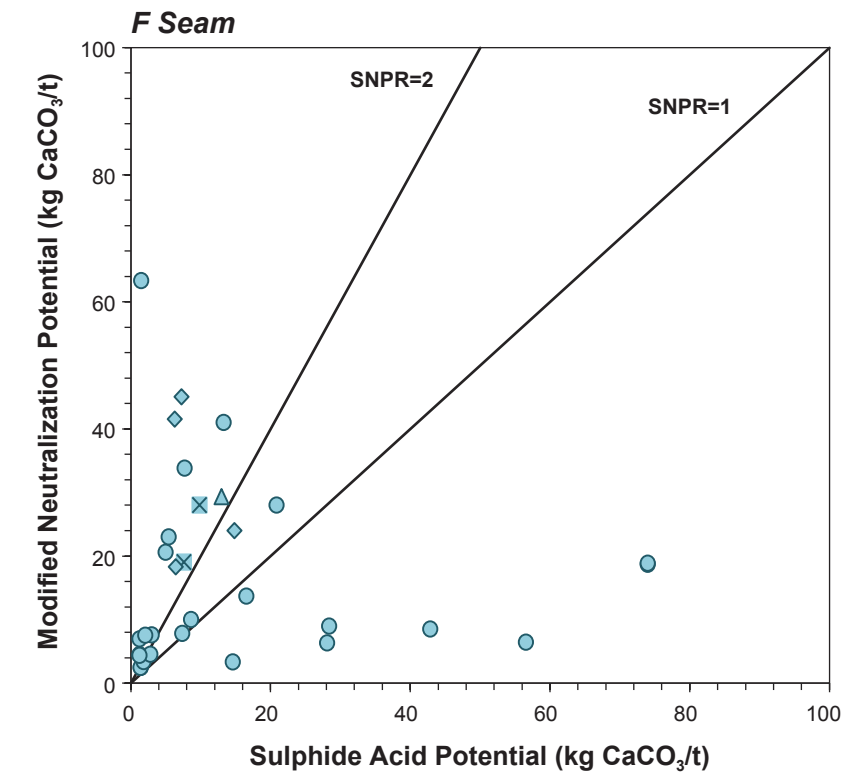
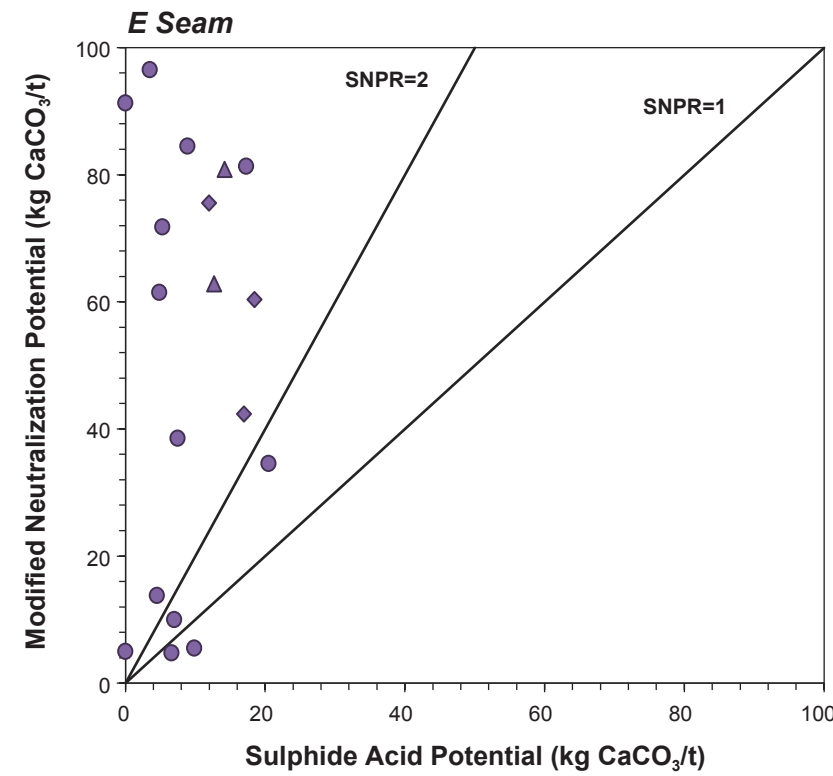
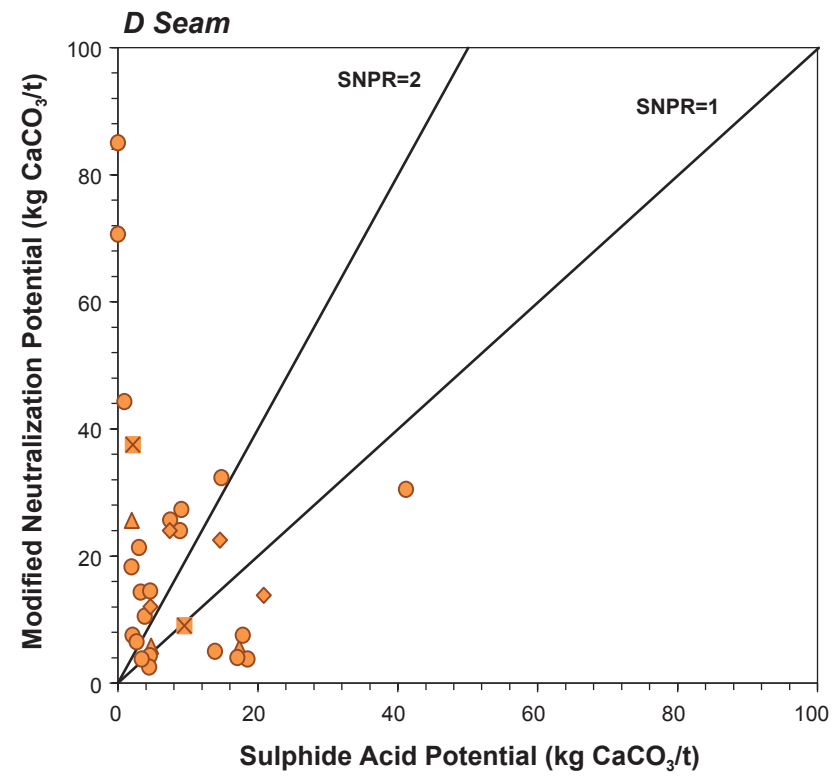
**Figure 5.2-11**  
**Statistical Summary of Sulphide Net Potential Ratio Results by Coal Seam**



Notes: 25<sup>th</sup> to 75<sup>th</sup> percentile is represented by the shaded box.  
 Where calculated sulphide sulphur was less than or equal to zero,  
 SNPR values were capped at 100.

Figure 5.2-12

Modified Neutralization Potential vs. Sulphide Acid Potential by Coal Seam

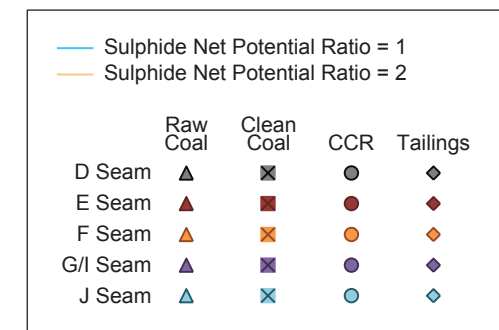
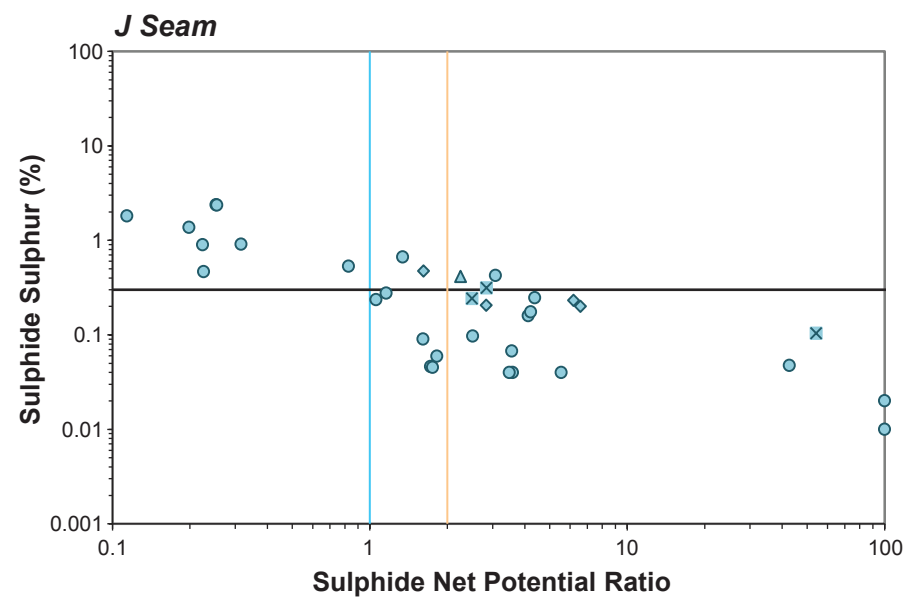
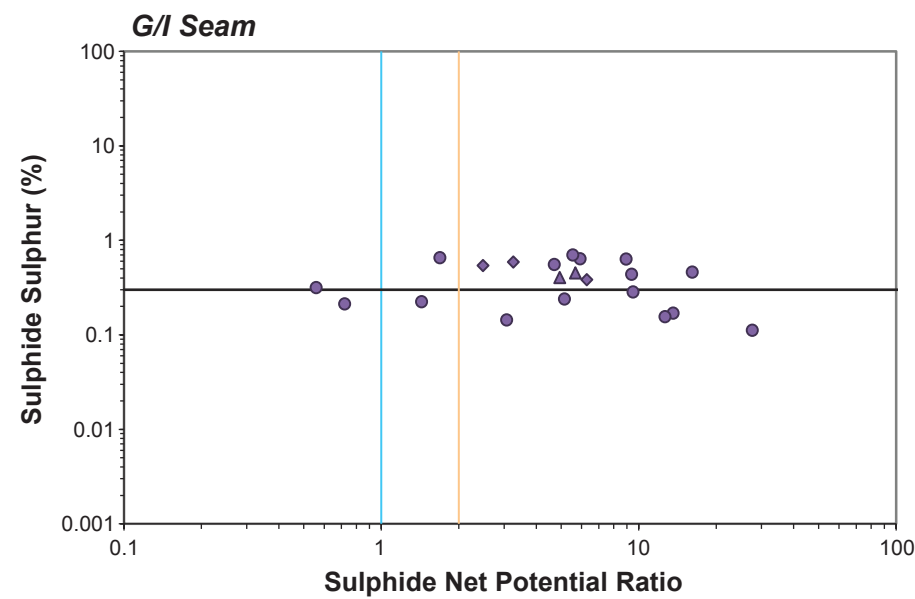
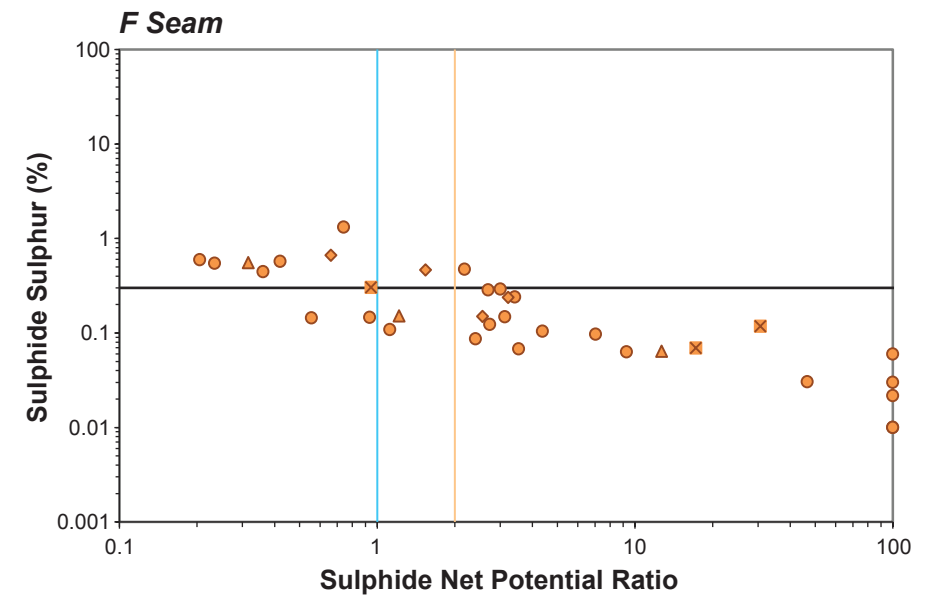
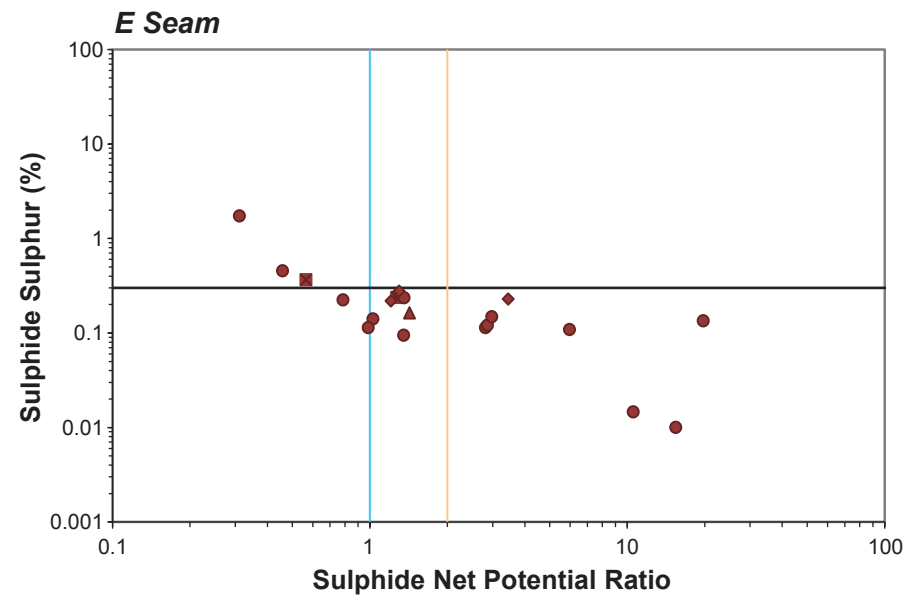
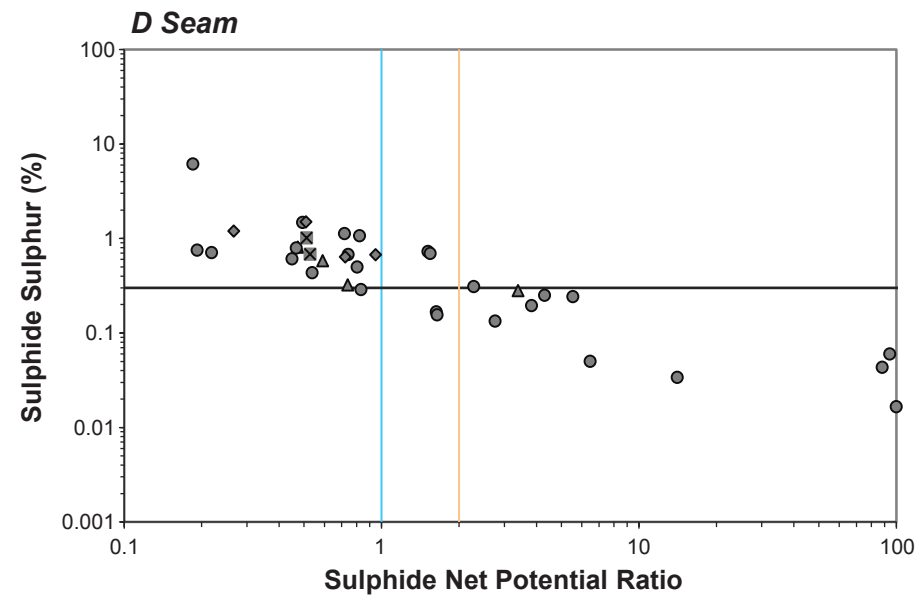


	Raw Coal	Clean Coal	CCR	Tailings
D Seam	▲	✕	●	◆
E Seam	▲	■	●	◆
F Seam	▲	✕	●	◆
G/I Seam	▲	✕	●	◆
J Seam	▲	✕	●	◆

Note: One-half the detection limit was used where data was reported at or below the detection limit.

Figure 5.2-13

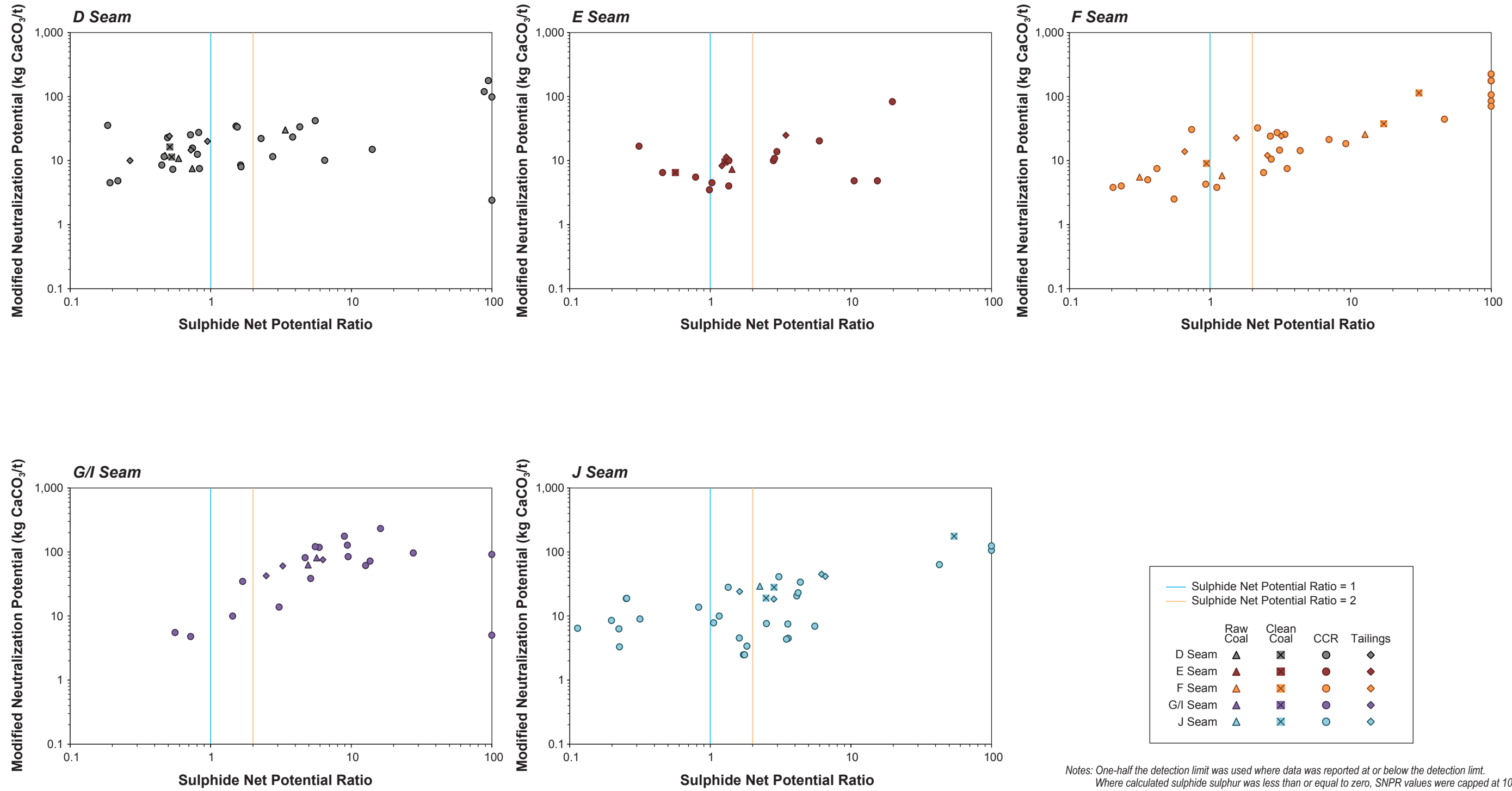
Sulphide Sulphur vs. Sulphide Net Potential Ratio by Coal Seam



Notes: One-half the detection limit was used where data was reported at or below the detection limit.  
Where calculated sulphide sulphur was less than or equal to zero, SNPR values were capped at 100.

Figure 5.2-14

Modified Neutralization Potential vs. Sulphide Net Potential Ratio by Coal Seam



Notes: One-half the detection limit was used where data was reported at or below the detection limit. Where calculated sulphide sulphur was less than or equal to zero, SNPR values were capped at 100.



**Table 5.2-9. Statistical Summary of Sulphide Net Potential Ratio Values of Coal Seams by Material**

	Min	25th	Mean	Median	75th	Max
<b>D Seam</b>						
Raw Coal (n = 4)	0.5	-	1.3	-	-	3.4
Clean Coal (n = 2)	0.5	-	0.5	-	-	0.5
CCR (n = 27)	0.2	0.6	16.3	1.5	4.9	190.5
Tailings (n = 4)	0.3	-	0.6	-	-	0.9
<i>All D Seam (n = 37)</i>	<i>0.2</i>	<i>0.5</i>	<i>12.1</i>	<i>0.8</i>	<i>3.4</i>	<i>190.5</i>
<b>E Seam</b>						
Raw Coal (n = 1)	-	-	1.4	-	-	-
Clean Coal (n = 2)	0.6	-	0.9	-	-	1.3
CCR (n = 14)	0.3	1.0	4.8	2.1	5.2	19.7
Tailings (n = 3)	1.2	-	2.0	-	-	3.5
<i>All E Seam (n = 20)</i>	<i>0.3</i>	<i>1.0</i>	<i>3.8</i>	<i>1.4</i>	<i>3.1</i>	<i>19.7</i>
<b>F Seam</b>						
Raw Coal (n = 3)	0.3	-	4.7	-	-	12.7
Clean Coal (n = 3)	0.9	-	16.3	-	-	30.7
CCR (n = 27)	0.2	1.0	101.0	3.1	83.1	563.6
Tailings (n = 4)	0.7	-	2.0	-	-	3.2
<i>All F Seam (n = 37)</i>	<i>0.2</i>	<i>0.9</i>	<i>75.6</i>	<i>3.0</i>	<i>17.2</i>	<i>563.6</i>
<b>G/I Seam</b>						
Raw Coal (n = 2)	4.9	-	5.3	-	-	5.7
Clean Coal (n = 0)	-	-	-	-	-	-
CCR (n = 18)	0.6	3.5	41.3	7.4	13.4	584.3
Tailings (n = 3)	2.5	-	4.0	-	-	6.3
<i>All G/I Seam (n = 23)</i>	<i>0.6</i>	<i>3.2</i>	<i>33.3</i>	<i>5.7</i>	<i>11.1</i>	<i>584.3</i>
<b>J Seam</b>						
Raw Coal (n = 1)	-	-	2.3	-	-	-
Clean Coal (n = 3)	2.5	-	19.8	-	-	54.2
CCR (n = 27)	0.1	0.6	24.3	1.8	3.9	396.8
Tailings (n = 4)	1.6	-	4.3	-	-	6.6
<i>All J Seam (n = 35)</i>	<i>0.1</i>	<i>1.1</i>	<i>21.0</i>	<i>2.5</i>	<i>4.2</i>	<i>396.8</i>

- n < 6, value not calculated

#### Analogue Static Testing

As detailed in Section 3.1, the ML/ARD characterization programs at the Quintette (SRK 2012) and Roman and Trend (Peace River Coal Inc. 2010) projects consistently classified D seam material as PAG, and G/I and J seam material as nPAG. G/I seam material was considered the least likely to generate acidity, which is consistent with the findings at the Murray River Coal Project. F seam material was classified as strongly nPAG at the Roman and Trend mines, and as the PAG seam with the lowest acid-generating potential at the Quintette project, which is generally consistent with the Project results.

Static testing results for sulphide sulphur, inorganic carbon NP, and selenium content at the Project were compared with values reported for the Quintette Project. Statistical summaries of these three

parameters are compared in Table 5.2-10. Sulphide sulphur values were strongly comparable between the two projects for all coal seams. Inorganic carbon NP values were comparable for D seam, but typically higher in Project samples from E, F, and G/I seams. In J seam, inorg NP values were higher in Quintette Project samples.

**Table 5.2-10. Statistical Summary of Sulphide Sulphur, Inorganic Carbon Neutralization Potential, and Selenium Values for Murray River and Quintette Coal Projects by Coal Seam**

	Sulphide Sulphur (%)		Inorg C NP (kg CaCO <sub>3</sub> /t)		Selenium (ppm)	
	Murray River	Quintette	Murray River	Quintette	Murray River	Quintette
<b>D Seam</b>	N = 37	N = 8	N = 37	N = 8	N = 37	N = 8
Min	0.01 <sup>†</sup>	0.7	3.9	10.7	0.4	0.8
Median	0.6	0.7	26.0	28.2	2.1	3.7
Mean	0.7	1.0	31.8	32.9	2.5	3.4
Max	6.1	1.6	214.2	46.6	7.0	4.7
<b>E Seam</b>	N = 20	N = 11	N = 20	N = 11	N = 20	N = 11
Min	0.01	0.0	3.2	3.9	0.4	2.8
Median	0.2	0.5	10.0	3.9	2.2	3.5
Mean	0.3	0.8	17.2	14.8	2.4	3.6
Max	1.7	2.7	95.5	33.9	4.4	4.6
<b>F Seam</b>	N = 37	N = 8	N = 37	N = 8	N = 37	N = 8
Min	0.01 <sup>†</sup>	0.1	2.0	5.0	0.3	0.3
Median	0.1	0.3	28.9	13.9	2.2	5.1
Mean	0.2	0.3	63.6	13.0	2.4	4.6
Max	1.3	0.4	281.8	18.9	7.5	7.5
<b>G/I Seam</b>	N = 23	N = 6	N = 23	N = 6	N = 23	N = 6
Min	0.01 <sup>†</sup>	0.1	4.2	5.0	0.4	0.7
Median	0.4	0.7	88.2	6.0	1.7	1.0
Mean	0.4	0.8	95.0	6.1	1.8	1.0
Max	0.7	1.6	300.2	7.5	3.7	1.3
<b>J Seam</b>	N = 35	N = 12	N = 35	N = 12	N = 35	N = 12
Min	0.01	0.04	2.5	111.0	0.2	0.4
Median	0.2	0.1	26.8	168.1	1.2	0.6
Mean	0.4	0.1	55.4	200.3	1.4	0.6
Max	2.4	0.3	184.4	321.8	3.4	0.7

<sup>†</sup> Indicates value was half of detection limit

Broad similarities were also apparent between the two projects in selenium concentrations. Selenium values at the Quintette Project were typically slightly higher than Project samples from D, E, and F seams, and slightly lower than Project samples from G/I and J seams.

### 5.2.2 Leachate Tests

Shake flask extraction tests were performed on 28 samples of raw coal, clean coal, and coarse and fine reject material. Dissolved metal concentrations were compared to the BC MOE water quality guidelines.

Dissolved aluminum concentrations exceeded BC 30-day mean water quality guidelines for dissolved aluminum in the majority of samples from each formation. In the absence of dissolved metal guidelines for parameters other than aluminum and iron, dissolved concentrations of other metals in leachate were compared to total metal guidelines. Where available, 30-day mean guidelines were applied, otherwise concentrations were compared to maximum guidelines. Elements that were above guidelines for each coal seam are listed in Table 5.2-11.

**Table 5.2-11. Elements Above BC 30-day Mean Guidelines in SFE Leachate for Coal Seams**

Seam	Comparison to Total Metal Guidelines	Comparison to Dissolved Metal Guidelines
D	As <sup>†</sup> , Cd, Cr <sup>†</sup> , Sb <sup>†</sup> , Se, V	Al, Fe <sup>†</sup>
E	As <sup>†</sup> , Ba, Cd, Cr <sup>†</sup> , Fe <sup>†</sup> , Pb, Se, Tl <sup>†</sup> , V, Zn	Al, Fe <sup>†</sup>
F	As <sup>†</sup> , Cd, Cu, Sb <sup>†</sup> , Se, V	Al
G/I	As <sup>†</sup> , Sb <sup>†</sup> , Se, V	Al
J	As <sup>†</sup> , Cd, Cu, Ni, Sb <sup>†</sup> , Se, V	Al, Fe <sup>†</sup>

*Note: Concentrations were measured in leachate as dissolved metals. Elements are listed for each seam if dissolved concentrations were above BC guidelines for a minimum of one sample in that formation.*

<sup>†</sup> Concentration compared to maximum guideline

Dissolved aluminum concentrations exceeded BC guidelines in at least one sample from each coal seam. Dissolved arsenic, selenium, and vanadium concentrations exceeded BC total metal guidelines in at least one sample from each seam. Dissolved cadmium and antimony also frequently exceeded total BC guidelines.

Samples from E seam had the highest number of elements exceeding guidelines, with 11 different elements exceeding guidelines in at least one sample (see Table 5.2-11). Samples from G/I seam had the fewest exceeding elements, as five elements were above guidelines in at least one sample. The highest proportion of exceeding elements per number of samples was observed in seam J.

Some elements elevated in the solid phase were also elevated in the leachate. This included selenium, which was elevated in both solid phase and leachate for all seams; and cadmium, which was elevated in both phases in samples from D, E, F, and J seams. Generally, the correlation between solid and leachate was very poor. Full leachate results are presented in Appendix 11.

### 5.2.3 Kinetic Tests

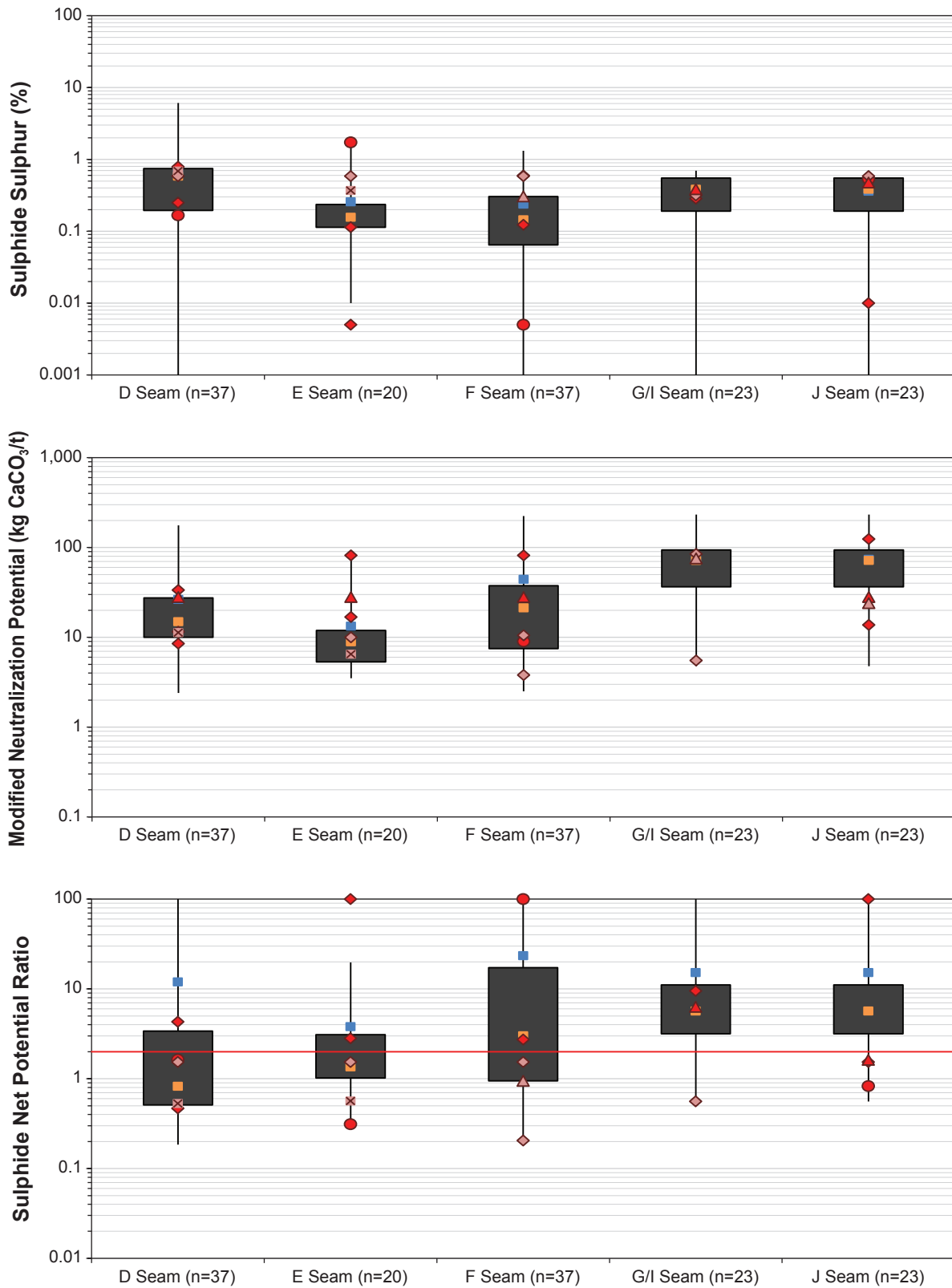
#### 5.2.3.1 Laboratory Humidity Cells

Humidity cells representing parting and wall rock material (classified as CCR) were initiated in February 2011. A raw coal humidity cell from F seam was initiated in May 2012, and a further three CCR and one tailings humidity cells were constructed in May 2013. Construction of these cells is detailed in Section 4.3.3 and presented in Table 4.3-3. Figure 5.2-15 illustrates the representivity of the static results of the material tested in humidity cells compared to the distribution within the seam.

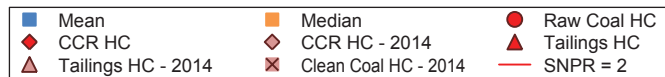
An additional ten clean coal, CCR, and tailings humidity cells were initiated in February 2014, as presented in Table 4.3-4. As these cells have been running for ten weeks and have not yet stabilized, discussion of the results is limited.

Figure 5.2-15

Statistical Summary of Sulphide Sulphur, Modified Neutralization Potential, and Sulphide Net Potential Ratio Results for Coal Compared to Individual Humidity Cells by Coal Seam



Notes: 25<sup>th</sup> to 75<sup>th</sup> percentile is represented by the shaded box. Where calculated sulphide sulphur was less than or equal to zero, SNPR values were capped at 100.



The following discussion presents the results of the humidity cell leachate analyses for each seam and material for:

- indicators of acid generation (pH, sulphate, acidity, and alkalinity);
- elements that contribute to acidity (aluminum, iron, and manganese);
- elements of interest (selenium, arsenic, and cadmium); and
- calcium and magnesium, which commonly occur in carbonate mineral phases and are associated with the neutralization potential.

#### Indicators of Acid Generation

Acid generation in the humidity cell leachate is indicated by decreasing pH, decreasing alkalinity, and increasing acidity. As of the end of April 2014, no coal humidity cells had yet recorded any pH values below 6.0. Humidity cell pH, sulphate, and alkalinity loadings are presented in Figure 5.2-16 and 5.2-17. The four humidity cells that had been running for over 40 weeks all had stable neutral to alkaline pH values after decreasing pH values for the first 30-35 weeks. All other humidity cells had alkaline pH values that were steadily decreasing. The exception was composite tailings humidity cell HC15, which had the lowest initial pH value of any humidity cell (8.35) and maintained a steady pH for the first 40 weeks of leaching.

Sulphate release rates dropped rapidly in all humidity cells before stabilizing around weeks 30 to 40. In the CCR cells, sulphate loadings increased from week 40 onwards. In raw coal humidity cell HC13, sulphate loadings continued to fluctuate. Acidity was typically at or below detection limits, and alkalinity loadings were stable after decreasing for the first 30 to 40 weeks. The exception was J seam CCR cell HC3, in which alkalinity leach rates continued to increase.

pH values were typically lowest and sulphate loadings highest in CCR humidity cells from D and E seams. Higher pH values and lower sulphate loadings were observed in J seam humidity cells. Tailings and CCR humidity cells typically had higher sulphate leach rates than the one raw coal humidity cell. HC16, composited from CCR material from E and F seams, had higher pH and lower sulphate leach rate values than the other E seam CCR cell.

#### Elements Contributing to Acidity

Aluminum concentrations typically decreased over time (Figure 5.2-18). The exception was composite tailings humidity cell HC15, in which aluminum leach rates started an order of magnitude lower than the CCR and raw coal humidity cells, and increased steadily over the first 20 weeks before levelling out. In the three longer running humidity cells, aluminum leach rates were similar to each other.

Iron and manganese leach rates continued to fluctuate after 45 weeks, having decreased over approximately the first month of leaching (Figure 5.2-19 and 5.2-20). In the longer running humidity cells, iron and manganese release rates were still fluctuating, but beginning to stabilize. Iron concentrations were typically highest in raw coal humidity cell HC13, and manganese concentrations were typically lowest in the same humidity cell.

In the composite tailings humidity cell HC15, iron and manganese leach rates increased over the first month, before levelling out. Initial iron loadings were lowest in HC15, compared with the rest of the humidity cells.

Figure 5.2-16

pH Values, and Sulphate and Alkalinity Production Rates for Raw Coal and CCR Humidity Cells

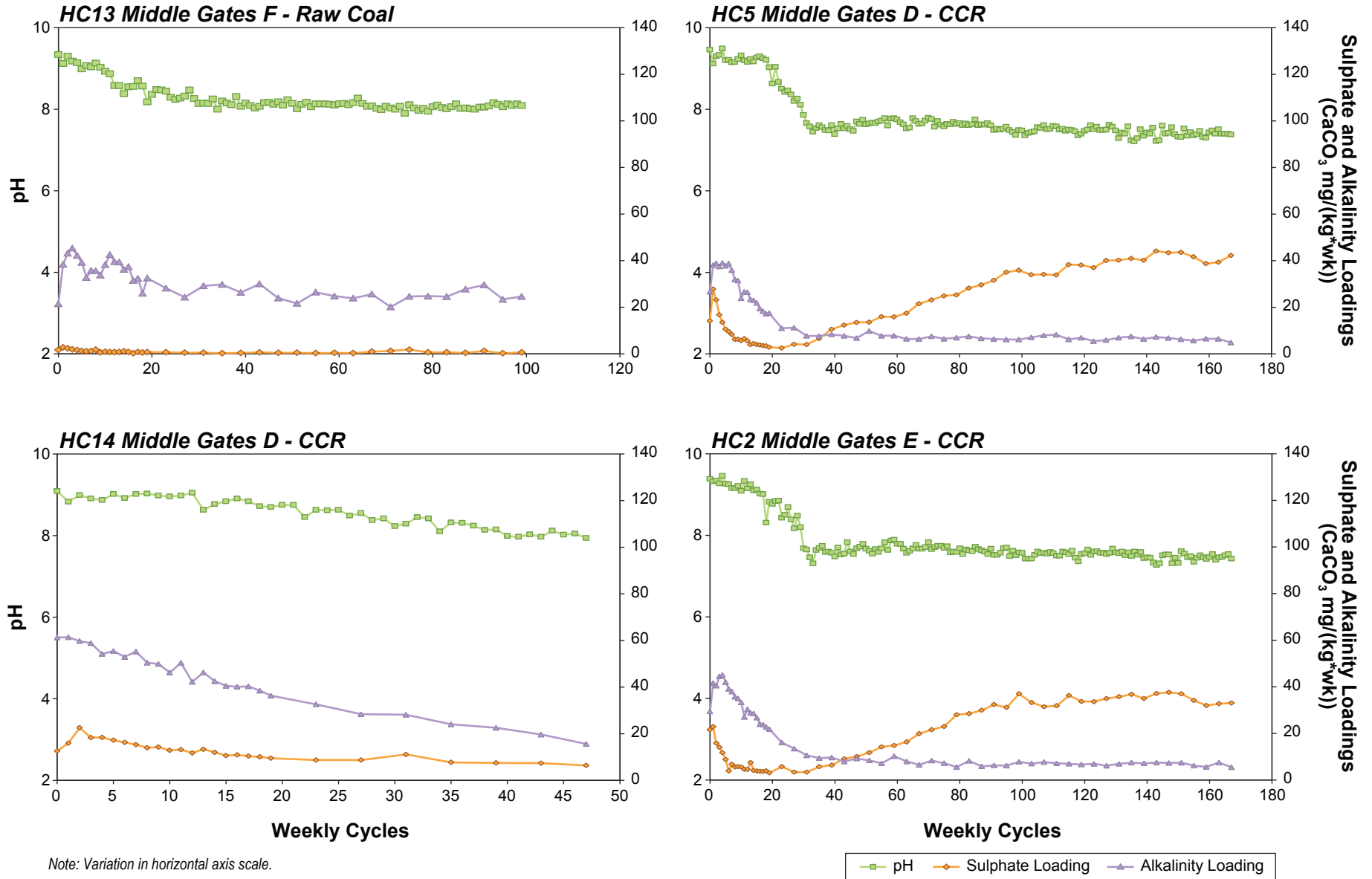
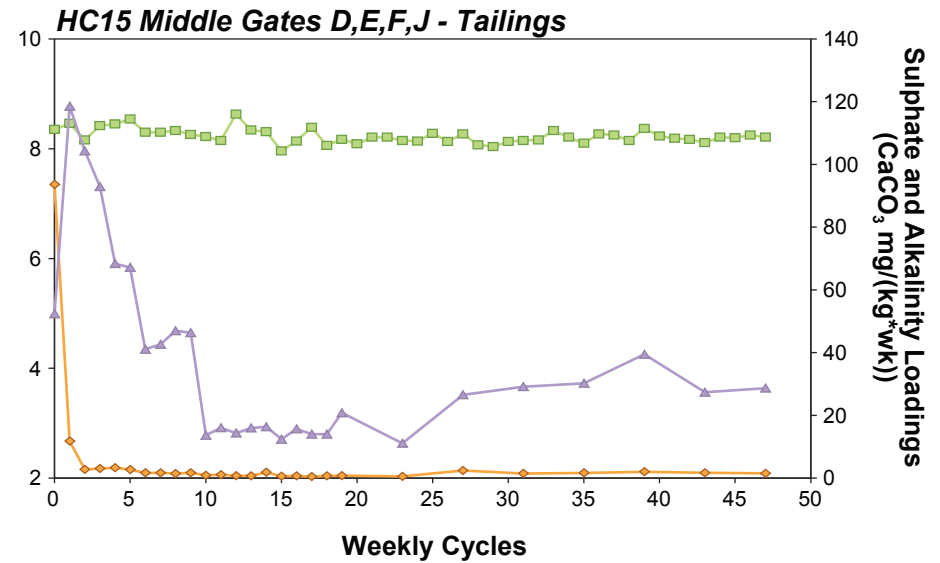
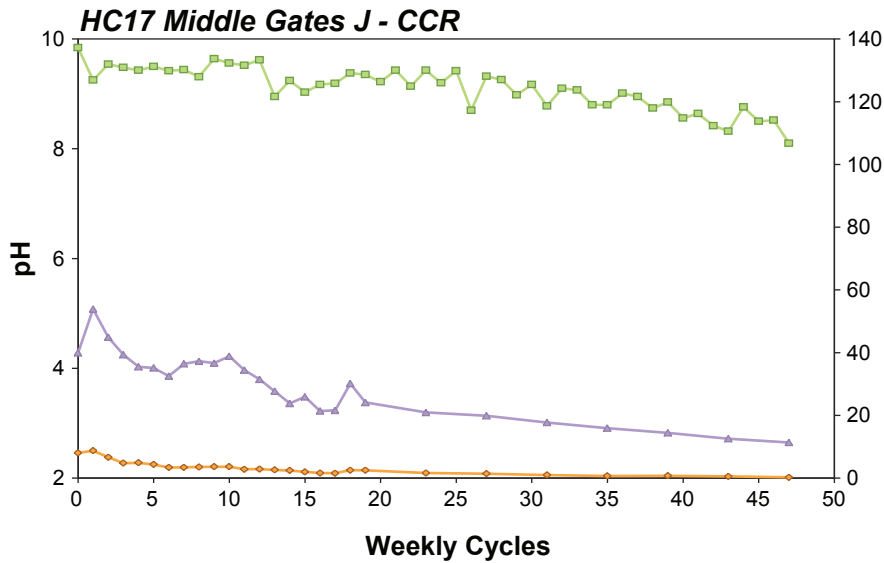
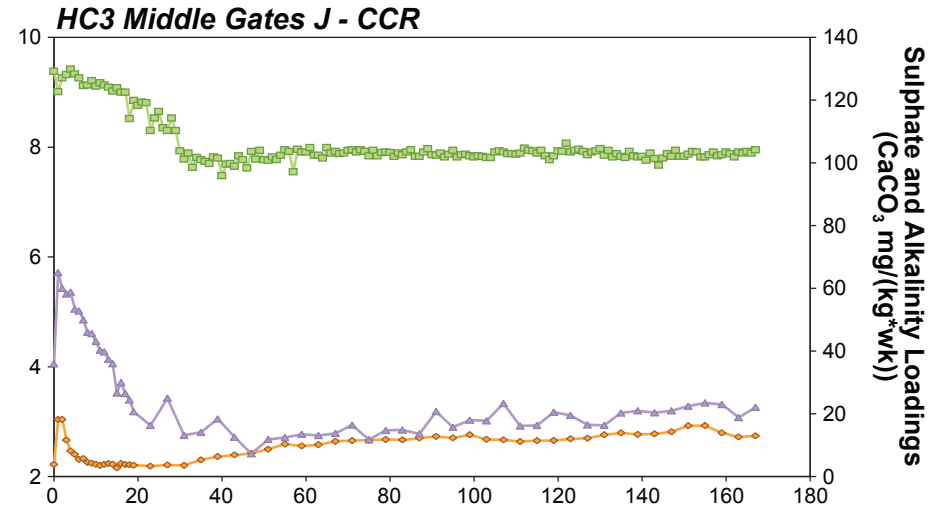
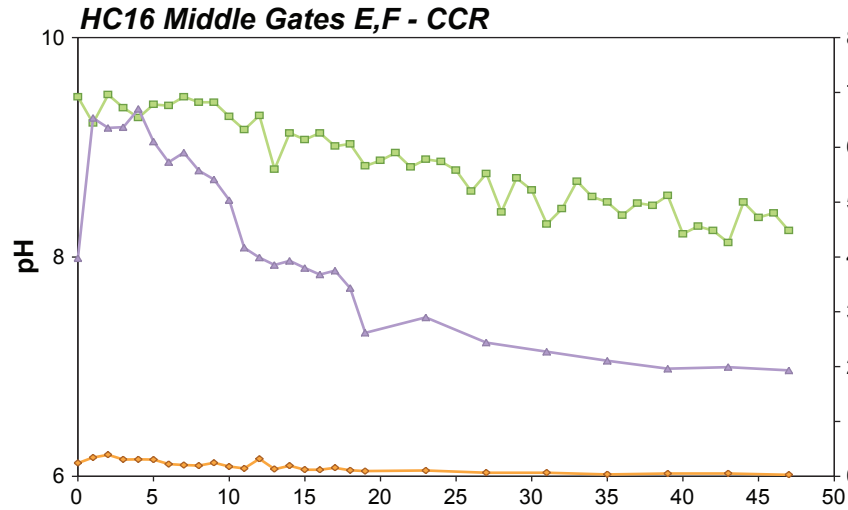




Figure 5.2-17

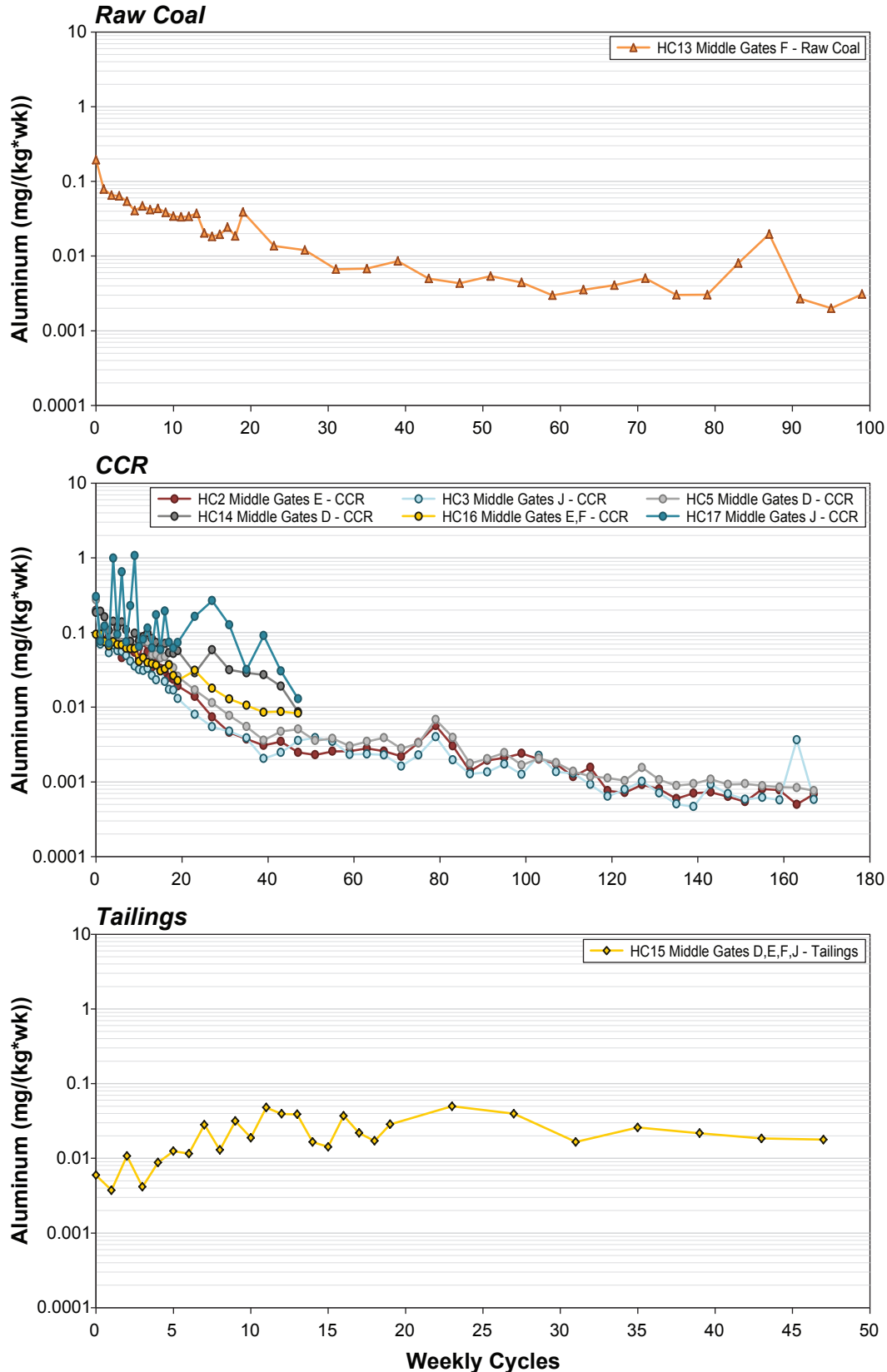
pH Values, and Sulphate and Alkalinity Production Rates for CCR and Tailings Humidity Cells



Note: Variation in horizontal axis scale.

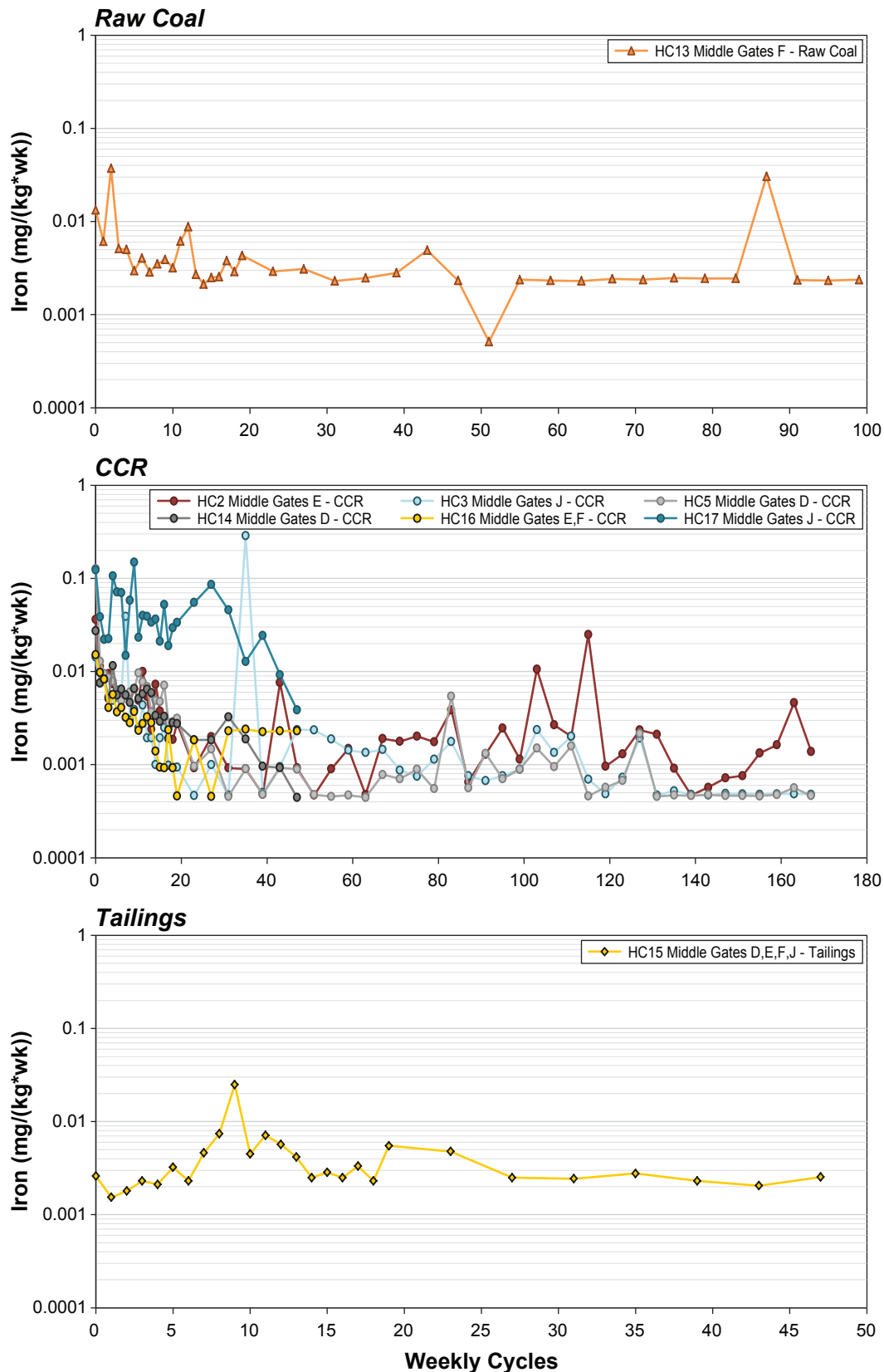
Legend: pH (green square), Sulphate Loading (orange diamond), Alkalinity Loading (purple triangle)

**Figure 5.2-18**  
**Aluminum Production Rates**  
**for Coal Humidity Cells by Material**



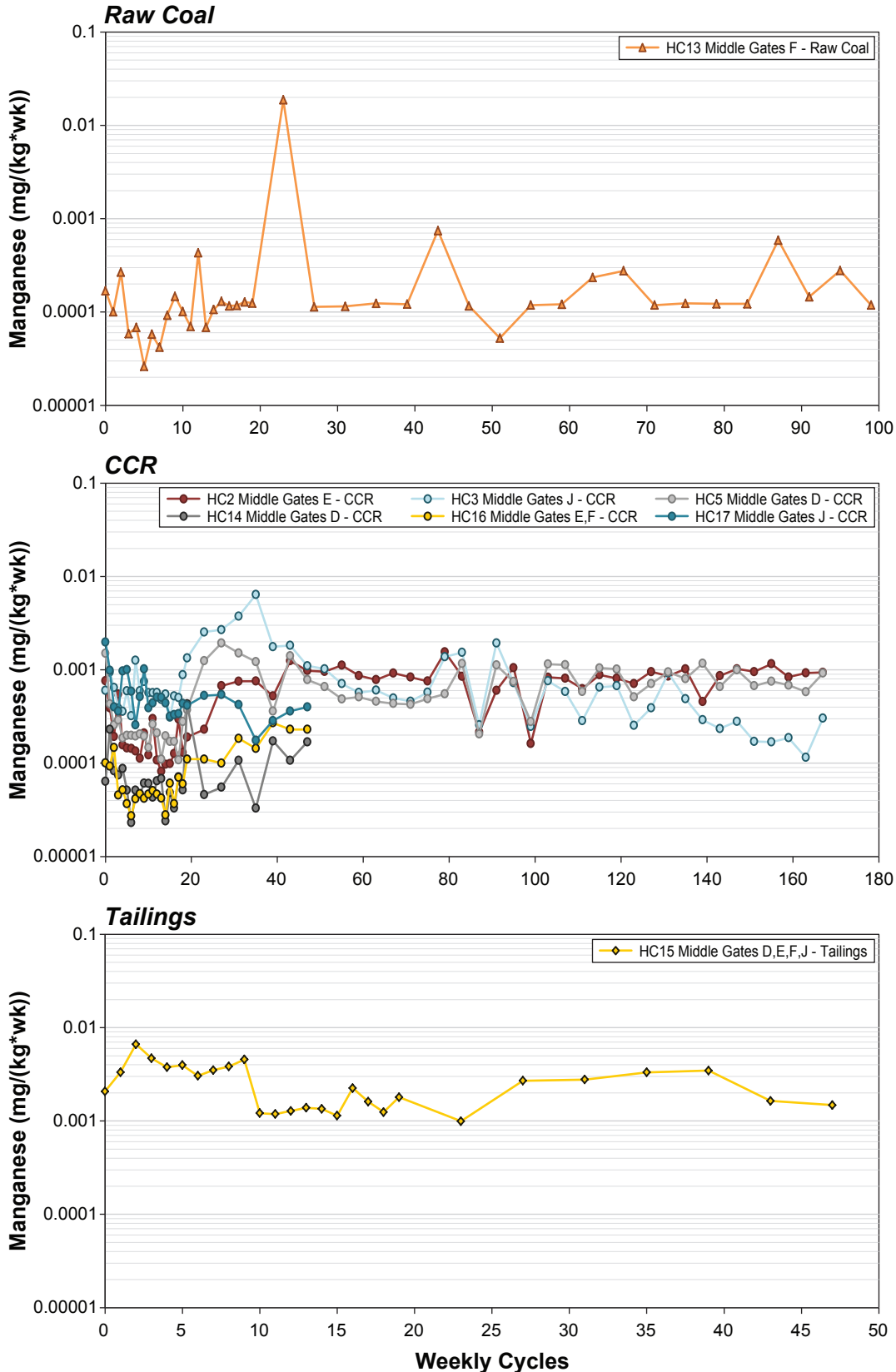
Note: Variation in horizontal axis scale.

**Figure 5.2-19**  
**Iron Production Rates**  
**for Coal Humidity Cells by Material**



Note: Variation in horizontal axis scale.

**Figure 5.2-20**  
**Manganese Production Rates**  
**for Coal Humidity Cells by Material**



Note: Variation in horizontal axis scale.

### Elements of Interest

Selenium is an element of concern in the region, as discussed in Section 3.1. Selenium concentrations were noted as elevated in solid phase, SFE leachate, and HCT leachate in all coal seams. Selenium leach rates decreased over the first 20 to 30 weeks of leaching in all cells, before levelling out (Figure 5.2-21). Selenium loadings did not appear to be controlled by seam, as CCR humidity cells from the same seam differed in selenium loading by up to an order of magnitude. Steady state selenium loadings were approximately correlated with initial solid phase selenium concentrations in the coal humidity cells samples. Selenium loadings in the humidity cells initiated in February 2014 were well-correlated with initial solid phase selenium concentrations over the first 10 weeks of leaching. This was consistent with the results of the longer running humidity cells, in which selenium leach rates were initially high and decreased rapidly. Selenium loadings in coal humidity cells did not correlate with initial sulphide sulphur concentrations.

Arsenic concentrations were elevated in SFE leachate in all coal seams, and so arsenic was considered an element of interest. Arsenic followed a similar pattern to selenium, as arsenic leach rates also decreased over 20 to 35 weeks prior to levelling out in the longer running cells (Figure 5.2-22). Arsenic leach rates did not correlate with initial solid phase arsenic concentrations, and steady state arsenic concentrations were not above guidelines in coal humidity cells.

Cadmium concentrations were elevated in solid phase samples from all coal seams, and samples were above guidelines in SFE and leachate. Cadmium humidity cell leach rates were typically low, and tended to level off after fluctuating for the first 10 to 20 weeks (Figure 5.2-23). The highest cadmium loadings were observed in tailings humidity cell HC15. In J seam humidity cell HC3, cadmium loadings increased by more than an order of magnitude between weeks 67 and 83, an increase that was also observed to a lesser extent in manganese loadings, before levelling out and starting to decrease. Cadmium leach rates did not correlate with initial solid phase cadmium concentrations.

A full suite of metals are analyzed during humidity cell operation. Full humidity cell results and graphs of loadings are presented in Appendix 12 and 13.

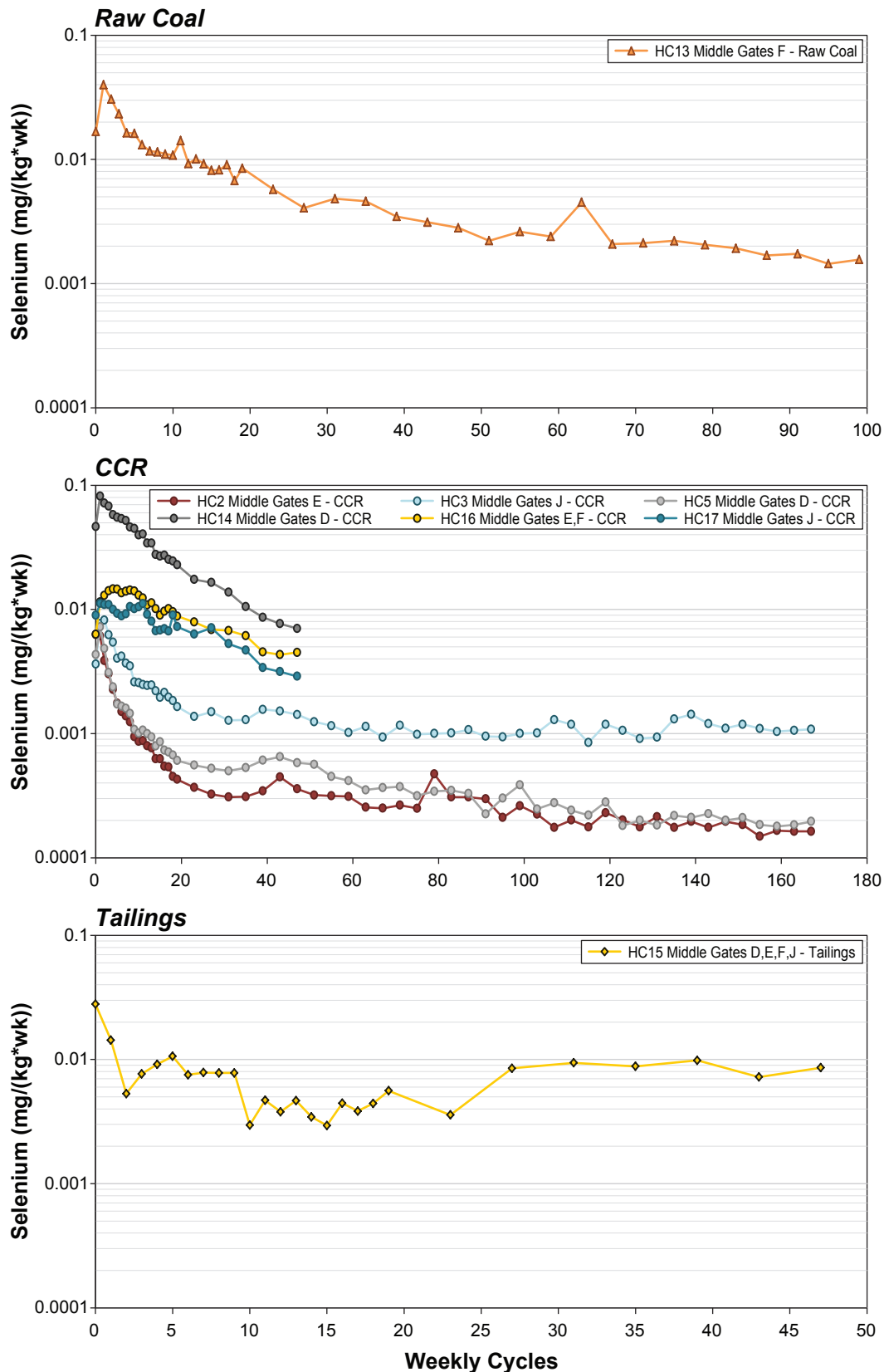
### Elements Associated with Neutralization Potential

Calcium release rates typically increased by one to two orders of magnitude over the first 40 weeks (Figure 5.2-24). In the longer running humidity cells, calcium loadings remained steady thereafter, continuing to increase slightly until about 80-90 weeks in the CCR humidity cells. Magnesium release rates followed a similar pattern to calcium (Figure 5.2-25), which is consistent with the presence of calcium and magnesium in the form of dolomite.

The exception was the composite tailings humidity cell HC15, in which calcium and magnesium loadings were up to two orders of magnitude higher than any other humidity cell for the first nine weeks. Leach rates dropped between weeks nine and ten, after which they remained steady and high. A similar pattern was observed in HC15 for manganese, suggesting that manganese in tailings is associated with calcium-magnesium carbonate (e.g. ankerite, as identified by Rietveld XRD). These initially high calcium and magnesium loadings can be attributed to faster reaction of carbonate minerals in tailings samples due to the smaller grain size and consequent higher surface area for reaction.

Carbonate molar ratios in D and E seam CCR humidity cells are close to 1.0, indicating that the rate of sulphide oxidation is approximately equal to the rate of carbonate consumption (Figure 5.2-26). In J seam CCR humidity cell HC3, the carbonate molar ratio has been stable at between 2.0 and 3.0 for 100 weeks. The highest carbonate molar ratios are in raw coal humidity cell HC13 and composite tailings humidity cell HC15. No other humidity cells have stable carbonate ratios. As of the end of April 2014, carbonate consumption is equal to or higher than sulphate production, and consequently acidic leachate is not being produced in any coal humidity cells.

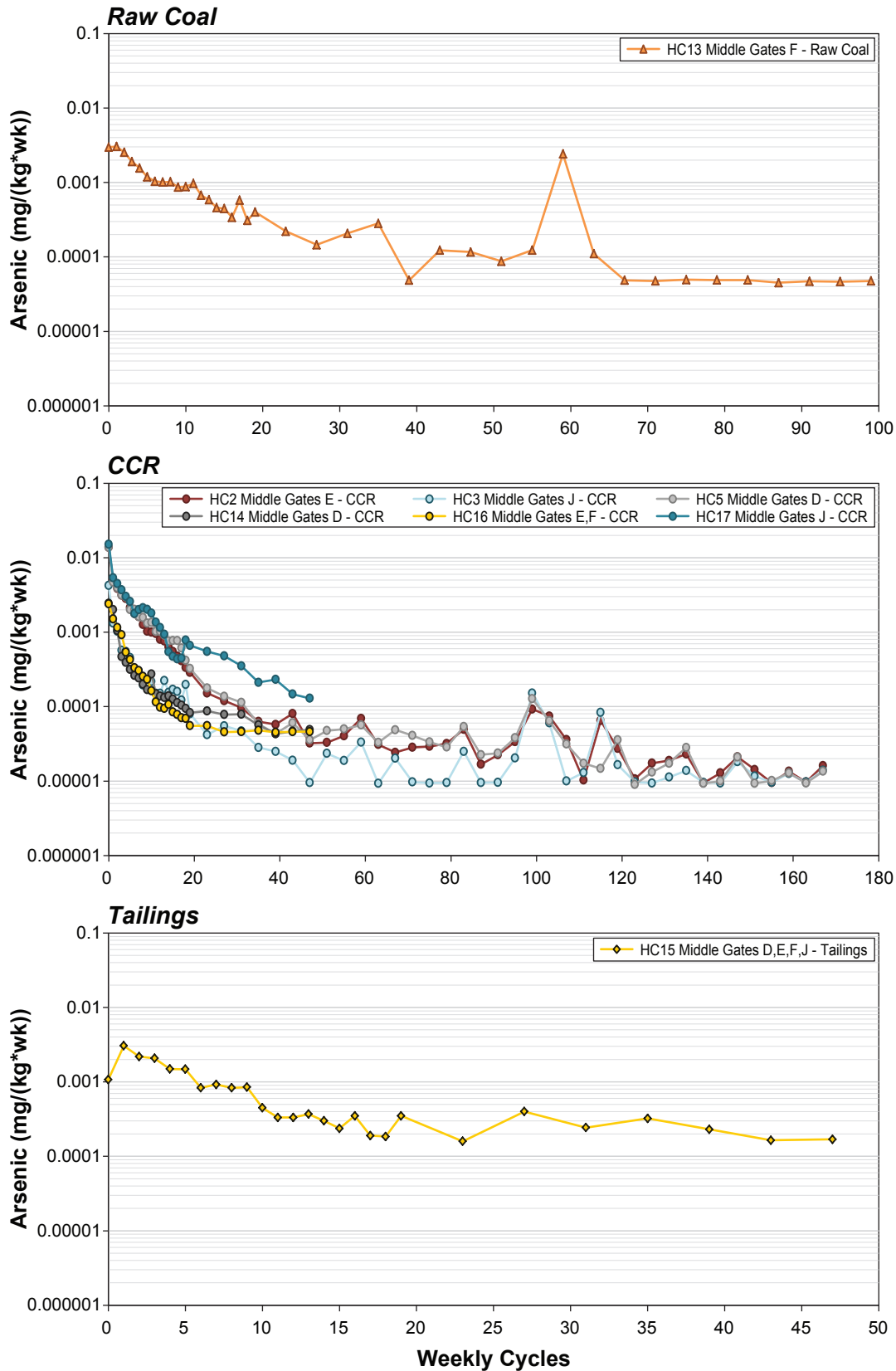
**Figure 5.2-21**  
**Selenium Production Rates**  
**for Coal Humidity Cells by Material**



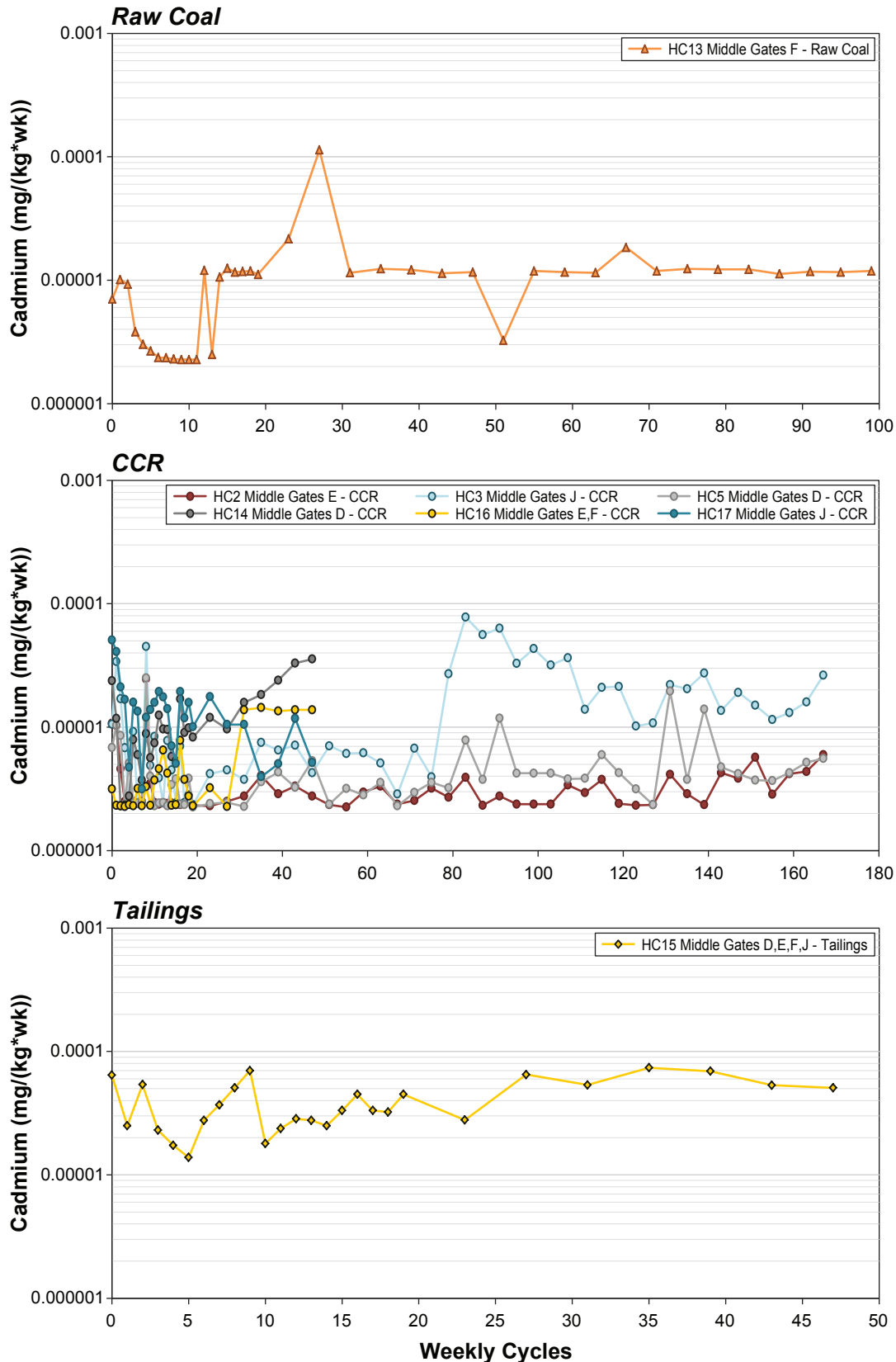
Note: Variation in horizontal axis scale.



**Figure 5.2-22**  
**Arsenic Production Rates**  
**for Coal Humidity Cells by Material**



**Figure 5.2-23**  
**Cadmium Production Rates**  
**for Coal Humidity Cells by Material**



Note: Variation in horizontal axis scale.

**Figure 5.2-24**  
**Calcium Production Rates**  
**for Coal Humidity Cells by Material**

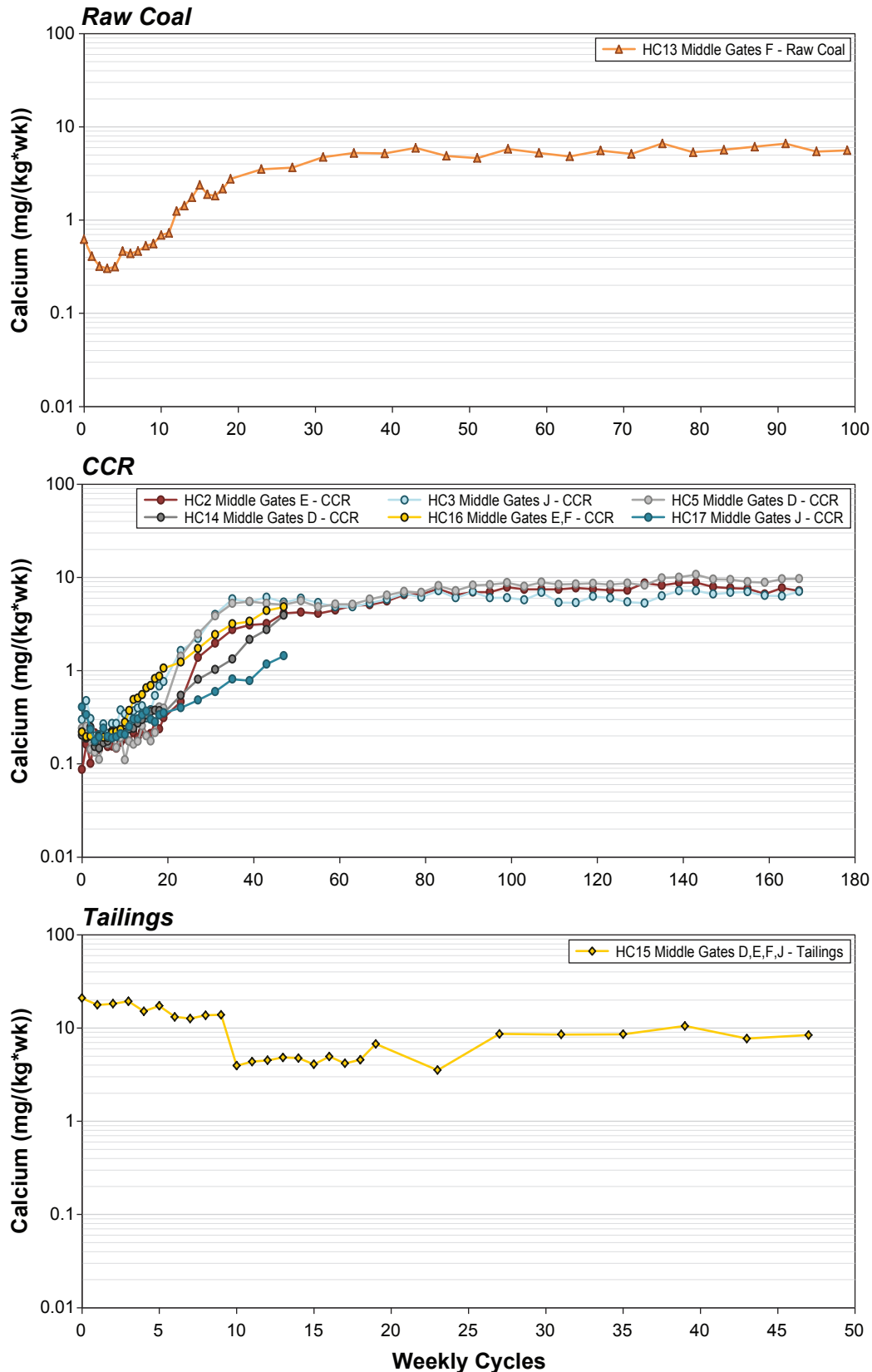
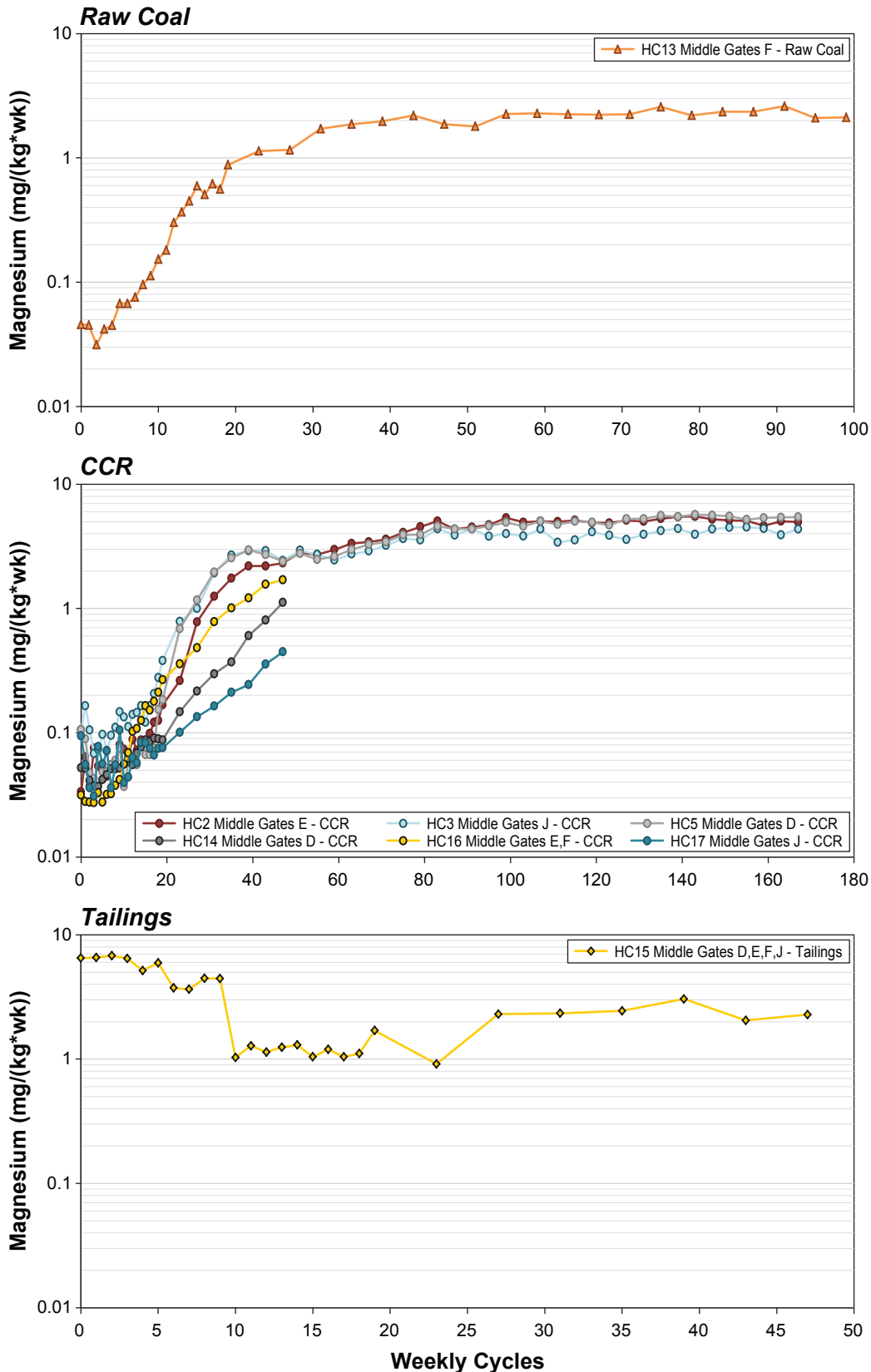


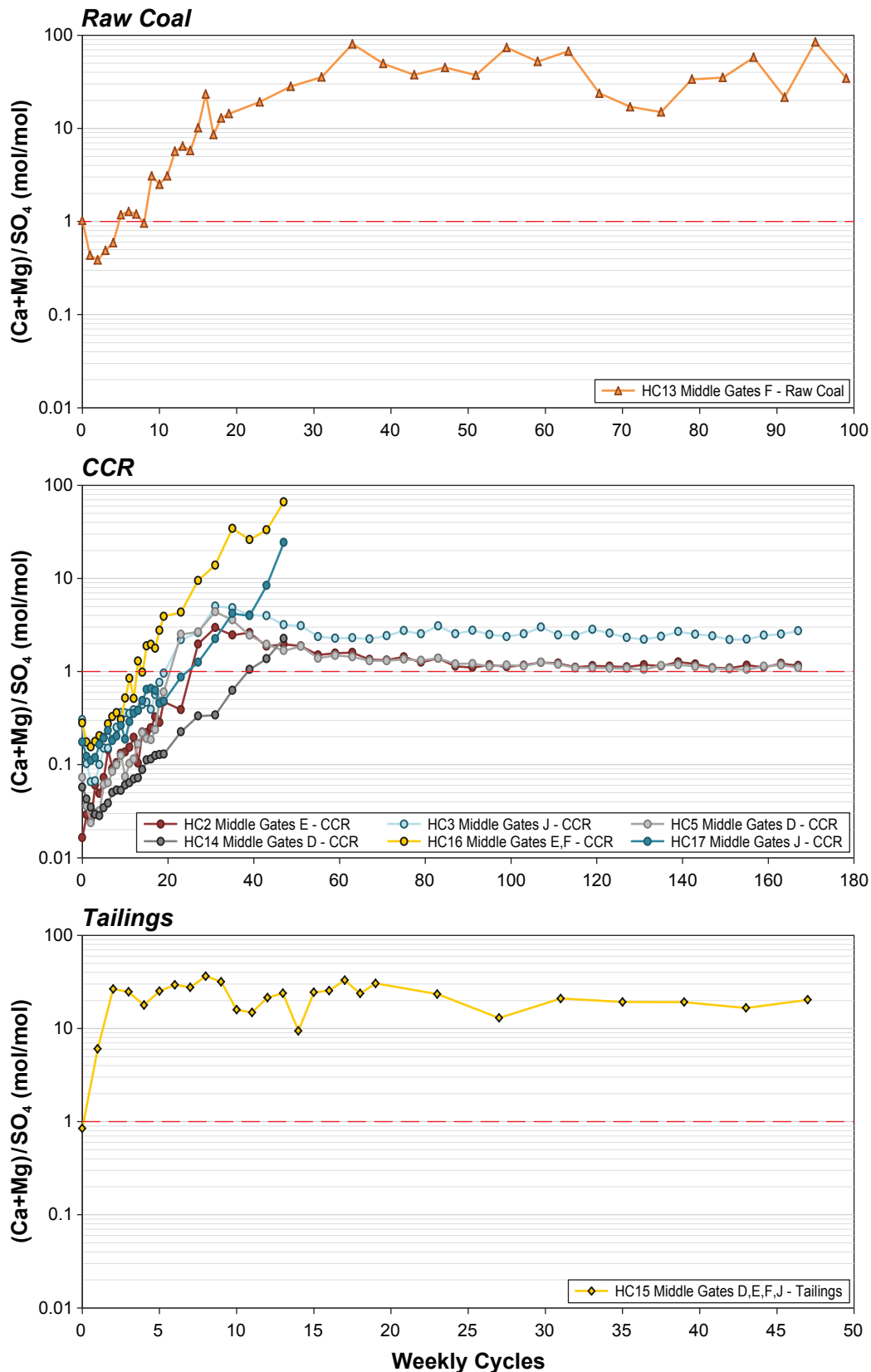
Figure 5.2-25

### Magnesium Production Rates for Coal Humidity Cells by Material



Note: Variation in horizontal axis scale.

Figure 5.2-26  
 Carbonate Molar Ratios  
 for Coal Humidity Cells by Material



Note: Variation in horizontal axis scale.

### Analogue Kinetic Testing

Project coal humidity cells were compared with three coarse reject humidity cells from the Quintette Project. The Quintette Project humidity cells were sourced from D, E, and J seam CCR material—coal seams in the region are laterally continuous across projects, allowing an assessment of lateral variability within coal seams.

### *pH and Sulphate*

Initial pH values in Quintette Project humidity cells were generally lower than at the Murray River Coal Project. Measured pH values were highest in the J seam cell and lowest in D seam, as was also observed in Murray River Coal Project kinetic testing. However, at the Quintette Project acidic pH values were observed in D seam humidity cell HC-13, where pH values dropped to below 3.0 in the first 80 weeks of leaching. Sulphate values were highest in D seam at Quintette Project and continuing to climb after 80 weeks, and lowest in J seam; this was consistent with the observations in Project humidity cells.

### *Elements of Interest*

Selenium leach rates in Quintette Project humidity cells were highest in E seam material, which differed from the observations at the Murray River Coal Project where E seam humidity cells had the lowest selenium loadings. Selenium leach rates at the Quintette Project after 40 to 80 weeks of leaching were in the range of values observed in Project humidity cells.

Cadmium leach rates were correlated with pH, increasing in D seam HC-13 once pH dropped below 6.0. As pH levelled off after about 80 weeks, cadmium loadings began to decrease. In the non-acidic humidity cells, cadmium levels remained low, with comparable leach rates to those observed in Project humidity cells.

### Lag Times

Laboratory HCT results were used to calculate lag times to the onset of acidic leachate in coal material, using the same procedure described for waste rock humidity cells in Section 5.1.3.1. As the Middle Gates Formation is predominantly mudstone and siltstone, CCR and partings material is likely to be composed predominantly of the same lithologies. Therefore, the same correction factor of 2.2 used for waste rock mudstone and siltstone was applied. The predicted lag times to ARD onset are summarized in Table 5.2-12. As none of the Project coal humidity cells have produced acidic leachate at this time, Quintette Project humidity cell HC-13 was included to check the correction factor.

Based on currently operating humidity cells, raw coal leachate is not expected to become acidic.

Coarse coal reject humidity cells with higher than 0.5% initial sulphide sulphur were expected to become acid-leaching, with lag times of less than a year in D seam (Quintette Project HC-13), approximately five years in E seam (HC2), and approximately nine years in J seam (HC17). Humidity cells constructed with CCR material containing less than 0.5% initial sulphide sulphur SNPR values greater than 2.0 were not expected to become acid-leaching.

Composite tailings humidity cell HC15 was not expected to become acid-leaching, due to low sulphate production following the initial five weeks of flushing.

As the coal humidity cells initiated in 2014 approach steady state, including PAG humidity cells from seams D, F, and G/I, and a PAG tailings humidity cell, the ranges of lag times for CCR and tailings by coal seam can be more accurately constrained.



Table 5.2-12. Summary of Predicted and Observed Lag Times for Coal Humidity Cells

Cell ID	Coal Seam	Material	ABA Results				pH last 10 weeks pH unit	Average Sulphate Production Rate <sup>1</sup> (mmol S/kg/wk)	Time to Sulphide Depletion <sup>2</sup> (years)	Bulk NP Consumption Rate <sup>1</sup> (mg CaCO <sub>3</sub> /kg/wk)	Time to NP Depletion <sup>2</sup> (years)	Predicted Total Time to ARD Onset <sup>2</sup> (years)	Observed Time to ARD Onset (if applicable) (years)
			Sulphide-Sulphur (%)	NP kg CaCO <sub>3</sub> /t	TIC (%)	SNPR unitless							
HC13	F	Raw Coal	0.06	25.6	0.41	12.7	8.06	0.01	50	0.8	629.9	not expected	N/A
HC5	D	CCR	0.17	8.5	0.40	1.63	7.40	0.41	4	40.6	5.3	not expected	N/A
HC14	D	CCR	0.25	33.5	0.45	4.30	8.04	0.07	20	7.2	89.4	not expected	N/A
QHC13 <sup>3</sup>	D	CCR	1.61	4.1	0.05	0.08	3.03	0.48	20	48.2	1.6	0.7	0.5
HC2	E	CCR	1.73	16.8	0.37	0.31	7.45	0.33	32	33.2	10.8	4.9	N/A
HC16	E,F	CCR	0.01	81.5	1.12	522	8.34	0.005	5	0.5	3,414	not expected	N/A
HC3	J	CCR	0.53	13.7	0.42	0.83	7.87	0.14	23	14.5	19.2	8.7	N/A
HC17	J	CCR	0.01	124.0	1.88	397	8.54	0.01	9	0.5	4,526	not expected	N/A
HC15	D,E,F,J	Tailings	0.59	28.0	0.42	1.53	8.21	0.02	197	1.8	302	not expected	N/A

<sup>1</sup> Calculated from last 10 weeks of data

<sup>2</sup> Includes time that humidity cells have been running

<sup>3</sup> Quintette Project humidity cell (data from SRK)

Grey highlighted humidity cell was acid-leaching as of the end of April 2014

N/A = not applicable

### 5.2.3.2 Field Leach Barrels

To date, no FLBs containing coal material have been initiated at the Project.

### 5.2.4 ML/ARD Potential and Mitigation

Sulphur content and NP were variable among seams, and as a result the ML/ARD potential of the coal seams was variable. Sulphur was present typically in sulphide sulphur form, with pyrite the dominant sulphide mineral identified by mineralogical analyses. Calcite, dolomite-ankerite, and siderite were all identified as carbonate minerals present in coal seams. Dolomite was typically more abundant than calcite, and siderite was most abundant in J seam samples.

Coal and reject material from the D coal seam is predicted to have a high potential to be acid-generating, with over 65% of D seam samples classified as PAG. This is principally attributed to high sulphide content in D seam. The results of the ML/ARD characterization program for coal samples are summarized in Table 5.2-13.

**Table 5.2-13. Coal ML/ARD Characterization Summary**

Seam	D	E	F	G/I	J
Mass proposed coal (Mt)	9.0	13.6	42.0	8.2	75.1
Number ABA Samples	37	20	37	23	35
ARD Potential <sup>†</sup>					
PAG	67.6%	60.0%	35.1%	17.4%	45.7%
nPAG	32.4%	40.0%	64.9%	82.6%	54.3%
BC guideline exceedances in leachate from SFE	Al <sup>†</sup> , As, Cd, Cr, Fe <sup>†</sup> , Sb, Se, V	Al <sup>†</sup> , As, Ba, Cd, Cr, Fe <sup>†</sup> , Pb, Se, Tl, V, Zn	Al <sup>†</sup> , As, Cd, Cu, Sb, Se, V	Al <sup>†</sup> , As, Sb, Se, V	Al <sup>†</sup> , As, Cd, Cu, Fe <sup>†</sup> , Ni, Sb, Se, V
BC guideline exceedances in leachate from HCT *	Ba, Cd, Se	Ba, Cd, Se	Ba, Cd, Se	n/a	Al <sup>†</sup> , Ba, Cd, Se

<sup>†</sup> ARD potential is based on SNPR, where  $SNPR \geq 2.0 = nPAG$ ,  $SNPR < 2.0 = PAG$

<sup>‡</sup> Concentration compared to dissolved phase guideline

\* HCT concentrations from steady state weeks were compared to guidelines

n/a = no data or samples available

E seam samples were also likely to produce acidity, with 60% of samples classified as PAG. This was predominantly affected by low NP values in E seam. In F seam, the majority of samples (65%) had SNPR values higher than 2.0, but over a third of samples (35%) were PAG.

Samples from J seam showed the most variability in acid generation potential. Sulphide sulphur concentrations and NP were observed across a large range of values. Mineralogical analysis of J seam samples resulted in sulphide mineral abundances ranging from 0.0 to 5.7%, and carbonate mineral abundances ranging from 0.8 to 24%. Siderite content was also highest in J seam samples. J seam therefore appears to have the most in-seam variation.

G/I seam samples had the lowest potential for acid generation. Over 80% of samples had SNPR values greater than 2.0. Neutralization potentials were typically highest in G/I samples, which contained the highest carbonate mineral abundances of all the coal seams.

The SNPR of samples from D, E, F, and J seams had strong sulphide sulphur controls, with most samples containing higher than 0.3% sulphide sulphur having SNPR values below 2. This result was not observed in samples from G/I seam, which were more strongly controlled by NP.

## 6. Summary

## 6. Summary

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Metal leaching and acid rock drainage can occur in environments where sulphide minerals in excavated geologic materials are exposed to air and water. The information presented in this report is used to inform:

- mine planning by assessing potential for ML/ARD;
- the development of ML/ARD management plans; and
- inputs to the predictive water quality model.

### 6.1 ACID ROCK DRAINAGE POTENTIAL FOR MINE PLANNING

The criterion used to determine ML/ARD potential for the Project is the ratio of modified NP to the sulphide AP, the SNPR. Ratios greater than or equal to 2.0 are considered low potential and material is classified as nPAG. Ratios less than 2.0 are considered higher potential, and material is classified as PAG. These classifications are consistent with the approved Waste Rock Management Plan as per CX-9-44. The Project will mine 6 Mtpa metallurgical coal from the Middle Gates Formation D, E, F, G/I, and J seams. Longwall mining will be used, a form of underground mining where coal is extracted in large panels. Waste rock will be excavated for construction of two declines and three shafts. Raw coal will be mined and transported via conveyors to the surface, where it will be processed at the CPP. Clean coal and middlings will be transported off the property, and CCR and tailings will be stored in two reject piles. Waste rock will be stored in a waste rock pile at the surface, with some material stored at the CCR site or underground.

Geochemical characterization of waste rock and coal was completed by ERM Rescan to assist with mine planning. Static geochemical tests were performed on drill core samples collected between 2010 and 2013. Waste rock samples were selected to represent the Hasler, Boulder Creek, Hulcross, Upper Gates, and Middle Gates formations. Samples were also selected to capture the lithological variability. All Project lithologies were sedimentary, and consequently the lithological variability was determined by grain size, and included mudstone, siltstone, sandstone, and conglomerate units. Coal samples were selected to represent raw coal, clean coal (including middlings), CCR (including partings), and tailings from each of the targeted coal seams.

#### 6.1.1 Waste Rock

Waste rock from the Hasler and Hulcross formations represents a high potential for ARD, with over 85% of samples from each formation having SNPR values of less than 2.0. Boulder Creek Formation waste rock samples have a moderate potential for ARD, as 30% of samples were classified as PAG. Greater than 80% of samples from the Gates Formation, including Upper Gates Formation waste rock and Middle Gates Formation interburden between coal seams, was classified as nPAG, indicating a low potential for acid generation in that formation. Overburden material was also predominantly classified as nPAG, as more than 85% of overburden samples had SNPR values greater than or equal to 2.0. Acid rock drainage potential of waste rock is summarized by formation in Table 6.1-1, with estimated masses of PAG and nPAG rock calculated from the masses of proposed waste rock, as detailed in Table 4.2-2.

Overall, as the declines are constructed, the earliest waste rock to be excavated will typically have the highest ARD potential. Waste rock from above and between coal seams, excluding wall and parting material directly in contact with the seams, has a low potential for ARD.

**Table 6.1-1. Waste Rock Acid Rock Drainage Potential Summary**

Formation	Overburden	Hasler	Boulder Creek	Hulcross	Upper Gates	Middle Gates Interburden
Mass proposed waste rock (kt)	31	238	42	43		129
Number ABA Samples	7	45	30	31	32	22
<i>ARD Potential<sup>†</sup></i>						
PAG Proportion	14.3%	86.7%	30.0%	90.3%		18.5%
nPAG Proportion	85.7%	13.3%	70.0%	9.7%		81.5%
Estimated PAG Mass (kt)	4.5	206	12.6	38.7		23.9
Estimated nPAG Mass (kt)	26.8	31.7	29.5	4.1		105

<sup>†</sup> ARD potential is based on SNPR, where  $SNPR \geq 2.0 = nPAG$ ,  $SNPR < 2.0 = PAG$

### 6.1.2 Coal

Coal material ARD potential varied depending on the coal seam. Seams D and E both have a higher potential for ARD, with at least 60% of samples from both coal seams being classified as PAG. In F seam, approximately 35% of samples were PAG, and in J seam approximately 46% of samples were PAG. G/I seam had the lowest potential for ARD. Acid rock drainage potential of coal material is summarized by coal seam in Table 6.1-2, with estimated masses of PAG and nPAG rock calculated from the masses of proposed coal to be mined, as detailed in Table 4.2-3.

**Table 6.1-2. Coal Acid Rock Drainage Potential Summary**

Seam	D	E	F	G/I	J
Mass proposed coal (Mt)	9.0	13.6	42.0	8.2	75.1
Number ABA Samples	37	20	37	23	35
<i>ARD Potential<sup>†</sup></i>					
PAG Proportion	67.6%	60.0%	35.1%	17.4%	45.7%
nPAG Proportion	32.4%	40.0%	64.9%	82.6%	54.3%
PAG Mass (Mt)	6.08	8.16	14.7	1.43	34.3
nPAG Mass (Mt)	2.92	5.44	27.3	6.77	40.8

<sup>†</sup> ARD potential is based on SNPR, where  $SNPR \geq 2.0 = nPAG$ ,  $SNPR < 2.0 = PAG$

<sup>‡</sup> Concentration compared to dissolved phase guideline

The bulk of the seams with the highest potential for ARD, D and E seams, is scheduled to be mined in the first seven years of mining (Table 3.2-1). This mine schedule indicates that the raw coal and reject piles will have the highest potential for acid generation in the early years of mining, but material will subsequently be covered by nPAG material.

## 6.2 METAL LEACHING POTENTIAL

### 6.2.1 Waste Rock

Waste rock represents a potential for ML. Metal release rates in leachate were assessed through SFE, HCT, and FLB analyses. Dissolved aluminum, arsenic, selenium, and vanadium concentrations were above BC 30-day mean or maximum water quality dissolved or total guidelines for multiple samples from each formation in SFE leachate.

In FLB leachate, dissolved aluminum, arsenic, chromium, copper, iron, selenium, and zinc frequently exceeded BC guidelines. Selenium was elevated in both solid phase and leachate for several samples, and the highest selenium leach rates were observed in the acidic Boulder Creek Formation humidity cell (HC4).

### 6.2.2 Coal

Coal material from seams D, E, F, and J have the highest potential for ML, based on SFE and HCT leachate. G/I seam material has the lowest potential for ML, with elements only elevated in SFE leachate.

Dissolved aluminum, arsenic, selenium, and vanadium had concentrations above BC dissolved or total guidelines in all coal seams in SFE leachate. Dissolved cadmium selenium concentrations were frequently elevated in HCTs. Dissolved barium was elevated in clean coal samples. Selenium and cadmium were elevated in both solid phase and leachate for several samples, and selenium leach rates in HCTs correlated with initial selenium concentrations.

## References



## References

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Definitions of the acronyms and abbreviations used in this reference list can be found in the Glossary and Abbreviations section.

1996. *Mines Act*, RSBC 293.

BCMEMP and BCMELP. 1998. *Policy for metal leaching and acid rock drainage at British Columbia minesites*. British Columbia Ministry of Energy and Mines and British Columbia Ministry of Environment, Lands and Parks: Victoria, BC.

BCMEMP. 2008. *Health, Safety and Reclamation Code for Mines in British Columbia*. Ministry of Energy, Mines and Petroleum Resources: Victoria, BC.

Holland, S. S. 1976. *Landforms of British Columbia: A physiographic outline*.

Norwest. 2010. *Geology and Coal Resources of the Murray River Coal Property, Peace River Coalfield, British Columbia*. Canadian Dehua International Mine Group, Inc.: Salt Lake City, Utah.

Peace River Coal Inc. 2010. *Roman Coal Mine Project Environmental Assessment Report*.

Price, W. A. 1997. *Draft guidelines and recommended methods for the prediction of metal leaching and acid rock drainage at minesites in British Columbia*. British Columbia Ministry of Employment and Investment: Victoria, BC.

Price, W. A. 2005. *List of Potential Information Requirements in Metal Leaching/Acid Rock Drainage Assessment and Mitigation Work. MEND Report 5.10E*. Natural Resources Canada, Mine Environmental Neutral Drainage (MEND) Program: Ottawa, ON.

Price, W. A. 2009. *Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. MEND Report 1.20.1*. Natural Resources Canada, Mine Environmental Neutral Drainage Program: Ottawa, ON.

Price, W. A. and J. C. Errington. 1998. *Guidelines For Metal Leaching and Acid Rock Drainage at Minesites in British Columbia*. Ministry of Energy and Mines: Victoria, BC.

Rescan. 2011. *Murray River Bulk Sample: Waste Discharge Permit Application Technical Assessment Report*. Prepared for HD Mining International Ltd. by Rescan Environmental Services Ltd.: Vancouver, BC.

Rescan. 2012. *Murray River Coal Project: 2011 Geochemistry Baseline Report*. Prepared for HD Mining International Ltd. by Rescan Environmental Services Ltd.: Vancouver, BC.

Rescan. 2013. *Murray River Coal Project: 2010 to 2012 Soils and Terrain Baseline Report*. Prepared for HD Mining International Ltd. by Rescan Environmental Services Ltd.: Vancouver, BC.

Skousen, J., J. Renton, H. Brown, P. Evans, K. Leavitt, K. Brady, L. Dohen, and P. Ziemkiewicz. 1997. Neutralization potential of overburden samples containing siderite. *Journal of Environmental Quality*, 26 (3): 673-81.

SRK. 2012. *Metal Leaching and Acid Rock Drainage Management Plan: Quintette Project*. 1CT017.008. Prepared for Teck Coal Ltd. by SRK Consulting (Canada) Inc.: Vancouver, BC.

Western Canadian Coal. 2007. *Application for an Environmental Assessment Certificate for the Hermann Mine Project*.

# Appendix 1

## Overburden and Waste Rock ABA and Elemental Abundance Results

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Drillhole Govt ID	Drillhole Client ID	From	To	Formation	Description	Lithology	Weight kg	Lab	Lab Certificate	Date	Paste pH pH Unit
2128212	P2R11-17	P2R11	H6	0.2	0.4	Overburden	till	gravelly sandy soil	3.09	Agat	10V452067	15-Nov-10	5.68
2128213	P2R11-18	P2R11	H6	0.2	0.4	Overburden	till	sansicl	4.59	Agat	10V452067	15-Nov-10	8.51
2128211	P2R11-16	P2R11	H6	53.35	53.95	Overburden	till	clay	4.21	Agat	10V452067	15-Nov-10	8.18
MRC RX 55	MRC RX 55	P2C21	H2	0	0.5	Overburden	Top Soil	Sand/Gravel	3.46	Maxxam		26-May-11	5.57
MRC RX 56	MRC RX 56	P2C21	H2	17	17.5	Overburden	Upper Till	Mudstone	2.32	Maxxam		26-May-11	8.58
MRC RX 57	MRC RX 57	P2C21	H2	17.8	18.3	Overburden	Lower Till	Mudstone	1.70	Maxxam		26-May-11	9.31
2128210	P2R11-15	P2R11	H6	61.2	61.85	Overburden	till	clay	3.42	Agat	10V452067	15-Nov-10	7.80
2212056	MRC RX 15	P1R39	H16	159.14	160.14	Hasler	Upper Hasler	Mudstone	0.37	Agat	10T462552	23-Dec-10	8.98
MRC RX 76	MRC RX 76	P2C24	H12	96.3	96.55	Hasler	Upper Hasler	Siltstone	1.85	Maxxam		22-Jun-11	9.08
MRC RX 91	MRC RX 91	P2C27	H14	64	64.23	Hasler	Upper Hasler	Siltstone	3.46	Maxxam		22-Jun-11	9.66
MRC RX 102	MRC RX 102	P1R39	H16w	49.4	49.66	Hasler	Upper Hasler	Siltstone	1.95	Maxxam		22-Jun-11	9.76
2212057	MRC RX 16	P1R39	H16	283.96	285.96	Hasler	Upper Hasler	Mudstone	0.32	Agat	10T462552	23-Dec-10	8.86
MRC RX 38	MRC RX 38	P1R31	H8	97.73	97.93	Hasler	Upper Hasler	Siltstone	2	Maxxam		23-Mar-11	9.45
MRC RX 30	MRC RX 30	P2R6	H3	98.8	99.15	Hasler	Upper Hasler	Mudstone	2.69	Maxxam		23-Mar-11	9.78
MRC RX 46	MRC RX 46	P1C45	H11	100	100.4	Hasler	Upper Hasler	Mudstone	1.705	Maxxam		23-Mar-11	9.22
MRC RX 58	MRC RX 58	P2C21	H2	29	29.5	Hasler	Upper Hasler	Mudstone	1.64	Maxxam		26-May-11	9.72
2128169	P2C20-1	P2C20	H1	42.37	42.82	Hasler	Upper Hasler	Siltstone	3.37	Agat	10V452067	15-Nov-10	9.08
MRC RX 47	MRC RX 47	P1C45	H11	298.8	299.2	Hasler	Middle Hasler	Mudstone	2.02	Maxxam		23-Mar-11	9.51
MRC RX 31	MRC RX 31	P2R6	H3	322.17	322.64	Hasler	Middle Hasler	Mudstone	1.72	Maxxam		23-Mar-11	9.48
2212058	MRC RX 17	P1R39	H16	443.56	445.56	Hasler	Middle Hasler	Mudstone	0.43	Agat	10T462552	23-Dec-10	8.45
2212059	MRC RX 18	P1R39	H16	443.56	445.56	Hasler	Middle Hasler	Mudstone	0.35	Agat	10T462552	23-Dec-10	8.50
2212060	MRC RX 19	P1R39	H16	559.14	560.14	Hasler	Middle Hasler	Mudstone	0.45	Agat	10T462552	23-Dec-10	8.84
2212061	MRC RX 20	P1R39	H16	652.3	654.3	Hasler	Middle Hasler	Sandstone	0.35	Agat	10T462552	23-Dec-10	8.65
MRC RX 39	MRC RX 39	P1R31	H8	373	373.4	Hasler	Middle Hasler	Sandstone	1.75	Maxxam		23-Mar-11	9.57
MRC RX 59	MRC RX 59	P2C21	H2	299.75	300.25	Hasler	Middle Hasler	Mudstone	2.20	Maxxam		26-May-11	9.81
MRC RX 77	MRC RX 77	P2C24	H12	299.8	300.03	Hasler	Middle Hasler	Siltstone	1.84	Maxxam		22-Jun-11	9.97
MRC RX 92	MRC RX 92	P2C27	H14	127.81	128	Hasler	Middle Hasler	Siltstone	2.25	Maxxam		22-Jun-11	9.84
MRC RX 103	MRC RX 103	P1R39	H16w	292.1	292.35	Hasler	Middle Hasler	Siltstone	1.84	Maxxam		22-Jun-11	9.89
2128170	P2C20-2	P2C20	H1	209.55	209.92	Hasler	Middle Hasler	Siltstone	3.05	Agat	10V452067	15-Nov-10	9.49
2128170A	P2C20-2	P2C20	H1	209.55	209.92	Hasler	Middle Hasler	Siltstone	2.51	Maxxam		24-Feb-11	9.54
2128171	P2C20-3	P2C20	H1	302.24	302.67	Hasler	Middle Hasler	Siltstone	2.22	Agat	10V452067	15-Nov-10	9.33
MRC RX 32	MRC RX 32	P2R6	H3	480.25	480.67	Hasler	Lower Hasler	Mudstone	1.95	Maxxam		23-Mar-11	9.30
MRC RX 48	MRC RX 48	P1C45	H11	480.97	481.42	Hasler	Lower Hasler	Mudstone	1.64	Maxxam		23-Mar-11	9.41
MRC RX 40	MRC RX 40	P1R31	H8	531.2	531.65	Hasler	Lower Hasler	Mudstone	1.29	Maxxam		23-Mar-11	9.68
MRC RX 45	MRC RX 45	P1R31	H8	531.2	531.65	Hasler	Lower Hasler	Mudstone	0.985	Maxxam		23-Mar-11	9.41
MRC RX 78	MRC RX 78	P2C24	H12	479.5	479.76	Hasler	Lower Hasler	Siltstone	1.83	Maxxam		22-Jun-11	9.65
MRC RX 93	MRC RX 93	P2C27	H14	222.5	222.7	Hasler	Lower Hasler	Siltstone	2.72	Maxxam		22-Jun-11	9.55
MRC RX 104	MRC RX 104	P1R39	H16w	581.97	582.23	Hasler	Lower Hasler	Siltstone	1.95	Maxxam		22-Jun-11	9.73
2128172	P2C20-4	P2C20	H1	487.17	487.57	Hasler	Lower Hasler	Siltstone	2.59	Agat	10V452067	15-Nov-10	9.20
2128172A	P2C20-4	P2C20	H1	487.17	487.57	Hasler	Lower Hasler	Siltstone	2.75	Maxxam		24-Feb-11	9.25
MRC RX 60	MRC RX 60	P2C21	H2	592.85	593.35	Hasler	Lower Hasler	Siltstone	1.47	Maxxam		26-May-11	9.64
2128196	P2R11-1	P2R11	H6	100.79	101	Hasler	Lower Hasler	Mudstone	2.06	Agat	10V452067	15-Nov-10	8.77
HF9093	BH06-10.1M	MW-H29	BH06	9.94	10.18	Hasler	Hasler East	Mudstone	1.88	Maxxam	B372818	1-Sep-13	9.18
HF9094	BH06-19.8M	MW-H29	BH06	19.70	19.92	Hasler	Hasler East	Mudstone	1.66	Maxxam	B372818	1-Sep-13	8.87
HF9095	BH06-29.9M	MW-H29	BH06	29.78	29.96	Hasler	Hasler East	Mudstone	1.38	Maxxam	B372818	1-Sep-13	8.93
HF9096	BH06-39.9M	MW-H29	BH06	39.84	40.01	Hasler	Hasler East	Mudstone	1.33	Maxxam	B372818	1-Sep-13	8.99

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Drillhole Govt ID	Drillhole Client ID	From	To	Formation	Description	Lithology	Weight	Lab	Lab	Date	Paste pH
									kg		Certificate		pH Unit
HF9097	BH06-50.0M	MW-H29	BH06	49.88	50.09	Hasler	Hasler East	Mudstone	1.52	Maxxam	B372818	1-Sep-13	9.04
HF9098	BH06-59.7M	MW-H29	BH06	59.64	59.85	Hasler	Hasler East	Mudstone	1.6	Maxxam	B372818	1-Sep-13	8.91
HF9099	BH06-69.8M	MW-H29	BH06	69.68	69.92	Hasler	Hasler East	Mudstone	1.79	Maxxam	B372818	1-Sep-13	8.62
HF9100	BH06-79.9M	MW-H29	BH06	79.77	79.95	Hasler	Hasler East	Mudstone	1.36	Maxxam	B372818	1-Sep-13	8.81
HF9101	BH06-89.9M	MW-H29	BH06	89.80	90.03	Hasler	Hasler East	Mudstone	1.73	Maxxam	B372818	1-Sep-13	8.34
HF9102	BH06-98.5M	MW-H29	BH06	98.34	98.57	Hasler	Hasler East	Mudstone	1.6	Maxxam	B372818	1-Sep-13	8.56
2128225	P2R18-1	P2R18	H15	254.65	254.9	Boulder Creek	Upper Boulder Creek	Siltstone	1.99	Agat	10V452067	15-Nov-10	8.74
MRC RX 79	MRC RX 79	P2C24	H12	522	522.24	Boulder Creek	Upper Boulder Creek	Sandstone	1.86	Maxxam		22-Jun-11	9.33
MRC RX 41	MRC RX 41	P1R31	H8	620.5	620.85	Boulder Creek	Upper Boulder Creek	Mudstone	1.75	Maxxam		23-Mar-11	9.37
MRC RX 94	MRC RX 94	P2C27	H14	253.78	254	Boulder Creek	Upper Boulder Creek	Siltstone	2.40	Maxxam		22-Jun-11	9.45
MRC RX 105	MRC RX 105	P1R39	H16w	591	591.25	Boulder Creek	Upper Boulder Creek	Sandstone	1.80	Maxxam		22-Jun-11	9.28
2128173	P2C20-5	P2C20	H1	520.6	521.2	Boulder Creek	Upper Boulder Creek	Mudstone	2.74	Agat	10V452067	15-Nov-10	8.89
2128174	P2C20-6	P2C20	H1	612.64	613	Boulder Creek	Middle Boulder Creek	Sandstone	1.78	Agat	10V452067	15-Nov-10	9.35
2128175	P2C20-7	P2C20	H1	623.54	623.92	Boulder Creek	Middle Boulder Creek	Sandstone	1.72	Agat	10V452067	15-Nov-10	8.38
MRC RX 29	MRC RX 29	P2R6	H3	601	601.43	Boulder Creek	Middle Boulder Creek	Siltstone	1.13	Maxxam		23-Mar-11	9.46
MRC RX 49	MRC RX 49	P1C45	H11	606	606.38	Boulder Creek	Middle Boulder Creek	Mudstone	1.75	Maxxam		23-Mar-11	9.23
MRC RX 50	MRC RX 50	P1C45	H11	670.5	670.9	Boulder Creek	Middle Boulder Creek	Mudstone	1.54	Maxxam		23-Mar-11	9.34
MRC RX 61	MRC RX 61	P2C21	H2	739.9	740.4	Boulder Creek	Middle Boulder Creek	Fine-grained Sandstone	1.88	Maxxam		26-May-11	9.33
MRC RX 80	MRC RX 80	P2C24	H12	576.3	576.55	Boulder Creek	Middle Boulder Creek	Sandstone	1.94	Maxxam		22-Jun-11	9.53
MRC RX 106	MRC RX 106	P1R39	H16w	658.3	658.56	Boulder Creek	Middle Boulder Creek	Sandstone	2.01	Maxxam		22-Jun-11	9.68
MRC RX 122	MRC RX 122	P2R7	H21	773.93	774.3	Boulder Creek	Middle Boulder Creek	Sandstone	1.90	Maxxam		22-Jun-11	8.93
MRC RX 95	MRC RX 95	P2C27	H14	298.77	299	Boulder Creek	Middle Boulder Creek	Siltstone	3.37	Maxxam		22-Jun-11	9.44
2128214	P2C26-1	P2C26	H18	253	253.24	Boulder Creek	Middle Boulder Creek	Mudstone	1.97	Agat	10V452067	15-Nov-10	8.99
2128197	P2R11-2	P2R11	H6	176.58	176.78	Boulder Creek	Middle Boulder Creek	Siltstone	1.62	Agat	10V452067	15-Nov-10	9.04
2212048	MRC RX 08	P2R16	H19	392.25	393.86	Boulder Creek	Middle Boulder Creek	Conglomerate	0.35	Agat	10T462552	23-Dec-10	8.42
2128176	P2C20-8	P2C20	H1	708.52	708.96	Boulder Creek	Lower Boulder Creek	Mudstone	2.43	Agat	10V452067	15-Nov-10	9.16
MRC RX 81	MRC RX 81	P2C24	H12	639	639.25	Boulder Creek	Lower Boulder Creek	Sandstone	2.05	Maxxam		22-Jun-11	8.81
MRC RX 96	MRC RX 96	P2C27	H14	349.2	349.4	Boulder Creek	Lower Boulder Creek	Sandstone	3.42	Maxxam		22-Jun-11	8.07
MRC RX 107	MRC RX 107	P1R39	H16w	712	712.28	Boulder Creek	Lower Boulder Creek	Sandstone	2.09	Maxxam		22-Jun-11	8.90
MRC RX 123	MRC RX 123	P2R7	H21	791.64	791.97	Boulder Creek	Lower Boulder Creek	Conglomerate	1.53	Maxxam		22-Jun-11	5.60
MRC RX 124	MRC RX 124	P2R7	H21	809.7	810.4	Boulder Creek	Lower Boulder Creek	Mudstone	1.64	Maxxam		22-Jun-11	8.80
MRC RX 42	MRC RX 42	P1R31	H8	680.8	681.2	Boulder Creek	Lower Boulder Creek	Sandstone	1.98	Maxxam		23-Mar-11	8.76
MRC RX 34	MRC RX 34	P2R6	H3	689.5	689.94	Boulder Creek	Lower Boulder Creek	Sandstone	1.72	Maxxam		23-Mar-11	9.08
MRC RX 33	MRC RX 33	P2R6	H3	601	601.43	Boulder Creek	Lower Boulder Creek	Siltstone	1.13	Maxxam		23-Mar-11	9.46
MRC RX 62	MRC RX 62	P2C21	H2	846.2	846.7	Boulder Creek	Lower Boulder Creek	Fine-grained Sandstone	1.87	Maxxam		26-May-11	8.92
2128176A	P2C20-8	P2C20	H1	708.52	708.96	Boulder Creek	Lower Boulder Creek	Mudstone	1.93	Maxxam		24-Feb-11	9.17
2128215	P2C26-2	P2C26	H18	297.85	298.09	Hulcross	Upper Hulcross	Mudstone	1.92	Agat	10V452067	15-Nov-10	9.06
MRC RX 82	MRC RX 82	P2C24	H12	664	664.25	Hulcross	Upper Hulcross	Mudstone	1.82	Maxxam		22-Jun-11	9.76
MRC RX 97	MRC RX 97	P2C27	H14	358.21	358.41	Hulcross	Upper Hulcross	Siltstone	3.02	Maxxam		22-Jun-11	9.70
MRC RX 108	MRC RX 108	P1R39	H16w	727.73	728	Hulcross	Upper Hulcross	Mudstone	2.07	Maxxam		22-Jun-11	9.58
MRC RX 125	MRC RX 125	P2R7	H21	830.88	831.58	Hulcross	Upper Hulcross	Mudstone	1.72	Maxxam		22-Jun-11	9.49
MRC RX 126	MRC RX 126	P2R7	H21	861.86	862.56	Hulcross	Upper Hulcross	Mudstone	1.71	Maxxam		22-Jun-11	9.34
2128226	P2R18-2	P2R18	H15	264.95	265.15	Hulcross	Upper Hulcross	Mudstone	1.94	Agat	10V452067	15-Nov-10	9.00
2128198	P2R11-3	P2R11	H6	253.76	253.9	Hulcross	Upper Hulcross	Sandstone	1.76	Agat	10V452067	15-Nov-10	8.36
2128199	P2R11-4	P2R11	H6	291.5	291.75	Hulcross	Upper Hulcross	Mudstone	2.09	Agat	10V452067	15-Nov-10	9.25
MRC RX 63	MRC RX 63	P2C21	H2	870.37	870.87	Hulcross	Upper Hulcross	Mudstone	2.02	Maxxam		26-May-11	9.03

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Drillhole Govt ID	Drillhole Client ID	From	To	Formation	Description	Lithology	Weight		Lab		Paste pH pH Unit
									kg	Lab	Certificate	Date	
2128199A	P2R11-4	P2R11	H6	291.5	291.75	Hulcross	Upper Hulcross	Mudstone	1.56	Maxxam		24-Feb-11	9.66
MRC RX 21	MRC RX 21	P2R16	H19	556.66	557	Hulcross	Middle Hulcross	Mudstone	1.76	Maxxam		23-Mar-11	9.39
MRC RX 51	MRC RX 51	P1C45	H11	760.4	760.83	Hulcross	Middle Hulcross	Mudstone	1.79	Maxxam		23-Mar-11	9.23
MRC RX 43	MRC RX 43	P1R31	H8	770.65	771.05	Hulcross	Middle Hulcross	Mudstone	1.96	Maxxam		23-Mar-11	9.42
MRC RX 35	MRC RX 35	P2R6	H3	803.5	803.87	Hulcross	Middle Hulcross	Siltstone	1.9	Maxxam		23-Mar-11	9.68
MRC RX 98	MRC RX 98	P2C27	H14	399.1	399.3	Hulcross	Middle Hulcross	Siltstone	2.34	Maxxam		22-Jun-11	9.35
MRC RX 109	MRC RX 109	P1R39	H16w	748.44	748.86	Hulcross	Middle Hulcross	Mudstone	1.91	Maxxam		22-Jun-11	9.72
MRC RX 83	MRC RX 83	P2C24	H12	700	700.21	Hulcross	Middle Hulcross	Mudstone	1.62	Maxxam		22-Jun-11	9.66
2128186A	P2R12-1	P2R12	H10	652.85	653.25	Hulcross	Middle Hulcross	Mudstone	1.57	Maxxam		24-Feb-11	9.19
2128186	P2R12-1	P2R12	H10	652.85	653.25	Hulcross	Middle Hulcross	Mudstone	2.10	Agat	10V452067	15-Nov-10	9.09
2128200	P2R11-5	P2R11	H6	347.02	347.47	Hulcross	Lower Hulcross	Mudstone	2.07	Agat	10V452067	15-Nov-10	9.06
2128187	P2R12-2	P2R12	H10	694.75	695.2	Hulcross	Lower Hulcross	Siltstone	2.19	Agat	10V452067	15-Nov-10	8.84
MRC RX 127	MRC RX 127	P2R7	H21	901.68	902.38	Hulcross	Lower Hulcross	Mudstone	1.67	Maxxam		22-Jun-11	9.40
MRC RX 128	MRC RX 128	P2R7	H21	599.35	599.68	Hulcross	Lower Hulcross	Mudstone	1.74	Maxxam		22-Jun-11	9.67
MRC RX 129	MRC RX 129	P2R7	H21	624.85	625.19	Hulcross	Lower Hulcross	Siltstone	1.77	Maxxam		22-Jun-11	9.41
MRC RX 110	MRC RX 110	P1R39	H16w	800.45	800.87	Hulcross	Lower Hulcross	Mudstone	1.93	Maxxam		22-Jun-11	9.57
MRC RX 99	MRC RX 99	P2C27	H14	439.67	439.85	Hulcross	Lower Hulcross	Conglomerate	2.30	Maxxam		22-Jun-11	6.78
MRC RX 84	MRC RX 84	P2C24	H12	734	734.2	Hulcross	Lower Hulcross	Mudstone	1.54	Maxxam		22-Jun-11	9.42
2128216	P2C26-3	P2C26	H18	345.33	345.8	Hulcross	Lower Hulcross	Mudstone	2.32	Agat	10V452067	15-Nov-10	9.07
MRC RX 64	MRC RX 64	P2C21	H2	1077	1077.5	Hulcross	Lower Hulcross	Siltstone	1.67	Maxxam		26-May-11	9.84
2128227	P2R18-3	P2R18	H15	314.4	314.65	Hulcross	Lower Hulcross	Mudstone	1.97	Agat	10V452067	15-Nov-10	9.10
MRC RX 120	MRC RX 120	P1R31	H8	780.8	781.34	Upper Gates	Above A	Siltstone	2.75	Maxxam		22-Jun-11	9.30
2212054	MRC RX 13	P1R34	H17	470.38	471.38	Upper Gates	Above A	Carbonaceous Mudstone	0.51	Agat	10T462552	23-Dec-10	8.80
MRC RX 65	MRC RX 65	P2C21	H2	1092.98	1093.48	Upper Gates	Above A	Conglomerate	1.39	Maxxam		26-May-11	9.08
2128188	P2R12-3	P2R12	H10	702.09	702.49	Upper Gates	A to B	Mudstone	2.14	Agat	10V452067	15-Nov-10	9.23
MRC RX 118	MRC RX 118	P2R6	H3	840.15	840.6	Upper Gates	Top C	Mudstone	2.55	Maxxam		22-Jun-11	9.51
2128228	P2R18-4	P2R18	H15	349.71	349.86	Upper Gates	A to B	Mudstone	1.54	Agat	10V452067	15-Nov-10	9.07
MRC RX 66	MRC RX 66	P2C21	H2	1111	1111.5	Upper Gates	A to B	Siltstone	1.56	Maxxam		26-May-11	9.70
2128201	P2R11-6	P2R11	H6	375.7	376.1	Upper Gates	Top B	Mudstone	1.81	Agat	10V452067	15-Nov-10	9.16
2128217	P2C26-4	P2C26	H18	395.23	395.63	Upper Gates	Top B	Mudstone	1.52	Agat	10V452067	15-Nov-10	9.26
2128177	P2C20-9	P2C20	H1	763.53	763.95	Upper Gates	Top B	Mudstone	1.99	Agat	10V452067	15-Nov-10	9.43
2128189	P2R12-4	P2R12	H10	721.92	722.37	Upper Gates	B to C	Siltstone	2.29	Agat	10V452067	15-Nov-10	9.39
MRC RX 67	MRC RX 67	P2C21	H2	1135.82	1136.32	Upper Gates	B to C	Mudstone	1.44	Maxxam		26-May-11	9.78
2128202	P2R11-7	P2R11	H6	391.5	391.82	Upper Gates	Top C	Mudstone	1.59	Agat	10V452067	15-Nov-10	9.25
2128218	P2C26-5	P2C26	H18	417.2	417.5	Upper Gates	Top C	Fine Sandstone	1.61	Agat	10V452067	15-Nov-10	9.25
MRC RX 85	MRC RX 85	P2C24	H12	770.23	770.45	Upper Gates	C to D	Sandstone	1.80	Maxxam		22-Jun-11	9.83
MRC RX 100	MRC RX 100	P2C27	H14	528.9	529.07	Upper Gates	C to D	Siltstone	1.66	Maxxam		22-Jun-11	9.64
MRC RX 111	MRC RX 111	P1R39	H16w	885	885.41	Upper Gates	C to D	Siltstone	1.90	Maxxam		22-Jun-11	8.89
MRC RX 130	MRC RX 130	P2R7	H21	650.93	651.36	Upper Gates	C to D	Sandstone	1.61	Maxxam		22-Jun-11	9.77
2128229	P2R18-5	P2R18	H15	410	410.28	Upper Gates	C to D	Mudstone	2.33	Agat	10V452067	15-Nov-10	9.29
2212041	MRC RX 01	P2R11	H6	437.91	439.91	Upper Gates	C to D	Siltstone	0.44	Agat	10T462552	23-Dec-10	8.48
2128190	P2R12-5	P2R12	H10	758.55	758.95	Upper Gates	C to D	Fine Sandstone	1.99	Agat	10V452067	15-Nov-10	9.47
2128178	P2C20-10	P2C20	H1	815.5	815.9	Upper Gates	C to D	Siltstone	1.99	Agat	10V452067	15-Nov-10	9.63
FT8925	UPPER GATES-1	Shaft	Shaft	349.78	350.05	Upper Gates		Mudstone	1.85	Maxxam	B317253	1-Apr-13	9.07
FT8926	UPPER GATES-2	Shaft	Shaft	358.5	358.78	Upper Gates		Siltstone	2.13	Maxxam	B317253	1-Apr-13	9.71
FT8927	UPPER GATES-3	Shaft	Shaft	367.98	368.2	Upper Gates		Mudstone	1.76	Maxxam	B317253	1-Apr-13	9.76

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Drillhole Govt ID	Drillhole Client ID	From	To	Formation	Description	Lithology	Weight kg	Lab	Lab Certificate	Date	Paste pH pH Unit
FT8928	UPPER GATES-4	Shaft	Shaft	381.53	381.75	Upper Gates		Sandstone	1.58	Maxxam	B317253	1-Apr-13	9.58
FT8929	UPPER GATES-5	Shaft	Shaft	389.43	389.77	Upper Gates		Sandstone	2.40	Maxxam	B317253	1-Apr-13	9.88
FT8930	UPPER GATES-6	Shaft	Shaft	399.75	400.07	Upper Gates		Sandstone	2.40	Maxxam	B317253	1-Apr-13	9.60
FT8931	UPPER GATES-7	Shaft	Shaft	410.23	410.55	Upper Gates		Sandstone	2.41	Maxxam	B317253	1-Apr-13	9.61
FT8932	UPPER GATES-8	Shaft	Shaft	419.22	419.54	Upper Gates		Sandstone	2.44	Maxxam	B317253	1-Apr-13	9.82
FT8933	UPPER GATES-9	Shaft	Shaft	429.22	429.52	Upper Gates		Sandstone	2.30	Maxxam	B317253	1-Apr-13	9.65
FT8934	UPPER GATES-10	Shaft	Shaft	444.5	444.76	Upper Gates		Sandstone	1.86	Maxxam	B317253	1-Apr-13	6.54
MRC RX 86	MRC RX 86	P2C24	H12	836	836.25	Middle Gates	D to E	Conglomerate	1.94	Maxxam		22-Jun-11	8.93
MRC RX 101	MRC RX 101	P2C27	H14	545.08	545.3	Middle Gates	D to E	Mudstone	1.53	Maxxam		22-Jun-11	9.71
MRC RX 112	MRC RX 112	P1R39	H16w	895.5	895.91	Middle Gates	D to E	Mudstone	1.91	Maxxam		22-Jun-11	9.56
MRC RX 131	MRC RX 131	P2R7	H21	725.75	726.12	Middle Gates	D to E	Mudstone	1.83	Maxxam		22-Jun-11	9.54
2128179	P2C20-11	P2C20	H1	841.5	841.95	Middle Gates	D to E	Mudstone	2.31	Agat	10V452067	15-Nov-10	9.58
MRC RX 69	MRC RX 69	P2C21	H2	1197.1	1197.6	Middle Gates	D to E	Mudstone	1.97	Maxxam		26-May-11	9.34
2128220	P2C26-7	P2C26	H18	531.83	532.18	Middle Gates	E to F1	Carbonaceous Mudstone	1.80	Agat	10V452067	15-Nov-10	9.29
MRC RX 132	MRC RX 132	P2R7	H21	751.38	751.72	Middle Gates	E to F	Siltstone	1.9	Maxxam		22-Jun-11	9.53
MRC RX 114	MRC RX 114	P1R39	H16w	921	921.37	Middle Gates	E to F	Sandstone	1.73	Maxxam		22-Jun-11	9.67
MRC RX 87	MRC RX 87	P2C24	H12	865.4	865.65	Middle Gates	E to F	Siltstone	1.99	Maxxam		22-Jun-11	9.67
2128204	P2R11-9	P2R11	H6	458.5	458.9	Middle Gates	E to F1	Mudstone	1.63	Agat	10V452067	15-Nov-10	9.31
MRC RX 70	MRC RX 70	P2C21	H2	1212.35	1212.85	Middle Gates	E to F	Mudstone	1.39	Maxxam		26-May-11	9.54
2212042	MRC RX 02	P2R11	H6	478.95	484.92	Middle Gates	E to F1	Mudstone	0.33	Agat	10T462552	23-Dec-10	8.58
2128191	P2R12-6	P2R12	H10	819.51	819.91	Middle Gates	E to F1	Silty Mudstone	1.60	Agat	10V452067	15-Nov-10	9.37
2128181	P2C20-13	P2C20	H1	945.2	945.65	Middle Gates	F to G/I	Siltstone	2.23	Agat	10V452067	15-Nov-10	9.74
2128205	P2R11-10	P2R11	H6	487.3	487.68	Middle Gates	F to G/I	Mudstone	1.59	Agat	10V452067	15-Nov-10	9.15
2128182	P2C20-14	P2C20	H1	978.1	978.52	Middle Gates	F to G/I	Sandstone	1.93	Agat	10V452067	15-Nov-10	9.58
2212055	MRC RX 14	P1R34	H17	614.45	615.45	Middle Gates	F to G/I	Sandstone	0.32	Agat	10T462552	23-Dec-10	8.84
2128193	P2R12-8	P2R12	H10	865.23	865.43	Middle Gates	F to G/I	Fine Sandstone	2.16	Agat	10V452067	15-Nov-10	8.79
MRC RX 27	MRC RX 27	P2R16	H19	730.3	730.89	Middle Gates	G/I to J	Mudstone	1.6	Maxxam		23-Mar-11	9.47
2128206	P2R11-11	P2R11	H6	513.3	513.65	Middle Gates	G/I to J	Mudstone	1.50	Agat	10V452067	15-Nov-10	8.73
2128194	P2R12-9	P2R12	H10	884	884.5	Middle Gates	G/I to J	Siltstone	1.62	Agat	10V452067	15-Nov-10	9.22
2128235	P2R18-11	P2R18	H15	526	526.3	Middle Gates	Top K	Mudstone	1.70	Agat	10V452067	15-Nov-10	8.72
2212046	MRC RX 06	P2R14	H9	934.57	936.57	Middle Gates	Bottom K	Carbonaceous Mudstone	0.5	Agat	10T462552	23-Dec-10	7.98
MRC RX 75	MRC RX 75	P2C21	H2	1298.25	1298.75	Middle Gates	Top K	Siltstone	2.07	Maxxam		26-May-11	9.54
2128207	P2R11-12	P2R11	H6	533.5	533.9	Middle Gates	Top K	Siltstone	1.61	Agat	10V452067	15-Nov-10	8.99
2212047	MRC RX 07	P2R14	H9	934.57	936.57	Middle Gates	Bottom K	Carbonaceous Mudstone	0.47	Agat	10T462552	23-Dec-10	8.19
2128185	P2C20-17	P2C20	H1	1045.9	1046.3	Middle Gates	Bottom K	Sandstone	1.64	Agat	10V452067	15-Nov-10	9.42
2128208	P2R11-13	P2R11	H6	539.8	540.25	Lower Gates	Below K	Mudstone	1.84	Agat	10V452067	15-Nov-10	9.31
2128209	P2R11-14	P2R11	H6	548.61	549	Lower Gates	Below K	Siltstone	1.53	Agat	10V452067	15-Nov-10	8.92
2212049	MRC RX 09	P2R16	H19	821.3	823.3	Gates			0.36	Agat	10T462552	23-Dec-10	8.56

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Total S %	SO <sub>4</sub> _HCl %	Measured	Calculated	S_BaSO <sub>4</sub> %	TAP kg CaCO <sub>3</sub> / t	SAP kg CaCO <sub>3</sub> / t	Modified NP kg CaCO <sub>3</sub> / t	Standard	Total C %	Inorganic	Total C NP kg CaCO <sub>3</sub> / t	Inorg C NP kg CaCO <sub>3</sub> / t	Fe Carb	Ca NP kg CaCO <sub>3</sub> / t
				Sulphide %	Sulphide %					Sobek NP kg CaCO <sub>3</sub> / t		C %			Corrected NP kg CaCO <sub>3</sub> / t	
2128212	P2R11-17	0.03	0.01	0.00	0.02	0.00	0.8	0.5	3.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4.0
2128213	P2R11-18	0.04	0.05	0.00	0.00	0.00	1.2	0.0	243.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	294.7
2128211	P2R11-16	0.08	0.03	0.00	0.04	0.01	2.4	1.3	129.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	145.1
MRC RX 55	MRC RX 55	0.10	0.06	0.01	0.02	0.02	3.1	0.5	0.1	n.a.	0.88	0.04	73.3	3.6	0.0	2.5
MRC RX 56	MRC RX 56	0.35	0.02	0.27	0.32	0.01	10.9	9.9	26.5	n.a.	1.03	0.52	85.8	43.7	32.1	20.2
MRC RX 57	MRC RX 57	0.20	0.01	0.11	0.19	0.01	6.3	5.8	25.5	n.a.	1.57	0.69	130.8	57.3	18.4	16.2
2128210	P2R11-15	0.08	0.01	0.00	0.06	0.01	2.3	1.9	139.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	127.1
2212056	MRC RX 15	0.08	0.09	0.00	0.00	0.02	2.6	0.0	24.6	n.a.	1.54	0.60	128.3	50.0	8.1	17.7
MRC RX 76	MRC RX 76	1.99	0.02	1.53	1.97	0.00	62.2	61.4	22.3	n.a.	1.78	0.33	148.3	27.3	27.3	14.7
MRC RX 91	MRC RX 91	0.31	0.01	0.29	0.28	0.02	9.7	9.1	9.2	n.a.	1.41	0.22	117.5	18.2	0.0	8.5
MRC RX 102	MRC RX 102	1.52	0.01	1.13	1.51	0.00	47.5	47.1	68.8	n.a.	2.00	0.81	166.7	67.3	63.4	32.5
2212057	MRC RX 16	0.26	0.01	0.00	0.24	0.01	8.1	7.5	4.9	n.a.	1.06	0.17	88.3	14.2	0.0	6.0
MRC RX 38	MRC RX 38	1.06	0.01	0.97	1.05	0.00	33.1	32.7	11.1	n.a.	1.19	0.17	99.2	14.6	14.6	10.5
MRC RX 30	MRC RX 30	0.42	0.01	0.41	0.39	0.02	13.1	12.8	10.2	n.a.	1.60	0.38	133.3	31.4	5.5	8.7
MRC RX 46	MRC RX 46	1.32	0.01	1.31	1.31	0.00	41.3	40.9	55.7	n.a.	1.69	0.44	140.8	37.1	37.1	21.5
MRC RX 58	MRC RX 58	0.42	0.01	0.33	0.40	0.01	13.1	12.5	36.8	n.a.	1.88	0.61	156.7	50.9	31.4	23.5
2128169	P2C20-1	1.44	0.01	0.00	1.43	0.00	45.0	44.8	21.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.7
MRC RX 47	MRC RX 47	0.53	0.01	0.52	0.51	0.01	16.6	16.3	22.1	n.a.	2.62	1.30	218.3	108.5	8.8	17.0
MRC RX 31	MRC RX 31	0.41	0.01	0.38	0.38	0.02	12.8	11.9	11.4	n.a.	1.89	0.49	157.5	40.7	0.0	11.2
2212058	MRC RX 17	0.73	0.08	0.00	0.65	0.00	22.9	20.3	18.7	n.a.	0.87	0.32	72.5	26.7	4.1	20.7
2212059	MRC RX 18	0.79	0.01	0.00	0.78	0.01	24.7	24.2	23.6	n.a.	1.18	0.66	98.3	55.0	35.5	23.5
2212060	MRC RX 19	1.85	0.03	0.00	1.82	0.00	57.8	56.8	5.0	n.a.	1.76	0.01	146.7	0.8	0.8	6.5
2212061	MRC RX 20	0.04	0.02	0.00	0.01	0.01	1.1	0.3	51.7	n.a.	7.37	0.65	614.2	54.2	0.0	45.5
MRC RX 39	MRC RX 39	0.31	0.01	0.30	0.28	0.02	9.7	9.4	15.2	n.a.	1.57	0.46	130.8	38.4	0.0	11.7
MRC RX 59	MRC RX 59	0.71	0.01	0.53	0.69	0.01	22.2	21.6	16.7	n.a.	1.82	0.54	151.7	45.0	14.4	11.7
MRC RX 77	MRC RX 77	0.64	0.01	0.45	0.61	0.02	20.0	19.2	11.1	n.a.	1.58	0.31	131.7	26.2	3.3	8.7
MRC RX 92	MRC RX 92	0.63	0.01	0.61	0.60	0.02	19.7	19.1	8.0	n.a.	1.20	0.12	100.0	10.0	0.0	6.2
MRC RX 103	MRC RX 103	0.13	0.01	0.13	0.11	0.01	4.1	4.1	13.7	n.a.	1.22	0.35	101.7	29.6	0.0	10.0
2128170	P2C20-2	0.36	0.04	0.00	0.31	0.01	11.4	9.8	22.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	13.7
2128170A	P2C20-2	0.25	0.01	0.24	0.23	0.01	7.8	7.5	22.0	n.a.	1.53	0.49	127.5	40.7	16.0	14.7
2128171	P2C20-3	1.27	0.03	0.00	1.24	0.00	39.7	38.6	13.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	9.2
MRC RX 32	MRC RX 32	1.12	0.01	1.03	1.11	0.00	35.0	34.6	5.1	n.a.	1.36	0.03	113.3	2.7	2.7	6.0
MRC RX 48	MRC RX 48	0.71	0.01	0.70	0.69	0.01	22.2	21.9	6.5	n.a.	1.45	0.03	120.8	2.7	0.0	5.5
MRC RX 40	MRC RX 40	0.64	0.01	0.57	0.62	0.01	20.0	19.4	6.5	n.a.	0.96	0.06	80.0	5.2	1.8	6.0
MRC RX 45	MRC RX 45	0.47	0.01	0.43	0.45	0.01	14.7	14.0	5.6	n.a.	1.06	0.07	88.3	5.9	0.0	6.5
MRC RX 78	MRC RX 78	0.78	0.01	0.59	0.76	0.01	24.4	23.8	6.5	n.a.	1.39	0.05	115.8	4.1	4.1	5.7
MRC RX 93	MRC RX 93	0.89	0.01	0.73	0.87	0.01	27.8	27.3	10.1	n.a.	1.16	0.12	96.7	10.0	10.0	9.5
MRC RX 104	MRC RX 104	0.76	0.01	0.63	0.74	0.01	23.8	23.2	5.7	n.a.	1.29	0.04	107.5	3.6	2.0	6.0
2128172	P2C20-4	1.03	0.02	0.00	1.00	0.01	32.2	31.4	8.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.7
2128172A	P2C20-4	0.77	0.02	0.04	0.74	0.01	24.1	23.1	5.4	n.a.	1.32	0.05	110.0	3.9	3.6	6.2
MRC RX 60	MRC RX 60	0.77	0.01	0.63	0.76	0.01	24.1	23.7	11.1	n.a.	1.16	0.19	96.7	15.7	8.4	9.0
2128196	P2R11-1	0.82	0.01	0.00	0.80	0.01	25.6	25.1	10.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7.0
HF9093	BH06-10.1M	0.50	0.01	0.35	0.48	0.02	15.6	15.0	3.5	11.0	1.22	0.05	101.7	4.3	0.0	6.7
HF9094	BH06-19.8M	0.95	0.01	0.68	0.94	0.01	29.7	29.3	8.5	11.5	0.92	0.09	76.7	7.7	7.7	9.0
HF9095	BH06-29.9M	1.20	0.01	0.82	1.19	0.01	37.5	37.2	4.5	12.3	1.00	0.07	83.3	5.9	5.9	5.5
HF9096	BH06-39.9M	2.20	0.01	1.39	2.19	0.00	68.8	68.5	9.0	13.3	1.33	0.08	110.8	6.4	6.4	7.2

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported



Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Total S %	SO <sub>4</sub> _HCl %	Measured	Calculated	S_BaSO <sub>4</sub> %	TAP kg CaCO <sub>3</sub> / t	SAP kg CaCO <sub>3</sub> / t	Modified NP kg CaCO <sub>3</sub> / t	Standard Sobek NP kg CaCO <sub>3</sub> / t	Total C %	Inorganic		Fe Carb		
				Sulphide %	Sulphide %							Total C NP kg CaCO <sub>3</sub> / t	Inorg C NP kg CaCO <sub>3</sub> / t	Corrected NP kg CaCO <sub>3</sub> / t	Ca NP kg CaCO <sub>3</sub> / t	
HF9097	BH06-50.0M	1.94	0.01	1.21	1.93	0.00	60.6	60.4	14.0	18.8	1.39	0.17	115.8	14.6	14.6	11.5
HF9098	BH06-59.7M	1.89	0.01	1.11	1.88	0.00	59.1	58.8	14.5	18.3	1.42	0.16	118.3	13.2	13.2	10.7
HF9099	BH06-69.8M	1.99	0.01	1.23	1.98	0.00	62.2	61.9	6.3	12.5	1.66	0.10	138.3	8.0	8.0	6.2
HF9100	BH06-79.9M	2.18	0.01	1.42	2.17	0.00	68.1	67.7	8.5	12.3	1.72	0.07	143.3	5.7	5.7	7.0
HF9101	BH06-89.9M	2.20	0.01	1.39	2.19	0.00	68.8	68.4	2.5	12.5	1.61	0.06	134.2	5.0	5.0	6.5
HF9102	BH06-98.5M	2.26	0.01	1.56	2.25	0.00	70.6	70.3	6.8	10.8	1.66	0.07	138.3	6.1	6.1	5.7
2128225	P2R18-1	0.10	0.01	0.00	0.07	0.02	3.0	2.3	11.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.2
MRC RX 79	MRC RX 79	0.02	0.01	0.02	0.00	0.01	0.6	0.6	5.3	n.a.	0.38	0.16	31.7	13.4	0.0	4.0
MRC RX 41	MRC RX 41	0.04	0.01	0.03	0.01	0.02	1.3	0.9	3.9	n.a.	0.41	0.06	34.2	4.8	0.0	3.2
MRC RX 94	MRC RX 94	0.05	0.01	0.03	0.03	0.01	1.6	0.9	86.3	n.a.	2.78	2.04	231.7	170.1	73.1	54.7
MRC RX 105	MRC RX 105	0.01	0.01	0.02	0.00	0.00	0.3	0.6	1.7	n.a.	0.07	0.01	5.8	0.7	0.0	0.2
2128173	P2C20-5	0.01	0.02	0.00	0.00	0.01	0.4	0.0	6.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.0
2128174	P2C20-6	0.46	0.01	0.00	0.44	0.02	14.5	13.8	11.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.2
2128175	P2C20-7	0.05	0.01	0.00	0.04	0.00	1.5	1.2	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4.7
MRC RX 29	MRC RX 29	0.01	0.01	0.01	0.00	0.01	0.3	0.3	4.2	n.a.	0.18	0.06	15.0	5.2	0.0	7.7
MRC RX 49	MRC RX 49	0.01	0.01	0.01	0.00	0.01	0.3	0.3	1.4	n.a.	0.16	0.01	13.3	0.7	0.0	1.2
MRC RX 50	MRC RX 50	0.42	0.01	0.41	0.40	0.01	13.1	12.8	8.0	n.a.	1.47	0.09	122.5	7.5	0.0	6.7
MRC RX 61	MRC RX 61	0.10	0.01	0.06	0.09	0.01	3.1	2.8	3.1	n.a.	0.39	0.03	32.5	2.5	0.0	3.0
MRC RX 80	MRC RX 80	0.07	0.01	0.03	0.05	0.01	2.2	1.6	38.4	n.a.	0.69	0.48	57.5	40.0	18.7	31.2
MRC RX 106	MRC RX 106	0.02	0.01	0.02	0.01	0.00	0.6	0.6	72.0	n.a.	1.37	1.15	114.2	96.0	55.2	57.2
MRC RX 122	MRC RX 122	0.01	0.01	0.02	0.00	0.01	0.3	0.6	1.6	n.a.	0.15	0.04	12.5	3.0	0.0	0.5
MRC RX 95	MRC RX 95	0.01	0.01	0.01	0.00	0.02	0.3	0.3	6.7	n.a.	0.75	0.22	62.5	18.0	0.0	5.7
2128214	P2C26-1	0.04	0.03	0.00	0.00	0.01	1.1	0.0	6.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.5
2128197	P2R11-2	0.03	0.04	0.00	0.00	0.01	0.9	0.0	71.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	51.4
2212048	MRC RX 08	2.74	0.06	0.00	2.68	0.00	85.6	83.7	7.4	n.a.	8.29	1.13	690.9	94.2	94.2	6.5
2128176	P2C20-8	1.55	0.01	0.00	1.54	0.00	48.4	48.1	20.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	15.0
MRC RX 81	MRC RX 81	0.15	0.01	0.10	0.14	0.00	4.7	4.3	6.7	n.a.	0.32	0.11	26.7	9.1	0.0	7.2
MRC RX 96	MRC RX 96	0.03	0.01	0.02	0.02	0.00	0.9	0.6	4.7	n.a.	0.70	0.59	58.3	49.1	0.3	5.5
MRC RX 107	MRC RX 107	0.01	0.01	0.02	0.00	0.00	0.3	0.6	4.1	n.a.	0.39	0.27	32.5	22.7	0.0	5.5
MRC RX 123	MRC RX 123	0.26	0.02	0.18	0.24	0.00	8.1	7.4	1.5	n.a.	0.31	0.04	25.8	3.0	0.8	1.5
MRC RX 124	MRC RX 124	0.58	0.01	0.47	0.57	0.01	18.1	17.8	12.0	n.a.	0.94	0.43	78.3	36.2	0.0	8.7
MRC RX 42	MRC RX 42	0.09	0.01	0.08	0.08	0.00	2.8	2.5	9.7	n.a.	0.99	0.77	82.5	64.4	4.8	9.2
MRC RX 34	MRC RX 34	0.19	0.01	0.18	0.17	0.01	5.9	5.6	14.8	n.a.	1.12	0.42	93.3	34.8	0.0	12.7
MRC RX 33	MRC RX 33	0.01	0.01	0.01	0.00	0.01	0.3	0.3	11.7	n.a.	0.50	0.37	41.7	30.7	0.0	16.2
MRC RX 62	MRC RX 62	0.16	0.01	0.09	0.15	0.00	5.0	4.8	11.2	n.a.	0.70	0.53	58.3	44.6	0.0	6.5
2128176A	P2C20-8	1.09	0.02	1.07	1.07	0.00	34.1	33.4	20.5	n.a.	1.58	0.27	131.7	22.3	22.3	15.0
2128215	P2C26-2	1.26	0.06	0.00	1.20	0.00	39.4	37.4	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7.7
MRC RX 82	MRC RX 82	0.88	0.01	0.63	0.85	0.02	27.5	26.6	10.7	n.a.	1.52	0.10	126.7	8.4	8.4	8.5
MRC RX 97	MRC RX 97	1.09	0.01	0.87	1.08	0.00	34.1	33.6	16.0	n.a.	1.35	0.20	112.5	17.1	17.1	12.2
MRC RX 108	MRC RX 108	0.83	0.01	0.73	0.82	0.00	25.9	25.7	9.8	n.a.	1.16	0.09	96.7	7.7	0.0	7.7
MRC RX 125	MRC RX 125	0.91	0.01	0.65	0.90	0.01	28.4	28.1	10.8	n.a.	1.46	0.10	121.7	8.2	7.1	8.5
MRC RX 126	MRC RX 126	1.49	0.01	1.13	1.48	0.00	46.6	46.2	16.2	n.a.	1.48	0.17	123.3	14.6	14.6	13.0
2128226	P2R18-2	1.50	0.01	0.00	1.49	0.00	46.9	46.5	6.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	8.2
2128198	P2R11-3	0.05	0.04	0.00	0.01	0.00	1.6	0.2	3.7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.5
2128199	P2R11-4	1.14	0.04	0.00	1.10	0.00	35.6	34.3	53.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	29.5
MRC RX 63	MRC RX 63	1.94	0.01	1.80	1.93	0.00	60.6	60.3	18.8	n.a.	1.94	1.07	161.7	89.2	15.5	13.7

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Total S %	SO <sub>4</sub> _HCl %	Measured	Calculated	S_BaSO <sub>4</sub> %	TAP kg CaCO <sub>3</sub> / t	SAP kg CaCO <sub>3</sub> / t	Modified NP kg CaCO <sub>3</sub> / t	Standard	Total C %	Inorganic		Fe Carb		
				Sulphide %	Sulphide %					Sobek NP kg CaCO <sub>3</sub> / t		C %	Total C NP kg CaCO <sub>3</sub> / t	Inorg C NP kg CaCO <sub>3</sub> / t	Corrected NP kg CaCO <sub>3</sub> / t	Ca NP kg CaCO <sub>3</sub> / t
2128199A	P2R11-4	1.02	0.02	0.89	1.00	0.00	31.9	31.2	29.1	n.a.	1.81	0.37	150.8	30.7	30.7	28.2
MRC RX 21	MRC RX 21	1.34	0.01	1.17	1.33	0.00	41.9	41.5	22.3	n.a.	1.85	0.30	154.2	25.2	25.2	19.0
MRC RX 51	MRC RX 51	1.07	0.01	1.06	1.06	0.00	33.4	33.1	29.5	n.a.	1.68	0.38	140.0	31.6	31.6	22.5
MRC RX 43	MRC RX 43	1.45	0.01	1.35	1.44	0.00	45.3	45.0	23.7	n.a.	1.97	0.28	164.2	23.0	23.0	17.5
MRC RX 35	MRC RX 35	1.20	0.01	1.03	1.19	0.00	37.5	37.1	117.5	n.a.	2.42	1.50	201.7	125.1	125.1	113.1
MRC RX 98	MRC RX 98	1.30	0.01	1.00	1.29	0.00	40.6	40.3	27.4	n.a.	1.74	0.35	145.0	28.9	28.9	19.2
MRC RX 109	MRC RX 109	1.28	0.01	1.00	1.27	0.00	40.0	39.6	11.4	n.a.	1.26	0.10	105.0	8.6	8.6	9.5
MRC RX 83	MRC RX 83	0.84	0.01	0.62	0.82	0.02	26.3	25.5	19.6	n.a.	1.47	0.21	122.5	17.7	17.7	13.2
2128186A	P2R12-1	1.46	0.02	1.33	1.44	0.00	45.6	44.9	14.0	n.a.	1.76	0.16	146.7	13.2	13.2	11.2
2128186	P2R12-1	1.93	0.04	0.00	1.89	0.00	60.3	59.0	14.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	10.7
2128200	P2R11-5	1.93	0.03	0.00	1.90	0.00	60.3	59.3	23.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	17.2
2128187	P2R12-2	1.82	0.06	0.00	1.76	0.00	56.9	54.9	25.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	17.7
MRC RX 127	MRC RX 127	1.47	0.01	1.07	1.46	0.00	45.9	45.7	25.0	n.a.	1.61	0.30	134.2	24.8	24.8	18.2
MRC RX 128	MRC RX 128	1.01	0.01	0.73	1.00	0.01	31.6	31.2	20.0	n.a.	1.18	0.22	98.3	18.2	18.2	14.0
MRC RX 129	MRC RX 129	1.26	0.01	0.87	1.25	0.00	39.4	39.0	40.0	n.a.	1.74	0.44	145.0	36.8	36.8	33.0
MRC RX 110	MRC RX 110	1.05	0.01	0.80	1.04	0.01	32.8	32.3	30.0	n.a.	1.42	0.36	118.3	30.0	30.0	21.5
MRC RX 99	MRC RX 99	0.14	0.02	0.11	0.12	0.00	4.4	3.7	3.2	n.a.	0.28	0.07	23.3	5.7	1.0	3.0
MRC RX 84	MRC RX 84	1.13	0.01	0.93	1.11	0.01	35.3	34.7	29.0	n.a.	1.66	0.35	138.3	29.3	29.3	20.2
2128216	P2C26-3	1.31	0.04	0.00	1.27	0.00	40.9	39.6	13.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.0
MRC RX 64	MRC RX 64	1.04	0.01	0.80	1.03	0.00	32.5	32.3	279.7	n.a.	4.62	3.75	385.0	312.7	305.4	236.0
2128227	P2R18-3	1.33	0.01	0.00	1.32	0.00	41.6	41.3	18.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	14.0
MRC RX 120	MRC RX 120	1.84	0.01	1.27	1.83	0.00	57.5	57.2	25.6	n.a.	2.75	0.78	229.2	65.3	16.6	19.5
2212054	MRC RX 13	1.33	0.09	0.00	1.24	0.00	41.6	38.7	170.0	n.a.	4.19	2.58	349.2	215.0	210.6	165.8
MRC RX 65	MRC RX 65	1.94	0.01	1.20	1.93	0.00	60.6	60.3	59.2	n.a.	1.21	0.76	100.8	63.2	63.2	51.7
2128188	P2R12-3	0.08	0.03	0.00	0.03	0.02	2.5	0.9	57.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	49.4
MRC RX 118	MRC RX 118	0.32	0.01	0.27	0.30	0.02	10.0	9.2	57.3	n.a.	4.24	1.61	353.4	134.2	16.4	25.0
2128228	P2R18-4	0.08	0.01	0.00	0.06	0.02	2.4	1.7	27.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	20.5
MRC RX 66	MRC RX 66	0.04	0.01	0.03	0.02	0.01	1.3	0.9	152.6	n.a.	4.22	2.45	351.7	204.2	146.8	95.9
2128201	P2R11-6	0.05	0.05	0.00	0.00	0.02	1.6	0.0	80.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	66.9
2128217	P2C26-4	0.06	0.03	0.00	0.01	0.02	1.7	0.2	54.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	44.0
2128177	P2C20-9	0.07	0.02	0.00	0.04	0.01	2.2	1.2	71.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	75.2
2128189	P2R12-4	0.05	0.02	0.00	0.01	0.01	1.5	0.5	23.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	18.0
MRC RX 67	MRC RX 67	0.29	0.01	0.16	0.27	0.01	9.1	8.4	17.6	n.a.	4.22	2.18	351.7	181.7	5.7	18.0
2128202	P2R11-7	0.05	0.08	0.00	0.00	0.01	1.6	0.0	184.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	183.5
2128218	P2C26-5	0.04	0.04	0.00	0.00	0.02	1.4	0.0	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3.7
MRC RX 85	MRC RX 85	0.07	0.01	0.06	0.05	0.01	2.2	1.9	247.9	n.a.	4.14	3.53	345.0	294.3	241.9	173.3
MRC RX 100	MRC RX 100	0.06	0.01	0.04	0.05	0.01	1.9	1.4	177.5	n.a.	4.42	2.90	368.4	241.8	189.7	116.1
MRC RX 111	MRC RX 111	0.29	0.01	0.25	0.28	0.00	9.1	8.6	14.8	n.a.	0.79	0.39	65.8	32.5	14.9	10.5
MRC RX 130	MRC RX 130	0.02	0.01	0.02	0.01	0.00	0.6	0.6	152.1	n.a.	2.32	1.93	193.3	161.0	140.4	111.1
2128229	P2R18-5	0.11	0.01	0.00	0.09	0.01	3.3	2.7	29.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	23.5
2212041	MRC RX 01	0.77	0.04	0.00	0.72	0.01	24.1	22.6	55.6	n.a.	1.73	0.69	144.2	57.5	34.0	48.4
2128190	P2R12-5	0.16	0.04	0.00	0.11	0.01	4.8	3.4	57.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	61.9
2128178	P2C20-10	0.07	0.04	0.00	0.01	0.03	2.3	0.2	37.7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	18.5
FT8925	UPPER GATES-1	2.08	0.01	0.00	2.07	0.00	65.0	64.7	4.5	12.8	1.88	0.28	156.7	23.4	23.4	4.5
FT8926	UPPER GATES-2	0.04	0.01	0.00	0.03	0.01	1.3	0.8	218.3	246.3	4.33	2.70	360.9	225.2	176.5	126.6
FT8927	UPPER GATES-3	0.01	0.01	0.00	0.00	0.01	0.3	0.0	211.3	238.8	3.65	2.71	304.2	226.1	183.3	135.9

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Total S %	SO <sub>4</sub> _HCl %	Measured	Calculated	S_BaSO <sub>4</sub> %	TAP kg CaCO <sub>3</sub> / t	SAP kg CaCO <sub>3</sub> / t	Modified NP kg CaCO <sub>3</sub> / t	Standard Sobek NP kg CaCO <sub>3</sub> / t	Total C %	Inorganic C %	Total C NP kg CaCO <sub>3</sub> / t	Inorg C NP kg CaCO <sub>3</sub> / t	Fe Carb Corrected NP kg CaCO <sub>3</sub> / t	Ca NP kg CaCO <sub>3</sub> / t
				Sulphide %	Sulphide %											
FT8928	UPPER GATES-4	0.08	0.01	0.00	0.06	0.02	2.5	1.8	5.3	15.3	0.49	0.10	40.8	8.0	0.0	8.0
FT8929	UPPER GATES-5	0.01	0.01	0.00	0.00	0.02	0.3	0.0	49.3	67.0	1.21	1.06	100.8	88.0	17.1	39.5
FT8930	UPPER GATES-6	0.04	0.01	0.00	0.02	0.02	1.3	0.5	19.8	33.5	1.46	0.45	121.7	37.3	0.0	14.7
FT8931	UPPER GATES-7	0.02	0.01	0.00	0.00	0.03	0.6	0.0	25.3	34.5	0.74	0.53	61.7	43.9	0.0	17.0
FT8932	UPPER GATES-8	0.02	0.02	0.00	0.00	0.03	0.6	0.0	16.5	48.3	1.09	0.85	90.8	71.0	0.0	23.0
FT8933	UPPER GATES-9	0.16	0.01	0.00	0.14	0.01	5.0	4.4	91.8	85.5	2.42	1.30	201.7	108.5	79.4	53.4
FT8934	UPPER GATES-10	0.48	0.03	0.00	0.45	0.00	15.0	14.0	7.5	8.8	0.31	0.04	25.8	3.6	3.6	6.2
MRC RX 86	MRC RX 86	1.48	0.01	1.00	1.47	0.00	46.3	45.8	13.0	n.a.	0.53	0.22	44.2	18.6	18.6	11.7
MRC RX 101	MRC RX 101	0.04	0.01	0.02	0.02	0.01	1.3	0.7	228.4	n.a.	5.68	4.59	473.4	382.8	251.2	183.5
MRC RX 112	MRC RX 112	0.03	0.01	0.03	0.01	0.01	0.9	0.9	150.9	n.a.	3.31	2.57	275.9	214.2	167.0	122.6
MRC RX 131	MRC RX 131	0.07	0.01	0.04	0.05	0.02	2.2	1.5	40.2	n.a.	5.50	1.19	458.4	99.2	27.5	25.0
2128179	P2C20-11	0.05	0.04	0.00	0.00	0.01	1.5	0.0	133.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	174.3
MRC RX 69	MRC RX 69	0.03	0.01	0.01	0.01	0.01	0.9	0.4	3.4	n.a.	2.58	0.07	215.0	6.1	3.7	1.0
2128220	P2C26-7	0.09	0.06	0.00	0.02	0.01	2.7	0.5	54.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	57.9
MRC RX 132	MRC RX 132	0.04	0.01	0.03	0.02	0.02	1.3	0.9	109.7	n.a.	4.95	3.50	412.5	291.8	68.6	75.2
MRC RX 114	MRC RX 114	0.03	0.01	0.02	0.02	0.00	0.9	0.6	233.4	n.a.	3.39	3.14	282.5	261.8	234.5	163.3
MRC RX 87	MRC RX 87	0.03	0.01	0.03	0.02	0.01	0.9	0.9	262.3	n.a.	5.46	4.21	455.0	351.1	283.4	205.0
2128204	P2R11-9	0.10	0.01	0.00	0.08	0.01	3.1	2.4	59.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	43.5
MRC RX 70	MRC RX 70	0.18	0.01	0.07	0.16	0.01	5.6	5.1	5.7	n.a.	7.41	0.10	617.5	8.4	0.0	4.5
2212042	MRC RX 02	0.02	0.04	0.00	0.00	0.02	0.7	0.0	39.6	n.a.	2.41	0.93	200.8	77.5	31.0	31.5
2128191	P2R12-6	0.07	0.06	0.00	0.00	0.01	2.1	0.0	125.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	150.6
2128181	P2C20-13	0.04	0.06	0.00	0.00	0.01	1.2	0.0	102.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	116.9
2128205	P2R11-10	0.16	0.04	0.00	0.10	0.02	5.0	3.2	112.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	93.4
2128182	P2C20-14	0.03	0.01	0.00	0.02	0.00	1.0	0.7	72.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	47.7
2212055	MRC RX 14	0.11	0.08	0.00	0.02	0.01	3.5	0.6	35.2	n.a.	15.80	2.10	1316.8	175.0	115.7	29.5
2128193	P2R12-8	0.03	0.03	0.00	0.00	0.00	1.0	0.0	50.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	37.5
MRC RX 27	MRC RX 27	0.08	0.01	0.07	0.06	0.01	2.5	2.2	148.5	n.a.	3.63	2.52	302.5	210.1	150.4	86.9
2128206	P2R11-11	0.03	0.01	0.00	0.00	0.02	0.9	0.1	7.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7.5
2128194	P2R12-9	0.09	0.15	0.00	0.00	0.01	2.8	0.0	105.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	121.6
2128235	P2R18-11	0.10	0.03	0.00	0.06	0.01	3.2	2.0	4.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4.2
2212046	MRC RX 06	0.02	0.03	0.00	0.00	0.01	0.7	0.0	8.7	n.a.	0.55	0.28	45.8	23.3	1.1	8.2
MRC RX 75	MRC RX 75	0.61	0.01	0.48	0.60	0.01	19.1	18.7	35.6	n.a.	5.82	0.87	485.0	72.5	28.4	21.0
2128207	P2R11-12	0.06	0.02	0.00	0.03	0.01	1.8	0.9	132.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	125.1
2212047	MRC RX 07	0.05	0.04	0.00	0.00	0.01	1.4	0.0	27.0	n.a.	2.33	1.13	194.2	94.2	26.5	24.5
2128185	P2C20-17	0.02	0.01	0.00	0.01	0.01	0.7	0.2	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.7
2128208	P2R11-13	1.74	0.01	0.00	1.73	0.01	54.4	54.0	19.7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	11.5
2128209	P2R11-14	0.09	0.01	0.00	0.08	0.01	2.7	2.3	3.7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4.2
2212049	MRC RX 09	0.03	0.06	0.00	0.00	0.01	1.0	0.0	4.9	n.a.	6.91	0.18	575.9	15.0	3.8	3.2

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	CaMg NP kg CaCO <sub>3</sub> / t	TNPR unitless	SNPR unitless	Fizz Rating Unity	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm
2128212	P2R11-17	10.3	4.5	6.8	1	0.10	0.83	6.7	n.a.	6	148	0.59	0.12	0.16	0.41	15.8	9.5	350
2128213	P2R11-18	414.9	199.4	77760.0	3	0.10	0.41	2.8	n.a.	3	93	0.21	0.07	11.80	0.37	18.6	3.7	177
2128211	P2R11-16	214.5	54.3	101.9	2	0.10	1.03	5.3	n.a.	9	236	0.50	0.13	5.81	0.77	23.1	7.2	209
MRC RX 55	MRC RX 55	5.7	0.0	0.23	1	0.24	0.41	5.4	0.0084	10	976	n.a.	0.16	0.10	0.37	n.a.	3.8	20
MRC RX 56	MRC RX 56	33.8	2.4	2.7	2	0.27	0.40	5.2	0.0008	10	560	n.a.	0.30	0.81	0.34	n.a.	4.0	15
MRC RX 57	MRC RX 57	32.1	4.1	4.4	2	0.24	0.46	5.8	0.0008	10	399	n.a.	0.14	0.65	0.15	n.a.	5.0	28
2128210	P2R11-15	189.3	59.3	73.7	2	0.20	2.48	7.7	n.a.	16	414	0.90	0.20	5.09	1.00	28.0	10.4	165
2212056	MRC RX 15	40.9	9.5	7872.0	1	0.25	1.37	5.3	0.0050	21	952	1.35	0.28	0.71	0.18	10.0	3.9	45
MRC RX 76	MRC RX 76	29.5	0.4	0.4	2	0.43	0.63	8.3	0.0006	10	200	n.a.	0.27	0.59	0.47	n.a.	8.8	22
MRC RX 91	MRC RX 91	20.0	0.9	1.0	1	0.41	0.92	6.4	0.0004	10	1048	n.a.	0.20	0.34	0.30	n.a.	7.3	37
MRC RX 102	MRC RX 102	54.1	1.4	1.5	2	0.40	0.80	6.6	0.0009	10	171	n.a.	0.18	1.30	0.55	n.a.	7.4	35
2212057	MRC RX 16	16.6	0.6	0.7	1	0.38	1.11	7.7	0.0050	22	591	0.93	0.15	0.24	0.29	12.4	5.0	195
MRC RX 38	MRC RX 38	17.8	0.3	0.3	1	0.35	0.54	7.5	0.0003	10	181	n.a.	0.15	0.42	0.25	n.a.	5.6	34
MRC RX 30	MRC RX 30	19.8	0.8	0.8	1	0.33	0.77	7.6	0.0009	10	651	n.a.	0.21	0.35	0.24	n.a.	6.4	23
MRC RX 46	MRC RX 46	41.2	1.4	1.4	1	0.34	0.76	10.4	0.0005	10	53	n.a.	0.17	0.86	0.43	n.a.	7.0	33
MRC RX 58	MRC RX 58	46.4	2.8	2.9	2	0.32	0.78	7.2	0.0006	10	584	n.a.	0.24	0.94	0.22	n.a.	8.6	28
2128169	P2C20-1	26.1	0.5	0.5	1	0.30	0.87	6.0	n.a.	15	102	0.68	0.17	0.51	0.33	9.4	5.9	171
MRC RX 47	MRC RX 47	45.0	1.3	1.4	1	0.31	1.03	10.6	0.0004	10	583	n.a.	0.18	0.68	0.31	n.a.	9.9	30
MRC RX 31	MRC RX 31	25.5	0.9	1.0	1	0.34	1.12	6.7	0.0006	10	920	n.a.	0.25	0.45	0.31	n.a.	8.1	26
2212058	MRC RX 17	37.5	0.8	0.9	1	0.27	1.06	7.7	0.0050	15	184	0.90	0.10	0.83	0.22	18.5	5.1	385
2212059	MRC RX 18	42.1	1.0	1.0	1	0.28	1.09	6.8	0.0050	16	384	0.95	0.09	0.94	0.23	17.8	4.9	438
2212060	MRC RX 19	17.5	0.1	0.1	1	0.46	1.38	12.7	0.0050	21	56	1.23	0.27	0.26	0.19	9.6	4.2	89
2212061	MRC RX 20	81.6	46.0	203.4	1	0.38	0.98	7.3	0.0050	7	337	1.15	0.11	1.82	1.81	13.8	10.5	441
MRC RX 39	MRC RX 39	27.2	1.6	1.6	1	0.37	1.06	6.4	0.0001	10	915	n.a.	0.19	0.47	0.25	n.a.	7.0	31
MRC RX 59	MRC RX 59	28.1	0.8	0.8	1	0.46	0.88	9.4	0.0006	10	548	n.a.	0.24	0.47	0.47	n.a.	7.9	28
MRC RX 77	MRC RX 77	21.2	0.6	0.6	1	0.39	0.87	8.9	0.0007	10	704	n.a.	0.22	0.35	0.37	n.a.	9.1	25
MRC RX 92	MRC RX 92	16.0	0.4	0.4	1	0.34	0.88	9.7	0.0003	10	746	n.a.	0.18	0.25	0.22	n.a.	8.4	46
MRC RX 103	MRC RX 103	25.8	3.4	3.4	1	0.38	0.89	4.6	0.0003	10	526	n.a.	0.15	0.40	0.35	n.a.	7.2	43
2128170	P2C20-2	29.5	2.0	2.3	1	0.30	0.65	6.0	n.a.	8	436	0.54	0.13	0.55	0.23	8.9	6.1	154
2128170A	P2C20-2	31.8	2.8	2.9	2	0.31	0.67	5.4	0.0008	10	475	n.a.	0.13	0.59	0.25	n.a.	6.9	46
2128171	P2C20-3	22.9	0.4	0.4	1	0.30	1.05	9.3	n.a.	11	149	0.76	0.23	0.37	0.61	10.1	8.4	62
MRC RX 32	MRC RX 32	12.9	0.1	0.1	1	0.39	0.84	7.7	0.0015	10	62	n.a.	0.21	0.24	0.18	n.a.	5.1	30
MRC RX 48	MRC RX 48	12.0	0.3	0.3	1	0.39	0.82	10.0	0.0001	10	215	n.a.	0.18	0.22	0.17	n.a.	4.9	29
MRC RX 40	MRC RX 40	12.0	0.3	0.3	1	0.38	0.67	11.6	0.0004	10	350	n.a.	0.13	0.24	0.16	n.a.	4.6	35
MRC RX 45	MRC RX 45	13.2	0.4	0.4	1	0.35	0.81	10.5	0.0005	10	517	n.a.	0.14	0.26	0.16	n.a.	4.7	49
MRC RX 78	MRC RX 78	13.2	0.3	0.3	1	0.40	0.73	8.4	0.0001	10	607	n.a.	0.21	0.23	0.19	n.a.	5.9	39
MRC RX 93	MRC RX 93	17.5	0.4	0.4	1	0.44	0.72	13.4	0.0008	10	498	n.a.	0.15	0.38	0.15	n.a.	5.4	56
MRC RX 104	MRC RX 104	13.7	0.2	0.2	1	0.44	0.82	9.2	0.0002	10	599	n.a.	0.19	0.24	0.21	n.a.	5.4	41
2128172	P2C20-4	12.3	0.3	0.3	1	0.30	0.80	9.7	n.a.	10	268	0.66	0.17	0.23	0.17	9.2	4.8	132
2128172A	P2C20-4	14.0	0.2	0.2	1	0.36	0.71	10.2	0.0005	10	470	n.a.	0.18	0.25	0.19	n.a.	5.5	34
MRC RX 60	MRC RX 60	19.2	0.5	0.5	1	0.43	0.70	10.7	0.0009	10	347	n.a.	0.20	0.36	0.18	n.a.	5.7	36
2128196	P2R11-1	14.3	0.4	0.4	1	0.30	0.81	6.0	n.a.	8	306	0.54	0.16	0.28	0.15	8.4	4.1	115
HF9093	BH06-10.1M	14.9	0.2	0.2	1	0.34	0.78	5.9	0.0023	10	657	n.a.	0.23	0.27	0.25	n.a.	7.8	55
HF9094	BH06-19.8M	15.5	0.3	0.3	1	0.38	0.51	4.7	0.0018	10	346	n.a.	0.14	0.36	0.23	n.a.	6.2	67
HF9095	BH06-29.9M	12.0	0.1	0.1	1	0.35	0.61	6.1	0.0009	10	252	n.a.	0.16	0.22	0.26	n.a.	7.2	38
HF9096	BH06-39.9M	15.7	0.1	0.1	1	0.46	0.72	10.5	0.0016	10	79	n.a.	0.21	0.29	0.46	n.a.	10.2	23

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	CaMg NP kg CaCO <sub>3</sub> / t	TNPR unitless	SNPR unitless	Fizz Rating Unity	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm
HF9097	BH06-50.0M	21.5	0.2	0.2	1	0.46	0.64	7.9	0.0016	10	85	n.a.	0.17	0.46	0.42	n.a.	7.4	42
HF9098	BH06-59.7M	20.3	0.2	0.2	1	0.47	0.64	8.1	0.0009	10	122	n.a.	0.18	0.43	0.43	n.a.	7.3	37
HF9099	BH06-69.8M	13.5	0.1	0.1	1	0.50	0.62	7.6	0.0009	10	134	n.a.	0.20	0.25	0.49	n.a.	7.2	32
HF9100	BH06-79.9M	14.3	0.1	0.1	1	0.52	0.62	10.2	0.0011	10	87	n.a.	0.23	0.28	0.60	n.a.	8.7	26
HF9101	BH06-89.9M	13.5	0.0	0.0	1	0.47	0.64	7.7	0.0002	10	103	n.a.	0.21	0.26	0.57	n.a.	8.0	32
HF9102	BH06-98.5M	12.6	0.1	0.1	1	0.49	0.61	9.5	0.0012	10	70	n.a.	0.23	0.23	0.63	n.a.	9.4	23
2128225	P2R18-1	26.6	3.7	4.8	1	0.40	1.26	6.0	n.a.	9	721	0.93	0.19	0.49	0.31	13.4	9.7	167
MRC RX 79	MRC RX 79	13.7	8.5	8.5	1	0.31	0.98	0.9	0.0001	10	437	n.a.	0.23	0.16	1.15	n.a.	6.9	71
MRC RX 41	MRC RX 41	10.0	3.1	4.2	1	0.47	1.15	4.1	0.0011	10	998	n.a.	0.19	0.13	1.85	n.a.	7.1	17
MRC RX 94	MRC RX 94	96.2	55.2	92.1	3	0.31	1.11	2.6	0.0003	10	471	n.a.	0.14	2.19	1.07	n.a.	13.4	34
MRC RX 105	MRC RX 105	1.1	5.6	2.8	1	0.14	0.25	0.3	0.0010	10	152	n.a.	0.03	0.01	0.07	n.a.	1.5	79
2128173	P2C20-5	4.0	15.3	1984.0	1	0.10	0.69	0.5	n.a.	3	412	0.84	0.17	0.04	0.18	18.5	3.8	112
2128174	P2C20-6	13.2	0.8	0.8	1	0.30	0.75	6.7	n.a.	8	690	0.54	0.12	0.25	0.14	9.0	4.1	158
2128175	P2C20-7	6.6	3.4	4.1	1	0.40	0.18	3.9	n.a.	3	109	0.28	0.04	0.19	0.10	4.6	5.0	206
MRC RX 29	MRC RX 29	16.9	13.3	13.3	1	0.33	1.04	0.9	0.0038	10	551	n.a.	0.19	0.31	0.70	n.a.	9.3	34
MRC RX 49	MRC RX 49	5.2	4.4	4.4	1	0.45	0.69	2.6	0.0007	10	578	n.a.	0.17	0.05	0.13	n.a.	3.2	39
MRC RX 50	MRC RX 50	14.3	0.6	0.6	1	0.47	0.95	12.0	0.0001	10	347	n.a.	0.17	0.27	0.25	n.a.	7.3	40
MRC RX 61	MRC RX 61	15.5	1.0	1.1	1	0.31	0.81	4.1	0.0006	10	280	n.a.	0.10	0.12	0.70	n.a.	10.0	55
MRC RX 80	MRC RX 80	49.5	17.6	23.4	2	0.31	0.72	9.7	0.0014	10	319	n.a.	0.13	1.25	6.51	n.a.	21.9	67
MRC RX 106	MRC RX 106	81.9	115.2	115.2	4	0.16	0.43	5.2	0.0003	10	198	n.a.	0.04	2.29	0.42	n.a.	5.8	99
MRC RX 122	MRC RX 122	2.6	5.2	2.6	1	0.27	0.56	0.3	0.0013	10	418	n.a.	0.12	0.02	0.03	n.a.	2.8	39
MRC RX 95	MRC RX 95	18.0	21.5	21.5	1	0.39	1.29	0.9	0.0008	10	749	n.a.	0.23	0.23	1.60	n.a.	9.2	39
2128214	P2C26-1	13.7	5.4	1936.0	1	0.30	1.32	0.5	n.a.	3	522	0.77	0.20	0.10	0.71	14.5	4.8	56
2128197	P2R11-2	93.9	75.7	22720.0	2	0.20	0.91	1.6	n.a.	3	311	0.56	0.10	2.06	1.23	14.0	7.5	137
2212048	MRC RX 08	22.3	0.1	0.1	1	0.31	1.29	22.8	0.0050	10	44	1.06	0.31	0.26	0.75	10.8	12.1	99
2128176	P2C20-8	27.2	0.4	0.4	1	0.40	0.74	11.4	n.a.	9	75	0.66	0.18	0.60	0.32	8.3	4.2	127
MRC RX 81	MRC RX 81	14.3	1.4	1.6	1	0.25	0.73	7.4	0.0017	10	89	n.a.	0.06	0.29	0.11	n.a.	4.9	89
MRC RX 96	MRC RX 96	10.9	5.0	7.5	1	0.33	0.25	4.0	0.0002	10	111	n.a.	0.04	0.22	0.11	n.a.	3.9	102
MRC RX 107	MRC RX 107	8.9	13.1	6.6	1	0.48	0.29	3.5	0.0016	10	109	n.a.	0.04	0.22	0.14	n.a.	12.2	110
MRC RX 123	MRC RX 123	2.3	0.2	0.2	1	1.01	0.16	13.2	0.0001	10	84	n.a.	0.06	0.06	0.07	n.a.	2.1	200
MRC RX 124	MRC RX 124	18.6	0.7	0.7	2	0.37	1.02	17.6	0.0007	10	251	n.a.	0.07	0.35	0.14	n.a.	6.2	92
MRC RX 42	MRC RX 42	17.8	3.4	3.9	1	0.31	0.28	5.6	0.0021	10	136	n.a.	0.04	0.37	0.13	n.a.	5.2	69
MRC RX 34	MRC RX 34	25.2	2.5	2.6	1	0.40	0.97	13.1	0.0009	10	246	n.a.	0.14	0.51	0.23	n.a.	9.9	58
MRC RX 33	MRC RX 33	27.2	37.4	37.4	1	0.34	1.21	0.6	0.0017	10	589	n.a.	0.20	0.65	0.73	n.a.	9.8	38
MRC RX 62	MRC RX 62	16.9	2.2	2.3	2	0.18	0.62	6.3	0.0003	10	106	n.a.	0.04	0.26	0.07	n.a.	4.3	90
2128176A	P2C20-8	27.5	0.6	0.6	2	0.42	0.67	11.2	0.0004	10	153	n.a.	0.19	0.60	0.40	n.a.	4.6	34
2128215	P2C26-2	17.5	0.1	0.1	1	0.40	1.08	6.1	n.a.	8	124	0.58	0.19	0.31	0.22	10.4	4.2	105
MRC RX 82	MRC RX 82	18.3	0.4	0.4	1	0.55	0.75	7.5	0.0005	10	753	n.a.	0.18	0.34	0.21	n.a.	5.5	42
MRC RX 97	MRC RX 97	25.5	0.5	0.5	1	0.50	0.89	7.3	0.0006	10	174	n.a.	0.31	0.49	0.39	n.a.	5.0	33
MRC RX 108	MRC RX 108	18.0	0.4	0.4	1	0.53	1.15	8.6	0.0006	10	171	n.a.	0.20	0.31	0.25	n.a.	6.0	44
MRC RX 125	MRC RX 125	17.5	0.4	0.4	1	0.50	0.95	6.7	0.0005	10	224	n.a.	0.18	0.34	0.19	n.a.	4.6	38
MRC RX 126	MRC RX 126	25.8	0.3	0.4	2	0.60	0.98	14.4	0.0001	10	60	n.a.	0.25	0.52	0.87	n.a.	6.1	35
2128226	P2R18-2	15.5	0.1	0.1	1	0.40	0.91	6.7	n.a.	8	105	0.49	0.11	0.33	0.16	9.2	4.6	190
2128198	P2R11-3	14.0	2.4	15.2	1	0.40	0.21	3.7	n.a.	3	96	0.29	0.04	0.26	0.14	7.8	6.2	185
2128199	P2R11-4	43.5	1.5	1.6	2	0.40	1.13	6.0	n.a.	10	145	0.73	0.20	1.18	0.20	11.2	3.9	114
MRC RX 63	MRC RX 63	32.9	0.3	0.3	2	0.49	1.03	94.7	0.0001	10	24	n.a.	0.31	0.55	0.35	n.a.	20.7	49

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported



Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	CaMg NP kg CaCO <sub>3</sub> / t	TNPR unitless	SNPR unitless	Fizz Rating Unity	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm
2128199A	P2R11-4	41.2	0.9	0.9	2	0.50	0.79	6.4	0.0017	10	96	n.a.	0.23	1.13	0.26	n.a.	4.5	27
MRC RX 21	MRC RX 21	33.5	0.5	0.5	1	0.52	0.66	14.1	0.0004	10	67	n.a.	0.20	0.76	0.70	n.a.	5.3	28
MRC RX 51	MRC RX 51	38.9	0.9	0.9	1	0.50	0.77	12.9	0.0001	10	42	n.a.	0.16	0.90	1.20	n.a.	4.8	40
MRC RX 43	MRC RX 43	31.5	0.5	0.5	1	0.47	0.91	11.3	0.0002	10	42	n.a.	0.24	0.70	0.62	n.a.	5.4	32
MRC RX 35	MRC RX 35	142.6	3.1	3.2	4	0.43	0.59	11.9	0.0003	10	64	n.a.	0.11	4.53	0.57	n.a.	3.2	40
MRC RX 98	MRC RX 98	34.1	0.7	0.7	2	0.44	0.82	11.1	0.0005	10	76	n.a.	0.24	0.77	0.68	n.a.	5.0	35
MRC RX 109	MRC RX 109	19.8	0.3	0.3	1	0.57	0.87	6.3	0.0007	10	155	n.a.	0.19	0.38	0.35	n.a.	5.5	33
MRC RX 83	MRC RX 83	26.6	0.7	0.8	2	0.56	0.78	11.5	0.0011	10	758	n.a.	0.18	0.53	0.47	n.a.	5.0	42
2128186A	P2R12-1	22.3	0.3	0.3	1	0.53	0.80	9.6	0.0013	10	93	n.a.	0.29	0.45	0.81	n.a.	6.2	25
2128186	P2R12-1	21.5	0.2	0.3	1	0.40	0.91	9.3	n.a.	8	75	0.74	0.29	0.43	0.65	8.9	5.4	73
2128200	P2R11-5	31.5	0.4	0.4	1	0.40	1.08	12.3	n.a.	11	56	0.82	0.25	0.69	0.72	10.4	5.6	88
2128187	P2R12-2	30.9	0.4	0.5	1	0.40	0.69	10.6	n.a.	7	83	0.65	0.19	0.71	0.61	9.1	4.6	127
MRC RX 127	MRC RX 127	30.9	0.5	0.5	2	0.50	0.64	11.3	0.0001	10	136	n.a.	0.17	0.73	0.75	n.a.	5.5	44
MRC RX 128	MRC RX 128	24.1	0.6	0.6	2	0.43	0.59	10.0	0.0008	10	264	n.a.	0.10	0.56	0.29	n.a.	3.4	39
MRC RX 129	MRC RX 129	49.0	1.0	1.0	2	0.43	0.55	11.8	0.0001	10	119	n.a.	0.10	1.32	0.51	n.a.	3.5	53
MRC RX 110	MRC RX 110	37.2	0.9	0.9	2	0.44	0.65	10.3	0.0004	10	426	n.a.	0.12	0.86	1.09	n.a.	4.1	46
MRC RX 99	MRC RX 99	4.9	0.7	0.9	1	0.35	0.13	4.7	0.0001	10	79	n.a.	0.05	0.12	0.14	n.a.	2.1	134
MRC RX 84	MRC RX 84	36.1	0.8	0.8	2	0.43	0.72	9.9	0.0011	10	411	n.a.	0.17	0.81	0.75	n.a.	4.5	46
2128216	P2C26-3	23.2	0.3	0.3	1	0.40	0.90	11.0	n.a.	8	99	0.62	0.17	0.48	0.50	9.1	4.1	122
MRC RX 64	MRC RX 64	285.5	8.6	8.7	4	0.32	0.44	9.0	0.0001	10	71	n.a.	0.11	9.45	0.58	n.a.	3.4	25
2128227	P2R18-3	24.9	0.4	0.4	1	0.30	0.71	10.8	n.a.	7	108	0.50	0.14	0.56	0.41	10.6	3.4	146
MRC RX 120	MRC RX 120	46.4	0.4	0.4	2	0.44	1.59	13.2	0.0010	10	47	n.a.	0.28	0.78	1.51	n.a.	18.4	45
2212054	MRC RX 13	244.5	4.1	4.4	3	0.34	1.34	7.3	0.0050	11	70	0.69	0.14	6.64	1.24	16.0	8.4	97
MRC RX 65	MRC RX 65	66.4	1.0	1.0	4	0.32	0.20	35.9	0.0001	10	64	n.a.	0.08	2.07	0.35	n.a.	7.7	91
2128188	P2R12-3	84.8	22.6	62.7	2	0.30	1.67	5.1	n.a.	6	936	0.96	0.28	1.98	1.41	23.5	12.7	53
MRC RX 118	MRC RX 118	51.5	5.7	6.2	2	0.37	1.27	11.0	0.0003	10	830	n.a.	0.24	1.00	1.84	n.a.	10.9	25
2128228	P2R18-4	52.7	11.1	15.5	1	0.30	1.74	2.7	n.a.	3	746	0.70	0.25	0.82	1.18	19.8	14.5	84
MRC RX 66	MRC RX 66	156.3	122.1	162.8	4	0.29	0.74	1.4	0.0001	10	571	n.a.	0.18	3.84	1.07	n.a.	8.8	29
2128201	P2R11-6	116.0	51.5	25728.0	2	0.30	1.26	1.6	n.a.	9	805	0.81	0.22	2.68	1.29	19.2	10.5	41
2128217	P2C26-4	80.5	31.9	246.6	1	0.20	1.16	1.6	n.a.	7	766	0.87	0.19	1.76	1.67	16.1	10.9	81
2128177	P2C20-9	130.9	32.6	57.5	2	0.20	0.85	1.8	n.a.	6	439	0.66	0.19	3.01	1.28	13.0	10.4	54
2128189	P2R12-4	44.7	15.9	51.3	1	0.20	1.32	2.6	n.a.	3	563	0.74	0.18	0.72	0.95	17.8	12.7	93
MRC RX 67	MRC RX 67	36.1	1.9	2.1	2	0.18	0.80	40.6	0.0002	10	504	n.a.	0.10	0.72	0.86	n.a.	12.9	36
2128202	P2R11-7	262.3	117.8	58880.0	3	0.10	0.55	4.0	n.a.	3	306	0.35	0.05	7.35	0.57	12.8	5.6	190
2128218	P2C26-5	23.2	3.6	1590.4	1	0.30	1.72	4.6	n.a.	3	790	0.75	0.23	0.15	0.89	19.2	11.0	81
MRC RX 85	MRC RX 85	259.4	113.3	132.2	4	0.16	0.66	8.5	0.0012	10	451	n.a.	0.06	6.94	0.55	n.a.	6.0	78
MRC RX 100	MRC RX 100	181.0	94.7	122.6	3	0.39	0.64	2.6	0.0004	10	372	n.a.	0.18	4.65	1.80	n.a.	12.9	36
MRC RX 111	MRC RX 111	19.8	1.6	1.7	2	0.25	0.38	19.6	0.0007	10	199	n.a.	0.05	0.42	0.14	n.a.	4.9	204
MRC RX 130	MRC RX 130	160.6	243.4	243.4	4	0.16	0.32	2.8	0.0001	10	202	n.a.	0.03	4.45	0.25	n.a.	4.1	86
2128229	P2R18-5	54.7	8.9	10.9	1	0.10	1.48	6.0	n.a.	3	611	0.68	0.22	0.94	0.57	16.3	15.4	60
2212041	MRC RX 01	88.2	2.3	2.5	1	0.38	1.70	18.0	0.0050	13	337	0.94	0.15	1.94	0.37	13.8	3.9	175
2128190	P2R12-5	103.9	11.8	16.8	2	0.10	0.65	9.2	n.a.	3	262	0.52	0.08	2.48	0.15	9.7	4.8	195
2128178	P2C20-10	41.5	16.5	154.8	2	0.10	1.13	6.7	n.a.	3	1080	0.73	0.28	0.74	0.33	22.1	9.4	53
FT8925	UPPER GATES-1	10.9	0.1	0.1	1	0.34	0.75	6.7	0.0011	10	48	n.a.	0.16	0.18	2.55	n.a.	8.8	29
FT8926	UPPER GATES-2	198.2	174.6	269.5	3	0.21	0.66	1.2	0.0001	10	389	n.a.	0.08	5.07	0.64	n.a.	5.3	57
FT8927	UPPER GATES-3	211.6	676.2	67616.0	3	0.23	0.72	1.3	0.0005	10	468	n.a.	0.09	5.44	0.95	n.a.	5.2	52

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	CaMg NP kg CaCO <sub>3</sub> / t	TNPR unitless	SNPR unitless	Fizz Rating Unity	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm
FT8928	UPPER GATES-4	26.9	2.1	2.9	1	0.19	1.23	8.1	0.0010	10	733	n.a.	0.11	0.32	0.61	n.a.	13.2	82
FT8929	UPPER GATES-5	67.0	157.8	15776.0	2	0.08	0.90	4.8	0.0003	10	644	n.a.	0.05	1.58	0.28	n.a.	9.9	56
FT8930	UPPER GATES-6	39.5	15.8	40.9	2	0.25	1.26	3.6	0.0001	10	836	n.a.	0.15	0.59	0.94	n.a.	14.5	41
FT8931	UPPER GATES-7	33.2	40.5	8096.0	2	0.10	0.67	1.7	0.0012	10	1240	n.a.	0.04	0.68	0.17	n.a.	8.8	64
FT8932	UPPER GATES-8	43.0	26.4	5280.0	2	0.09	0.66	1.3	0.0001	10	1370	n.a.	0.04	0.92	0.25	n.a.	9.4	55
FT8933	UPPER GATES-9	99.4	18.4	20.7	2	0.28	0.58	12.4	0.0001	10	548	n.a.	0.12	2.14	0.25	n.a.	8.7	41
FT8934	UPPER GATES-10	10.0	0.5	0.5	1	0.23	0.11	8.0	0.0019	10	144	n.a.	0.01	0.25	0.05	n.a.	2.7	113
MRC RX 86	MRC RX 86	17.8	0.3	0.3	2	0.33	0.25	24.8	0.0001	10	177	n.a.	0.07	0.47	0.18	n.a.	10.4	133
MRC RX 101	MRC RX 101	257.7	182.7	350.6	3	0.32	0.74	1.1	0.0004	10	607	n.a.	0.18	7.35	1.46	n.a.	6.7	27
MRC RX 112	MRC RX 112	176.7	160.9	160.9	3	0.37	0.76	7.2	0.0003	10	498	n.a.	0.20	4.91	1.42	n.a.	9.3	17
MRC RX 131	MRC RX 131	43.8	18.4	26.5	1	0.29	0.84	3.0	0.0001	10	701	n.a.	0.20	1.00	1.11	n.a.	10.2	23
2128179	P2C20-11	247.4	86.9	42560.0	3	0.20	0.85	1.1	n.a.	6	407	0.74	0.16	6.98	1.28	15.5	8.0	34
MRC RX 69	MRC RX 69	2.9	3.6	8.1	1	0.23	0.39	0.7	0.0001	10	504	n.a.	0.28	0.04	0.15	n.a.	0.8	8
2128220	P2C26-7	100.2	19.9	110.4	1	0.30	0.81	3.4	n.a.	6	485	0.82	0.22	2.32	1.83	15.5	11.7	31
MRC RX 132	MRC RX 132	122.0	87.7	117.0	3	0.31	1.38	2.7	0.0001	10	718	n.a.	0.18	3.01	1.69	n.a.	11.6	34
MRC RX 114	MRC RX 114	232.2	249.0	371.0	4	0.18	0.33	3.9	0.0005	10	209	n.a.	0.05	6.54	0.45	n.a.	4.0	43
MRC RX 87	MRC RX 87	282.1	279.8	279.8	4	0.29	0.85	2.3	0.0001	10	427	n.a.	0.15	8.21	1.32	n.a.	7.2	29
2128204	P2R11-9	76.5	19.4	24.9	2	0.30	0.82	9.6	n.a.	8	509	0.76	0.14	1.74	1.14	21.1	17.8	137
MRC RX 70	MRC RX 70	12.0	1.0	1.1	1	0.46	0.62	6.5	0.0001	10	555	n.a.	0.27	0.18	2.11	n.a.	20.9	11
2212042	MRC RX 02	62.1	60.3	12672.0	1	0.35	1.59	2.1	0.0050	24	775	1.40	0.28	1.26	1.66	19.4	5.7	27
2128191	P2R12-6	207.6	58.8	40000.0	3	0.30	0.70	4.6	n.a.	6	461	0.78	0.16	6.03	1.57	16.8	8.0	55
2128181	P2C20-13	184.7	83.7	32640.0	3	0.10	0.47	1.8	n.a.	5	314	0.56	0.10	4.68	0.77	16.0	7.1	130
2128205	P2R11-10	157.2	22.5	34.9	3	0.30	0.92	1.5	n.a.	7	701	0.84	0.18	3.74	1.58	19.2	9.3	42
2128182	P2C20-14	80.5	74.7	101.3	2	0.10	0.18	2.1	n.a.	3	134	0.34	0.04	1.91	0.08	6.2	2.8	201
2212055	MRC RX 14	53.5	10.0	58.7	1	0.29	0.85	5.9	0.0050	10	592	1.60	0.27	1.18	1.44	16.3	8.1	29
2128193	P2R12-8	64.7	49.1	16192.0	2	0.10	0.31	6.2	n.a.	3	147	0.51	0.05	1.50	0.10	10.2	8.2	299
MRC RX 27	MRC RX 27	152.1	59.4	67.9	3	0.28	0.65	1.5	0.0001	10	318	n.a.	0.21	3.48	1.00	n.a.	10.5	24
2128206	P2R11-11	16.0	8.0	71.8	1	0.20	0.79	0.6	n.a.	6	714	0.88	0.20	0.30	1.19	23.0	9.4	136
2128194	P2R12-9	184.4	36.9	33600.0	2	0.20	0.86	4.0	n.a.	3	261	0.72	0.24	4.87	0.88	14.8	11.8	67
2128235	P2R18-11	18.0	1.5	2.4	1	0.20	1.21	1.4	n.a.	8	304	0.82	0.21	0.17	1.12	14.4	15.8	127
2212046	MRC RX 06	17.5	12.1	2784.0	1	0.12	1.54	2.6	0.0050	3	291	0.65	0.05	0.33	0.08	7.7	4.1	169
MRC RX 75	MRC RX 75	50.7	1.9	1.9	2	0.28	0.71	9.6	0.0001	10	262	n.a.	0.22	0.84	0.99	n.a.	13.6	24
2128207	P2R11-12	187.6	75.4	147.8	3	0.10	1.04	0.6	n.a.	6	318	0.79	0.28	5.01	0.82	14.5	10.8	38
2212047	MRC RX 07	48.7	18.8	8640.0	2	0.29	1.24	7.8	0.0050	3	331	0.88	0.06	0.98	0.14	11.3	20.3	219
2128185	P2C20-17	9.4	7.6	27.4	1	0.10	0.66	1.6	n.a.	3	221	0.44	0.04	0.11	0.07	8.1	13.2	182
2128208	P2R11-13	33.2	0.4	0.4	1	0.20	3.75	12.1	n.a.	9	265	1.00	0.34	0.46	1.12	8.7	15.5	214
2128209	P2R11-14	14.9	1.4	1.6	2	0.10	0.71	4.5	n.a.	9	292	0.66	0.09	0.17	0.67	15.7	11.2	212
2212049	MRC RX 09	8.3	4.9	1568.0	1	0.33	0.90	3.5	0.0050	12	441	0.86	0.12	0.13	1.87	13.5	6.5	121

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported



Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Cs ppm	Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm
2128212	P2R11-17	0.72	15.7	2.16	2.5	n.a.	n.a.	0.05	0.026	0.19	7.0	12.0	0.20	451	2.5	0.005	n.a.	33.3	986
2128213	P2R11-18	0.49	9.4	1.06	2.5	n.a.	n.a.	0.03	0.013	0.11	9.0	5.0	2.69	633	2.0	0.005	n.a.	14.5	687
2128211	P2R11-16	1.15	18.7	1.82	2.5	n.a.	n.a.	0.06	0.027	0.25	11.0	15.0	1.68	526	2.8	0.010	n.a.	28.9	934
MRC RX 55	MRC RX 55	n.a.	12.7	1.65	1.2	n.a.	n.a.	0.08	n.a.	0.10	3.3	n.a.	0.10	142	2.1	0.007	n.a.	12.6	690
MRC RX 56	MRC RX 56	n.a.	33.3	1.11	1.1	n.a.	n.a.	0.04	n.a.	0.15	3.8	n.a.	0.37	151	2.1	0.045	n.a.	17.9	460
MRC RX 57	MRC RX 57	n.a.	15.7	2.20	1.1	n.a.	n.a.	0.03	n.a.	0.15	3.0	n.a.	0.47	162	2.3	0.033	n.a.	18.5	800
2128210	P2R11-15	2.00	34.1	2.72	7.0	n.a.	n.a.	0.09	0.043	0.65	13.0	24.0	1.52	660	2.8	0.040	n.a.	46.4	1090
2212056	MRC RX 15	1.16	19.4	2.02	4.4	0.03	0.14	0.07	0.042	0.50	4.4	18.5	0.72	289	2.8	0.170	0.080	20.6	427
MRC RX 76	MRC RX 76	n.a.	33.8	2.26	1.6	n.a.	n.a.	0.09	n.a.	0.21	2.6	n.a.	0.44	140	4.1	0.118	n.a.	33.4	680
MRC RX 91	MRC RX 91	n.a.	29.2	1.67	2.5	n.a.	n.a.	0.06	n.a.	0.25	4.1	n.a.	0.36	92	2.1	0.122	n.a.	24.2	1110
MRC RX 102	MRC RX 102	n.a.	25.1	2.81	1.8	n.a.	n.a.	0.09	n.a.	0.26	2.8	n.a.	0.59	246	4.5	0.107	n.a.	32.0	800
2212057	MRC RX 16	1.32	19.5	1.79	4.3	0.05	0.10	0.12	0.033	0.37	5.3	28.8	0.34	137	1.3	0.100	0.025	25.9	623
MRC RX 38	MRC RX 38	n.a.	18.0	1.41	1.5	n.a.	n.a.	0.08	n.a.	0.18	3.0	n.a.	0.20	86	3.3	0.084	n.a.	21.1	710
MRC RX 30	MRC RX 30	n.a.	23.3	1.96	1.9	n.a.	n.a.	0.08	n.a.	0.22	3.3	n.a.	0.34	74	1.8	0.151	n.a.	24.9	770
MRC RX 46	MRC RX 46	n.a.	22.5	2.10	1.9	n.a.	n.a.	0.08	n.a.	0.20	3.4	n.a.	0.58	88	3.8	0.100	n.a.	29.4	930
MRC RX 58	MRC RX 58	n.a.	29.4	1.64	2.1	n.a.	n.a.	0.07	n.a.	0.21	3.3	n.a.	0.68	82	2.7	0.098	n.a.	31.6	720
2128169	P2C20-1	1.18	21.2	1.79	2.5	n.a.	n.a.	0.09	0.036	0.28	4.0	18.0	0.40	162	2.2	0.100	n.a.	31.1	813
MRC RX 47	MRC RX 47	n.a.	23.8	5.71	2.7	n.a.	n.a.	0.08	n.a.	0.24	3.9	n.a.	0.89	350	1.7	0.128	n.a.	27.1	1830
MRC RX 31	MRC RX 31	n.a.	28.0	2.67	2.9	n.a.	n.a.	0.05	n.a.	0.27	4.1	n.a.	0.44	124	1.4	0.146	n.a.	25.3	1280
2212058	MRC RX 17	0.85	16.1	2.22	4.2	0.06	0.08	0.17	0.030	0.26	6.9	20.1	0.48	202	1.8	0.070	0.060	22.7	1350
2212059	MRC RX 18	0.84	17.0	2.29	4.5	0.06	0.08	0.18	0.028	0.26	6.6	19.8	0.53	229	2.0	0.060	0.080	23.4	1260
2212060	MRC RX 19	1.75	30.9	2.44	4.7	0.06	0.09	0.26	0.054	0.46	3.7	33.1	0.35	100	2.9	0.130	0.060	28.8	664
2212061	MRC RX 20	0.64	27.0	2.80	4.2	0.06	0.13	0.16	0.026	0.21	5.7	11.6	1.03	661	3.2	0.030	0.210	67.2	777
MRC RX 39	MRC RX 39	n.a.	26.2	2.43	2.9	n.a.	n.a.	0.05	n.a.	0.24	4.2	n.a.	0.48	113	1.6	0.131	n.a.	23.6	1190
MRC RX 59	MRC RX 59	n.a.	31.6	2.68	2.4	n.a.	n.a.	0.08	n.a.	0.22	3.7	n.a.	0.51	164	2.4	0.132	n.a.	32.3	840
MRC RX 77	MRC RX 77	n.a.	29.2	2.17	2.2	n.a.	n.a.	0.08	n.a.	0.21	3.2	n.a.	0.39	100	1.7	0.128	n.a.	30.6	1020
MRC RX 92	MRC RX 92	n.a.	23.2	1.61	2.1	n.a.	n.a.	0.07	n.a.	0.26	3.2	n.a.	0.31	93	2.8	0.121	n.a.	24.0	760
MRC RX 103	MRC RX 103	n.a.	23.2	1.84	2.5	n.a.	n.a.	0.04	n.a.	0.22	4.0	n.a.	0.50	79	2.9	0.097	n.a.	29.0	870
2128170	P2C20-2	0.68	16.0	1.59	2.5	n.a.	n.a.	0.07	0.029	0.17	4.0	19.0	0.48	150	1.1	0.070	n.a.	24.7	821
2128170A	P2C20-2	n.a.	19.0	1.61	1.9	n.a.	n.a.	0.06	n.a.	0.18	3.5	n.a.	0.52	101	3.1	0.084	n.a.	23.1	700
2128171	P2C20-3	1.20	27.4	1.99	2.5	n.a.	n.a.	0.15	0.048	0.24	4.0	27.0	0.43	119	1.0	0.130	n.a.	30.8	1080
MRC RX 32	MRC RX 32	n.a.	24.2	1.62	2.2	n.a.	n.a.	0.14	n.a.	0.25	3.1	n.a.	0.21	45	2.2	0.106	n.a.	21.5	870
MRC RX 48	MRC RX 48	n.a.	24.6	1.43	2.1	n.a.	n.a.	0.13	n.a.	0.24	2.9	n.a.	0.20	48	1.9	0.105	n.a.	21.5	760
MRC RX 40	MRC RX 40	n.a.	17.8	1.25	1.9	n.a.	n.a.	0.09	n.a.	0.19	3.1	n.a.	0.18	38	2.3	0.079	n.a.	20.9	840
MRC RX 45	MRC RX 45	n.a.	20.8	1.19	2.2	n.a.	n.a.	0.08	n.a.	0.24	3.4	n.a.	0.20	48	2.8	0.086	n.a.	19.5	890
MRC RX 78	MRC RX 78	n.a.	27.6	1.32	1.8	n.a.	n.a.	0.12	n.a.	0.25	2.9	n.a.	0.23	54	2.7	0.102	n.a.	23.2	720
MRC RX 93	MRC RX 93	n.a.	22.6	1.51	2.0	n.a.	n.a.	0.16	n.a.	0.23	3.3	n.a.	0.23	47	4.6	0.091	n.a.	27.5	760
MRC RX 104	MRC RX 104	n.a.	25.7	1.37	2.1	n.a.	n.a.	0.15	n.a.	0.28	3.4	n.a.	0.24	61	2.5	0.108	n.a.	23.0	850
2128172	P2C20-4	1.15	21.3	1.31	2.5	n.a.	n.a.	0.13	0.035	0.25	4.0	16.0	0.20	71	0.9	0.080	n.a.	22.8	1030
2128172A	P2C20-4	n.a.	25.7	1.30	2.0	n.a.	n.a.	0.09	n.a.	0.23	3.6	n.a.	0.24	42	2.2	0.100	n.a.	21.2	840
MRC RX 60	MRC RX 60	n.a.	24.3	1.67	2.1	n.a.	n.a.	0.11	n.a.	0.20	3.3	n.a.	0.31	68	2.6	0.090	n.a.	24.1	940
2128196	P2R11-1	1.21	20.1	1.38	2.5	n.a.	n.a.	0.14	0.032	0.25	3.0	12.0	0.22	82	1.3	0.030	n.a.	21.4	894
HF9093	BH06-10.1M	n.a.	28.6	1.46	2.3	n.a.	n.a.	0.08	n.a.	0.20	3.2	n.a.	0.25	81	1.0	0.099	n.a.	29.4	760
HF9094	BH06-19.8M	n.a.	18.2	1.46	1.5	n.a.	n.a.	0.11	n.a.	0.15	2.8	n.a.	0.18	74	0.8	0.099	n.a.	23.1	720
HF9095	BH06-29.9M	n.a.	21.6	1.87	1.7	n.a.	n.a.	0.06	n.a.	0.16	2.5	n.a.	0.20	79	0.9	0.127	n.a.	26.1	620
HF9096	BH06-39.9M	n.a.	32.2	2.70	1.8	n.a.	n.a.	0.09	n.a.	0.18	2.3	n.a.	0.26	106	1.9	0.162	n.a.	41.1	700

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Cs ppm	Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm
HF9097	BH06-50.0M	n.a.	25.2	2.31	1.8	n.a.	n.a.	0.11	n.a.	0.18	2.5	n.a.	0.29	106	1.5	0.132	n.a.	31.9	680
HF9098	BH06-59.7M	n.a.	27.6	2.26	1.8	n.a.	n.a.	0.08	n.a.	0.18	2.5	n.a.	0.28	106	1.8	0.134	n.a.	34.6	660
HF9099	BH06-69.8M	n.a.	28.7	2.35	1.6	n.a.	n.a.	0.09	n.a.	0.19	2.4	n.a.	0.22	119	1.6	0.150	n.a.	32.1	660
HF9100	BH06-79.9M	n.a.	32.3	2.47	1.5	n.a.	n.a.	0.11	n.a.	0.19	2.5	n.a.	0.22	138	2.5	0.175	n.a.	35.7	670
HF9101	BH06-89.9M	n.a.	29.4	2.44	1.6	n.a.	n.a.	0.11	n.a.	0.20	2.3	n.a.	0.21	114	2.4	0.167	n.a.	30.9	640
HF9102	BH06-98.5M	n.a.	31.0	2.70	1.6	n.a.	n.a.	0.14	n.a.	0.19	2.1	n.a.	0.21	139	2.8	0.183	n.a.	33.1	590
2128225	P2R18-1	1.29	29.7	2.05	2.5	n.a.	n.a.	0.05	0.044	0.28	6.0	24.0	0.44	175	2.3	0.050	n.a.	40.7	1120
MRC RX 79	MRC RX 79	n.a.	26.4	1.42	2.9	n.a.	n.a.	0.05	n.a.	0.24	6.6	n.a.	0.32	135	3.9	0.067	n.a.	27.8	470
MRC RX 41	MRC RX 41	n.a.	26.0	0.77	2.7	n.a.	n.a.	0.10	n.a.	0.23	1.8	n.a.	0.22	72	0.9	0.142	n.a.	34.0	290
MRC RX 94	MRC RX 94	n.a.	27.0	4.73	2.9	n.a.	n.a.	0.04	n.a.	0.20	5.5	n.a.	1.17	676	5.1	0.057	n.a.	41.7	1220
MRC RX 105	MRC RX 105	n.a.	6.4	0.17	0.7	n.a.	n.a.	0.00	n.a.	0.10	1.8	n.a.	0.03	9	5.2	0.029	n.a.	8.4	20
2128173	P2C20-5	0.77	19.4	0.64	2.5	n.a.	n.a.	0.02	0.028	0.18	8.0	19.0	0.10	196	0.3	0.070	n.a.	24.4	45
2128174	P2C20-6	1.18	19.4	1.17	2.5	n.a.	n.a.	0.07	0.030	0.23	4.0	14.0	0.21	69	1.3	0.060	n.a.	22.3	949
2128175	P2C20-7	0.18	5.7	0.48	2.5	n.a.	n.a.	0.02	0.015	0.05	2.0	2.0	0.04	58	1.4	0.010	n.a.	12.6	1030
MRC RX 29	MRC RX 29	n.a.	27.2	1.38	3.4	n.a.	n.a.	0.04	n.a.	0.22	4.8	n.a.	0.28	82	1.7	0.079	n.a.	36.3	890
MRC RX 49	MRC RX 49	n.a.	24.9	0.39	2.0	n.a.	n.a.	0.06	n.a.	0.13	1.9	n.a.	0.13	12	1.9	0.072	n.a.	26.1	50
MRC RX 50	MRC RX 50	n.a.	25.6	1.60	2.7	n.a.	n.a.	0.10	n.a.	0.23	3.2	n.a.	0.23	55	2.7	0.079	n.a.	25.9	900
MRC RX 61	MRC RX 61	n.a.	18.1	1.21	3.0	n.a.	n.a.	0.04	n.a.	0.11	3.5	n.a.	0.42	35	5.5	0.032	n.a.	36.7	490
MRC RX 80	MRC RX 80	n.a.	18.5	1.12	2.5	n.a.	n.a.	0.10	n.a.	0.15	6.8	n.a.	0.48	215	4.4	0.034	n.a.	81.5	880
MRC RX 106	MRC RX 106	n.a.	7.2	2.00	1.6	n.a.	n.a.	0.05	n.a.	0.08	2.5	n.a.	0.57	401	5.9	0.020	n.a.	33.3	550
MRC RX 122	MRC RX 122	n.a.	20.6	0.30	1.4	n.a.	n.a.	0.04	n.a.	0.19	6.8	n.a.	0.07	14	1.9	0.068	n.a.	12.5	40
MRC RX 95	MRC RX 95	n.a.	39.3	1.86	3.7	n.a.	n.a.	0.06	n.a.	0.25	3.5	n.a.	0.40	318	1.6	0.087	n.a.	50.1	510
2128214	P2C26-1	1.00	35.8	1.96	2.5	n.a.	n.a.	0.12	0.040	0.26	7.0	18.0	0.38	177	0.3	0.060	n.a.	32.5	189
2128197	P2R11-2	0.89	20.5	2.13	2.5	n.a.	n.a.	0.05	0.023	0.16	6.0	12.0	1.22	705	1.6	0.020	n.a.	32.7	680
2212048	MRC RX 08	2.44	23.6	3.43	3.8	0.05	0.12	0.72	0.050	0.29	4.6	27.2	0.52	101	2.7	0.070	0.060	50.6	430
2128176	P2C20-8	0.98	25.0	1.64	2.5	n.a.	n.a.	0.15	0.036	0.23	3.0	13.0	0.35	101	2.5	0.070	n.a.	29.2	1040
MRC RX 81	MRC RX 81	n.a.	6.9	1.94	1.8	n.a.	n.a.	0.04	n.a.	0.05	3.2	n.a.	0.21	55	6.3	0.014	n.a.	15.6	1180
MRC RX 96	MRC RX 96	n.a.	6.2	2.39	1.0	n.a.	n.a.	0.02	n.a.	0.09	2.2	n.a.	0.16	163	7.2	0.015	n.a.	9.7	950
MRC RX 107	MRC RX 107	n.a.	6.1	1.45	1.0	n.a.	n.a.	0.04	n.a.	0.06	2.3	n.a.	0.09	85	8.1	0.015	n.a.	23.8	980
MRC RX 123	MRC RX 123	n.a.	11.1	0.52	0.9	n.a.	n.a.	0.07	n.a.	0.05	0.3	n.a.	0.02	31	16.3	0.031	n.a.	15.8	210
MRC RX 124	MRC RX 124	n.a.	11.1	3.61	2.6	n.a.	n.a.	0.05	n.a.	0.12	2.6	n.a.	0.30	172	7.3	0.031	n.a.	24.5	860
MRC RX 42	MRC RX 42	n.a.	6.4	3.01	1.1	n.a.	n.a.	0.08	n.a.	0.08	4.2	n.a.	0.25	360	5.2	0.016	n.a.	10.9	1300
MRC RX 34	MRC RX 34	n.a.	13.8	3.06	2.8	n.a.	n.a.	0.04	n.a.	0.10	3.2	n.a.	0.37	149	4.3	0.032	n.a.	28.6	1190
MRC RX 33	MRC RX 33	n.a.	28.6	2.54	3.8	n.a.	n.a.	0.02	n.a.	0.25	6.9	n.a.	0.30	194	1.6	0.079	n.a.	38.2	2390
MRC RX 62	MRC RX 62	n.a.	5.2	3.11	1.6	n.a.	n.a.	0.04	n.a.	0.04	2.3	n.a.	0.33	319	6.6	0.014	n.a.	12.1	850
2128176A	P2C20-8	n.a.	29.1	1.61	1.8	n.a.	n.a.	0.11	n.a.	0.22	3.8	n.a.	0.36	64	3.9	0.083	n.a.	27.3	820
2128215	P2C26-2	1.32	26.0	1.91	2.5	n.a.	n.a.	0.23	0.034	0.30	4.0	16.0	0.30	103	1.7	0.070	n.a.	26.7	1040
MRC RX 82	MRC RX 82	n.a.	29.9	1.41	2.0	n.a.	n.a.	0.13	n.a.	0.26	3.6	n.a.	0.30	58	3.0	0.089	n.a.	29.1	810
MRC RX 97	MRC RX 97	n.a.	28.7	1.84	2.3	n.a.	n.a.	0.11	n.a.	0.31	4.9	n.a.	0.40	100	4.7	0.102	n.a.	25.1	870
MRC RX 108	MRC RX 108	n.a.	35.8	1.85	3.0	n.a.	n.a.	0.11	n.a.	0.35	4.5	n.a.	0.32	61	2.4	0.093	n.a.	29.9	880
MRC RX 125	MRC RX 125	n.a.	29.3	1.62	2.4	n.a.	n.a.	0.12	n.a.	0.29	3.2	n.a.	0.27	56	2.7	0.096	n.a.	28.5	770
MRC RX 126	MRC RX 126	n.a.	41.0	2.10	2.8	n.a.	n.a.	0.16	n.a.	0.30	3.8	n.a.	0.38	70	4.9	0.116	n.a.	36.8	900
2128226	P2R18-2	1.30	19.8	2.01	2.5	n.a.	n.a.	0.19	0.029	0.27	4.0	12.0	0.21	111	2.3	0.060	n.a.	23.9	1020
2128198	P2R11-3	0.21	5.5	3.56	2.5	n.a.	n.a.	0.03	0.026	0.06	3.0	2.0	0.23	384	1.8	0.005	n.a.	15.9	1360
2128199	P2R11-4	1.49	25.2	1.67	2.5	n.a.	n.a.	0.17	0.036	0.35	5.0	15.0	0.34	200	2.3	0.090	n.a.	26.8	933
MRC RX 63	MRC RX 63	n.a.	32.6	6.91	2.6	n.a.	n.a.	0.41	n.a.	0.18	3.8	n.a.	0.60	468	10.6	0.065	n.a.	51.0	1030

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Cs ppm	Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm
2128199A	P2R11-4	n.a.	31.9	1.65	2.3	n.a.	n.a.	0.13	n.a.	0.25	4.2	n.a.	0.31	122	3.0	0.095	n.a.	26.8	780
MRC RX 21	MRC RX 21	n.a.	32.5	1.79	1.8	n.a.	n.a.	0.12	n.a.	0.22	3.7	n.a.	0.41	63	4.9	0.087	n.a.	31.2	890
MRC RX 51	MRC RX 51	n.a.	27.6	1.77	2.2	n.a.	n.a.	0.13	n.a.	0.24	3.9	n.a.	0.46	67	6.6	0.076	n.a.	31.3	1110
MRC RX 43	MRC RX 43	n.a.	34.1	1.90	2.4	n.a.	n.a.	0.13	n.a.	0.30	3.8	n.a.	0.40	60	6.8	0.106	n.a.	35.2	910
MRC RX 35	MRC RX 35	n.a.	17.7	1.77	1.8	n.a.	n.a.	0.11	n.a.	0.19	3.8	n.a.	0.45	154	5.4	0.066	n.a.	20.1	980
MRC RX 98	MRC RX 98	n.a.	31.1	1.80	2.0	n.a.	n.a.	0.11	n.a.	0.29	4.4	n.a.	0.42	62	7.0	0.094	n.a.	32.1	820
MRC RX 109	MRC RX 109	n.a.	31.3	1.84	2.1	n.a.	n.a.	0.13	n.a.	0.30	3.6	n.a.	0.31	52	4.9	0.095	n.a.	30.1	740
MRC RX 83	MRC RX 83	n.a.	30.3	1.37	2.1	n.a.	n.a.	0.08	n.a.	0.27	3.6	n.a.	0.40	68	3.0	0.083	n.a.	26.9	790
2128186A	P2R12-1	n.a.	44.4	1.93	2.3	n.a.	n.a.	0.13	n.a.	0.25	3.4	n.a.	0.33	60	5.0	0.097	n.a.	34.6	780
2128186	P2R12-1	1.34	37.8	1.82	2.5	n.a.	n.a.	0.20	0.043	0.28	3.0	16.0	0.32	87	4.5	0.090	n.a.	35.6	976
2128200	P2R11-5	1.59	35.1	2.10	2.5	n.a.	n.a.	0.18	0.046	0.36	4.0	13.0	0.41	88	10.6	0.090	n.a.	40.6	1050
2128187	P2R12-2	1.19	24.6	1.70	2.5	n.a.	n.a.	0.18	0.037	0.22	4.0	10.0	0.37	116	6.3	0.060	n.a.	32.1	1110
MRC RX 127	MRC RX 127	n.a.	26.8	1.75	2.0	n.a.	n.a.	0.13	n.a.	0.21	4.0	n.a.	0.35	72	10.3	0.081	n.a.	34.8	920
MRC RX 128	MRC RX 128	n.a.	18.2	1.37	1.8	n.a.	n.a.	0.08	n.a.	0.19	3.5	n.a.	0.28	56	3.9	0.064	n.a.	21.1	780
MRC RX 129	MRC RX 129	n.a.	16.6	1.59	1.7	n.a.	n.a.	0.11	n.a.	0.18	4.7	n.a.	0.39	103	6.8	0.060	n.a.	22.4	1170
MRC RX 110	MRC RX 110	n.a.	21.6	1.54	1.6	n.a.	n.a.	0.09	n.a.	0.24	4.3	n.a.	0.44	61	6.6	0.068	n.a.	27.9	1000
MRC RX 99	MRC RX 99	n.a.	9.7	0.43	0.5	n.a.	n.a.	0.06	n.a.	0.06	0.9	n.a.	0.05	37	10.2	0.027	n.a.	10.6	390
MRC RX 84	MRC RX 84	n.a.	25.1	1.64	1.9	n.a.	n.a.	0.09	n.a.	0.25	3.7	n.a.	0.45	72	7.2	0.076	n.a.	32.4	920
2128216	P2C26-3	1.22	26.1	1.61	2.5	n.a.	n.a.	0.15	0.032	0.28	4.0	12.0	0.33	86	2.9	0.070	n.a.	28.2	1020
MRC RX 64	MRC RX 64	n.a.	18.7	2.15	1.1	n.a.	n.a.	0.09	n.a.	0.16	3.4	n.a.	0.52	357	4.5	0.054	n.a.	21.1	780
2128227	P2R18-3	0.85	17.9	1.58	2.5	n.a.	n.a.	0.13	0.025	0.22	4.0	10.0	0.31	106	3.2	0.060	n.a.	21.5	983
MRC RX 120	MRC RX 120	n.a.	85.9	5.53	6.2	n.a.	n.a.	0.11	n.a.	0.24	5.9	n.a.	0.84	1251	2.2	0.093	n.a.	53.6	980
2212054	MRC RX 13	0.82	29.1	2.37	4.2	0.03	0.11	0.12	0.032	0.43	6.4	18.0	1.90	643	3.1	0.060	0.025	40.4	652
MRC RX 65	MRC RX 65	n.a.	11.4	1.94	0.7	n.a.	n.a.	0.34	n.a.	0.07	2.4	n.a.	0.25	172	13.4	0.024	n.a.	35.0	770
2128188	P2R12-3	2.09	78.2	4.96	7.0	n.a.	n.a.	0.03	0.061	0.25	11.0	29.0	0.98	2120	1.2	0.080	n.a.	41.4	1620
MRC RX 118	MRC RX 118	n.a.	31.0	6.19	3.7	n.a.	n.a.	0.12	n.a.	0.35	5.2	n.a.	0.80	1192	1.7	0.154	n.a.	50.0	880
2128228	P2R18-4	1.20	71.8	3.56	7.0	n.a.	n.a.	0.04	0.056	0.22	9.0	28.0	1.02	1420	1.4	0.080	n.a.	45.1	1260
MRC RX 66	MRC RX 66	n.a.	27.8	2.82	2.2	n.a.	n.a.	0.05	n.a.	0.17	6.6	n.a.	1.62	583	2.0	0.056	n.a.	37.5	620
2128201	P2R11-6	1.85	27.7	3.00	2.5	n.a.	n.a.	0.09	0.045	0.34	9.0	18.0	1.37	1260	2.1	0.080	n.a.	53.8	767
2128217	P2C26-4	1.53	24.0	2.45	2.5	n.a.	n.a.	0.03	0.041	0.29	7.0	24.0	1.05	916	2.2	0.070	n.a.	49.0	886
2128177	P2C20-9	1.09	28.5	1.44	2.5	n.a.	n.a.	0.07	0.039	0.19	5.0	18.0	1.56	583	1.9	0.050	n.a.	48.4	625
2128189	P2R12-4	1.14	55.8	3.59	6.0	n.a.	n.a.	0.05	0.050	0.22	8.0	21.0	0.84	1250	1.8	0.090	n.a.	37.5	1220
MRC RX 67	MRC RX 67	n.a.	16.8	8.95	2.6	n.a.	n.a.	0.18	n.a.	0.16	5.6	n.a.	0.54	1937	2.2	0.081	n.a.	37.3	1230
2128202	P2R11-7	0.62	9.6	1.73	2.5	n.a.	n.a.	0.04	0.015	0.17	6.0	6.0	1.81	759	1.6	0.040	n.a.	28.9	906
2128218	P2C26-5	1.75	66.7	2.37	6.0	n.a.	n.a.	0.07	0.052	0.32	9.0	33.0	0.66	201	0.3	0.130	n.a.	44.6	532
MRC RX 85	MRC RX 85	n.a.	9.7	2.63	1.6	n.a.	n.a.	0.06	n.a.	0.15	5.4	n.a.	2.12	987	6.2	0.040	n.a.	24.2	710
MRC RX 100	MRC RX 100	n.a.	34.0	2.59	1.7	n.a.	n.a.	0.08	n.a.	0.22	5.5	n.a.	1.67	586	3.2	0.073	n.a.	45.7	820
MRC RX 111	MRC RX 111	n.a.	8.2	1.33	1.2	n.a.	n.a.	0.07	n.a.	0.12	3.2	n.a.	0.27	107	14.9	0.037	n.a.	25.5	610
MRC RX 130	MRC RX 130	n.a.	6.8	1.03	1.1	n.a.	n.a.	0.01	n.a.	0.10	2.8	n.a.	1.16	241	6.3	0.028	n.a.	17.1	580
2128229	P2R18-5	1.27	67.9	3.35	6.0	n.a.	n.a.	0.04	0.053	0.25	7.0	20.0	0.97	921	1.5	0.130	n.a.	46.4	1210
2212041	MRC RX 01	1.16	15.8	2.39	3.9	0.03	0.12	0.18	0.040	0.56	6.5	13.7	1.14	128	2.4	0.110	0.050	23.6	647
2128190	P2R12-5	0.62	12.7	3.97	2.5	n.a.	n.a.	0.03	0.030	0.20	4.0	4.0	1.15	443	1.4	0.070	n.a.	16.2	1110
2128178	P2C20-10	0.90	33.9	2.25	2.5	n.a.	n.a.	0.06	0.050	0.27	9.0	10.0	0.71	442	2.5	0.220	n.a.	29.8	715
FT8925	UPPER GATES-1	n.a.	20.6	3.49	1.8	n.a.	n.a.	0.06	n.a.	0.27	1.7	n.a.	0.20	541	1.3	0.106	n.a.	35.8	330
FT8926	UPPER GATES-2	n.a.	13.7	2.39	1.6	n.a.	n.a.	0.02	n.a.	0.17	4.4	n.a.	1.85	460	0.9	0.055	n.a.	18.0	710
FT8927	UPPER GATES-3	n.a.	20.9	2.06	2.0	n.a.	n.a.	0.05	n.a.	0.18	4.6	n.a.	1.95	600	1.2	0.062	n.a.	22.4	870

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Cs ppm	Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm
FT8928	UPPER GATES-4	n.a.	34.5	2.35	5.7	n.a.	n.a.	0.03	n.a.	0.18	6.7	n.a.	0.62	198	0.9	0.090	n.a.	34.3	780
FT8929	UPPER GATES-5	n.a.	15.6	3.42	3.8	n.a.	n.a.	0.01	n.a.	0.12	5.6	n.a.	0.76	671	0.4	0.074	n.a.	24.0	620
FT8930	UPPER GATES-6	n.a.	49.6	3.26	4.7	n.a.	n.a.	0.05	n.a.	0.20	5.4	n.a.	0.79	312	1.2	0.151	n.a.	37.7	620
FT8931	UPPER GATES-7	n.a.	12.9	2.69	2.3	n.a.	n.a.	0.01	n.a.	0.14	3.6	n.a.	0.48	381	0.2	0.133	n.a.	21.1	590
FT8932	UPPER GATES-8	n.a.	13.6	3.72	2.5	n.a.	n.a.	0.01	n.a.	0.12	4.5	n.a.	0.58	702	0.2	0.116	n.a.	20.2	690
FT8933	UPPER GATES-9	n.a.	30.3	1.65	1.9	n.a.	n.a.	0.03	n.a.	0.18	3.9	n.a.	1.33	162	1.6	0.079	n.a.	28.0	770
FT8934	UPPER GATES-10	n.a.	4.6	0.58	0.4	n.a.	n.a.	0.08	n.a.	0.06	0.8	n.a.	0.10	34	0.5	0.021	n.a.	10.0	400
MRC RX 86	MRC RX 86	n.a.	10.8	1.68	0.7	n.a.	n.a.	0.36	n.a.	0.09	3.2	n.a.	0.15	77	12.0	0.038	n.a.	24.5	950
MRC RX 101	MRC RX 101	n.a.	30.6	6.38	1.6	n.a.	n.a.	0.03	n.a.	0.26	4.3	n.a.	1.65	1138	1.9	0.080	n.a.	21.0	1510
MRC RX 112	MRC RX 112	n.a.	32.2	2.33	1.9	n.a.	n.a.	0.04	n.a.	0.25	4.9	n.a.	1.26	579	1.7	0.108	n.a.	40.5	1010
MRC RX 131	MRC RX 131	n.a.	28.5	3.54	2.1	n.a.	n.a.	0.09	n.a.	0.26	4.7	n.a.	0.53	1035	2.1	0.156	n.a.	43.3	650
2128179	P2C20-11	1.11	28.6	2.69	2.5	n.a.	n.a.	0.03	0.039	0.20	6.0	11.0	1.66	1020	1.2	0.070	n.a.	29.8	1190
MRC RX 69	MRC RX 69	n.a.	22.5	0.14	0.8	n.a.	n.a.	0.01	n.a.	0.17	1.2	n.a.	0.06	6	0.6	0.152	n.a.	3.4	5
2128220	P2C26-7	1.49	35.0	2.54	2.5	n.a.	n.a.	0.12	0.048	0.30	7.0	7.0	1.18	973	3.0	0.080	n.a.	56.9	994
MRC RX 132	MRC RX 132	n.a.	29.1	10.81	4.2	n.a.	n.a.	0.06	n.a.	0.23	6.4	n.a.	1.25	1620	3.3	0.077	n.a.	60.8	1390
MRC RX 114	MRC RX 114	n.a.	10.7	1.35	0.9	n.a.	n.a.	0.01	n.a.	0.13	4.0	n.a.	1.57	267	3.2	0.045	n.a.	13.2	740
MRC RX 87	MRC RX 87	n.a.	29.4	3.32	1.8	n.a.	n.a.	0.05	n.a.	0.22	5.9	n.a.	1.64	679	2.0	0.067	n.a.	25.5	1070
2128204	P2R11-9	0.75	23.9	3.34	2.5	n.a.	n.a.	0.11	0.033	0.23	10.0	6.0	0.93	589	3.9	0.080	n.a.	57.4	1440
MRC RX 70	MRC RX 70	n.a.	47.4	0.71	1.6	n.a.	n.a.	0.21	n.a.	0.18	2.3	n.a.	0.24	22	3.6	0.146	n.a.	95.0	460
2212042	MRC RX 02	1.82	33.9	2.24	4.9	0.05	0.09	0.17	0.054	0.56	8.9	19.8	0.91	433	1.7	0.140	0.025	33.1	925
2128191	P2R12-6	1.19	30.6	2.45	2.5	n.a.	n.a.	0.06	0.042	0.20	6.0	8.0	1.22	878	2.0	0.060	n.a.	27.1	1410
2128181	P2C20-13	1.78	18.2	2.38	2.5	n.a.	n.a.	0.04	0.026	0.15	7.0	6.0	1.77	748	1.8	0.050	n.a.	29.6	889
2128205	P2R11-10	1.48	28.0	3.04	2.5	n.a.	n.a.	0.08	0.042	0.35	8.0	7.0	1.75	1010	2.1	0.070	n.a.	38.6	1400
2128182	P2C20-14	0.39	4.4	1.52	2.5	n.a.	n.a.	0.01	0.021	0.07	3.0	1.0	0.90	300	1.0	0.020	n.a.	8.9	1100
2212055	MRC RX 14	2.42	29.5	2.89	2.9	0.05	0.08	0.18	0.051	0.32	6.3	14.9	0.69	767	2.6	0.110	0.050	33.7	475
2128193	P2R12-8	0.28	4.1	3.90	2.5	n.a.	n.a.	0.02	0.039	0.09	5.0	2.0	0.76	556	1.6	0.020	n.a.	19.8	2190
MRC RX 27	MRC RX 27	n.a.	36.6	3.00	1.8	n.a.	n.a.	0.03	n.a.	0.17	4.3	n.a.	1.83	652	2.6	0.067	n.a.	28.8	640
2128206	P2R11-11	2.47	15.3	3.72	2.5	n.a.	n.a.	0.07	0.036	0.26	11.0	10.0	0.26	2990	1.0	0.050	n.a.	25.1	725
2128194	P2R12-9	2.14	33.0	2.52	2.5	n.a.	n.a.	0.05	0.038	0.23	6.0	12.0	1.57	912	2.3	0.050	n.a.	51.7	855
2128235	P2R18-11	2.31	36.5	1.25	2.5	n.a.	n.a.	0.03	0.038	0.33	7.0	13.0	0.46	141	2.2	0.070	n.a.	52.8	668
2212046	MRC RX 06	0.96	12.1	1.07	3.9	0.03	0.04	0.05	0.018	0.23	3.7	18.5	0.28	196	0.9	0.090	0.025	13.6	359
MRC RX 75	MRC RX 75	n.a.	31.1	3.17	2.0	n.a.	n.a.	0.23	n.a.	0.16	3.8	n.a.	0.93	525	1.9	0.091	n.a.	46.9	580
2128207	P2R11-12	2.53	34.6	3.33	2.5	n.a.	n.a.	0.04	0.041	0.30	6.0	11.0	1.54	1150	2.1	0.060	n.a.	44.1	901
2212047	MRC RX 07	0.95	13.7	3.26	3.7	0.05	0.06	0.09	0.025	0.21	5.9	14.9	0.72	551	2.1	0.080	0.025	44.8	319
2128185	P2C20-17	0.68	7.5	0.73	2.5	n.a.	n.a.	0.01	0.020	0.12	4.0	9.0	0.22	127	1.1	0.060	n.a.	27.5	547
2128208	P2R11-13	3.58	36.1	2.57	2.5	n.a.	n.a.	0.75	0.052	1.04	4.0	21.0	0.70	137	3.6	0.100	n.a.	63.7	692
2128209	P2R11-14	2.08	15.6	1.06	2.5	n.a.	n.a.	0.11	0.024	0.17	7.0	14.0	0.35	109	2.4	0.050	n.a.	52.9	591
2212049	MRC RX 09	1.93	14.5	0.54	2.9	0.03	0.11	0.14	0.037	0.29	6.7	40.7	0.16	52	0.8	0.050	0.080	23.2	189

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm
2128212	P2R11-17	10.1	14.0	n.a.	0.01	0.61	2.9	0.3	0.5	14	0.005	0.02	3.8	0.005	0.13	0.83	35.2	0.06	8
2128213	P2R11-18	5.7	5.0	n.a.	0.17	0.49	1.9	0.3	0.1	139	0.005	0.01	3.1	0.005	0.13	0.76	27.4	0.03	7
2128211	P2R11-16	9.6	20.0	n.a.	0.17	0.73	3.8	0.7	0.6	88	0.005	0.02	5.1	0.010	0.14	1.04	40.1	0.15	11
MRC RX 55	MRC RX 55	10.4	n.a.	n.a.	0.09	0.22	2.0	0.5	n.a.	20	n.a.	0.01	2.8	0.001	0.08	0.60	12.0	0.05	n.a.
MRC RX 56	MRC RX 56	45.1	n.a.	n.a.	0.36	0.21	2.2	0.6	n.a.	61	n.a.	0.06	6.5	0.001	0.22	1.90	8.0	8.50	n.a.
MRC RX 57	MRC RX 57	12.1	n.a.	n.a.	0.18	0.27	3.2	0.9	n.a.	45	n.a.	0.09	3.8	0.001	0.02	0.80	17.0	0.05	n.a.
2128210	P2R11-15	14.2	38.0	n.a.	0.11	0.92	6.0	1.0	0.9	86	0.005	0.04	6.6	0.010	0.13	1.28	83.4	0.07	15
2212056	MRC RX 15	24.9	24.4	0.0005	0.13	0.32	5.7	0.9	0.8	63	0.005	0.04	6.2	0.003	0.01	1.86	30.2	0.07	15.1
MRC RX 76	MRC RX 76	15.3	n.a.	n.a.	1.84	0.21	3.0	1.1	n.a.	45	n.a.	0.04	4.3	0.001	0.11	1.20	19.0	0.05	n.a.
MRC RX 91	MRC RX 91	12.2	n.a.	n.a.	0.30	0.15	3.7	1.0	n.a.	64	n.a.	0.05	5.1	0.001	0.06	1.60	27.0	0.05	n.a.
MRC RX 102	MRC RX 102	14.2	n.a.	n.a.	1.59	0.15	4.4	1.1	n.a.	56	n.a.	0.06	4.2	0.001	0.13	1.20	30.0	0.05	n.a.
2212057	MRC RX 16	11.0	23.0	0.0005	0.31	0.49	4.5	1.0	0.7	54	0.005	0.04	4.5	0.003	0.01	1.31	33.9	0.03	12.8
MRC RX 38	MRC RX 38	10.6	n.a.	n.a.	1.12	0.10	2.5	0.9	n.a.	41	n.a.	0.06	3.5	0.001	0.07	1.10	16.0	0.05	n.a.
MRC RX 30	MRC RX 30	11.9	n.a.	n.a.	0.42	0.16	3.9	0.8	n.a.	54	n.a.	0.07	4.0	0.001	0.03	0.80	26.0	0.05	n.a.
MRC RX 46	MRC RX 46	11.7	n.a.	n.a.	1.54	0.15	3.4	1.1	n.a.	44	n.a.	0.05	4.0	0.001	0.07	1.40	20.0	0.05	n.a.
MRC RX 58	MRC RX 58	16.9	n.a.	n.a.	0.44	0.16	3.1	1.1	n.a.	56	n.a.	0.06	5.0	0.001	0.03	1.00	20.0	0.05	n.a.
2128169	P2C20-1	12.9	20.0	n.a.	1.45	0.20	3.7	0.9	0.4	44	0.005	0.03	4.5	0.005	0.03	1.22	28.1	0.03	11
MRC RX 47	MRC RX 47	10.8	n.a.	n.a.	0.67	0.17	4.0	1.3	n.a.	71	n.a.	0.09	4.2	0.001	0.04	1.10	31.0	0.05	n.a.
MRC RX 31	MRC RX 31	12.9	n.a.	n.a.	0.34	0.10	4.4	1.2	n.a.	73	n.a.	0.07	4.7	0.001	0.01	1.30	31.0	0.05	n.a.
2212058	MRC RX 17	7.8	16.0	0.0005	0.78	0.34	3.7	0.7	0.9	53	0.005	0.03	3.4	0.003	0.03	0.91	33.0	0.09	16.4
2212059	MRC RX 18	7.4	16.9	0.0005	0.74	0.37	3.8	0.7	0.9	57	0.005	0.02	3.1	0.003	0.03	0.92	34.5	0.14	15.7
2212060	MRC RX 19	22.3	29.9	0.002	1.78	0.48	5.8	1.5	0.7	67	0.005	0.08	4.5	0.003	0.01	0.89	39.0	0.03	12.5
2212061	MRC RX 20	10.3	11.5	0.002	0.09	1.04	5.7	0.8	1.0	33	0.005	0.02	4.2	0.007	0.01	0.81	47.9	0.08	11.7
MRC RX 39	MRC RX 39	10.5	n.a.	n.a.	0.32	0.13	4.1	1.1	n.a.	65	n.a.	0.11	4.7	0.001	0.03	1.30	30.0	0.05	n.a.
MRC RX 59	MRC RX 59	16.4	n.a.	n.a.	0.75	0.21	4.4	1.4	n.a.	60	n.a.	0.07	5.0	0.001	0.03	1.20	26.0	0.05	n.a.
MRC RX 77	MRC RX 77	11.6	n.a.	n.a.	0.54	0.28	3.8	0.9	n.a.	63	n.a.	0.08	4.6	0.001	0.06	1.30	24.0	0.05	n.a.
MRC RX 92	MRC RX 92	10.6	n.a.	n.a.	0.79	0.20	3.3	0.8	n.a.	56	n.a.	0.08	4.1	0.001	0.06	0.90	24.0	0.05	n.a.
MRC RX 103	MRC RX 103	12.4	n.a.	n.a.	0.15	0.17	3.3	0.7	n.a.	51	n.a.	0.04	4.7	0.001	0.04	1.10	25.0	0.05	n.a.
2128170	P2C20-2	10.1	12.0	n.a.	0.31	0.21	3.0	0.7	0.2	37	0.005	0.02	4.5	0.005	0.02	1.10	18.8	0.03	11
2128170A	P2C20-2	11.1	n.a.	n.a.	0.25	0.20	2.9	0.8	n.a.	40	n.a.	0.03	4.5	0.001	0.07	1.10	16.0	0.05	n.a.
2128171	P2C20-3	12.7	19.0	n.a.	1.09	0.30	4.3	1.3	0.4	62	0.005	0.05	5.4	0.005	0.03	1.42	29.2	0.03	14
MRC RX 32	MRC RX 32	13.4	n.a.	n.a.	1.14	0.16	2.8	0.9	n.a.	43	n.a.	0.09	3.9	0.001	0.06	0.80	23.0	0.05	n.a.
MRC RX 48	MRC RX 48	12.6	n.a.	n.a.	0.94	0.15	2.6	1.0	n.a.	47	n.a.	0.11	4.1	0.001	0.05	0.80	22.0	0.05	n.a.
MRC RX 40	MRC RX 40	10.7	n.a.	n.a.	0.69	0.22	2.3	1.2	n.a.	33	n.a.	0.07	3.6	0.001	0.04	0.70	22.0	0.05	n.a.
MRC RX 45	MRC RX 45	9.4	n.a.	n.a.	0.49	0.16	2.7	0.9	n.a.	37	n.a.	0.06	4.0	0.001	0.02	0.80	27.0	0.05	n.a.
MRC RX 78	MRC RX 78	13.8	n.a.	n.a.	0.80	0.21	2.8	0.8	n.a.	51	n.a.	0.04	4.3	0.001	0.06	0.80	21.0	0.05	n.a.
MRC RX 93	MRC RX 93	15.9	n.a.	n.a.	0.91	0.37	2.8	1.2	n.a.	38	n.a.	0.04	4.2	0.001	0.07	0.90	25.0	0.05	n.a.
MRC RX 104	MRC RX 104	14.8	n.a.	n.a.	0.81	0.19	2.8	0.8	n.a.	53	n.a.	0.10	4.7	0.001	0.07	0.90	24.0	0.05	n.a.
2128172	P2C20-4	10.7	18.0	n.a.	0.93	0.24	3.1	0.9	0.3	40	0.005	0.04	4.7	0.005	0.04	0.96	28.1	0.03	12
2128172A	P2C20-4	12.4	n.a.	n.a.	0.77	0.19	2.8	1.2	n.a.	47	n.a.	0.08	4.8	0.001	0.07	0.90	20.0	0.05	n.a.
MRC RX 60	MRC RX 60	15.3	n.a.	n.a.	0.81	0.28	2.9	1.2	n.a.	52	n.a.	0.05	4.4	0.001	0.03	0.80	24.0	0.05	n.a.
2128196	P2R11-1	10.8	18.0	n.a.	0.98	0.25	2.8	0.8	0.3	36	0.005	0.03	4.4	0.005	0.05	0.92	24.8	0.03	11
HF9093	BH06-10.1M	13.7	n.a.	n.a.	0.43	0.22	4.2	0.6	n.a.	59	n.a.	0.04	5.0	0.002	0.06	1.00	21.0	0.05	n.a.
HF9094	BH06-19.8M	10.8	n.a.	n.a.	0.92	0.17	3.1	0.4	n.a.	38	n.a.	0.01	3.9	0.001	0.10	0.90	16.0	0.05	n.a.
HF9095	BH06-29.9M	11.6	n.a.	n.a.	1.11	0.23	3.2	0.4	n.a.	37	n.a.	0.01	3.9	0.001	0.08	0.80	18.0	0.05	n.a.
HF9096	BH06-39.9M	14.8	n.a.	n.a.	2.08	0.39	3.3	1.3	n.a.	44	n.a.	0.09	4.1	0.001	0.12	0.80	21.0	0.05	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm
HF9097	BH06-50.0M	12.6	n.a.	n.a.	1.78	0.26	3.5	0.3	n.a.	39	n.a.	0.06	3.9	0.001	0.12	0.90	19.0	0.05	n.a.
HF9098	BH06-59.7M	13.5	n.a.	n.a.	1.72	0.39	3.6	0.7	n.a.	40	n.a.	0.07	3.9	0.001	0.10	0.90	19.0	0.05	n.a.
HF9099	BH06-69.8M	14.3	n.a.	n.a.	1.81	0.27	3.6	0.8	n.a.	41	n.a.	0.01	4.0	0.001	0.12	1.00	19.0	0.05	n.a.
HF9100	BH06-79.9M	16.2	n.a.	n.a.	2.13	0.33	3.4	0.8	n.a.	45	n.a.	0.11	4.1	0.001	0.13	1.10	17.0	0.05	n.a.
HF9101	BH06-89.9M	14.9	n.a.	n.a.	2.06	0.25	3.4	0.6	n.a.	41	n.a.	0.03	4.3	0.001	0.14	1.10	18.0	0.05	n.a.
HF9102	BH06-98.5M	15.8	n.a.	n.a.	2.25	0.35	3.5	1.3	n.a.	44	n.a.	0.10	4.0	0.001	0.14	1.20	17.0	0.05	n.a.
2128225	P2R18-1	15.0	21.0	n.a.	0.11	0.32	4.2	1.5	0.6	60	0.005	0.05	5.0	0.005	0.04	1.11	60.9	0.03	14
MRC RX 79	MRC RX 79	9.8	n.a.	n.a.	0.01	0.09	3.0	0.3	n.a.	24	n.a.	0.01	4.2	0.001	0.10	0.50	24.0	0.05	n.a.
MRC RX 41	MRC RX 41	11.4	n.a.	n.a.	0.04	0.19	3.8	1.3	n.a.	44	n.a.	0.03	2.7	0.001	0.33	1.10	48.0	0.05	n.a.
MRC RX 94	MRC RX 94	12.5	n.a.	n.a.	0.05	0.41	6.5	1.0	n.a.	49	n.a.	0.02	4.7	0.002	0.07	0.80	40.0	0.05	n.a.
MRC RX 105	MRC RX 105	5.3	n.a.	n.a.	0.01	0.04	0.8	0.2	n.a.	10	n.a.	0.01	0.8	0.001	0.03	0.30	9.0	0.05	n.a.
2128173	P2C20-5	10.7	13.0	n.a.	0.01	0.22	3.1	0.3	0.3	25	0.005	0.01	3.4	0.005	0.10	0.61	18.1	0.03	5
2128174	P2C20-6	7.5	18.0	n.a.	0.40	0.25	2.8	0.9	0.4	44	0.005	0.03	4.1	0.005	0.06	0.91	31.5	0.03	11
2128175	P2C20-7	7.3	5.0	n.a.	0.04	0.21	1.0	0.6	0.1	20	0.005	0.02	1.7	0.005	0.03	0.63	17.1	0.03	9
MRC RX 29	MRC RX 29	11.1	n.a.	n.a.	0.01	0.11	2.6	0.2	n.a.	26	n.a.	0.05	4.1	0.002	0.11	0.50	22.0	0.05	n.a.
MRC RX 49	MRC RX 49	17.2	n.a.	n.a.	0.02	0.13	2.2	0.9	n.a.	27	n.a.	0.04	1.3	0.001	0.09	0.50	20.0	0.05	n.a.
MRC RX 50	MRC RX 50	12.8	n.a.	n.a.	0.62	0.19	2.8	1.4	n.a.	50	n.a.	0.11	3.7	0.001	0.04	0.80	37.0	0.05	n.a.
MRC RX 61	MRC RX 61	10.7	n.a.	n.a.	0.10	0.22	2.1	0.6	n.a.	35	n.a.	0.05	2.4	0.002	0.05	0.50	18.0	0.05	n.a.
MRC RX 80	MRC RX 80	11.0	n.a.	n.a.	0.06	0.53	2.1	0.8	n.a.	29	n.a.	0.03	3.8	0.002	0.10	0.70	20.0	0.05	n.a.
MRC RX 106	MRC RX 106	8.0	n.a.	n.a.	0.03	0.28	2.2	0.2	n.a.	38	n.a.	0.04	1.7	0.002	0.05	0.30	20.0	0.05	n.a.
MRC RX 122	MRC RX 122	12.8	n.a.	n.a.	0.01	0.07	1.8	0.1	n.a.	22	n.a.	0.06	3.9	0.001	0.11	0.40	12.0	0.05	n.a.
MRC RX 95	MRC RX 95	15.4	n.a.	n.a.	0.01	0.12	4.2	0.8	n.a.	38	n.a.	0.11	4.2	0.001	0.12	0.70	38.0	0.05	n.a.
2128214	P2C26-1	17.2	19.0	n.a.	0.01	0.24	3.9	0.8	0.4	27	0.005	0.02	4.9	0.005	0.12	1.04	31.2	0.03	11
2128197	P2R11-2	8.2	12.0	n.a.	0.03	0.28	4.0	0.5	0.3	28	0.005	0.02	4.0	0.005	0.10	0.69	24.4	0.03	11
2212048	MRC RX 08	21.2	17.0	0.0005	2.77	0.68	5.1	2.0	0.7	47	0.005	0.04	3.5	0.003	0.01	0.83	27.4	0.03	7.15
2128176	P2C20-8	11.4	17.0	n.a.	1.38	0.35	3.7	1.4	0.4	69	0.005	0.04	4.1	0.005	0.04	0.93	29.0	0.03	13
MRC RX 81	MRC RX 81	7.1	n.a.	n.a.	0.13	0.43	1.5	0.5	n.a.	26	n.a.	0.02	2.6	0.002	0.01	0.70	37.0	0.05	n.a.
MRC RX 96	MRC RX 96	7.5	n.a.	n.a.	0.02	0.22	2.0	0.5	n.a.	22	n.a.	0.03	1.6	0.001	0.01	0.60	36.0	0.05	n.a.
MRC RX 107	MRC RX 107	12.1	n.a.	n.a.	0.02	0.30	1.9	0.7	n.a.	21	n.a.	0.06	1.7	0.001	0.02	0.60	33.0	0.05	n.a.
MRC RX 123	MRC RX 123	13.8	n.a.	n.a.	0.24	0.86	1.2	0.7	n.a.	11	n.a.	0.06	0.2	0.001	0.03	0.20	20.0	0.05	n.a.
MRC RX 124	MRC RX 124	12.6	n.a.	n.a.	0.58	0.39	2.6	1.4	n.a.	29	n.a.	0.05	2.4	0.001	0.01	0.60	50.0	0.05	n.a.
MRC RX 42	MRC RX 42	9.3	n.a.	n.a.	0.09	0.28	2.8	1.0	n.a.	34	n.a.	0.03	3.2	0.001	0.01	0.70	44.0	0.05	n.a.
MRC RX 34	MRC RX 34	20.6	n.a.	n.a.	0.20	0.47	2.7	1.8	n.a.	42	n.a.	0.16	3.0	0.001	0.01	0.80	91.0	0.05	n.a.
MRC RX 33	MRC RX 33	14.9	n.a.	n.a.	0.01	0.10	4.7	0.5	n.a.	34	n.a.	0.04	3.8	0.002	0.11	0.70	33.0	0.05	n.a.
MRC RX 62	MRC RX 62	6.7	n.a.	n.a.	0.16	0.37	2.3	0.6	n.a.	25	n.a.	0.05	2.0	0.001	0.01	0.50	47.0	0.05	n.a.
2128176A	P2C20-8	13.6	n.a.	n.a.	1.15	0.29	3.4	1.6	n.a.	72	n.a.	0.10	4.3	0.001	0.10	0.90	23.0	0.05	n.a.
2128215	P2C26-2	13.7	23.0	n.a.	1.41	0.43	3.3	1.1	0.5	56	0.005	0.03	5.4	0.005	0.10	1.18	36.3	0.03	13
MRC RX 82	MRC RX 82	12.8	n.a.	n.a.	0.80	0.29	3.0	1.6	n.a.	74	n.a.	0.10	3.9	0.002	0.07	0.80	26.0	0.05	n.a.
MRC RX 97	MRC RX 97	18.2	n.a.	n.a.	1.17	0.16	3.5	1.4	n.a.	75	n.a.	0.08	5.6	0.009	0.13	1.20	24.0	0.05	n.a.
MRC RX 108	MRC RX 108	14.8	n.a.	n.a.	0.98	0.21	3.1	1.4	n.a.	67	n.a.	0.09	5.0	0.002	0.10	0.90	33.0	0.05	n.a.
MRC RX 125	MRC RX 125	12.4	n.a.	n.a.	0.91	0.16	3.1	1.7	n.a.	57	n.a.	0.09	3.7	0.001	0.03	0.70	29.0	0.05	n.a.
MRC RX 126	MRC RX 126	18.5	n.a.	n.a.	1.58	0.22	4.0	2.5	n.a.	86	n.a.	0.09	4.5	0.001	0.11	1.00	33.0	0.05	n.a.
2128226	P2R18-2	8.2	20.0	n.a.	1.62	0.47	2.8	0.9	0.4	40	0.005	0.04	3.6	0.005	0.10	1.02	39.7	0.03	12
2128198	P2R11-3	10.2	5.0	n.a.	0.04	0.36	3.1	0.8	0.1	22	0.005	0.03	2.3	0.005	0.03	0.67	46.4	0.03	10
2128199	P2R11-4	13.0	26.0	n.a.	1.26	0.43	3.8	1.3	0.5	77	0.005	0.04	4.9	0.005	0.09	1.07	36.6	0.03	15
MRC RX 63	MRC RX 63	47.2	n.a.	n.a.	2.50	1.02	4.2	2.9	n.a.	53	n.a.	0.31	5.9	0.002	0.07	0.90	121.0	0.05	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm
2128199A	P2R11-4	14.7	n.a.	n.a.	1.04	0.17	3.5	1.7	n.a.	80	n.a.	0.05	5.0	0.001	0.11	1.00	23.0	0.05	n.a.
MRC RX 21	MRC RX 21	14.8	n.a.	n.a.	1.35	0.43	3.7	2.3	n.a.	64	n.a.	0.06	4.1	0.002	0.09	1.00	26.0	0.05	n.a.
MRC RX 51	MRC RX 51	12.8	n.a.	n.a.	1.41	0.18	3.6	2.3	n.a.	67	n.a.	0.08	3.9	0.001	0.10	1.10	32.0	0.05	n.a.
MRC RX 43	MRC RX 43	15.5	n.a.	n.a.	1.47	0.18	4.0	2.3	n.a.	71	n.a.	0.06	4.9	0.001	0.08	1.10	31.0	0.05	n.a.
MRC RX 35	MRC RX 35	8.8	n.a.	n.a.	1.21	0.16	3.0	1.2	n.a.	100	n.a.	0.01	3.2	0.001	0.08	1.00	25.0	0.05	n.a.
MRC RX 98	MRC RX 98	19.2	n.a.	n.a.	1.40	0.18	3.9	1.9	n.a.	76	n.a.	0.09	7.0	0.002	0.16	1.50	27.0	0.05	n.a.
MRC RX 109	MRC RX 109	14.2	n.a.	n.a.	1.34	0.15	3.1	1.4	n.a.	77	n.a.	0.05	4.2	0.002	0.13	0.80	26.0	0.05	n.a.
MRC RX 83	MRC RX 83	12.6	n.a.	n.a.	0.79	0.29	3.3	1.4	n.a.	68	n.a.	0.05	4.1	0.002	0.07	0.90	29.0	0.05	n.a.
2128186A	P2R12-1	18.4	n.a.	n.a.	1.43	0.25	3.6	2.3	n.a.	89	n.a.	0.09	5.1	0.001	0.13	1.10	25.0	0.05	n.a.
2128186	P2R12-1	17.5	21.0	n.a.	1.68	0.46	3.8	1.8	0.5	78	0.005	0.06	5.1	0.005	0.08	1.22	33.8	0.03	13
2128200	P2R11-5	16.0	28.0	n.a.	2.09	0.49	4.7	2.1	0.5	79	0.005	0.05	5.3	0.005	0.12	1.49	43.1	0.03	15
2128187	P2R12-2	13.1	17.0	n.a.	1.55	0.42	3.6	1.4	0.4	68	0.005	0.04	4.5	0.005	0.10	1.16	31.2	0.03	13
MRC RX 127	MRC RX 127	14.2	n.a.	n.a.	1.44	0.17	3.1	1.8	n.a.	51	n.a.	0.09	4.3	0.001	0.11	1.20	26.0	0.05	n.a.
MRC RX 128	MRC RX 128	9.7	n.a.	n.a.	0.98	0.16	2.8	1.3	n.a.	59	n.a.	0.07	3.5	0.001	0.06	0.80	21.0	0.05	n.a.
MRC RX 129	MRC RX 129	9.9	n.a.	n.a.	1.19	0.13	3.0	1.3	n.a.	73	n.a.	0.07	3.6	0.001	0.08	1.10	24.0	0.05	n.a.
MRC RX 110	MRC RX 110	12.0	n.a.	n.a.	1.14	0.17	3.1	1.5	n.a.	65	n.a.	0.06	4.1	0.002	0.17	1.20	29.0	0.05	n.a.
MRC RX 99	MRC RX 99	4.3	n.a.	n.a.	0.14	0.25	1.2	0.3	n.a.	32	n.a.	0.01	0.4	0.001	0.04	0.30	11.0	0.05	n.a.
MRC RX 84	MRC RX 84	13.2	n.a.	n.a.	1.18	0.23	3.3	1.5	n.a.	62	n.a.	0.04	4.3	0.002	0.13	1.10	29.0	0.05	n.a.
2128216	P2C26-3	11.8	20.0	n.a.	1.35	0.40	3.3	1.4	0.4	65	0.005	0.04	4.4	0.005	0.07	1.31	35.3	0.22	13
MRC RX 64	MRC RX 64	9.8	n.a.	n.a.	1.04	0.16	2.7	1.2	n.a.	131	n.a.	0.05	3.1	0.001	0.06	0.90	23.0	0.05	n.a.
2128227	P2R18-3	10.6	15.0	n.a.	1.13	0.34	2.7	1.0	0.4	50	0.005	0.03	4.9	0.005	0.10	1.26	27.3	0.03	12
MRC RX 120	MRC RX 120	16.7	n.a.	n.a.	1.92	0.57	10.5	1.6	n.a.	82	n.a.	0.13	3.0	0.004	0.08	0.70	54.0	0.05	n.a.
2212054	MRC RX 13	11.8	19.4	0.001	1.43	0.58	6.4	1.3	0.5	116	0.005	0.03	4.1	0.003	0.01	0.85	32.9	0.03	13
MRC RX 65	MRC RX 65	9.5	n.a.	n.a.	1.78	0.58	1.6	1.6	n.a.	58	n.a.	0.07	1.9	0.001	0.70	0.50	11.0	0.05	n.a.
2128188	P2R12-3	15.2	16.0	n.a.	0.09	0.86	10.4	1.2	0.5	96	0.005	0.05	4.7	0.005	0.05	1.13	68.1	0.03	20
MRC RX 118	MRC RX 118	16.4	n.a.	n.a.	0.30	0.17	7.5	2.7	n.a.	74	n.a.	0.07	4.2	0.001	0.02	0.80	38.0	0.05	n.a.
2128228	P2R18-4	13.6	13.0	n.a.	0.08	0.79	9.4	1.1	0.4	63	0.005	0.05	4.5	0.005	0.03	1.02	58.6	0.03	17
MRC RX 66	MRC RX 66	13.3	n.a.	n.a.	0.03	0.18	5.7	0.9	n.a.	83	n.a.	0.03	4.6	0.001	0.02	0.60	22.0	0.05	n.a.
2128201	P2R11-6	17.9	23.0	n.a.	0.10	0.40	6.0	1.2	0.5	84	0.005	0.03	5.7	0.005	0.07	1.06	36.9	0.03	15
2128217	P2C26-4	13.3	21.0	n.a.	0.05	0.38	4.9	1.1	0.5	71	0.005	0.02	5.9	0.005	0.05	1.00	43.5	0.03	15
2128177	P2C20-9	16.1	13.0	n.a.	0.07	0.28	5.2	1.2	0.3	59	0.005	0.02	4.2	0.005	0.02	0.75	20.9	0.03	10
2128189	P2R12-4	10.6	13.0	n.a.	0.04	0.54	8.5	0.9	0.4	56	0.005	0.04	3.8	0.005	0.06	0.73	50.6	0.03	14
MRC RX 67	MRC RX 67	14.7	n.a.	n.a.	0.27	1.43	5.9	1.0	n.a.	47	n.a.	0.03	2.7	0.003	0.04	0.40	32.0	0.05	n.a.
2128202	P2R11-7	5.3	5.0	n.a.	0.14	0.41	2.5	0.5	0.2	165	0.005	0.01	3.1	0.005	0.06	0.63	19.6	0.03	10
2128218	P2C26-5	14.2	20.0	n.a.	0.03	0.66	6.2	0.8	0.4	114	0.005	0.04	2.9	0.005	0.11	0.68	48.6	0.03	7
MRC RX 85	MRC RX 85	6.2	n.a.	n.a.	0.07	0.64	2.6	0.3	n.a.	166	n.a.	0.01	2.5	0.002	0.06	0.50	20.0	0.05	n.a.
MRC RX 100	MRC RX 100	16.2	n.a.	n.a.	0.05	0.27	5.6	1.3	n.a.	83	n.a.	0.03	4.8	0.001	0.07	0.80	37.0	0.05	n.a.
MRC RX 111	MRC RX 111	12.2	n.a.	n.a.	0.25	0.38	2.3	0.4	n.a.	53	n.a.	0.04	2.8	0.001	0.10	0.60	22.0	0.05	n.a.
MRC RX 130	MRC RX 130	5.4	n.a.	n.a.	0.02	0.10	1.6	0.3	n.a.	101	n.a.	0.03	1.5	0.001	0.03	0.40	14.0	0.05	n.a.
2128229	P2R18-5	12.2	13.0	n.a.	0.11	0.86	9.1	1.0	0.3	95	0.005	0.05	4.0	0.005	0.05	0.62	53.1	0.03	14
2212041	MRC RX 01	17.5	20.2	0.001	1.09	0.60	5.0	1.1	2.3	106	0.005	0.04	5.6	0.003	0.01	1.11	31.2	0.03	11.8
2128190	P2R12-5	8.0	5.0	n.a.	0.21	0.39	4.6	0.5	0.2	81	0.005	0.03	3.6	0.005	0.03	0.80	33.4	0.03	12
2128178	P2C20-10	15.9	12.0	n.a.	0.08	0.49	5.3	0.5	0.4	175	0.005	0.04	3.7	0.005	0.08	0.69	19.9	0.03	9
FT8925	UPPER GATES-1	10.4	n.a.	n.a.	2.09	0.55	3.8	1.9	n.a.	38	n.a.	0.07	2.3	0.001	0.06	0.80	38.0	0.05	n.a.
FT8926	UPPER GATES-2	8.6	n.a.	n.a.	0.01	0.19	3.8	0.7	n.a.	90	n.a.	0.04	3.5	0.001	0.03	0.70	19.0	0.05	n.a.
FT8927	UPPER GATES-3	9.4	n.a.	n.a.	0.01	0.19	4.3	0.3	n.a.	121	n.a.	0.01	3.6	0.001	0.03	0.60	19.0	0.05	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported



Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm
FT8928	UPPER GATES-4	8.5	n.a.	n.a.	0.09	0.40	6.7	0.4	n.a.	54	n.a.	0.08	3.4	0.004	0.06	0.50	53.0	0.05	n.a.
FT8929	UPPER GATES-5	5.3	n.a.	n.a.	0.01	0.14	7.4	0.1	n.a.	74	n.a.	0.03	2.1	0.003	0.02	0.30	45.0	0.10	n.a.
FT8930	UPPER GATES-6	10.5	n.a.	n.a.	0.04	0.26	7.6	0.4	n.a.	82	n.a.	0.07	3.0	0.002	0.03	0.60	47.0	0.05	n.a.
FT8931	UPPER GATES-7	5.6	n.a.	n.a.	0.03	0.09	7.6	0.1	n.a.	90	n.a.	0.06	1.8	0.001	0.03	0.20	33.0	0.05	n.a.
FT8932	UPPER GATES-8	4.8	n.a.	n.a.	0.03	0.08	10.0	0.1	n.a.	67	n.a.	0.01	2.2	0.001	0.01	0.20	55.0	0.05	n.a.
FT8933	UPPER GATES-9	11.1	n.a.	n.a.	0.15	0.37	4.5	0.5	n.a.	69	n.a.	0.07	3.5	0.001	0.04	0.70	20.0	0.05	n.a.
FT8934	UPPER GATES-10	4.6	n.a.	n.a.	0.45	0.15	0.3	0.1	n.a.	23	n.a.	0.01	0.9	0.001	0.03	0.40	6.0	0.05	n.a.
MRC RX 86	MRC RX 86	10.7	n.a.	n.a.	1.44	0.66	1.6	0.6	n.a.	50	n.a.	0.01	1.8	0.001	0.48	0.70	12.0	0.05	n.a.
MRC RX 101	MRC RX 101	18.7	n.a.	n.a.	0.03	0.17	9.8	1.4	n.a.	148	n.a.	0.06	4.5	0.001	0.04	1.40	76.0	0.05	n.a.
MRC RX 112	MRC RX 112	14.6	n.a.	n.a.	0.04	0.21	6.6	1.6	n.a.	98	n.a.	0.05	4.5	0.001	0.03	0.70	28.0	0.05	n.a.
MRC RX 131	MRC RX 131	18.2	n.a.	n.a.	0.06	0.20	6.6	1.7	n.a.	76	n.a.	0.08	3.5	0.001	0.01	0.60	31.0	0.05	n.a.
2128179	P2C20-11	13.2	13.0	n.a.	0.12	0.23	6.6	1.3	0.4	132	0.005	0.02	5.1	0.005	0.04	0.90	31.5	0.03	17
MRC RX 69	MRC RX 69	13.2	n.a.	n.a.	0.01	0.13	1.8	0.7	n.a.	51	n.a.	0.07	0.7	0.001	0.03	0.40	11.0	0.05	n.a.
2128220	P2C26-7	17.6	20.0	n.a.	0.08	1.12	7.3	2.0	0.5	66	0.005	0.04	5.3	0.005	0.05	1.09	34.9	0.03	17
MRC RX 132	MRC RX 132	16.5	n.a.	n.a.	0.04	0.28	10.1	2.0	n.a.	73	n.a.	0.07	4.7	0.001	0.06	0.80	51.0	0.05	n.a.
MRC RX 114	MRC RX 114	5.2	n.a.	n.a.	0.04	0.16	3.0	0.7	n.a.	92	n.a.	0.04	2.3	0.001	0.03	0.50	20.0	0.05	n.a.
MRC RX 87	MRC RX 87	13.5	n.a.	n.a.	0.03	0.31	6.2	1.3	n.a.	157	n.a.	0.07	4.6	0.001	0.05	1.00	43.0	0.05	n.a.
2128204	P2R11-9	14.2	14.0	n.a.	0.09	0.99	6.3	1.4	0.4	67	0.005	0.02	5.7	0.005	0.08	1.42	35.5	0.03	22
MRC RX 70	MRC RX 70	23.6	n.a.	n.a.	0.13	1.05	2.9	6.1	n.a.	48	n.a.	0.08	3.3	0.001	0.01	1.20	26.0	0.05	n.a.
2212042	MRC RX 02	18.8	28.3	0.002	0.05	0.61	8.2	2.6	0.8	96	0.005	0.05	6.1	0.003	0.01	1.19	46.1	0.03	15.3
2128191	P2R12-6	13.1	14.0	n.a.	0.13	0.96	6.2	1.3	0.4	133	0.005	0.03	5.3	0.005	0.04	1.02	40.7	0.03	17
2128181	P2C20-13	10.6	11.0	n.a.	0.08	0.59	4.7	0.9	0.2	84	0.005	0.02	4.7	0.005	0.06	0.72	21.4	0.03	12
2128205	P2R11-10	15.6	20.0	n.a.	0.09	0.73	6.2	1.4	0.4	97	0.005	0.03	6.3	0.005	0.06	1.07	42.3	0.03	17
2128182	P2C20-14	6.8	5.0	n.a.	0.03	0.20	2.8	0.3	0.1	40	0.005	0.02	2.3	0.005	0.03	0.52	20.3	0.03	8
2212055	MRC RX 14	22.0	20.8	0.002	0.11	1.11	8.8	1.7	0.6	63	0.005	0.04	4.9	0.003	0.01	1.61	29.1	0.03	14.2
2128193	P2R12-8	9.5	5.0	n.a.	0.04	0.26	7.6	0.5	0.2	46	0.005	0.03	3.2	0.005	0.04	0.87	55.8	0.05	19
MRC RX 27	MRC RX 27	15.3	n.a.	n.a.	0.07	0.22	5.8	1.2	n.a.	60	n.a.	0.03	4.1	0.001	0.03	0.60	27.0	0.05	n.a.
2128206	P2R11-11	12.8	20.0	n.a.	0.01	0.35	5.2	1.4	0.4	57	0.005	0.02	5.3	0.005	0.06	1.08	44.2	0.03	15
2128194	P2R12-9	18.0	13.0	n.a.	0.14	0.63	6.7	1.1	0.3	104	0.005	0.02	5.5	0.005	0.04	0.76	29.0	0.03	13
2128235	P2R18-11	15.4	17.0	n.a.	0.07	0.33	4.4	1.0	0.4	27	0.005	0.03	4.4	0.005	0.01	1.01	26.8	0.03	7
2212046	MRC RX 06	11.6	8.9	0.0005	0.02	0.16	4.8	0.1	0.4	39	0.005	0.01	1.6	0.003	0.03	0.33	17.2	0.03	4.17
MRC RX 75	MRC RX 75	16.0	n.a.	n.a.	0.63	0.53	4.5	1.3	n.a.	51	n.a.	0.04	3.8	0.001	0.04	0.70	16.0	0.05	n.a.
2128207	P2R11-12	17.7	18.0	n.a.	0.11	0.58	7.2	0.9	0.9	107	0.005	0.03	5.6	0.005	0.06	0.84	38.9	0.03	14
2212047	MRC RX 07	11.7	9.6	0.0005	0.07	0.50	8.1	0.4	0.5	63	0.005	0.01	2.0	0.003	0.01	0.40	25.7	0.03	10.3
2128185	P2C20-17	7.6	5.0	n.a.	0.02	0.11	1.7	0.1	0.1	31	0.005	0.01	1.5	0.005	0.03	0.26	12.8	0.03	4
2128208	P2R11-13	19.5	25.0	n.a.	1.62	0.82	4.0	1.6	0.6	55	0.005	0.05	3.6	0.005	0.07	1.08	83.1	0.03	8
2128209	P2R11-14	9.4	16.0	n.a.	0.06	0.59	3.3	0.7	0.5	40	0.005	0.01	4.1	0.005	0.06	0.85	16.5	0.03	7
2212049	MRC RX 09	9.1	22.4	0.0005	0.06	0.32	4.0	1.0	0.6	49	0.005	0.02	2.5	0.003	0.01	0.65	27.5	0.03	5.73

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Zn ppm	Zr ppm	Al <sub>2</sub> O <sub>3</sub> %	BaO %	CaO %	Cr <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> O %	MgO %	MnO %	Na <sub>2</sub> O %	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	TiO <sub>2</sub> %	LOI %	SUM %
2128212	P2R11-17	103	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128213	P2R11-18	38	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128211	P2R11-16	86	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 55	MRC RX 55	73	n.a.	9.0	0.17	0.18	0.011	2.9	1.75	0.61	0.02	0.37	0.19	77.7	0.61	5.05	98.6
MRC RX 56	MRC RX 56	200	n.a.	11.9	0.19	1.15	0.019	2.3	2.42	1.30	0.02	0.37	0.14	72.2	0.48	6.2	98.7
MRC RX 57	MRC RX 57	110	n.a.	8.9	0.10	0.93	0.017	3.9	1.96	1.31	0.03	0.41	0.20	74.5	0.58	5.88	98.8
2128210	P2R11-15	133	6.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212056	MRC RX 15	100	5.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 76	MRC RX 76	132	n.a.	12.7	0.14	0.90	0.016	4.1	2.93	1.51	0.02	0.59	0.20	67.5	0.73	7.57	98.9
MRC RX 91	MRC RX 91	130	n.a.	13.6	0.21	0.51	0.021	3.3	2.77	1.23	0.02	0.51	0.28	69.8	0.71	6.72	99.7
MRC RX 102	MRC RX 102	121	n.a.	11.8	0.15	1.89	0.02	4.8	2.68	1.67	0.04	0.54	0.23	66.4	0.66	8.36	99.2
2212057	MRC RX 16	101	4.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 38	MRC RX 38	74	n.a.	9.2	0.08	0.61	0.017	2.5	1.88	0.85	0.01	0.43	0.18	78.2	0.61	5.16	99.7
MRC RX 30	MRC RX 30	132	n.a.	12.8	0.15	0.54	0.016	3.6	2.80	1.29	0.01	0.52	0.21	69.9	0.75	6.59	99.2
MRC RX 46	MRC RX 46	107	n.a.	11.0	0.11	1.32	0.017	3.8	2.40	1.61	0.02	0.52	0.24	71.2	0.59	6.79	99.7
MRC RX 58	MRC RX 58	138	n.a.	13.3	0.15	1.32	0.018	3.2	2.93	1.88	0.01	0.52	0.20	67.2	0.73	7.11	98.6
2128169	P2C20-1	107	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 47	MRC RX 47	113	n.a.	12.4	0.17	1.03	0.021	9.5	2.43	2.13	0.05	0.54	0.44	60.7	0.59	9.98	100.0
MRC RX 31	MRC RX 31	125	n.a.	14.3	0.21	0.67	0.019	4.8	2.88	1.48	0.02	0.53	0.32	65.9	0.71	7.55	99.4
2212058	MRC RX 17	61	2.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212059	MRC RX 18	63	3.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212060	MRC RX 19	88	2.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212061	MRC RX 20	93	5.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 39	MRC RX 39	118	n.a.	13.3	0.19	0.71	0.018	4.2	2.63	1.45	0.02	0.55	0.29	69.0	0.77	6.87	100.1
MRC RX 59	MRC RX 59	130	n.a.	13.7	0.15	0.67	0.016	4.7	2.80	1.59	0.03	0.50	0.22	66.5	0.74	7.39	99.1
MRC RX 77	MRC RX 77	136	n.a.	14.3	0.19	0.58	0.015	4.1	2.97	1.44	0.02	0.57	0.29	67.5	0.72	7.02	99.7
MRC RX 92	MRC RX 92	107	n.a.	12.3	0.18	0.40	0.022	3.1	2.55	1.15	0.02	0.42	0.21	72.0	0.67	6.31	99.3
MRC RX 103	MRC RX 103	123	n.a.	11.8	0.14	0.61	0.022	3.3	2.62	1.39	0.02	0.54	0.23	72.8	0.66	5.43	99.6
2128170	P2C20-2	92	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128170A	P2C20-2	92	n.a.	9.4	0.10	0.87	0.019	2.9	2.07	1.37	0.01	0.46	0.18	75.8	0.56	5.23	98.9
2128171	P2C20-3	154	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 32	MRC RX 32	81	n.a.	11.6	0.12	0.37	0.016	3.1	2.55	0.98	0.01	0.31	0.22	74.6	0.73	5.7	100.2
MRC RX 48	MRC RX 48	80	n.a.	11.8	0.13	0.34	0.017	2.9	2.57	1.00	0.01	0.33	0.21	74.2	0.70	5.72	100.0
MRC RX 40	MRC RX 40	84	n.a.	9.2	0.09	0.35	0.017	2.2	1.93	0.76	0.01	0.15	0.20	78.9	0.62	4.36	98.7
MRC RX 45	MRC RX 45	95	n.a.	9.8	0.10	0.38	0.018	2.2	2.07	0.81	0.01	0.16	0.21	78.7	0.61	4.5	99.6
MRC RX 78	MRC RX 78	92	n.a.	11.6	0.13	0.36	0.017	2.7	2.59	0.99	0.01	0.34	0.20	74.1	0.76	5.62	99.3
MRC RX 93	MRC RX 93	91	n.a.	10.1	0.12	0.55	0.021	2.8	2.08	0.85	0.01	0.23	0.20	76.4	0.61	5.5	99.5
MRC RX 104	MRC RX 104	93	n.a.	11.5	0.13	0.34	0.022	2.7	2.61	0.96	0.01	0.29	0.21	74.2	0.71	5.49	99.2
2128172	P2C20-4	98	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128172A	P2C20-4	89	n.a.	10.9	0.12	0.36	0.02	2.6	2.40	0.90	0.01	0.27	0.21	74.7	0.67	5.35	98.4
MRC RX 60	MRC RX 60	105	n.a.	10.8	0.11	0.52	0.017	3.0	2.21	1.03	0.02	0.19	0.24	75.3	0.68	5.39	99.5
2128196	P2R11-1	83	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HF9093	BH06-10.1M	116	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HF9094	BH06-19.8M	72	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HF9095	BH06-29.9M	90	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HF9096	BH06-39.9M	132	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Zn ppm	Zr ppm	Al <sub>2</sub> O <sub>3</sub> %	BaO %	CaO %	Cr <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> O %	MgO %	MnO %	Na <sub>2</sub> O %	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	TiO <sub>2</sub> %	LOI %	SUM %
HF9097	BH06-50.0M	109	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HF9098	BH06-59.7M	113	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HF9099	BH06-69.8M	122	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HF9100	BH06-79.9M	130	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HF9101	BH06-89.9M	123	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HF9102	BH06-98.5M	126	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128225	P2R18-1	174	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 79	MRC RX 79	108	n.a.	10.7	0.10	0.24	0.025	2.5	2.26	0.97	0.02	0.15	0.13	77.1	0.64	3.89	98.7
MRC RX 41	MRC RX 41	279	n.a.	16.9	0.20	0.18	0.016	2.0	2.67	1.04	0.01	0.28	0.11	69.3	0.79	5.8	99.3
MRC RX 94	MRC RX 94	118	n.a.	11.5	0.12	3.35	0.017	8.2	2.29	2.54	0.10	0.17	0.32	59.5	0.61	11.11	99.9
MRC RX 105	MRC RX 105	14	n.a.	5.8	0.05	0.03	0.027	0.4	0.93	0.23	0.01	0.04	0.02	89.4	0.26	1.88	99.0
2128173	P2C20-5	89	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128174	P2C20-6	100	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128175	P2C20-7	70	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 29	MRC RX 29	100	n.a.	12.1	0.10	0.46	0.02	2.4	2.47	1.07	0.01	0.17	0.21	76.7	0.73	3.66	100.1
MRC RX 49	MRC RX 49	104	n.a.	11.9	0.11	0.08	0.02	0.9	1.61	0.54	0.01	0.13	0.04	79.8	0.80	3.89	99.8
MRC RX 50	MRC RX 50	111	n.a.	11.0	0.12	0.41	0.022	3.0	2.12	0.92	0.01	0.21	0.23	75.2	0.62	5.59	99.4
MRC RX 61	MRC RX 61	95	n.a.	9.5	0.07	0.17	0.024	2.0	1.63	1.04	0.01	0.11	0.12	81.3	0.49	3.25	99.7
MRC RX 80	MRC RX 80	298	n.a.	7.5	0.07	1.85	0.025	1.9	1.41	1.17	0.03	0.07	0.23	80.4	0.44	4.3	99.4
MRC RX 106	MRC RX 106	50	n.a.	4.7	0.05	3.25	0.026	3.0	0.69	1.13	0.06	0.01	0.14	80.3	0.22	5.82	99.3
MRC RX 122	MRC RX 122	30	n.a.	12.9	0.10	0.04	0.018	0.9	2.43	0.61	0.01	0.17	0.03	77.8	0.66	3.78	99.4
MRC RX 95	MRC RX 95	170	n.a.	15.3	0.15	0.35	0.02	3.3	2.86	1.34	0.05	0.19	0.15	69.1	0.81	6.28	99.9
2128214	P2C26-1	186	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128197	P2R11-2	101	6.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212048	MRC RX 08	141	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128176	P2C20-8	113	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 81	MRC RX 81	70	n.a.	2.9	0.03	0.44	0.023	2.9	0.31	0.46	0.01	0.01	0.28	89.8	0.30	1.75	99.2
MRC RX 96	MRC RX 96	83	n.a.	2.5	0.03	0.34	0.026	3.6	0.36	0.32	0.03	0.01	0.24	88.5	0.20	3.23	99.4
MRC RX 107	MRC RX 107	117	n.a.	2.2	0.02	0.30	0.024	2.1	0.30	0.22	0.01	0.01	0.21	92.2	0.15	1.77	99.5
MRC RX 123	MRC RX 123	31	n.a.	2.1	0.06	0.10	0.046	0.8	0.33	0.13	0.01	0.06	0.06	94.2	0.10	1.6	99.5
MRC RX 124	MRC RX 124	113	n.a.	5.5	0.06	0.54	0.027	5.4	0.82	0.74	0.03	0.05	0.22	80.9	0.34	4.08	98.8
MRC RX 42	MRC RX 42	97	n.a.	2.7	0.03	0.55	0.022	4.4	0.39	0.54	0.05	0.02	0.29	86.2	0.36	3.7	99.3
MRC RX 34	MRC RX 34	220	n.a.	6.0	0.06	0.74	0.018	4.8	0.87	0.83	0.02	0.06	0.28	81.7	0.37	4.16	99.8
MRC RX 33	MRC RX 33	120	n.a.	11.6	0.10	0.93	0.016	4.1	2.31	1.03	0.03	0.16	0.55	73.4	0.66	4.6	99.5
MRC RX 62	MRC RX 62	59	n.a.	2.7	0.02	0.37	0.07	4.6	0.30	0.62	0.05	0.03	0.20	87.2	0.32	2.81	99.2
2128176A	P2C20-8	109	n.a.	10.7	0.16	0.88	0.022	2.9	2.41	1.19	0.01	0.36	0.21	73.4	0.68	5.99	99.0
2128215	P2C26-2	115	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 82	MRC RX 82	122	n.a.	11.1	0.17	0.49	0.019	2.8	2.61	1.07	0.01	0.36	0.20	74.2	0.74	5.63	99.5
MRC RX 97	MRC RX 97	103	n.a.	13.1	0.22	0.75	0.017	3.3	2.73	1.30	0.02	0.41	0.22	70.1	0.66	6.78	99.7
MRC RX 108	MRC RX 108	130	n.a.	13.0	0.20	0.48	0.021	3.5	2.84	1.18	0.01	0.33	0.24	71.2	0.69	6.03	99.6
MRC RX 125	MRC RX 125	119	n.a.	11.3	0.18	0.49	0.022	3.0	2.64	1.10	0.01	0.37	0.20	73.3	0.69	5.58	98.9
MRC RX 126	MRC RX 126	162	n.a.	12.3	0.18	0.72	0.019	3.6	2.81	1.30	0.01	0.42	0.21	70.0	0.69	6.57	98.9
2128226	P2R18-2	87	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128198	P2R11-3	110	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128199	P2R11-4	108	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 63	MRC RX 63	426	n.a.	9.8	0.13	0.79	0.023	11.2	1.82	1.44	0.07	0.14	0.27	64.3	0.54	9.07	99.6

Notes:

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Sample ID	Station/ Alternate ID	Zn ppm	Zr ppm	Al <sub>2</sub> O <sub>3</sub> %	BaO %	CaO %	Cr <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> O %	MgO %	MnO %	Na <sub>2</sub> O %	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	TiO <sub>2</sub> %	LOI %	SUM %
2128199A	P2R11-4	111	n.a.	11.5	0.23	1.59	0.018	3.1	2.66	1.17	0.01	0.42	0.19	70.4	0.66	6.58	98.6
MRC RX 21	MRC RX 21	125	n.a.	11.2	0.15	1.05	0.018	3.2	2.44	1.29	0.01	0.36	0.23	71.6	0.67	6.57	98.9
MRC RX 51	MRC RX 51	134	n.a.	10.2	0.13	1.24	0.024	3.1	2.06	1.22	0.01	0.26	0.25	74.4	0.61	6.42	99.9
MRC RX 43	MRC RX 43	123	n.a.	12.9	0.17	1.00	0.02	3.6	2.77	1.37	0.01	0.38	0.23	69.5	0.69	7.37	100.0
MRC RX 35	MRC RX 35	74	n.a.	8.2	0.13	6.01	0.017	3.0	1.84	1.13	0.02	0.27	0.22	69.0	0.53	7.76	98.2
MRC RX 98	MRC RX 98	119	n.a.	13.1	0.19	1.13	0.02	3.4	2.69	1.38	0.01	0.36	0.23	69.1	0.66	7.65	99.9
MRC RX 109	MRC RX 109	122	n.a.	11.5	0.20	0.57	0.015	3.3	2.63	1.13	0.01	0.44	0.19	73.2	0.64	5.89	99.7
MRC RX 83	MRC RX 83	119	n.a.	11.2	0.17	0.80	0.02	2.6	2.59	1.25	0.02	0.38	0.21	73.4	0.73	5.71	99.0
2128186A	P2R12-1	147	n.a.	13.0	0.20	0.67	0.021	3.7	2.85	1.29	0.01	0.42	0.21	68.7	0.68	6.92	98.7
2128186	P2R12-1	146	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128200	P2R11-5	139	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128187	P2R12-2	118	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 127	MRC RX 127	118	n.a.	9.9	0.11	1.06	0.022	3.0	2.03	1.09	0.01	0.27	0.24	74.1	0.65	6.11	98.6
MRC RX 128	MRC RX 128	76	n.a.	8.7	0.14	0.85	0.014	2.4	1.93	0.95	0.01	0.33	0.20	77.9	0.57	4.83	98.8
MRC RX 129	MRC RX 129	83	n.a.	7.8	0.15	1.84	0.017	2.6	1.58	1.07	0.02	0.23	0.27	76.8	0.50	5.7	98.5
MRC RX 110	MRC RX 110	116	n.a.	9.5	0.13	1.21	0.024	2.7	2.02	1.18	0.01	0.32	0.24	76.0	0.60	5.72	99.6
MRC RX 99	MRC RX 99	26	n.a.	2.0	0.04	0.20	0.037	0.7	0.35	0.17	0.01	0.04	0.10	94.9	0.12	1.87	100.5
MRC RX 84	MRC RX 84	113	n.a.	10.9	0.15	1.19	0.023	3.0	2.25	1.26	0.01	0.30	0.22	73.3	0.64	6.35	99.6
2128216	P2C26-3	119	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 64	MRC RX 64	84	n.a.	7.4	0.15	15.16	0.016	3.7	1.65	1.29	0.05	0.25	0.19	52.3	0.48	14.3	96.9
2128227	P2R18-3	88	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 120	MRC RX 120	163	n.a.	16.3	0.17	1.16	0.017	8.7	2.58	1.92	0.16	0.80	0.24	56.8	0.83	10.51	100.2
2212054	MRC RX 13	99	4.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 65	MRC RX 65	56	n.a.	3.3	0.11	3.00	0.028	3.3	0.65	0.55	0.03	0.08	0.19	82.1	0.20	4.22	97.7
2128188	P2R12-3	170	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 118	MRC RX 118	209	n.a.	15.4	0.17	1.44	0.016	10.2	3.85	2.21	0.16	0.28	0.25	52.5	0.59	12.69	99.7
2128228	P2R18-4	154	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 66	MRC RX 66	121	n.a.	11.6	0.13	6.07	0.015	4.8	2.43	3.35	0.08	0.16	0.16	56.1	0.62	13.66	99.2
2128201	P2R11-6	172	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128217	P2C26-4	184	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128177	P2C20-9	142	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128189	P2R12-4	132	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 67	MRC RX 67	111	n.a.	11.0	0.10	1.09	0.013	14.1	1.80	1.26	0.25	1.18	0.31	55.6	0.54	11.98	99.2
2128202	P2R11-7	61	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128218	P2C26-5	177	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 85	MRC RX 85	58	n.a.	5.3	0.08	9.83	0.021	4.3	1.20	3.75	0.13	0.29	0.17	59.4	0.28	14.32	99.0
MRC RX 100	MRC RX 100	144	n.a.	12.5	0.09	6.77	0.015	4.6	2.50	3.44	0.09	0.17	0.22	53.6	0.65	15.52	100.0
MRC RX 111	MRC RX 111	62	n.a.	4.2	0.05	0.56	0.052	2.1	0.65	0.53	0.02	0.04	0.15	87.2	0.29	3.34	99.1
MRC RX 130	MRC RX 130	33	n.a.	3.6	0.05	6.41	0.024	1.7	0.80	2.23	0.03	0.11	0.15	76.2	0.21	8.04	99.5
2128229	P2R18-5	141	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212041	MRC RX 01	89	4.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128190	P2R12-5	69	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128178	P2C20-10	89	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FT8925	UPPER GATES-1	201	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FT8926	UPPER GATES-2	71	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FT8927	UPPER GATES-3	78	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 1. Overburden and Waste Rock ABA and Elemental Abundance Results

Sample ID	Station/ Alternate ID	Zn ppm	Zr ppm	Al <sub>2</sub> O <sub>3</sub> %	BaO %	CaO %	Cr <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> O %	MgO %	MnO %	Na <sub>2</sub> O %	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	TiO <sub>2</sub> %	LOI %	SUM %
FT8928	UPPER GATES-4	110	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FT8929	UPPER GATES-5	59	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FT8930	UPPER GATES-6	126	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FT8931	UPPER GATES-7	62	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FT8932	UPPER GATES-8	74	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FT8933	UPPER GATES-9	90	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FT8934	UPPER GATES-10	21	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 86	MRC RX 86	36	n.a.	3.6	0.07	0.69	0.041	2.8	0.66	0.40	0.01	0.07	0.25	87.7	0.17	3.25	99.6
MRC RX 101	MRC RX 101	130	n.a.	10.8	0.13	10.53	0.012	10.7	2.49	3.22	0.16	0.20	0.39	41.3	0.49	19.91	100.3
MRC RX 112	MRC RX 112	154	n.a.	14.3	0.12	7.24	0.013	4.3	3.40	2.95	0.08	0.21	0.26	53.0	0.60	14.07	100.5
MRC RX 131	MRC RX 131	145	n.a.	16.4	0.15	1.43	0.02	5.9	3.32	1.67	0.14	0.29	0.19	56.4	0.69	13.28	99.9
2128179	P2C20-11	122	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 69	MRC RX 69	14	n.a.	16.6	0.11	0.08	0.015	0.8	2.64	0.80	0.01	0.33	0.04	68.3	0.95	8.1	98.7
2128220	P2C26-7	191	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 132	MRC RX 132	157	n.a.	12.0	0.13	4.46	0.016	16.5	2.48	2.65	0.22	0.16	0.37	44.2	0.56	16.17	100.0
MRC RX 114	MRC RX 114	51	n.a.	5.8	0.05	9.79	0.014	2.3	1.18	3.08	0.04	0.09	0.18	63.6	0.34	13.49	100.0
MRC RX 87	MRC RX 87	118	n.a.	10.5	0.10	11.76	0.015	5.8	2.09	3.33	0.10	0.17	0.29	45.5	0.52	19.12	99.3
2128204	P2R11-9	117	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 70	MRC RX 70	206	n.a.	17.3	0.13	0.25	0.02	1.8	3.64	1.26	0.01	0.30	0.15	59.9	0.68	13.3	98.8
2212042	MRC RX 02	166	3.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128191	P2R12-6	151	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128181	P2C20-13	88	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128205	P2R11-10	154	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128182	P2C20-14	44	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212055	MRC RX 14	181	3.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128193	P2R12-8	68	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 27	MRC RX 27	128	n.a.	12.9	0.09	5.10	0.013	5.1	2.68	3.71	0.09	0.23	0.17	56.3	0.62	12.98	100.0
2128206	P2R11-11	209	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128194	P2R12-9	132	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128235	P2R18-11	149	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212046	MRC RX 06	55	1.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 75	MRC RX 75	137	n.a.	14.2	0.11	1.16	0.023	5.3	3.23	2.31	0.07	0.26	0.16	58.3	0.70	12.92	98.7
2128207	P2R11-12	124	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212047	MRC RX 07	57	2.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128185	P2C20-17	74	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128208	P2R11-13	204	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128209	P2R11-14	116	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212049	MRC RX 09	176	5.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

## Appendix 2

### Overburden and Waste Rock Mineralogy Results

Appendix 2. Overburden and Waste Rock Rietveld X-ray Diffraction Results

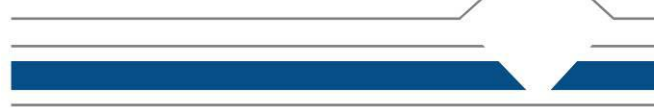
Sample ID	Station/ Alternate ID	Formation	Lithology	Humidity Cell (if applicable)	Silicates, Oxides, Hydroxides, Phosphates, and Halides										Carbonates					
					Quartz SiO <sub>2</sub>	K-Feldspar KAlSi <sub>3</sub> O <sub>8</sub>	Plagioclase		Clinocllore (Mg,Fe <sup>2+</sup> ) <sub>5</sub> Al(Si <sub>3</sub> Al)O <sub>10</sub> (OH) <sub>8</sub>	Kaolinite Al <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> (OH) <sub>4</sub>	Illite-muscovite -K <sub>0.65</sub> Al <sub>2</sub> OAl <sub>0.65</sub> Si <sub>3.35</sub> O <sub>10</sub> (OH) <sub>2</sub>	Anatase TiO <sub>2</sub>	Rutile TiO <sub>2</sub>	Halite? NaCl	Ankerite-Dolomite					
							NaAlSi <sub>3</sub> O <sub>8</sub> - CaAl <sub>2</sub> Si <sub>2</sub> O <sub>8</sub>								Calcite CaCO <sub>3</sub>	Ca(Fe <sup>2+</sup> ,Mg,Mn)(CO <sub>3</sub> ) <sub>2</sub> - CaMg(CO <sub>3</sub> ) <sub>2</sub>	Dolomite CaMg(CO <sub>3</sub> ) <sub>2</sub>	Siderite Fe <sup>2+</sup> CO <sub>3</sub>	Pyrite FeS <sub>2</sub>	Marcasite? FeS <sub>2</sub>
2212057	MRC RX 16	Hasler	Mudstone	7	67.0	0.0	3.7	3.5	0.0	22.9	0.0	0.0	0.0	0.0	0.3	0.0	1.8	0.9	0.0	
2212059	MRC RX 18	Hasler	Mudstone	8	65.4	0.0	3.8	2.8	3.1	18.7	0.4	0.0	0.0	0.0	2.6	0.0	0.3	2.7	0.0	
2212060	MRC RX 19	Hasler	Mudstone	9	69.9	0.0	3.9	2.0	2.7	19.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	
2128172A	2128172A	Hasler	Siltstone	-	60.2	1.1	1.7	0.8	4.1	29.5	0.6	0.0	0.0	0.2	0.0	0.0	0.0	1.8	0.0	
HF9093	BH06-10.1m	Hasler	Mudstone	-	63.1	0.0	3.6	3.4	3.5	24.2	0.7	0.0	0.0	0.0	0.0	0.0	0.3	1.3	0.0	
HF9099	BH06-69.8m	Hasler	Mudstone	-	62.3	0.0	2.7	1.8	3.2	23.1	0.6	0.0	0.0	0.0	0.0	0.4	1.2	4.7	0.0	
2212048	MRC RX 08	Boulder Creek	Conglomerate	4	43.6	0.0	0.0	2.3	11.8	34.7	1.0	2.7	0.0	0.0	0.7	0.0	0.7	2.5	0.0	
2128176A	2128176A	Boulder Creek	Mudstone	-	58.6	1.6	2.4	1.3	2.4	29.0	0.4	0.0	0.0	0.3	1.7	0.0	0.0	2.4	0.0	
MRC RX 94	MRC RX 94	Boulder Creek	Siltstone	-	50.4	2.0	0.0	3.5	4.5	22.3	0.0	0.0	0.0	1.4	5.5	0.0	10.3	0.0	0.0	
MRC RX 106	MRC RX 106	Boulder Creek	Sandstone	-	80.1	0.0	0.0	0.7	3.8	5.4	0.0	0.0	0.0	3.6	3.0	0.0	2.9	0.4	0.0	
MRC RX 107	MRC RX 107	Boulder Creek	Sandstone	-	94.5	0.0	0.0	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.2	0.0	
MRC RX 21	MRC RX 21	Hulcross	Mudstone	10	64.7	2.8	3.0	0.0	3.8	19.3	0.4	0.0	0.0	0.0	0.0	2.7	0.0	3.2	0.0	
MRC RX 51	MRC RX 51	Hulcross	Mudstone	11	67.7	2.8	2.1	1.0	3.1	16.9	0.4	0.0	0.0	0.0	0.0	3.1	0.0	3.0	0.0	
MRC RX 43	MRC RX 43	Hulcross	Mudstone	12	60.0	3.3	3.6	1.5	3.1	22.2	0.4	0.0	0.0	0.0	0.0	2.6	0.0	3.2	0.0	
2128186A	2128186A	Hulcross	Mudstone	-	54.1	0.0	3.8	1.2	3.4	33.5	0.4	0.0	0.0	0.0	0.5	0.0	0.0	3.2	0.0	
2212041	MRC RX 01	Upper Gates	Siltstone	1	75.7	0.0	0.0	0.0	4.3	11.4	0.0	0.6	0.3	0.0	4.6	0.0	1.5	1.6	0.0	
2212054	MRC RX 13	Upper Gates	Carbonaceous Mudstone	6	47.8	0.0	0.0	1.7	3.1	17.7	0.6	0.0	0.0	7.5	16.7	0.0	1.1	3.2	0.4	

Note: Values are percentages by weight, normalized to 100%



# Mineral Services

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**REPORT NO. MSC11/014R**

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**PETROGRAPHY OF THREE HUMIDITY CELL SAMPLES**  
**FROM THE MURRAY RIVER COAL PROJECT (B.C.)**

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Report prepared for

**Rescan Environmental Services Ltd.**

6th Floor – 1111 West Hastings Street

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By

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May 17, 2011

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## PETROGRAPHY OF THREE HUMIDITY CELL SAMPLES FROM THE MURRAY RIVER COAL PROJECT (B.C.)

---

### 1. INTRODUCTION

This report presents the results of petrographic analyses of three humidity cell samples received from Keith Mountjoy of Rescan Environmental Services. The samples were submitted as crushed material and results of XRD analyses were provided. The aim of the study was to characterize the mineralogy of the samples, focusing on the presence of carbonate and sulphides. Note that MSC numbers 1 – 3 have been assigned to the samples for ease of reference (Table 1).

**Table 1:** List of samples examined as part of this investigation.

MSC Sample Number	Rescan Sample Name
1	HC10-MRC RX21
2	HC11-MRC RX51
3	HC12-MRC RX43

### 2. METHODS

The samples were forwarded to Vancouver Petrographics, where a 30 µm thick polished thin section of each sample was prepared.

Petrographic descriptions were performed in the office of Mineral Services Canada Inc. using a Nikon Eclipse E400 microscope equipped with transmitted and reflected light. The microscopic characteristics of the samples are described in Appendix A and illustrated in a series of representative photomicrographs presented in Appendix B. All modal abundance percentages in the descriptions are approximate.

### 3. RESULTS

Sample 1 is made up of mineral and lithic fragments (ranging in size from 2 microns to 10 mm). Sample 2 and 3 comprise lithic fragments only (200 microns to 10 mm in size).

Lithic fragments in all three samples include varying amounts of siltstone fragments, mudstone fragments and laminated fragments of alternating silt-size and clay-size material. Samples 1 and 2 are classified as muddy siltstone due to the higher abundance of fragments with silt-size material. Sample 3 is dominated by clay-rich fragments and is classified as a mudstone.

### 3.1 Gangue minerals

Siltstone clasts and laminae are essentially made up of anhedral grains of quartz with lesser feldspars and clusters of kaolinite cemented by ribbons of brown microcrystalline illite-sericite (confirmed by XRD analyses) associated with variable amounts of carbonaceous matter. Sheaves of muscovite and biotite and grains of rutile are disseminated throughout the fragments in all samples. Patches of chlorite occur in samples 1 and 2 and a few grains of zircon are observed in sample 1.

Mudstone clasts are essentially made of a groundmass of brown microcrystalline illite-sericite (confirmed by XRD analyses) in which grains of quartz (and possible feldspars and kaolinite) are scattered.

### 3.2 Carbonate

Carbonate occurs in small amounts in all three samples (3% in samples 1 and 3, 5% in sample 2). It occurs in siltstone clasts as anhedral grains disseminated between gangue minerals. Carbonate is less abundant in mudstone clasts where it forms smaller anhedral grains set in the illite-sericite groundmass. In mudstone, the carbonate grains are best recognized in the thinnest parts of the sections. The section for sample 2 is slightly thick and hence the presence of carbonate is more difficult to confirm

The carbonate recognized is colourless to cloudy, commonly with varying relief indicating that calcite is present. However, the presence of other weakly coloured carbonates (ankerite-dolomite for example) cannot be excluded. No reddish Fe-bearing carbonate was observed although results of XRD analyses provided by the client suggest it could be present.

### 3.3 Sulphides/oxides

The abundance of sulphides is low and varies from 2% in samples 1 and 2 to 3% in sample 3. Pyrite is the only sulphide present in sample 1 and 2, but trace amounts of arsenopyrite occur in sample 3.

Pyrite varies in size from 1 to 20 microns in all samples. It essentially occurs as framboids and clusters of framboids associated with illite-sericite and carbonaceous matter in mudstone clasts and in the cement of siltstone clasts. Anhedral to subhedral pyrite grains are observed locally.

Arsenopyrite was only observed in sample 3, where it occurs as a single cluster of anhedral to subhedral grains, 5 to 20 microns in size.

No oxidation is observed in the samples.

#### 4. SUMMARY AND CONCLUSION

The results of petrographic analyses of three samples are presented in this report. The purpose of the study was to characterize the mineralogy of the samples with particular emphasis on the carbonates and sulphides present. The main conclusions are summarized below.

- The samples are made up of mineral and lithic fragments in sample 1 and of lithic fragments in samples 2 and 3. Fragments range in size from 2 microns to 10 mm.
- Samples 1 and 2 are classified as muddy siltstone and sample 3 is classified as a mudstone.
- Gangue minerals comprise quartz with lesser feldspars and illite-sericite (confirmed by XRD analyses). Small amounts of muscovite, biotite and rutile are disseminated in all samples. Patches of chlorite occur in samples 1 and 2 and a few grains of zircon are observed in sample 1.
- Carbonate occurs in small amounts in all three samples. It occurs as anhedral grains disseminated in clasts. The carbonate recognized is colourless to cloudy, commonly with varying relief indicating that calcite is present, but the presence of other weakly coloured carbonates (ankerite-dolomite for example) cannot be excluded. No reddish Fe-bearing carbonate was observed although results of XRD analyses suggest it is present.
- The abundance of sulphides is low (2- 3%) in all samples. Pyrite is the only sulphide present in sample 1 and 2, but trace amounts of arsenopyrite occur in sample 3.
- Pyrite occurs as framboids and clusters of framboids associated with illite-sericite and carbonaceous matter in clasts. Anhedral to subhedral pyrite grains are locally observed.
- In sample 3, arsenopyrite occurs as a single cluster of anhedral to subhedral grains, 5 to 20 microns in size.
- No oxidation is observed in the samples.

#### 5. PROFESSIONAL SEAL

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Tom Nowicki, Ph. D., P. Geo.

## APPENDIX A-1: INDIVIDUAL SAMPLE DESCRIPTIONS

Sample #	Sample Name	Lithology	Sample Description	Carbonate	Pyrite	Arsenopyrite	Rutile
1	HC10-MRC RX21	Muddy siltstone	Mineral fragments and laminated lithic fragments alternating silty and muddy laminae; Silty laminae made up of silt-size quartz with minor feldspars, carbonate, rutile, chlorite, zircon, biotite, muscovite, clusters of kaolinite and seams of carbonaceous matter cemented by clay-size dark brown unresolved material (mostly illite-sericite as indicated by XRD); muddy laminae made up of a clay-size groundmass of the same dark brown unresolved microcrystalline material (illite-sericite) containing few disseminated silt-size quartz grains and possible carbonate; Pyrite (essentially framboidal) scattered in the illite-sericite cement of silty laminae and groundmass of muddy laminae	Very fine-grained (<50 microns in size) anhedral grains scattered in silty beds and cryptocrystalline grains sporadically observed in muddy beds; Colourless to cloudy, commonly with varying relief (calcite); heterogeneous distribution throughout laminae	Disseminated framboids to euhedral grains (<1-20 µm in size) and clusters of framboids/grains in lithic clasts; typically associated with carbonaceous matter and mud	n/a	Anhedral microcrystalline grains and clusters disseminated in silty laminae
2	HC11-MRC RX51	Muddy siltstone	Laminated lithic fragments alternating silty and muddy laminae; Silty laminae more common than in sample 1, made up of silt-size quartz with minor feldspars, carbonate, rutile, chlorite and clusters of kaolinite cemented by clay-size dark brown unresolved material (mostly illite-sericite as indicated by XRD); seams of carbonaceous matter, sheaves of muscovite and biotite scattered throughout; muddy laminae made up of a clay-size groundmass of the same dark brown unresolved microcrystalline material (illite-sericite) containing few disseminated silt-size quartz grains and possible carbonate; Pyrite (essentially framboidal) scattered in the illite-sericite cement of silty laminae and groundmass of muddy laminae	Very fine-grained (<50 microns in size) anhedral grains scattered in silty laminae; Colourless to cloudy, commonly with varying relief (calcite); heterogeneous distribution throughout laminae; section slightly thick and presence of cryptocrystalline grains in muddy laminae unconfirmed	Disseminated framboids and anhedral to euhedral grains (<1-20 µm in size) as well as clusters of framboids/grains in lithic clasts; typically associated with carbonaceous matter (cell-textured) and mud; less common than in sample 1 but on average in larger clusters	n/a	Anhedral microcrystalline grains and clusters disseminated in silty laminae
3	HC12-MRC RX43	Mudstone	Laminated lithic fragments alternating silty and muddy laminae but richer in muddy laminae; Silty laminae made up of silt-size quartz with minor feldspars, carbonate, rutile, clusters of kaolinite and seams of carbonaceous matter cemented by clay-size dark brown unresolved material (mostly illite-sericite as indicated by XRD); Sheaves of biotite more common, disseminated in silty laminae as are sheaves of muscovite; muddy laminae made up of a clay-size groundmass of the same dark brown unresolved microcrystalline material (illite-sericite) containing few disseminated silt-size quartz grains and possible carbonate; Pyrite (essentially framboidal) scattered in the illite-sericite cement of silty laminae and groundmass of muddy laminae; trace arsenopyrite in a clast	Very fine-grained (<50 microns in size) anhedral grains scattered in silty beds and cryptocrystalline grains sporadically observed in muddy beds in the thinnest parts of the thin section; Colourless to cloudy, commonly with varying relief (calcite); heterogeneous distribution throughout laminae	Disseminated framboids and anhedral to euhedral grains (<1-20 µm in size) as well as clusters of framboids/grains in lithic clasts; Pyrite grains more common in this sample than in samples 1 & 2; pyrite typically associated with carbonaceous matter and mud	One cluster of anhedral to subhedral grains, (5-20 microns in size) in a muddy laminae	Anhedral microcrystalline grains and clusters disseminated in silty laminae



## APPENDIX A-2: MINERAL MODAL ABUNDANCE ESTIMATES

MSC Sample Number	Rescan Sample Name	Quartz (%)	Feldspars (%)	Muscovite (%)	Illite / sericite (%)	Chlorite (%)	Biotite (%)	Rutile (%)	Kaolinite (%)	Carbonate (%)	Pyrite (%)	Arsenopyrite (%)	Zircon (%)	Carbonaceous matter (%)
1	HC10-MRC RX21	45-50	5	tr	30-35	tr-1	tr	tr-1	5	3	2	0	tr	2
2	HC11-MRC RX51	50	7	tr	25	tr	tr	tr	7	5	2	0	0	1
3	HC12-MRC RX43	30-35	5	tr	45	0	2	tr	5	3	3	tr	0	3

## **APPENDIX B: PHOTOMICROGRAPHS**

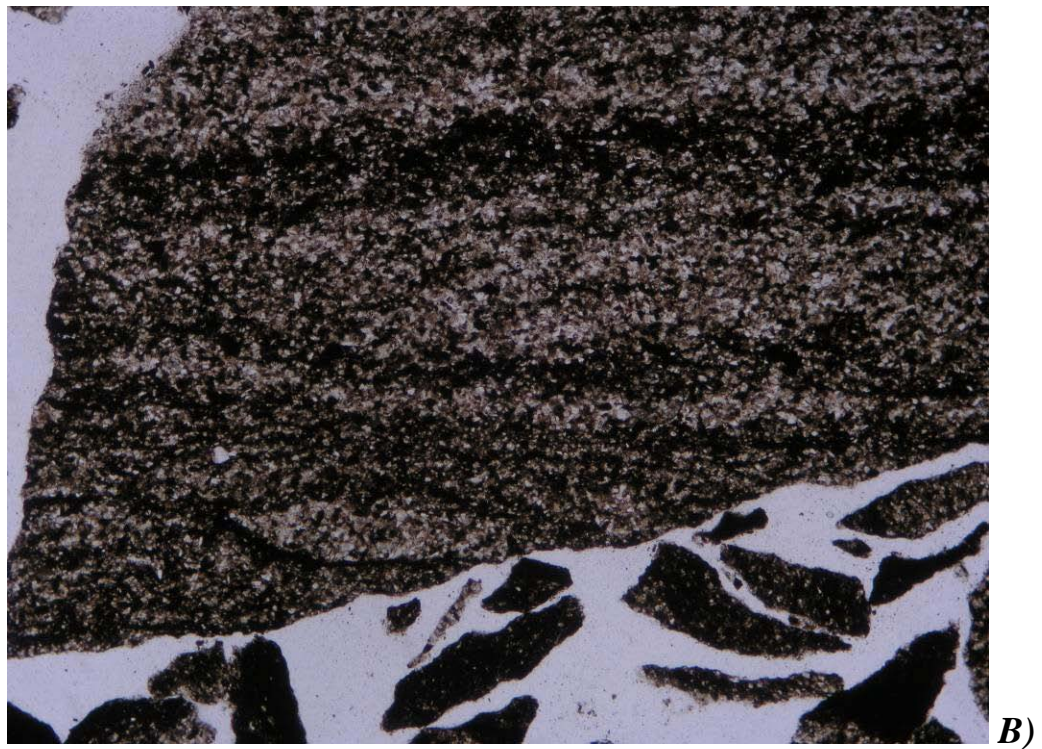
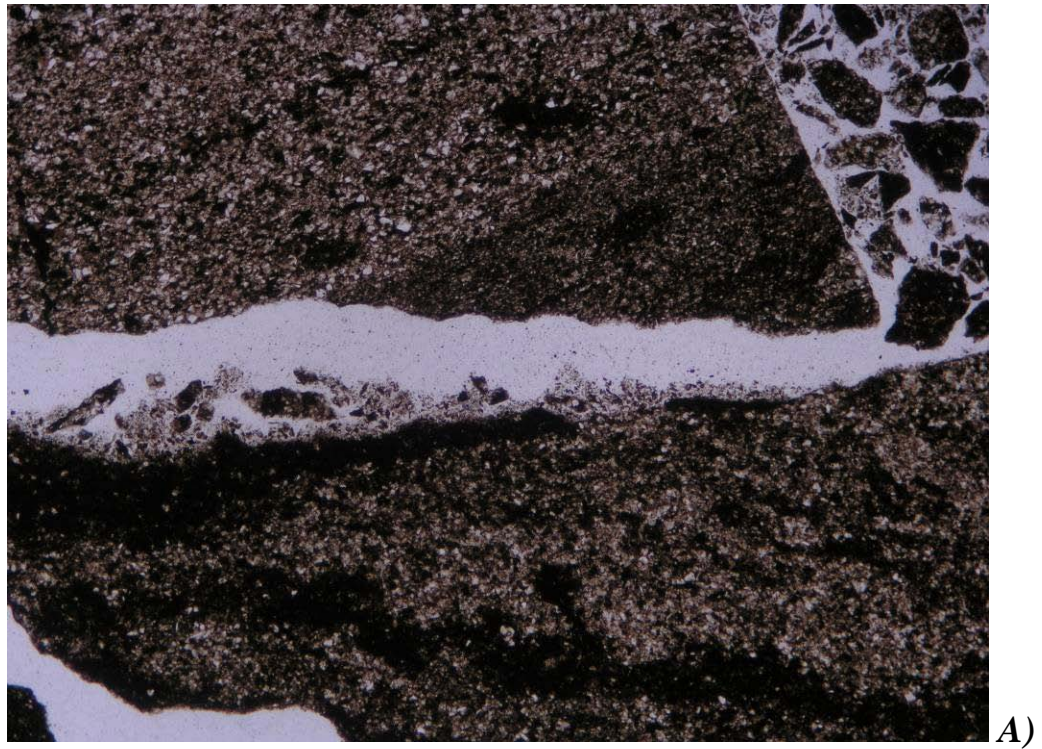
*List of abbreviations used in the description of photomicrographs:*

*FOV: Field of view – defined for the long dimension of photomicrographs*

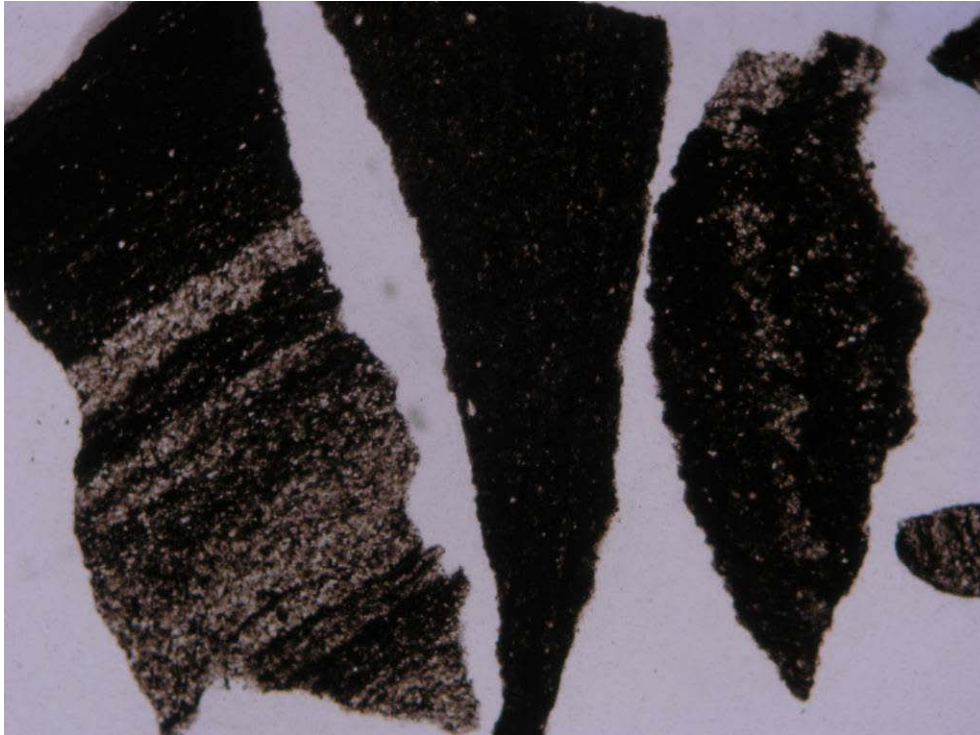
*PPL: Plane polarized light*

*XPL: Crossed polars*

*RL: Reflected light*

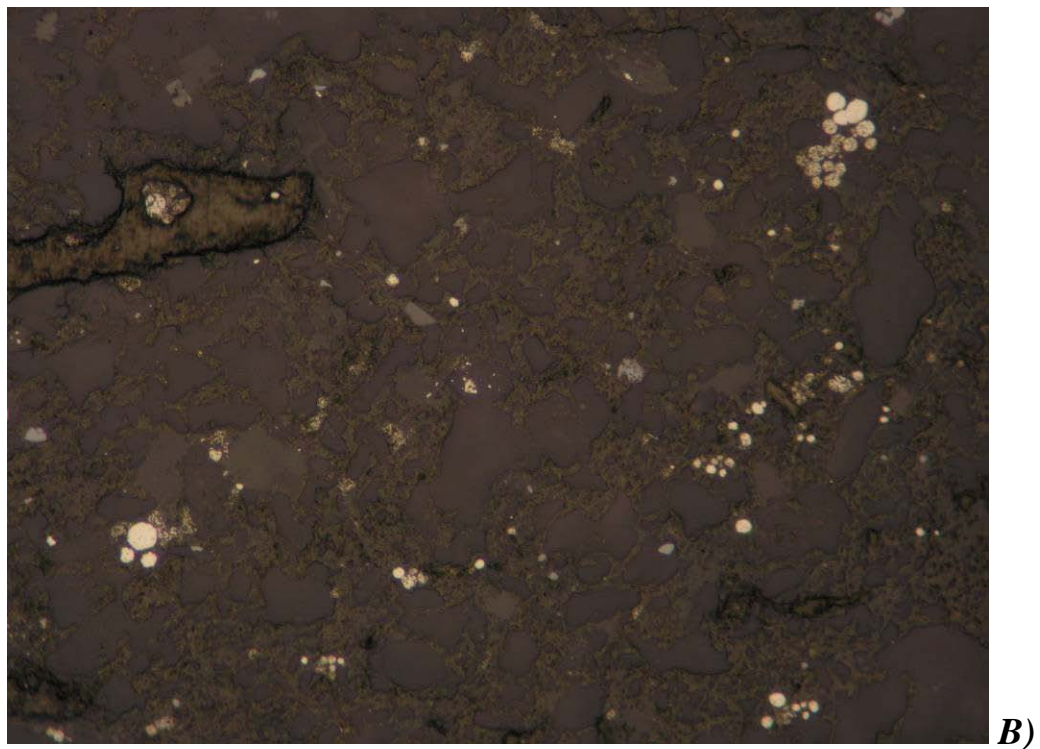
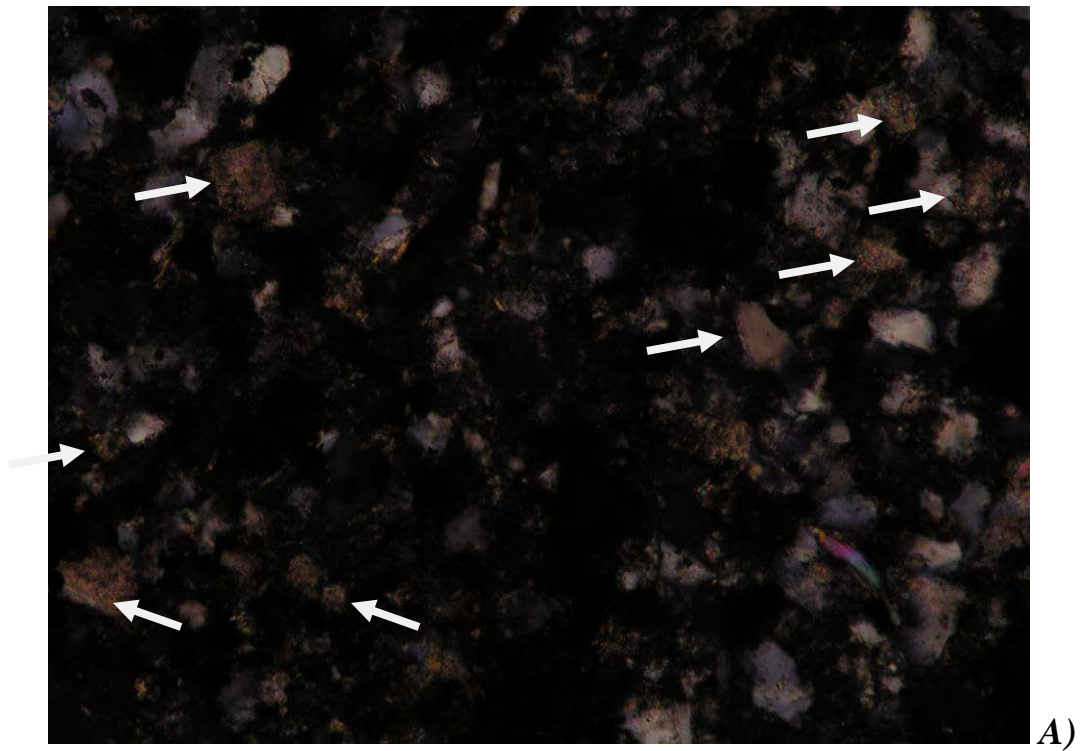


**Figure 1:** Photomicrographs of samples 1 (A) and 2 (B) showing the laminated texture of muddy siltstone clasts that comprise alternating silt-size and clay-size laminae. PPL, FOV = ~ 7 mm.

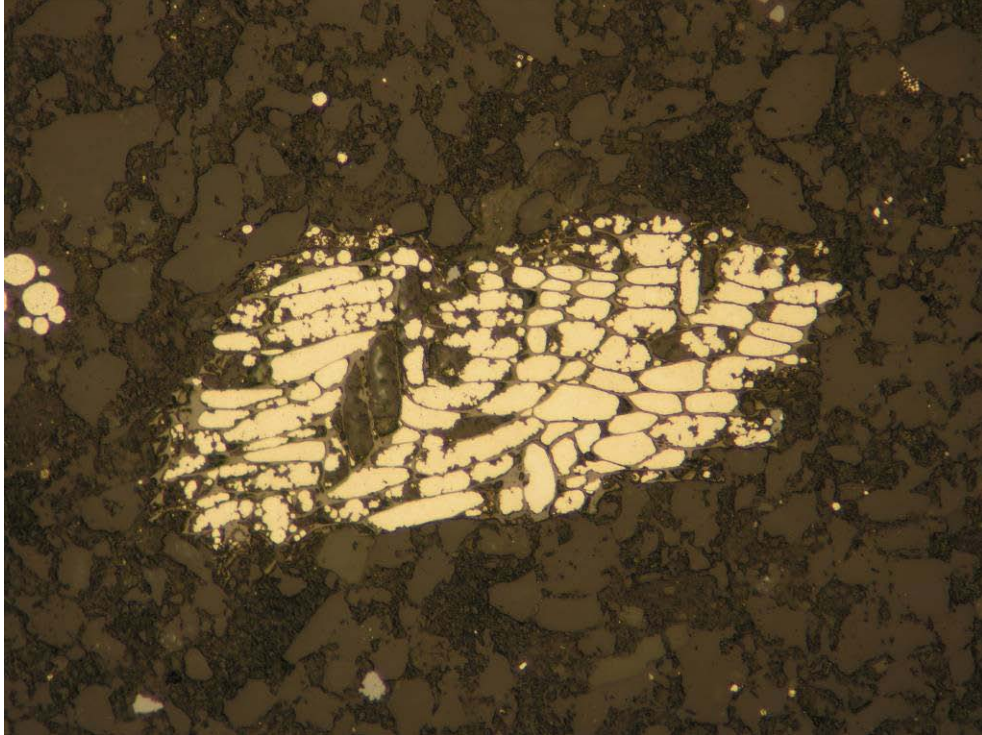


**Figure 2:** Photomicrograph of mudstone sample 3 showing the higher abundance of clay-size material. PPL, FOV = ~ 7 mm.

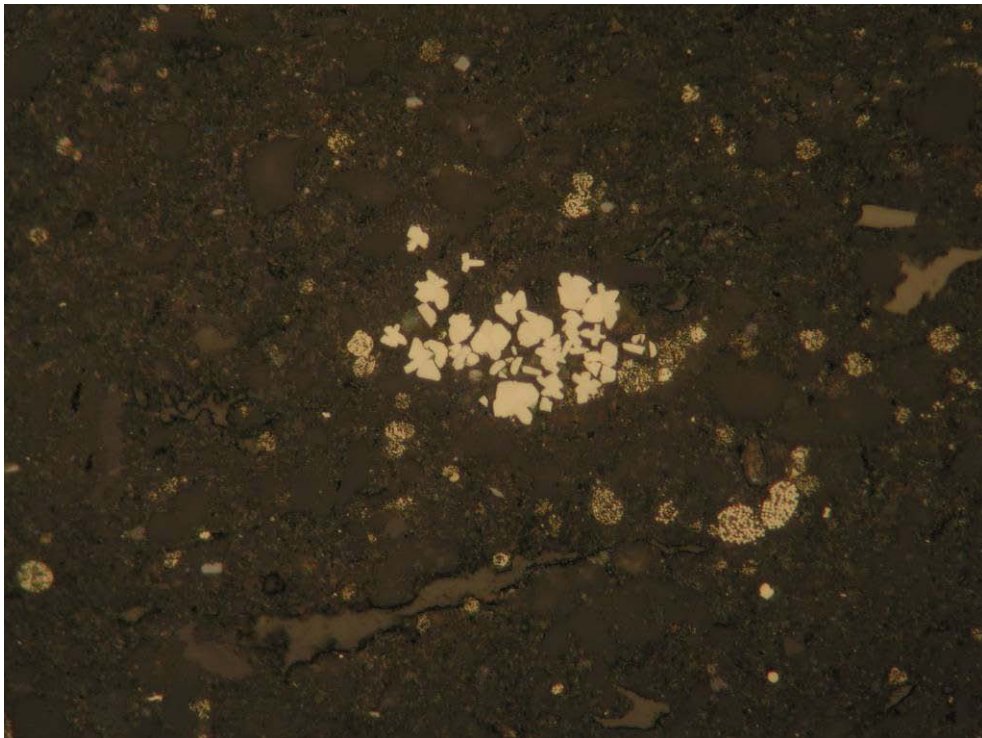




**Figure 3:** Photomicrographs of sample 1 showing the occurrence of numerous small carbonate grains (indicated by arrows) set in a siltstone clast. The groundmass around mineral grains essentially consists of illite-sericite with lesser carbonaceous matter and disseminated framboidal pyrite. A) XPL, B) RL, FOV = ~ 0.7 mm.



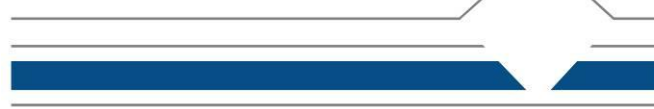
**Figure 4:** Photomicrograph of sample 2 showing anhedral pyrite filling the cellular texture of carbonaceous matter. RL, FOV = ~ 0.7 mm.



**Figure 5:** Photomicrographs of sample 3 showing a cluster of anhedral to subhedral grains of arsenopyrite in a clast. Pyrite framboids and clusters of framboids are disseminated throughout the clast. RL, FOV = ~ 0.28 mm.

# Mineral Services

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**REPORT NO. MSC11/019R**

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**PETROGRAPHY OF NINE HUMIDITY CELL SAMPLES  
FROM THE MURRAY RIVER COAL PROJECT (B.C.)**

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Report prepared for

**Rescan Environmental Services Ltd.**

6th Floor – 1111 West Hastings Street

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June 9, 2011



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## PETROGRAPHY OF NINE HUMIDITY CELL SAMPLES FROM THE MURRAY RIVER COAL PROJECT (B.C.)

---

### 1. INTRODUCTION

This report presents the results of petrographic analyses of nine humidity cell samples received from Keith Mountjoy of Rescan Environmental Services. The samples were submitted as crushed material. The aim of the study was to characterize the mineralogy of the samples, focusing on the presence of carbonate and sulphides. MSC numbers 1 – 9 have been assigned to the samples for ease of reference (Table 1).

**Table 1:** List of samples examined as part of this investigation.

MSC Sample Number	Rescan Sample Name
1	MRC RX 01
2	MRC RX 03
3	MRC RX 05
4	MRC RX 08
5	MRC RX 11
6	MRC RX 13
7	MRC RX 16
8	MRC RX 18
9	MRC RX 19

### 2. METHODS

The samples were forwarded to Vancouver Petrographics, where a 30 µm thick polished thin section of each sample was prepared.

Petrographic descriptions were performed in the office of Mineral Services Canada Inc. using a Nikon Eclipse E400 microscope equipped with transmitted and reflected light. The microscopic characteristics of the samples are described in Appendix A and illustrated in a series of representative photomicrographs presented in Appendix B. All modal abundance percentages in the descriptions are approximate.

### 3. RESULTS

The samples consist essentially of fragments of sedimentary rocks and lesser carbonaceous matter. Sedimentary rock fragments include sandstone, claystone, carbonate mudstone and possible chert. The abundance of carbonaceous matter fragment varies from zero (samples 5 to 9) to approximately 5% (samples 1, 2 and 3).

The following descriptions outline the main characteristics of each fragment type of fragment as well as the occurrences and types of carbonates and opaque minerals. The lithology, mineralogy, carbonate, and sulphide/oxide characteristics of each sample are summarised in Appendix A. Photographs highlighting these features are presented in Appendix B. Note that, in the descriptions below, the term carbonaceous matter applies to all-types of black, opaque (transmitted light), greenish to brown and weakly reflective material (reflected light). No distinction is made between the various carbonaceous matter macerals.

#### 3.1 GANGUE MINERALS

##### 3.1.1 SANDSTONE

Sandstone fragments are typically very fine-grained (0.0625 to 0.125 mm in size) and only rarely fine-grained (0.125-0.25 mm in size, sample 8) or very coarse-grained (1-2 mm in size, sample 1). They are observed in 2/3 of the samples (samples 1 to 5 and 8) and consist of a variety of components, typically dominated by quartz, feldspar, kaolinite and lesser claystone clasts. Muscovite, chlorite and amphibole are recognized in small amounts in most samples. Seams and masses of carbonaceous matter as well as grains of rutile, titanite and zircon are commonly disseminated within the sandstone fragments. Carbonate (colourless) occurs as scattered grains in samples 1, 2, 4 and 5 and locally as the sandstone cement in sample 8. No carbonate is observed in sandstone fragments within samples 3, 6 and 7.

The groundmass of the sandstones is variably developed and is made up of dark brown foliated possible muscovite/illite. The typically high abundance of kaolinite (likely replacing feldspars) and the variably developed groundmass suggest that most of the sandstone is feldspathic greywacke.

##### 3.1.2 SILTSTONE

Fragments of siltstone occur in all samples except in samples 2 and 5. Their abundance varies from approximately 2% in sample 3 to close to 95% in sample 7. They are made up of small (<63 µm) grains and clusters of gangue minerals (quartz, feldspar, kaolinite, chlorite, mica, rutile, zircon and carbonate) set in a variably developed dark brown foliated groundmass of muscovite/illite. Laminations are common and are defined by variations in grain size and abundance of the gangue minerals.

In sample 6, and to a lesser extent in sample 1, the siltstone fragments are calcareous, characterized by the presence of a well-developed carbonate cement between gangue minerals that take the place of the dark brown muscovite-illite groundmass.

### **3.1.3 CLAYSTONE**

Claystone fragments occur in all samples and their abundance varies from approximately 5% in sample 7 to close to 80% in sample 4.

The claystone is typically made up of a dark brown foliated groundmass of possible muscovite-illite. Quartz, colourless carbonate, feldspars, rutile and patches of kaolinite are disseminated in various amounts within claystone fragments in most samples (samples 1, 2, 4, 5, 7 and 8). The thin sections of samples 4 and 6 are slightly thick and gangue mineral grains are recognized in the claystone groundmass but their identity is undetermined. Seams and masses of carbonaceous matter are disseminated in claystone fragments in all samples.

### **3.1.4 CARBONACEOUS MATTER**

Fragments of carbonaceous matter only occur in a few samples (samples 1 to 4). Their abundance varies from trace in sample 4 to 5% in samples 1, 2 and 3. The carbonaceous matter fragments are typically subangular and massive. They are variably reflective and locally display cellular textures suggesting different types of carbonaceous matter are present.

### **3.1.5 CARBONATE MUDSTONE**

Carbonate mudstone fragments are observed in six of the nine samples (samples 1, 3, 4, 5, 6 and 7). They essentially consist of micro- to cryptocrystalline colourless carbonate (likely calcite although dolomite cannot be excluded) that is only recognized on the edges of the fragments or of the thin sections. The carbonate fragments are typically monomineralic, but can contain disseminated gangue minerals, sulphides and seams of carbonaceous matter. The abundance of carbonate mudstone varies from trace (samples 1 and 6) to 10% (sample 5).

### **3.1.6 CHERT**

Fragments of possible chert are only observed in sample 2 in which their abundance is approximately 5%. They essentially consist of fine-grained to microcrystalline quartz.

## **3.2 CARBONATE**

Carbonate is present in all samples except for sample 9. The abundance of carbonate is highly variable (1% in samples 3 and 7 to 50% in sample 6) and is mostly related to the presence or absence of carbonate mudstone.

Carbonate is colourless to turbid, typically with variable relief. Fragments react to varying degrees to cold dilute HCl, suggesting calcite is present.

Carbonate occurs in a wide range of forms. It occurs as the micro- to cryptocrystalline groundmass of carbonate mudstone, as microcrystalline and small grains in sandstone (samples 1, 2 and 5) and siltstone (samples 1, 3, 4, 5 and 8) and locally as disseminated grains and patches in claystone (sample 1). On rare occasions, carbonate is observed as cement in sandstone (samples 2 and 8) and siltstone (samples 1 and 6).

Carbonate is also a sparse vein component and occurs as liberated grains (sample 5), liberated grains with attachments of carbonaceous matter (sample 4), or in microveinlets in claystone fragments (samples 3 and 4).

### **3.3. OPAQUE MINERALS**

Opaque minerals are variably present throughout the samples and include carbonaceous matter, sulphides and Fe-oxyhydroxides. The maximum abundance of sulphides is estimated at 2-3%. Sulphides essentially consist of pyrite, arsenopyrite, marcasite and pyrrhotite.

#### **3.3.1. CARBONACEOUS MATTER**

Additionally to occurring as liberated fragments (section 3.1.3), carbonaceous matter is disseminated in lithic fragments in all samples. It typically occurs as disseminated seams and anhedral masses. These seams and masses of carbonaceous matter are a common locus of pyrite framboid development and concentration.

#### **3.3.2. PYRITE**

Pyrite is the most common sulphide, although its abundance is typically below 2%. It is observed in all samples. Pyrite occurs as framboids and as anhedral to subhedral grains. Framboids occur in all lithic fragment types but are generally more common in claystone, carbonaceous matter and carbonate mudstone than in siltstone and sandstone. The framboids are disseminated in clusters and are variably associated with seams and masses of carbonaceous matter. The size of the framboids is similar in all samples in which they occur and range from approximately 1 to 25  $\mu\text{m}$ .

Anhedral to subhedral pyrite grains occur most in sandstone and siltstone although they are observed in fragments of all rock types. Pyrite grain size ranges from 2 to 2,500  $\mu\text{m}$  in size.

Pyrite microveinlets cut through fragments of carbonaceous matter in sample 1 and 2. Liberated grains and clusters of pyrite occur in samples 3, 4, 5, 6, 8 and 9. In sample 6, pyrite is commonly intergrown or rimmed by arsenopyrite. In sample 7, attachments of arsenopyrite to pyrite are observed and in sample 6, a cluster of pyrite framboids occur that is cemented by coronas of arsenopyrite.

#### **3.3.3. ARSENOPYRITE**

Arsenopyrite is only observed in samples 2, 5, 6, 7 and 8 in which it occurs as trace amounts. Arsenopyrite forms small grains (5-400  $\mu\text{m}$  in size) that occurs liberated (samples 2 and 7) or within sandstone (samples 5 and 8), siltstone (sample 6) and carbonate mudstone (sample 5). While grains are anhedral to subhedral in sandstone and siltstone, they are typically round and radiating in carbonate mudstone.

Arsenopyrite additionally occurs as intergrowths with and/or rims around pyrite (sample 6, 7).

### 3.3.4. MARCASITE

Trace amounts of marcasite occur in samples 1, 3, 5, 6 and 7. Marcasite is generally fine-grained (<100 µm) but occurs as larger, vermicular masses (3.5 mm long) associated with pyrite in sample 3. It occurs as corroded anhedral grains within sandstone, siltstone or claystone.

### 3.3.5. PYRRHOTITE

Pyrrhotite is only observed in samples 3 and 7. In sample 3, it occurs as a possible rim around pyrite grains in a liberated pyrite cluster. In sample 7, one single grain is observed that is liberated and 75 µm in size.

## 4. SUMMARY AND CONCLUSIONS

The results of petrographic analyses of nine samples are presented in this report. The purpose of the study was to characterize the mineralogy of the samples with particular emphasis on the carbonates, sulphides and oxides present. The main conclusions are summarized below.

- The sample suite is made up of fragments of a range of sedimentary rock types including sandstone, siltstone, claystone, carbonate mudstone, carbonaceous matter and possible chert.
- Gangue minerals include quartz, claystone groundmass (likely essentially made up of muscovite-illite), feldspars, kaolinite, micas and chlorite. Rutile, amphibole and zircon are disseminated in most samples.
- Carbonate is present in most samples and occurs in amounts varying from 1 to 50%. It is typically colourless. Local reaction to cold dilute HCl suggests that calcite is one of the carbonates present.
- Carbonate is fine-grained to cryptocrystalline. It occurs as sedimentary grains in sandstone, siltstone and claystone and as cement in sandstone and siltstone. It additionally occurs as groundmass in carbonate mudstone, as liberated grains and aggregates (vein material, locally with attachments of carbonaceous matter material or quartz) and as veins in claystone.
- Small amounts of carbonaceous matter (<10%) occur in the samples. Carbonaceous matter occurs as seams and anhedral masses that are commonly associated with pyrite framboids in all fragment types of. It also occurs as liberated subangular fragments.
- In all samples, the abundance of sulphides is between 2 and 3%. Sulphides are dominated by pyrite. Arsenopyrite, marcasite and pyrrhotite are also observed in some samples.
- Pyrite occurs as framboids and grains set in lithic fragments (typically claystone, carbonaceous matter and carbonate mudstone). The framboid grain size ranges from approximately 1 to 25 µm. Less commonly, pyrite occurs as anhedral to subhedral grains set in lithic fragments (mostly sandstone and siltstone). Pyrite grains reach 2.5 mm in size.



- Pyrite is also observed in microveinlets in fragments of carbonaceous matter, as very rare liberated grains and clusters or intergrown with arsenopyrite.
- Trace amounts of arsenopyrite occur in a few samples. Arsenopyrite forms small anhedral grains (5-400 µm in size) that occur liberated or set in sandstone or siltstone. It also forms radiating spherules when present in carbonate mud.
- Marcasite occurs in trace amounts in approximately half of the samples. It occurs as anhedral grains, generally less than 100 µm in size, set in sand-, silt- and claystone fragments or as vermicular masses.
- A rim of pyrrhotite is observed around a pyrite grain in one sample and a liberated pyrrhotite grain is observed in another.
- No oxidation of sulphides is observed.

## 5. PROFESSIONAL SEAL

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## APPENDIX A-1: INDIVIDUAL SAMPLE DESCRIPTIONS

	Sample	Sandstone fragments	Siltstone fragments	Claystone fragments	Carbonate mudstone	Carbonaceous matter (± carbonate)	Chert fragments	Carbonate	Carbonaceous matter	Pyrite	Marcasite	Arsenopyrite	Pyrrhotite
1	MRC RX 01	Very fine-grained sandstone, made up of quartz, feldspars and lesser disseminated grains of carbonate and microcrystalline patches of chlorite or kaolinite; zircon, muscovite and rutile also scattered in fragments; interstitial patches of mud and carbonaceous matter between mineral grains in fragments, commonly hosting framboidal pyrite; two fragments of very coarse sandstone also present	Coarse siltstone fragments, mineralogically similar to sandstone fragments, except for the presence of a more developed brownish matrix of mud or on rare occasions of carbonate mud	Claystone fragments made up of microcrystalline brownish muscovite-illite groundmass with disseminated very small grains of quartz, possible feldspars and carbonate as well as patches of kaolinite; anhedral to framboidal pyrite and aligned seams of carbonaceous matter throughout fragments	Fragments of cryptocrystalline carbonate with disseminated anhedral to framboidal pyrite	Subangular fragments, textureless or cell-textured, associated with pyrite	n/a	Colourless to cloudy and weakly coloured carbonate occurring as 1) disseminated anhedral grains in sandstone and siltstone fragments, 2) cryptocrystalline grains in carbonate mudstone fragments and 3) cryptocrystalline cement in rare siltstone fragments	Disseminated seams in all siltstone/claystone fragments and less commonly in sandstone fragments	Frambooids and anhedral grains (2-100 µm in size) disseminated in sandstone, claystone, siltstone, carbonate mudstone and carbonaceous matter fragments; also as microveinlets in fragments of carbonaceous matter and as subangular liberated grains	Some patches (20-100 µm in size) present in sandstone fragments	n/a	n/a
2	MRC RX 03	Very fine-grained sandstone, made up of quartz, feldspars and lesser disseminated grains of carbonate and microcrystalline patches of chlorite or kaolinite; zircon, amphibole and rutile also scattered in fragments; interstitial patches of mud between mineral grains common in fragments; weakly developed matrix of carbonate mud observed in few fragments	n/a	Claystone fragments made up of microcrystalline brownish muscovite-illite groundmass with disseminated grains of quartz, carbonate, muscovite and possible feldspars of variable sizes; aligned seams of carbonaceous matter throughout fragments	n/a	Subangular fragments, textureless or cell-textured, rarely associated with pyrite	Fragments of micro-to cryptocrystalline quartz with disseminated muscovite and pyrite	Colourless to cloudy and weakly coloured carbonate occurring as disseminated anhedral grains in sandstone and siltstone fragments and as local cryptocrystalline cement in sandstone fragments	Disseminated seams in claystone fragments and very rarely in sandstone fragments	Pyrite (2-150 µm in size) framboids and anhedral grains essentially disseminated in claystone fragments and only locally in sandstone fragments and chert fragments; also as elongated cluters in fragments of carbonaceous matter	n/a	One subangular liberated grain, 25 µm in size	n/a
3	MRC RX 05	Very fine-grained sandstone fragments, made up of quartz, feldspars and lesser microcrystalline patches of kaolinite; rutile also scattered in fragments; interstitial patches of mud between mineral grains common in fragments	Rare coarse-grained siltstone fragments, made up of quartz, feldspars and lesser microcrystalline patches of kaolinite; rutile also scattered in fragments; interstitial patches of mud and carbonaceous matter between mineral grains common in fragments; carbonate grains locally present	Claystone fragments made up of a micro-to cryptocrystalline brownish to black groundmass with scattered cryptocrystalline undetermined mineral grains; aligned seams of carbonaceous matter and anhedral to subhedral pyrite throughout fragments as well as local carbonate veinlets	Few fragments of cryptocrystalline carbonate with disseminated anhedral to framboidal pyrite and aligned seams of carbonaceous matter	n/a	n/a	Colourless to weakly coloured grains in veinlets in claystone fragments; Cloudy to reddish very small grains scattered in siltstone fragments; also extremely fine-grained, associated with pyrite and seams of carbonaceous matter in carbonate mudstone fragments	Seams and anhedral masses in fragments	Anhedral to subhedral grains (1-50 µm in size) and clusters up to 250 µm in size disseminated in fragments; rare liberated grains and clusters	Pervasive vermicular marcasite fragment, 3.5 mm long with disseminated anhedral to framboidal pyrite	n/a	? Rims around individual pyrite grains in a liberated pyrite mass
4	MRC RX 08	Rare very fine-grained sandstone fragments, made up of quartz, feldspars and lesser carbonate and microcrystalline patches of kaolinite; rutile also scattered in fragments; interstitial patches of mud between mineral grains common in fragments	Coarse-grained siltstone fragments, made up of quartz, muscovite, lesser feldspars and microcrystalline patches of kaolinite in a variably developed undetermined brown groundmass; rutile and carbonaceous matter also scattered in fragments; few carbonate veinlets	Fragments made up of a cryptocrystalline brownish to black groundmass with rare scattered mineral grains including quartz, muscovite sheaves and rare carbonate; aligned seams of carbonaceous matter and anhedral to subhedral pyrite throughout fragments as well as local carbonate veinlets	Few small fragments made up of colourless to brownish cryptocrystalline carbonate	Two subangular fragments including one with carbonate veinlets	n/a	Small anhedral grains set in sandstone and siltstone fragments; veinlets in fragments of carbonaceous matter and siltstone	Subhedral fragments and seams in sandstone, siltstone and claystone fragments	Anhedral to subhedral grains and framboids (1-150 µm in size) and clusters up to 300 µm in size disseminated in fragments; rare liberated grains and clusters	n/a	n/a	n/a
5	MRC RX 11	Very fine-grained sandstone, made up of quartz, feldspars, lesser disseminated grains of carbonate and microcrystalline patches of chlorite or kaolinite; zircon, muscovite and rutile also scattered in fragments; interstitial patches of mud between mineral grains in fragments, locally hosting pyrite	n/a	Fragments made up of a cryptocrystalline brownish groundmass with scattered microcrystalline mineral grains including quartz, carbonate and muscovite sheaves; aligned seams of carbonaceous matter and anhedral to subhedral pyrite throughout fragments as well as local carbonate veinlets	Two fragments of cryptocrystalline carbonate mudstone containing small disseminated quartz grains, rounded radial arsenopyrite and rare seams of carbonaceous matter	n/a	n/a	Colourless to weakly coloured grains in sandstone fragments; Cryptocrystalline groundmass of carbonate mudstone fragments; liberated grains	Seams and anhedral masses in fragments	Anhedral to subhedral grains and clusters (1-300 µm in size) disseminated in sandstone and claystone fragments; rare liberated grains and clusters	Few corroded masses (10-100 µm in size) in fragments of claystone	Radiating rounded grains (5-400 µm in size) and ribbons set in fragments of carbonate mudstone and rare sandstone; on one occasion, radiating rim around pyrite	n/a
6	MRC RX 13	n/a	Fragments of coarse-grained possible calcareous siltstone, essentially made up of grains of quartz, colourless carbonate, rare disseminated muscovite sheaves and rutile set in a variably developed pale brown carbonate cement; Patches of dark brown microcrystalline mud, seams of carbonaceous matter and pyrite throughout fragments	Fragments made up of a cryptocrystalline brownish groundmass with scattered undetermined mineral grains; seams of carbonaceous matter and anhedral to subhedral pyrite throughout fragments as well	One large fragment of carbonate mudstone, made up by cryptocrystalline carbonate	n/a	n/a	Micro- to cryptocrystalline colourless to brownish carbonate grains in carbonate mudstone and calcareous siltstone fragments; presence in claystone unconfirmed	Seams and anhedral masses in siltstone and claystone fragments; locally associated with pyrite	Anhedral to subhedral grains (2-2500 µm in size) and clusters either set in calcareous siltstone fragments (essentially) or liberated; commonly intergrown or attached with arsenopyrite; on one occasion with a corona of arsenopyrite	Anhedral masses, 10-20 µm in size in a carbonate mudstone fragments	Anhedral to rounded radiating grains (5-200 µm in size) in siltstone fragments, attachments to pyrite or coronas around pyrite	n/a
7	MRC RX 16	n/a	Coarse siltstone fragments made up of subangular grains of quartz essentially with rare disseminated muscovite, rutile, zircon and micro- to cryptocrystalline clusters of kaolinite? or chlorite set in a variably developed brownish matrix	Claystone fragments made up of a cryptocrystalline brownish groundmass with disseminated small to very small grains of quartz, rutile, and undetermined cryptocrystalline clusters, disseminated anhedral to framboidal pyrite and aligned seams of carbonaceous matter throughout fragments	Few small fragments made up of colourless to brownish cryptocrystalline carbonate	n/a	n/a	Cryptocrystalline colourless to brownish grains in a fragment of carbonate mud and in few patches in siltstone fragments	Few seams and anhedral masses in siltstone and claystone fragments, locally associated with pyrite	Anhedral to subhedral grains and framboids (1-60 µm in size) and clusters up to 100 µm in size in all types of fragments; also as liberated subangular grains, with on one occasion an attachment of arsenopyrite	Anhedral masses, 10-30 µm in size in siltstone fragments	One subangular liberated grain, 40 µm in size and one attachment to a liberated pyrite grain	One subangular liberated grain 75 µm in size
8	MRC RX 18	fragments of fine-grained or very fine-grained sandstone, made up of quartz, feldspars, clusters of cryptocrystalline quartz or kaolinite, muscovite, biotite and chlorite sheaves, rutile and zircon cemented by colourless carbonate or by quartz	Coarse siltstone fragments, similar in mineralogy to sandstone fragments except for the presence of a variably developed brownish groundmass of mud at the expense of quartz or carbonate cement	Claystone fragments made up of a cryptocrystalline brownish groundmass with disseminated small to very small grains of quartz, colourless carbonate, rutile, and undetermined cryptocrystalline clusters, disseminated anhedral to framboidal pyrite and aligned seams of carbonaceous matter throughout fragments	n/a	n/a	n/a	Fine- to very fine-grained anhedral colourless grains set in all types of fragments; in sandstone fragments also as interstitial cement	Rare seams in claystone and siltstone fragments	Anhedral to subhedral grains and framboids (1-150 µm in size) and clusters up to 100 µm in size, in all types of fragments; also as rare liberated masses	n/a	Clusters (40-80 µm in size) of subhedral grains in a sandstone fragment	n/a
9	MRC RX 19	n/a	Coarse siltstone fragments made up of subangular grains of quartz, feldspars, muscovite, rutile, zircon and micro- to cryptocrystalline clusters of kaolinite, quartz or chlorite set in a variably developed brownish matrix of mud, locally with attachments and laminae of sandstone	Claystone fragments made up of microcrystalline brownish muscovite-illite groundmass with disseminated very small undetermined grains (?quartz), disseminated anhedral to framboidal pyrite and aligned seams of carbonaceous matter throughout fragments	n/a	n/a	n/a	n/a	Rare seams in claystone and siltstone fragments	Anhedral to subhedral grains and framboids (1-50 µm in size), clusters and anhedral masses up to 200 µm in size, rarely cemented by arsenopyrite in claystone and siltstone fragments; also as rare liberated grains and clusters and as thin laminae in siltstone fragments	n/a	n/a	n/a

## APPENDIX A-2: MODAL ABUNDANCE ESTIMATES OF MINERALs AND LITHIC FRAGMENTS

MSC Sample Number	Rescan Sample Name	Quartz (%)	Feldspars (%)	Muscovite (%)	Groundmass (%)	Chlorite (%)	Biotite (%)	Amphibole (%)	Rutile (%)	Kaolinite (%)	Carbonate (%)	Pyrite (%)	Marcasite (%)	Arsenopyrite (%)	Pyrrhotite (tr)	Zircon (%)	Carbonaceous matter (%)
1	MRC RX 01	30	20	tr	25	1	0	tr	tr	5	10	1	tr	0	0	tr	5
2	MRC RX 03	40	20-25	1	20-25	tr	0	tr	tr-1	3	2	1	0	tr	0	tr	5
3	MRC RX 05	5?	0	tr	60	tr	0	tr	tr	2	1	2	tr	0	tr	0	10
4	MRC RX 08	10	0	5	65	0	0	0	tr	5	2	2	0	0	0	tr	10
5	MRC RX 11	35	20	5	15	tr	0	0	tr	10	10	tr-1	tr	tr-1	0	tr	1
6	MRC RX 13	15?	0	?3	40	0	0	0	tr	0	50	tr	tr	tr	0	?	tr
7	MRC RX 16	30	10	3	40	2	0	0	1	10	1	<2	tr	tr	tr	tr	tr
8	MRC RX 18	35?	10	5	35	tr	tr	0	tr	?10	3	1	0	tr	0	tr	tr
9	MRC RX 19	20	10	2	50	1	0	0	1	10	0	2	0	tr	0	tr	3

MSC Sample Number	Rescan Sample Name	Sandstone (%)	Siltstone (%)	Mudstone (%)	Carbonate mudstone (%)	Carbonaceous matter (%)	Chert (%)
1	MRC RX 01	60	5	25	5	5	0
2	MRC RX 03	70	0	20	0	5	5
3	MRC RX 05	2	2	65	20	10	0
4	MRC RX 08	tr	20	75-80	tr	tr	0
5	MRC RX 11	75	0	15	10	0	0
6	MRC RX 13	0	50	45	5	0	0
7	MRC RX 16	0	95	4-5	tr	0	0
8	MRC RX 18	5	45	50	0	0	0
9	MRC RX 19	0	85	15	0	0	0

## **APPENDIX B: PHOTOMICROGRAPHS**

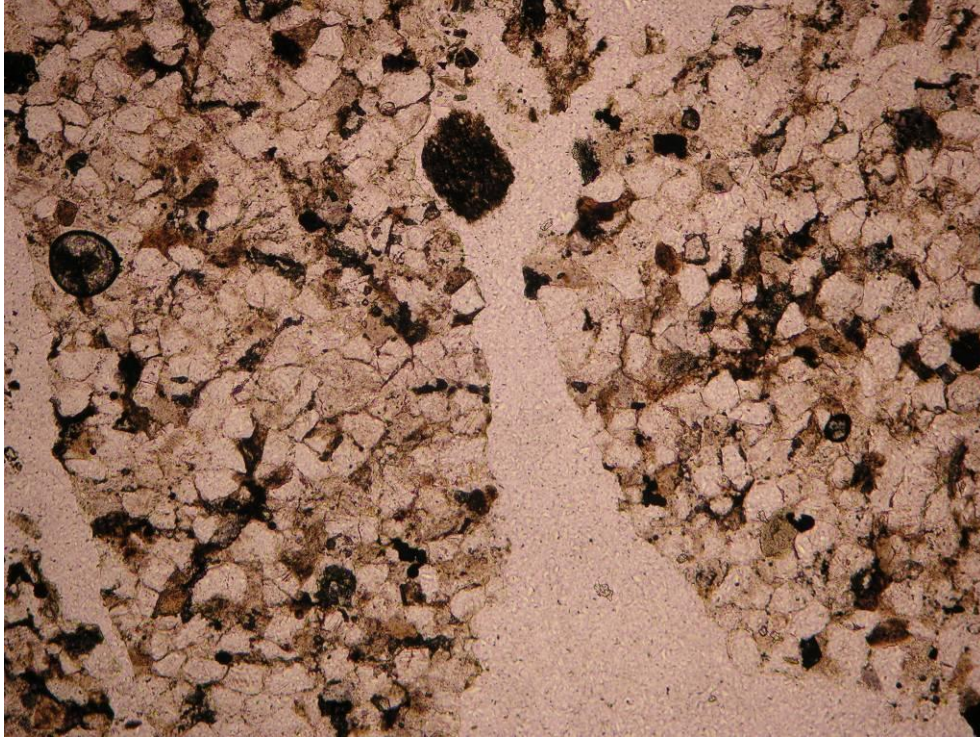
*List of abbreviations used in the description of photomicrographs:*

*FOV: Field of view – defined for the long dimension of photomicrographs*

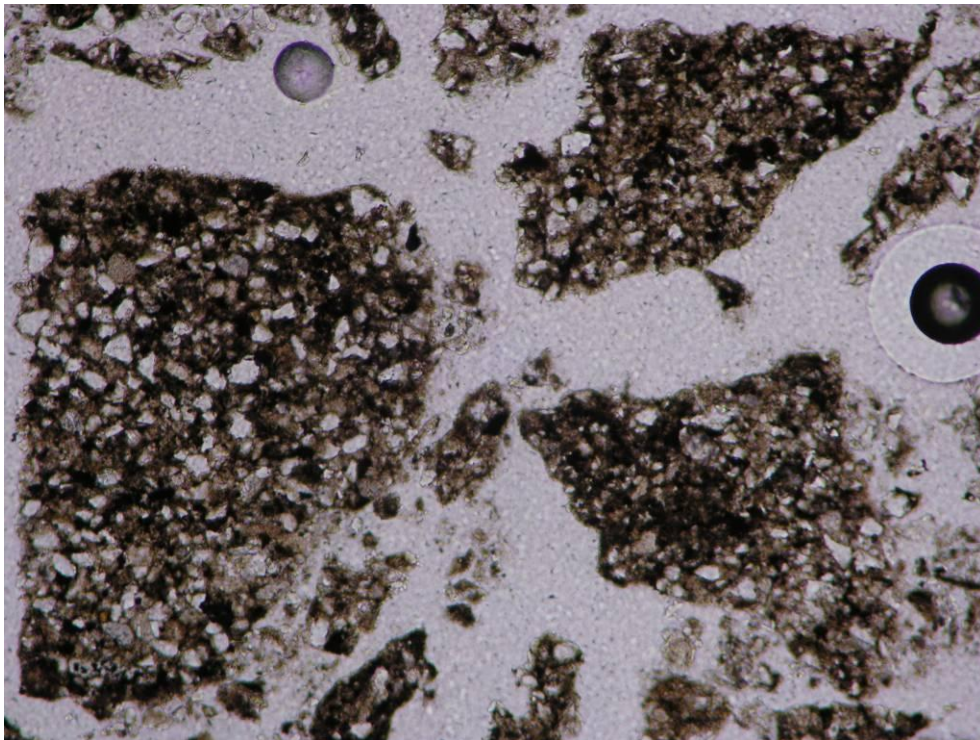
*PPL: Plane polarized light*

*XPL: Crossed polars*

*RL: Reflected light*

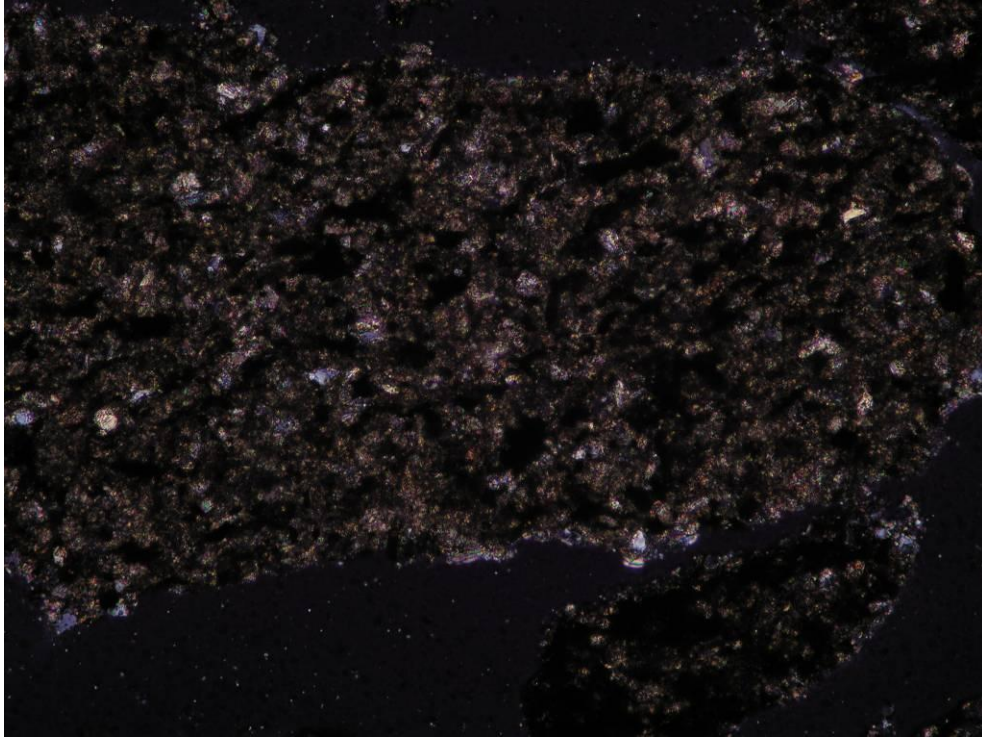


**Figure 1:** Photomicrograph of sample 5 showing fragments of very fine-grained sandstone. PPL, FOV = ~ 2.7 mm.



**Figure 2:** Photomicrograph of sample 7 showing fragments of coarse-grained siltstone. PPL, FOV = ~ 2.7 mm.





**Figure 3:** Photomicrograph of sample 6 showing a fragment of calcareous siltstone. Note the abundance of carbonate (high birefringence colours). PPL, FOV = ~ 1.4 mm.



**Figure 4:** Photomicrograph of a claystone fragment in sample 4. No gangue mineral grain is recognized in this particular fragment. PPL, FOV = ~ 2.7 mm.



**Figure 5:** Photomicrograph of a fragment of chert in sample 2. The fragment essentially consists of micro- to cryptocrystalline quartz. XPL, FOV = ~ 1.4 mm.

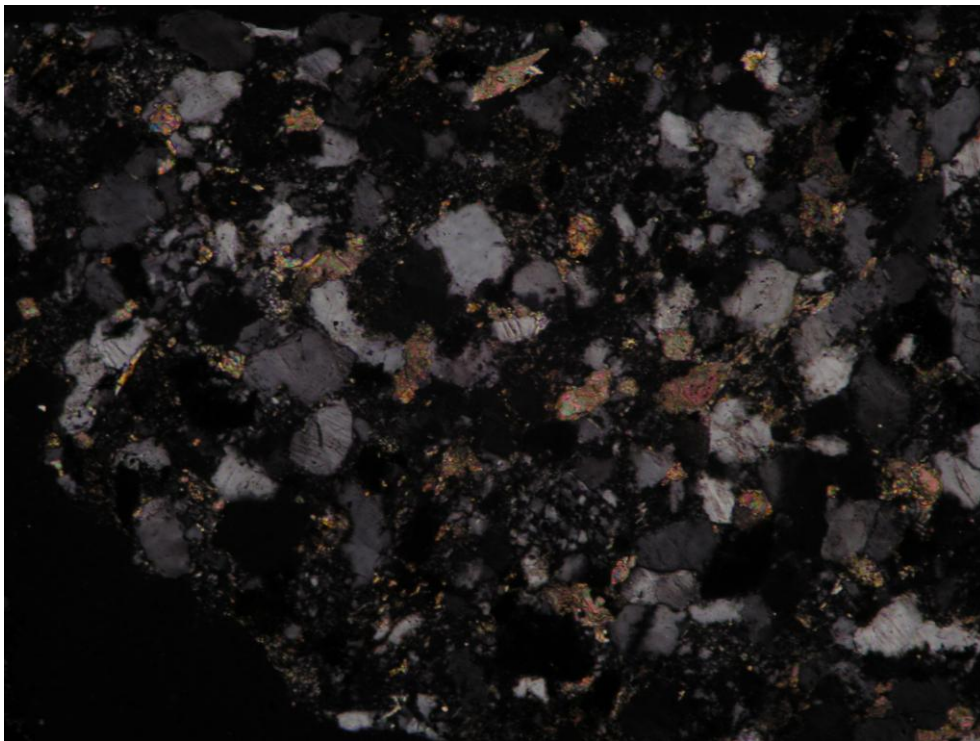


**Figure 6:** Photomicrograph of a carbonate mud fragment in sample 5. Quartz grains and masses and framboids of sulphides occur in a dark brown groundmass of carbonate that is characterised by a high relief. The carbonate is colourless on the thinnest edges of the fragments. PPL, FOV = ~ 2.7 mm.

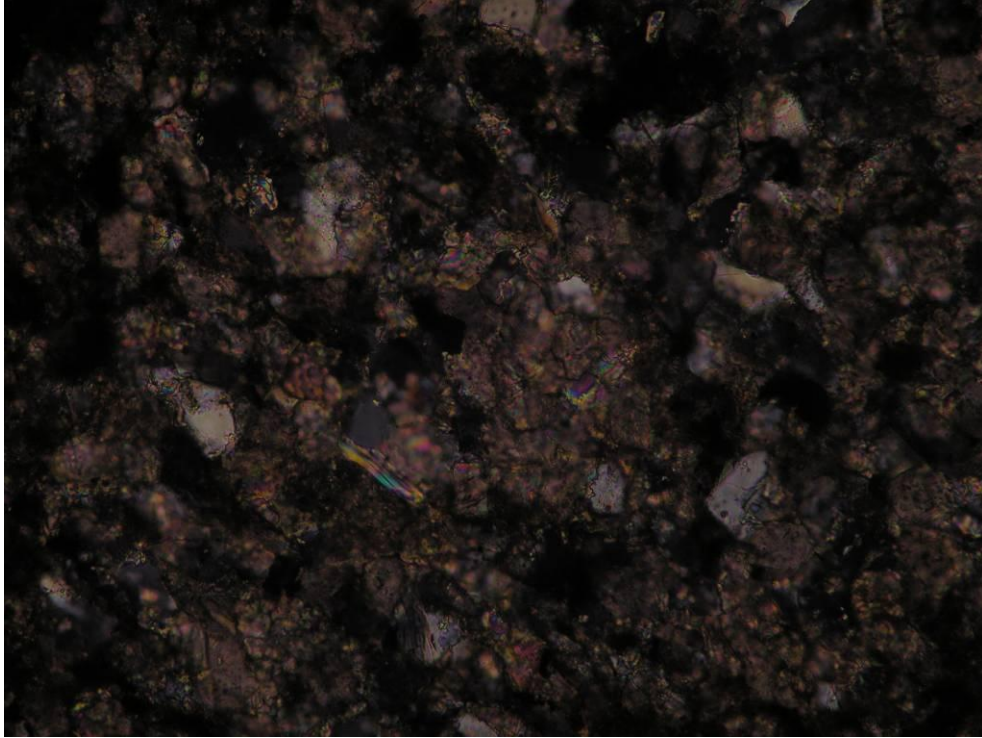




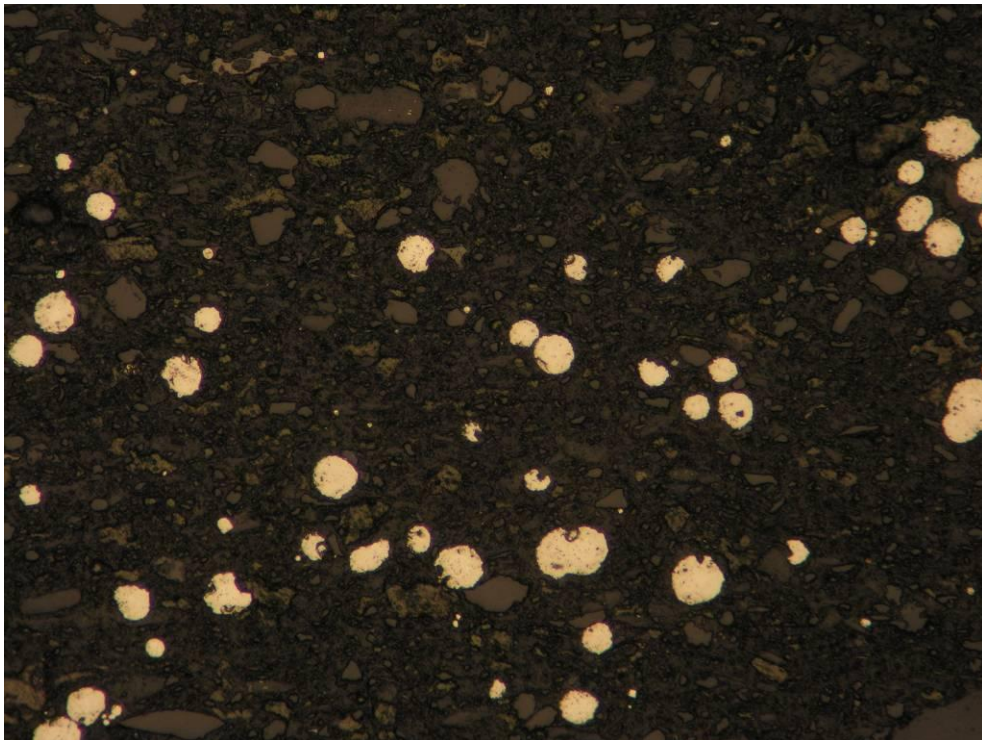
**Figure 7:** Photomicrograph of sample 1 showing the occurrence of a greenish fragment of carbonaceous matter containing anhedral to framboidal pyrite. RL, FOV = ~ 2.7 mm.



**Figure 8:** Photomicrograph of sample 1 showing the occurrence of carbonate grains in a sandstone fragment. XPL, FOV = ~ 1.4 mm.

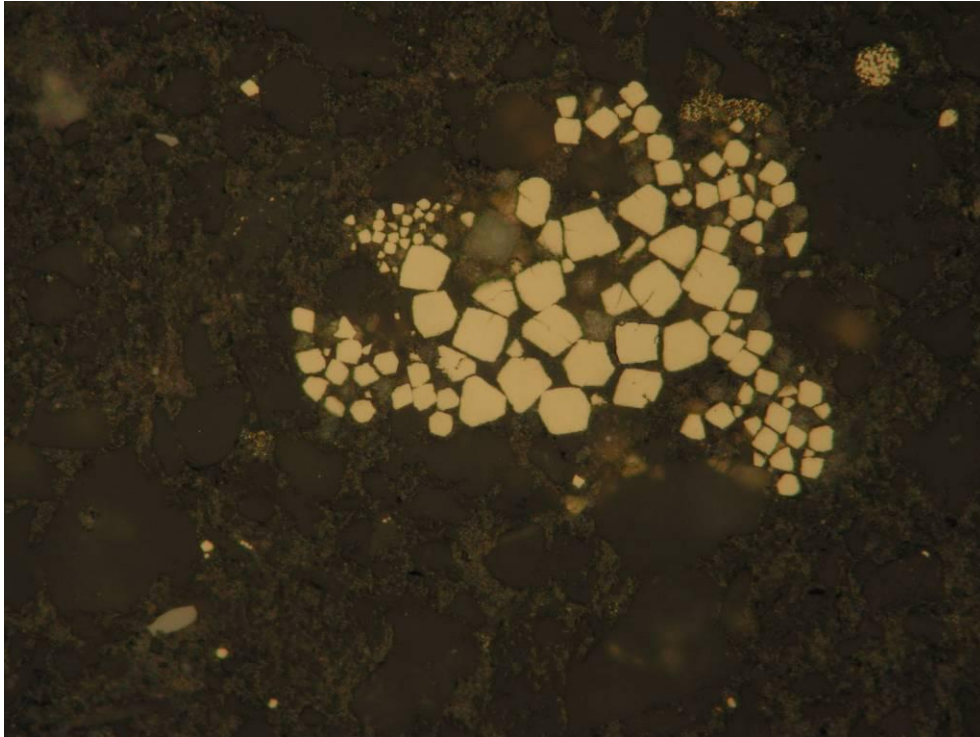


**Figure 9:** Photomicrograph of sample 6 showing a fragment of calcareous siltstone in which grains of quartz are set in a carbonate cement. XPL, FOV = ~ 0.7 mm.

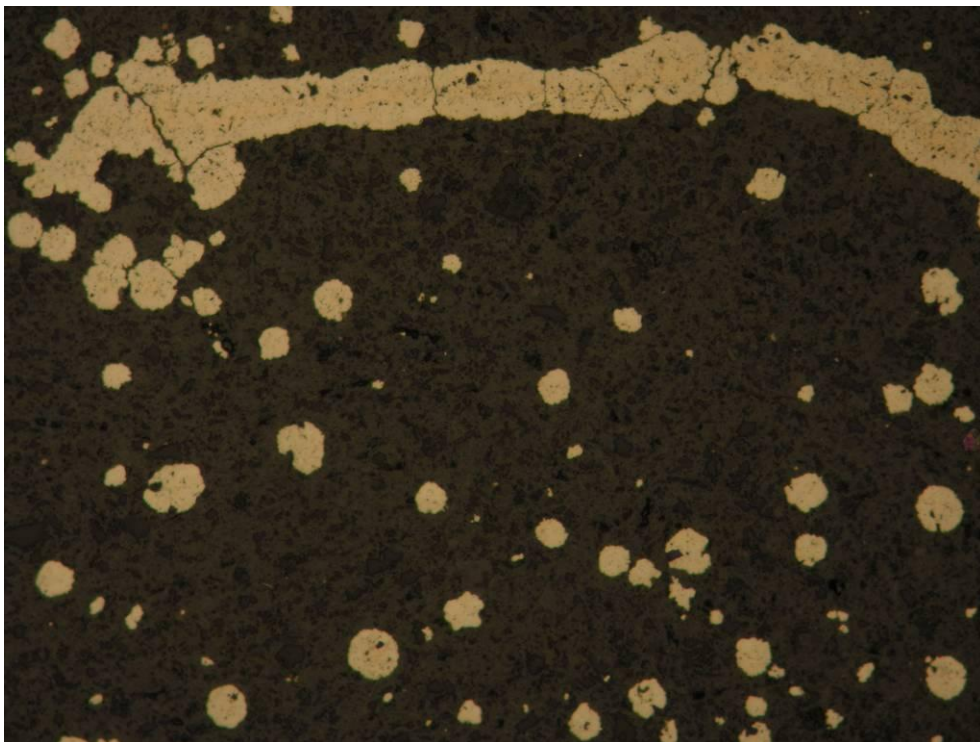


**Figure 10:** Photomicrograph of sample 4 showing disseminated pyrite framboids in a siltstone fragment. RL, FOV = ~ 0.7 mm.

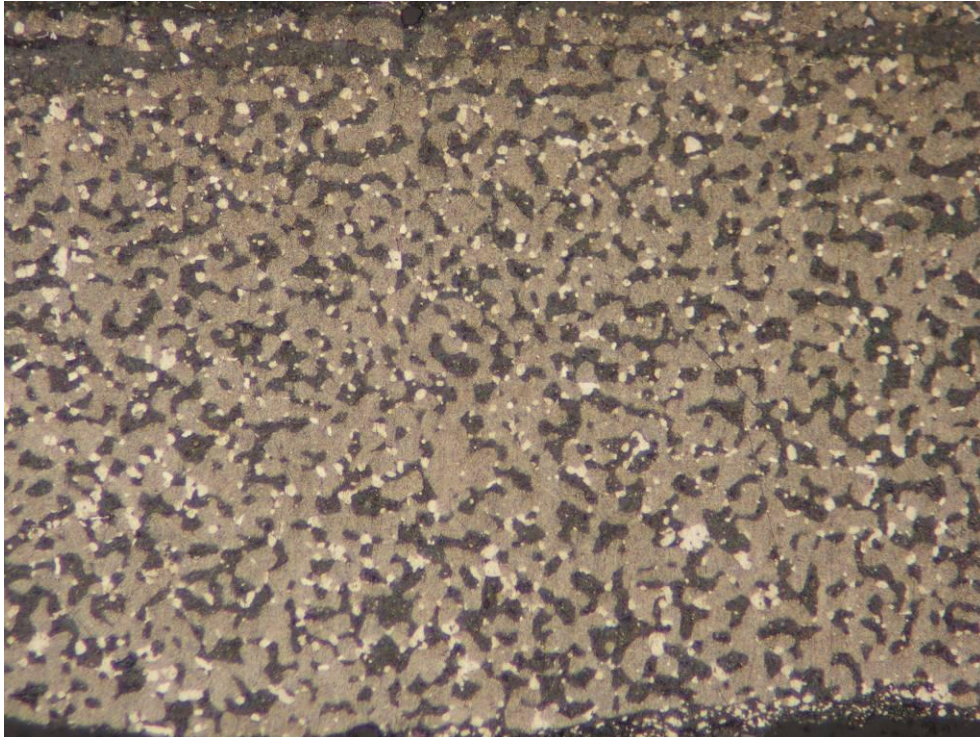




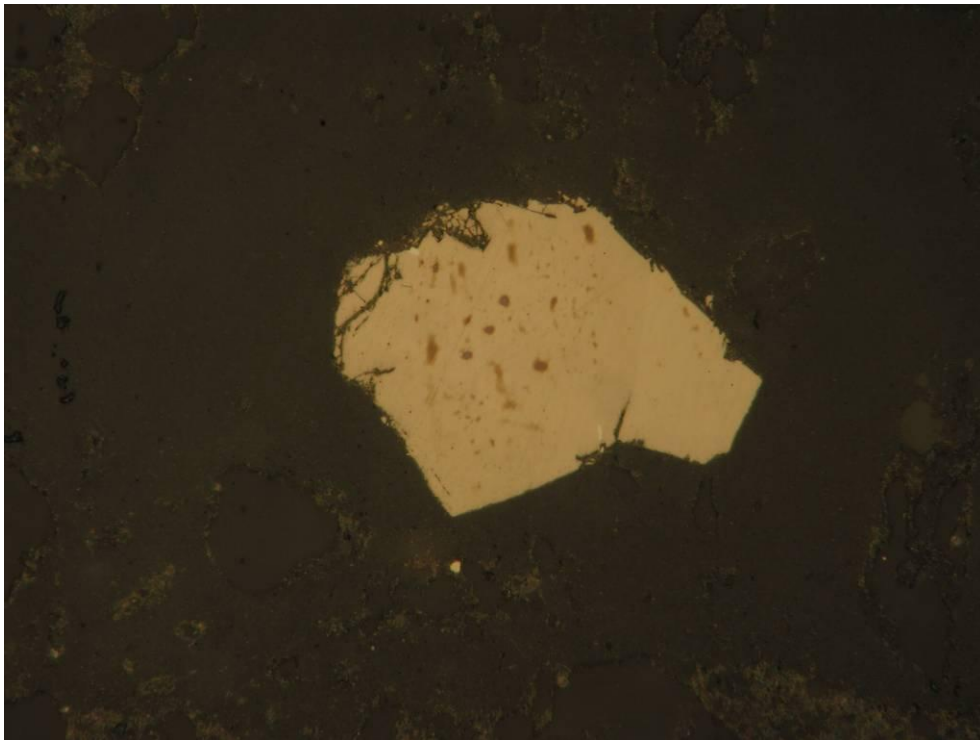
**Figure 11:** Photomicrograph of sample 9 showing a cluster of subhedral pyrite grains in a siltstone fragment. RL, FOV = ~ 0.7 mm.



**Figure 12:** Photomicrograph of sample 5 showing disseminated spherules of arsenopyrite and ribbons of pyrite rimmed by arsenopyrite (slightly bluish tint) in a fragment of carbonate mudstone. RL, FOV = ~ 1.4 mm.



**Figure 13:** Photomicrograph of sample 3 showing a fragment of vermicular marcasite (pale brown) and disseminated anhedral grains of pyrite. RL, FOV = ~ 0.7 mm.



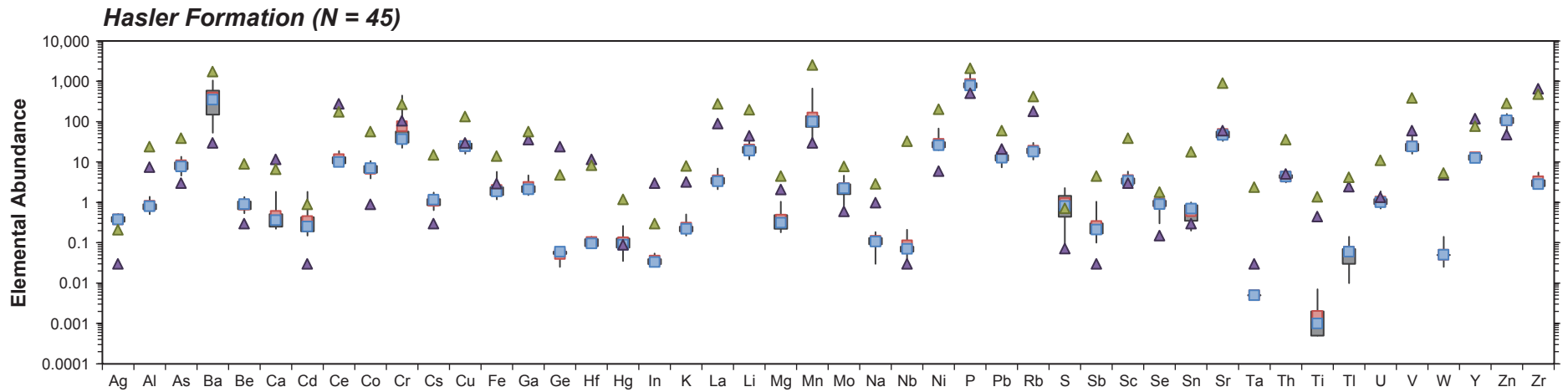
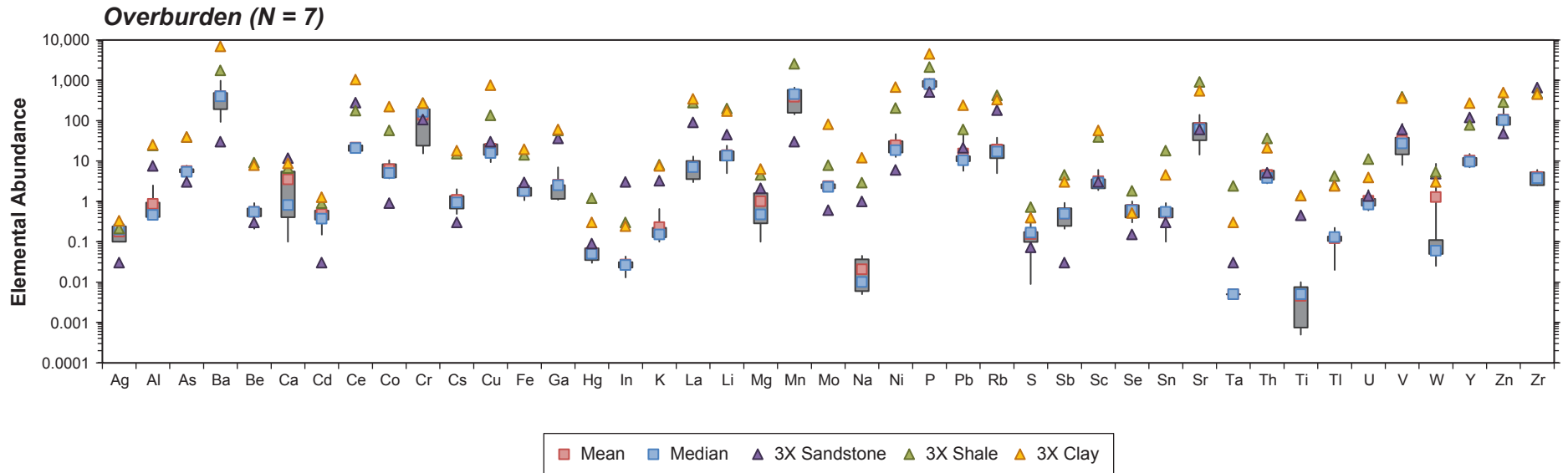
**Figure 14:** Photomicrograph of sample 7 showing a liberated subangular grain of pyrrhotite. RL, FOV = ~ 0.28 mm.

## Appendix 3

### Overburden and Waste Rock Elemental Abundance Statistical Summary Figures

Figure A3-1

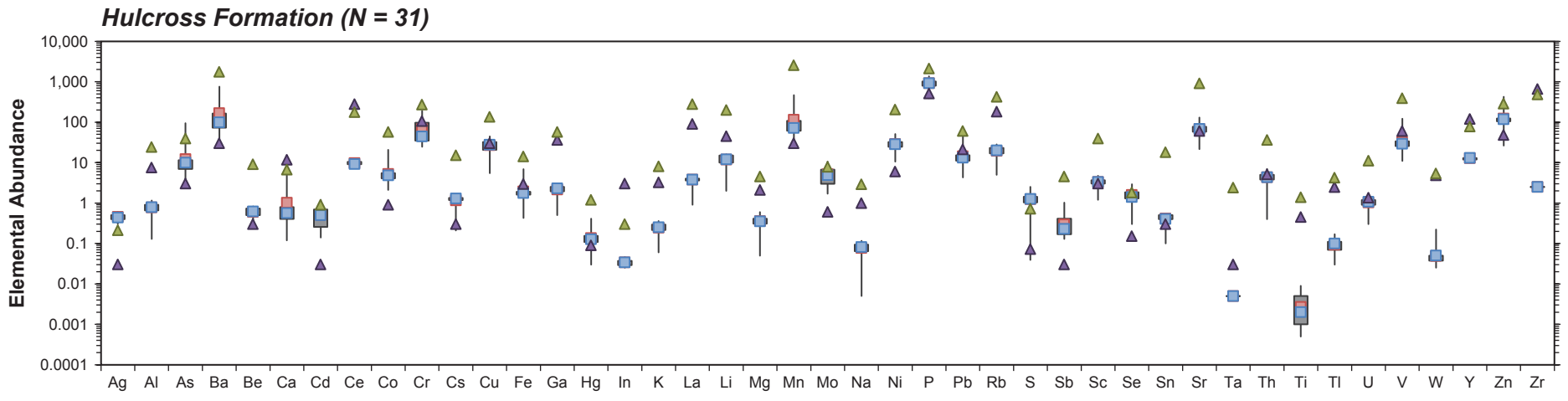
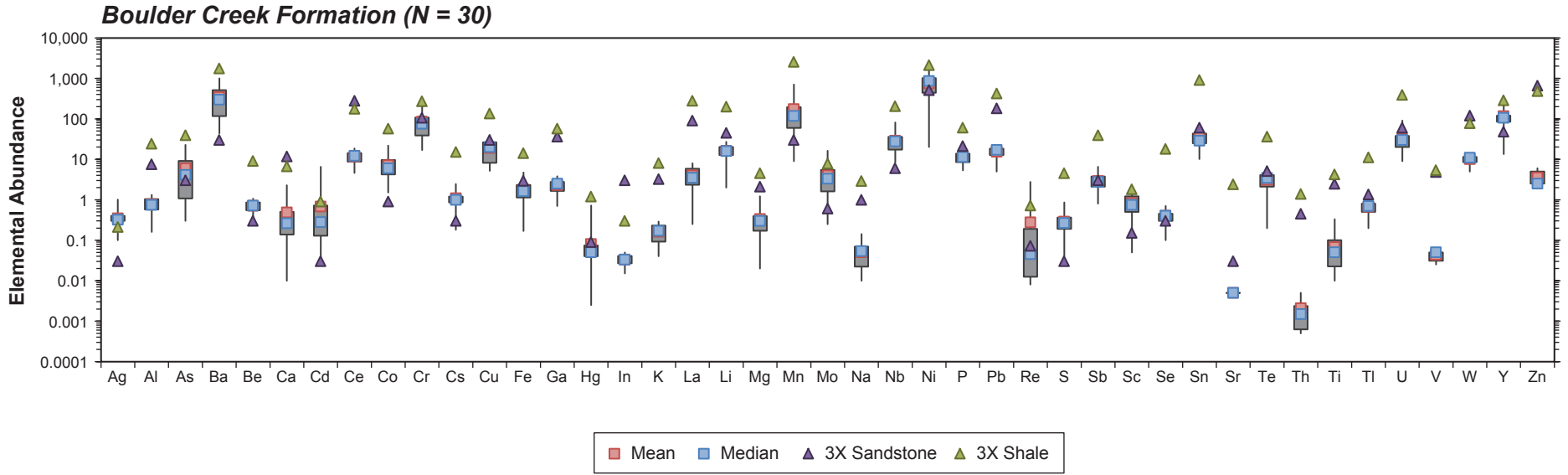
Statistical Summary of Elemental Abundance for Overburden and Hasler Formation Waste Rock Samples



Note: 25th to 75th percentile is represented by the shaded box.

Figure A3-2

Statistical Summary of Elemental Abundance for Boulder Creek and Hulcross Formation Waste Rock Samples

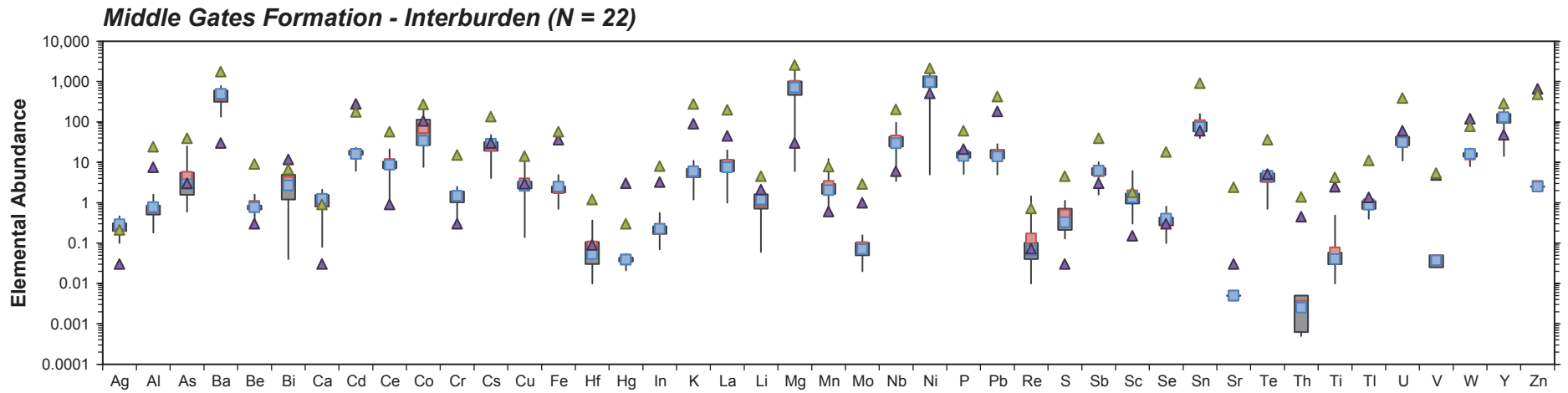
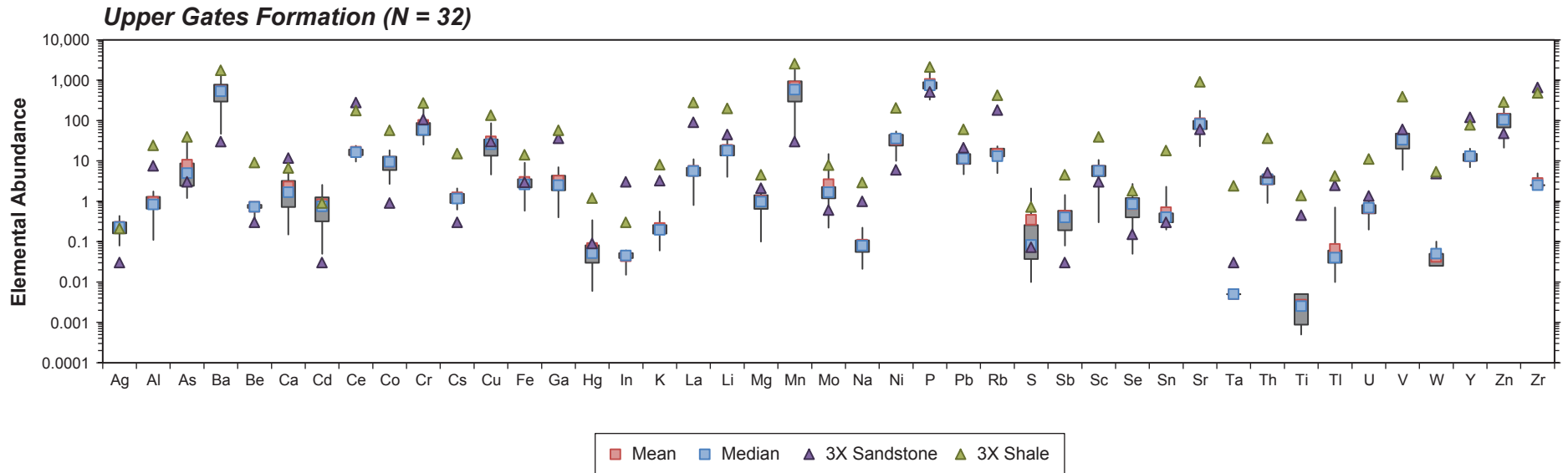


Note: 25th to 75th percentile is represented by the shaded box.



Figure A3-3

Statistical Summary of Elemental Abundance for Gates Formation Waste Rock Samples



Note: 25th to 75th percentile is represented by the shaded box.

## Appendix 4

### Overburden and Waste Rock Leachate Results

Appendix 4. Overburden and Waste Rock Leachate Results

Sample ID	Sample Description	Formation	Description	Lithology	Alkalinity CaCO <sub>3</sub>	pH	EC	Hardness	Ag	Al <sup>1</sup>	As <sup>2</sup>	B <sup>2</sup>	Ba	Be	Bi	Ca	Cd <sup>2</sup>	Ce	Co
					mg/L	pH Units	µS/cm	CaCO <sub>3</sub> mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2128210	P2R11-15	Overburden	till	clay	114	8.13	350	108	<0.0002	0.059	0.015	0.11	0.073	<0.001	<0.001	23.8	<0.0002	<0.005	<0.001
2128211	P2R11-16	Overburden	till	clay	79	8.15	298	112	<0.0002	0.634	0.014	0.09	0.061	<0.001	<0.001	23.1	<0.0002	<0.005	<0.001
2128212	P2R11-17	Overburden	till	gravelly sandy soil	4	6.31	26	8.3	<0.0002	5.79	0.013	0.06	0.061	<0.001	<0.001	1.42	<0.0002	0.007	0.003
2128213	P2R11-18	Overburden	till	sansicl	95	8.09	209	78.0	<0.0002	0.06	0.011	<0.05	0.077	<0.001	<0.001	18.7	<0.0002	<0.005	<0.001
2128169	P2C20-1	Hasler	Upper Hasler	Siltstone	144	7.92	362	4.7	<0.0002	2.07	0.018	0.16	0.131	<0.001	<0.001	0.51	<0.0002	<0.005	<0.001
2128170	P2C20-2	Hasler	Middle Hasler	Siltstone	144	8.03	319	6.0	<0.0002	1.06	0.028	0.15	0.108	<0.001	<0.001	0.73	<0.0002	<0.005	<0.001
2128171	P2C20-3	Hasler	Middle Hasler	Siltstone	100	7.94	300	0.8	0.0002	1.29	0.048	0.2	0.067	<0.001	<0.001	<0.05	<0.0002	<0.005	<0.001
2128172	P2C20-4	Hasler	Lower Hasler	Siltstone	98	7.88	290	0.9	<0.0002	1.45	0.052	0.15	0.059	<0.001	<0.001	<0.05	<0.0002	<0.005	<0.001
2128196	P2R11-1	Hasler	Lower Hasler	Mudstone	75	7.93	207	9.6	<0.0002	0.062	0.017	0.14	0.343	<0.001	<0.001	1.53	<0.0002	<0.005	<0.001
2128173	P2C20-5	Boulder Creek	Upper Boulder Creek	Mudstone	77	7.79	160	0.8	<0.0002	2.41	0.022	0.13	0.048	<0.001	<0.001	<0.05	<0.0002	<0.005	<0.001
2128174	P2C20-6	Boulder Creek	Middle Boulder Creek	Sandstone	28	7.25	145	0.8	<0.0002	2.09	0.073	0.13	0.048	<0.001	<0.001	<0.05	<0.0002	<0.005	0.001
2128175	P2C20-7	Boulder Creek	Middle Boulder Creek	Sandstone	122	7.98	283	2.0	<0.0002	0.642	0.055	0.11	0.122	<0.001	<0.001	0.29	<0.0002	<0.005	<0.001
2128176	P2C20-8	Boulder Creek	Lower Boulder Creek	Mudstone	172	8.15	404	8.2	<0.0002	0.275	0.022	0.14	0.252	<0.001	<0.001	1.35	<0.0002	<0.005	<0.001
2128197	P2R11-2	Boulder Creek	Middle Boulder Creek	Siltstone	106	8.12	212	20.0	<0.0002	1.52	0.019	0.07	0.39	<0.001	<0.001	4.26	<0.0002	<0.005	<0.001
2128214	P2C26-1	Boulder Creek	Middle Boulder Creek	Mudstone	91	8.23	176	10.5	<0.0002	27.7	0.015	0.13	0.53	<0.001	<0.001	0.2	<0.0002	0.007	<0.001
2128225	P2R18-1	Boulder Creek	Upper Boulder Creek	Siltstone	92	8.17	269	4.3	<0.0002	0.124	0.016	0.17	0.246	<0.001	<0.001	0.6	<0.0002	<0.005	<0.001
2128186	P2R12-1	Hulcross	Middle Hulcross	Mudstone	172	8.25	416	3.2	<0.0002	0.733	0.039	0.16	0.145	<0.001	<0.001	0.47	<0.0002	<0.005	<0.001
2128187	P2R12-2	Hulcross	Lower Hulcross	Siltstone	192	8.30	476	13.8	<0.0002	0.125	0.021	0.16	0.364	<0.001	<0.001	2.33	<0.0002	<0.005	<0.001
2128198	P2R11-3	Hulcross	Upper Hulcross	Sandstone	25	7.50	141	5.6	0.0002	0.023	0.013	0.08	0.066	<0.001	<0.001	0.73	<0.0002	<0.005	0.004
2128199	P2R11-4	Hulcross	Upper Hulcross	Mudstone	185	8.40	438	9.6	0.0030	0.181	0.029	0.15	0.591	<0.001	<0.001	2.69	<0.0002	<0.005	<0.001
2128200	P2R11-5	Hulcross	Lower Hulcross	Mudstone	140	8.28	350	5.3	0.0008	0.198	0.038	0.15	0.19	<0.001	<0.001	0.92	<0.0002	<0.005	<0.001
2128215	P2C26-2	Hulcross	Upper Hulcross	Mudstone	113	8.24	326	4.4	<0.0002	5.33	0.027	0.14	0.37	<0.001	<0.001	0.35	<0.0002	<0.005	<0.001
2128216	P2C26-3	Hulcross	Lower Hulcross	Mudstone	155	8.76	396	5.9	<0.0002	1.2	0.031	0.15	0.32	<0.001	<0.001	0.91	<0.0002	<0.005	<0.001
2128226	P2R18-2	Hulcross	Upper Hulcross	Mudstone	129	8.18	388	4.9	<0.0002	0.524	0.023	0.11	0.355	<0.001	<0.001	1.07	<0.0002	<0.005	<0.001
2128227	P2R18-3	Hulcross	Lower Hulcross	Mudstone	150	8.29	431	10.0	<0.0002	1.95	0.023	0.12	0.675	<0.001	<0.001	1.98	<0.0002	<0.005	<0.001
2128177	P2C20-9	Upper Gates	Top B	Mudstone	221	8.37	428	18.0	<0.0002	0.296	0.015	0.11	0.263	<0.001	<0.001	3.63	<0.0002	<0.005	<0.001
2128178	P2C20-10	Upper Gates	C to D	Siltstone	308	8.71	572	3.4	<0.0002	7.78	0.028	0.06	0.269	<0.001	<0.001	0.2	<0.0002	<0.005	<0.001
2128188	P2R12-3	Upper Gates	A to B	Mudstone	267	8.54	499	11.4	<0.0002	0.285	0.022	0.11	0.286	<0.001	<0.001	2.58	<0.0002	<0.005	<0.001
2128189	P2R12-4	Upper Gates	B to C	Siltstone	230	8.49	442	4.2	<0.0002	0.926	0.017	0.09	0.088	<0.001	<0.001	0.57	<0.0002	<0.005	<0.001
2128190	P2R12-5	Upper Gates	C to D	Fine Sandstone	204	8.33	434	23.1	<0.0002	0.118	0.028	0.08	0.332	<0.001	<0.001	4.05	<0.0002	<0.005	<0.001
2128201	P2R11-6	Upper Gates	Top B	Mudstone	194	8.51	369	8.7	<0.0002	0.424	0.017	0.12	0.178	<0.001	<0.001	1.9	<0.0002	<0.005	<0.001
2128202	P2R11-7	Upper Gates	Top C	Mudstone	161	8.39	309	18.3	0.0005	0.871	0.014	0.06	0.184	<0.001	<0.001	3.81	<0.0002	<0.005	<0.001
2128217	P2C26-4	Upper Gates	Top B	Mudstone	175	8.59	347	10.4	<0.0002	0.16	0.013	0.1	0.32	<0.001	<0.001	2.23	<0.0002	<0.005	<0.001
2128218	P2C26-5	Upper Gates	Top C	Fine Sandstone	172	8.77	315	5.5	<0.0002	16.1	0.046	0.06	0.409	<0.001	<0.001	0.25	<0.0002	<0.005	<0.001
2128228	P2R18-4	Upper Gates	A to B	Mudstone	185	8.44	366	4.8	<0.0002	0.851	0.017	0.08	0.188	<0.001	<0.001	0.84	<0.0002	<0.005	<0.001
2128229	P2R18-5	Upper Gates	C to D	Mudstone	260	8.80	503	8.7	<0.0002	18.1	0.037	0.09	0.454	<0.001	<0.001	0.78	<0.0002	<0.005	0.002
2128179	P2C20-11	Middle Gates	D to E	Mudstone	291	8.62	545	12.3	<0.0002	0.434	0.013	0.12	0.084	<0.001	<0.001	2.56	<0.0002	<0.005	<0.001
2128181	P2C20-13	Middle Gates	F to G/I	Siltstone	257	8.51	489	20.7	<0.0002	0.333	0.015	0.12	0.11	<0.001	<0.001	3.69	<0.0002	<0.005	<0.001
2128182	P2C20-14	Middle Gates	F to G/I	Sandstone	193	8.37	488	32.6	<0.0002	0.444	0.012	0.09	0.251	<0.001	<0.001	5.68	<0.0002	<0.005	<0.001
2128191	P2R12-6	Middle Gates	E to F1	Silty Mudstone	247	8.48	471	16.0	<0.0002	0.243	0.028	0.15	0.172	<0.001	<0.001	3.48	<0.0002	<0.005	<0.001
2128193	P2R12-8	Middle Gates	F to G/I	Fine Sandstone	84	7.98	267	36.0	<0.0002	1.32	0.011	<0.05	0.212	<0.001	<0.001	6.22	<0.0002	<0.005	<0.001
2128194	P2R12-9	Middle Gates	G/I to J	Siltstone	188	8.45	354	12.3	<0.0002	1.16	0.031	0.09	0.053	<0.001	<0.001	2.77	<0.0002	<0.005	<0.001
2128204	P2R11-9	Middle Gates	E to F1	Mudstone	215	8.54	410	11.8	<0.0002	3.66	0.089	0.14	0.12	<0.001	<0.001	1.76	<0.0002	<0.005	<0.001
2128205	P2R11-10	Middle Gates	F to G/I	Mudstone	191	8.51	359	9.3	<0.0002	1.92	0.016	0.07	0.226	<0.001	<0.001	1.72	<0.0002	<0.005	<0.001
2128206	P2R11-11	Middle Gates	G/I to J	Mudstone	79	8.04	160	4.8	<0.0002	15.8	0.014	0.1	0.395	<0.001	<0.001	0.18	<0.0002	<0.005	0.001
2128220	P2C26-7	Middle Gates	E to F1	Carbonaceous Mudstone	183	8.51	369	11.1	<0.0002	0.207	0.017	0.09	0.083	<0.001	<0.001	1.88	<0.0002	<0.005	<0.001
2128207	P2R11-12	Middle Gates	Top K	Siltstone	185	8.38	352	13.6	<0.0002	0.741	0.014	0.08	0.054	<0.001	<0.001	3.14	<0.0002	<0.005	<0.001
2128235	P2R18-11	Middle Gates	Top K	Mudstone	84	8.11	179	1.5	<0.0002	3.94	0.038	0.16	0.057	<0.001	<0.001	<0.05	<0.0002	<0.005	<0.001
2128185	P2C20-17	Middle Gates	Bottom K	Sandstone	81	7.94	174	0.2	<0.0002	0.127	0.021	0.07	0.003	<0.001	<0.001	<0.05	<0.0002	<0.005	<0.001
2128208	P2R11-13	Lower Gates	Below K	Mudstone	101	8.16	221	2.2	0.0139	2.64	0.040	0.13	0.044	<0.001	<0.001	0.18	<0.0002	<0.005	<0.001
2128209	P2R11-14	Lower Gates	Below K	Siltstone	104	8.16	233	4.9	<0.0002	8.95	0.044	0.14	0.173	<0.001	<0.001	0.22	0.0003	<0.005	0.001

Notes:

Blue values are calculated.

Highlighted values exceed BC MOE water quality guidelines for total metals.

Where available, concentrations were compared to chronic (30-day mean) guidelines. Where only acute (maximum) guidelines existed, concentrations were compared to acute guidelines.

< indicates sample concentration was below detection limits

<sup>1</sup> Values were compared to dissolved metal guidelines.

<sup>2</sup> Values were compared to acute guidelines.

Appendix 4. Overburden and Waste Rock Leachate Results

Sample ID	Cr mg/L	Cu mg/L	Fe <sup>1</sup> mg/L	K mg/L	La mg/L	Li mg/L	Mg mg/L	Mn mg/L	Mo mg/L	Na mg/L	Ni <sup>2</sup> mg/L	P mg/L	Pb mg/L	Sb <sup>2</sup> mg/L	Se mg/L	Si mg/L	Sn mg/L	Sr mg/L	Te mg/L	Th mg/L	Ti mg/L	Tl <sup>2</sup> mg/L	U <sup>2</sup> mg/L	V mg/L
2128210	<0.001	<0.001	<0.05	9.84	<0.005	0.007	11.9	0.059	0.0418	70.2	<0.001	<0.15	<0.001	0.007	0.013	3.3	<0.001	0.205	<0.001	<0.0005	<0.005	<0.0001	0.0046	0.021
2128211	<0.001	<0.001	0.24	11.6	<0.005	0.013	13.2	0.055	0.0398	19.5	0.003	<0.15	<0.001	0.004	0.075	6.0	<0.001	0.274	<0.001	<0.0005	0.009	<0.0001	0.0031	0.019
2128212	<0.001	<0.001	4.42	5.19	<0.005	0.004	1.17	0.108	<0.0005	1.93	0.007	0.2	<0.001	<0.001	<0.001	20.7	<0.001	0.009	<0.001	0.0025	0.096	<0.0001	0.0006	0.029
2128213	<0.001	<0.001	<0.05	8.87	<0.005	0.005	7.61	0.025	0.0063	2.99	0.002	<0.15	<0.001	<0.001	<0.001	4.0	<0.001	0.077	<0.001	<0.0005	<0.005	<0.0001	0.0007	0.016
2128169	0.001	<0.001	0.21	3.47	<0.005	0.157	0.83	0.001	0.0164	115	<0.001	<0.15	<0.001	0.005	0.014	8.1	<0.001	0.023	<0.001	<0.0005	0.026	<0.0001	0.0006	0.025
2128170	<0.001	<0.001	0.13	3.94	<0.005	0.124	1.02	<0.001	0.0356	102	<0.001	<0.15	<0.001	0.028	0.015	5.9	<0.001	0.034	<0.001	<0.0005	0.01	<0.0001	<0.0005	0.025
2128171	<0.001	<0.001	0.16	1.96	<0.005	0.057	0.17	<0.001	0.018	97.2	<0.001	<0.15	<0.001	0.022	<0.001	6.8	<0.001	0.005	<0.001	<0.0005	0.014	<0.0001	<0.0005	0.039
2128172	<0.001	<0.001	0.2	3.44	<0.005	0.048	0.21	<0.001	0.0118	87.6	<0.001	<0.15	<0.001	0.031	0.027	9.3	<0.001	0.008	<0.001	<0.0005	0.026	<0.0001	<0.0005	0.034
2128196	<0.001	<0.001	<0.05	6.03	<0.005	0.035	1.41	<0.001	0.0149	54.5	<0.001	<0.15	<0.001	0.008	<0.001	5.0	<0.001	0.078	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.022
2128173	<0.001	<0.001	0.19	1.83	<0.005	0.003	0.17	<0.001	0.0085	53	<0.001	<0.15	<0.001	0.04	0.003	12.4	<0.001	<0.005	<0.001	<0.0005	0.03	<0.0001	<0.0005	0.056
2128174	<0.001	<0.001	0.19	3.01	<0.005	0.043	0.19	<0.001	0.0672	40.2	<0.001	<0.15	<0.001	0.024	0.057	12.0	<0.001	0.006	<0.001	<0.0005	0.023	<0.0001	<0.0005	0.055
2128175	<0.001	<0.001	0.09	2.04	<0.005	0.055	0.32	<0.001	0.0243	96.2	<0.001	<0.15	<0.001	0.03	0.029	5.8	<0.001	0.026	<0.001	<0.0005	0.013	<0.0001	<0.0005	0.041
2128176	<0.001	<0.001	<0.05	3.46	<0.005	0.125	1.17	<0.001	0.0222	>10000	<0.001	<0.15	<0.001	0.01	<0.001	4.7	<0.001	0.123	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.031
2128197	<0.001	<0.001	0.3	5.93	<0.005	0.004	2.29	0.006	0.0677	53.8	<0.001	<0.15	<0.001	0.013	0.075	6.5	<0.001	0.099	<0.001	<0.0005	0.03	<0.0001	<0.0005	0.023
2128214	0.031	<0.001	3.33	12.6	<0.005	0.013	2.44	0.004	0.0117	57.7	0.005	<0.15	0.002	0.012	0.013	52.1	<0.001	0.02	<0.001	0.002	0.295	0.0004	0.0009	0.104
2128225	<0.001	<0.001	<0.05	3.57	<0.005	0.042	0.68	<0.001	0.0907	72.3	<0.001	<0.15	<0.001	0.009	0.039	3.6	<0.001	0.061	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.028
2128186	<0.001	<0.001	0.06	2.46	<0.005	0.127	0.49	<0.001	0.0385	>10000	<0.001	<0.15	<0.001	0.018	<0.001	5.6	<0.001	0.059	<0.001	<0.0005	0.01	<0.0001	<0.0005	0.035
2128187	<0.001	<0.001	<0.05	4.13	<0.005	0.082	1.95	0.001	0.0702	>10000	<0.001	<0.15	<0.001	0.011	0.067	4.5	<0.001	0.171	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.026
2128198	<0.001	<0.001	<0.05	3.73	<0.005	0.035	0.93	0.002	0.0336	34.7	0.007	<0.15	<0.001	0.007	0.065	3.4	<0.001	0.061	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.015
2128199	<0.001	<0.001	<0.05	5.71	<0.005	0.088	0.69	<0.001	0.0242	>10000	<0.001	<0.15	<0.001	0.016	0.006	4.0	<0.001	0.163	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.038
2128200	<0.001	<0.001	<0.05	3.76	<0.005	0.047	0.72	<0.001	0.0737	114	<0.001	<0.15	<0.001	0.015	<0.001	3.8	<0.001	0.078	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.036
2128215	0.003	<0.001	0.85	6.22	<0.005	0.077	0.85	0.002	0.0207	103	<0.001	<0.15	<0.001	0.012	<0.001	15.3	<0.001	0.052	<0.001	<0.0005	0.101	<0.0001	<0.0005	0.04
2128216	<0.001	<0.001	0.12	4.22	<0.005	0.105	0.89	<0.001	0.025	>10000	<0.001	<0.15	<0.001	0.011	<0.001	6.5	<0.001	0.105	<0.001	<0.0005	0.011	<0.0001	0.0006	0.041
2128226	<0.001	<0.001	0.06	4.82	<0.005	0.076	0.55	<0.001	0.0131	>10000	<0.001	<0.15	<0.001	0.007	<0.001	5.6	<0.001	0.074	<0.001	<0.0005	0.007	<0.0001	<0.0005	0.035
2128227	<0.001	<0.001	0.24	5.21	<0.005	0.117	1.23	0.001	0.0242	>10000	<0.001	<0.15	<0.001	0.007	<0.001	8.2	<0.001	0.158	<0.001	<0.0005	0.025	<0.0001	0.0006	0.036
2128177	0.002	<0.001	<0.05	5.69	<0.005	0.044	2.18	0.001	0.108	>10000	<0.001	<0.15	<0.001	0.025	0.074	3.8	<0.001	0.156	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.023
2128178	0.009	<0.001	0.86	3.91	<0.005	0.05	0.7	0.006	0.0821	>10000	<0.001	<0.15	<0.001	0.031	0.102	18.4	<0.001	0.038	<0.001	<0.0005	0.105	<0.0001	<0.0005	0.03
2128188	0.005	<0.001	<0.05	3.27	<0.005	0.013	1.21	0.003	0.0309	>10000	<0.001	<0.15	<0.001	0.04	0.139	3.4	<0.001	0.144	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.022
2128189	0.004	<0.001	0.15	3.79	<0.005	0.009	0.67	0.004	0.162	>10000	<0.001	<0.15	<0.001	0.042	0.02	5.4	<0.001	0.048	<0.001	<0.0005	0.012	<0.0001	<0.0005	0.026
2128190	0.002	<0.001	<0.05	4.06	<0.005	0.064	3.17	0.002	0.072	>10000	<0.001	<0.15	<0.001	0.023	0.107	4.0	<0.001	0.337	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.022
2128201	<0.001	<0.001	<0.05	5.24	<0.005	0.016	0.96	0.001	0.079	123	<0.001	<0.15	<0.001	0.017	0.034	3.0	<0.001	0.097	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.031
2128202	<0.001	<0.001	0.12	5.12	<0.005	0.026	2.13	0.003	0.0816	90.4	<0.001	<0.15	<0.001	0.006	0.103	3.9	<0.001	0.116	<0.001	<0.0005	0.006	<0.0001	0.0005	0.02
2128217	<0.001	<0.001	<0.05	4.68	<0.005	0.035	1.18	0.002	0.115	114	<0.001	<0.15	<0.001	0.016	0.021	3.7	<0.001	0.127	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.032
2128218	0.011	<0.001	1.91	8.35	<0.005	0.02	1.19	0.002	0.0086	>10000	<0.001	<0.15	<0.001	0.023	0.009	31.2	<0.001	0.031	<0.001	<0.0005	0.153	0.0001	<0.0005	0.07
2128228	<0.001	<0.001	0.17	3.97	<0.005	0.011	0.67	0.005	0.0487	>10000	<0.001	<0.15	<0.001	0.047	0.059	4.3	<0.001	0.069	<0.001	<0.0005	0.015	<0.0001	<0.0005	0.024
2128229	0.022	<0.001	2.26	9.04	<0.005	0.034	1.64	0.017	0.148	>10000	0.004	<0.15	<0.001	0.052	0.022	31.7	<0.001	0.086	<0.001	<0.0005	0.234	0.0001	<0.0005	0.068
2128179	0.008	<0.001	<0.05	3.64	<0.005	0.024	1.43	<0.001	0.0478	>10000	<0.001	<0.15	<0.001	0.015	0.058	3.1	<0.001	0.121	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.024
2128181	0.006	<0.001	<0.05	4.47	<0.005	0.069	2.79	0.001	0.0798	>10000	<0.001	<0.15	<0.001	0.028	0.15	3.4	<0.001	0.103	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.022
2128182	0.002	<0.001	<0.05	7.59	<0.005	0.122	4.48	0.003	0.0125	>10000	<0.001	<0.15	<0.001	0.003	0.015	5.0	<0.001	0.298	<0.001	<0.0005	<0.005	<0.0001	0.0008	0.019
2128191	0.002	<0.001	<0.05	4.58	<0.005	0.028	1.78	<0.001	0.0588	>10000	<0.001	<0.15	<0.001	0.056	0.007	3.0	<0.001	0.137	<0.001	<0.0005	<0.005	<0.0001	<0.0005	0.024
2128193	<0.001	<0.001	0.3	5.49	<0.005	0.04	4.98	0.007	0.0193	54.6	<0.001	<0.15	<0.001	0.002	0.002	5.1	<0.001	0.225	<0.001	<0.0005	0.025	<0.0001	<0.0005	0.018
2128194	<0.001	<0.001	0.12	3.68	<0.005	0.024	1.32	0.003	0.0843	112	<0.001	<0.15	<0.001	0.037	0.112	3.7	<0.001	0.079	<0.001	<0.0005	0.014	<0.0001	<0.0005	0.022
2128204	0.008	<0.001	0.94	4.44	<0.005	0.008	1.8	0.008	0.143	>10000	<0.001	<0.15	<0.001	0.066	0.156	10.3	<0.001	0.029	<0.001	<0.0005	0.066	<0.0001	<0.0005	0.032
2128205	0.003																							

Appendix 4. Overburden and Waste Rock Leachate Results

Sample ID	Y mg/L	Zn mg/L	Zr mg/L
2128210	<0.005	<0.005	<0.01
2128211	<0.005	<0.005	<0.01
2128212	<0.005	0.023	0.01
2128213	<0.005	<0.005	<0.01
2128169	<0.005	<0.005	<0.01
2128170	<0.005	<0.005	<0.01
2128171	<0.005	<0.005	<0.01
2128172	<0.005	<0.005	<0.01
2128196	<0.005	<0.005	<0.01
2128173	<0.005	<0.005	<0.01
2128174	<0.005	<0.005	<0.01
2128175	<0.005	<0.005	<0.01
2128176	<0.005	<0.005	<0.01
2128197	<0.005	<0.005	<0.01
2128214	0.005	0.013	0.02
2128225	<0.005	<0.005	<0.01
2128186	<0.005	<0.005	<0.01
2128187	<0.005	<0.005	<0.01
2128198	<0.005	<0.005	<0.01
2128199	<0.005	<0.005	<0.01
2128200	<0.005	<0.005	<0.01
2128215	<0.005	<0.005	<0.01
2128216	<0.005	<0.005	<0.01
2128226	<0.005	<0.005	<0.01
2128227	<0.005	<0.005	<0.01
2128177	<0.005	<0.005	<0.01
2128178	<0.005	0.008	<0.01
2128188	<0.005	<0.005	<0.01
2128189	<0.005	<0.005	<0.01
2128190	<0.005	<0.005	<0.01
2128201	<0.005	<0.005	<0.01
2128202	<0.005	<0.005	<0.01
2128217	<0.005	<0.005	<0.01
2128218	<0.005	0.01	<0.01
2128228	<0.005	<0.005	<0.01
2128229	<0.005	0.005	<0.01
2128179	<0.005	<0.005	<0.01
2128181	<0.005	<0.005	<0.01
2128182	<0.005	<0.005	<0.01
2128191	<0.005	<0.005	<0.01
2128193	<0.005	<0.005	<0.01
2128194	<0.005	<0.005	<0.01
2128204	<0.005	<0.005	<0.01
2128205	<0.005	<0.005	<0.01
2128206	<0.005	0.005	0.01
2128220	<0.005	<0.005	<0.01
2128207	<0.005	<0.005	<0.01
2128235	<0.005	<0.005	<0.01
2128185	<0.005	<0.005	<0.01
2128208	<0.005	<0.005	<0.01
2128209	<0.005	<0.005	<0.01

Notes:

Blue values are calculated.

Highlighted values exceed BC MOE water quality guidelines for total metals.

Where available, concentrations were compared to chronic (30-day mean) guidelines. Where only acute (maximum) guidelines existed, concentrations were compared to acute guidelines.

< indicates sample concentration was below detection limits

<sup>1</sup> Values were compared to dissolved metal guidelines.

<sup>2</sup> Values were compared to acute guidelines.

# Appendix 5

## Waste Rock Humidity Cell Results

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity $\mu\text{S/cm}$	ORP mV	Sulphate ( $\text{SO}_4^{2-}$ ) mg/L	Acidity to pH 4.5 mg $\text{CaCO}_3/\text{L}$	Acidity to pH 8.3 mg $\text{CaCO}_3/\text{L}$	Total Alkalinity mg $\text{CaCO}_3/\text{L}$	Chloride (Cl) mg/L	Fluoride (F) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC1 Upper Gates Siltstone																				
HC-1-0	15-Feb-11	0	750	645	9.22	231	80	67.0	0.5	0.5	39.0	0.9	0.73	1.5	0.192	0.00722	0.04590	0.041	0.00001	0.000015
HC-1-1	22-Feb-11	1	500	485	9.00	318	50	80.0	0.5	1.0	64.0	0.6	0.96	2.4	0.139	0.00695	0.02030	0.060	0.00001	0.000005
HC-1-2	01-Mar-11	2	500	465	9.10	246	45	37.0	0.5	0.5	71.0	0.5	0.76	1.5	0.135	0.00599	0.01500	0.044	0.00001	0.000005
HC-1-3	08-Mar-11	3	500	500	9.29	224	40	28.0	0.5	0.5	77.0	0.5	0.61	2.5	0.115	0.00506	0.01050	0.051	0.00001	0.000005
HC-1-4	15-Mar-11	4	500	470	9.54	213	20	27.0	0.5	0.5	74.0	0.5	0.62	1.5	0.102	0.00438	0.01220	0.040	0.00001	0.000005
HC-1-5	22-Mar-11	5	500	465	9.30	179	50	19.0	0.5	0.5	63.0	0.7	0.41	2.0	0.089	0.00317	0.00796	0.039	0.00001	0.000005
HC-1-6	29-Mar-11	6	500	485	9.22	180	45	22.0	0.5	0.5	69.0	0.5	0.37	2.3	0.084	0.00303	0.00759	0.047	0.00001	0.000005
HC-1-7	05-Apr-11	7	500	500	9.10	167	55	17.0	0.5	0.5	62.0	0.5	0.34	2.6	0.076	0.00273	0.00633	0.047	0.00001	0.000005
HC-1-8	12-Apr-11	8	500	485	9.09	154	45	15.0	0.5	0.5	54.0	0.5	0.30	2.1	0.080	0.00232	0.00590	0.042	0.00001	0.000005
HC-1-9	19-Apr-11	9	500	495	9.18	152	65	16.0	0.5	0.5	59.0	1.7	0.30	3.2	0.068	0.00220	0.00420	0.048	0.00001	0.000005
HC-1-10	26-Apr-11	10	500	480	9.10	149	85	13.0	0.5	0.5	54.0	0.5	0.27	3.0	0.065	0.00221	0.00449	0.040	0.00001	0.000005
HC-1-11	03-May-11	11	500	485	9.16	137	95	13.0	0.5	0.5	51.0	0.5	0.21	2.9	0.070	0.00184	0.00431	0.037	0.00001	0.000005
HC-1-12	10-May-11	12	500	490	8.85	149	90	15.0	0.5	0.5	49.0	1.9	0.23	3.5	0.069	0.00178	0.00382	0.045	0.00001	0.000005
HC-1-13	17-May-11	13	500	485	9.11	133	80	16.0	0.5	0.5	49.0	1.9	0.20	5.1	0.066	0.00163	0.00436	0.039	0.00001	0.000005
HC-1-14	24-May-11	14	500	495	8.95	135	85	17.0	0.5	0.5	45.0	0.5	0.18	5.5	0.047	0.00147	0.00334	0.054	0.00001	0.000005
HC-1-15	31-May-11	15	500	475	9.00	111	120	14.0	0.5	0.5	36.0	0.5	0.15	4.3	0.071	0.00115	0.00367	0.040	0.00001	0.000005
HC-1-16	07-Jun-11	16	500	480	8.75	109	100	13.0	0.5	0.5	34.0	0.5	0.13	5.3	0.050	0.00107	0.00314	0.037	0.00001	0.000005
HC-1-17	14-Jun-11	17	500	480	8.62	113	150	14.0	0.5	0.5	34.0	0.7	0.12	6.1	0.041	0.00110	0.00261	0.044	0.00001	0.000005
HC-1-18	21-Jun-11	18	500	465	8.96	113	145	14.0	0.5	0.5	35.0	1.8	0.14	7.0	0.041	0.00109	0.00234	0.038	0.00001	0.000005
HC-1-19	28-Jun-11	19	500	475	8.81	113	135	13.0	0.5	0.5	33.0	2.8	0.12	7.7	0.032	0.00087	0.00225	0.031	0.00001	0.000005
HC-1-20	05-Jul-11	20	500	490	8.60	116	165	12.5	0.5	0.5	31.5	3.9	0.11		0.030	0.00081	0.00195	0.035	0.00001	0.000005
HC-1-21	12-Jul-11	21	500	485	8.51	114	225	12.0	0.5	0.5	30.0	5.1	0.11		0.027	0.00075	0.00165	0.039	0.00001	0.000005
HC-1-22	19-Jul-11	22	500	495	8.65	120	160	11.5	0.5	0.5	28.5	6.2	0.10		0.025	0.00069	0.00135	0.042	0.00001	0.000005
HC-1-23	26-Jul-11	23	500	470	8.25	107	180	11.0	0.5	0.5	27.0	7.3	0.09	10.9	0.023	0.00063	0.00105	0.046	0.00001	0.000005
HC-1-24	02-Aug-11	24	500	480	8.38	112	175	11.5	0.5	0.5	26.3	8.7	0.09		0.020	0.00060	0.00099	0.048	0.00001	0.000005
HC-1-25	09-Aug-11	25	500	495	8.56	109	150	12.0	0.5	0.5	25.5	10.2	0.08		0.018	0.00058	0.00093	0.049	0.00001	0.000005
HC-1-26	16-Aug-11	26	500	490	8.45	121	165	12.5	0.5	0.5	24.8	11.6	0.08		0.015	0.00055	0.00087	0.051	0.00001	0.000005
HC-1-27	23-Aug-11	27	500	485	8.21	129	170	13.0	0.5	0.5	24.0	13.0	0.07	20.0	0.013	0.00052	0.00081	0.052	0.00001	0.000005
HC-1-28	30-Aug-11	28	500	470	8.47	128	160	12.8	0.5	0.7	23.3	13.5	0.07		0.013	0.00049	0.00080	0.050	0.00001	0.000005
HC-1-29	06-Sep-11	29	500	470	8.35	115	150	12.5	0.5	1.0	22.5	14.0	0.07		0.013	0.00045	0.00080	0.047	0.00001	0.000005
HC-1-30	13-Sep-11	30	500	470	7.70	135	165	12.3	0.5	1.2	21.8	14.5	0.07		0.013	0.00042	0.00079	0.044	0.00001	0.000005
HC-1-31	20-Sep-11	31	500	465	7.70	135	165	12.0	0.5	1.4	21.0	15.0	0.07	28.0	0.013	0.00038	0.00078	0.041	0.00001	0.000005
HC-1-32	27-Sep-11	32	500	460	7.75	125	175	12.2	0.5	1.2	20.0	14.8	0.07		0.013	0.00036	0.00072	0.043	0.00001	0.000005
HC-1-33	04-Oct-11	33	500	470	7.48	147	145	12.4	0.5	1.0	19.0	14.5	0.07		0.013	0.00034	0.00066	0.045	0.00001	0.000005
HC-1-34	11-Oct-11	34	500	475	7.75	137	195	12.6	0.5	0.7	18.0	14.3	0.06		0.013	0.00032	0.00059	0.046	0.00001	0.000005
HC-1-35	18-Oct-11	35	500	455	7.70	130	190	12.8	0.5	0.5	17.0	14.0	0.06	32.2	0.013	0.00030	0.00053	0.048	0.00001	0.000005
HC-1-36	25-Oct-11	36	500	475	7.72	178	190	13.2	0.5	0.5	18.4	13.8	0.06		0.011	0.00030	0.00050	0.048	0.00001	0.000005
HC-1-37	01-Nov-11	37	500	475	7.58	173	220	13.6	0.5	0.5	19.8	13.5	0.06		0.010	0.00031	0.00046	0.047	0.00001	0.000005
HC-1-38	08-Nov-11	38	500	485	7.80	151	195	13.9	0.5	0.5	21.1	13.3	0.06		0.009	0.00031	0.00043	0.047	0.00001	0.000005
HC-1-39	15-Nov-11	39	500	485	7.61	138	205	14.3	0.5	0.5	22.5	13.0	0.07	37.3	0.007	0.00031	0.00039	0.046	0.00001	0.000005
HC-1-40	22-Nov-11	40	500	500	7.57	122	195	14.0	0.5	0.5	21.9	12.5	0.07		0.007	0.00030	0.00043	0.045	0.00001	0.000005
HC-1-41	29-Nov-11	41	500	475	7.70	108	195	13.6	0.5	0.5	21.4	12.0	0.07		0.008	0.00029	0.00046	0.044	0.00001	0.000005
HC-1-42	06-Dec-11	42	500	465	7.65	136	140	13.3	0.5	0.5	20.8	11.5	0.07		0.008	0.00027	0.00050	0.042	0.00001	0.000005
HC-1-43	13-Dec-11	43	500	465	7.61	135	130	12.9	0.5	0.5	20.2	11.0	0.07	33.8	0.008	0.00026	0.00053	0.041	0.00001	0.000005
HC-1-44	20-Dec-11	44	500	465	7.79	135	130	13.0	0.5	0.5	20.3	10.8	0.07		0.008	0.00025	0.00051	0.042	0.00001	0.000005
HC-1-45	27-Dec-11	45	500	475	7.61	132	135	13.2	0.5	0.5	20.3	10.5	0.06		0.008	0.00024	0.00050	0.043	0.00001	0.000005
HC-1-46	03-Jan-12	46	500	475	7.58	110	130	13.3	0.5	0.5	20.4	10.3	0.06		0.008	0.00023	0.00048	0.044	0.00001	0.000005
HC-1-47	10-Jan-12	47	500	460	7.79	116	130	13.4	0.5	0.5	20.4	10.0	0.06	42.2	0.009	0.00022	0.00046	0.045	0.00001	0.000005



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-1-48	17-Jan-12	48	500	460	7.87	112	135	13.9	0.5	0.5	20.9	11.0	0.06		0.008	0.00022	0.00045	0.046	0.00001	0.000005
HC-1-49	24-Jan-12	49	500	465	7.97	146	135	14.4	0.5	0.5	21.4	12.0	0.06		0.008	0.00022	0.00043	0.048	0.00001	0.000005
HC-1-50	31-Jan-12	50	500	460	7.66	156	120	14.8	0.5	0.5	21.8	13.0	0.06		0.008	0.00021	0.00042	0.050	0.00001	0.000005
HC-1-51	07-Feb-12	51	500	475	7.76	149	115	15.3	0.5	0.5	22.3	14.0	0.06	49.5	0.007	0.00021	0.00040	0.051	0.00001	0.000005
HC-1-52	14-Feb-12	52	500	460	7.65	132	125	15.8	0.5	0.5	23.6	11.3	0.06		0.008	0.00021	0.00042	0.049	0.00001	0.000005
HC-1-53	21-Feb-12	53	500	490	7.87	107	125	16.2	0.5	0.5	24.8	8.5	0.06		0.008	0.00021	0.00044	0.047	0.00001	0.000005
HC-1-54	28-Feb-12	54	500	475	7.68	143	125	16.7	0.5	0.5	26.1	5.8	0.06		0.008	0.00021	0.00046	0.045	0.00001	0.000005
HC-1-55	06-Mar-12	55	500	475	7.83	115	130	17.1	0.5	0.5	27.3	3.0	0.06	38.4	0.008	0.00021	0.00048	0.043	0.00001	0.000005
HC-1-56	13-Mar-12	56	500	485	7.89	143	130	16.5	0.5	0.5	26.4	4.3	0.06		0.008	0.00020	0.00047	0.046	0.00001	0.000005
HC-1-57	20-Mar-12	57	500	465	7.66	125	135	15.9	0.5	0.5	25.5	5.5	0.06		0.009	0.00020	0.00046	0.050	0.00001	0.000005
HC-1-58	27-Mar-12	58	500	460	7.98	90	130	15.3	0.5	0.5	24.5	6.8	0.06		0.009	0.00019	0.00044	0.053	0.00001	0.000005
HC-1-59	03-Apr-12	59	500	475	8.01	127	130	14.7	0.5	0.5	23.6	8.0	0.06	44.5	0.010	0.00018	0.00043	0.057	0.00001	0.000005
HC-1-60	10-Apr-12	60	500	495	8.05	124	130	14.6	0.5	0.5	23.4	7.6	0.06		0.010	0.00018	0.00041	0.056	0.00001	0.000005
HC-1-61	17-Apr-12	61	500	475	7.71	102	130	14.5	0.5	0.5	23.1	7.2	0.06		0.011	0.00018	0.00039	0.055	0.00001	0.000005
HC-1-62	24-Apr-12	62	500	465	7.77	112	125	14.3	0.5	0.5	22.9	6.7	0.06		0.011	0.00018	0.00037	0.054	0.00001	0.000005
HC-1-63	01-May-12	63	500	475	7.73	108	130	14.2	0.5	0.5	22.6	6.3	0.06	42.6	0.012	0.00018	0.00035	0.054	0.00001	0.000005
HC-1-64	08-May-12	64	500	475	7.81	126	130	14.2	0.5	0.5	22.5	6.5	0.06		0.012	0.00018	0.00034	0.049	0.00001	0.000005
HC-1-65	15-May-12	65	500	460	7.88	130	130	14.3	0.5	0.6	22.4	6.7	0.06		0.011	0.00017	0.00034	0.045	0.00001	0.000005
HC-1-66	22-May-12	66	500	485	7.95	129	130	14.3	0.5	0.6	22.2	6.8	0.05		0.011	0.00017	0.00034	0.041	0.00001	0.000005
HC-1-67	29-May-12	67	500	470	7.91	122	125	14.3	0.5	0.6	22.1	7.0	0.05	42.6	0.011	0.00016	0.00033	0.037	0.00001	0.000005
HC-1-68	05-Jun-12	68	500	475	7.94	119	120	14.3	0.5	0.6	22.7	7.4	0.05		0.010	0.00016	0.00032	0.038	0.00001	0.000005
HC-1-69	12-Jun-12	69	500	475	7.87	111	135	14.2	0.5	0.6	23.4	7.8	0.05		0.009	0.00015	0.00030	0.039	0.00001	0.000005
HC-1-70	19-Jun-12	70	500	490	8.07	106	125	14.2	0.5	0.5	24.0	8.1	0.05		0.008	0.00015	0.00029	0.041	0.00001	0.000005
HC-1-71	26-Jun-12	71	500	485	7.95	119	140	14.1	0.5	0.5	24.6	8.5	0.05	43.9	0.007	0.00014	0.00027	0.042	0.00001	0.000005
HC-1-72	03-Jul-12	72	500	475	7.88	111	145	14.3	0.5	0.5	23.7	9.6	0.05		0.007	0.00014	0.00028	0.042	0.00001	0.000005
HC-1-73	10-Jul-12	73	500	465	7.89	114	140	14.5	0.5	0.5	22.8	10.8	0.05		0.007	0.00014	0.00029	0.041	0.00001	0.000005
HC-1-74	17-Jul-12	74	500	465	7.75	123	130	14.7	0.5	0.5	21.9	11.9	0.05		0.007	0.00014	0.00030	0.041	0.00001	0.000005
HC-1-75	24-Jul-12	75	500	470	7.81	129	130	14.9	0.5	0.5	21.0	13.0	0.04	51.6	0.007	0.00013	0.00031	0.041	0.00001	0.000005
HC-1-76	31-Jul-12	76	500	470	7.88	144	135	14.5	0.5	0.5	21.0	11.4	0.04		0.009	0.00013	0.00029	0.038	0.00001	0.000005
HC-1-77	07-Aug-12	77	500	470	7.82	127	150	14.2	0.5	0.5	20.9	9.8	0.05		0.011	0.00012	0.00027	0.036	0.00001	0.000005
HC-1-78	14-Aug-12	78	500	485	7.86	133	145	13.8	0.5	0.5	20.9	8.2	0.05		0.013	0.00012	0.00026	0.033	0.00001	0.000005
HC-1-79	21-Aug-12	79	500	460	7.82	109	140	13.4	0.5	0.5	20.8	6.6	0.05	43.6	0.015	0.00012	0.00024	0.031	0.00001	0.000005
HC-1-80	28-Aug-12	80	500	475	7.90	115	135	13.8	0.5	1.0	21.6	8.2	0.05		0.013	0.00012	0.00025	0.033	0.00001	0.000005
HC-1-81	04-Sep-12	81	500	485	7.79	124	140	14.2	0.5	1.5	22.3	9.8	0.05		0.011	0.00012	0.00026	0.034	0.00001	0.000005
HC-1-82	11-Sep-12	82	500	480	7.75	133	145	14.5	0.5	2.0	23.1	11.4	0.04		0.009	0.00012	0.00027	0.036	0.00001	0.000005
HC-1-83	18-Sep-12	83	500	485	7.93	136	140	14.9	0.5	2.5	23.8	13.0	0.04	54.7	0.007	0.00012	0.00028	0.038	0.00001	0.000005
HC-1-84	25-Sep-12	84	500	480	8.00	100	135	14.1	0.5	2.0	22.4	11.2	0.04		0.007	0.00011	0.00027	0.036	0.00001	0.000005
HC-1-85	02-Oct-12	85	500	475	7.91	104	135	13.4	0.5	1.5	21.0	9.5	0.04		0.007	0.00011	0.00025	0.035	0.00001	0.000005
HC-1-86	09-Oct-12	86	500	485	7.77	118	135	12.6	0.5	1.0	19.5	7.7	0.04		0.007	0.00011	0.00024	0.034	0.00001	0.000005
HC-1-87	16-Oct-12	87	500	460	8.00	94	130	11.8	0.5	0.5	18.1	5.9	0.04	37.1	0.007	0.00010	0.00022	0.032	0.00001	0.000005
HC-1-88	23-Oct-12	88	500	475	8.04	134	145	12.6	0.5	0.5	19.9	6.1	0.04		0.007	0.00016	0.00026	0.033	0.00001	0.000005
HC-1-89	30-Oct-12	89	500	460	8.16	126	145	13.4	0.5	0.5	21.7	6.3	0.04		0.007	0.00022	0.00030	0.033	0.00001	0.000005
HC-1-90	06-Nov-12	90	500	485	7.94	113	145	14.2	0.5	0.5	23.4	6.5	0.04		0.007	0.00028	0.00033	0.033	0.00001	0.000005
HC-1-91	13-Nov-12	91	500	465	7.91	110	130	15.0	0.5	0.5	25.2	6.7	0.04	45.5	0.006	0.00034	0.00037	0.034	0.00001	0.000005
HC-1-92	20-Nov-12	92	500	470	7.95	105	130	14.8	0.5	0.5	24.1	6.3	0.04		0.006	0.00028	0.00036	0.031	0.00001	0.000005
HC-1-93	27-Nov-12	93	500	480	7.76	113	140	14.6	0.5	0.5	23.0	5.8	0.04		0.006	0.00022	0.00034	0.029	0.00001	0.000005
HC-1-94	04-Dec-12	94	500	470	7.94	105	125	14.4	0.5	0.5	21.9	5.4	0.04		0.006	0.00016	0.00032	0.027	0.00001	0.000005
HC-1-95	11-Dec-12	95	500	475	8.06	105	135	14.2	0.5	0.5	20.8	4.9	0.04	41.6	0.006	0.00010	0.00031	0.025	0.00001	0.000005
HC-1-96	18-Dec-12	96	500	470	7.90	96	135	14.6	0.5	0.5	21.8	4.3	0.04		0.006	0.00010	0.00046	0.025	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-1-97	25-Dec-12	97	500	480	7.83	101	125	15.1	0.5	0.5	22.8	3.6	0.04		0.006	0.00009	0.00061	0.026	0.00001	0.000005
HC-1-98	01-Jan-13	98	500	460	7.70	89	120	15.5	0.5	0.5	23.7	3.0	0.04		0.006	0.00009	0.00077	0.026	0.00001	0.000005
HC-1-99	08-Jan-13	99	500	480	7.95	99	130	15.9	0.5	0.5	24.7	2.3	0.04	41.8	0.006	0.00008	0.00092	0.027	0.00001	0.000005
HC-1-100	15-Jan-13	100	500	480	7.77	95	110	15.6	0.5	0.5	24.6	2.5	0.04		0.006	0.00008	0.00079	0.026	0.00001	0.000005
HC-1-101	22-Jan-13	101	500	470	7.63	96	125	15.4	0.5	0.5	24.6	2.8	0.04		0.006	0.00009	0.00065	0.026	0.00001	0.000005
HC-1-102	29-Jan-13	102	500	470	7.67	94	110	15.1	0.5	0.5	24.5	3.0	0.04		0.006	0.00009	0.00052	0.026	0.00001	0.000005
HC-1-103	05-Feb-13	103	500	480	7.73	84	120	14.8	0.5	0.5	24.4	3.2	0.04	41.0	0.006	0.00009	0.00039	0.026	0.00001	0.000005
HC-1-104	12-Feb-13	104	500	480	7.72	85	135	14.8	0.5	0.5	25.1	2.5	0.04		0.006	0.00009	0.00035	0.027	0.00001	0.000005
HC-1-105	19-Feb-13	105	500	475	7.98	95	120	14.7	0.5	0.5	25.8	1.9	0.04		0.006	0.00010	0.00032	0.028	0.00001	0.000005
HC-1-106	26-Feb-13	106	500	485	8.08	97	130	14.7	0.5	0.5	26.5	1.2	0.04		0.007	0.00010	0.00028	0.030	0.00001	0.000005
HC-1-107	05-Mar-13	107	500	480	7.88	90	140	14.6	0.5	0.5	27.2	0.5	0.04	41.2	0.007	0.00011	0.00025	0.031	0.00001	0.000005
HC-1-108	12-Mar-13	108	500	485	7.91	96	150	14.7	0.5	0.5	26.4	1.0	0.04		0.006	0.00010	0.00024	0.031	0.00001	0.000005
HC-1-109	19-Mar-13	109	500	485	7.80	89	140	14.9	0.5	0.5	25.5	1.5	0.04		0.006	0.00009	0.00024	0.031	0.00001	0.000005
HC-1-110	26-Mar-13	110	500	475	7.90	99	135	15.0	0.5	0.5	24.7	2.0	0.04		0.005	0.00009	0.00024	0.030	0.00001	0.000005
HC-1-111	02-Apr-13	111	500	490	7.89	90	150	15.1	0.5	0.5	23.8	2.5	0.04	40.9	0.005	0.00008	0.00023	0.030	0.00001	0.000005
HC-1-112	09-Apr-13	112	500	475	7.90	98	150	15.2	0.5	0.5	23.6	2.7	0.04		0.005	0.00008	0.00027	0.029	0.00001	0.000005
HC-1-113	16-Apr-13	113	500	470	7.81	88	140	15.3	0.5	0.5	23.5	2.9	0.04		0.004	0.00008	0.00030	0.028	0.00001	0.000005
HC-1-114	23-Apr-13	114	500	465	8.08	91	140	15.3	0.5	0.5	23.3	3.0	0.04		0.004	0.00008	0.00034	0.027	0.00001	0.000005
HC-1-115	30-Apr-13	115	500	470	7.87	92	120	15.4	0.5	0.5	23.1	3.2	0.04	41.3	0.004	0.00008	0.00037	0.026	0.00001	0.000005
HC-1-116	07-May-13	116	500	470	8.05	97	130	15.1	0.5	0.5	23.3	3.0	0.03		0.004	0.00008	0.00035	0.025	0.00001	0.000005
HC-1-117	14-May-13	117	500	485	7.79	97	135	14.8	0.5	0.5	23.5	2.9	0.03		0.004	0.00008	0.00032	0.025	0.00001	0.000005
HC-1-118	21-May-13	118	500	480	7.46	89	130	14.5	0.5	0.5	23.6	2.7	0.03		0.004	0.00008	0.00029	0.024	0.00001	0.000005
HC-1-119	28-May-13	119	500	480	7.67	92	140	14.2	0.5	0.5	23.8	2.5	0.03	39.7	0.004	0.00008	0.00027	0.024	0.00001	0.000005
HC-1-120	04-Jun-13	120	500	490	7.80	99	135	14.3	0.5	0.5	23.8	2.6	0.03		0.004	0.00008	0.00026	0.024	0.00001	0.000005
HC-1-121	11-Jun-13	121	500	490	7.86	95	140	14.3	0.5	0.5	23.8	2.7	0.03		0.004	0.00008	0.00025	0.024	0.00001	0.000005
HC-1-122	18-Jun-13	122	500	475	7.76	90	140	14.4	0.5	0.5	23.8	2.8	0.03		0.004	0.00007	0.00024	0.023	0.00001	0.000005
HC-1-123	25-Jun-13	123	500	465	7.98	87	150	14.4	0.5	0.5	23.8	2.9	0.03	38.7	0.003	0.00007	0.00024	0.023	0.00001	0.000005
HC-1-124	02-Jul-13	124	500	480	7.96	99	160	14.3	0.5	0.5	23.4	3.0	0.03		0.004	0.00007	0.00030	0.023	0.00001	0.000005
HC-1-125	09-Jul-13	125	500	470	8.02	88	165	14.1	0.5	0.5	23.0	3.0	0.03		0.004	0.00007	0.00036	0.022	0.00001	0.000005
HC-1-126	16-Jul-13	126	500	470	7.74	92	150	14.0	0.5	0.5	22.5	3.1	0.03		0.004	0.00007	0.00043	0.022	0.00001	0.000005
HC-1-127	23-Jul-13	127	500	495	7.84	95	160	13.8	0.5	0.5	22.1	3.1	0.03	40.8	0.004	0.00008	0.00049	0.022	0.00001	0.000005
HC-1-128	30-Jul-13	128	500	475	7.88	96	150	14.5	0.5	0.5	22.8	3.0	0.03		0.004	0.00008	0.00044	0.022	0.00001	0.000005
HC-1-129	06-Aug-13	129	500	475	7.89	93	150	15.2	0.5	0.5	23.5	2.9	0.03		0.004	0.00008	0.00039	0.022	0.00001	0.000005
HC-1-130	13-Aug-13	130	500	465	8.02	92	140	15.8	0.5	0.5	24.2	2.8	0.03		0.004	0.00008	0.00033	0.022	0.00001	0.000005
HC-1-131	20-Aug-13	131	500	475	7.78	94	160	16.5	0.5	0.5	24.9	2.7	0.03	44.3	0.003	0.00008	0.00028	0.022	0.00001	0.000005
HC-1-132	27-Aug-13	132	500	475	8.00	92	140	17.4	0.5	0.5	25.0	2.5	0.03		0.003	0.00008	0.00026	0.023	0.00001	0.000005
HC-1-133	03-Sep-13	133	500	480	7.73	96	160	18.2	0.5	0.5	25.2	2.4	0.03		0.003	0.00008	0.00025	0.024	0.00001	0.000005
HC-1-134	10-Sep-13	134	500	470	8.03	91	150	19.1	0.5	0.5	25.3	2.2	0.03		0.003	0.00008	0.00023	0.026	0.00001	0.000005
HC-1-135	17-Sep-13	135	500	475	7.79	98	150	19.9	0.5	0.5	25.4	2.0	0.03	43.9	0.004	0.00008	0.00021	0.027	0.00001	0.000005
HC-1-136	24-Sep-13	136	500	475	7.91	96	140	19.3	0.5	0.6	25.0	2.4	0.03		0.003	0.00008	0.00021	0.026	0.00001	0.000005
HC-1-137	01-Oct-13	137	500	470	7.99	95	150	18.6	0.5	0.7	24.7	2.7	0.03		0.003	0.00008	0.00020	0.026	0.00001	0.000005
HC-1-138	08-Oct-13	138	500	475	7.74	92	145	18.0	0.5	0.8	24.3	3.1	0.03		0.003	0.00008	0.00019	0.026	0.00001	0.000005
HC-1-139	15-Oct-13	139	500	475	7.76	98	140	17.3	0.5	1.0	23.9	3.4	0.03	45.3	0.003	0.00008	0.00018	0.026	0.00001	0.000005
HC-1-140	22-Oct-13	140	500	475	7.89	93	150	17.8	0.5	0.8	25.0	2.7	0.03		0.003	0.00008	0.00018	0.026	0.00001	0.000005
HC-1-141	29-Oct-13	141	500	475	7.75	97	125	18.3	0.5	0.7	26.2	2.1	0.03		0.004	0.00008	0.00018	0.025	0.00001	0.000005
HC-1-142	05-Nov-13	142	500	470	7.75	90	130	18.7	0.5	0.6	27.3	1.4	0.03		0.004	0.00008	0.00018	0.025	0.00001	0.000005
HC-1-143	12-Nov-13	143	500	485	7.48	92	130	19.2	0.5	0.5	28.4	0.7	0.03	44.8	0.005	0.00008	0.00017	0.025	0.00001	0.000005
HC-1-144	19-Nov-13	144	500	465	7.82	93	135	19.0	0.5	0.5	28.0	1.1	0.03		0.004	0.00007	0.00017	0.025	0.00001	0.000005
HC-1-145	26-Nov-13	145	500	485	7.85	93	150	18.7	0.5	0.5	27.6	1.5	0.03		0.004	0.00007	0.00017	0.026	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-1-146	03-Dec-13	146	500	470	7.74	103	160	18.5	0.5	0.5	27.1	1.9	0.03		0.003	0.00007	0.00018	0.026	0.00001	0.000005
HC-1-147	10-Dec-13	147	500	475	7.48	103	150	18.2	0.5	0.5	26.7	2.3	0.03	45.4	0.003	0.00007	0.00018	0.026	0.00001	0.000005
HC-1-148	17-Dec-13	148	500	470	7.98	97	145	18.6	0.5	0.5	26.1	2.0	0.03		0.003	0.00007	0.00017	0.026	0.00001	0.000005
HC-1-149	24-Dec-13	149	500	465	7.75	89	160	19.0	0.5	0.5	25.5	1.6	0.03		0.003	0.00007	0.00016	0.025	0.00001	0.000005
HC-1-150	31-Dec-13	150	500	480	7.75	94	150	19.4	0.5	0.5	24.8	1.3	0.03		0.003	0.00007	0.00015	0.024	0.00001	0.000005
HC-1-151	07-Jan-14	151	500	475	7.86	94	155	19.8	0.5	0.5	24.2	0.9	0.03	43.5	0.003	0.00007	0.00015	0.023	0.00001	0.000005
HC-1-152	14-Jan-14	152	500	485	7.97	94	160	19.0	0.5	0.5	23.8	1.6	0.03		0.003	0.00007	0.00015	0.023	0.00001	0.000005
HC-1-153	21-Jan-14	153	500	480	7.76	98	145	18.2	0.5	0.5	23.4	2.2	0.03		0.003	0.00007	0.00015	0.022	0.00001	0.000005
HC-1-154	28-Jan-14	154	500	480	7.87	93	150	17.3	0.5	0.5	23.0	2.8	0.03		0.003	0.00007	0.00015	0.021	0.00001	0.000005
HC-1-155	04-Feb-14	155	500	460	7.78	92	160	16.5	0.5	0.5	22.6	3.4	0.03	41.3	0.003	0.00007	0.00015	0.020	0.00001	0.000005
HC-1-156	11-Feb-14	156	500	485	7.78	101	155	16.5	0.5	0.5	22.9	2.7	0.03		0.003	0.00006	0.00014	0.021	0.00001	0.000005
HC-1-157	18-Feb-14	157	500	480	7.77	88	155	16.5	0.5	0.5	23.1	2.1	0.03		0.003	0.00006	0.00014	0.021	0.00001	0.000005
HC-1-158	25-Feb-14	158	500	490	7.71	91	160	16.4	0.5	0.5	23.4	1.4	0.03		0.003	0.00006	0.00014	0.021	0.00001	0.000005
HC-1-159	04-Mar-14	159	500	480	7.83	88	150	16.4	0.5	0.5	23.6	0.7	0.03	38.5	0.003	0.00006	0.00013	0.021	0.00001	0.000005
HC-1-160	11-Mar-14	160	500	475	7.84	89	160	16.1	0.5	0.5	23.0	1.2	0.03		0.003	0.00006	0.00014	0.022	0.00001	0.000005
HC-1-161	18-Mar-14	161	500	480	8.04	90	140	15.8	0.5	0.5	22.5	1.7	0.03		0.003	0.00006	0.00015	0.022	0.00001	0.000005
HC-1-162	25-Mar-14	162	500	485	7.75	87	165	15.4	0.5	0.5	21.9	2.1	0.03		0.004	0.00006	0.00017	0.022	0.00001	0.000005
HC-1-163	01-Apr-14	163	500	480	7.80	95	160	15.1	0.5	0.5	21.3	2.6	0.03	42.2	0.004	0.00006	0.00018	0.023	0.00001	0.000005
HC-1-164	08-Apr-14	164	500	485	7.86	96	165	15.5	0.5	0.5	22.0	2.6	0.03		0.004	0.00006	0.00017	0.023	0.00001	0.000005
HC-1-165	15-Apr-14	165	500	470	7.95	95	160	15.9	0.5	0.5	22.7	2.5	0.03		0.003	0.00006	0.00016	0.023	0.00001	0.000005
HC-1-166	22-Apr-14	166	500	480	7.99	96	150	16.2	0.5	0.5	23.3	2.5	0.03		0.003	0.00006	0.00015	0.023	0.00001	0.000005
HC-1-167	29-Apr-14	167	500	475	7.87	96	140	16.6	0.5	0.5	24.0	2.4	0.03	46.5	0.003	0.00006	0.00014	0.023	0.00001	0.000005
Mean all weeks					8.01	116	137	16.0	0.5	0.6	26.9	5.4	0.08	27.6	0.016	0.00049	0.00135	0.035	0.00001	0.000005
<b>HC4 Boulder Creek Conglomerate</b>																				
HC-4-0	15-Feb-11	0	750	620	9.31	92	65	8.7	0.5	0.5	21.0	4.1	0.61	0.5	0.301	0.00585	0.01610	0.010	0.00001	0.000005
HC-4-1	22-Feb-11	1	500	475	8.92	254	55	37.0	0.5	0.5	63.0	7.2	0.71	0.9	0.155	0.00829	0.00619	0.047	0.00001	0.000005
HC-4-2	01-Mar-11	2	500	480	8.95	225	70	37.0	0.5	0.5	58.0	2.6	0.66	0.7	0.170	0.00715	0.00337	0.035	0.00001	0.000005
HC-4-3	08-Mar-11	3	500	485	9.10	185	100	26.0	0.5	0.5	57.0	1.0	0.51	1.6	0.163	0.00498	0.00290	0.012	0.00001	0.000005
HC-4-4	15-Mar-11	4	500	475	9.13	199	45	23.0	0.5	0.5	65.0	1.4	0.61	0.7	0.142	0.00557	0.00292	0.020	0.00001	0.000005
HC-4-5	22-Mar-11	5	500	470	9.04	178	45	20.0	0.5	0.5	61.0	1.0	0.43	0.5	0.100	0.00408	0.00188	0.014	0.00001	0.000005
HC-4-6	29-Mar-11	6	500	490	8.90	180	60	19.0	0.5	0.5	65.0	0.7	0.40	0.7	0.091	0.00404	0.00203	0.016	0.00001	0.000005
HC-4-7	05-Apr-11	7	500	500	8.87	174	80	20.0	0.5	0.5	57.0	0.6	0.38	0.7	0.093	0.00372	0.00203	0.012	0.00001	0.000005
HC-4-8	12-Apr-11	8	500	490	8.87	164	50	18.0	0.5	0.5	54.0	0.5	0.34	0.5	0.092	0.00340	0.00193	0.012	0.00001	0.000005
HC-4-9	19-Apr-11	9	500	490	8.84	152	40	19.0	0.5	0.5	50.0	0.5	0.32	0.6	0.076	0.00283	0.00160	0.012	0.00001	0.000005
HC-4-10	26-Apr-11	10	500	490	8.59	156	80	21.0	0.5	0.5	48.0	0.5	0.30	0.6	0.064	0.00299	0.00152	0.011	0.00001	0.000005
HC-4-11	03-May-11	11	500	465	8.62	138	90	20.0	0.5	0.5	41.0	0.7	0.26	0.5	0.078	0.00250	0.00159	0.009	0.00001	0.000005
HC-4-12	10-May-11	12	500	495	8.63	161	75	27.0	0.5	0.5	40.0	0.5	0.28	0.6	0.074	0.00274	0.00157	0.009	0.00001	0.000005
HC-4-13	17-May-11	13	500	470	8.86	139	90	29.0	0.5	0.5	36.0	0.5	0.23	0.5	0.067	0.00226	0.00162	0.008	0.00001	0.000005
HC-4-14	24-May-11	14	500	495	8.33	151	90	29.0	0.5	0.5	37.0	0.5	0.23	0.9	0.044	0.00216	0.00129	0.010	0.00001	0.000005
HC-4-15	31-May-11	15	500	460	8.50	159	95	36.0	0.5	0.5	32.0	0.6	0.21	0.9	0.046	0.00197	0.00116	0.009	0.00001	0.000005
HC-4-16	07-Jun-11	16	500	495	8.30	158	95	36.0	0.5	0.5	29.0	0.5	0.19	1.0	0.038	0.00165	0.00106	0.010	0.00001	0.000005
HC-4-17	14-Jun-11	17	500	475	8.20	167	120	42.0	0.5	0.5	25.0	1.0	0.16	1.1	0.035	0.00165	0.00083	0.010	0.00001	0.000005
HC-4-18	21-Jun-11	18	500	480	8.10	176	110	45.0	0.5	0.5	24.0	2.5	0.16	1.6	0.029	0.00153	0.00066	0.013	0.00001	0.000005
HC-4-19	28-Jun-11	19	500	470	7.89	188	110	47.0	0.5	0.5	21.0	5.7	0.14	2.1	0.021	0.00120	0.00051	0.013	0.00001	0.000005
HC-4-20	05-Jul-11	20	500	470	7.49	190	145	48.8	0.5	0.5	17.5	9.3	0.13		0.017	0.00104	0.00043	0.015	0.00001	0.000005
HC-4-21	12-Jul-11	21	500	500	7.70	214	185	50.5	0.5	0.5	14.0	12.9	0.12		0.013	0.00089	0.00036	0.017	0.00001	0.000005
HC-4-22	19-Jul-11	22	500	500	7.48	194	165	52.3	0.5	0.5	10.5	16.4	0.10		0.009	0.00073	0.00028	0.020	0.00001	0.000005
HC-4-23	26-Jul-11	23	500	490	7.27	226	200	54.0	0.5	0.5	7.0	20.0	0.09	7.1	0.005	0.00057	0.00020	0.022	0.00001	0.000005
HC-4-24	02-Aug-11	24	500	470	7.05	245	170	62.0	0.5	0.5	6.3	20.5	0.08		0.005	0.00053	0.00020	0.022	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-4-25	09-Aug-11	25	500	485	7.26	239	165	70.0	0.5	0.5	5.5	21.0	0.08		0.004	0.00049	0.00021	0.021	0.00001	0.000005
HC-4-26	16-Aug-11	26	500	470	7.07	280	165	78.0	0.5	0.5	4.8	21.5	0.07		0.003	0.00044	0.00021	0.021	0.00001	0.000005
HC-4-27	23-Aug-11	27	500	445	7.14	284	155	86.0	0.5	0.5	4.0	22.0	0.06	25.8	0.003	0.00040	0.00021	0.021	0.00001	0.000005
HC-4-28	30-Aug-11	28	500	475	7.01	290	160	86.0	0.5	0.5	3.8	18.4	0.06		0.003	0.00035	0.00021	0.020	0.00001	0.000005
HC-4-29	06-Sep-11	29	500	465	6.89	263	145	86.0	0.5	0.5	3.5	14.8	0.06		0.003	0.00031	0.00021	0.019	0.00001	0.000005
HC-4-30	13-Sep-11	30	500	480	6.56	283	180	86.0	0.5	0.5	3.3	11.2	0.05		0.004	0.00026	0.00021	0.018	0.00001	0.000005
HC-4-31	20-Sep-11	31	500	490	6.74	255	160	86.0	0.5	0.5	3.0	7.6	0.05	38.9	0.004	0.00021	0.00021	0.017	0.00001	0.000005
HC-4-32	27-Sep-11	32	500	465	6.53	258	200	85.2	0.5	0.5	2.6	9.2	0.05		0.004	0.00019	0.00021	0.017	0.00001	0.000005
HC-4-33	04-Oct-11	33	500	475	6.03	284	140	84.4	0.5	0.5	2.3	10.8	0.05		0.004	0.00018	0.00020	0.017	0.00002	0.000005
HC-4-34	11-Oct-11	34	500	465	6.52	295	200	83.6	0.5	0.5	1.9	12.4	0.04		0.004	0.00016	0.00020	0.016	0.00002	0.000005
HC-4-35	18-Oct-11	35	500	470	6.42	273	160	82.8	0.5	0.5	1.5	14.0	0.04	58.8	0.004	0.00014	0.00019	0.016	0.00002	0.000005
HC-4-36	25-Oct-11	36	500	475	6.54	298	170	82.5	0.5	0.5	1.4	13.0	0.04		0.003	0.00013	0.00018	0.016	0.00002	0.000005
HC-4-37	01-Nov-11	37	500	450	6.53	288	200	82.1	0.5	0.5	1.4	12.0	0.04		0.003	0.00013	0.00017	0.016	0.00003	0.000005
HC-4-38	08-Nov-11	38	500	480	6.38	266	200	81.8	0.5	0.5	1.3	10.9	0.04		0.002	0.00012	0.00015	0.015	0.00003	0.000005
HC-4-39	15-Nov-11	39	500	480	6.18	240	220	81.4	0.5	0.5	1.3	9.9	0.04	60.8	0.001	0.00011	0.00014	0.015	0.00003	0.000005
HC-4-40	22-Nov-11	40	500	500	6.07	243	160	79.0	0.5	0.5	1.1	9.2	0.04		0.001	0.00010	0.00016	0.014	0.00004	0.000005
HC-4-41	29-Nov-11	41	500	480	6.00	227	140	76.5	0.5	0.5	0.9	8.6	0.04		0.002	0.00009	0.00017	0.013	0.00005	0.000005
HC-4-42	06-Dec-11	42	500	475	6.40	260	125	74.1	0.5	0.5	0.7	7.9	0.04		0.002	0.00008	0.00019	0.013	0.00005	0.000005
HC-4-43	13-Dec-11	43	500	445	6.45	219	120	71.6	0.5	0.5	0.5	7.2	0.03	58.8	0.002	0.00007	0.00020	0.012	0.00006	0.000005
HC-4-44	20-Dec-11	44	500	475	5.83	244	130	71.1	0.5	0.5	0.5	6.6	0.03		0.002	0.00007	0.00020	0.012	0.00006	0.000005
HC-4-45	27-Dec-11	45	500	480	5.92	248	130	70.7	0.5	0.5	0.5	5.9	0.03		0.002	0.00006	0.00020	0.012	0.00006	0.000005
HC-4-46	03-Jan-12	46	500	480	6.15	200	135	70.2	0.5	0.5	0.5	5.3	0.03		0.002	0.00006	0.00019	0.011	0.00006	0.000005
HC-4-47	10-Jan-12	47	500	440	5.71	200	120	69.7	0.5	0.5	0.5	4.6	0.03	62.3	0.003	0.00005	0.00019	0.011	0.00006	0.000005
HC-4-48	17-Jan-12	48	500	485	5.68	223	120	70.0	0.5	0.5	0.6	5.4	0.03		0.003	0.00005	0.00020	0.012	0.00006	0.000005
HC-4-49	24-Jan-12	49	500	445	5.51	214	130	70.4	0.5	0.6	0.7	6.2	0.03		0.003	0.00005	0.00020	0.012	0.00007	0.000005
HC-4-50	31-Jan-12	50	500	485	5.59	227	155	70.7	0.5	0.6	0.8	6.9	0.04		0.004	0.00005	0.00021	0.012	0.00007	0.000005
HC-4-51	07-Feb-12	51	500	480	5.72	235	125	71.0	0.5	0.6	0.9	7.7	0.04	71.0	0.004	0.00005	0.00021	0.012	0.00007	0.000005
HC-4-52	14-Feb-12	52	500	465	5.70	202	120	71.6	0.5	0.8	0.8	7.8	0.04		0.004	0.00005	0.00022	0.012	0.00008	0.000005
HC-4-53	21-Feb-12	53	500	470	5.64	207	130	72.3	0.5	0.9	0.7	8.0	0.04		0.004	0.00005	0.00022	0.012	0.00009	0.000005
HC-4-54	28-Feb-12	54	500	475	5.82	225	130	72.9	0.5	1.1	0.6	8.1	0.04		0.004	0.00004	0.00023	0.011	0.00009	0.000005
HC-4-55	06-Mar-12	55	500	460	5.70	230	135	73.5	0.5	1.2	0.5	8.2	0.03	71.0	0.004	0.00004	0.00023	0.011	0.00010	0.000005
HC-4-56	13-Mar-12	56	500	465	5.97	212	135	71.4	0.5	1.1	0.5	7.1	0.03		0.004	0.00004	0.00022	0.011	0.00010	0.000005
HC-4-57	20-Mar-12	57	500	465	6.19	201	135	69.3	0.5	1.0	0.5	6.0	0.04		0.004	0.00004	0.00022	0.011	0.00009	0.000005
HC-4-58	27-Mar-12	58	500	470	5.79	194	135	67.2	0.5	0.8	0.5	4.9	0.04		0.004	0.00003	0.00021	0.011	0.00009	0.000005
HC-4-59	03-Apr-12	59	500	460	5.66	195	130	65.1	0.5	0.7	0.5	3.8	0.04	65.1	0.004	0.00003	0.00020	0.011	0.00008	0.000005
HC-4-60	10-Apr-12	60	500	485	5.71	198	130	65.0	0.5	0.8	0.5	3.8	0.04		0.004	0.00003	0.00020	0.011	0.00009	0.000005
HC-4-61	17-Apr-12	61	500	470	5.68	175	140	64.9	0.5	0.8	0.5	3.8	0.04		0.005	0.00004	0.00020	0.012	0.00010	0.000005
HC-4-62	24-Apr-12	62	500	480	6.21	200	135	64.8	0.5	0.9	0.5	3.7	0.04		0.005	0.00004	0.00020	0.013	0.00011	0.000005
HC-4-63	01-May-12	63	500	465	5.94	185	130	64.7	0.5	0.9	0.5	3.7	0.04	67.6	0.005	0.00004	0.00020	0.013	0.00012	0.000005
HC-4-64	08-May-12	64	500	480	6.00	199	140	65.1	0.5	0.9	0.5	4.0	0.04		0.006	0.00004	0.00020	0.013	0.00012	0.000005
HC-4-65	15-May-12	65	500	485	5.54	205	140	65.5	0.5	1.0	0.5	4.4	0.04		0.006	0.00004	0.00020	0.013	0.00013	0.000005
HC-4-66	22-May-12	66	500	475	5.90	184	140	65.8	0.5	1.0	0.5	4.7	0.04		0.007	0.00004	0.00021	0.012	0.00013	0.000005
HC-4-67	29-May-12	67	500	470	5.59	207	140	66.2	0.5	1.0	0.5	5.0	0.04	67.5	0.007	0.00004	0.00021	0.012	0.00014	0.000005
HC-4-68	05-Jun-12	68	500	480	5.53	181	130	65.1	0.5	1.0	0.5	5.1	0.04		0.008	0.00003	0.00021	0.012	0.00014	0.000005
HC-4-69	12-Jun-12	69	500	480	5.52	186	140	63.9	0.5	1.0	0.5	5.2	0.04		0.008	0.00003	0.00020	0.013	0.00014	0.000005
HC-4-70	19-Jun-12	70	500	480	5.52	177	135	62.8	0.5	1.0	0.5	5.2	0.04		0.008	0.00003	0.00020	0.013	0.00014	0.000005
HC-4-71	26-Jun-12	71	500	480	5.37	178	135	61.6	0.5	1.0	0.5	5.3	0.04	63.9	0.008	0.00003	0.00020	0.014	0.00015	0.000005
HC-4-72	03-Jul-12	72	500	495	5.51	162	145	60.3	0.5	0.9	0.5	5.7	0.04		0.009	0.00003	0.00018	0.013	0.00015	0.000005
HC-4-73	10-Jul-12	73	500	465	5.61	160	140	59.0	0.5	0.8	0.5	6.1	0.04		0.009	0.00003	0.00017	0.013	0.00015	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-4-74	17-Jul-12	74	500	485	5.55	181	130	57.6	0.5	0.7	0.5	6.4	0.04		0.010	0.00003	0.00016	0.013	0.00015	0.000005
HC-4-75	24-Jul-12	75	500	475	5.38	173	150	56.3	0.5	0.6	0.5	6.8	0.04	67.8	0.010	0.00003	0.00015	0.013	0.00015	0.000005
HC-4-76	31-Jul-12	76	500	465	5.38	196	135	55.7	0.5	0.7	0.5	6.1	0.04		0.010	0.00002	0.00014	0.013	0.00014	0.000005
HC-4-77	07-Aug-12	77	500	470	5.34	184	160	55.1	0.5	0.9	0.5	5.5	0.04		0.009	0.00002	0.00014	0.013	0.00014	0.000005
HC-4-78	14-Aug-12	78	500	490	5.55	175	180	54.5	0.5	1.1	0.5	4.8	0.04		0.008	0.00002	0.00014	0.012	0.00013	0.000005
HC-4-79	21-Aug-12	79	500	480	5.32	165	135	53.9	0.5	1.3	0.5	4.1	0.05	59.1	0.008	0.00002	0.00013	0.012	0.00013	0.000005
HC-4-80	28-Aug-12	80	500	465	5.48	171	140	53.4	0.5	1.2	0.5	5.3	0.04		0.009	0.00002	0.00014	0.013	0.00014	0.000005
HC-4-81	04-Sep-12	81	500	470	5.35	175	145	52.9	0.5	1.1	0.5	6.6	0.04		0.010	0.00002	0.00015	0.014	0.00015	0.000005
HC-4-82	11-Sep-12	82	500	485	5.27	193	165	52.4	0.5	1.0	0.5	7.8	0.04		0.012	0.00003	0.00016	0.015	0.00017	0.000005
HC-4-83	18-Sep-12	83	500	460	5.22	185	160	51.9	0.5	0.8	0.5	9.0	0.04	66.9	0.013	0.00003	0.00017	0.016	0.00018	0.000005
HC-4-84	25-Sep-12	84	500	460	5.47	179	140	51.8	0.5	0.8	0.5	8.4	0.04		0.012	0.00003	0.00015	0.015	0.00018	0.000005
HC-4-85	02-Oct-12	85	500	480	5.35	160	140	51.7	0.5	0.7	0.5	7.8	0.04		0.012	0.00002	0.00014	0.014	0.00018	0.000005
HC-4-86	09-Oct-12	86	500	470	5.25	170	135	51.6	0.5	0.7	0.5	7.1	0.04		0.011	0.00002	0.00013	0.013	0.00018	0.000005
HC-4-87	16-Oct-12	87	500	460	5.35	164	135	51.5	0.5	0.7	0.5	6.5	0.04	60.4	0.010	0.00002	0.00011	0.012	0.00018	0.000005
HC-4-88	23-Oct-12	88	500	490	5.45	163	140	53.9	0.5	0.6	0.5	6.4	0.04		0.010	0.00002	0.00011	0.013	0.00018	0.000005
HC-4-89	30-Oct-12	89	500	485	5.50	169	150	56.4	0.5	0.6	0.5	6.3	0.05		0.010	0.00003	0.00010	0.013	0.00017	0.000005
HC-4-90	06-Nov-12	90	500	465	5.45	157	155	58.8	0.5	0.5	0.5	6.1	0.05		0.010	0.00003	0.00009	0.013	0.00016	0.000005
HC-4-91	13-Nov-12	91	500	470	5.36	169	140	61.2	0.5	0.5	0.5	6.0	0.05	63.4	0.010	0.00003	0.00009	0.013	0.00016	0.000005
HC-4-92	20-Nov-12	92	500	475	5.59	162	135	59.8	0.5	0.5	0.5	5.6	0.05		0.009	0.00003	0.00009	0.012	0.00015	0.000005
HC-4-93	27-Nov-12	93	500	480	5.70	162	150	58.4	0.5	0.5	0.5	5.2	0.05		0.009	0.00003	0.00010	0.012	0.00015	0.000005
HC-4-94	04-Dec-12	94	500	475	5.61	161	140	56.9	0.5	0.5	0.6	4.8	0.05		0.008	0.00003	0.00010	0.011	0.00015	0.000005
HC-4-95	11-Dec-12	95	500	470	5.63	166	145	55.5	0.5	0.5	0.6	4.4	0.05	59.8	0.007	0.00003	0.00011	0.011	0.00014	0.000005
HC-4-96	18-Dec-12	96	500	475	5.85	150	135	54.3	0.5	0.5	0.6	4.0	0.05		0.007	0.00003	0.00011	0.011	0.00014	0.000005
HC-4-97	25-Dec-12	97	500	475	5.58	135	130	53.2	0.5	0.5	0.5	3.6	0.05		0.007	0.00002	0.00012	0.012	0.00014	0.000005
HC-4-98	01-Jan-13	98	500	470	5.51	153	110	52.0	0.5	0.5	0.5	3.2	0.05		0.007	0.00002	0.00012	0.012	0.00014	0.000005
HC-4-99	08-Jan-13	99	500	460	5.57	145	130	50.8	0.5	0.5	0.5	2.8	0.05	56.3	0.007	0.00002	0.00012	0.013	0.00013	0.000005
HC-4-100	15-Jan-13	100	500	440	5.45	149	140	50.8	0.5	0.5	0.5	2.9	0.05		0.009	0.00002	0.00013	0.013	0.00014	0.000005
HC-4-101	22-Jan-13	101	500	495	5.37	141	125	50.9	0.5	0.6	0.5	3.1	0.05		0.010	0.00002	0.00014	0.013	0.00015	0.000005
HC-4-102	29-Jan-13	102	500	470	5.17	143	135	50.9	0.5	0.6	0.5	3.2	0.05		0.012	0.00002	0.00015	0.013	0.00016	0.000005
HC-4-103	05-Feb-13	103	500	480	5.31	123	135	50.9	0.5	0.7	0.5	3.3	0.05	52.0	0.013	0.00002	0.00016	0.013	0.00017	0.000005
HC-4-104	12-Feb-13	104	500	470	5.30	133	140	50.3	0.5	1.4	0.6	3.0	0.05		0.013	0.00002	0.00015	0.013	0.00018	0.000005
HC-4-105	19-Feb-13	105	500	475	5.26	136	140	49.7	0.5	2.1	0.6	2.8	0.05		0.013	0.00002	0.00014	0.013	0.00018	0.000005
HC-4-106	26-Feb-13	106	500	470	5.32	133	145	49.1	0.5	2.8	0.7	2.5	0.05		0.014	0.00002	0.00012	0.013	0.00018	0.000005
HC-4-107	05-Mar-13	107	500	485	5.27	136	130	48.5	0.5	3.5	0.8	2.2	0.05	52.5	0.014	0.00002	0.00011	0.013	0.00018	0.000005
HC-4-108	12-Mar-13	108	500	475	5.24	133	190	49.1	0.5	2.8	1.0	2.4	0.05		0.014	0.00002	0.00010	0.013	0.00018	0.000005
HC-4-109	19-Mar-13	109	500	470	5.30	131	190	49.6	0.5	2.2	1.1	2.6	0.05		0.014	0.00002	0.00009	0.013	0.00018	0.000005
HC-4-110	26-Mar-13	110	500	480	5.15	131	200	50.2	0.5	1.6	1.3	2.7	0.05		0.014	0.00002	0.00008	0.014	0.00018	0.000005
HC-4-111	02-Apr-13	111	500	495	5.07	129	200	50.7	0.5	1.0	1.5	2.9	0.05	49.3	0.015	0.00002	0.00008	0.014	0.00018	0.000005
HC-4-112	09-Apr-13	112	500	425	5.09	138	190	49.4	0.5	1.0	1.3	3.0	0.05		0.015	0.00002	0.00012	0.014	0.00018	0.000005
HC-4-113	16-Apr-13	113	500	495	5.04	128	175	48.1	0.5	1.0	1.0	3.1	0.05		0.015	0.00002	0.00017	0.014	0.00018	0.000005
HC-4-114	23-Apr-13	114	500	475	5.08	130	180	46.8	0.5	1.1	0.8	3.2	0.05		0.016	0.00002	0.00022	0.014	0.00018	0.000005
HC-4-115	30-Apr-13	115	500	470	5.10	128	170	45.5	0.5	1.1	0.5	3.3	0.05	49.7	0.016	0.00002	0.00027	0.014	0.00018	0.000005
HC-4-116	07-May-13	116	500	460	5.03	132	175	46.5	0.5	1.1	0.5	3.3	0.05		0.016	0.00002	0.00023	0.014	0.00019	0.000005
HC-4-117	14-May-13	117	500	490	5.01	132	180	47.6	0.5	1.1	0.5	3.3	0.05		0.017	0.00002	0.00018	0.014	0.00020	0.000005
HC-4-118	21-May-13	118	500	475	5.33	130	200	48.6	0.5	1.1	0.5	3.2	0.05		0.017	0.00002	0.00014	0.013	0.00020	0.000005
HC-4-119	28-May-13	119	500	475	5.03	133	185	49.6	0.5	1.1	0.5	3.2	0.05	51.1	0.018	0.00002	0.00010	0.013	0.00021	0.000005
HC-4-120	04-Jun-13	120	500	485	5.13	132	170	49.4	0.5	1.1	0.5	3.2	0.05		0.018	0.00002	0.00010	0.013	0.00021	0.000005
HC-4-121	11-Jun-13	121	500	475	5.20	133	200	49.1	0.5	1.1	0.5	3.1	0.05		0.019	0.00002	0.00011	0.012	0.00021	0.000005
HC-4-122	18-Jun-13	122	500	480	5.01	127	210	48.9	0.5	1.2	0.5	3.1	0.05		0.019	0.00002	0.00012	0.012	0.00020	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity $\mu\text{S/cm}$	ORP mV	Sulphate ( $\text{SO}_4^{2-}$ ) mg/L	Acidity to pH 4.5 mg $\text{CaCO}_3/\text{L}$	Acidity to pH 8.3 mg $\text{CaCO}_3/\text{L}$	Total Alkalinity mg $\text{CaCO}_3/\text{L}$	Chloride ( $\text{Cl}^-$ ) mg/L	Fluoride ( $\text{F}^-$ ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC-4-123	25-Jun-13	123	500	480	5.07	132	210	48.6	0.5	1.2	0.5	3.0	0.05	51.2	0.019	0.00002	0.00012	0.012	0.00020	0.000005
HC-4-124	02-Jul-13	124	500	460	4.99	131	190	48.4	0.5	1.6	0.6	3.1	0.05		0.020	0.00002	0.00012	0.012	0.00020	0.000005
HC-4-125	09-Jul-13	125	500	460	5.01	135	205	48.2	0.5	2.1	0.6	3.2	0.05		0.020	0.00002	0.00011	0.012	0.00021	0.000005
HC-4-126	16-Jul-13	126	500	475	4.99	136	195	47.9	0.5	2.5	0.7	3.3	0.05		0.020	0.00002	0.00010	0.011	0.00021	0.000005
HC-4-127	23-Jul-13	127	500	460	4.90	135	170	47.7	0.5	3.0	0.8	3.4	0.05	49.5	0.021	0.00002	0.00009	0.011	0.00021	0.000005
HC-4-128	30-Jul-13	128	500	475	4.96	135	195	47.6	0.5	2.6	1.0	3.3	0.05		0.020	0.00002	0.00009	0.011	0.00021	0.000005
HC-4-129	06-Aug-13	129	500	475	5.03	130	190	47.4	0.5	2.2	1.2	3.1	0.05		0.020	0.00002	0.00009	0.011	0.00021	0.000005
HC-4-130	13-Aug-13	130	500	470	4.95	131	180	47.3	0.5	1.8	1.4	3.0	0.05		0.020	0.00002	0.00009	0.011	0.00021	0.000005
HC-4-131	20-Aug-13	131	500	460	4.84	127	180	47.1	0.5	1.4	1.6	2.8	0.05	48.2	0.019	0.00002	0.00009	0.010	0.00021	0.000005
HC-4-132	27-Aug-13	132	500	475	4.87	133	165	47.5	0.5	1.4	1.3	2.8	0.05		0.020	0.00002	0.00009	0.010	0.00022	0.000005
HC-4-133	03-Sep-13	133	500	485	4.88	134	210	47.8	0.5	1.4	1.1	2.8	0.05		0.020	0.00002	0.00010	0.011	0.00022	0.000005
HC-4-134	10-Sep-13	134	500	450	4.88	143	195	48.2	0.5	1.3	0.8	2.8	0.05		0.021	0.00002	0.00010	0.011	0.00023	0.000005
HC-4-135	17-Sep-13	135	500	465	4.92	131	170	48.5	0.5	1.3	0.6	2.8	0.05	50.6	0.022	0.00002	0.00011	0.011	0.00024	0.000005
HC-4-136	24-Sep-13	136	500	465	4.75	133	185	48.6	0.5	1.4	0.5	3.1	0.05		0.022	0.00002	0.00009	0.011	0.00025	0.000005
HC-4-137	01-Oct-13	137	500	475	4.85	133	170	48.6	0.5	1.5	0.5	3.4	0.05		0.023	0.00002	0.00008	0.012	0.00026	0.000005
HC-4-138	08-Oct-13	138	500	470	4.91	134	185	48.7	0.5	1.5	0.5	3.6	0.05		0.024	0.00002	0.00006	0.012	0.00027	0.000005
HC-4-139	15-Oct-13	139	500	470	4.96	138	195	48.7	0.5	1.6	0.5	3.9	0.05	55.2	0.025	0.00002	0.00004	0.012	0.00029	0.000005
HC-4-140	22-Oct-13	140	500	465	4.89	139	200	49.1	0.5	1.3	0.6	3.4	0.05		0.024	0.00002	0.00005	0.013	0.00028	0.000005
HC-4-141	29-Oct-13	141	500	465	5.05	145	120	49.5	0.5	1.1	0.6	2.8	0.05		0.024	0.00002	0.00006	0.013	0.00027	0.000005
HC-4-142	05-Nov-13	142	500	470	5.30	135	205	49.9	0.5	0.8	0.6	2.3	0.05		0.023	0.00002	0.00007	0.013	0.00026	0.000005
HC-4-143	12-Nov-13	143	500	475	5.30	131	150	50.3	0.5	0.5	0.6	1.7	0.05	54.9	0.023	0.00002	0.00007	0.013	0.00026	0.000005
HC-4-144	19-Nov-13	144	500	455	5.28	133	180	51.1	0.5	0.6	0.6	1.9	0.05		0.023	0.00002	0.00007	0.013	0.00027	0.000005
HC-4-145	26-Nov-13	145	500	490	4.93	140	195	52.0	0.5	0.7	0.6	2.2	0.05		0.023	0.00002	0.00008	0.012	0.00028	0.000005
HC-4-146	03-Dec-13	146	500	475	5.13	148	200	52.8	0.5	0.8	0.5	2.4	0.05		0.023	0.00002	0.00008	0.012	0.00030	0.000005
HC-4-147	10-Dec-13	147	500	465	5.06	146	170	53.6	0.5	0.9	0.5	2.6	0.05	54.8	0.023	0.00002	0.00008	0.012	0.00031	0.000005
HC-4-148	17-Dec-13	148	500	460	5.00	149	175	54.2	0.5	0.9	0.5	2.3	0.05		0.024	0.00002	0.00008	0.012	0.00031	0.000005
HC-4-149	24-Dec-13	149	500	475	4.95	144	205	54.9	0.5	0.8	0.5	2.0	0.05		0.025	0.00002	0.00007	0.012	0.00031	0.000005
HC-4-150	31-Dec-13	150	500	470	5.16	151	210	55.5	0.5	0.7	0.5	1.6	0.05		0.026	0.00002	0.00007	0.012	0.00032	0.000005
HC-4-151	07-Jan-14	151	500	475	4.91	144	180	56.1	0.5	0.7	0.5	1.3	0.05	54.0	0.027	0.00002	0.00007	0.011	0.00032	0.000005
HC-4-152	14-Jan-14	152	500	470	4.85	148	180	56.3	0.5	1.0	0.5	1.7	0.05		0.029	0.00002	0.00007	0.011	0.00034	0.000005
HC-4-153	21-Jan-14	153	500	470	4.84	154	190	56.5	0.5	1.3	0.5	2.0	0.06		0.031	0.00002	0.00006	0.012	0.00036	0.000005
HC-4-154	28-Jan-14	154	500	465	4.80	149	200	56.7	0.5	1.6	0.5	2.4	0.06		0.033	0.00002	0.00006	0.012	0.00037	0.000005
HC-4-155	04-Feb-14	155	500	480	4.83	148	210	56.9	0.5	1.9	0.5	2.7	0.06	57.5	0.035	0.00002	0.00006	0.012	0.00039	0.000005
HC-4-156	11-Feb-14	156	500	460	4.84	155	195	57.6	0.5	2.1	0.5	2.4	0.06		0.036	0.00002	0.00006	0.012	0.00040	0.000005
HC-4-157	18-Feb-14	157	500	475	4.73	152	215	58.2	0.5	2.2	0.5	2.1	0.06		0.038	0.00002	0.00006	0.012	0.00041	0.000005
HC-4-158	25-Feb-14	158	500	485	4.72	150	160	58.9	0.5	2.3	0.5	1.7	0.06		0.039	0.00002	0.00006	0.012	0.00043	0.000005
HC-4-159	04-Mar-14	159	500	470	4.69	155	220	59.5	0.5	2.5	0.5	1.4	0.06	58.2	0.040	0.00002	0.00005	0.013	0.00044	0.000005
HC-4-160	11-Mar-14	160	500	475	4.66	158	210	60.8	0.5	2.7	0.5	1.5	0.06		0.043	0.00002	0.00005	0.013	0.00045	0.000005
HC-4-161	18-Mar-14	161	500	470	4.64	162	210	62.1	0.5	2.9	0.5	1.6	0.06		0.045	0.00002	0.00005	0.013	0.00047	0.000005
HC-4-162	25-Mar-14	162	500	470	4.61	163	210	63.4	0.5	3.1	0.5	1.6	0.06		0.048	0.00002	0.00005	0.013	0.00048	0.000005
HC-4-163	01-Apr-14	163	500	485	4.65	167	210	64.7	0.5	3.3	0.5	1.7	0.06	62.4	0.051	0.00002	0.00005	0.013	0.00050	0.000005
HC-4-164	08-Apr-14	164	500	475	4.58	173	210	67.6	0.5	3.4	0.5	1.8	0.06		0.054	0.00002	0.00005	0.013	0.00055	0.000005
HC-4-165	15-Apr-14	165	500	475	4.54	176	220	70.5	0.5	3.6	0.5	1.8	0.07		0.057	0.00002	0.00006	0.012	0.00059	0.000005
HC-4-166	22-Apr-14	166	500	470	4.53	182	220	73.3	0.5	3.7	0.5	1.9	0.07		0.060	0.00002	0.00006	0.012	0.00064	0.000005
HC-4-167	29-Apr-14	167	500	470	4.57	179	210	76.2	0.5	3.8	0.5	1.9	0.07	70.1	0.062	0.00002	0.00006	0.012	0.00068	0.000005
Mean all weeks					5.89	176	154	55.9	0.5	1.1	6.3	5.1	0.09	36.7	0.024	0.00049	0.00044	0.013	0.00016	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity $\mu\text{S/cm}$	ORP mV	Sulphate ( $\text{SO}_4^{2-}$ ) mg/L	Acidity to pH 4.5 mg $\text{CaCO}_3/\text{L}$	Acidity to pH 8.3 mg $\text{CaCO}_3/\text{L}$	Total Alkalinity mg $\text{CaCO}_3/\text{L}$	Chloride ( $\text{Cl}^-$ ) mg/L	Fluoride ( $\text{F}^-$ ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC6 Upper Gates Carbonaceous Mudstone																				
HC-6-0	15-Feb-11	0	750	615	9.99	291	65	8.0	0.5	0.5	130.0	2.9	0.78	3.4	0.622	0.00889	0.00976	0.099	0.00001	0.000005
HC-6-1	22-Feb-11	1	500	500	9.52	454	35	46.0	0.5	0.5	170.0	1.8	0.88	5.7	0.295	0.00860	0.00462	0.262	0.00001	0.000005
HC-6-2	01-Mar-11	2	500	480	9.62	396	20	30.0	0.5	0.5	160.0	0.5	0.73	2.8	0.289	0.00568	0.00298	0.164	0.00001	0.000005
HC-6-3	08-Mar-11	3	500	470	9.70	364	20	23.0	0.5	0.5	150.0	0.5	0.56	2.6	0.254	0.00406	0.00223	0.146	0.00001	0.000005
HC-6-4	15-Mar-11	4	500	495	9.65	335	20	20.0	0.5	0.5	150.0	0.5	0.55	3.9	0.234	0.00346	0.00170	0.174	0.00001	0.000005
HC-6-5	22-Mar-11	5	500	480	9.65	305	20	18.0	0.5	0.5	130.0	0.6	0.42	3.2	0.195	0.00242	0.00129	0.133	0.00001	0.000005
HC-6-6	29-Mar-11	6	500	485	9.52	242	30	14.0	0.5	0.5	110.0	0.5	0.35	3.4	0.164	0.00194	0.00084	0.151	0.00001	0.000005
HC-6-7	05-Apr-11	7	500	500	9.54	255	55	13.0	0.5	0.5	110.0	0.5	0.31	3.8	0.168	0.00175	0.00086	0.150	0.00001	0.000005
HC-6-8	12-Apr-11	8	500	485	9.42	242	30	11.0	0.5	0.5	100.0	0.5	0.29	3.5	0.154	0.00156	0.00070	0.146	0.00001	0.000005
HC-6-9	19-Apr-11	9	500	500	9.49	221	55	11.0	0.5	0.5	95.0	0.5	0.28	5.0	0.130	0.00139	0.00052	0.167	0.00001	0.000005
HC-6-10	26-Apr-11	10	500	485	9.29	215	55	11.0	0.5	0.5	89.0	0.5	0.26	5.1	0.135	0.00138	0.00064	0.177	0.00001	0.000005
HC-6-11	03-May-11	11	500	485	9.32	199	65	8.7	0.5	0.5	86.0	0.5	0.22	5.2	0.125	0.00115	0.00043	0.165	0.00001	0.000005
HC-6-12	10-May-11	12	500	495	9.21	206	65	9.8	0.5	0.5	79.0	0.5	0.23	6.2	0.125	0.00113	0.00043	0.179	0.00001	0.000005
HC-6-13	17-May-11	13	500	480	9.30	187	90	7.7	0.5	0.5	74.0	2.8	0.21	6.8	0.108	0.00101	0.00064	0.213	0.00001	0.000005
HC-6-14	24-May-11	14	500	500	9.20	193	90	7.1	0.5	0.5	71.0	1.3	0.19	9.7	0.083	0.00085	0.00031	0.248	0.00001	0.000005
HC-6-15	31-May-11	15	500	480	9.09	193	90	6.3	0.5	0.5	56.0	1.1	0.18	9.7	0.068	0.00071	0.00027	0.241	0.00001	0.000005
HC-6-16	07-Jun-11	16	500	490	8.89	185	90	5.0	0.5	0.5	48.0	1.6	0.16	12.6	0.059	0.00062	0.00020	0.264	0.00001	0.000005
HC-6-17	14-Jun-11	17	500	490	8.87	173	140	4.7	0.5	0.5	46.0	1.9	0.14	14.0	0.050	0.00063	0.00017	0.313	0.00001	0.000005
HC-6-18	21-Jun-11	18	500	485	8.90	146	135	5.3	0.5	0.5	44.0	4.0	0.15	13.8	0.046	0.00057	0.00016	0.292	0.00001	0.000005
HC-6-19	28-Jun-11	19	500	480	8.76	148	135	5.2	0.5	0.5	45.0	6.2	0.15	18.4	0.049	0.00054	0.00017	0.313	0.00001	0.000005
HC-6-20	05-Jul-11	20	500	480	8.75	138	165	6.9	0.5	0.5	42.3	19.9	0.15		0.045	0.00050	0.00016	0.371	0.00001	0.000005
HC-6-21	12-Jul-11	21	500	495	8.34	116	170	8.6	0.5	0.5	39.5	33.6	0.14		0.041	0.00047	0.00014	0.428	0.00001	0.000005
HC-6-22	19-Jul-11	22	500	485	8.63	120	165	10.3	0.5	0.5	36.8	47.3	0.14		0.037	0.00043	0.00013	0.486	0.00001	0.000005
HC-6-23	26-Jul-11	23	500	460	8.41	136	170	12.0	0.5	0.5	34.0	61.0	0.13	29.9	0.033	0.00039	0.00011	0.543	0.00001	0.000005
HC-6-24	02-Aug-11	24	500	485	8.52	130	165	10.0	0.5	0.5	34.5	50.3	0.13		0.030	0.00038	0.00011	0.571	0.00001	0.000005
HC-6-25	09-Aug-11	25	500	485	8.60	122	140	8.0	0.5	0.5	35.0	39.5	0.13		0.027	0.00037	0.00011	0.600	0.00001	0.000005
HC-6-26	16-Aug-11	26	500	485	8.30	134	160	5.9	0.5	0.5	35.5	28.8	0.12		0.024	0.00036	0.00011	0.628	0.00001	0.000005
HC-6-27	23-Aug-11	27	500	500	8.18	148	155	3.9	0.5	0.5	36.0	18.0	0.12	45.5	0.021	0.00035	0.00011	0.656	0.00001	0.000005
HC-6-28	30-Aug-11	28	500	465	8.48	156	165	3.8	0.5	0.5	34.3	19.3	0.12		0.020	0.00033	0.00010	0.656	0.00001	0.000005
HC-6-29	06-Sep-11	29	500	465	8.34	123	130	3.6	0.5	0.5	32.5	20.5	0.12		0.019	0.00032	0.00010	0.656	0.00001	0.000005
HC-6-30	13-Sep-11	30	500	460	7.89	178	175	3.5	0.5	0.5	30.8	21.8	0.12		0.019	0.00030	0.00009	0.656	0.00001	0.000005
HC-6-31	20-Sep-11	31	500	465	7.95	156	150	3.3	0.5	0.5	29.0	23.0	0.12	53.0	0.018	0.00028	0.00008	0.656	0.00001	0.000005
HC-6-32	27-Sep-11	32	500	460	7.59	152	175	3.6	0.5	0.5	30.0	23.3	0.12		0.018	0.00028	0.00008	0.674	0.00001	0.000005
HC-6-33	04-Oct-11	33	500	475	7.76	183	130	3.8	0.5	0.5	31.0	23.5	0.12		0.017	0.00027	0.00008	0.691	0.00001	0.000005
HC-6-34	11-Oct-11	34	500	470	8.05	173	150	4.1	0.5	0.5	32.0	23.8	0.11		0.017	0.00027	0.00008	0.709	0.00001	0.000005
HC-6-35	18-Oct-11	35	500	440	8.05	174	185	4.3	0.5	0.5	33.0	24.0	0.11	64.9	0.016	0.00026	0.00008	0.726	0.00001	0.000005
HC-6-36	25-Oct-11	36	500	485	7.97	204	185	4.1	0.5	0.5	33.5	22.5	0.11		0.016	0.00025	0.00007	0.706	0.00001	0.000005
HC-6-37	01-Nov-11	37	500	485	7.75	206	205	4.0	0.5	0.5	34.0	21.0	0.11		0.015	0.00025	0.00006	0.685	0.00001	0.000005
HC-6-38	08-Nov-11	38	500	485	8.01	171	200	3.8	0.5	0.5	34.5	19.5	0.10		0.015	0.00024	0.00005	0.665	0.00001	0.000005
HC-6-39	15-Nov-11	39	500	485	8.17	150	200	3.7	0.5	0.5	35.0	18.0	0.10	54.9	0.014	0.00023	0.00004	0.644	0.00001	0.000005
HC-6-40	22-Nov-11	40	500	490	7.72	141	190	3.9	0.5	0.5	34.3	16.8	0.10		0.014	0.00023	0.00005	0.604	0.00001	0.000005
HC-6-41	29-Nov-11	41	500	475	7.98	115	190	4.2	0.5	0.5	33.7	15.5	0.11		0.014	0.00023	0.00005	0.564	0.00001	0.000005
HC-6-42	06-Dec-11	42	500	475	7.97	152	125	4.5	0.5	0.5	33.0	14.3	0.11		0.014	0.00022	0.00006	0.524	0.00001	0.000005
HC-6-43	13-Dec-11	43	500	465	7.57	135	125	4.7	0.5	0.5	32.3	13.0	0.11	52.3	0.014	0.00022	0.00006	0.484	0.00001	0.000005
HC-6-44	20-Dec-11	44	500	470	7.79	140	125	5.4	0.5	0.5	33.1	11.7	0.11		0.015	0.00022	0.00006	0.469	0.00001	0.000005
HC-6-45	27-Dec-11	45	500	470	7.99	127	125	6.1	0.5	0.5	33.8	10.3	0.11		0.016	0.00022	0.00005	0.453	0.00001	0.000005
HC-6-46	03-Jan-12	46	500	480	7.82	101	130	6.7	0.5	0.5	34.6	9.0	0.10		0.016	0.00022	0.00005	0.438	0.00001	0.000005
HC-6-47	10-Jan-12	47	500	460	8.00	114	125	7.4	0.5	0.5	35.3	7.6	0.10	50.4	0.017	0.00022	0.00004	0.422	0.00001	0.000005



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity µS/cm	ORP mV	Sulphate (SO <sub>4</sub> <sup>2-</sup> ) mg/L	Acidity to pH 4.5 mg CaCO <sub>3</sub> /L	Acidity to pH 8.3 mg CaCO <sub>3</sub> /L	Total Alkalinity mg CaCO <sub>3</sub> /L	Chloride (Cl <sup>-</sup> ) mg/L	Fluoride (F <sup>-</sup> ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC-6-48	17-Jan-12	48	500	465	8.20	114	110	6.9	0.5	0.5	35.4	8.5	0.10		0.016	0.00021	0.00004	0.425	0.00001	0.000005
HC-6-49	24-Jan-12	49	500	460	8.39	133	120	6.4	0.5	0.5	35.6	9.3	0.10		0.016	0.00021	0.00004	0.428	0.00001	0.000005
HC-6-50	31-Jan-12	50	500	465	8.18	136	125	6.0	0.5	0.5	35.7	10.2	0.10		0.015	0.00020	0.00003	0.430	0.00001	0.000005
HC-6-51	07-Feb-12	51	500	475	8.15	139	120	5.5	0.5	0.5	35.8	11.0	0.10	55.6	0.015	0.00019	0.00003	0.433	0.00001	0.000005
HC-6-52	14-Feb-12	52	500	465	8.43	124	120	6.0	0.5	0.5	35.4	11.0	0.09		0.015	0.00019	0.00004	0.423	0.00001	0.000005
HC-6-53	21-Feb-12	53	500	465	8.26	137	115	6.4	0.5	0.6	35.1	11.0	0.09		0.015	0.00019	0.00004	0.413	0.00001	0.000005
HC-6-54	28-Feb-12	54	500	470	8.30	148	120	6.9	0.5	0.6	34.7	11.0	0.09		0.015	0.00019	0.00005	0.402	0.00001	0.000005
HC-6-55	06-Mar-12	55	500	450	8.22	136	120	7.4	0.5	0.6	34.3	11.0	0.09	51.6	0.016	0.00019	0.00005	0.392	0.00001	0.000005
HC-6-56	13-Mar-12	56	500	470	8.24	140	125	7.1	0.5	0.6	34.3	9.3	0.09		0.015	0.00019	0.00006	0.368	0.00001	0.000005
HC-6-57	20-Mar-12	57	500	465	7.98	124	115	6.9	0.5	0.6	34.3	7.5	0.08		0.014	0.00018	0.00007	0.343	0.00001	0.000005
HC-6-58	27-Mar-12	58	500	475	8.23	103	120	6.6	0.5	0.5	34.2	5.8	0.08		0.012	0.00018	0.00008	0.319	0.00001	0.000005
HC-6-59	03-Apr-12	59	500	480	8.35	110	125	6.4	0.5	0.5	34.2	4.0	0.08	44.1	0.011	0.00017	0.00009	0.294	0.00001	0.000005
HC-6-60	10-Apr-12	60	500	485	8.45	106	125	6.4	0.5	0.5	33.8	3.9	0.08		0.012	0.00017	0.00008	0.291	0.00001	0.000005
HC-6-61	17-Apr-12	61	500	470	8.58	102	130	6.3	0.5	0.5	33.4	3.8	0.08		0.012	0.00017	0.00007	0.288	0.00001	0.000005
HC-6-62	24-Apr-12	62	500	470	8.10	110	125	6.3	0.5	0.5	32.9	3.6	0.08		0.013	0.00016	0.00006	0.285	0.00001	0.000005
HC-6-63	01-May-12	63	500	470	8.11	95	130	6.3	0.5	0.5	32.5	3.5	0.07	42.0	0.013	0.00016	0.00006	0.282	0.00001	0.000005
HC-6-64	08-May-12	64	500	470	8.25	116	120	6.4	0.5	0.5	32.3	4.1	0.07		0.013	0.00015	0.00006	0.279	0.00001	0.000005
HC-6-65	15-May-12	65	500	470	8.29	125	110	6.5	0.5	0.5	32.2	4.6	0.07		0.012	0.00015	0.00007	0.275	0.00001	0.000005
HC-6-66	22-May-12	66	500	485	8.32	110	130	6.5	0.5	0.5	32.0	5.2	0.07		0.012	0.00014	0.00007	0.272	0.00001	0.000005
HC-6-67	29-May-12	67	500	465	8.33	114	130	6.6	0.5	0.5	31.8	5.7	0.06	44.0	0.011	0.00013	0.00008	0.268	0.00001	0.000005
HC-6-68	05-Jun-12	68	500	470	8.28	108	120	6.7	0.5	0.5	33.1	6.0	0.07		0.011	0.00014	0.00007	0.279	0.00001	0.000005
HC-6-69	12-Jun-12	69	500	470	8.29	109	135	6.8	0.5	0.5	34.3	6.4	0.07		0.011	0.00014	0.00006	0.290	0.00001	0.000005
HC-6-70	19-Jun-12	70	500	490	8.51	105	125	6.9	0.5	0.5	35.6	6.7	0.07		0.011	0.00014	0.00004	0.301	0.00001	0.000005
HC-6-71	26-Jun-12	71	500	475	8.44	120	130	7.0	0.5	0.5	36.8	7.0	0.07	46.9	0.011	0.00014	0.00003	0.312	0.00001	0.000005
HC-6-72	03-Jul-12	72	500	490	8.17	110	135	7.8	0.5	0.5	35.2	8.3	0.07		0.012	0.00014	0.00003	0.312	0.00001	0.000005
HC-6-73	10-Jul-12	73	500	470	8.27	120	125	8.7	0.5	0.5	33.7	9.5	0.07		0.013	0.00015	0.00004	0.312	0.00001	0.000005
HC-6-74	17-Jul-12	74	500	465	8.07	119	130	9.5	0.5	0.5	32.1	10.8	0.07		0.014	0.00015	0.00004	0.311	0.00001	0.000005
HC-6-75	24-Jul-12	75	500	475	8.04	132	135	10.4	0.5	0.5	30.5	12.0	0.07	57.8	0.015	0.00015	0.00004	0.311	0.00001	0.000005
HC-6-76	31-Jul-12	76	500	465	8.05	151	135	10.1	0.5	0.5	33.0	9.6	0.06		0.015	0.00014	0.00003	0.297	0.00001	0.000005
HC-6-77	07-Aug-12	77	500	470	8.17	139	140	9.7	0.5	0.5	35.5	7.1	0.06		0.015	0.00014	0.00003	0.284	0.00001	0.000005
HC-6-78	14-Aug-12	78	500	475	8.25	142	135	9.4	0.5	0.5	37.9	4.7	0.06		0.015	0.00013	0.00002	0.270	0.00001	0.000005
HC-6-79	21-Aug-12	79	500	490	8.25	114	135	9.0	0.5	0.5	40.4	2.2	0.06	50.4	0.016	0.00013	0.00002	0.256	0.00001	0.000005
HC-6-80	28-Aug-12	80	500	480	8.39	117	135	8.3	0.5	0.5	38.7	5.2	0.06		0.014	0.00012	0.00003	0.256	0.00001	0.000005
HC-6-81	04-Sep-12	81	500	475	8.13	132	135	7.7	0.5	0.5	37.0	8.1	0.06		0.012	0.00012	0.00003	0.256	0.00001	0.000005
HC-6-82	11-Sep-12	82	500	480	8.25	140	135	7.0	0.5	0.5	35.3	11.1	0.06		0.010	0.00011	0.00004	0.256	0.00001	0.000005
HC-6-83	18-Sep-12	83	500	490	8.18	139	140	6.4	0.5	0.5	33.6	14.0	0.06	56.6	0.009	0.00011	0.00004	0.256	0.00001	0.000005
HC-6-84	25-Sep-12	84	500	460	8.44	114	135	7.0	0.5	0.5	33.1	12.5	0.05		0.008	0.00010	0.00004	0.247	0.00001	0.000005
HC-6-85	02-Oct-12	85	500	475	8.40	109	130	7.5	0.5	0.5	32.5	10.9	0.05		0.008	0.00010	0.00003	0.237	0.00001	0.000005
HC-6-86	09-Oct-12	86	500	490	8.25	123	130	8.1	0.5	0.5	32.0	9.4	0.05		0.007	0.00010	0.00003	0.228	0.00001	0.000005
HC-6-87	16-Oct-12	87	500	465	8.24	113	130	8.7	0.5	0.5	31.4	7.8	0.05	47.1	0.007	0.00010	0.00002	0.218	0.00001	0.000005
HC-6-88	23-Oct-12	88	500	480	8.21	143	130	8.8	0.5	0.5	31.0	7.8	0.05		0.007	0.00010	0.00002	0.217	0.00001	0.000005
HC-6-89	30-Oct-12	89	500	465	8.12	114	135	9.0	0.5	0.5	30.5	7.8	0.05		0.008	0.00010	0.00002	0.216	0.00001	0.000005
HC-6-90	06-Nov-12	90	500	480	8.34	120	135	9.1	0.5	0.5	30.1	7.7	0.05		0.008	0.00010	0.00003	0.214	0.00001	0.000005
HC-6-91	13-Nov-12	91	500	465	8.24	116	125	9.3	0.5	0.5	29.6	7.7	0.05	50.4	0.009	0.00010	0.00003	0.213	0.00001	0.000005
HC-6-92	20-Nov-12	92	500	465	8.31	110	125	9.6	0.5	0.5	30.6	7.4	0.05		0.009	0.00010	0.00003	0.212	0.00001	0.000005
HC-6-93	27-Nov-12	93	500	475	8.24	118	125	9.8	0.5	0.5	31.7	7.0	0.05		0.009	0.00011	0.00004	0.211	0.00001	0.000005
HC-6-94	04-Dec-12	94	500	475	8.32	111	125	10.1	0.5	0.5	32.7	6.7	0.06		0.009	0.00011	0.00004	0.210	0.00001	0.000005
HC-6-95	11-Dec-12	95	500	455	8.49	133	130	10.3	0.5	0.5	33.7	6.3	0.06	56.0	0.010	0.00012	0.00005	0.209	0.00001	0.000005
HC-6-96	18-Dec-12	96	500	495	8.15	107	130	10.3	0.5	0.5	35.2	5.0	0.06		0.009	0.00011	0.00005	0.203	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-6-97	25-Dec-12	97	500	470	8.18	109	125	10.2	0.5	0.5	36.7	3.6	0.05		0.009	0.00011	0.00005	0.198	0.00001	0.000005
HC-6-98	01-Jan-13	98	500	495	8.24	116	120	10.2	0.5	0.5	38.1	2.3	0.05		0.008	0.00010	0.00005	0.192	0.00001	0.000005
HC-6-99	08-Jan-13	99	500	490	8.26	111	110	10.1	0.5	0.5	39.6	0.9	0.05	50.7	0.008	0.00010	0.00004	0.186	0.00001	0.000005
HC-6-100	15-Jan-13	100	500	480	8.26	108	105	10.4	0.5	0.5	38.6	1.6	0.05		0.008	0.00010	0.00006	0.182	0.00001	0.000005
HC-6-101	22-Jan-13	101	500	495	8.26	111	115	10.8	0.5	0.5	37.6	2.3	0.05		0.008	0.00010	0.00007	0.177	0.00001	0.000005
HC-6-102	29-Jan-13	102	500	475	8.21	107	110	11.1	0.5	0.5	36.5	3.0	0.05		0.008	0.00009	0.00008	0.173	0.00001	0.000005
HC-6-103	05-Feb-13	103	500	470	8.15	90	155	11.4	0.5	0.5	35.5	3.7	0.04	47.3	0.009	0.00009	0.00009	0.168	0.00001	0.000005
HC-6-104	12-Feb-13	104	500	475	8.26	102	140	11.2	0.5	1.0	36.7	3.4	0.04		0.008	0.00009	0.00008	0.176	0.00001	0.000005
HC-6-105	19-Feb-13	105	500	455	8.41	112	110	10.9	0.5	1.4	38.0	3.0	0.05		0.008	0.00010	0.00007	0.183	0.00001	0.000005
HC-6-106	26-Feb-13	106	500	485	8.16	116	130	10.7	0.5	1.9	39.2	2.7	0.05		0.008	0.00010	0.00006	0.191	0.00001	0.000005
HC-6-107	05-Mar-13	107	500	485	8.37	116	125	10.4	0.5	2.3	40.4	2.3	0.05	53.8	0.008	0.00011	0.00006	0.198	0.00001	0.000005
HC-6-108	12-Mar-13	108	500	455	8.33	107	145	10.1	0.5	1.9	39.1	2.6	0.05		0.008	0.00010	0.00005	0.192	0.00001	0.000005
HC-6-109	19-Mar-13	109	500	475	8.34	106	140	9.7	0.5	1.4	37.9	2.8	0.05		0.008	0.00009	0.00004	0.185	0.00001	0.000005
HC-6-110	26-Mar-13	110	500	465	8.35	111	130	9.4	0.5	1.0	36.6	3.1	0.05		0.008	0.00009	0.00003	0.179	0.00001	0.000005
HC-6-111	02-Apr-13	111	500	465	8.33	100	140	9.0	0.5	0.5	35.3	3.3	0.05	45.6	0.009	0.00008	0.00002	0.172	0.00001	0.000005
HC-6-112	09-Apr-13	112	500	455	8.17	108	140	9.5	0.5	0.5	36.0	3.6	0.05		0.008	0.00008	0.00003	0.173	0.00001	0.000005
HC-6-113	16-Apr-13	113	500	465	8.10	105	125	10.1	0.5	0.5	36.7	3.9	0.05		0.008	0.00009	0.00004	0.175	0.00001	0.000005
HC-6-114	23-Apr-13	114	500	460	8.31	102	125	10.6	0.5	0.5	37.4	4.1	0.05		0.007	0.00009	0.00005	0.176	0.00001	0.000005
HC-6-115	30-Apr-13	115	500	460	8.32	110	130	11.1	0.5	0.5	38.1	4.4	0.05	52.8	0.006	0.00009	0.00006	0.177	0.00001	0.000005
HC-6-116	07-May-13	116	500	470	8.34	116	120	11.0	0.5	0.5	38.0	4.2	0.04		0.006	0.00009	0.00006	0.170	0.00001	0.000005
HC-6-117	14-May-13	117	500	475	8.32	108	135	10.9	0.5	0.5	37.9	4.0	0.04		0.006	0.00009	0.00005	0.164	0.00001	0.000005
HC-6-118	21-May-13	118	500	480	8.12	109	130	10.8	0.5	0.5	37.8	3.8	0.04		0.006	0.00008	0.00005	0.157	0.00001	0.000005
HC-6-119	28-May-13	119	500	475	8.23	110	125	10.7	0.5	0.5	37.7	3.6	0.04	49.8	0.005	0.00008	0.00005	0.150	0.00001	0.000005
HC-6-120	04-Jun-13	120	500	485	8.27	108	130	10.8	0.5	0.5	37.6	3.6	0.04		0.005	0.00008	0.00008	0.151	0.00001	0.000005
HC-6-121	11-Jun-13	121	500	480	8.25	113	130	10.9	0.5	0.5	37.6	3.6	0.04		0.006	0.00008	0.00011	0.151	0.00001	0.000005
HC-6-122	18-Jun-13	122	500	475	8.31	112	130	10.9	0.5	0.5	37.5	3.6	0.04		0.006	0.00008	0.00014	0.152	0.00001	0.000005
HC-6-123	25-Jun-13	123	500	450	8.46	108	140	11.0	0.5	0.5	37.4	3.6	0.04	51.3	0.006	0.00008	0.00017	0.152	0.00001	0.000005
HC-6-124	02-Jul-13	124	500	470	8.36	116	145	11.1	0.5	0.5	37.0	3.8	0.04		0.006	0.00008	0.00013	0.151	0.00001	0.000005
HC-6-125	09-Jul-13	125	500	465	8.35	115	140	11.2	0.5	0.5	36.6	4.0	0.04		0.006	0.00008	0.00010	0.151	0.00001	0.000005
HC-6-126	16-Jul-13	126	500	465	8.36	115	140	11.2	0.5	0.5	36.2	4.1	0.03		0.006	0.00008	0.00006	0.150	0.00001	0.000005
HC-6-127	23-Jul-13	127	500	465	8.35	116	130	11.3	0.5	0.5	35.8	4.3	0.03	52.1	0.006	0.00009	0.00003	0.149	0.00001	0.000005
HC-6-128	30-Jul-13	128	500	460	8.45	115	130	11.6	0.5	0.5	39.4	4.0	0.03		0.006	0.00009	0.00003	0.146	0.00001	0.000005
HC-6-129	06-Aug-13	129	500	465	8.38	103	140	12.0	0.5	0.5	43.0	3.8	0.04		0.006	0.00009	0.00003	0.144	0.00001	0.000005
HC-6-130	13-Aug-13	130	500	465	8.47	111	130	12.3	0.5	0.5	46.5	3.5	0.04		0.006	0.00009	0.00003	0.141	0.00001	0.000005
HC-6-131	20-Aug-13	131	500	455	8.44	111	130	12.6	0.5	0.5	50.1	3.2	0.04	52.0	0.005	0.00009	0.00003	0.138	0.00001	0.000005
HC-6-132	27-Aug-13	132	500	470	8.40	111	125	12.6	0.5	0.7	46.6	2.9	0.04		0.005	0.00009	0.00003	0.135	0.00001	0.000005
HC-6-133	03-Sep-13	133	500	470	8.26	115	150	12.6	0.5	1.0	43.2	2.7	0.04		0.005	0.00008	0.00003	0.133	0.00001	0.000005
HC-6-134	10-Sep-13	134	500	475	8.21	111	150	12.5	0.5	1.2	39.7	2.4	0.04		0.005	0.00008	0.00003	0.130	0.00001	0.000005
HC-6-135	17-Sep-13	135	500	470	8.16	103	145	12.5	0.5	1.5	36.2	2.1	0.04	48.0	0.004	0.00008	0.00003	0.127	0.00001	0.000005
HC-6-136	24-Sep-13	136	500	465	8.27	115	135	12.4	0.5	1.2	36.8	2.6	0.03		0.004	0.00008	0.00003	0.131	0.00001	0.000005
HC-6-137	01-Oct-13	137	500	475	8.32	115	135	12.3	0.5	1.0	37.4	3.2	0.03		0.004	0.00008	0.00003	0.134	0.00001	0.000005
HC-6-138	08-Oct-13	138	500	470	8.36	111	130	12.2	0.5	0.7	37.9	3.7	0.03		0.004	0.00008	0.00002	0.138	0.00001	0.000005
HC-6-139	15-Oct-13	139	500	475	8.15	116	140	12.1	0.5	0.5	38.5	4.2	0.03	57.9	0.004	0.00008	0.00002	0.141	0.00001	0.000005
HC-6-140	22-Oct-13	140	500	470	8.26	108	140	12.1	0.5	0.5	38.9	3.4	0.03		0.005	0.00008	0.00002	0.138	0.00001	0.000005
HC-6-141	29-Oct-13	141	500	475	8.12	118	115	12.1	0.5	0.5	39.3	2.6	0.03		0.005	0.00008	0.00002	0.134	0.00001	0.000005
HC-6-142	05-Nov-13	142	500	475	8.27	107	125	12.1	0.5	0.5	39.6	1.8	0.03		0.005	0.00007	0.00002	0.131	0.00001	0.000005
HC-6-143	12-Nov-13	143	500	475	8.15	107	125	12.1	0.5	0.5	40.0	1.0	0.04	56.6	0.006	0.00007	0.00002	0.127	0.00001	0.000005
HC-6-144	19-Nov-13	144	500	475	7.87	108	125	12.2	0.5	0.5	40.0	1.7	0.03		0.006	0.00007	0.00003	0.128	0.00001	0.000005
HC-6-145	26-Nov-13	145	500	495	8.29	106	135	12.4	0.5	0.5	39.9	2.4	0.03		0.005	0.00007	0.00003	0.130	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total	Total	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In	Volume Out																
HC-6-146	03-Dec-13	146	500	470	7.93	122	135	12.5	0.5	0.5	39.9	3.0	0.03		0.005	0.00007	0.00004	0.131	0.00001	0.000005
HC-6-147	10-Dec-13	147	500	485	8.12	118	140	12.6	0.5	0.5	39.8	3.7	0.03	54.5	0.004	0.00007	0.00005	0.132	0.00001	0.000005
HC-6-148	17-Dec-13	148	500	465	8.43	114	120	13.0	0.5	0.5	39.6	3.1	0.03		0.013	0.00007	0.00006	0.129	0.00001	0.000005
HC-6-149	24-Dec-13	149	500	460	8.44	109	135	13.4	0.5	0.5	39.3	2.5	0.03		0.022	0.00008	0.00007	0.125	0.00001	0.000005
HC-6-150	31-Dec-13	150	500	475	8.31	105	130	13.8	0.5	0.5	39.1	1.8	0.03		0.030	0.00008	0.00008	0.122	0.00001	0.000005
HC-6-151	07-Jan-14	151	500	480	8.37	109	140	14.2	0.5	0.5	38.8	1.2	0.03	50.4	0.039	0.00008	0.00009	0.118	0.00001	0.000005
HC-6-152	14-Jan-14	152	500	470	8.36	111	135	14.2	0.5	0.5	38.2	2.1	0.03		0.031	0.00008	0.00007	0.118	0.00001	0.000005
HC-6-153	21-Jan-14	153	500	470	8.26	116	130	14.2	0.5	0.5	37.7	3.0	0.03		0.022	0.00008	0.00006	0.119	0.00001	0.000005
HC-6-154	28-Jan-14	154	500	470	8.32	113	140	14.2	0.5	0.5	37.1	3.9	0.03		0.013	0.00007	0.00004	0.119	0.00001	0.000005
HC-6-155	04-Feb-14	155	500	475	8.30	112	145	14.2	0.5	0.5	36.5	4.8	0.03	54.4	0.005	0.00007	0.00003	0.119	0.00001	0.000005
HC-6-156	11-Feb-14	156	500	480	8.05	119	135	15.1	0.5	0.5	37.1	3.8	0.03		0.004	0.00007	0.00002	0.118	0.00001	0.000005
HC-6-157	18-Feb-14	157	500	465	8.34	109	130	16.0	0.5	0.5	37.6	2.9	0.04		0.004	0.00007	0.00002	0.116	0.00001	0.000005
HC-6-158	25-Feb-14	158	500	480	8.23	106	135	16.8	0.5	0.5	38.2	1.9	0.04		0.004	0.00007	0.00002	0.115	0.00001	0.000005
HC-6-159	04-Mar-14	159	500	465	8.21	109	140	17.7	0.5	0.5	38.7	0.9	0.04	49.4	0.004	0.00008	0.00002	0.113	0.00001	0.000005
HC-6-160	11-Mar-14	160	500	470	8.35	108	140	16.5	0.5	0.5	37.8	1.5	0.03		0.004	0.00007	0.00002	0.113	0.00001	0.000005
HC-6-161	18-Mar-14	161	500	475	8.30	106	140	15.2	0.5	0.5	36.9	2.1	0.03		0.004	0.00007	0.00002	0.113	0.00001	0.000005
HC-6-162	25-Mar-14	162	500	475	8.18	111	140	14.0	0.5	0.5	35.9	2.7	0.03		0.004	0.00006	0.00002	0.113	0.00001	0.000005
HC-6-163	01-Apr-14	163	500	475	8.17	111	140	12.7	0.5	0.5	35.0	3.3	0.03	52.1	0.004	0.00006	0.00002	0.113	0.00001	0.000005
HC-6-164	08-Apr-14	164	500	470	8.31	109	145	12.6	0.5	0.5	35.9	3.4	0.03		0.004	0.00006	0.00002	0.116	0.00001	0.000005
HC-6-165	15-Apr-14	165	500	470	8.26	106	140	12.5	0.5	0.5	36.8	3.5	0.03		0.004	0.00007	0.00003	0.120	0.00001	0.000005
HC-6-166	22-Apr-14	166	500	480	8.29	101	135	12.3	0.5	0.5	37.7	3.5	0.03		0.004	0.00007	0.00003	0.123	0.00001	0.000005
HC-6-167	29-Apr-14	167	500	470	8.18	114	130	12.2	0.5	0.5	38.6	3.6	0.03	55.7	0.004	0.00007	0.00003	0.126	0.00001	0.000005
<b>Mean all weeks</b>					<b>8.37</b>	<b>136</b>	<b>128</b>	<b>9.9</b>	<b>0.5</b>	<b>0.6</b>	<b>43.3</b>	<b>7.6</b>	<b>0.10</b>	<b>35.6</b>	<b>0.030</b>	<b>0.00041</b>	<b>0.00022</b>	<b>0.268</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC7 Hasler Mudstone</b>																				
HC-7-0	15-Feb-11	0	750	625	9.98	172	100	6.3	0.5	0.5	69.0	1.9	0.67	1.2	1.220	0.01420	0.01630	0.125	0.00008	0.000010
HC-7-1	22-Feb-11	1	500	500	9.11	335	50	60.0	0.5	1.5	88.0	2.6	0.69	0.9	0.245	0.01250	0.01380	0.051	0.00001	0.000005
HC-7-2	01-Mar-11	2	500	475	9.15	277	40	43.0	0.5	0.5	80.0	0.5	0.53	0.7	0.206	0.00889	0.00803	0.039	0.00001	0.000005
HC-7-3	08-Mar-11	3	500	480	9.23	232	40	27.0	0.5	0.5	80.0	0.5	0.40	0.7	0.187	0.00695	0.00653	0.041	0.00001	0.000005
HC-7-4	15-Mar-11	4	500	480	9.34	222	30	19.0	0.5	0.5	85.0	0.5	0.39	0.8	0.264	0.00723	0.00730	0.043	0.00001	0.000005
HC-7-5	22-Mar-11	5	500	500	9.16	200	50	15.0	0.5	0.5	81.0	0.7	0.28	1.1	0.188	0.00535	0.00469	0.037	0.00001	0.000005
HC-7-6	29-Mar-11	6	500	490	9.12	184	45	12.0	0.5	0.5	78.0	0.5	0.22	0.9	0.171	0.00456	0.00408	0.031	0.00001	0.000005
HC-7-7	05-Apr-11	7	500	500	9.00	176	70	11.0	0.5	0.5	72.0	0.5	0.20	0.9	0.148	0.00421	0.00332	0.030	0.00001	0.000005
HC-7-8	12-Apr-11	8	500	485	8.97	169	40	8.7	0.5	0.5	74.0	0.5	0.19	0.5	0.176	0.00417	0.00381	0.024	0.00001	0.000005
HC-7-9	19-Apr-11	9	500	500	9.11	156	50	9.9	0.5	0.5	68.0	0.5	0.16	0.8	0.130	0.00325	0.00203	0.030	0.00001	0.000005
HC-7-10	26-Apr-11	10	500	485	8.97	147	65	12.0	0.5	0.5	62.0	0.9	0.15	0.5	0.159	0.00335	0.00242	0.026	0.00001	0.000005
HC-7-11	03-May-11	11	500	485	9.04	138	70	15.0	0.5	0.5	59.0	0.0	0.13	0.5	0.175	0.00287	0.00225	0.028	0.00001	0.000005
HC-7-12	10-May-11	12	500	490	9.03	147	70	8.0	0.5	0.5	58.0	2.0	0.13	0.5	0.161	0.00275	0.00219	0.024	0.00001	0.000005
HC-7-13	17-May-11	13	500	480	9.05	138	85	7.1	0.5	0.5	53.0	4.0	0.11	0.5	0.159	0.00261	0.00187	0.019	0.00001	0.000005
HC-7-14	24-May-11	14	500	475	9.02	142	65	7.5	0.5	0.5	54.0	4.8	0.11	0.5	0.184	0.00230	0.00175	0.024	0.00001	0.000005
HC-7-15	31-May-11	15	500	475	9.01	135	75	6.9	0.5	0.5	50.0	4.0	0.11	0.5	0.164	0.00204	0.00157	0.020	0.00001	0.000005
HC-7-16	07-Jun-11	16	500	470	8.80	127	70	9.7	0.5	0.5	45.0	4.6	0.09	0.5	0.184	0.00174	0.00130	0.021	0.00001	0.000005
HC-7-17	14-Jun-11	17	500	490	8.94	137	100	6.5	0.5	0.5	42.0	7.6	0.08	0.5	0.114	0.00170	0.00133	0.018	0.00001	0.000005
HC-7-18	21-Jun-11	18	500	485	8.70	163	100	6.7	0.5	0.5	34.0	20.0	0.07	0.9	0.167	0.00140	0.00098	0.034	0.00001	0.000005
HC-7-19	28-Jun-11	19	500	465	8.79	155	100	5.5	0.5	9.2	27.0	20.0	0.07	0.8	0.130	0.00106	0.00085	0.025	0.00001	0.000005
HC-7-20	05-Jul-11	20	500	485	8.67	155	150	5.9	0.5	7.0	24.0	25.8	0.07		0.117	0.00095	0.00072	0.030	0.00001	0.000005
HC-7-21	12-Jul-11	21	500	480	8.85	125	120	6.3	0.5	4.9	21.0	31.5	0.08		0.104	0.00085	0.00058	0.035	0.00001	0.000005
HC-7-22	19-Jul-11	22	500	490	8.52	143	140	6.6	0.5	2.7	18.0	37.3	0.08		0.091	0.00074	0.00045	0.040	0.00001	0.000005
HC-7-23	26-Jul-11	23	500	480	8.15	195	145	7.0	0.5	0.5	15.0	43.0	0.08	1.1	0.077	0.00063	0.00031	0.046	0.00001	0.000005
HC-7-24	02-Aug-11	24	500	485	8.14	156	140	7.0	0.5	0.5	15.5	39.5	0.09		0.073	0.00058	0.00029	0.046	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-7-25	09-Aug-11	25	500	500	8.20	127	125	6.9	0.5	0.5	16.0	36.0	0.10		0.069	0.00053	0.00027	0.047	0.00001	0.000005
HC-7-26	16-Aug-11	26	500	495	8.02	178	110	6.9	0.5	0.5	16.5	32.5	0.11		0.065	0.00047	0.00025	0.048	0.00001	0.000005
HC-7-27	23-Aug-11	27	500	495	7.82	181	115	6.8	0.5	0.5	17.0	29.0	0.12	1.4	0.061	0.00042	0.00023	0.049	0.00001	0.000005
HC-7-28	30-Aug-11	28	500	485	7.78	209	120	6.4	0.5	0.5	16.0	32.3	0.11		0.054	0.00037	0.00021	0.057	0.00001	0.000005
HC-7-29	06-Sep-11	29	500	465	7.86	158	130	6.0	0.5	0.5	15.0	35.5	0.11		0.047	0.00031	0.00019	0.065	0.00001	0.000005
HC-7-30	13-Sep-11	30	500	460	7.56	258	150	5.5	0.5	0.5	14.0	38.8	0.10		0.041	0.00026	0.00017	0.073	0.00001	0.000005
HC-7-31	20-Sep-11	31	500	465	7.50	200	140	5.1	0.5	0.5	13.0	42.0	0.09	3.2	0.034	0.00020	0.00015	0.082	0.00001	0.000005
HC-7-32	27-Sep-11	32	500	465	7.34	197	200	5.4	0.5	0.5	12.8	40.5	0.09		0.035	0.00018	0.00014	0.082	0.00001	0.000005
HC-7-33	04-Oct-11	33	500	475	7.21	233	120	5.7	0.5	0.5	12.5	39.0	0.10		0.036	0.00017	0.00013	0.083	0.00001	0.000005
HC-7-34	11-Oct-11	34	500	465	7.45	221	165	6.0	0.5	0.5	12.3	37.5	0.10		0.037	0.00015	0.00012	0.084	0.00001	0.000005
HC-7-35	18-Oct-11	35	500	460	7.33	193	200	6.3	0.5	0.5	12.0	36.0	0.10	4.4	0.038	0.00013	0.00011	0.085	0.00001	0.000005
HC-7-36	25-Oct-11	36	500	470	7.35	239	195	6.9	0.5	0.5	12.4	32.8	0.10		0.036	0.00012	0.00011	0.082	0.00001	0.000005
HC-7-37	01-Nov-11	37	500	475	7.25	226	220	7.5	0.5	0.5	12.9	29.5	0.09		0.035	0.00012	0.00011	0.080	0.00001	0.000005
HC-7-38	08-Nov-11	38	500	487	7.45	177	180	8.1	0.5	0.5	13.3	26.3	0.09		0.033	0.00011	0.00010	0.077	0.00001	0.000005
HC-7-39	15-Nov-11	39	500	485	7.50	144	225	8.7	0.5	0.5	13.7	23.0	0.08	6.1	0.031	0.00010	0.00010	0.075	0.00001	0.000005
HC-7-40	22-Nov-11	40	500	500	7.18	141	180	10.0	0.5	0.5	13.6	22.0	0.08		0.034	0.00010	0.00012	0.071	0.00001	0.000005
HC-7-41	29-Nov-11	41	500	485	7.51	114	160	11.2	0.5	0.5	13.5	21.0	0.08		0.037	0.00011	0.00013	0.068	0.00001	0.000005
HC-7-42	06-Dec-11	42	500	460	7.51	159	125	12.5	0.5	0.5	13.4	20.0	0.08		0.040	0.00011	0.00015	0.064	0.00001	0.000005
HC-7-43	13-Dec-11	43	500	465	7.44	138	125	13.7	0.5	0.5	13.3	19.0	0.08	9.6	0.043	0.00011	0.00016	0.061	0.00001	0.000005
HC-7-44	20-Dec-11	44	500	465	7.53	147	135	14.3	0.5	0.5	13.5	17.8	0.08		0.038	0.00011	0.00013	0.061	0.00001	0.000005
HC-7-45	27-Dec-11	45	500	475	7.45	145	125	14.9	0.5	0.5	13.7	16.5	0.08		0.033	0.00010	0.00010	0.061	0.00001	0.000005
HC-7-46	03-Jan-12	46	500	470	7.37	119	125	15.5	0.5	0.5	13.8	15.3	0.07	15.7	0.028	0.00010	0.00007	0.062	0.00001	0.000005
HC-7-47	10-Jan-12	47	500	460	7.67	127	125	16.1	0.5	0.5	14.0	14.0	0.07		0.023	0.00009	0.00004	0.062	0.00001	0.000005
HC-7-48	17-Jan-12	48	500	465	7.51	138	115	17.3	0.5	0.5	13.1	16.0	0.07		0.019	0.00009	0.00004	0.062	0.00001	0.000005
HC-7-49	24-Jan-12	49	500	465	7.55	167	130	18.5	0.5	0.5	12.3	18.0	0.07		0.015	0.00008	0.00005	0.061	0.00001	0.000005
HC-7-50	31-Jan-12	50	500	490	7.33	190	125	19.6	0.5	0.5	11.4	20.0	0.06		0.012	0.00008	0.00005	0.061	0.00001	0.000005
HC-7-51	07-Feb-12	51	500	475	7.35	175	115	20.8	0.5	0.5	10.5	22.0	0.06	28.8	0.008	0.00007	0.00005	0.060	0.00001	0.000005
HC-7-52	14-Feb-12	52	500	460	7.36	171	120	23.8	0.5	0.5	9.8	21.5	0.06		0.008	0.00007	0.00005	0.054	0.00001	0.000005
HC-7-53	21-Feb-12	53	500	470	7.26	199	125	26.8	0.5	0.5	9.0	21.0	0.06		0.007	0.00006	0.00006	0.048	0.00001	0.000005
HC-7-54	28-Feb-12	54	500	470	7.22	212	130	29.7	0.5	0.5	8.3	20.5	0.06		0.006	0.00006	0.00006	0.042	0.00001	0.000005
HC-7-55	06-Mar-12	55	500	470	7.27	181	125	32.7	0.5	0.5	7.5	20.0	0.06	33.3	0.005	0.00005	0.00006	0.036	0.00001	0.000005
HC-7-56	13-Mar-12	56	500	470	7.31	193	125	32.6	0.5	0.5	7.9	17.5	0.06		0.005	0.00006	0.00006	0.035	0.00001	0.000005
HC-7-57	20-Mar-12	57	500	465	7.25	174	120	32.5	0.5	0.5	8.4	14.9	0.06		0.005	0.00006	0.00006	0.035	0.00001	0.000005
HC-7-58	27-Mar-12	58	500	470	7.41	145	120	32.4	0.5	0.5	8.8	12.4	0.06		0.005	0.00007	0.00005	0.034	0.00001	0.000005
HC-7-59	03-Apr-12	59	500	475	7.41	157	125	32.3	0.5	0.5	9.2	9.8	0.06	32.8	0.005	0.00007	0.00005	0.034	0.00001	0.000005
HC-7-60	10-Apr-12	60	500	495	7.34	148	130	36.0	0.5	0.5	9.1	9.9	0.06		0.005	0.00007	0.00004	0.033	0.00001	0.000005
HC-7-61	17-Apr-12	61	500	475	7.39	136	135	39.7	0.5	0.5	9.0	9.9	0.06		0.005	0.00007	0.00004	0.032	0.00001	0.000005
HC-7-62	24-Apr-12	62	500	465	7.34	154	130	43.4	0.5	0.5	8.9	10.0	0.06		0.005	0.00006	0.00003	0.030	0.00001	0.000005
HC-7-63	01-May-12	63	500	470	7.18	153	130	47.1	0.5	0.5	8.8	10.0	0.07	39.3	0.005	0.00006	0.00002	0.029	0.00001	0.000005
HC-7-64	08-May-12	64	500	470	7.25	174	130	45.1	0.5	0.6	8.2	10.3	0.06		0.005	0.00006	0.00003	0.028	0.00001	0.000005
HC-7-65	15-May-12	65	500	440	7.30	180	130	43.1	0.5	0.7	7.6	10.5	0.06		0.005	0.00006	0.00004	0.027	0.00001	0.000005
HC-7-66	22-May-12	66	500	490	7.34	173	140	41.0	0.5	0.8	7.0	10.8	0.06		0.005	0.00006	0.00005	0.026	0.00001	0.000005
HC-7-67	29-May-12	67	500	470	7.26	173	135	39.0	0.5	0.9	6.4	11.0	0.06	42.1	0.005	0.00006	0.00006	0.025	0.00001	0.000005
HC-7-68	05-Jun-12	68	500	475	7.21	167	140	39.2	0.5	0.8	6.5	11.5	0.06		0.005	0.00006	0.00006	0.025	0.00001	0.000005
HC-7-69	12-Jun-12	69	500	470	7.24	152	150	39.3	0.5	0.7	6.5	12.0	0.06		0.005	0.00005	0.00006	0.026	0.00001	0.000005
HC-7-70	19-Jun-12	70	500	485	7.28	144	130	39.5	0.5	0.6	6.6	12.5	0.05		0.004	0.00005	0.00006	0.027	0.00001	0.000005
HC-7-71	26-Jun-12	71	500	470	7.26	168	125	39.6	0.5	0.5	6.6	13.0	0.05	43.0	0.004	0.00005	0.00006	0.027	0.00001	0.000005
HC-7-72	03-Jul-12	72	500	475	7.19	157	135	39.6	0.5	0.5	5.9	14.0	0.05		0.004	0.00005	0.00005	0.027	0.00001	0.000005
HC-7-73	10-Jul-12	73	500	465	7.23	158	135	39.7	0.5	0.5	5.2	15.0	0.05		0.004	0.00005	0.00004	0.027	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-7-74	17-Jul-12	74	500	465	7.24	169	130	39.7	0.5	0.5	4.5	16.0	0.05		0.004	0.00004	0.00003	0.027	0.00001	0.000005
HC-7-75	24-Jul-12	75	500	470	7.11	178	140	39.7	0.5	0.5	3.8	17.0	0.05	57.2	0.004	0.00004	0.00002	0.027	0.00001	0.000005
HC-7-76	31-Jul-12	76	500	470	7.07	197	135	39.4	0.5	0.5	3.8	16.0	0.05		0.005	0.00004	0.00002	0.027	0.00001	0.000005
HC-7-77	07-Aug-12	77	500	460	7.00	181	155	39.0	0.5	0.5	3.8	15.0	0.05		0.006	0.00004	0.00003	0.027	0.00001	0.000005
HC-7-78	14-Aug-12	78	500	465	6.92	180	150	38.7	0.5	0.5	3.8	14.0	0.05		0.008	0.00004	0.00003	0.027	0.00001	0.000005
HC-7-79	21-Aug-12	79	500	450	7.01	161	135	38.3	0.5	0.5	3.8	13.0	0.06	52.3	0.009	0.00004	0.00004	0.027	0.00001	0.000005
HC-7-80	28-Aug-12	80	500	445	6.99	168	145	38.4	0.5	0.6	3.5	14.0	0.06		0.008	0.00004	0.00005	0.027	0.00001	0.000005
HC-7-81	04-Sep-12	81	500	475	6.82	193	150	38.6	0.5	0.8	3.2	15.0	0.06		0.007	0.00004	0.00006	0.027	0.00001	0.000005
HC-7-82	11-Sep-12	82	500	470	6.74	204	150	38.7	0.5	0.9	2.9	16.0	0.06		0.006	0.00004	0.00007	0.026	0.00001	0.000005
HC-7-83	18-Sep-12	83	500	485	6.84	193	145	38.8	0.5	1.1	2.6	17.0	0.06	63.9	0.005	0.00004	0.00008	0.026	0.00001	0.000005
HC-7-84	25-Sep-12	84	500	450	6.88	156	140	39.5	0.5	0.9	2.5	15.8	0.06		0.004	0.00004	0.00006	0.027	0.00001	0.000005
HC-7-85	02-Oct-12	85	500	480	7.06	160	135	40.3	0.5	0.8	2.5	14.5	0.06		0.003	0.00003	0.00005	0.028	0.00001	0.000005
HC-7-86	09-Oct-12	86	500	480	6.95	168	135	41.0	0.5	0.6	2.4	13.3	0.06		0.002	0.00003	0.00003	0.029	0.00001	0.000005
HC-7-87	16-Oct-12	87	500	460	6.81	161	135	41.7	0.5	0.5	2.3	12.0	0.06	56.1	0.002	0.00003	0.00002	0.030	0.00001	0.000005
HC-7-88	23-Oct-12	88	500	470	6.86	178	135	43.1	0.5	0.5	2.5	11.4	0.07		0.002	0.00012	0.00003	0.028	0.00001	0.000005
HC-7-89	30-Oct-12	89	500	470	6.74	163	140	44.5	0.5	0.5	2.6	10.7	0.07		0.003	0.00020	0.00004	0.027	0.00001	0.000005
HC-7-90	06-Nov-12	90	500	470	6.91	154	135	45.9	0.5	0.5	2.8	10.1	0.07		0.004	0.00029	0.00005	0.026	0.00001	0.000005
HC-7-91	13-Nov-12	91	500	470	6.76	157	135	47.3	0.5	0.5	2.9	9.4	0.08	59.3	0.005	0.00037	0.00006	0.025	0.00001	0.000005
HC-7-92	20-Nov-12	92	500	460	6.88	145	130	46.7	0.5	0.5	2.9	8.6	0.08		0.004	0.00029	0.00006	0.024	0.00001	0.000005
HC-7-93	27-Nov-12	93	500	460	6.76	169	135	46.1	0.5	0.5	2.9	7.8	0.08		0.004	0.00021	0.00006	0.023	0.00001	0.000005
HC-7-94	04-Dec-12	94	500	470	6.87	151	135	45.5	0.5	0.5	2.8	7.0	0.08		0.004	0.00013	0.00006	0.022	0.00001	0.000005
HC-7-95	11-Dec-12	95	500	465	6.82	149	135	44.9	0.5	0.5	2.8	6.2	0.08	54.2	0.004	0.00005	0.00006	0.021	0.00001	0.000005
HC-7-96	18-Dec-12	96	500	465	6.84	140	130	46.1	0.5	0.5	2.6	5.5	0.08		0.003	0.00004	0.00009	0.022	0.00001	0.000005
HC-7-97	25-Dec-12	97	500	470	6.75	135	125	47.3	0.5	0.5	2.5	4.8	0.08		0.003	0.00004	0.00013	0.024	0.00001	0.000005
HC-7-98	01-Jan-13	98	500	460	6.82	139	115	48.5	0.5	0.5	2.4	4.0	0.08		0.003	0.00004	0.00016	0.025	0.00001	0.000005
HC-7-99	08-Jan-13	99	500	465	6.82	145	120	49.7	0.5	0.5	2.3	3.3	0.09	56.2	0.003	0.00004	0.00020	0.026	0.00001	0.000005
HC-7-100	15-Jan-13	100	500	485	6.74	132	115	48.4	0.5	0.5	2.3	3.7	0.08		0.002	0.00004	0.00016	0.025	0.00001	0.000005
HC-7-101	22-Jan-13	101	500	460	6.67	134	120	47.2	0.5	0.5	2.3	4.1	0.08		0.002	0.00004	0.00013	0.023	0.00001	0.000005
HC-7-102	29-Jan-13	102	500	460	6.75	132	110	45.9	0.5	0.5	2.3	4.4	0.08		0.002	0.00004	0.00010	0.022	0.00001	0.000005
HC-7-103	05-Feb-13	103	500	475	6.78	115	165	44.6	0.5	0.5	2.3	4.8	0.08	51.6	0.002	0.00005	0.00007	0.021	0.00001	0.000005
HC-7-104	12-Feb-13	104	500	465	6.69	120	140	44.4	0.5	0.7	2.4	4.5	0.08		0.002	0.00005	0.00007	0.021	0.00001	0.000005
HC-7-105	19-Feb-13	105	500	465	6.76	129	125	44.2	0.5	0.9	2.4	4.1	0.09		0.003	0.00005	0.00007	0.021	0.00001	0.000005
HC-7-106	26-Feb-13	106	500	485	6.72	125	125	43.9	0.5	1.1	2.5	3.8	0.09		0.003	0.00005	0.00007	0.021	0.00001	0.000005
HC-7-107	05-Mar-13	107	500	475	6.65	124	125	43.7	0.5	1.3	2.6	3.4	0.09	59.1	0.003	0.00005	0.00008	0.021	0.00001	0.000005
HC-7-108	12-Mar-13	108	500	470	6.63	133	150	42.6	0.5	1.1	2.5	3.5	0.09		0.003	0.00005	0.00007	0.022	0.00001	0.000005
HC-7-109	19-Mar-13	109	500	475	6.62	113	160	41.4	0.5	0.9	2.5	3.5	0.10		0.003	0.00005	0.00005	0.022	0.00001	0.000005
HC-7-110	26-Mar-13	110	500	470	6.62	130	140	40.3	0.5	0.7	2.5	3.6	0.10		0.002	0.00004	0.00004	0.023	0.00001	0.000005
HC-7-111	02-Apr-13	111	500	480	6.59	119	150	39.1	0.5	0.5	2.5	3.6	0.10	48.6	0.002	0.00004	0.00003	0.023	0.00001	0.000005
HC-7-112	09-Apr-13	112	500	475	6.58	122	160	39.7	0.5	0.5	2.4	3.8	0.10		0.002	0.00004	0.00005	0.022	0.00001	0.000005
HC-7-113	16-Apr-13	113	500	460	6.60	114	150	40.4	0.5	0.5	2.4	4.0	0.09		0.002	0.00004	0.00008	0.021	0.00001	0.000005
HC-7-114	23-Apr-13	114	500	460	6.68	117	135	41.0	0.5	0.5	2.3	4.1	0.09		0.001	0.00004	0.00010	0.020	0.00001	0.000005
HC-7-115	30-Apr-13	115	500	460	6.56	119	140	41.6	0.5	0.5	2.2	4.3	0.09	49.1	0.001	0.00004	0.00012	0.019	0.00001	0.000005
HC-7-116	07-May-13	116	500	465	6.70	125	135	40.7	0.5	0.5	2.4	4.1	0.09		0.002	0.00004	0.00011	0.019	0.00001	0.000005
HC-7-117	14-May-13	117	500	475	6.40	119	135	39.8	0.5	0.5	2.5	4.0	0.09		0.002	0.00004	0.00011	0.019	0.00001	0.000005
HC-7-118	21-May-13	118	500	480	6.78	111	135	38.8	0.5	0.5	2.7	3.8	0.09		0.003	0.00004	0.00010	0.019	0.00001	0.000005
HC-7-119	28-May-13	119	500	475	6.78	115	135	37.9	0.5	0.5	2.8	3.6	0.09	44.7	0.003	0.00004	0.00009	0.018	0.00001	0.000005
HC-7-120	04-Jun-13	120	500	485	6.74	122	140	37.6	0.5	0.6	2.6	3.7	0.09		0.003	0.00004	0.00010	0.019	0.00001	0.000005
HC-7-121	11-Jun-13	121	500	470	6.61	118	135	37.3	0.5	0.6	2.4	3.8	0.09		0.002	0.00004	0.00011	0.019	0.00001	0.000005
HC-7-122	18-Jun-13	122	500	470	6.64	114	140	37.0	0.5	0.7	2.2	3.8	0.10		0.002	0.00004	0.00012	0.020	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-7-123	25-Jun-13	123	500	455	6.53	110	140	36.7	0.5	0.8	2.0	3.9	0.10	44.6	0.001	0.00004	0.00013	0.020	0.00001	0.000005
HC-7-124	02-Jul-13	124	500	480	6.48	124	140	36.9	0.5	0.7	1.8	4.0	0.10		0.002	0.00004	0.00012	0.020	0.00001	0.000005
HC-7-125	09-Jul-13	125	500	465	6.59	112	160	37.1	0.5	0.6	1.6	4.0	0.09		0.002	0.00004	0.00010	0.019	0.00001	0.000005
HC-7-126	16-Jul-13	126	500	460	6.58	116	150	37.3	0.5	0.6	1.4	4.1	0.09		0.003	0.00004	0.00009	0.018	0.00001	0.000005
HC-7-127	23-Jul-13	127	500	465	6.40	116	145	37.5	0.5	0.5	1.2	4.1	0.09	45.1	0.003	0.00004	0.00008	0.018	0.00001	0.000005
HC-7-128	30-Jul-13	128	500	490	6.56	112	160	37.3	0.5	0.5	1.5	4.0	0.10		0.003	0.00004	0.00008	0.018	0.00001	0.000005
HC-7-129	06-Aug-13	129	500	490	6.49	111	145	37.1	0.5	0.5	1.9	3.8	0.10		0.002	0.00005	0.00008	0.019	0.00001	0.000005
HC-7-130	13-Aug-13	130	500	460	6.71	108	140	36.8	0.5	0.5	2.2	3.7	0.11		0.002	0.00005	0.00008	0.019	0.00001	0.000005
HC-7-131	20-Aug-13	131	500	460	6.60	110	145	36.6	0.5	0.5	2.5	3.5	0.11	46.6	0.001	0.00005	0.00009	0.019	0.00001	0.000005
HC-7-132	27-Aug-13	132	500	465	6.60	107	135	38.3	0.5	0.5	2.3	3.3	0.11		0.002	0.00005	0.00008	0.019	0.00001	0.000005
HC-7-133	03-Sep-13	133	500	465	6.43	112	170	40.0	0.5	0.5	2.1	3.0	0.11		0.002	0.00005	0.00007	0.019	0.00001	0.000005
HC-7-134	10-Sep-13	134	500	470	6.44	115	170	41.7	0.5	0.5	1.8	2.8	0.11		0.002	0.00005	0.00007	0.019	0.00001	0.000005
HC-7-135	17-Sep-13	135	500	475	6.65	112	155	43.4	0.5	0.5	1.6	2.5	0.11	45.2	0.002	0.00005	0.00006	0.019	0.00001	0.000005
HC-7-136	24-Sep-13	136	500	470	6.72	108	160	42.0	0.5	0.5	1.5	2.8	0.11		0.002	0.00005	0.00005	0.020	0.00001	0.000005
HC-7-137	01-Oct-13	137	500	475	6.81	109	150	40.6	0.5	0.5	1.5	3.1	0.10		0.002	0.00005	0.00005	0.021	0.00001	0.000005
HC-7-138	08-Oct-13	138	500	475	6.41	104	140	39.1	0.5	0.5	1.4	3.4	0.10		0.002	0.00005	0.00004	0.022	0.00001	0.000005
HC-7-139	15-Oct-13	139	500	465	6.72	111	150	37.7	0.5	0.5	1.3	3.7	0.10	47.0	0.001	0.00005	0.00004	0.023	0.00001	0.000005
HC-7-140	22-Oct-13	140	500	470	6.31	106	135	38.1	0.5	0.5	1.3	3.1	0.10		0.002	0.00005	0.00004	0.023	0.00001	0.000005
HC-7-141	29-Oct-13	141	500	470	6.29	107	120	38.5	0.5	0.5	1.2	2.4	0.10		0.002	0.00005	0.00004	0.022	0.00001	0.000005
HC-7-142	05-Nov-13	142	500	475	6.37	102	130	38.8	0.5	0.5	1.2	1.8	0.11		0.003	0.00005	0.00005	0.021	0.00001	0.000005
HC-7-143	12-Nov-13	143	500	470	6.31	101	125	39.2	0.5	0.5	1.1	1.1	0.11	42.7	0.004	0.00005	0.00005	0.021	0.00001	0.000005
HC-7-144	19-Nov-13	144	500	470	6.35	100	135	38.9	0.5	0.6	1.1	1.8	0.11		0.004	0.00005	0.00006	0.021	0.00001	0.000005
HC-7-145	26-Nov-13	145	500	485	6.32	98	155	38.6	0.5	0.6	1.1	2.5	0.10		0.003	0.00005	0.00006	0.020	0.00001	0.000005
HC-7-146	03-Dec-13	146	500	460	6.33	111	160	38.3	0.5	0.7	1.0	3.1	0.10		0.003	0.00005	0.00007	0.020	0.00002	0.000005
HC-7-147	10-Dec-13	147	500	470	6.25	109	170	38.0	0.5	0.8	1.0	3.8	0.09	43.0	0.003	0.00005	0.00008	0.020	0.00002	0.000005
HC-7-148	17-Dec-13	148	500	470	6.29	103	155	38.4	0.5	0.8	0.9	3.1	0.10		0.004	0.00005	0.00007	0.019	0.00002	0.000005
HC-7-149	24-Dec-13	149	500	460	6.15	99	160	38.8	0.5	0.8	0.9	2.5	0.10		0.004	0.00005	0.00007	0.019	0.00002	0.000005
HC-7-150	31-Dec-13	150	500	475	6.32	101	150	39.2	0.5	0.8	0.8	1.8	0.11		0.004	0.00005	0.00007	0.018	0.00002	0.000005
HC-7-151	07-Jan-14	151	500	470	6.27	98	155	39.6	0.5	0.8	0.8	1.1	0.11	39.3	0.005	0.00005	0.00006	0.017	0.00001	0.000005
HC-7-152	14-Jan-14	152	500	475	6.41	97	150	38.9	0.5	0.7	0.7	1.8	0.11		0.005	0.00004	0.00006	0.017	0.00001	0.000005
HC-7-153	21-Jan-14	153	500	450	6.12	102	160	38.2	0.5	0.6	0.6	2.5	0.11		0.005	0.00004	0.00005	0.018	0.00001	0.000005
HC-7-154	28-Jan-14	154	500	475	6.40	94	150	37.4	0.5	0.6	0.6	3.1	0.10		0.005	0.00004	0.00005	0.018	0.00001	0.000005
HC-7-155	04-Feb-14	155	500	465	6.31	94	150	36.7	0.5	0.5	0.5	3.8	0.10	37.1	0.005	0.00004	0.00004	0.018	0.00001	0.000005
HC-7-156	11-Feb-14	156	500	470	6.21	104	135	36.2	0.5	0.5	0.5	3.0	0.11		0.005	0.00004	0.00005	0.018	0.00001	0.000005
HC-7-157	18-Feb-14	157	500	470	6.00	96	165	35.7	0.5	0.5	0.5	2.2	0.11		0.005	0.00004	0.00005	0.018	0.00001	0.000005
HC-7-158	25-Feb-14	158	500	480	6.06	93	150	35.2	0.5	0.5	0.5	1.3	0.12		0.005	0.00004	0.00005	0.017	0.00001	0.000005
HC-7-159	04-Mar-14	159	500	470	6.06	89	150	34.7	0.5	0.5	0.5	0.5	0.12	33.2	0.005	0.00004	0.00006	0.017	0.00001	0.000005
HC-7-160	11-Mar-14	160	500	475	6.06	88	160	33.5	0.5	0.5	0.7	1.2	0.11		0.006	0.00004	0.00005	0.018	0.00001	0.000005
HC-7-161	18-Mar-14	161	500	475	6.00	95	150	32.2	0.5	0.5	1.0	1.9	0.11		0.006	0.00004	0.00005	0.018	0.00002	0.000005
HC-7-162	25-Mar-14	162	500	480	6.00	89	150	31.0	0.5	0.5	1.2	2.5	0.10		0.007	0.00004	0.00004	0.018	0.00002	0.000005
HC-7-163	01-Apr-14	163	500	475	6.01	93	160	29.7	0.5	0.5	1.4	3.2	0.10	35.8	0.007	0.00003	0.00004	0.019	0.00002	0.000005
HC-7-164	08-Apr-14	164	500	485	6.00	92	160	29.9	0.5	0.5	1.3	3.1	0.10		0.007	0.00004	0.00005	0.018	0.00002	0.000005
HC-7-165	15-Apr-14	165	500	480	5.96	94	170	30.0	0.5	0.5	1.2	3.0	0.11		0.008	0.00004	0.00005	0.018	0.00002	0.000005
HC-7-166	22-Apr-14	166	500	475	5.96	92	160	30.2	0.5	0.5	1.1	2.8	0.11		0.008	0.00004	0.00006	0.018	0.00002	0.000005
HC-7-167	29-Apr-14	167	500	465	5.96	91	140	30.3	0.5	0.5	1.0	2.7	0.12	37.2	0.009	0.00004	0.00006	0.017	0.00002	0.000005
<b>Mean all weeks</b>					<b>7.17</b>	<b>145</b>	<b>133</b>	<b>30.7</b>	<b>0.5</b>	<b>0.7</b>	<b>12.4</b>	<b>10.7</b>	<b>0.10</b>	<b>25.0</b>	<b>0.038</b>	<b>0.00064</b>	<b>0.00059</b>	<b>0.032</b>	<b>0.00001</b>	<b>0.000005</b>

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity $\mu\text{S/cm}$	ORP mV	Sulphate ( $\text{SO}_4^{2-}$ ) mg/L	Acidity to pH 4.5 mg $\text{CaCO}_3/\text{L}$	Acidity to pH 8.3 mg $\text{CaCO}_3/\text{L}$	Total Alkalinity mg $\text{CaCO}_3/\text{L}$	Chloride ( $\text{Cl}^-$ ) mg/L	Fluoride ( $\text{F}^-$ ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC8 Hasler Mudstone																				
HC-8-0	15-Feb-11	0	750	630	9.69	255	90	40.0	0.5	0.5	51.0	12.0	0.63	1.5	0.696	0.01030	0.02340	0.047	0.00002	0.000005
HC-8-1	22-Feb-11	1	500	500	8.25	469	100	150.0	0.5	8.4	31.0	8.9	0.69	1.3	0.159	0.00584	0.00667	0.084	0.00001	0.000005
HC-8-2	01-Mar-11	2	500	475	9.02	360	60	81.0	0.5	0.5	74.0	1.2	0.59	1.5	0.195	0.00545	0.00440	0.043	0.00001	0.000005
HC-8-3	08-Mar-11	3	500	480	9.20	335	45	68.0	0.5	0.5	80.0	0.5	0.48	1.1	0.171	0.00515	0.00351	0.034	0.00001	0.000005
HC-8-4	15-Mar-11	4	500	470	9.39	307	30	55.0	0.5	0.5	84.0	0.5	0.43	1.1	0.194	0.00493	0.00277	0.037	0.00001	0.000005
HC-8-5	22-Mar-11	5	500	495	9.21	279	45	44.0	0.5	0.5	81.0	0.7	0.32	1.5	0.161	0.00430	0.00188	0.033	0.00001	0.000005
HC-8-6	29-Mar-11	6	500	490	9.10	260	55	44.0	0.5	0.5	79.0	0.5	0.26	1.4	0.135	0.00373	0.00159	0.030	0.00001	0.000005
HC-8-7	05-Apr-11	7	500	500	9.05	258	75	39.0	0.5	0.5	74.0	0.5	0.23	1.4	0.137	0.00355	0.00126	0.034	0.00001	0.000005
HC-8-8	12-Apr-11	8	500	490	9.09	235	40	34.0	0.5	0.5	67.0	0.5	0.20	1.2	0.206	0.00302	0.00114	0.038	0.00001	0.000005
HC-8-9	19-Apr-11	9	500	495	9.15	228	40	36.0	0.5	0.5	69.0	0.5	0.19	1.5	0.157	0.00299	0.00099	0.036	0.00001	0.000005
HC-8-10	26-Apr-11	10	500	490	8.98	226	65	43.0	0.5	0.5	66.0	0.6	0.18	1.3	0.138	0.00315	0.00112	0.030	0.00001	0.000005
HC-8-11	03-May-11	11	500	485	9.02	210	75	31.0	0.5	0.5	64.0	0.5	0.15	1.6	0.167	0.00273	0.00109	0.045	0.00001	0.000005
HC-8-12	10-May-11	12	500	495	9.04	225	70	33.0	0.5	0.5	63.0	0.5	0.15	2.4	0.172	0.00263	0.00130	0.041	0.00001	0.000005
HC-8-13	17-May-11	13	500	470	9.07	192	90	30.0	0.5	0.5	54.0	3.7	0.12	1.6	0.195	0.00256	0.00118	0.040	0.00001	0.000005
HC-8-14	24-May-11	14	500	465	8.94	199	85	30.0	0.5	0.5	60.0	0.5	0.12	2.0	0.186	0.00234	0.00104	0.044	0.00001	0.000005
HC-8-15	31-May-11	15	500	490	8.99	180	85	31.0	0.5	0.5	50.0	0.5	0.11	1.7	0.137	0.00203	0.00091	0.038	0.00001	0.000005
HC-8-16	07-Jun-11	16	500	485	8.75	173	80	29.0	0.5	0.5	46.0	0.5	0.09	1.5	0.166	0.00191	0.00109	0.035	0.00001	0.000005
HC-8-17	14-Jun-11	17	500	485	8.94	177	65	30.0	0.5	0.5	45.0	0.5	0.08	1.7	0.154	0.00187	0.00099	0.031	0.00001	0.000005
HC-8-18	21-Jun-11	18	500	480	9.07	167	90	29.0	0.5	0.5	45.0	0.5	0.08	1.7	0.133	0.00165	0.00068	0.034	0.00001	0.000005
HC-8-19	28-Jun-11	19	500	485	8.71	176	95	31.0	0.5	0.5	45.0	1.0	0.08	2.4	0.131	0.00162	0.00079	0.031	0.00001	0.000005
HC-8-20	05-Jul-11	20	500	480	8.42	164	155	31.8	0.5	0.5	42.0	1.2	0.08		0.165	0.00151	0.00073	0.031	0.00001	0.000005
HC-8-21	12-Jul-11	21	500	445	8.18	193	150	32.5	0.5	0.5	39.0	1.3	0.07		0.199	0.00140	0.00066	0.030	0.00001	0.000005
HC-8-22	19-Jul-11	22	500	480	8.87	160	125	33.3	0.5	0.5	36.0	1.5	0.07		0.233	0.00128	0.00060	0.029	0.00001	0.000005
HC-8-23	26-Jul-11	23	500	480	8.71	151	135	34.0	0.5	0.5	33.0	1.6	0.06	2.3	0.267	0.00117	0.00053	0.029	0.00001	0.000005
HC-8-24	02-Aug-11	24	500	495	8.43	169	140	37.3	0.5	0.5	34.8	1.9	0.06		0.221	0.00122	0.00051	0.032	0.00001	0.000005
HC-8-25	09-Aug-11	25	500	500	8.65	175	145	40.5	0.5	0.5	36.5	2.2	0.06		0.174	0.00126	0.00048	0.035	0.00001	0.000005
HC-8-26	16-Aug-11	26	500	475	8.45	174	155	43.8	0.5	0.5	38.3	2.4	0.05		0.128	0.00131	0.00046	0.037	0.00001	0.000005
HC-8-27	23-Aug-11	27	500	500	8.02	209	145	47.0	0.5	0.5	40.0	2.7	0.05	9.2	0.081	0.00135	0.00043	0.040	0.00001	0.000005
HC-8-28	30-Aug-11	28	500	480	8.48	163	150	44.8	0.5	0.5	36.5	2.9	0.05		0.094	0.00120	0.00040	0.037	0.00001	0.000005
HC-8-29	06-Sep-11	29	500	480	7.93	251	130	42.5	0.5	0.6	33.0	3.1	0.05		0.106	0.00105	0.00037	0.035	0.00001	0.000005
HC-8-30	13-Sep-11	30	500	500	8.03	262	150	40.3	0.5	0.6	29.5	3.2	0.04		0.119	0.00090	0.00033	0.032	0.00001	0.000005
HC-8-31	20-Sep-11	31	500	475	7.64	183	155	38.0	0.5	0.6	26.0	3.4	0.04	7.4	0.131	0.00075	0.00030	0.029	0.00001	0.000005
HC-8-32	27-Sep-11	32	500	470	7.45	186	150	44.2	0.5	0.6	23.5	3.9	0.04		0.104	0.00070	0.00028	0.029	0.00001	0.000005
HC-8-33	04-Oct-11	33	500	475	7.48	221	190	50.3	0.5	0.6	21.0	4.4	0.04		0.077	0.00066	0.00026	0.029	0.00001	0.000005
HC-8-34	11-Oct-11	34	500	480	7.59	215	180	56.5	0.5	0.5	18.5	4.8	0.03		0.050	0.00061	0.00023	0.029	0.00001	0.000005
HC-8-35	18-Oct-11	35	500	480	7.45	241	210	62.6	0.5	0.5	16.0	5.3	0.03	23.6	0.023	0.00056	0.00021	0.029	0.00001	0.000005
HC-8-36	25-Oct-11	36	500	480	7.42	269	190	68.2	0.5	0.5	18.0	5.8	0.03		0.020	0.00057	0.00023	0.030	0.00001	0.000005
HC-8-37	01-Nov-11	37	500	485	7.56	302	210	73.9	0.5	0.5	20.1	6.4	0.03		0.017	0.00058	0.00025	0.030	0.00001	0.000005
HC-8-38	08-Nov-11	38	500	485	7.72	293	190	79.5	0.5	0.5	22.1	6.9	0.03		0.014	0.00058	0.00026	0.030	0.00001	0.000005
HC-8-39	15-Nov-11	39	500	480	7.62	279	200	85.1	0.5	0.5	24.1	7.4	0.03	51.4	0.010	0.00059	0.00028	0.031	0.00001	0.000005
HC-8-40	22-Nov-11	40	500	490	7.45	228	195	86.5	0.5	0.5	20.5	7.2	0.03		0.009	0.00051	0.00024	0.028	0.00001	0.000005
HC-8-41	29-Nov-11	41	500	485	7.34	256	190	88.0	0.5	0.5	16.9	6.9	0.03		0.008	0.00044	0.00019	0.025	0.00001	0.000005
HC-8-42	06-Dec-11	42	500	470	7.39	285	130	89.4	0.5	0.5	13.3	6.7	0.03		0.007	0.00036	0.00015	0.021	0.00001	0.000005
HC-8-43	13-Dec-11	43	500	475	7.35	271	130	90.8	0.5	0.5	9.7	6.4	0.03	69.0	0.007	0.00028	0.00010	0.018	0.00001	0.000005
HC-8-44	20-Dec-11	44	500	475	7.34	281	130	91.3	0.5	0.5	9.4	5.9	0.03		0.007	0.00027	0.00010	0.018	0.00001	0.000005
HC-8-45	27-Dec-11	45	500	475	7.21	292	125	91.7	0.5	0.5	9.0	5.5	0.03		0.008	0.00027	0.00010	0.017	0.00001	0.000005
HC-8-46	03-Jan-12	46	500	485	7.20	254	135	92.2	0.5	0.5	8.6	5.0	0.03		0.008	0.00026	0.00010	0.016	0.00001	0.000005
HC-8-47	10-Jan-12	47	500	475	7.37	262	125	92.6	0.5	0.5	8.3	4.5	0.03	89.2	0.009	0.00025	0.00010	0.015	0.00001	0.000005



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-8-48	17-Jan-12	48	500	475	7.35	278	125	98.5	0.5	0.5	8.2	5.3	0.03		0.007	0.00024	0.00011	0.015	0.00001	0.000005
HC-8-49	24-Jan-12	49	500	465	7.24	299	130	104.3	0.5	0.5	8.1	6.1	0.03		0.006	0.00024	0.00012	0.014	0.00001	0.000005
HC-8-50	31-Jan-12	50	500	470	7.20	313	125	110.2	0.5	0.5	8.0	6.8	0.03		0.004	0.00023	0.00013	0.014	0.00001	0.000005
HC-8-51	07-Feb-12	51	500	475	7.24	324	115	116.0	0.5	0.5	7.9	7.6	0.03	116.0	0.002	0.00022	0.00014	0.013	0.00001	0.000005
HC-8-52	14-Feb-12	52	500	475	7.26	296	120	116.5	0.5	0.8	7.8	7.5	0.03		0.003	0.00022	0.00014	0.013	0.00001	0.000005
HC-8-53	21-Feb-12	53	500	465	7.24	320	130	117.0	0.5	1.2	7.6	7.5	0.03		0.003	0.00022	0.00014	0.013	0.00001	0.000005
HC-8-54	28-Feb-12	54	500	480	7.23	332	120	117.5	0.5	1.5	7.4	7.4	0.02		0.003	0.00022	0.00013	0.012	0.00001	0.000005
HC-8-55	06-Mar-12	55	500	465	7.24	334	135	118.0	0.5	1.8	7.3	7.3	0.02	119.0	0.004	0.00022	0.00013	0.012	0.00001	0.000005
HC-8-56	13-Mar-12	56	500	480	7.29	336	130	119.3	0.5	1.5	7.3	6.2	0.02		0.004	0.00021	0.00014	0.012	0.00001	0.000005
HC-8-57	20-Mar-12	57	500	480	7.24	318	125	120.5	0.5	1.2	7.4	5.1	0.02		0.003	0.00020	0.00014	0.012	0.00001	0.000005
HC-8-58	27-Mar-12	58	500	480	7.31	313	125	121.8	0.5	0.9	7.4	3.9	0.02		0.003	0.00018	0.00015	0.012	0.00001	0.000005
HC-8-59	03-Apr-12	59	500	480	7.28	335	130	123.0	0.5	0.6	7.5	2.8	0.03	126.0	0.003	0.00017	0.00015	0.012	0.00001	0.000005
HC-8-60	10-Apr-12	60	500	485	7.29	326	130	125.5	0.5	0.6	7.0	2.5	0.02		0.003	0.00017	0.00014	0.012	0.00001	0.000005
HC-8-61	17-Apr-12	61	500	485	7.29	326	135	128.0	0.5	0.6	6.6	2.3	0.02		0.003	0.00018	0.00013	0.012	0.00001	0.000005
HC-8-62	24-Apr-12	62	500	470	7.26	337	130	130.5	0.5	0.5	6.2	2.0	0.02		0.003	0.00018	0.00012	0.011	0.00001	0.000005
HC-8-63	01-May-12	63	500	475	7.12	345	130	133.0	0.5	0.5	5.8	1.7	0.02	145.0	0.003	0.00019	0.00011	0.011	0.00001	0.000005
HC-8-64	08-May-12	64	500	475	7.13	355	125	135.5	0.5	0.6	5.7	1.8	0.02		0.003	0.00019	0.00011	0.011	0.00001	0.000005
HC-8-65	15-May-12	65	500	455	7.22	364	135	138.0	0.5	0.7	5.7	1.8	0.02		0.003	0.00018	0.00010	0.010	0.00001	0.000005
HC-8-66	22-May-12	66	500	490	7.24	360	135	140.5	0.5	0.7	5.7	1.9	0.02		0.003	0.00018	0.00010	0.010	0.00001	0.000005
HC-8-67	29-May-12	67	500	475	7.19	385	130	143.0	0.5	0.8	5.7	1.9	0.02	145.0	0.004	0.00018	0.00009	0.010	0.00001	0.000005
HC-8-68	05-Jun-12	68	500	475	7.18	360	135	142.8	0.5	0.7	6.0	2.0	0.02		0.004	0.00018	0.00009	0.010	0.00001	0.000005
HC-8-69	12-Jun-12	69	500	475	7.17	362	145	142.5	0.5	0.7	6.3	2.0	0.02		0.004	0.00017	0.00009	0.010	0.00001	0.000005
HC-8-70	19-Jun-12	70	500	490	7.22	353	140	142.3	0.5	0.6	6.6	2.1	0.02		0.003	0.00016	0.00009	0.010	0.00001	0.000005
HC-8-71	26-Jun-12	71	500	485	7.18	367	130	142.0	0.5	0.5	6.9	2.1	0.02	151.0	0.003	0.00016	0.00008	0.010	0.00001	0.000005
HC-8-72	03-Jul-12	72	500	485	7.14	353	140	143.8	0.5	0.5	6.4	2.6	0.02		0.003	0.00015	0.00008	0.010	0.00001	0.000005
HC-8-73	10-Jul-12	73	500	480	7.21	357	140	145.5	0.5	0.5	5.8	3.1	0.02		0.003	0.00015	0.00007	0.010	0.00001	0.000005
HC-8-74	17-Jul-12	74	500	480	7.19	371	130	147.3	0.5	0.5	5.2	3.6	0.02		0.003	0.00015	0.00006	0.010	0.00001	0.000005
HC-8-75	24-Jul-12	75	500	480	7.13	374	145	149.0	0.5	0.5	4.6	4.1	0.02	173.0	0.003	0.00014	0.00006	0.010	0.00001	0.000005
HC-8-76	31-Jul-12	76	500	490	7.19	407	135	147.8	0.5	0.5	4.8	3.9	0.02		0.003	0.00014	0.00006	0.010	0.00001	0.000005
HC-8-77	07-Aug-12	77	500	475	7.11	381	145	146.5	0.5	0.5	4.9	3.6	0.02		0.003	0.00013	0.00007	0.010	0.00001	0.000005
HC-8-78	14-Aug-12	78	500	485	7.04	402	145	145.3	0.5	0.5	5.0	3.4	0.02		0.003	0.00012	0.00007	0.010	0.00001	0.000005
HC-8-79	21-Aug-12	79	500	475	7.05	379	135	144.0	0.5	0.5	5.2	3.1	0.02	163.0	0.003	0.00012	0.00008	0.009	0.00001	0.000005
HC-8-80	28-Aug-12	80	500	470	7.06	390	145	148.0	0.5	0.6	4.8	4.3	0.02		0.004	0.00011	0.00008	0.010	0.00001	0.000005
HC-8-81	04-Sep-12	81	500	475	7.04	412	145	152.0	0.5	0.7	4.5	5.4	0.02		0.004	0.00011	0.00008	0.010	0.00001	0.000005
HC-8-82	11-Sep-12	82	500	480	6.92	438	140	156.0	0.5	0.8	4.2	6.6	0.02		0.004	0.00010	0.00008	0.010	0.00001	0.000005
HC-8-83	18-Sep-12	83	500	485	6.93	418	155	160.0	0.5	0.9	3.9	7.7	0.02	179.0	0.005	0.00010	0.00008	0.010	0.00001	0.000005
HC-8-84	25-Sep-12	84	500	470	6.89	407	130	163.0	0.5	1.9	3.7	7.0	0.02		0.004	0.00010	0.00008	0.010	0.00001	0.000005
HC-8-85	02-Oct-12	85	500	480	6.90	413	140	166.0	0.5	3.0	3.6	6.4	0.02		0.003	0.00009	0.00008	0.011	0.00001	0.000005
HC-8-86	09-Oct-12	86	500	480	6.86	419	135	169.0	0.5	4.0	3.5	5.7	0.02		0.002	0.00009	0.00008	0.011	0.00001	0.000005
HC-8-87	16-Oct-12	87	500	475	6.81	393	145	172.0	0.5	5.1	3.3	5.0	0.02	157.0	0.002	0.00008	0.00007	0.011	0.00001	0.000005
HC-8-88	23-Oct-12	88	500	475	6.83	419	145	171.8	0.5	3.9	3.3	5.0	0.02		0.002	0.00009	0.00007	0.011	0.00001	0.000005
HC-8-89	30-Oct-12	89	500	475	6.82	412	150	171.5	0.5	2.8	3.3	4.9	0.02		0.002	0.00009	0.00007	0.010	0.00001	0.000005
HC-8-90	06-Nov-12	90	500	470	6.73	392	140	171.3	0.5	1.6	3.3	4.9	0.03		0.002	0.00009	0.00007	0.010	0.00001	0.000005
HC-8-91	13-Nov-12	91	500	475	6.72	406	140	171.0	0.5	0.5	3.4	4.8	0.03	178.0	0.002	0.00009	0.00007	0.010	0.00001	0.000005
HC-8-92	20-Nov-12	92	500	470	6.71	408	145	168.3	0.5	0.5	3.2	4.3	0.03		0.003	0.00009	0.00007	0.009	0.00001	0.000005
HC-8-93	27-Nov-12	93	500	480	6.76	413	135	165.5	0.5	0.5	3.0	3.8	0.03		0.003	0.00008	0.00007	0.009	0.00001	0.000005
HC-8-94	04-Dec-12	94	500	480	6.69	395	135	162.8	0.5	0.5	2.8	3.3	0.03		0.004	0.00008	0.00007	0.008	0.00001	0.000005
HC-8-95	11-Dec-12	95	500	475	6.63	400	135	160.0	0.5	0.5	2.6	2.8	0.03	174.0	0.005	0.00007	0.00007	0.008	0.00001	0.000005
HC-8-96	18-Dec-12	96	500	475	6.80	385	140	164.8	0.5	0.5	2.8	2.5	0.03		0.004	0.00007	0.00009	0.008	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-8-97	25-Dec-12	97	500	450	6.54	334	130	169.5	0.5	0.5	3.0	2.1	0.03		0.004	0.00007	0.00011	0.009	0.00001	0.000005
HC-8-98	01-Jan-13	98	500	475	6.54	403	130	174.3	0.5	0.5	3.2	1.8	0.03		0.003	0.00006	0.00013	0.010	0.00001	0.000005
HC-8-99	08-Jan-13	99	500	470	6.63	438	125	179.0	0.5	0.5	3.4	1.4	0.03	194.0	0.002	0.00006	0.00015	0.011	0.00001	0.000005
HC-8-100	15-Jan-13	100	500	490	6.59	394	120	173.5	0.5	0.5	3.1	1.4	0.03		0.002	0.00007	0.00012	0.010	0.00001	0.000005
HC-8-101	22-Jan-13	101	500	470	6.51	386	120	168.0	0.5	0.5	2.8	1.5	0.03		0.002	0.00008	0.00010	0.009	0.00001	0.000005
HC-8-102	29-Jan-13	102	500	480	6.53	377	115	162.5	0.5	0.5	2.5	1.5	0.03		0.003	0.00009	0.00008	0.009	0.00001	0.000005
HC-8-103	05-Feb-13	103	500	485	6.55	328	135	157.0	0.5	0.5	2.2	1.5	0.03	161.0	0.003	0.00010	0.00006	0.008	0.00001	0.000005
HC-8-104	12-Feb-13	104	500	485	6.51	354	135	158.5	0.5	0.7	2.2	1.3	0.03		0.003	0.00009	0.00007	0.008	0.00001	0.000005
HC-8-105	19-Feb-13	105	500	465	6.70	369	125	160.0	0.5	0.8	2.2	1.2	0.03		0.003	0.00008	0.00008	0.008	0.00001	0.000005
HC-8-106	26-Feb-13	106	500	490	6.61	353	130	161.5	0.5	1.0	2.2	1.0	0.03		0.002	0.00007	0.00009	0.008	0.00001	0.000005
HC-8-107	05-Mar-13	107	500	475	6.54	355	125	163.0	0.5	1.2	2.2	0.9	0.03	163.0	0.002	0.00006	0.00010	0.008	0.00001	0.000005
HC-8-108	12-Mar-13	108	500	490	6.51	346	150	157.3	0.5	1.0	2.3	0.9	0.03		0.002	0.00006	0.00009	0.008	0.00001	0.000005
HC-8-109	19-Mar-13	109	500	480	6.52	337	150	151.5	0.5	0.9	2.4	0.9	0.04		0.002	0.00006	0.00008	0.008	0.00001	0.000005
HC-8-110	26-Mar-13	110	500	485	6.51	355	130	145.8	0.5	0.7	2.6	0.9	0.04		0.002	0.00005	0.00007	0.008	0.00001	0.000005
HC-8-111	02-Apr-13	111	500	490	6.49	321	140	140.0	0.5	0.6	2.7	0.9	0.04	149.0	0.001	0.00005	0.00005	0.008	0.00001	0.000005
HC-8-112	09-Apr-13	112	500	475	6.43	328	160	140.8	0.5	0.6	2.4	1.0	0.04		0.001	0.00005	0.00007	0.008	0.00001	0.000005
HC-8-113	16-Apr-13	113	500	475	6.31	322	130	141.5	0.5	0.6	2.1	1.1	0.04		0.002	0.00005	0.00009	0.009	0.00001	0.000005
HC-8-114	23-Apr-13	114	500	470	6.38	342	130	142.3	0.5	0.7	1.8	1.3	0.04		0.002	0.00005	0.00011	0.009	0.00001	0.000005
HC-8-115	30-Apr-13	115	500	470	6.26	312	160	143.0	0.5	0.7	1.5	1.4	0.04	139.0	0.002	0.00005	0.00012	0.009	0.00001	0.000005
HC-8-116	07-May-13	116	500	470	6.29	338	145	143.5	0.5	0.7	1.4	1.4	0.04		0.002	0.00005	0.00012	0.009	0.00002	0.000005
HC-8-117	14-May-13	117	500	475	6.16	350	150	144.0	0.5	0.7	1.2	1.4	0.04		0.002	0.00005	0.00011	0.009	0.00002	0.000005
HC-8-118	21-May-13	118	500	470	6.12	293	140	144.5	0.5	0.7	1.1	1.4	0.04		0.003	0.00005	0.00011	0.008	0.00002	0.000005
HC-8-119	28-May-13	119	500	480	6.24	324	145	145.0	0.5	0.7	0.9	1.4	0.04	141.0	0.003	0.00005	0.00010	0.008	0.00002	0.000005
HC-8-120	04-Jun-13	120	500	485	6.24	320	135	140.8	0.5	0.7	0.9	1.4	0.04		0.003	0.00005	0.00008	0.008	0.00002	0.000005
HC-8-121	11-Jun-13	121	500	480	6.25	321	130	136.5	0.5	0.7	0.9	1.4	0.04		0.003	0.00005	0.00007	0.009	0.00002	0.000005
HC-8-122	18-Jun-13	122	500	480	6.12	316	130	132.3	0.5	0.7	0.9	1.3	0.04		0.003	0.00005	0.00005	0.009	0.00002	0.000005
HC-8-123	25-Jun-13	123	500	475	6.07	294	140	128.0	0.5	0.7	0.9	1.3	0.04	134.0	0.004	0.00005	0.00003	0.009	0.00003	0.000005
HC-8-124	02-Jul-13	124	500	470	6.06	312	140	130.3	0.5	0.7	0.8	1.3	0.04		0.005	0.00005	0.00004	0.009	0.00003	0.000005
HC-8-125	09-Jul-13	125	500	480	6.03	304	160	132.5	0.5	0.7	0.7	1.3	0.04		0.006	0.00004	0.00005	0.008	0.00003	0.000005
HC-8-126	16-Jul-13	126	500	475	6.02	308	160	134.8	0.5	0.7	0.6	1.3	0.04		0.008	0.00004	0.00005	0.008	0.00003	0.000005
HC-8-127	23-Jul-13	127	500	470	5.89	301	145	137.0	0.5	0.7	0.5	1.3	0.04	135.0	0.009	0.00004	0.00006	0.007	0.00003	0.000005
HC-8-128	30-Jul-13	128	500	475	5.94	303	165	138.3	0.5	0.7	0.5	1.3	0.04		0.010	0.00004	0.00006	0.008	0.00004	0.000005
HC-8-129	06-Aug-13	129	500	480	5.84	301	155	139.5	0.5	0.6	0.5	1.3	0.05		0.010	0.00004	0.00006	0.009	0.00004	0.000005
HC-8-130	13-Aug-13	130	500	475	5.89	286	150	140.8	0.5	0.6	0.5	1.2	0.05		0.011	0.00004	0.00006	0.009	0.00004	0.000005
HC-8-131	20-Aug-13	131	500	460	5.83	297	155	142.0	0.5	0.5	0.5	1.2	0.05	133.0	0.012	0.00004	0.00006	0.010	0.00005	0.000005
HC-8-132	27-Aug-13	132	500	480	5.80	276	150	140.3	0.5	0.6	0.5	1.2	0.05		0.012	0.00004	0.00006	0.010	0.00004	0.000005
HC-8-133	03-Sep-13	133	500	470	5.77	295	170	138.5	0.5	0.8	0.5	1.1	0.05		0.013	0.00004	0.00006	0.009	0.00003	0.000005
HC-8-134	10-Sep-13	134	500	475	5.78	303	150	136.8	0.5	0.9	0.6	1.1	0.05		0.013	0.00003	0.00006	0.009	0.00003	0.000005
HC-8-135	17-Sep-13	135	500	475	5.71	283	140	135.0	0.5	1.0	0.6	1.0	0.05	126.0	0.013	0.00003	0.00006	0.009	0.00002	0.000005
HC-8-136	24-Sep-13	136	500	475	5.66	278	140	131.8	0.5	1.1	0.6	1.1	0.05		0.014	0.00003	0.00005	0.011	0.00003	0.000005
HC-8-137	01-Oct-13	137	500	470	5.45	299	155	128.5	0.5	1.2	0.6	1.2	0.05		0.016	0.00003	0.00004	0.013	0.00004	0.000005
HC-8-138	08-Oct-13	138	500	485	5.32	312	145	125.3	0.5	1.3	0.6	1.3	0.05		0.017	0.00003	0.00003	0.014	0.00005	0.000005
HC-8-139	15-Oct-13	139	500	465	5.64	265	160	122.0	0.5	1.4	0.5	1.4	0.05	131.0	0.018	0.00003	0.00002	0.016	0.00005	0.000005
HC-8-140	22-Oct-13	140	500	465	5.35	288	140	124.3	0.5	1.3	0.5	1.2	0.06		0.026	0.00003	0.00012	0.016	0.00007	0.000005
HC-8-141	29-Oct-13	141	500	485	5.61	298	120	126.5	0.5	1.2	0.5	1.0	0.06		0.035	0.00003	0.00022	0.015	0.00009	0.000005
HC-8-142	05-Nov-13	142	500	500	4.97	309	170	128.8	0.5	1.2	0.5	0.7	0.07		0.043	0.00003	0.00033	0.015	0.00010	0.000005
HC-8-143	12-Nov-13	143	500	465	5.29	275	130	131.0	0.5	1.1	0.5	0.5	0.07	131.0	0.052	0.00003	0.00043	0.014	0.00012	0.000005
HC-8-144	19-Nov-13	144	500	490	5.50	293	160	131.0	0.5	1.2	0.5	0.7	0.07		0.056	0.00003	0.00034	0.014	0.00012	0.000005
HC-8-145	26-Nov-13	145	500	490	5.15	295	190	131.0	0.5	1.2	0.5	0.8	0.08		0.061	0.00003	0.00026	0.013	0.00013	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity $\mu\text{S/cm}$	ORP mV	Sulphate ( $\text{SO}_4^{2-}$ ) mg/L	Acidity to pH 4.5 mg $\text{CaCO}_3/\text{L}$	Acidity to pH 8.3 mg $\text{CaCO}_3/\text{L}$	Total Alkalinity mg $\text{CaCO}_3/\text{L}$	Chloride ( $\text{Cl}^-$ ) mg/L	Fluoride ( $\text{F}^-$ ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC-8-146	03-Dec-13	146	500	455	5.29	275	190	131.0	0.5	1.3	0.5	1.0	0.08		0.066	0.00003	0.00018	0.013	0.00013	0.000005
HC-8-147	10-Dec-13	147	500	485	4.98	285	205	131.0	0.5	1.3	0.5	1.1	0.08	124.0	0.071	0.00004	0.00009	0.013	0.00014	0.000005
HC-8-148	17-Dec-13	148	500	475	4.66	289	200	131.3	0.5	1.4	0.5	1.0	0.08		0.083	0.00003	0.00009	0.013	0.00016	0.000005
HC-8-149	24-Dec-13	149	500	475	4.74	263	195	131.5	0.5	1.4	0.5	0.8	0.09		0.095	0.00003	0.00008	0.012	0.00018	0.000005
HC-8-150	31-Dec-13	150	500	480	4.90	286	205	131.8	0.5	1.5	0.5	0.7	0.09		0.107	0.00003	0.00007	0.012	0.00020	0.000005
HC-8-151	07-Jan-14	151	500	475	4.53	294	200	132.0	0.5	1.5	0.5	0.5	0.10	120.0	0.119	0.00003	0.00006	0.012	0.00022	0.000005
HC-8-152	14-Jan-14	152	500	475	4.65	274	210	129.5	0.5	1.9	0.5	0.7	0.10		0.121	0.00003	0.00006	0.011	0.00021	0.000005
HC-8-153	21-Jan-14	153	500	485	4.61	270	200	127.0	0.5	2.3	0.5	1.0	0.11		0.124	0.00003	0.00006	0.010	0.00021	0.000005
HC-8-154	28-Jan-14	154	500	475	4.62	258	205	124.5	0.5	2.7	0.5	1.2	0.11		0.126	0.00003	0.00006	0.010	0.00020	0.000005
HC-8-155	04-Feb-14	155	500	475	5.15	266	25	122.0	0.5	3.1	0.5	1.4	0.11	114.0	0.128	0.00003	0.00005	0.009	0.00020	0.000005
HC-8-156	11-Feb-14	156	500	475	4.42	290	210	120.0	0.5	3.7	0.5	1.2	0.11		0.134	0.00003	0.00005	0.010	0.00021	0.000005
HC-8-157	18-Feb-14	157	500	475	4.54	256	215	118.0	0.5	4.3	0.5	1.0	0.12		0.139	0.00003	0.00006	0.010	0.00022	0.000005
HC-8-158	25-Feb-14	158	500	490	4.43	272	210	116.0	0.5	4.9	0.5	0.7	0.12		0.145	0.00002	0.00006	0.011	0.00023	0.000005
HC-8-159	04-Mar-14	159	500	485	4.37	271	230	114.0	0.5	5.4	0.5	0.5	0.12	107.0	0.150	0.00002	0.00006	0.012	0.00024	0.000005
HC-8-160	11-Mar-14	160	500	470	4.41	248	220	113.5	0.5	5.2	0.5	0.7	0.12		0.157	0.00002	0.00005	0.012	0.00024	0.000005
HC-8-161	18-Mar-14	161	500	475	4.39	264	200	113.0	0.5	4.9	0.5	0.8	0.13		0.163	0.00002	0.00005	0.012	0.00024	0.000005
HC-8-162	25-Mar-14	162	500	460	4.37	249	210	112.5	0.5	4.6	0.5	1.0	0.13		0.170	0.00002	0.00005	0.012	0.00024	0.000005
HC-8-163	01-Apr-14	163	500	490	4.36	272	200	112.0	0.5	4.4	0.5	1.1	0.13	113.0	0.176	0.00002	0.00005	0.011	0.00023	0.000005
HC-8-164	08-Apr-14	164	500	480	4.39	257	220	110.8	0.5	4.2	0.5	1.1	0.13		0.170	0.00002	0.00005	0.011	0.00023	0.000005
HC-8-165	15-Apr-14	165	500	480	4.40	253	210	109.5	0.5	4.0	0.5	1.2	0.13		0.164	0.00002	0.00005	0.010	0.00022	0.000005
HC-8-166	22-Apr-14	166	500	485	4.37	261	230	108.3	0.5	3.8	0.5	1.2	0.12		0.158	0.00002	0.00005	0.009	0.00022	0.000005
HC-8-167	29-Apr-14	167	500	460	4.43	252	220	107.0	0.5	3.7	0.5	1.2	0.12	106.0	0.152	0.00002	0.00005	0.008	0.00022	0.000005
<b>Mean all weeks</b>					<b>6.81</b>	<b>303</b>	<b>142</b>	<b>114.8</b>	<b>0.5</b>	<b>1.2</b>	<b>13.4</b>	<b>2.6</b>	<b>0.07</b>	<b>79.5</b>	<b>0.058</b>	<b>0.00062</b>	<b>0.00046</b>	<b>0.017</b>	<b>0.00004</b>	<b>0.000005</b>
<b>HC9 Hasler Mudstone</b>																				
HC-9-0	15-Feb-11	0	750	625	9.94	130	80	5.8	0.5	0.5	38.0	6.5	0.55	0.6	0.988	0.00493	0.00983	0.069	0.00004	0.000008
HC-9-1	22-Feb-11	1	500	480	9.25	282	50	58.0	0.5	2.5	52.0	18.0	0.73	0.5	0.239	0.00285	0.00585	0.034	0.00001	0.000005
HC-9-2	01-Mar-11	2	500	480	8.88	229	65	45.0	0.5	0.5	51.0	1.0	0.58	0.5	0.194	0.00213	0.00248	0.035	0.00001	0.000005
HC-9-3	08-Mar-11	3	500	465	9.15	196	70	28.0	0.5	0.5	57.0	0.5	0.45	0.5	0.181	0.00162	0.00157	0.028	0.00001	0.000005
HC-9-4	15-Mar-11	4	500	475	9.40	182	30	19.0	0.5	0.5	63.0	0.5	0.43	0.5	0.274	0.00182	0.00137	0.030	0.00001	0.000005
HC-9-5	22-Mar-11	5	500	500	9.15	164	55	16.0	0.5	0.5	57.0	0.5	0.32	0.5	0.222	0.00154	0.00111	0.029	0.00001	0.000005
HC-9-6	29-Mar-11	6	500	495	9.21	150	50	13.0	0.5	0.5	55.0	0.5	0.26	0.5	0.289	0.00134	0.00104	0.031	0.00001	0.000005
HC-9-7	05-Apr-11	7	500	500	8.93	133	80	12.0	0.5	0.5	49.0	0.5	0.24	0.5	0.197	0.00120	0.00092	0.020	0.00001	0.000005
HC-9-8	12-Apr-11	8	500	495	8.95	131	50	11.0	0.5	0.5	49.0	0.5	0.22	0.5	0.315	0.00120	0.00075	0.029	0.00001	0.000005
HC-9-9	19-Apr-11	9	500	495	9.03	121	40	12.0	0.5	0.5	46.0	0.5	0.21	0.5	0.278	0.00108	0.00070	0.032	0.00001	0.000005
HC-9-10	26-Apr-11	10	500	485	8.99	116	80	10.0	0.5	0.5	44.0	0.5	0.20	0.5	0.208	0.00115	0.00078	0.021	0.00001	0.000005
HC-9-11	03-May-11	11	500	485	8.80	108	90	9.5	0.5	0.5	43.0	1.0	0.17	0.5	0.254	0.00107	0.00069	0.022	0.00001	0.000005
HC-9-12	10-May-11	12	500	465	9.07	104	95	10.0	0.5	0.5	43.0	0.5	0.18	0.5	0.343	0.00112	0.00071	0.025	0.00001	0.000005
HC-9-13	17-May-11	13	500	465	9.07	104	95	9.9	0.5	0.5	37.0	0.5	0.16	0.5	0.142	0.00104	0.00077	0.013	0.00001	0.000005
HC-9-14	24-May-11	14	500	475	8.99	102	70	9.1	0.5	0.5	40.0	0.5	0.15	0.5	0.166	0.00097	0.00093	0.017	0.00001	0.000005
HC-9-15	31-May-11	15	500	460	8.88	106	100	10.0	0.5	0.5	41.0	0.5	0.16	0.5	0.134	0.00101	0.00091	0.013	0.00001	0.000005
HC-9-16	07-Jun-11	16	500	465	8.67	100	85	11.0	0.5	0.5	36.0	0.5	0.13	0.5	0.146	0.00087	0.00080	0.013	0.00001	0.000005
HC-9-17	14-Jun-11	17	500	495	8.82	94	90	10.0	0.5	0.5	32.0	0.6	0.11	0.5	0.202	0.00089	0.00074	0.018	0.00001	0.000005
HC-9-18	21-Jun-11	18	500	475	8.70	88	90	11.0	0.5	1.0	33.0	0.5	0.12	0.5	0.162	0.00084	0.00091	0.013	0.00001	0.000005
HC-9-19	28-Jun-11	19	500	465	8.74	84	95	9.2	0.5	0.5	32.0	0.9	0.11	0.5	0.124	0.00076	0.00083	0.011	0.00001	0.000005
HC-9-20	05-Jul-11	20	500	460	8.86	94	120	9.4	0.5	0.5	30.3	1.2	0.11		0.140	0.00072	0.00082	0.012	0.00001	0.000005
HC-9-21	12-Jul-11	21	500	495	8.88	89	105	9.6	0.5	0.5	28.5	1.6	0.11		0.155	0.00068	0.00082	0.014	0.00001	0.000005
HC-9-22	19-Jul-11	22	500	505	8.70	83	105	9.8	0.5	0.5	26.8	1.9	0.10		0.171	0.00064	0.00081	0.015	0.00001	0.000005
HC-9-23	26-Jul-11	23	500	490	8.20	79	125	10.0	0.5	0.5	25.0	2.2	0.10	0.5	0.186	0.00060	0.00080	0.017	0.00001	0.000005
HC-9-24	02-Aug-11	24	500	485	8.67	76	120	10.0	0.5	0.5	23.0	3.1	0.10		0.185	0.00059	0.00073	0.019	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-9-25	09-Aug-11	25	500	500	8.78	78	105	10.0	0.5	0.5	21.0	4.0	0.09		0.185	0.00058	0.00067	0.020	0.00001	0.000005
HC-9-26	16-Aug-11	26	500	495	8.50	85	105	10.0	0.5	0.5	19.0	4.9	0.09		0.184	0.00056	0.00060	0.022	0.00001	0.000005
HC-9-27	23-Aug-11	27	500	495	8.45	86	105	10.0	0.5	0.5	17.0	5.8	0.08	0.5	0.183	0.00055	0.00053	0.024	0.00001	0.000005
HC-9-28	30-Aug-11	28	500	465	8.58	82	110	10.5	0.5	0.5	14.9	6.9	0.08		0.156	0.00051	0.00051	0.021	0.00001	0.000005
HC-9-29	06-Sep-11	29	500	470	8.29	75	95	11.0	0.5	0.5	12.8	7.9	0.08		0.128	0.00047	0.00050	0.019	0.00001	0.000005
HC-9-30	13-Sep-11	30	500	460	7.77	91	110	11.5	0.5	0.5	10.6	9.0	0.07		0.101	0.00042	0.00048	0.016	0.00001	0.000005
HC-9-31	20-Sep-11	31	500	465	7.57	90	120	12.0	0.5	0.5	8.5	10.0	0.07	0.5	0.073	0.00038	0.00046	0.013	0.00001	0.000005
HC-9-32	27-Sep-11	32	500	455	7.30	94	140	12.9	0.5	0.5	7.9	10.5	0.07		0.064	0.00036	0.00042	0.014	0.00001	0.000005
HC-9-33	04-Oct-11	33	500	465	7.06	117	120	13.9	0.5	0.5	7.3	11.0	0.07		0.055	0.00033	0.00039	0.014	0.00001	0.000005
HC-9-34	11-Oct-11	34	500	475	7.23	109	175	14.8	0.5	0.5	6.7	11.5	0.07		0.046	0.00031	0.00035	0.014	0.00001	0.000005
HC-9-35	18-Oct-11	35	500	455	7.08	101	175	15.7	0.5	0.5	6.1	12.0	0.07	0.7	0.037	0.00028	0.00031	0.015	0.00001	0.000005
HC-9-36	25-Oct-11	36	500	485	7.12	145	190	18.5	0.5	0.5	5.9	12.5	0.08		0.033	0.00028	0.00033	0.017	0.00001	0.000005
HC-9-37	01-Nov-11	37	500	485	6.97	144	220	21.4	0.5	0.5	5.7	13.0	0.08		0.028	0.00029	0.00034	0.019	0.00001	0.000005
HC-9-38	08-Nov-11	38	500	485	7.01	131	205	24.2	0.5	0.5	5.6	13.5	0.09		0.023	0.00029	0.00036	0.021	0.00001	0.000005
HC-9-39	15-Nov-11	39	500	480	6.94	127	210	27.0	0.5	0.5	5.4	14.0	0.10	1.4	0.019	0.00029	0.00037	0.023	0.00001	0.000005
HC-9-40	22-Nov-11	40	500	500	6.70	98	195	30.8	0.5	0.5	4.7	13.3	0.09		0.018	0.00027	0.00034	0.022	0.00001	0.000005
HC-9-41	29-Nov-11	41	500	475	6.92	128	160	34.7	0.5	0.5	4.1	12.5	0.09		0.016	0.00025	0.00031	0.022	0.00001	0.000005
HC-9-42	06-Dec-11	42	500	470	6.92	160	130	38.5	0.5	0.5	3.4	11.8	0.09		0.015	0.00023	0.00027	0.021	0.00001	0.000005
HC-9-43	13-Dec-11	43	500	455	6.93	175	125	42.3	0.5	0.5	2.7	11.0	0.08	2.7	0.014	0.00021	0.00024	0.021	0.00001	0.000005
HC-9-44	20-Dec-11	44	500	465	6.58	210	125	48.1	0.5	0.5	2.2	10.3	0.08		0.011	0.00020	0.00023	0.019	0.00001	0.000005
HC-9-45	27-Dec-11	45	500	475	6.64	225	125	53.9	0.5	0.5	1.6	9.7	0.07		0.009	0.00019	0.00022	0.018	0.00002	0.000005
HC-9-46	03-Jan-12	46	500	470	6.64	204	125	59.7	0.5	0.5	1.1	9.0	0.07		0.007	0.00017	0.00020	0.016	0.00002	0.000005
HC-9-47	10-Jan-12	47	500	450	6.41	214	120	65.5	0.5	0.5	0.5	8.3	0.07	9.4	0.005	0.00016	0.00019	0.015	0.00002	0.000005
HC-9-48	17-Jan-12	48	500	470	6.40	242	120	69.6	0.5	0.5	0.5	9.0	0.07		0.008	0.00015	0.00019	0.014	0.00003	0.000005
HC-9-49	24-Jan-12	49	500	455	6.17	260	120	73.7	0.5	0.5	0.6	9.7	0.07		0.012	0.00014	0.00019	0.014	0.00003	0.000005
HC-9-50	31-Jan-12	50	500	465	6.07	273	120	77.7	0.5	0.5	0.6	10.3	0.07		0.015	0.00013	0.00019	0.014	0.00004	0.000005
HC-9-51	07-Feb-12	51	500	475	5.82	282	135	81.8	0.5	0.5	0.7	11.0	0.07	21.8	0.019	0.00012	0.00019	0.013	0.00004	0.000005
HC-9-52	14-Feb-12	52	500	455	5.85	241	105	82.8	0.5	0.8	0.6	10.6	0.07		0.021	0.00012	0.00019	0.013	0.00005	0.000005
HC-9-53	21-Feb-12	53	500	460	5.65	269	155	83.8	0.5	1.1	0.6	10.3	0.07		0.023	0.00011	0.00020	0.013	0.00006	0.000005
HC-9-54	28-Feb-12	54	500	475	5.59	277	100	84.8	0.5	1.4	0.5	9.9	0.06		0.025	0.00011	0.00020	0.013	0.00006	0.000005
HC-9-55	06-Mar-12	55	500	435	5.61	268	100	85.8	0.5	1.7	0.5	9.5	0.06	23.9	0.027	0.00010	0.00020	0.013	0.00007	0.000005
HC-9-56	13-Mar-12	56	500	480	5.49	269	90	85.3	0.5	1.6	0.5	8.1	0.06		0.028	0.00009	0.00018	0.013	0.00008	0.000005
HC-9-57	20-Mar-12	57	500	455	6.00	237	105	84.8	0.5	1.5	0.5	6.7	0.06		0.028	0.00009	0.00017	0.014	0.00008	0.000005
HC-9-58	27-Mar-12	58	500	470	5.53	228	100	84.3	0.5	1.3	0.5	5.2	0.06		0.029	0.00008	0.00015	0.015	0.00009	0.000005
HC-9-59	03-Apr-12	59	500	470	5.38	245	100	83.8	0.5	1.2	0.5	3.8	0.06	27.6	0.030	0.00007	0.00013	0.016	0.00009	0.000005
HC-9-60	10-Apr-12	60	500	495	5.54	222	90	81.7	0.5	1.3	0.5	3.7	0.06		0.033	0.00007	0.00014	0.016	0.00010	0.000005
HC-9-61	17-Apr-12	61	500	475	5.25	211	95	79.6	0.5	1.3	0.5	3.6	0.06		0.037	0.00007	0.00016	0.016	0.00010	0.000005
HC-9-62	24-Apr-12	62	500	455	5.28	223	90	77.5	0.5	1.4	0.5	3.4	0.06		0.040	0.00007	0.00017	0.016	0.00011	0.000005
HC-9-63	01-May-12	63	500	470	5.85	224	100	75.4	0.5	1.4	0.5	3.3	0.07	32.9	0.044	0.00007	0.00018	0.016	0.00011	0.000005
HC-9-64	08-May-12	64	500	475	5.44	221	140	74.3	0.5	1.6	0.5	3.3	0.07		0.045	0.00006	0.00018	0.015	0.00012	0.000005
HC-9-65	15-May-12	65	500	440	4.93	237	140	73.2	0.5	1.7	0.5	3.3	0.07		0.046	0.00006	0.00017	0.014	0.00013	0.000005
HC-9-66	22-May-12	66	500	490	5.21	215	130	72.0	0.5	1.9	0.5	3.3	0.07		0.048	0.00005	0.00016	0.014	0.00013	0.000005
HC-9-67	29-May-12	67	500	475	4.93	223	120	70.9	0.5	2.0	0.5	3.3	0.07	31.5	0.049	0.00005	0.00016	0.013	0.00014	0.000005
HC-9-68	05-Jun-12	68	500	475	4.82	207	130	71.9	0.5	2.1	0.5	3.3	0.07		0.057	0.00005	0.00017	0.013	0.00015	0.000005
HC-9-69	12-Jun-12	69	500	460	4.79	206	135	73.0	0.5	2.2	0.5	3.3	0.07		0.064	0.00005	0.00017	0.013	0.00016	0.000005
HC-9-70	19-Jun-12	70	500	490	4.77	204	130	74.0	0.5	2.3	0.5	3.3	0.07		0.071	0.00004	0.00018	0.013	0.00017	0.000005
HC-9-71	26-Jun-12	71	500	475	4.59	217	120	75.0	0.5	2.4	0.5	3.3	0.07	36.9	0.079	0.00004	0.00019	0.013	0.00019	0.000005
HC-9-72	03-Jul-12	72	500	475	4.47	209	130	77.5	0.5	3.0	0.5	3.2	0.08		0.110	0.00004	0.00018	0.012	0.00022	0.000005
HC-9-73	10-Jul-12	73	500	455	4.35	213	155	80.0	0.5	3.5	0.5	3.2	0.08		0.142	0.00004	0.00017	0.012	0.00025	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-9-74	17-Jul-12	74	500	455	4.28	235	155	82.5	0.5	4.0	0.5	3.1	0.08		0.174	0.00003	0.00016	0.011	0.00028	0.000005
HC-9-75	24-Jul-12	75	500	460	4.16	246	210	85.0	0.5	4.6	0.5	3.0	0.08	50.3	0.206	0.00003	0.00014	0.011	0.00031	0.000005
HC-9-76	31-Jul-12	76	500	475	4.06	290	185	99.5	0.9	6.3	0.5	2.7	0.10		0.284	0.00003	0.00019	0.010	0.00040	0.000005
HC-9-77	07-Aug-12	77	500	465	4.00	288	220	114.0	1.2	8.0	0.5	2.4	0.12		0.361	0.00002	0.00024	0.009	0.00048	0.000005
HC-9-78	14-Aug-12	78	500	475	3.98	349	360	128.5	1.6	9.8	0.5	2.1	0.13		0.439	0.00002	0.00029	0.009	0.00057	0.000005
HC-9-79	21-Aug-12	79	500	460	3.87	383	290	143.0	1.9	11.5	0.5	1.8	0.15	92.7	0.516	0.00002	0.00035	0.008	0.00066	0.000005
HC-9-80	28-Aug-12	80	500	460	3.83	439	300	164.0	3.2	14.8	0.5	2.1	0.23		0.785	0.00002	0.00046	0.008	0.00097	0.000005
HC-9-81	04-Sep-12	81	500	485	3.73	522	340	185.0	4.4	18.1	0.5	2.5	0.31		1.053	0.00002	0.00057	0.008	0.00128	0.000005
HC-9-82	11-Sep-12	82	500	475	3.65	624	340	206.0	5.6	21.4	0.5	2.8	0.39		1.322	0.00002	0.00069	0.008	0.00158	0.000005
HC-9-83	18-Sep-12	83	500	490	3.60	643	420	227.0	6.9	24.7	0.5	3.1	0.47	179.0	1.590	0.00002	0.00080	0.008	0.00189	0.000005
HC-9-84	25-Sep-12	84	500	450	3.58	674	410	230.3	5.3	29.9	0.5	2.8	0.56		1.925	0.00002	0.00085	0.008	0.00210	0.000005
HC-9-85	02-Oct-12	85	500	475	3.53	678	430	233.5	3.7	35.1	0.5	2.5	0.64		2.260	0.00002	0.00091	0.008	0.00230	0.000005
HC-9-86	09-Oct-12	86	500	480	3.51	711	490	236.8	2.1	40.2	0.5	2.2	0.73		2.595	0.00002	0.00096	0.008	0.00251	0.000005
HC-9-87	16-Oct-12	87	500	460	3.46	702	450	240.0	0.5	45.4	0.5	1.9	0.81	205.0	2.930	0.00002	0.00101	0.008	0.00271	0.000005
HC-9-88	23-Oct-12	88	500	480	3.42	739	450	240.8	1.6	45.6	0.5	1.7	0.88		3.228	0.00002	0.00106	0.008	0.00276	0.000005
HC-9-89	30-Oct-12	89	500	465	3.42	749	495	241.5	2.8	45.7	0.5	1.5	0.96		3.525	0.00002	0.00112	0.008	0.00281	0.000005
HC-9-90	06-Nov-12	90	500	470	3.41	715	510	242.3	3.9	45.9	0.5	1.3	1.03		3.823	0.00002	0.00117	0.008	0.00286	0.000005
HC-9-91	13-Nov-12	91	500	470	3.40	724	480	243.0	5.0	46.0	0.5	1.1	1.10	200.0	4.120	0.00002	0.00122	0.007	0.00291	0.000005
HC-9-92	20-Nov-12	92	500	465	3.43	721	450	229.8	3.9	45.0	0.5	1.0	1.13		4.213	0.00002	0.00123	0.007	0.00294	0.000005
HC-9-93	27-Nov-12	93	500	490	3.38	704	460	216.5	2.8	44.1	0.5	0.8	1.15		4.305	0.00002	0.00124	0.007	0.00297	0.000005
HC-9-94	04-Dec-12	94	500	490	3.38	676	480	203.3	1.6	43.1	0.5	0.7	1.18		4.398	0.00002	0.00125	0.007	0.00300	0.000005
HC-9-95	11-Dec-12	95	500	490	3.38	665	420	190.0	0.5	42.1	0.5	0.5	1.20	181.0	4.490	0.00002	0.00126	0.007	0.00303	0.000005
HC-9-96	18-Dec-12	96	500	465	3.41	646	450	201.3	6.9	46.7	0.5	0.5	1.23		4.870	0.00002	0.00149	0.007	0.00308	0.000005
HC-9-97	25-Dec-12	97	500	475	3.39	616	460	212.5	13.3	51.4	0.5	0.5	1.25		5.250	0.00002	0.00172	0.007	0.00313	0.000005
HC-9-98	01-Jan-13	98	500	455	3.35	683	300	223.8	19.6	56.0	0.5	0.5	1.28		5.630	0.00002	0.00195	0.008	0.00318	0.000005
HC-9-99	08-Jan-13	99	500	470	3.34	706	300	235.0	26.0	60.6	0.5	0.6	1.30	189.0	6.010	0.00002	0.00218	0.008	0.00323	0.000005
HC-9-100	15-Jan-13	100	500	480	3.35	640	470	226.0	25.3	59.0	0.5	0.6	1.25		5.763	0.00002	0.00197	0.008	0.00313	0.000005
HC-9-101	22-Jan-13	101	500	460	3.36	651	490	217.0	24.6	57.3	0.5	0.6	1.20		5.515	0.00002	0.00177	0.007	0.00304	0.000005
HC-9-102	29-Jan-13	102	500	465	3.32	633	480	208.0	23.9	55.7	0.5	0.7	1.15		5.268	0.00002	0.00156	0.007	0.00294	0.000005
HC-9-103	05-Feb-13	103	500	470	3.34	588	490	199.0	23.2	54.0	0.5	0.7	1.10	148.0	5.020	0.00002	0.00135	0.007	0.00284	0.000005
HC-9-104	12-Feb-13	104	500	470	3.31	607	460	181.0	23.0	52.6	0.5	0.7	1.00		4.643	0.00002	0.00123	0.006	0.00253	0.000005
HC-9-105	19-Feb-13	105	500	455	3.31	609	420	163.0	22.8	51.2	0.5	0.6	0.91		4.265	0.00002	0.00112	0.006	0.00222	0.000005
HC-9-106	26-Feb-13	106	500	485	3.32	581	400	145.0	22.6	49.7	0.5	0.6	0.81		3.888	0.00002	0.00100	0.005	0.00190	0.000005
HC-9-107	05-Mar-13	107	500	465	3.33	445	450	127.0	22.4	48.3	0.5	0.5	0.71	83.0	3.510	0.00002	0.00088	0.005	0.00159	0.000005
HC-9-108	12-Mar-13	108	500	470	3.30	623	470	137.3	23.0	49.8	0.5	0.5	0.78		3.875	0.00002	0.00086	0.006	0.00182	0.000005
HC-9-109	19-Mar-13	109	500	475	3.31	568	450	147.5	23.7	51.3	0.5	0.5	0.86		4.240	0.00002	0.00083	0.006	0.00205	0.000005
HC-9-110	26-Mar-13	110	500	470	3.31	577	460	157.8	24.3	52.7	0.5	0.5	0.93		4.605	0.00002	0.00081	0.007	0.00227	0.000005
HC-9-111	02-Apr-13	111	500	485	3.36	522	440	168.0	24.9	54.2	0.5	0.5	1.00	118.0	4.970	0.00002	0.00078	0.008	0.00250	0.000005
HC-9-112	09-Apr-13	112	500	460	3.33	539	460	167.5	25.4	54.8	0.5	0.5	1.00		5.008	0.00002	0.00081	0.008	0.00248	0.000005
HC-9-113	16-Apr-13	113	500	460	3.29	531	440	167.0	25.9	55.3	0.5	0.5	1.00		5.045	0.00002	0.00083	0.008	0.00246	0.000005
HC-9-114	23-Apr-13	114	500	450	3.30	561	460	166.5	26.3	55.9	0.5	0.5	1.00		5.083	0.00002	0.00086	0.008	0.00244	0.000005
HC-9-115	30-Apr-13	115	500	455	3.29	509	460	166.0	26.8	56.4	0.5	0.5	1.00	110.0	5.120	0.00002	0.00088	0.008	0.00242	0.000005
HC-9-116	07-May-13	116	500	470	3.30	515	440	162.8	26.4	56.0	0.5	0.5	0.99		4.995	0.00011	0.00088	0.008	0.00233	0.000005
HC-9-117	14-May-13	117	500	480	3.29	490	480	159.5	26.1	55.6	0.5	0.5	0.98		4.870	0.00019	0.00088	0.008	0.00225	0.000005
HC-9-118	21-May-13	118	500	470	3.33	474	490	156.3	25.7	55.2	0.5	0.5	0.96		4.745	0.00028	0.00087	0.008	0.00216	0.000005
HC-9-119	28-May-13	119	500	475	3.27	487	490	153.0	25.3	54.8	0.5	0.5	0.95	95.6	4.620	0.00037	0.00087	0.008	0.00207	0.000005
HC-9-120	04-Jun-13	120	500	490	3.29	498	470	149.3	24.7	53.8	0.5	0.5	0.92		4.600	0.00028	0.00084	0.007	0.00206	0.000005
HC-9-121	11-Jun-13	121	500	475	3.30	499	480	145.5	24.2	52.8	0.5	0.5	0.90		4.580	0.00019	0.00080	0.007	0.00204	0.000005
HC-9-122	18-Jun-13	122	500	475	3.30	491	490	141.8	23.6	51.8	0.5	0.5	0.87		4.560	0.00011	0.00077	0.007	0.00203	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-9-123	25-Jun-13	123	500	450	3.31	473	470	138.0	23.0	50.8	0.5	0.5	0.84	91.2	4.540	0.00002	0.00074	0.007	0.00201	0.000005
HC-9-124	02-Jul-13	124	500	485	3.30	493	470	137.8	22.6	49.8	0.5	0.5	0.84		4.563	0.00002	0.00067	0.007	0.00199	0.000005
HC-9-125	09-Jul-13	125	500	465	3.31	477	490	137.5	22.1	48.8	0.5	0.5	0.84		4.585	0.00002	0.00061	0.007	0.00198	0.000005
HC-9-126	16-Jul-13	126	500	460	3.31	480	480	137.3	21.7	47.7	0.5	0.5	0.84		4.608	0.00002	0.00055	0.007	0.00196	0.000005
HC-9-127	23-Jul-13	127	500	460	3.29	471	470	137.0	21.2	46.7	0.5	0.5	0.84	80.3	4.630	0.00002	0.00048	0.007	0.00194	0.000005
HC-9-128	30-Jul-13	128	500	475	3.30	469	470	136.8	16.0	46.0	0.5	0.5	0.83		4.523	0.00002	0.00043	0.008	0.00193	0.000005
HC-9-129	06-Aug-13	129	500	470	3.31	457	495	136.5	10.9	45.2	0.5	0.5	0.82		4.415	0.00002	0.00038	0.008	0.00192	0.000005
HC-9-130	13-Aug-13	130	500	465	3.33	457	480	136.3	5.7	44.5	0.5	0.5	0.81		4.308	0.00002	0.00034	0.008	0.00190	0.000005
HC-9-131	20-Aug-13	131	500	460	3.28	453	480	136.0	0.5	43.7	0.5	0.5	0.80	78.0	4.200	0.00002	0.00029	0.008	0.00189	0.000005
HC-9-132	27-Aug-13	132	500	465	3.29	442	460	135.3	7.4	47.4	0.5	0.5	0.80		4.305	0.00002	0.00028	0.008	0.00187	0.000005
HC-9-133	03-Sep-13	133	500	470	3.31	451	480	134.5	14.4	51.1	0.5	0.5	0.80		4.410	0.00002	0.00027	0.009	0.00185	0.000005
HC-9-134	10-Sep-13	134	500	470	3.32	448	490	133.8	21.3	54.8	0.5	0.5	0.80		4.515	0.00002	0.00027	0.009	0.00183	0.000005
HC-9-135	17-Sep-13	135	500	475	3.25	447	490	133.0	28.2	58.5	0.5	0.5	0.80	72.7	4.620	0.00002	0.00026	0.009	0.00181	0.000005
HC-9-136	24-Sep-13	136	500	470	3.27	433	480	132.3	25.0	54.0	0.5	0.5	0.79		4.585	0.00002	0.00025	0.009	0.00182	0.000005
HC-9-137	01-Oct-13	137	500	480	3.31	428	490	131.5	21.7	49.4	0.5	0.5	0.79		4.550	0.00002	0.00023	0.009	0.00184	0.000005
HC-9-138	08-Oct-13	138	500	460	3.25	419	495	130.8	18.5	44.9	0.5	0.5	0.78		4.515	0.00002	0.00022	0.009	0.00185	0.000005
HC-9-139	15-Oct-13	139	500	465	3.31	418	485	130.0	15.2	40.3	0.5	0.5	0.77	73.2	4.480	0.00002	0.00021	0.009	0.00186	0.000005
HC-9-140	22-Oct-13	140	500	470	3.29	425	480	127.5	15.9	41.2	0.5	0.5	0.76		4.488	0.00002	0.00023	0.009	0.00183	0.000005
HC-9-141	29-Oct-13	141	500	470	3.34	421	460	125.0	16.7	42.1	0.5	0.6	0.76		4.495	0.00002	0.00025	0.010	0.00181	0.000005
HC-9-142	05-Nov-13	142	500	480	3.28	410	400	122.5	17.4	42.9	0.5	0.6	0.75		4.503	0.00002	0.00028	0.010	0.00178	0.000005
HC-9-143	12-Nov-13	143	500	475	3.32	395	400	120.0	18.1	43.8	0.5	0.6	0.74	68.9	4.510	0.00002	0.00030	0.010	0.00175	0.000005
HC-9-144	19-Nov-13	144	500	470	3.35	402	410	118.0	16.5	43.6	0.5	0.6	0.73		4.395	0.00002	0.00028	0.010	0.00171	0.000005
HC-9-145	26-Nov-13	145	500	495	3.30	402	470	116.0	14.8	43.3	0.5	0.6	0.72		4.280	0.00002	0.00027	0.010	0.00168	0.000005
HC-9-146	03-Dec-13	146	500	475	3.29	420	490	114.0	13.2	43.1	0.5	0.5	0.70		4.165	0.00002	0.00025	0.010	0.00164	0.000005
HC-9-147	10-Dec-13	147	500	490	3.29	409	460	112.0	11.5	42.8	0.5	0.5	0.69	59.1	4.050	0.00002	0.00024	0.010	0.00160	0.000005
HC-9-148	17-Dec-13	148	500	470	3.31	403	480	110.0	13.1	42.4	0.5	0.5	0.69		3.990	0.00002	0.00024	0.009	0.00155	0.000005
HC-9-149	24-Dec-13	149	500	460	3.31	399	490	108.0	14.8	41.9	0.5	0.5	0.68		3.930	0.00002	0.00024	0.009	0.00150	0.000005
HC-9-150	31-Dec-13	150	500	480	3.35	385	490	106.0	16.4	41.5	0.5	0.5	0.68		3.870	0.00002	0.00024	0.009	0.00144	0.000005
HC-9-151	07-Jan-14	151	500	475	3.29	377	485	104.0	18.0	41.0	0.5	0.5	0.67	52.4	3.810	0.00002	0.00024	0.009	0.00139	0.000005
HC-9-152	14-Jan-14	152	500	470	3.29	400	490	103.3	20.2	42.6	0.5	0.5	0.65		3.760	0.00002	0.00023	0.009	0.00137	0.000005
HC-9-153	21-Jan-14	153	500	465	3.36	394	470	102.5	22.4	44.2	0.5	0.5	0.63		3.710	0.00002	0.00022	0.009	0.00135	0.000005
HC-9-154	28-Jan-14	154	500	465	3.32	392	480	101.8	24.6	45.8	0.5	0.5	0.61		3.660	0.00002	0.00021	0.009	0.00133	0.000005
HC-9-155	04-Feb-14	155	500	460	3.37	382	410	101.0	26.8	47.4	0.5	0.5	0.59	48.2	3.610	0.00002	0.00020	0.009	0.00131	0.000005
HC-9-156	11-Feb-14	156	500	450	3.36	375	500	98.1	27.4	49.1	0.5	0.5	0.59		3.598	0.00002	0.00019	0.009	0.00130	0.000005
HC-9-157	18-Feb-14	157	500	480	3.35	373	525	95.2	28.0	50.9	0.5	0.5	0.58		3.585	0.00002	0.00019	0.009	0.00130	0.000005
HC-9-158	25-Feb-14	158	500	485	3.36	370	470	92.2	28.6	52.6	0.5	0.5	0.58		3.573	0.00002	0.00018	0.009	0.00129	0.000005
HC-9-159	04-Mar-14	159	500	470	3.33	370	480	89.3	29.2	54.3	0.5	0.5	0.57	44.4	3.560	0.00002	0.00017	0.010	0.00128	0.000005
HC-9-160	11-Mar-14	160	500	480	3.34	364	480	87.9	28.9	53.1	0.5	0.5	0.56		3.515	0.00002	0.00016	0.010	0.00126	0.000005
HC-9-161	18-Mar-14	161	500	480	3.34	367	400	86.5	28.7	51.9	0.5	0.5	0.56		3.470	0.00002	0.00015	0.010	0.00125	0.000005
HC-9-162	25-Mar-14	162	500	470	3.33	361	470	85.1	28.4	50.7	0.5	0.5	0.55		3.425	0.00002	0.00015	0.010	0.00123	0.000005
HC-9-163	01-Apr-14	163	500	480	3.33	361	460	83.7	28.1	49.5	0.5	0.5	0.54	41.3	3.380	0.00002	0.00014	0.010	0.00121	0.000005
HC-9-164	08-Apr-14	164	500	475	3.30	367	455	84.4	28.4	50.8	0.5	0.5	0.54		3.388	0.00002	0.00015	0.010	0.00123	0.000005
HC-9-165	15-Apr-14	165	500	470	3.32	365	470	85.0	28.7	52.0	0.5	0.5	0.54		3.395	0.00002	0.00017	0.010	0.00125	0.000005
HC-9-166	22-Apr-14	166	500	470	3.31	377	455	85.7	29.0	53.3	0.5	0.5	0.53		3.403	0.00002	0.00019	0.010	0.00127	0.000005
HC-9-167	29-Apr-14	167	500	465	3.33	366	445	86.3	29.3	54.5	0.5	0.5	0.53	42.8	3.410	0.00002	0.00020	0.010	0.00129	0.000005
<b>Mean all weeks</b>					<b>5.07</b>	<b>349</b>	<b>298</b>	<b>101.2</b>	<b>9.8</b>	<b>25.5</b>	<b>7.5</b>	<b>3.0</b>	<b>0.49</b>	<b>45.7</b>	<b>2.207</b>	<b>0.00027</b>	<b>0.00066</b>	<b>0.013</b>	<b>0.00109</b>	<b>0.000005</b>

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity $\mu\text{S/cm}$	ORP mV	Sulphate ( $\text{SO}_4^{2-}$ ) mg/L	Acidity to pH 4.5 mg $\text{CaCO}_3/\text{L}$	Acidity to pH 8.3 mg $\text{CaCO}_3/\text{L}$	Total Alkalinity mg $\text{CaCO}_3/\text{L}$	Chloride ( $\text{Cl}^-$ ) mg/L	Fluoride ( $\text{F}^-$ ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC10 Hulcross Mudstone																				
HC-10-0	05-Apr-11	0	750	640	9.68	191	50	16.0	0.5	0.5	75.0	8.7	0.73	1.2	0.677	0.00894	0.01620	0.059	0.00001	0.000005
HC-10-1	12-Apr-11	1	500	490	8.96	447	40	62.0	0.5	1.4	62.0	33.0	0.83	2.3	0.256	0.00644	0.00590	0.149	0.00001	0.000005
HC-10-2	19-Apr-11	2	500	500	9.10	366	30	59.0	0.5	0.5	84.0	1.9	0.82	4.2	0.222	0.00699	0.00284	0.073	0.00001	0.000005
HC-10-3	26-Apr-11	3	500	490	9.19	327	50	37.0	0.5	0.5	83.0	0.5	0.61	1.7	0.233	0.00630	0.00190	0.052	0.00001	0.000005
HC-10-4	03-May-11	4	500	470	9.33	282	55	29.0	0.5	0.5	82.0	0.6	0.49	1.6	0.242	0.00510	0.00168	0.056	0.00001	0.000005
HC-10-5	10-May-11	5	500	495	9.30	261	40	32.0	0.5	0.5	85.0	0.5	0.47	1.6	0.238	0.00525	0.00153	0.056	0.00001	0.000005
HC-10-6	17-May-11	6	500	450	9.53	222	70	27.0	0.5	0.5	74.0	0.6	0.37	1.3	0.261	0.00430	0.00155	0.065	0.00001	0.000005
HC-10-7	24-May-11	7	500	465	9.41	220	45	23.0	0.5	0.5	82.0	1.0	0.35	2.3	0.341	0.00426	0.00166	0.085	0.00001	0.000005
HC-10-8	31-May-11	8	500	490	9.37	218	60	22.0	0.5	0.5	76.0	0.5	0.34	1.8	0.258	0.00398	0.00130	0.063	0.00001	0.000005
HC-10-9	07-Jun-11	9	500	475	9.39	187	70	19.0	0.5	0.5	65.0	0.5	0.26	1.4	0.205	0.00330	0.00110	0.058	0.00001	0.000005
HC-10-10	14-Jun-11	10	500	475	9.36	176	70	17.0	0.5	0.5	61.0	0.7	0.23	1.8	0.239	0.00324	0.00092	0.085	0.00001	0.000005
HC-10-11	21-Jun-11	11	500	470	9.58	170	70	17.0	0.5	0.5	65.0	0.5	0.23	1.4	0.235	0.00299	0.00094	0.058	0.00001	0.000005
HC-10-12	28-Jun-11	12	500	485	9.46	168	50	15.0	0.5	0.5	62.0	0.6	0.20	1.4	0.180	0.00252	0.00082	0.042	0.00001	0.000005
HC-10-13	05-Jul-11	13	500	480	9.31	161	120	14.0	0.5	0.5	67.0	0.5	0.22	2.0	0.140	0.00267	0.00073	0.071	0.00001	0.000005
HC-10-14	12-Jul-11	14	500	460	9.31	162	65	14.0	0.5	0.5	61.0	0.5	0.20	1.8	0.173	0.00245	0.00070	0.055	0.00001	0.000005
HC-10-15	19-Jul-11	15	500	505	9.17	159	95	15.0	0.5	0.5	63.0	0.7	0.17	3.5	0.113	0.00274	0.00077	0.082	0.00001	0.000005
HC-10-16	26-Jul-11	16	500	465	9.33	132	65	13.0	0.5	0.5	50.0	0.9	0.17	1.6	0.167	0.00188	0.00077	0.055	0.00001	0.000005
HC-10-17	02-Aug-11	17	500	475	9.26	144	70	14.0	0.5	0.5	53.0	1.1	0.16	1.9	0.129	0.00213	0.00129	0.047	0.00001	0.000005
HC-10-18	09-Aug-11	18	500	480	9.29	144	75	14.0	0.5	0.5	55.0	0.8	0.15	2.4	0.113	0.00219	0.00091	0.052	0.00001	0.000005
HC-10-19	16-Aug-11	19	500	470	9.21	86	90	7.7	0.5	0.5	32.0	0.6	0.08	1.2	0.114	0.00113	0.00043	0.047	0.00001	0.000005
HC-10-20	23-Aug-11	20	500	490	9.08	128	90	9.0	0.5	0.5	33.0	1.0	0.09		0.114	0.00123	0.00046	0.045	0.00001	0.000005
HC-10-21	30-Aug-11	21	500	460	9.41	128	85	10.4	0.5	0.5	34.0	1.4	0.10		0.113	0.00133	0.00049	0.043	0.00001	0.000005
HC-10-22	06-Sep-11	22	500	465	9.05	114	105	11.7	0.5	0.5	35.0	1.8	0.10		0.113	0.00142	0.00051	0.040	0.00001	0.000005
HC-10-23	13-Sep-11	23	500	450	9.20	102	85	13.0	0.5	0.5	36.0	2.2	0.11	1.9	0.112	0.00152	0.00054	0.038	0.00001	0.000005
HC-10-24	20-Sep-11	24	500	445	9.10	115	120	13.6	0.5	0.5	35.5	2.4	0.11		0.126	0.00147	0.00051	0.038	0.00001	0.000005
HC-10-25	27-Sep-11	25	500	440	9.18	118	80	14.1	0.5	0.5	35.0	2.6	0.11		0.139	0.00142	0.00049	0.039	0.00001	0.000005
HC-10-26	04-Oct-11	26	500	465	9.03	230	60	14.7	0.5	0.5	34.5	2.7	0.11		0.153	0.00136	0.00046	0.039	0.00001	0.000005
HC-10-27	11-Oct-11	27	500	425	9.02	126	150	15.2	0.5	0.5	34.0	2.9	0.11	2.9	0.166	0.00131	0.00043	0.039	0.00001	0.000005
HC-10-28	18-Oct-11	28	500	445	9.02	126	95	16.2	0.5	0.5	32.8	3.8	0.11		0.143	0.00128	0.00038	0.039	0.00001	0.000005
HC-10-29	25-Oct-11	29	500	475	9.00	144	155	17.2	0.5	0.5	31.5	4.7	0.10		0.120	0.00126	0.00033	0.038	0.00001	0.000005
HC-10-30	01-Nov-11	30	500	465	8.73	144	185	18.1	0.5	0.5	30.3	5.6	0.10		0.097	0.00123	0.00027	0.037	0.00001	0.000005
HC-10-31	08-Nov-11	31	500	475	8.97	129	175	19.1	0.5	0.5	29.0	6.5	0.09	7.3	0.073	0.00120	0.00022	0.036	0.00001	0.000005
HC-10-32	15-Nov-11	32	500	465	8.56	142	200	21.4	0.5	0.5	27.6	6.4	0.09		0.068	0.00113	0.00021	0.035	0.00001	0.000005
HC-10-33	22-Nov-11	33	500	500	7.87	145	195	23.7	0.5	0.5	26.2	6.3	0.09		0.062	0.00106	0.00021	0.034	0.00001	0.000005
HC-10-34	29-Nov-11	34	500	465	8.42	109	190	25.9	0.5	0.5	24.8	6.1	0.09		0.057	0.00098	0.00020	0.033	0.00001	0.000005
HC-10-35	06-Dec-11	35	500	460	7.77	157	185	28.2	0.5	0.5	23.4	6.0	0.09	11.5	0.051	0.00091	0.00019	0.032	0.00001	0.000005
HC-10-36	13-Dec-11	36	500	465	7.85	152	130	29.2	0.5	0.5	23.4	4.8	0.08		0.049	0.00094	0.00020	0.033	0.00001	0.000005
HC-10-37	20-Dec-11	37	500	465	7.90	165	130	30.1	0.5	0.5	23.4	3.6	0.08		0.047	0.00097	0.00020	0.035	0.00001	0.000005
HC-10-38	27-Dec-11	38	500	475	7.99	173	125	31.1	0.5	0.5	23.3	2.3	0.08		0.044	0.00099	0.00021	0.036	0.00001	0.000005
HC-10-39	03-Jan-12	39	500	465	7.75	150	125	32.0	0.5	0.5	23.3	1.1	0.08	18.2	0.042	0.00102	0.00021	0.038	0.00001	0.000005
HC-10-40	10-Jan-12	40	500	450	7.68	150	120	33.0	0.5	0.5	23.1	1.9	0.08		0.036	0.00096	0.00020	0.034	0.00001	0.000005
HC-10-41	17-Jan-12	41	500	475	7.88	145	120	34.0	0.5	0.5	23.0	2.6	0.07		0.031	0.00090	0.00020	0.030	0.00001	0.000005
HC-10-42	24-Jan-12	42	500	455	7.88	158	125	34.9	0.5	0.5	22.8	3.4	0.07		0.025	0.00084	0.00019	0.026	0.00001	0.000005
HC-10-43	31-Jan-12	43	500	460	7.85	162	120	35.9	0.5	0.5	22.6	4.1	0.07	26.3	0.020	0.00078	0.00018	0.022	0.00001	0.000005
HC-10-44	07-Feb-12	44	500	475	7.72	162	115	35.6	0.5	0.5	20.8	4.3	0.07		0.020	0.00076	0.00018	0.022	0.00001	0.000005
HC-10-45	14-Feb-12	45	500	455	7.82	134	115	35.2	0.5	0.5	19.0	4.4	0.07		0.019	0.00074	0.00018	0.022	0.00001	0.000005
HC-10-46	21-Feb-12	46	500	470	7.83	155	110	34.9	0.5	0.5	17.2	4.6	0.06		0.019	0.00072	0.00018	0.022	0.00001	0.000005
HC-10-47	28-Feb-12	47	500	475	7.73	153	125	34.5	0.5	0.5	15.4	4.7	0.06	31.7	0.019	0.00070	0.00018	0.022	0.00001	0.000005



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity $\mu\text{S/cm}$	ORP mV	Sulphate ( $\text{SO}_4^{2-}$ ) mg/L	Acidity to pH 4.5 mg $\text{CaCO}_3/\text{L}$	Acidity to pH 8.3 mg $\text{CaCO}_3/\text{L}$	Total Alkalinity mg $\text{CaCO}_3/\text{L}$	Chloride ( $\text{Cl}^-$ ) mg/L	Fluoride ( $\text{F}^-$ ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC-10-48	06-Mar-12	48	500	470	7.67	157	125	35.8	0.5	0.5	15.1	3.9	0.06		0.018	0.00067	0.00016	0.022	0.00001	0.000005
HC-10-49	13-Mar-12	49	500	470	7.89	162	120	37.1	0.5	0.5	14.8	3.0	0.06		0.017	0.00064	0.00014	0.021	0.00001	0.000005
HC-10-50	20-Mar-12	50	500	455	7.65	145	120	38.3	0.5	0.5	14.5	2.2	0.06		0.016	0.00060	0.00012	0.021	0.00001	0.000005
HC-10-51	27-Mar-12	51	500	420	7.71	129	120	39.6	0.5	0.5	14.2	1.3	0.05	33.9	0.016	0.00057	0.00010	0.021	0.00001	0.000005
HC-10-52	03-Apr-12	52	500	455	7.87	161	120	38.8	0.5	0.5	14.6	1.2	0.05		0.015	0.00058	0.00011	0.021	0.00001	0.000005
HC-10-53	10-Apr-12	53	500	485	7.88	153	125	37.9	0.5	0.6	14.9	1.0	0.05		0.015	0.00060	0.00013	0.021	0.00001	0.000005
HC-10-54	17-Apr-12	54	500	465	7.97	132	130	37.1	0.5	0.6	15.3	0.9	0.05		0.014	0.00061	0.00014	0.022	0.00001	0.000005
HC-10-55	24-Apr-12	55	500	450	7.73	142	130	36.2	0.5	0.7	15.6	0.8	0.06	40.4	0.014	0.00063	0.00016	0.022	0.00001	0.000005
HC-10-56	01-May-12	56	500	470	7.61	145	125	36.2	0.5	0.6	16.0	1.0	0.06		0.014	0.00063	0.00016	0.024	0.00001	0.000005
HC-10-57	08-May-12	57	500	465	7.68	138	135	36.3	0.5	0.6	16.5	1.3	0.06		0.013	0.00064	0.00015	0.025	0.00001	0.000005
HC-10-58	15-May-12	58	500	455	7.74	147	140	36.3	0.5	0.5	16.9	1.6	0.06		0.013	0.00065	0.00015	0.027	0.00001	0.000005
HC-10-59	22-May-12	59	500	475	7.82	143	130	36.3	0.5	0.5	17.3	1.9	0.06	46.3	0.013	0.00066	0.00015	0.028	0.00001	0.000005
HC-10-60	29-May-12	60	500	460	7.85	146	125	36.2	0.5	0.5	18.1	1.8	0.05		0.012	0.00066	0.00013	0.027	0.00001	0.000005
HC-10-61	05-Jun-12	61	500	460	7.75	140	125	36.0	0.5	0.5	19.0	1.7	0.05		0.012	0.00065	0.00011	0.026	0.00001	0.000005
HC-10-62	12-Jun-12	62	500	455	7.77	132	130	35.9	0.5	0.5	19.8	1.5	0.05		0.011	0.00064	0.00009	0.026	0.00001	0.000005
HC-10-63	19-Jun-12	63	500	480	7.99	138	130	35.7	0.5	0.5	20.6	1.4	0.05	46.7	0.011	0.00064	0.00007	0.025	0.00001	0.000005
HC-10-64	26-Jun-12	64	500	475	7.85	141	125	35.8	0.5	0.5	19.0	1.4	0.04		0.012	0.00062	0.00009	0.024	0.00001	0.000005
HC-10-65	03-Jul-12	65	500	475	7.79	130	135	35.9	0.5	0.5	17.4	1.4	0.04		0.013	0.00059	0.00010	0.024	0.00001	0.000005
HC-10-66	10-Jul-12	66	500	465	7.84	128	135	35.9	0.5	0.5	15.7	1.4	0.04		0.014	0.00057	0.00011	0.023	0.00001	0.000005
HC-10-67	17-Jul-12	67	500	460	7.84	137	130	36.0	0.5	0.5	14.1	1.4	0.04	50.2	0.015	0.00055	0.00013	0.023	0.00001	0.000005
HC-10-68	24-Jul-12	68	500	475	7.81	134	150	35.5	0.5	0.5	14.6	1.4	0.04		0.015	0.00055	0.00012	0.024	0.00001	0.000005
HC-10-69	31-Jul-12	69	500	470	7.80	147	130	35.1	0.5	0.5	15.2	1.4	0.04		0.016	0.00056	0.00012	0.024	0.00001	0.000005
HC-10-70	07-Aug-12	70	500	460	7.71	132	150	34.6	0.5	0.5	15.7	1.3	0.04		0.016	0.00056	0.00012	0.025	0.00001	0.000005
HC-10-71	14-Aug-12	71	500	470	7.78	142	150	34.1	0.5	0.5	16.2	1.3	0.05	51.9	0.016	0.00056	0.00011	0.025	0.00001	0.000005
HC-10-72	21-Aug-12	72	500	465	7.77	131	135	34.3	0.5	0.7	16.1	1.5	0.04		0.015	0.00054	0.00011	0.024	0.00001	0.000005
HC-10-73	28-Aug-12	73	500	445	7.74	132	150	34.5	0.5	0.8	16.1	1.6	0.04		0.013	0.00051	0.00011	0.023	0.00001	0.000005
HC-10-74	04-Sep-12	74	500	475	7.63	145	150	34.6	0.5	1.0	16.0	1.8	0.04		0.011	0.00049	0.00011	0.022	0.00001	0.000005
HC-10-75	11-Sep-12	75	500	460	7.78	146	150	34.8	0.5	1.1	15.9	1.9	0.04	57.1	0.010	0.00046	0.00012	0.021	0.00001	0.000005
HC-10-76	18-Sep-12	76	500	475	7.58	151	130	36.2	0.5	1.0	16.3	1.6	0.04		0.010	0.00047	0.00011	0.024	0.00001	0.000005
HC-10-77	25-Sep-12	77	500	455	7.80	135	130	37.6	0.5	0.8	16.7	1.3	0.04		0.011	0.00048	0.00011	0.026	0.00001	0.000005
HC-10-78	02-Oct-12	78	500	465	7.65	138	150	39.0	0.5	0.7	17.1	1.0	0.04		0.011	0.00049	0.00011	0.029	0.00001	0.000005
HC-10-79	09-Oct-12	79	500	480	7.51	145	140	40.4	0.5	0.5	17.5	0.7	0.04	57.5	0.012	0.00051	0.00011	0.031	0.00001	0.000005
HC-10-80	16-Oct-12	80	500	460	7.83	133	150	40.8	0.5	0.5	17.0	0.7	0.04		0.011	0.00048	0.00013	0.029	0.00001	0.000005
HC-10-81	23-Oct-12	81	500	465	7.83	142	145	41.2	0.5	0.5	16.5	0.6	0.04		0.011	0.00045	0.00014	0.027	0.00001	0.000005
HC-10-82	30-Oct-12	82	500	465	7.66	143	145	41.5	0.5	0.5	16.0	0.6	0.04		0.011	0.00042	0.00016	0.025	0.00001	0.000005
HC-10-83	06-Nov-12	83	500	465	7.63	138	145	41.9	0.5	0.5	15.5	0.5	0.03	54.1	0.011	0.00040	0.00017	0.024	0.00001	0.000005
HC-10-84	13-Nov-12	84	500	465	7.54	147	145	42.1	0.5	0.5	15.5	0.6	0.03		0.011	0.00040	0.00015	0.023	0.00001	0.000005
HC-10-85	20-Nov-12	85	500	465	7.56	146	160	42.2	0.5	0.5	15.5	0.7	0.03		0.011	0.00040	0.00012	0.022	0.00001	0.000005
HC-10-86	27-Nov-12	86	500	465	7.73	141	155	42.4	0.5	0.5	15.5	0.8	0.03		0.011	0.00040	0.00010	0.021	0.00001	0.000005
HC-10-87	04-Dec-12	87	500	465	7.65	137	130	42.5	0.5	0.5	15.5	1.0	0.03	59.9	0.011	0.00041	0.00008	0.020	0.00001	0.000005
HC-10-88	11-Dec-12	88	500	465	7.88	149	145	41.9	0.5	0.5	16.0	0.9	0.03		0.011	0.00041	0.00008	0.023	0.00001	0.000005
HC-10-89	18-Dec-12	89	500	465	7.48	133	135	41.3	0.5	0.5	16.4	0.9	0.03		0.011	0.00042	0.00009	0.026	0.00001	0.000005
HC-10-90	25-Dec-12	90	500	470	7.52	136	130	40.7	0.5	0.5	16.9	0.9	0.03		0.010	0.00043	0.00010	0.029	0.00001	0.000005
HC-10-91	01-Jan-13	91	500	460	7.72	145	125	40.1	0.5	0.5	17.3	0.9	0.03	55.9	0.010	0.00044	0.00010	0.032	0.00001	0.000005
HC-10-92	08-Jan-13	92	500	465	7.62	145	130	40.3	0.5	0.5	17.1	0.8	0.03		0.009	0.00043	0.00010	0.029	0.00001	0.000005
HC-10-93	15-Jan-13	93	500	470	7.50	139	130	40.4	0.5	0.5	16.9	0.7	0.03		0.009	0.00041	0.00010	0.026	0.00001	0.000005
HC-10-94	22-Jan-13	94	500	460	7.53	146	130	40.6	0.5	0.5	16.6	0.6	0.03		0.008	0.00040	0.00009	0.023	0.00001	0.000005
HC-10-95	29-Jan-13	95	500	465	7.59	145	120	40.7	0.5	0.5	16.4	0.5	0.03	58.5	0.008	0.00039	0.00009	0.020	0.00001	0.000005
HC-10-96	05-Feb-13	96	500	475	7.51	126	140	41.6	0.5	0.5	16.2	0.5	0.03		0.008	0.00038	0.00009	0.020	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-10-97	12-Feb-13	97	500	460	7.51	128	140	42.5	0.5	0.5	16.0	0.6	0.03		0.008	0.00038	0.00009	0.020	0.00001	0.000005
HC-10-98	19-Feb-13	98	500	455	7.77	140	150	43.3	0.5	0.5	15.7	0.6	0.03		0.008	0.00037	0.00009	0.020	0.00001	0.000005
HC-10-99	26-Feb-13	99	500	465	7.53	140	140	44.2	0.5	0.5	15.5	0.7	0.03	59.0	0.009	0.00037	0.00009	0.020	0.00001	0.000005
HC-10-100	05-Mar-13	100	500	455	7.61	143	150	45.0	0.5	0.5	16.1	0.8	0.03		0.008	0.00036	0.00011	0.020	0.00001	0.000005
HC-10-101	12-Mar-13	101	500	475	7.61	148	160	45.7	0.5	0.5	16.6	0.8	0.03		0.008	0.00035	0.00013	0.021	0.00001	0.000005
HC-10-102	19-Mar-13	102	500	475	7.51	137	155	46.5	0.5	0.5	17.2	0.9	0.03		0.008	0.00035	0.00015	0.022	0.00001	0.000005
HC-10-103	26-Mar-13	103	500	460	7.72	156	150	47.2	0.5	0.5	17.7	1.0	0.03	63.2	0.008	0.00034	0.00017	0.023	0.00001	0.000005
HC-10-104	02-Apr-13	104	500	480	7.79	160	150	48.3	0.5	0.5	16.8	0.8	0.03		0.007	0.00033	0.00016	0.022	0.00001	0.000005
HC-10-105	09-Apr-13	105	500	460	7.62	145	160	49.4	0.5	0.5	15.8	0.7	0.03		0.007	0.00033	0.00014	0.020	0.00001	0.000005
HC-10-106	16-Apr-13	106	500	465	7.65	144	150	50.4	0.5	0.5	14.9	0.6	0.03		0.007	0.00032	0.00013	0.019	0.00001	0.000005
HC-10-107	23-Apr-13	107	500	450	7.56	144	140	51.5	0.5	0.5	13.9	0.5	0.02	62.7	0.007	0.00031	0.00011	0.018	0.00001	0.000005
HC-10-108	30-Apr-13	108	500	490	7.60	153	150	52.2	0.5	0.5	13.9	0.5	0.03		0.008	0.00030	0.00022	0.018	0.00001	0.000005
HC-10-109	07-May-13	109	500	460	7.57	157	140	52.9	0.5	0.5	13.9	0.5	0.03		0.009	0.00030	0.00033	0.017	0.00001	0.000005
HC-10-110	14-May-13	110	500	475	7.67	167	150	53.6	0.5	0.5	13.8	0.5	0.03		0.009	0.00029	0.00044	0.017	0.00001	0.000005
HC-10-111	21-May-13	111	500	470	7.34	155	140	54.3	0.5	0.5	13.8	0.5	0.03	63.8	0.010	0.00028	0.00055	0.016	0.00001	0.000005
HC-10-112	28-May-13	112	500	455	7.50	153	145	56.1	0.5	0.5	13.8	0.5	0.03		0.009	0.00028	0.00043	0.016	0.00001	0.000005
HC-10-113	04-Jun-13	113	500	490	7.47	176	145	58.0	0.5	0.5	13.7	0.5	0.03		0.008	0.00028	0.00031	0.017	0.00001	0.000005
HC-10-114	11-Jun-13	114	500	460	7.57	164	140	59.8	0.5	0.5	13.7	0.5	0.03		0.007	0.00028	0.00019	0.017	0.00001	0.000005
HC-10-115	18-Jun-13	115	500	465	7.61	176	140	61.6	0.5	0.5	13.6	0.5	0.03	74.1	0.005	0.00028	0.00007	0.017	0.00001	0.000005
HC-10-116	25-Jun-13	116	500	455	7.54	168	140	62.5	0.5	0.6	13.9	0.5	0.02		0.005	0.00027	0.00007	0.016	0.00001	0.000005
HC-10-117	02-Jul-13	117	500	470	7.62	189	160	63.4	0.5	0.7	14.2	0.5	0.02		0.006	0.00026	0.00006	0.016	0.00001	0.000005
HC-10-118	09-Jul-13	118	500	465	7.49	183	150	64.3	0.5	0.7	14.4	0.6	0.02		0.006	0.00025	0.00005	0.015	0.00001	0.000005
HC-10-119	16-Jul-13	119	500	465	7.46	186	160	65.2	0.5	0.8	14.7	0.6	0.02	73.4	0.006	0.00025	0.00005	0.014	0.00001	0.000005
HC-10-120	23-Jul-13	120	500	460	7.47	189	140	67.0	0.5	0.7	14.5	0.6	0.02		0.006	0.00024	0.00005	0.014	0.00001	0.000005
HC-10-121	30-Jul-13	121	500	460	7.54	188	140	68.9	0.5	0.7	14.2	0.5	0.02		0.005	0.00024	0.00005	0.014	0.00001	0.000005
HC-10-122	06-Aug-13	122	500	475	7.63	197	160	70.7	0.5	0.6	14.0	0.5	0.02		0.005	0.00024	0.00004	0.014	0.00001	0.000005
HC-10-123	13-Aug-13	123	500	460	7.55	198	150	72.5	0.5	0.5	13.7	0.5	0.02	82.2	0.004	0.00024	0.00004	0.014	0.00001	0.000005
HC-10-124	20-Aug-13	124	500	465	7.42	211	145	77.2	0.5	0.5	14.1	0.7	0.02		0.004	0.00024	0.00004	0.013	0.00001	0.000005
HC-10-125	27-Aug-13	125	500	460	7.48	189	140	81.8	0.5	0.5	14.5	0.9	0.02		0.004	0.00023	0.00004	0.013	0.00001	0.000005
HC-10-126	03-Sep-13	126	500	480	7.44	217	160	86.5	0.5	0.5	14.8	1.0	0.02		0.004	0.00023	0.00004	0.013	0.00001	0.000005
HC-10-127	10-Sep-13	127	500	455	7.59	222	160	91.1	0.5	0.5	15.2	1.2	0.02	93.5	0.003	0.00022	0.00004	0.012	0.00001	0.000005
HC-10-128	17-Sep-13	128	500	480	7.17	219	150	91.2	0.5	0.5	14.4	1.0	0.02		0.003	0.00022	0.00004	0.012	0.00001	0.000005
HC-10-129	24-Sep-13	129	500	460	7.05	218	140	91.2	0.5	0.6	13.6	0.9	0.02		0.003	0.00021	0.00004	0.013	0.00001	0.000005
HC-10-130	01-Oct-13	130	500	470	7.25	214	145	91.3	0.5	0.6	12.8	0.7	0.02		0.003	0.00021	0.00004	0.013	0.00001	0.000005
HC-10-131	08-Oct-13	131	500	475	7.43	226	160	91.3	0.5	0.6	12.0	0.5	0.02	103.0	0.003	0.00020	0.00004	0.013	0.00001	0.000005
HC-10-132	15-Oct-13	132	500	460	7.20	235	165	94.0	0.5	0.6	12.0	0.5	0.02		0.004	0.00020	0.00003	0.013	0.00001	0.000005
HC-10-133	22-Oct-13	133	500	465	7.39	243	160	96.7	0.5	0.6	12.0	0.5	0.02		0.004	0.00020	0.00003	0.013	0.00001	0.000005
HC-10-134	29-Oct-13	134	500	465	7.24	267	145	99.3	0.5	0.5	11.9	0.5	0.02		0.004	0.00019	0.00003	0.013	0.00001	0.000005
HC-10-135	05-Nov-13	135	500	470	7.29	244	145	102.0	0.5	0.5	11.9	0.5	0.02	121.0	0.004	0.00019	0.00002	0.013	0.00001	0.000005
HC-10-136	12-Nov-13	136	500	475	7.31	257	140	106.5	0.5	0.5	12.0	0.5	0.02		0.004	0.00019	0.00003	0.012	0.00001	0.000005
HC-10-137	19-Nov-13	137	500	470	7.18	259	145	111.0	0.5	0.5	12.1	0.5	0.02		0.003	0.00018	0.00003	0.012	0.00001	0.000005
HC-10-138	26-Nov-13	138	500	475	7.34	270	135	115.5	0.5	0.5	12.1	0.5	0.02		0.003	0.00017	0.00003	0.011	0.00001	0.000005
HC-10-139	03-Dec-13	139	500	465	7.30	306	150	120.0	0.5	0.5	12.2	0.6	0.02	128.0	0.003	0.00016	0.00004	0.011	0.00001	0.000005
HC-10-140	10-Dec-13	140	500	475	7.24	270	150	127.3	0.5	0.5	12.0	0.5	0.02		0.003	0.00017	0.00003	0.012	0.00001	0.000005
HC-10-141	17-Dec-13	141	500	460	7.27	296	150	134.5	0.5	0.5	11.8	0.5	0.02		0.004	0.00017	0.00003	0.014	0.00001	0.000005
HC-10-142	24-Dec-13	142	500	460	7.25	317	165	141.8	0.5	0.5	11.5	0.5	0.02		0.005	0.00017	0.00002	0.015	0.00001	0.000005
HC-10-143	31-Dec-13	143	500	475	7.29	337	155	149.0	0.5	0.5	11.3	0.5	0.02	152.0	0.005	0.00017	0.00002	0.016	0.00001	0.000005
HC-10-144	07-Jan-14	144	500	480	7.16	333	170	148.5	0.5	0.5	11.1	0.5	0.02		0.004	0.00017	0.00002	0.014	0.00001	0.000005
HC-10-145	14-Jan-14	145	500	470	7.47	339	150	148.0	0.5	0.5	10.8	0.5	0.02		0.004	0.00017	0.00002	0.013	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
HC-10-146	21-Jan-14	146	500	480	7.31	337	155	147.5	0.5	0.5	10.6	0.5	0.02		0.003	0.00016	0.00002	0.011	0.00001	0.000005	
HC-10-147	28-Jan-14	147	500	480	7.41	332	150	147.0	0.5	0.5	10.3	0.5	0.02	156.0	0.002	0.00016	0.00002	0.010	0.00001	0.000005	
HC-10-148	04-Feb-14	148	500	465	7.20	332	150	151.0	0.5	0.5	10.4	0.5	0.02		0.002	0.00016	0.00002	0.010	0.00001	0.000005	
HC-10-149	11-Feb-14	149	500	475	7.34	369	240	155.0	0.5	0.5	10.5	0.5	0.02		0.002	0.00015	0.00003	0.009	0.00001	0.000005	
HC-10-150	18-Feb-14	150	500	480	7.32	364	170	159.0	0.5	0.5	10.5	0.5	0.02		0.002	0.00015	0.00003	0.009	0.00001	0.000005	
HC-10-151	25-Feb-14	151	500	480	7.22	368	150	163.0	0.5	0.5	10.6	0.5	0.02	163.0	0.002	0.00015	0.00003	0.009	0.00001	0.000005	
HC-10-152	04-Mar-14	152	500	470	7.34	370	155	165.8	0.5	0.6	10.3	0.5	0.02		0.002	0.00015	0.00005	0.009	0.00001	0.000005	
HC-10-153	11-Mar-14	153	500	475	7.31	371	150	168.5	0.5	0.7	10.0	0.6	0.02		0.003	0.00015	0.00007	0.009	0.00001	0.000005	
HC-10-154	18-Mar-14	154	500	470	7.24	375	145	171.3	0.5	0.7	9.7	0.6	0.02		0.003	0.00015	0.00008	0.008	0.00001	0.000005	
HC-10-155	25-Mar-14	155	500	480	7.20	365	145	174.0	0.5	0.8	9.5	0.6	0.02	171.0	0.003	0.00015	0.00010	0.008	0.00001	0.000005	
HC-10-156	01-Apr-14	156	500	480	7.26	399	130	178.8	0.5	0.7	9.4	0.6	0.02		0.002	0.00015	0.00009	0.008	0.00001	0.000005	
HC-10-157	08-Apr-14	157	500	475	7.25	418	150	183.5	0.5	0.7	9.4	0.6	0.02		0.002	0.00015	0.00008	0.008	0.00001	0.000005	
HC-10-158	15-Apr-14	158	500	470	7.22	415	145	188.3	0.5	0.6	9.3	0.5	0.02		0.002	0.00015	0.00007	0.008	0.00001	0.000005	
HC-10-159	22-Apr-14	159	500	470	7.25	448	155	193.0	0.5	0.5	9.3	0.5	0.03	210.0	0.002	0.00015	0.00006	0.008	0.00001	0.000005	
Mean all weeks					7.92	191	131	57.8	0.5	0.5	23.2	1.6	0.08	45.9	0.047	0.00093	0.00040	0.027	0.00001	0.000005	
HC11 Hulcross Mudstone																					
HC-11-0	05-Apr-11	0	750	615	9.43	248	60	26.0	0.5	0.5	68.0	12.0	1.06	1.7	0.650	0.00690	0.01330	0.067	0.00001	0.000005	
HC-11-1	12-Apr-11	1	500	490	8.99	464	40	62.0	0.5	2.8	90.0	41.0	1.27	3.6	0.314	0.00536	0.00683	0.168	0.00001	0.000005	
HC-11-2	19-Apr-11	2	500	500	8.98	400	45	85.0	0.5	0.5	92.0	5.3	0.93	8.2	0.157	0.00343	0.00215	0.065	0.00001	0.000005	
HC-11-3	26-Apr-11	3	500	480	9.01	385	60	78.0	0.5	0.5	89.0	0.7	0.76	3.9	0.194	0.00330	0.00211	0.064	0.00001	0.000005	
HC-11-4	03-May-11	4	500	495	8.92	335	65	67.0	0.5	0.5	85.0	0.5	0.60	3.7	0.163	0.00278	0.00184	0.053	0.00001	0.000005	
HC-11-5	10-May-11	5	500	495	8.98	329	65	56.0	0.5	0.5	84.0	0.5	0.58	4.2	0.170	0.00267	0.00187	0.054	0.00001	0.000005	
HC-11-6	17-May-11	6	500	470	9.14	297	80	49.0	0.5	0.5	82.0	0.5	0.48	4.1	0.149	0.00251	0.00171	0.058	0.00001	0.000005	
HC-11-7	24-May-11	7	500	475	8.92	270	75	49.0	0.5	0.5	77.0	0.5	0.40	5.5	0.154	0.00222	0.00139	0.073	0.00001	0.000005	
HC-11-8	31-May-11	8	500	475	8.99	268	75	43.0	0.5	0.5	77.0	0.5	0.38	4.8	0.152	0.00207	0.00143	0.061	0.00001	0.000005	
HC-11-9	07-Jun-11	9	500	480	9.00	250	80	38.0	0.5	0.5	70.0	0.5	0.32	5.0	0.141	0.00200	0.00122	0.057	0.00001	0.000005	
HC-11-10	14-Jun-11	10	500	485	8.98	230	95	35.0	0.5	0.5	65.0	0.5	0.27	5.8	0.163	0.00183	0.00110	0.083	0.00001	0.000005	
HC-11-11	21-Jun-11	11	500	475	9.00	210	100	29.0	0.5	0.5	66.0	0.6	0.25	4.9	0.140	0.00166	0.00095	0.065	0.00001	0.000005	
HC-11-12	28-Jun-11	12	500	480	8.83	207	105	30.0	0.5	0.5	62.0	2.9	0.21	6.3	0.101	0.00143	0.00079	0.052	0.00001	0.000005	
HC-11-13	05-Jul-11	13	500	495	8.72	197	160	27.0	0.5	0.8	58.0	4.2	0.20	7.7	0.086	0.00131	0.00069	0.070	0.00001	0.000005	
HC-11-14	12-Jul-11	14	500	490	8.75	199	165	29.0	0.5	0.5	54.0	3.1	0.18	9.0	0.093	0.00118	0.00076	0.063	0.00001	0.000005	
HC-11-15	19-Jul-11	15	500	500	8.62	195	155	26.0	0.5	0.5	45.0	6.5	0.15	11.4	0.059	0.00113	0.00046	0.082	0.00001	0.000005	
HC-11-16	26-Jul-11	16	500	480	8.44	238	165	25.0	0.5	0.5	37.0	21.0	0.14	16.5	0.051	0.00084	0.00042	0.068	0.00001	0.000005	
HC-11-17	02-Aug-11	17	500	475	8.29	233	160	29.0	0.5	0.5	33.0	16.0	0.12	21.4	0.043	0.00095	0.00060	0.074	0.00001	0.000005	
HC-11-18	09-Aug-11	18	500	495	8.33	205	165	33.0	0.5	0.5	37.0	6.8	0.12	22.8	0.046	0.00088	0.00039	0.057	0.00001	0.000005	
HC-11-19	16-Aug-11	19	500	475	8.25	215	150	30.0	0.5	0.5	32.0	12.0	0.11	26.3	0.039	0.00076	0.00031	0.043	0.00001	0.000005	
HC-11-20	23-Aug-11	20	500	495	8.12	215	150	31.3	0.5	1.1	29.3	14.5	0.11		0.036	0.00072	0.00029	0.046	0.00001	0.000005	
HC-11-21	30-Aug-11	21	500	460	8.21	217	145	32.5	0.5	1.6	26.5	17.0	0.10		0.033	0.00067	0.00028	0.050	0.00001	0.000005	
HC-11-22	06-Sep-11	22	500	465	8.10	206	145	33.8	0.5	2.2	23.8	19.5	0.10		0.030	0.00063	0.00026	0.054	0.00001	0.000005	
HC-11-23	13-Sep-11	23	500	460	7.86	217	175	35.0	0.5	2.7	21.0	22.0	0.09	46.5	0.027	0.00058	0.00024	0.057	0.00001	0.000005	
HC-11-24	20-Sep-11	24	500	455	7.66	209	145	37.2	0.5	2.2	20.8	20.0	0.09		0.025	0.00056	0.00024	0.054	0.00001	0.000005	
HC-11-25	27-Sep-11	25	500	490	7.65	200	180	39.4	0.5	1.6	20.5	18.0	0.09		0.023	0.00054	0.00024	0.050	0.00001	0.000005	
HC-11-26	04-Oct-11	26	500	465	7.50	230	130	41.6	0.5	1.1	20.3	16.0	0.09		0.021	0.00051	0.00024	0.047	0.00001	0.000005	
HC-11-27	11-Oct-11	27	500	465	7.67	220	170	43.8	0.5	0.5	20.0	14.0	0.09	54.7	0.019	0.00049	0.00024	0.043	0.00001	0.000005	
HC-11-28	18-Oct-11	28	500	445	7.63	207	165	43.2	0.5	0.5	21.0	13.5	0.09		0.019	0.00050	0.00022	0.045	0.00001	0.000005	
HC-11-29	25-Oct-11	29	500	470	7.68	244	190	42.6	0.5	0.5	22.0	13.0	0.09		0.018	0.00051	0.00020	0.047	0.00001	0.000005	
HC-11-30	01-Nov-11	30	500	465	7.59	227	210	42.0	0.5	0.5	23.0	12.5	0.08		0.018	0.00052	0.00017	0.049	0.00001	0.000005	
HC-11-31	08-Nov-11	31	500	480	7.79	197	200	41.4	0.5	0.5	24.0	12.0	0.08	65.7	0.018	0.00053	0.00015	0.051	0.00001	0.000005	
HC-11-32	15-Nov-11	32	500	475	7.65	200	200	41.8	0.5	0.5	23.8	11.2	0.08		0.017	0.00051	0.00015	0.049	0.00001	0.000005	

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-11-33	22-Nov-11	33	500	500	7.66	195	200	42.1	0.5	0.5	23.6	10.4	0.08		0.017	0.00050	0.00014	0.046	0.00001	0.000005
HC-11-34	29-Nov-11	34	500	465	7.61	164	210	42.5	0.5	0.5	23.4	9.6	0.08		0.017	0.00048	0.00014	0.043	0.00001	0.000005
HC-11-35	06-Dec-11	35	500	465	7.64	200	205	42.8	0.5	0.5	23.2	8.8	0.08	64.4	0.017	0.00046	0.00013	0.040	0.00001	0.000005
HC-11-36	13-Dec-11	36	500	465	7.64	180	210	40.3	0.5	0.5	24.0	7.2	0.08		0.017	0.00047	0.00013	0.043	0.00001	0.000005
HC-11-37	20-Dec-11	37	500	475	7.77	184	210	37.8	0.5	0.5	24.9	5.7	0.08		0.018	0.00049	0.00013	0.047	0.00001	0.000005
HC-11-38	27-Dec-11	38	500	475	7.65	183	210	35.2	0.5	0.5	25.7	4.1	0.08		0.019	0.00050	0.00012	0.051	0.00001	0.000005
HC-11-39	03-Jan-12	39	500	480	7.55	162	130	32.7	0.5	0.5	26.5	2.5	0.07	61.2	0.020	0.00051	0.00012	0.054	0.00001	0.000005
HC-11-40	10-Jan-12	40	500	465	7.68	164	120	35.6	0.5	0.5	26.0	3.6	0.07		0.019	0.00048	0.00013	0.051	0.00001	0.000005
HC-11-41	17-Jan-12	41	500	460	7.63	155	120	38.5	0.5	0.5	25.4	4.8	0.07		0.017	0.00046	0.00014	0.048	0.00001	0.000005
HC-11-42	24-Jan-12	42	500	460	7.86	171	125	41.3	0.5	0.5	24.9	5.9	0.07		0.016	0.00043	0.00015	0.045	0.00001	0.000005
HC-11-43	31-Jan-12	43	500	470	7.68	173	125	44.2	0.5	0.5	24.3	7.0	0.06	64.0	0.015	0.00040	0.00016	0.041	0.00001	0.000005
HC-11-44	07-Feb-12	44	500	465	7.72	178	115	41.4	0.5	0.5	23.4	7.2	0.06		0.015	0.00039	0.00014	0.039	0.00001	0.000005
HC-11-45	14-Feb-12	45	500	470	7.76	164	120	38.6	0.5	0.5	22.6	7.5	0.06		0.014	0.00038	0.00013	0.036	0.00001	0.000005
HC-11-46	21-Feb-12	46	500	465	7.82	170	120	35.8	0.5	0.5	21.7	7.7	0.06		0.014	0.00036	0.00011	0.034	0.00001	0.000005
HC-11-47	28-Feb-12	47	500	470	7.74	174	130	33.0	0.5	0.5	20.8	7.9	0.05	66.6	0.013	0.00035	0.00009	0.032	0.00001	0.000005
HC-11-48	06-Mar-12	48	500	465	7.59	176	130	35.9	0.5	0.6	20.7	6.9	0.05		0.014	0.00035	0.00009	0.032	0.00001	0.000005
HC-11-49	13-Mar-12	49	500	475	7.76	169	130	38.9	0.5	0.6	20.7	6.0	0.05		0.014	0.00036	0.00009	0.032	0.00001	0.000005
HC-11-50	20-Mar-12	50	500	470	7.63	162	120	41.8	0.5	0.7	20.6	5.0	0.05		0.014	0.00036	0.00008	0.032	0.00001	0.000005
HC-11-51	27-Mar-12	51	500	465	7.78	154	120	44.7	0.5	0.7	20.5	4.0	0.05	63.1	0.014	0.00036	0.00008	0.033	0.00001	0.000005
HC-11-52	03-Apr-12	52	500	475	7.92	167	120	43.8	0.5	0.8	21.0	3.7	0.05		0.015	0.00036	0.00009	0.033	0.00001	0.000005
HC-11-53	10-Apr-12	53	500	480	7.84	159	125	43.0	0.5	0.8	21.6	3.4	0.05		0.016	0.00037	0.00010	0.033	0.00001	0.000005
HC-11-54	17-Apr-12	54	500	495	7.88	161	125	42.1	0.5	0.9	22.1	3.0	0.05		0.016	0.00037	0.00011	0.033	0.00001	0.000005
HC-11-55	24-Apr-12	55	500	475	7.84	168	125	41.2	0.5	1.0	22.6	2.7	0.05	67.7	0.017	0.00037	0.00012	0.033	0.00001	0.000005
HC-11-56	01-May-12	56	500	475	7.71	145	130	40.8	0.5	0.9	22.7	3.2	0.05		0.016	0.00037	0.00011	0.034	0.00001	0.000005
HC-11-57	08-May-12	57	500	475	7.62	162	135	40.3	0.5	0.7	22.7	3.8	0.05		0.016	0.00036	0.00010	0.035	0.00001	0.000005
HC-11-58	15-May-12	58	500	465	7.84	179	120	39.9	0.5	0.6	22.8	4.3	0.05		0.015	0.00036	0.00008	0.036	0.00001	0.000005
HC-11-59	22-May-12	59	500	485	7.81	162	130	39.4	0.5	0.5	22.8	4.8	0.05	65.7	0.015	0.00036	0.00007	0.037	0.00001	0.000005
HC-11-60	29-May-12	60	500	465	7.80	176	130	39.0	0.5	0.5	22.8	4.3	0.05		0.014	0.00035	0.00007	0.035	0.00001	0.000005
HC-11-61	05-Jun-12	61	500	480	7.72	159	125	38.6	0.5	0.5	22.8	3.8	0.04		0.013	0.00034	0.00006	0.033	0.00001	0.000005
HC-11-62	12-Jun-12	62	500	465	7.85	169	135	38.1	0.5	0.5	22.8	3.3	0.04		0.012	0.00033	0.00006	0.031	0.00001	0.000005
HC-11-63	19-Jun-12	63	500	490	7.81	151	135	37.7	0.5	0.5	22.8	2.8	0.04	61.1	0.011	0.00032	0.00006	0.029	0.00001	0.000005
HC-11-64	26-Jun-12	64	500	470	7.84	169	130	38.2	0.5	0.5	22.4	3.2	0.04		0.012	0.00031	0.00006	0.032	0.00001	0.000005
HC-11-65	03-Jul-12	65	500	480	7.74	153	135	38.7	0.5	0.5	22.0	3.5	0.04		0.012	0.00030	0.00006	0.035	0.00001	0.000005
HC-11-66	10-Jul-12	66	500	470	7.80	153	130	39.1	0.5	0.5	21.6	3.9	0.04		0.013	0.00029	0.00006	0.038	0.00001	0.000005
HC-11-67	17-Jul-12	67	500	460	7.81	163	130	39.6	0.5	0.5	21.2	4.2	0.03	68.4	0.014	0.00028	0.00006	0.041	0.00001	0.000005
HC-11-68	24-Jul-12	68	500	470	7.71	162	150	39.5	0.5	0.5	21.2	4.2	0.03		0.015	0.00028	0.00006	0.038	0.00001	0.000005
HC-11-69	31-Jul-12	69	500	470	7.75	180	135	39.4	0.5	0.5	21.2	4.2	0.04		0.015	0.00028	0.00007	0.035	0.00001	0.000005
HC-11-70	07-Aug-12	70	500	470	7.66	167	145	39.3	0.5	0.5	21.2	4.1	0.04		0.016	0.00028	0.00007	0.032	0.00001	0.000005
HC-11-71	14-Aug-12	71	500	475	7.76	172	140	39.2	0.5	0.5	21.2	4.1	0.04	67.0	0.017	0.00029	0.00008	0.029	0.00001	0.000005
HC-11-72	21-Aug-12	72	500	470	7.76	158	140	40.4	0.5	0.5	21.3	4.5	0.04		0.016	0.00027	0.00008	0.028	0.00001	0.000005
HC-11-73	28-Aug-12	73	500	470	7.69	160	140	41.6	0.5	0.5	21.4	4.9	0.03		0.016	0.00026	0.00008	0.026	0.00001	0.000005
HC-11-74	04-Sep-12	74	500	470	7.53	170	145	42.8	0.5	0.5	21.4	5.3	0.03		0.015	0.00024	0.00008	0.025	0.00001	0.000005
HC-11-75	11-Sep-12	75	500	460	7.63	189	145	44.0	0.5	0.5	21.5	5.7	0.03	80.6	0.014	0.00023	0.00008	0.024	0.00001	0.000005
HC-11-76	18-Sep-12	76	500	490	7.69	182	135	43.5	0.5	0.6	20.6	5.0	0.03		0.014	0.00023	0.00008	0.029	0.00001	0.000005
HC-11-77	25-Sep-12	77	500	460	7.74	170	135	43.1	0.5	0.6	19.8	4.4	0.03		0.014	0.00023	0.00008	0.034	0.00001	0.000005
HC-11-78	02-Oct-12	78	500	470	7.74	167	145	42.6	0.5	0.6	18.9	3.7	0.03		0.013	0.00023	0.00008	0.039	0.00001	0.000005
HC-11-79	09-Oct-12	79	500	475	7.65	167	135	42.1	0.5	0.6	18.0	3.0	0.04	70.5	0.013	0.00023	0.00008	0.045	0.00001	0.000005
HC-11-80	16-Oct-12	80	500	460	7.69	167	140	44.0	0.5	0.6	17.9	3.0	0.03		0.012	0.00023	0.00009	0.042	0.00001	0.000005
HC-11-81	23-Oct-12	81	500	465	7.85	179	135	45.9	0.5	0.6	17.8	2.9	0.03		0.012	0.00023	0.00010	0.039	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-11-82	30-Oct-12	82	500	465	7.70	172	145	47.8	0.5	0.5	17.6	2.9	0.03		0.011	0.00022	0.00010	0.036	0.00001	0.000005
HC-11-83	06-Nov-12	83	500	470	7.64	166	140	49.7	0.5	0.5	17.5	2.8	0.03	70.5	0.011	0.00022	0.00011	0.033	0.00001	0.000005
HC-11-84	13-Nov-12	84	500	460	7.57	176	130	51.2	0.5	0.5	17.4	2.9	0.03		0.011	0.00021	0.00010	0.031	0.00001	0.000005
HC-11-85	20-Nov-12	85	500	460	7.54	174	135	52.7	0.5	0.5	17.2	2.9	0.03		0.010	0.00021	0.00009	0.029	0.00001	0.000005
HC-11-86	27-Nov-12	86	500	475	7.56	174	135	54.2	0.5	0.5	17.1	3.0	0.03		0.010	0.00020	0.00008	0.026	0.00001	0.000005
HC-11-87	04-Dec-12	87	500	465	7.58	175	125	55.7	0.5	0.5	16.9	3.0	0.03	81.5	0.009	0.00019	0.00007	0.024	0.00001	0.000005
HC-11-88	11-Dec-12	88	500	480	7.63	190	125	54.3	0.5	0.5	17.0	2.7	0.03		0.010	0.00019	0.00007	0.028	0.00001	0.000005
HC-11-89	18-Dec-12	89	500	460	7.44	172	130	52.9	0.5	0.5	17.0	2.4	0.03		0.010	0.00020	0.00006	0.032	0.00001	0.000005
HC-11-90	25-Dec-12	90	500	470	7.61	166	125	51.5	0.5	0.5	17.1	2.0	0.03		0.010	0.00020	0.00005	0.036	0.00001	0.000005
HC-11-91	01-Jan-13	91	500	455	7.59	170	120	50.1	0.5	0.5	17.1	1.7	0.03	74.0	0.010	0.00020	0.00004	0.040	0.00001	0.000005
HC-11-92	08-Jan-13	92	500	470	7.61	166	125	52.2	0.5	0.5	18.0	1.7	0.03		0.009	0.00020	0.00006	0.035	0.00001	0.000005
HC-11-93	15-Jan-13	93	500	460	7.55	188	120	54.3	0.5	0.5	18.8	1.8	0.03		0.009	0.00021	0.00008	0.031	0.00001	0.000005
HC-11-94	22-Jan-13	94	500	460	7.50	183	120	56.3	0.5	0.5	19.7	1.8	0.03		0.008	0.00021	0.00010	0.026	0.00001	0.000005
HC-11-95	29-Jan-13	95	500	465	7.60	182	115	58.4	0.5	0.5	20.5	1.8	0.03	77.2	0.007	0.00021	0.00012	0.021	0.00001	0.000005
HC-11-96	05-Feb-13	96	500	465	7.64	158	130	58.6	0.5	0.5	20.4	1.7	0.03		0.007	0.00020	0.00011	0.021	0.00001	0.000005
HC-11-97	12-Feb-13	97	500	470	7.55	168	150	58.8	0.5	0.5	20.4	1.6	0.02		0.007	0.00020	0.00010	0.020	0.00001	0.000005
HC-11-98	19-Feb-13	98	500	460	7.64	180	130	59.0	0.5	0.5	20.3	1.4	0.02		0.008	0.00019	0.00008	0.019	0.00001	0.000005
HC-11-99	26-Feb-13	99	500	470	7.54	176	135	59.2	0.5	0.5	20.2	1.3	0.02	77.3	0.008	0.00018	0.00007	0.019	0.00001	0.000005
HC-11-100	05-Mar-13	100	500	465	7.63	185	140	60.8	0.5	0.5	21.0	2.2	0.02		0.008	0.00018	0.00007	0.021	0.00001	0.000005
HC-11-101	12-Mar-13	101	500	470	7.61	180	150	62.4	0.5	0.5	21.8	3.2	0.02		0.007	0.00018	0.00007	0.024	0.00001	0.000005
HC-11-102	19-Mar-13	102	500	465	7.56	173	140	64.0	0.5	0.5	22.6	4.1	0.03		0.007	0.00018	0.00006	0.026	0.00001	0.000005
HC-11-103	26-Mar-13	103	500	480	7.72	197	145	65.6	0.5	0.5	23.4	5.0	0.03	89.1	0.007	0.00019	0.00006	0.028	0.00001	0.000005
HC-11-104	02-Apr-13	104	500	475	7.61	178	140	67.2	0.5	0.5	21.8	4.0	0.03		0.007	0.00017	0.00010	0.026	0.00001	0.000005
HC-11-105	09-Apr-13	105	500	465	7.63	189	150	68.9	0.5	0.5	20.1	2.9	0.03		0.007	0.00016	0.00015	0.023	0.00001	0.000005
HC-11-106	16-Apr-13	106	500	470	7.58	187	140	70.5	0.5	0.5	18.5	1.9	0.02		0.007	0.00015	0.00019	0.020	0.00001	0.000005
HC-11-107	23-Apr-13	107	500	455	7.62	182	130	72.1	0.5	0.5	16.8	0.8	0.02	80.8	0.006	0.00014	0.00024	0.017	0.00001	0.000005
HC-11-108	30-Apr-13	108	500	495	7.57	188	145	70.8	0.5	0.5	16.5	0.8	0.02		0.006	0.00014	0.00021	0.017	0.00001	0.000005
HC-11-109	07-May-13	109	500	465	7.59	197	135	69.5	0.5	0.5	16.1	0.7	0.02		0.006	0.00014	0.00018	0.017	0.00001	0.000005
HC-11-110	14-May-13	110	500	465	7.60	208	130	68.2	0.5	0.5	15.8	0.6	0.02		0.007	0.00014	0.00015	0.016	0.00001	0.000005
HC-11-111	21-May-13	111	500	460	7.38	192	130	66.9	0.5	0.5	15.4	0.5	0.02	83.3	0.007	0.00014	0.00012	0.016	0.00001	0.000005
HC-11-112	28-May-13	112	500	465	7.58	207	125	69.6	0.5	0.5	15.9	0.8	0.02		0.006	0.00014	0.00010	0.016	0.00001	0.000005
HC-11-113	04-Jun-13	113	500	495	7.56	207	130	72.2	0.5	0.5	16.4	1.0	0.02		0.006	0.00014	0.00009	0.016	0.00001	0.000005
HC-11-114	11-Jun-13	114	500	460	7.52	214	130	74.9	0.5	0.5	16.8	1.3	0.02		0.005	0.00014	0.00007	0.016	0.00001	0.000005
HC-11-115	18-Jun-13	115	500	460	7.65	215	135	77.5	0.5	0.5	17.3	1.5	0.02	96.1	0.005	0.00014	0.00005	0.016	0.00001	0.000005
HC-11-116	25-Jun-13	116	500	460	7.62	215	150	79.1	0.5	0.6	16.9	1.5	0.02		0.005	0.00013	0.00005	0.016	0.00001	0.000005
HC-11-117	02-Jul-13	117	500	465	7.59	229	140	80.8	0.5	0.7	16.5	1.5	0.02		0.004	0.00013	0.00004	0.016	0.00001	0.000005
HC-11-118	09-Jul-13	118	500	460	7.61	218	150	82.4	0.5	0.8	16.0	1.4	0.02		0.004	0.00013	0.00004	0.016	0.00001	0.000005
HC-11-119	16-Jul-13	119	500	450	7.52	227	140	84.0	0.5	1.0	15.6	1.4	0.02	100.0	0.004	0.00013	0.00003	0.015	0.00001	0.000005
HC-11-120	23-Jul-13	120	500	460	7.55	234	140	85.5	0.5	0.8	16.2	1.4	0.02		0.004	0.00013	0.00003	0.015	0.00001	0.000005
HC-11-121	30-Jul-13	121	500	470	7.47	236	150	87.1	0.5	0.7	16.7	1.4	0.02		0.004	0.00012	0.00004	0.015	0.00001	0.000005
HC-11-122	06-Aug-13	122	500	465	7.64	242	140	88.6	0.5	0.6	17.3	1.3	0.02		0.004	0.00012	0.00004	0.015	0.00001	0.000005
HC-11-123	13-Aug-13	123	500	470	7.58	237	140	90.1	0.5	0.5	17.8	1.3	0.02	107.0	0.004	0.00012	0.00004	0.015	0.00001	0.000005
HC-11-124	20-Aug-13	124	500	455	7.49	232	145	93.6	0.5	0.6	18.5	1.4	0.02		0.004	0.00012	0.00004	0.016	0.00001	0.000005
HC-11-125	27-Aug-13	125	500	465	7.61	241	130	97.1	0.5	0.8	19.3	1.6	0.02		0.004	0.00013	0.00004	0.016	0.00001	0.000005
HC-11-126	03-Sep-13	126	500	465	7.47	256	150	100.5	0.5	0.9	20.0	1.7	0.02		0.004	0.00013	0.00004	0.017	0.00001	0.000005
HC-11-127	10-Sep-13	127	500	480	7.61	259	150	104.0	0.5	1.1	20.7	1.8	0.02	117.0	0.003	0.00014	0.00004	0.017	0.00001	0.000005
HC-11-128	17-Sep-13	128	500	470	7.32	256	145	104.3	0.5	0.9	19.7	1.5	0.02		0.004	0.00013	0.00004	0.017	0.00001	0.000005
HC-11-129	24-Sep-13	129	500	475	7.31	258	140	104.5	0.5	0.8	18.6	1.2	0.02		0.004	0.00013	0.00004	0.017	0.00001	0.000005
HC-11-130	01-Oct-13	130	500	470	7.47	259	150	104.8	0.5	0.6	17.6	0.8	0.02		0.004	0.00012	0.00004	0.016	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-11-131	08-Oct-13	131	500	470	7.52	257	140	105.0	0.5	0.5	16.5	0.5	0.02	124.0	0.004	0.00012	0.00003	0.016	0.00001	0.000005
HC-11-132	15-Oct-13	132	500	470	7.34	266	145	109.0	0.5	0.5	16.6	0.5	0.02		0.004	0.00012	0.00003	0.016	0.00001	0.000005
HC-11-133	22-Oct-13	133	500	465	7.46	278	145	113.0	0.5	0.5	16.7	0.5	0.02		0.004	0.00013	0.00003	0.016	0.00001	0.000005
HC-11-134	29-Oct-13	134	500	475	7.30	300	125	117.0	0.5	0.5	16.8	0.5	0.02		0.004	0.00013	0.00002	0.016	0.00001	0.000005
HC-11-135	05-Nov-13	135	500	475	7.45	292	145	121.0	0.5	0.5	16.9	0.6	0.02	147.0	0.004	0.00013	0.00002	0.016	0.00001	0.000005
HC-11-136	12-Nov-13	136	500	485	7.25	283	140	123.8	0.5	0.5	16.3	0.8	0.02		0.003	0.00012	0.00002	0.015	0.00001	0.000005
HC-11-137	19-Nov-13	137	500	460	7.22	291	140	126.5	0.5	0.5	15.6	1.0	0.02		0.003	0.00012	0.00002	0.015	0.00001	0.000005
HC-11-138	26-Nov-13	138	500	475	7.44	298	150	129.3	0.5	0.5	15.0	1.2	0.02		0.003	0.00011	0.00002	0.014	0.00001	0.000005
HC-11-139	03-Dec-13	139	500	465	7.34	329	150	132.0	0.5	0.5	14.3	1.4	0.02	144.0	0.003	0.00010	0.00002	0.014	0.00001	0.000005
HC-11-140	10-Dec-13	140	500	465	7.22	329	140	137.3	0.5	0.5	14.7	1.2	0.02		0.005	0.00010	0.00002	0.015	0.00001	0.000005
HC-11-141	17-Dec-13	141	500	465	7.35	338	140	142.5	0.5	0.5	15.1	1.0	0.02		0.006	0.00011	0.00003	0.017	0.00001	0.000005
HC-11-142	24-Dec-13	142	500	455	7.30	331	150	147.8	0.5	0.5	15.5	0.8	0.02		0.007	0.00011	0.00003	0.019	0.00001	0.000005
HC-11-143	31-Dec-13	143	500	480	7.29	345	130	153.0	0.5	0.5	15.9	0.5	0.02	166.0	0.009	0.00011	0.00003	0.020	0.00001	0.000005
HC-11-144	07-Jan-14	144	500	485	7.21	347	155	153.3	0.5	0.5	15.8	0.7	0.02		0.007	0.00011	0.00003	0.019	0.00001	0.000005
HC-11-145	14-Jan-14	145	500	465	7.52	334	135	153.5	0.5	0.5	15.6	0.8	0.02		0.006	0.00010	0.00002	0.017	0.00001	0.000005
HC-11-146	21-Jan-14	146	500	465	7.47	351	140	153.8	0.5	0.5	15.5	0.9	0.02		0.004	0.00010	0.00002	0.016	0.00001	0.000005
HC-11-147	28-Jan-14	147	500	465	7.39	349	135	154.0	0.5	0.5	15.3	1.0	0.02	168.0	0.002	0.00010	0.00002	0.014	0.00001	0.000005
HC-11-148	04-Feb-14	148	500	465	7.46	346	145	156.0	0.5	0.5	14.8	0.9	0.02		0.002	0.00009	0.00003	0.014	0.00001	0.000005
HC-11-149	11-Feb-14	149	500	485	7.42	362	140	158.0	0.5	0.5	14.3	0.8	0.02		0.002	0.00009	0.00003	0.013	0.00001	0.000005
HC-11-150	18-Feb-14	150	500	475	7.36	352	155	160.0	0.5	0.5	13.7	0.7	0.02		0.002	0.00009	0.00004	0.013	0.00001	0.000005
HC-11-151	25-Feb-14	151	500	470	7.29	362	130	162.0	0.5	0.5	13.2	0.6	0.02	167.0	0.002	0.00008	0.00005	0.013	0.00001	0.000005
HC-11-152	04-Mar-14	152	500	475	7.37	360	130	165.3	0.5	0.5	12.9	0.7	0.02		0.002	0.00008	0.00005	0.013	0.00001	0.000005
HC-11-153	11-Mar-14	153	500	470	7.33	369	145	168.5	0.5	0.5	12.7	0.9	0.02		0.003	0.00009	0.00005	0.012	0.00001	0.000005
HC-11-154	18-Mar-14	154	500	480	7.39	361	140	171.8	0.5	0.5	12.4	1.0	0.02		0.003	0.00009	0.00005	0.012	0.00001	0.000005
HC-11-155	25-Mar-14	155	500	470	7.22	373	140	175.0	0.5	0.5	12.1	1.1	0.02	181.0	0.003	0.00009	0.00005	0.012	0.00001	0.000005
HC-11-156	01-Apr-14	156	500	475	7.34	382	140	174.5	0.5	0.5	12.3	1.0	0.02		0.003	0.00009	0.00005	0.012	0.00001	0.000005
HC-11-157	08-Apr-14	157	500	475	7.35	394	145	174.0	0.5	0.5	12.5	0.9	0.02		0.003	0.00009	0.00005	0.011	0.00001	0.000005
HC-11-158	15-Apr-14	158	500	475	7.38	399	150	173.5	0.5	0.5	12.7	0.8	0.02		0.003	0.00009	0.00006	0.011	0.00001	0.000005
HC-11-159	22-Apr-14	159	500	475	7.36	406	150	173.0	0.5	0.5	12.9	0.6	0.03	192.0	0.003	0.00009	0.00006	0.011	0.00001	0.000005
<b>Mean all weeks</b>					<b>7.75</b>	<b>225</b>	<b>137</b>	<b>69.2</b>	<b>0.5</b>	<b>0.6</b>	<b>25.0</b>	<b>4.3</b>	<b>0.09</b>	<b>63.4</b>	<b>0.028</b>	<b>0.00050</b>	<b>0.00033</b>	<b>0.033</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC12 Hulcross Mudstone</b>																				
HC-12-0	05-Apr-11	0	750	640	9.68	191	50	19.0	0.5	0.5	66.0	3.0	1.00	0.8	0.709	0.00748	0.01680	0.036	0.00001	0.000005
HC-12-1	12-Apr-11	1	500	490	8.96	447	40	48.0	0.5	1.5	78.0	59.0	1.13	2.2	0.243	0.00432	0.00462	0.168	0.00001	0.000005
HC-12-2	19-Apr-11	2	500	500	9.10	366	30	74.0	0.5	0.5	91.0	0.9	0.98	5.1	0.206	0.00320	0.00201	0.077	0.00001	0.000005
HC-12-3	26-Apr-11	3	500	490	9.19	327	50	57.0	0.5	0.5	84.0	0.5	0.83	1.8	0.221	0.00285	0.00172	0.058	0.00001	0.000005
HC-12-4	03-May-11	4	500	470	9.33	282	55	61.0	0.5	0.5	74.0	0.5	0.66	1.8	0.243	0.00221	0.00147	0.056	0.00001	0.000005
HC-12-5	10-May-11	5	500	495	9.25	321	55	46.0	0.5	0.5	88.0	0.5	0.64	2.2	0.205	0.00241	0.00119	0.058	0.00001	0.000005
HC-12-6	17-May-11	6	500	480	9.33	260	75	38.0	0.5	0.5	80.0	0.5	0.53	1.9	0.185	0.00227	0.00108	0.058	0.00001	0.000005
HC-12-7	24-May-11	7	500	465	9.32	248	55	38.0	0.5	0.5	74.0	0.5	0.47	2.4	0.235	0.00190	0.00115	0.080	0.00001	0.000005
HC-12-8	31-May-11	8	500	485	9.33	240	60	33.0	0.5	0.5	75.0	0.5	0.43	2.1	0.181	0.00192	0.00091	0.066	0.00001	0.000005
HC-12-9	07-Jun-11	9	500	475	9.29	225	60	31.0	0.5	0.5	67.0	0.5	0.37	2.0	0.185	0.00179	0.00087	0.066	0.00001	0.000005
HC-12-10	14-Jun-11	10	500	475	9.21	221	70	31.0	0.5	0.5	67.0	0.5	0.33	2.6	0.217	0.00177	0.00083	0.087	0.00001	0.000005
HC-12-11	21-Jun-11	11	500	490	9.23	225	80	27.0	0.5	0.5	80.0	2.4	0.32	2.5	0.123	0.00178	0.00060	0.078	0.00001	0.000005
HC-12-12	28-Jun-11	12	500	495	9.28	205	75	26.0	0.5	0.5	67.0	0.9	0.27	1.8	0.130	0.00143	0.00061	0.054	0.00001	0.000005
HC-12-13	05-Jul-11	13	500	465	9.18	208	120	26.0	0.5	0.5	73.0	0.5	0.30	2.3	0.130	0.00156	0.00065	0.076	0.00001	0.000005
HC-12-14	12-Jul-11	14	500	500	9.11	200	80	23.0	0.5	0.5	68.0	0.5	0.25	2.4	0.110	0.00137	0.00055	0.054	0.00001	0.000005
HC-12-15	19-Jul-11	15	500	500	9.18	188	90	24.0	0.5	0.5	64.0	0.9	0.23	2.6	0.104	0.00143	0.00053	0.074	0.00001	0.000005
HC-12-16	26-Jul-11	16	500	480	8.26	170	90	25.0	0.5	0.5	53.0	2.5	0.24	1.8	0.159	0.00117	0.00055	0.065	0.00001	0.000005
HC-12-17	02-Aug-11	17	500	480	9.12	178	75	25.0	0.5	0.5	53.0	2.2	0.21	2.2	0.110	0.00125	0.00053	0.057	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-12-18	09-Aug-11	18	500	485	9.18	174	90	23.0	0.5	0.5	59.0	1.1	0.18	2.8	0.089	0.00130	0.00046	0.073	0.00001	0.000005
HC-12-19	16-Aug-11	19	500	500	8.35	178	110	24.0	0.5	0.5	51.0	1.9	0.19	3.0	0.103	0.00115	0.00038	0.062	0.00001	0.000005
HC-12-20	23-Aug-11	20	500	500	8.98	180	110	23.8	0.5	0.5	48.0	3.5	0.19		0.097	0.00111	0.00037	0.057	0.00001	0.000005
HC-12-21	30-Aug-11	21	500	465	9.19	169	95	23.5	0.5	0.5	45.0	5.1	0.18		0.091	0.00107	0.00035	0.052	0.00001	0.000005
HC-12-22	06-Sep-11	22	500	480	9.03	160	110	23.3	0.5	0.5	42.0	6.6	0.18		0.086	0.00103	0.00034	0.047	0.00001	0.000005
HC-12-23	13-Sep-11	23	500	465	9.05	166	85	23.0	0.5	0.5	39.0	8.2	0.17	3.5	0.080	0.00099	0.00032	0.042	0.00001	0.000005
HC-12-24	20-Sep-11	24	500	460	8.98	165	130	23.5	0.5	0.5	37.5	8.1	0.16		0.076	0.00095	0.00031	0.040	0.00001	0.000005
HC-12-25	27-Sep-11	25	500	460	8.92	162	100	24.0	0.5	0.5	36.0	8.0	0.16		0.072	0.00091	0.00031	0.039	0.00001	0.000005
HC-12-26	04-Oct-11	26	500	460	8.65	171	90	24.5	0.5	0.5	34.5	7.8	0.15		0.068	0.00087	0.00030	0.037	0.00001	0.000005
HC-12-27	11-Oct-11	27	500	465	8.65	176	105	25.0	0.5	0.5	33.0	7.7	0.14	5.6	0.064	0.00083	0.00029	0.035	0.00001	0.000005
HC-12-28	18-Oct-11	28	500	450	8.79	177	125	28.1	0.5	0.5	33.3	8.5	0.14		0.059	0.00083	0.00026	0.036	0.00001	0.000005
HC-12-29	25-Oct-11	29	500	480	8.67	207	155	31.1	0.5	0.5	33.5	9.4	0.13		0.054	0.00084	0.00024	0.037	0.00001	0.000005
HC-12-30	01-Nov-11	30	500	475	8.54	207	170	34.2	0.5	0.5	33.8	10.2	0.13		0.048	0.00084	0.00021	0.038	0.00001	0.000005
HC-12-31	08-Nov-11	31	500	460	8.68	191	160	37.2	0.5	0.5	34.0	11.0	0.12	12.8	0.043	0.00084	0.00018	0.039	0.00001	0.000005
HC-12-32	15-Nov-11	32	500	500	8.42	190	180	37.5	0.5	0.5	31.8	10.3	0.12		0.042	0.00080	0.00017	0.036	0.00001	0.000005
HC-12-33	22-Nov-11	33	500	480	7.84	192	200	37.7	0.5	0.5	29.6	9.7	0.12		0.042	0.00076	0.00016	0.033	0.00001	0.000005
HC-12-34	29-Nov-11	34	500	460	8.20	166	205	38.0	0.5	0.5	27.4	9.0	0.11		0.041	0.00072	0.00014	0.030	0.00001	0.000005
HC-12-35	06-Dec-11	35	500	465	7.92	211	220	38.2	0.5	0.5	25.2	8.3	0.11	19.4	0.040	0.00068	0.00013	0.027	0.00001	0.000005
HC-12-36	13-Dec-11	36	500	465	7.67	197	220	40.2	0.5	0.5	25.0	6.9	0.11		0.037	0.00068	0.00013	0.030	0.00001	0.000005
HC-12-37	20-Dec-11	37	500	465	7.82	211	220	42.2	0.5	0.5	24.9	5.6	0.10		0.033	0.00067	0.00012	0.033	0.00001	0.000005
HC-12-38	27-Dec-11	38	500	450	7.87	211	225	44.2	0.5	0.5	24.7	4.2	0.10		0.030	0.00067	0.00012	0.036	0.00001	0.000005
HC-12-39	03-Jan-12	39	500	480	7.84	188	115	46.2	0.5	0.5	24.5	2.8	0.09	26.6	0.026	0.00066	0.00011	0.039	0.00001	0.000005
HC-12-40	10-Jan-12	40	500	475	7.75	198	115	48.2	0.5	0.5	24.0	4.5	0.09		0.024	0.00063	0.00013	0.036	0.00001	0.000005
HC-12-41	17-Jan-12	41	500	475	7.95	186	115	50.1	0.5	0.5	23.5	6.2	0.08		0.022	0.00059	0.00014	0.033	0.00001	0.000005
HC-12-42	24-Jan-12	42	500	445	8.11	207	120	52.1	0.5	0.5	22.9	7.8	0.08		0.020	0.00056	0.00016	0.030	0.00001	0.000005
HC-12-43	31-Jan-12	43	500	495	7.76	214	115	54.0	0.5	0.5	22.4	9.5	0.08	39.1	0.018	0.00052	0.00017	0.027	0.00001	0.000005
HC-12-44	07-Feb-12	44	500	470	7.80	205	115	51.8	0.5	0.5	20.7	9.9	0.07		0.018	0.00050	0.00016	0.026	0.00001	0.000005
HC-12-45	14-Feb-12	45	500	470	7.81	188	120	49.5	0.5	0.5	18.9	10.3	0.07		0.018	0.00049	0.00015	0.025	0.00001	0.000005
HC-12-46	21-Feb-12	46	500	470	7.82	199	110	47.3	0.5	0.5	17.2	10.6	0.07		0.017	0.00047	0.00014	0.024	0.00001	0.000005
HC-12-47	28-Feb-12	47	500	470	7.66	204	130	45.0	0.5	0.5	15.4	11.0	0.07	47.2	0.017	0.00045	0.00013	0.023	0.00001	0.000005
HC-12-48	06-Mar-12	48	500	470	7.76	207	125	47.4	0.5	0.5	15.7	9.1	0.07		0.017	0.00045	0.00012	0.022	0.00001	0.000005
HC-12-49	13-Mar-12	49	500	470	7.75	194	130	49.8	0.5	0.5	16.1	7.1	0.07		0.017	0.00045	0.00011	0.022	0.00001	0.000005
HC-12-50	20-Mar-12	50	500	470	7.85	186	115	52.2	0.5	0.5	16.4	5.2	0.07		0.017	0.00044	0.00009	0.021	0.00001	0.000005
HC-12-51	27-Mar-12	51	500	485	7.82	172	120	54.6	0.5	0.5	16.7	3.2	0.07	53.8	0.017	0.00044	0.00008	0.021	0.00001	0.000005
HC-12-52	03-Apr-12	52	500	470	7.90	181	120	52.8	0.5	0.8	16.4	2.9	0.06		0.016	0.00044	0.00009	0.022	0.00001	0.000005
HC-12-53	10-Apr-12	53	500	485	7.94	174	120	50.9	0.5	1.1	16.0	2.6	0.06		0.014	0.00044	0.00010	0.022	0.00001	0.000005
HC-12-54	17-Apr-12	54	500	475	7.91	169	130	49.1	0.5	1.4	15.7	2.3	0.06		0.013	0.00044	0.00010	0.023	0.00001	0.000005
HC-12-55	24-Apr-12	55	500	475	7.84	176	130	47.2	0.5	1.7	15.3	2.0	0.06	51.6	0.012	0.00044	0.00011	0.024	0.00001	0.000005
HC-12-56	01-May-12	56	500	490	7.65	165	130	46.9	0.5	1.4	16.0	2.5	0.06		0.012	0.00044	0.00011	0.025	0.00001	0.000005
HC-12-57	08-May-12	57	500	470	7.73	176	125	46.6	0.5	1.1	16.6	3.0	0.06		0.013	0.00045	0.00011	0.027	0.00001	0.000005
HC-12-58	15-May-12	58	500	460	7.75	195	130	46.2	0.5	0.8	17.3	3.5	0.06		0.013	0.00045	0.00011	0.028	0.00001	0.000005
HC-12-59	22-May-12	59	500	470	7.80	171	130	45.9	0.5	0.5	17.9	4.0	0.06	56.5	0.013	0.00046	0.00011	0.030	0.00001	0.000005
HC-12-60	29-May-12	60	500	480	7.81	184	135	46.4	0.5	0.5	19.2	3.2	0.06		0.012	0.00045	0.00010	0.029	0.00001	0.000005
HC-12-61	05-Jun-12	61	500	470	7.79	171	125	46.8	0.5	0.5	20.6	2.5	0.06		0.011	0.00044	0.00009	0.027	0.00001	0.000005
HC-12-62	12-Jun-12	62	500	465	7.87	172	125	47.3	0.5	0.5	21.9	1.7	0.06		0.009	0.00043	0.00007	0.026	0.00001	0.000005
HC-12-63	19-Jun-12	63	500	490	7.87	168	125	47.7	0.5	0.5	23.2	1.0	0.06	60.2	0.008	0.00043	0.00006	0.025	0.00001	0.000005
HC-12-64	26-Jun-12	64	500	470	7.89	169	130	47.9	0.5	0.5	21.4	1.7	0.06		0.010	0.00042	0.00008	0.026	0.00001	0.000005
HC-12-65	03-Jul-12	65	500	495	7.76	164	130	48.1	0.5	0.5	19.5	2.4	0.05		0.012	0.00041	0.00009	0.027	0.00001	0.000005
HC-12-66	10-Jul-12	66	500	465	7.78	160	130	48.2	0.5	0.5	17.7	3.1	0.05		0.013	0.00040	0.00010	0.028	0.00001	0.000005



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-12-67	17-Jul-12	67	500	460	7.76	175	130	48.4	0.5	0.5	15.8	3.8	0.05	66.3	0.015	0.00039	0.00011	0.029	0.00001	0.000005
HC-12-68	24-Jul-12	68	500	465	7.70	181	150	47.8	0.5	0.5	16.2	3.8	0.05		0.014	0.00039	0.00012	0.028	0.00001	0.000005
HC-12-69	31-Jul-12	69	500	475	7.73	197	130	47.1	0.5	0.5	16.6	3.8	0.05		0.013	0.00038	0.00012	0.027	0.00001	0.000005
HC-12-70	07-Aug-12	70	500	470	7.67	184	145	46.5	0.5	0.5	17.0	3.8	0.05		0.012	0.00038	0.00012	0.025	0.00001	0.000005
HC-12-71	14-Aug-12	71	500	480	7.75	192	145	45.8	0.5	0.5	17.4	3.8	0.05	67.1	0.011	0.00038	0.00013	0.024	0.00001	0.000005
HC-12-72	21-Aug-12	72	500	470	7.79	173	140	46.7	0.5	0.5	17.0	3.8	0.05		0.011	0.00037	0.00013	0.024	0.00001	0.000005
HC-12-73	28-Aug-12	73	500	475	7.74	181	135	47.7	0.5	0.5	16.5	3.7	0.05		0.011	0.00035	0.00014	0.025	0.00001	0.000005
HC-12-74	04-Sep-12	74	500	450	7.56	196	135	48.6	0.5	0.5	16.1	3.7	0.05		0.011	0.00033	0.00015	0.025	0.00001	0.000005
HC-12-75	11-Sep-12	75	500	490	7.71	200	140	49.5	0.5	0.5	15.6	3.6	0.04	79.8	0.012	0.00032	0.00016	0.026	0.00001	0.000005
HC-12-76	18-Sep-12	76	500	495	7.70	193	140	48.7	0.5	0.5	15.6	3.1	0.05		0.011	0.00032	0.00016	0.029	0.00001	0.000005
HC-12-77	25-Sep-12	77	500	455	7.77	180	135	47.9	0.5	0.5	15.5	2.6	0.05		0.011	0.00033	0.00016	0.032	0.00001	0.000005
HC-12-78	02-Oct-12	78	500	480	7.75	182	145	47.0	0.5	0.5	15.5	2.1	0.05		0.011	0.00034	0.00016	0.035	0.00001	0.000005
HC-12-79	09-Oct-12	79	500	475	7.67	177	135	46.2	0.5	0.5	15.4	1.6	0.05	70.7	0.011	0.00034	0.00016	0.038	0.00001	0.000005
HC-12-80	16-Oct-12	80	500	470	7.74	180	130	48.5	0.5	0.5	15.3	1.7	0.05		0.010	0.00033	0.00015	0.035	0.00001	0.000005
HC-12-81	23-Oct-12	81	500	485	7.80	190	130	50.8	0.5	0.5	15.2	1.7	0.05		0.010	0.00032	0.00014	0.032	0.00001	0.000005
HC-12-82	30-Oct-12	82	500	480	7.69	184	150	53.0	0.5	0.5	15.1	1.8	0.04		0.009	0.00031	0.00013	0.029	0.00001	0.000005
HC-12-83	06-Nov-12	83	500	465	7.74	176	130	55.3	0.5	0.5	15.0	1.8	0.04	71.2	0.009	0.00029	0.00012	0.026	0.00001	0.000005
HC-12-84	13-Nov-12	84	500	445	7.56	189	135	57.4	0.5	0.5	15.5	1.8	0.04		0.009	0.00029	0.00011	0.026	0.00001	0.000005
HC-12-85	20-Nov-12	85	500	450	7.69	212	125	59.4	0.5	0.5	16.0	1.9	0.04		0.009	0.00029	0.00009	0.026	0.00001	0.000005
HC-12-86	27-Nov-12	86	500	480	7.61	194	125	61.5	0.5	0.5	16.4	1.9	0.04		0.009	0.00029	0.00008	0.026	0.00001	0.000005
HC-12-87	04-Dec-12	87	500	475	7.68	192	125	63.5	0.5	0.5	16.9	1.9	0.04	85.2	0.010	0.00029	0.00006	0.026	0.00001	0.000005
HC-12-88	11-Dec-12	88	500	485	7.82	205	130	62.2	0.5	0.5	16.5	1.8	0.04		0.010	0.00029	0.00006	0.028	0.00001	0.000005
HC-12-89	18-Dec-12	89	500	465	7.58	184	130	60.9	0.5	0.5	16.0	1.7	0.04		0.010	0.00029	0.00006	0.031	0.00001	0.000005
HC-12-90	25-Dec-12	90	500	480	7.61	186	125	59.6	0.5	0.5	15.6	1.6	0.04		0.010	0.00029	0.00005	0.034	0.00001	0.000005
HC-12-91	01-Jan-13	91	500	460	7.63	188	120	58.3	0.5	0.5	15.1	1.5	0.03	78.9	0.010	0.00029	0.00005	0.037	0.00001	0.000005
HC-12-92	08-Jan-13	92	500	475	7.59	208	120	58.5	0.5	0.5	15.2	1.4	0.03		0.009	0.00028	0.00006	0.032	0.00001	0.000005
HC-12-93	15-Jan-13	93	500	470	7.55	173	115	58.8	0.5	0.5	15.3	1.3	0.04		0.008	0.00028	0.00007	0.027	0.00001	0.000005
HC-12-94	22-Jan-13	94	500	490	7.64	215	120	59.0	0.5	0.5	15.3	1.1	0.04		0.007	0.00028	0.00008	0.022	0.00001	0.000005
HC-12-95	29-Jan-13	95	500	460	7.64	194	115	59.2	0.5	0.5	15.4	1.0	0.04	78.5	0.007	0.00028	0.00008	0.017	0.00001	0.000005
HC-12-96	05-Feb-13	96	500	480	7.57	170	130	61.6	0.5	0.5	15.8	1.0	0.03		0.007	0.00027	0.00007	0.017	0.00001	0.000005
HC-12-97	12-Feb-13	97	500	475	7.53	189	130	64.0	0.5	0.5	16.3	1.0	0.03		0.007	0.00026	0.00007	0.017	0.00001	0.000005
HC-12-98	19-Feb-13	98	500	470	7.70	202	120	66.3	0.5	0.5	16.7	1.0	0.03		0.007	0.00025	0.00006	0.017	0.00001	0.000005
HC-12-99	26-Feb-13	99	500	490	7.60	198	140	68.7	0.5	0.5	17.1	1.0	0.03	85.0	0.007	0.00024	0.00005	0.017	0.00001	0.000005
HC-12-100	05-Mar-13	100	500	480	7.59	203	140	71.1	0.5	0.5	18.2	0.9	0.03		0.007	0.00024	0.00005	0.018	0.00001	0.000005
HC-12-101	12-Mar-13	101	500	480	7.57	201	155	73.5	0.5	0.5	19.2	0.7	0.03		0.007	0.00024	0.00006	0.020	0.00001	0.000005
HC-12-102	19-Mar-13	102	500	480	7.57	197	145	75.9	0.5	0.5	20.3	0.6	0.04		0.006	0.00024	0.00006	0.022	0.00001	0.000005
HC-12-103	26-Mar-13	103	500	440	7.61	229	135	78.3	0.5	0.5	21.3	0.5	0.04	93.3	0.006	0.00024	0.00007	0.024	0.00001	0.000005
HC-12-104	02-Apr-13	104	500	500	7.66	218	140	81.1	0.5	0.5	19.2	0.6	0.04		0.006	0.00022	0.00008	0.021	0.00001	0.000005
HC-12-105	09-Apr-13	105	500	480	7.56	208	150	84.0	0.5	0.5	17.1	0.6	0.03		0.006	0.00021	0.00010	0.019	0.00001	0.000005
HC-12-106	16-Apr-13	106	500	485	7.56	208	130	86.8	0.5	0.5	15.0	0.7	0.03		0.006	0.00020	0.00011	0.016	0.00001	0.000005
HC-12-107	23-Apr-13	107	500	455	7.55	216	150	89.6	0.5	0.5	12.9	0.7	0.03	94.0	0.006	0.00019	0.00013	0.014	0.00001	0.000005
HC-12-108	30-Apr-13	108	500	490	7.58	222	150	90.7	0.5	0.5	13.9	0.8	0.03		0.006	0.00018	0.00016	0.014	0.00001	0.000005
HC-12-109	07-May-13	109	500	475	7.55	238	140	91.7	0.5	0.5	14.9	1.0	0.03		0.006	0.00018	0.00019	0.014	0.00001	0.000005
HC-12-110	14-May-13	110	500	460	7.65	252	145	92.8	0.5	0.5	15.9	1.1	0.03		0.006	0.00018	0.00022	0.014	0.00001	0.000005
HC-12-111	21-May-13	111	500	485	7.46	247	135	93.8	0.5	0.5	16.9	1.2	0.03	107.0	0.006	0.00018	0.00025	0.014	0.00001	0.000005
HC-12-112	28-May-13	112	500	480	7.57	248	140	97.9	0.5	0.5	15.9	1.1	0.03		0.005	0.00017	0.00019	0.014	0.00001	0.000005
HC-12-113	04-Jun-13	113	500	485	7.52	256	135	101.9	0.5	0.5	14.8	1.1	0.03		0.005	0.00017	0.00014	0.013	0.00001	0.000005
HC-12-114	11-Jun-13	114	500	470	7.60	268	130	106.0	0.5	0.5	13.8	1.0	0.03		0.004	0.00017	0.00009	0.012	0.00001	0.000005
HC-12-115	18-Jun-13	115	500	470	7.62	269	130	110.0	0.5	0.5	12.7	0.9	0.03	119.0	0.004	0.00017	0.00003	0.012	0.00001	0.000005

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-12-116	25-Jun-13	116	500	455	7.64	275	140	113.5	0.5	0.6	13.1	1.0	0.03		0.004	0.00016	0.00003	0.012	0.00001	0.000005
HC-12-117	02-Jul-13	117	500	485	7.57	300	135	117.0	0.5	0.7	13.5	1.1	0.03		0.003	0.00016	0.00004	0.011	0.00001	0.000005
HC-12-118	09-Jul-13	118	500	470	7.63	284	150	120.5	0.5	0.9	13.9	1.2	0.03		0.003	0.00015	0.00004	0.011	0.00001	0.000005
HC-12-119	16-Jul-13	119	500	475	7.51	300	145	124.0	0.5	1.0	14.3	1.3	0.03	125.0	0.003	0.00014	0.00004	0.011	0.00001	0.000005
HC-12-120	23-Jul-13	120	500	470	7.50	304	145	126.5	0.5	0.9	14.1	1.2	0.03		0.003	0.00014	0.00004	0.010	0.00001	0.000005
HC-12-121	30-Jul-13	121	500	490	7.59	318	150	129.0	0.5	0.8	13.9	1.0	0.03		0.003	0.00015	0.00004	0.010	0.00001	0.000005
HC-12-122	06-Aug-13	122	500	490	7.59	320	145	131.5	0.5	0.7	13.7	0.9	0.03		0.003	0.00015	0.00004	0.010	0.00001	0.000005
HC-12-123	13-Aug-13	123	500	470	7.55	326	145	134.0	0.5	0.7	13.5	0.8	0.03	154.0	0.003	0.00015	0.00003	0.010	0.00001	0.000005
HC-12-124	20-Aug-13	124	500	455	7.49	330	150	142.5	0.5	0.6	13.5	1.0	0.02		0.003	0.00015	0.00004	0.010	0.00001	0.000005
HC-12-125	27-Aug-13	125	500	470	7.48	337	145	151.0	0.5	0.6	13.4	1.2	0.02		0.002	0.00015	0.00004	0.010	0.00001	0.000005
HC-12-126	03-Sep-13	126	500	475	7.41	359	145	159.5	0.5	0.5	13.4	1.5	0.02		0.002	0.00015	0.00004	0.010	0.00001	0.000005
HC-12-127	10-Sep-13	127	500	475	7.52	380	150	168.0	0.5	0.5	13.3	1.7	0.02	176.0	0.002	0.00015	0.00004	0.009	0.00001	0.000005
HC-12-128	17-Sep-13	128	500	480	7.30	370	155	170.3	0.5	0.5	12.9	1.5	0.03		0.002	0.00014	0.00004	0.009	0.00001	0.000005
HC-12-129	24-Sep-13	129	500	480	7.29	378	135	172.5	0.5	0.5	12.6	1.3	0.03		0.002	0.00013	0.00003	0.009	0.00001	0.000005
HC-12-130	01-Oct-13	130	500	470	7.45	382	135	174.8	0.5	0.5	12.2	1.1	0.03		0.002	0.00013	0.00003	0.009	0.00001	0.000005
HC-12-131	08-Oct-13	131	500	470	7.42	394	145	177.0	0.5	0.5	11.8	0.9	0.03	194.0	0.002	0.00012	0.00003	0.009	0.00001	0.000005
HC-12-132	15-Oct-13	132	500	460	7.32	418	145	180.0	0.5	0.5	12.1	0.8	0.03		0.003	0.00012	0.00003	0.009	0.00001	0.000005
HC-12-133	22-Oct-13	133	500	465	7.38	423	150	183.0	0.5	0.5	12.4	0.7	0.03		0.003	0.00012	0.00002	0.009	0.00001	0.000005
HC-12-134	29-Oct-13	134	500	460	7.26	453	120	186.0	0.5	0.5	12.7	0.6	0.03		0.003	0.00012	0.00002	0.010	0.00001	0.000005
HC-12-135	05-Nov-13	135	500	485	7.44	441	150	189.0	0.5	0.5	13.0	0.6	0.02	242.0	0.003	0.00012	0.00002	0.010	0.00001	0.000005
HC-12-136	12-Nov-13	136	500	455	7.28	442	120	196.5	0.5	0.5	13.0	0.8	0.02		0.003	0.00012	0.00003	0.010	0.00001	0.000005
HC-12-137	19-Nov-13	137	500	485	7.25	467	135	204.0	0.5	0.5	13.0	1.0	0.02		0.003	0.00012	0.00004	0.010	0.00001	0.000005
HC-12-138	26-Nov-13	138	500	475	7.35	485	140	211.5	0.5	0.5	12.9	1.2	0.02		0.003	0.00011	0.00006	0.009	0.00001	0.000005
HC-12-139	03-Dec-13	139	500	460	7.43	553	160	219.0	0.5	0.5	12.9	1.4	0.03	253.0	0.003	0.00011	0.00007	0.009	0.00001	0.000005
HC-12-140	10-Dec-13	140	500	490	7.37	522	150	241.3	0.5	0.5	12.4	1.2	0.03		0.003	0.00011	0.00006	0.010	0.00001	0.000005
HC-12-141	17-Dec-13	141	500	470	7.40	538	140	263.5	0.5	0.5	12.0	1.0	0.03		0.004	0.00011	0.00005	0.011	0.00001	0.000005
HC-12-142	24-Dec-13	142	500	460	7.28	550	155	285.8	0.5	0.5	11.5	0.7	0.03		0.004	0.00012	0.00005	0.012	0.00001	0.000005
HC-12-143	31-Dec-13	143	500	470	7.24	607	140	308.0	0.5	0.5	11.0	0.5	0.03	305.0	0.005	0.00012	0.00004	0.013	0.00001	0.000005
HC-12-144	07-Jan-14	144	500	475	7.30	616	155	303.3	0.5	0.8	10.6	0.6	0.03		0.004	0.00011	0.00004	0.012	0.00001	0.000005
HC-12-145	14-Jan-14	145	500	460	7.31	585	145	298.5	0.5	1.1	10.2	0.7	0.03		0.003	0.00011	0.00004	0.011	0.00001	0.000005
HC-12-146	21-Jan-14	146	500	490	7.24	596	150	293.8	0.5	1.3	9.7	0.9	0.03		0.003	0.00011	0.00003	0.010	0.00001	0.000005
HC-12-147	28-Jan-14	147	500	490	7.21	585	140	289.0	0.5	1.6	9.3	1.0	0.03	301.0	0.002	0.00010	0.00003	0.009	0.00001	0.000005
HC-12-148	04-Feb-14	148	500	460	7.19	591	155	291.8	0.5	1.3	9.2	0.9	0.03		0.002	0.00010	0.00004	0.009	0.00001	0.000005
HC-12-149	11-Feb-14	149	500	480	7.30	620	145	294.5	0.5	1.1	9.2	0.9	0.03		0.002	0.00009	0.00005	0.008	0.00001	0.000005
HC-12-150	18-Feb-14	150	500	460	7.22	607	155	297.3	0.5	0.8	9.1	0.8	0.02		0.002	0.00009	0.00005	0.008	0.00001	0.000005
HC-12-151	25-Feb-14	151	500	470	7.13	633	140	300.0	0.5	0.5	9.1	0.7	0.02	318.0	0.002	0.00009	0.00006	0.008	0.00001	0.000005
HC-12-152	04-Mar-14	152	500	470	7.16	619	145	298.3	0.5	0.8	8.5	0.9	0.03		0.002	0.00009	0.00006	0.008	0.00001	0.000005
HC-12-153	11-Mar-14	153	500	475	7.11	608	150	296.5	0.5	1.0	7.9	1.1	0.03		0.002	0.00009	0.00006	0.008	0.00001	0.000005
HC-12-154	18-Mar-14	154	500	480	7.20	609	150	294.8	0.5	1.3	7.3	1.3	0.03		0.002	0.00009	0.00006	0.008	0.00001	0.000005
HC-12-155	25-Mar-14	155	500	470	7.07	604	145	293.0	0.5	1.6	6.8	1.5	0.03	322.0	0.002	0.00009	0.00006	0.007	0.00001	0.000005
HC-12-156	01-Apr-14	156	500	480	7.19	636	155	299.8	0.5	1.3	6.6	1.3	0.03		0.003	0.00009	0.00007	0.007	0.00001	0.000005
HC-12-157	08-Apr-14	157	500	470	7.07	652	150	306.5	0.5	1.0	6.4	1.0	0.03		0.003	0.00009	0.00007	0.007	0.00001	0.000005
HC-12-158	15-Apr-14	158	500	485	7.04	640	160	313.3	0.5	0.8	6.3	0.8	0.03		0.003	0.00009	0.00008	0.007	0.00001	0.000005
HC-12-159	22-Apr-14	159	500	470	7.09	671	165	320.0	0.5	0.5	6.1	0.6	0.03	341.0	0.004	0.00009	0.00009	0.007	0.00001	0.000005
<b>Mean all weeks</b>					<b>7.88</b>	<b>278</b>	<b>130</b>	<b>97.9</b>	<b>0.5</b>	<b>0.6</b>	<b>24.1</b>	<b>3.1</b>	<b>0.11</b>	<b>77.3</b>	<b>0.037</b>	<b>0.00058</b>	<b>0.00033</b>	<b>0.028</b>	<b>0.00001</b>	<b>0.000005</b>

Note: Where concentrations were below detection limits, they were reported as the detection limit value

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC1 Upper Gates Siltstone																				
HC-1-0	15-Feb-11	0	0.05	0.00005	0.000019	0.39	0.00010	0.00005	0.00076	0.00005	0.021	0.000359	0.0295	0.13	0.00068	0.032	0.010000	0.0322	0.00038	0.43
HC-1-1	22-Feb-11	1	0.05	0.00005	0.000072	0.61	0.00030	0.00013	0.00079	0.00005	0.015	0.000217	0.0385	0.22	0.00076	0.039	0.000020	0.1150	0.00063	0.48
HC-1-2	01-Mar-11	2	0.05	0.00005	0.000005	0.40	0.00010	0.00011	0.00088	0.00005	0.013	0.000171	0.0285	0.13	0.00058	0.024	0.000020	0.0594	0.00056	0.35
HC-1-3	08-Mar-11	3	0.05	0.00005	0.000026	0.64	0.00020	0.00011	0.00114	0.00005	0.013	0.000130	0.0264	0.22	0.00061	0.023	0.000002	0.0344	0.00046	0.39
HC-1-4	15-Mar-11	4	0.05	0.00005	0.000012	0.39	0.00010	0.00005	0.00052	0.00005	0.006	0.000047	0.0229	0.14	0.00028	0.008	0.000000	0.0267	0.00020	0.34
HC-1-5	22-Mar-11	5	0.05	0.00005	0.000005	0.52	0.00010	0.00007	0.00055	0.00005	0.010	0.000086	0.0178	0.16	0.00037	0.025	0.000020	0.0195	0.00034	0.30
HC-1-6	29-Mar-11	6	0.05	0.00005	0.000005	0.62	0.00010	0.00008	0.00039	0.00005	0.010	0.000101	0.0193	0.19	0.00048	0.011	0.000020	0.0193	0.00028	0.35
HC-1-7	05-Apr-11	7	0.05	0.00005	0.000009	0.67	0.00010	0.00007	0.00075	0.00005	0.009	0.000149	0.0171	0.22	0.00052	0.011	0.002000	0.0133	0.00070	0.33
HC-1-8	12-Apr-11	8	0.05	0.00001	0.000050	0.53	0.00010	0.00005	0.00029	0.00005	0.007	0.000078	0.0161	0.20	0.00036	0.015	0.003000	0.0062	0.00025	0.32
HC-1-9	19-Apr-11	9	0.05	0.00005	0.000005	0.77	0.00010	0.00005	0.00026	0.00005	0.007	0.000067	0.0173	0.30	0.00031	0.012	0.000002	0.0136	0.00021	0.33
HC-1-10	26-Apr-11	10	0.05	0.00005	0.000005	0.77	0.00010	0.00006	0.00024	0.00005	0.007	0.000062	0.0162	0.27	0.00037	0.014	0.000002	0.0108	0.00023	0.33
HC-1-11	03-May-11	11	0.05	0.00005	0.000005	0.74	0.00010	0.00007	0.00054	0.00005	0.010	0.000119	0.0147	0.25	0.00097	0.007	0.000002	0.0115	0.00072	0.32
HC-1-12	10-May-11	12	0.05	0.00005	0.000009	0.87	0.00010	0.00007	0.00033	0.00005	0.007	0.000062	0.0151	0.32	0.00045	0.012	0.000002	0.0097	0.00021	0.35
HC-1-13	17-May-11	13	0.05	0.00005	0.000005	1.34	0.00010	0.00006	0.00056	0.00005	0.024	0.000288	0.0166	0.42	0.00133	0.003	0.000002	0.0088	0.00021	0.37
HC-1-14	24-May-11	14	0.05	0.00005	0.000010	1.35	0.00010	0.00006	0.00032	0.00005	0.004	0.000040	0.0151	0.51	0.00032	0.009	0.000002	0.0090	0.00021	0.37
HC-1-15	31-May-11	15	0.05	0.00005	0.000006	1.06	0.00010	0.00008	0.00065	0.00005	0.011	0.000090	0.0120	0.40	0.00035	0.012	0.002000	0.0062	0.00032	0.33
HC-1-16	07-Jun-11	16	0.05	0.00005	0.000005	1.30	0.00020	0.00006	0.00034	0.00005	0.009	0.000071	0.0126	0.49	0.00035	0.003	0.000002	0.0077	0.00022	0.36
HC-1-17	14-Jun-11	17	0.05	0.00005	0.000005	1.48	0.00010	0.00004	0.00032	0.00005	0.004	0.000039	0.0134	0.58	0.00018	0.002	0.000002	0.0074	0.00021	0.40
HC-1-18	21-Jun-11	18	0.05	0.00005	0.000008	1.65	0.00010	0.00006	0.00030	0.00005	0.006	0.000064	0.0131	0.69	0.00044	0.016	0.000002	0.0074	0.00022	0.41
HC-1-19	28-Jun-11	19	0.05	0.00005	0.000005	1.71	0.00010	0.00006	0.00041	0.00005	0.008	0.000050	0.0126	0.83	0.00050	0.013	0.000002	0.0057	0.00022	0.44
HC-1-20	05-Jul-11	20	0.05	0.00005	0.000005	1.92	0.00010	0.00005	0.00048	0.00005	0.007	0.000041	0.0123	0.90	0.00045	0.010	0.000002	0.0053	0.00023	0.45
HC-1-21	12-Jul-11	21	0.05	0.00005	0.000005	2.12	0.00010	0.00004	0.00055	0.00005	0.005	0.000032	0.0119	0.97	0.00040	0.008	0.000002	0.0049	0.00025	0.45
HC-1-22	19-Jul-11	22	0.05	0.00005	0.000005	2.33	0.00010	0.00004	0.00062	0.00005	0.004	0.000023	0.0116	1.03	0.00034	0.005	0.000002	0.0045	0.00026	0.46
HC-1-23	26-Jul-11	23	0.05	0.00005	0.000005	2.53	0.00010	0.00003	0.00069	0.00005	0.002	0.000014	0.0112	1.10	0.00029	0.002	0.000002	0.0041	0.00027	0.46
HC-1-24	02-Aug-11	24	0.05	0.00005	0.000005	3.03	0.00010	0.00004	0.00060	0.00005	0.002	0.000019	0.0117	1.35	0.00032	0.010	0.001002	0.0041	0.00030	0.50
HC-1-25	09-Aug-11	25	0.05	0.00005	0.000005	3.53	0.00010	0.00005	0.00050	0.00005	0.002	0.000025	0.0123	1.61	0.00034	0.018	0.002001	0.0041	0.00033	0.54
HC-1-26	16-Aug-11	26	0.05	0.00005	0.000005	4.02	0.00010	0.00005	0.00041	0.00005	0.002	0.000030	0.0128	1.86	0.00037	0.026	0.003001	0.0040	0.00035	0.58
HC-1-27	23-Aug-11	27	0.05	0.00005	0.000005	4.52	0.00010	0.00006	0.00031	0.00005	0.002	0.000035	0.0133	2.11	0.00039	0.034	0.004000	0.0040	0.00038	0.62
HC-1-28	30-Aug-11	28	0.05	0.00005	0.000005	4.96	0.00010	0.00006	0.00035	0.00005	0.002	0.000029	0.0129	2.33	0.00041	0.027	0.003001	0.0038	0.00038	0.64
HC-1-29	06-Sep-11	29	0.05	0.00005	0.000006	5.40	0.00010	0.00005	0.00039	0.00005	0.002	0.000022	0.0126	2.56	0.00042	0.019	0.002001	0.0036	0.00039	0.66
HC-1-30	13-Sep-11	30	0.05	0.00005	0.000006	5.83	0.00010	0.00005	0.00042	0.00005	0.002	0.000016	0.0122	2.78	0.00044	0.012	0.001002	0.0034	0.00039	0.68
HC-1-31	20-Sep-11	31	0.05	0.00005	0.000006	6.27	0.00010	0.00005	0.00046	0.00005	0.002	0.000009	0.0118	3.00	0.00045	0.004	0.000002	0.0031	0.00039	0.70
HC-1-32	27-Sep-11	32	0.05	0.00005	0.000007	6.58	0.00010	0.00005	0.00052	0.00005	0.002	0.000010	0.0113	3.06	0.00046	0.004	0.000002	0.0029	0.00043	0.73
HC-1-33	04-Oct-11	33	0.05	0.00005	0.000009	6.90	0.00010	0.00005	0.00058	0.00005	0.002	0.000011	0.0108	3.13	0.00047	0.004	0.000002	0.0028	0.00047	0.75
HC-1-34	11-Oct-11	34	0.05	0.00005	0.000010	7.21	0.00010	0.00006	0.00064	0.00005	0.001	0.000011	0.0102	3.19	0.00047	0.004	0.000002	0.0026	0.00050	0.78
HC-1-35	18-Oct-11	35	0.05	0.00005	0.000011	7.52	0.00010	0.00006	0.00070	0.00005	0.001	0.000012	0.0097	3.25	0.00048	0.004	0.000002	0.0024	0.00054	0.80
HC-1-36	25-Oct-11	36	0.05	0.00005	0.000012	7.66	0.00010	0.00005	0.00060	0.00005	0.001	0.000022	0.0096	3.48	0.00039	0.005	0.000002	0.0023	0.00052	0.81
HC-1-37	01-Nov-11	37	0.05	0.00005	0.000012	7.80	0.00010	0.00004	0.00050	0.00005	0.001	0.000032	0.0095	3.71	0.00029	0.006	0.000002	0.0023	0.00051	0.83
HC-1-38	08-Nov-11	38	0.05	0.00005	0.000013	7.93	0.00010	0.00003	0.00040	0.00005	0.001	0.000042	0.0094	3.94	0.00020	0.007	0.000002	0.0023	0.00049	0.84
HC-1-39	15-Nov-11	39	0.05	0.00005	0.000013	8.07	0.00010	0.00002	0.00030	0.00005	0.001	0.000052	0.0093	4.17	0.00010	0.008	0.000002	0.0022	0.00047	0.85
HC-1-40	22-Nov-11	40	0.05	0.00005	0.000012	7.90	0.00010	0.00003	0.00034	0.00005	0.002	0.000055	0.0090	4.07	0.00024	0.007	0.000002	0.0022	0.00046	0.87
HC-1-41	29-Nov-11	41	0.05	0.00005	0.000012	7.72	0.00010	0.00004	0.00039	0.00005	0.003	0.000058	0.0086	3.96	0.00037	0.006	0.000002	0.0022	0.00044	0.89
HC-1-42	06-Dec-11	42	0.05	0.00005	0.000011	7.55	0.00010	0.00005	0.00043	0.00005	0.004	0.000060	0.0083	3.86	0.00051	0.004	0.000002	0.0022	0.00043	0.90
HC-1-43	13-Dec-11	43	0.05	0.00005	0.000010	7.37	0.00010	0.00006	0.00047	0.00005	0.005	0.000063	0.0079	3.75	0.00064	0.003	0.000002	0.0022	0.00041	0.92
HC-1-44	20-Dec-11	44	0.05	0.00005	0.000010	7.96	0.00010	0.00006	0.00045	0.00005	0.004	0.000050	0.0078	3.90	0.00059	0.004	0.000002	0.0021	0.00040	0.91
HC-1-45	27-Dec-11	45	0.05	0.00005	0.000009	8.56	0.00010	0.00005	0.00043	0.00005	0.004	0.000037	0.0076	4.05	0.00055	0.004	0.000002	0.0020	0.00039	0.90
HC-1-46	03-Jan-12	46	0.05	0.00005	0.000009	9.15	0.00010	0.00005	0.00041	0.00005	0.003	0.000024	0.0075	4.19	0.00050	0.005	0.000002	0.0018	0.00038	0.89
HC-1-47	10-Jan-12	47	0.05	0.00005	0.000008	9.74	0.00010	0.00005	0.00039	0.00005	0.002	0.000011	0.0073	4.34	0.00045	0.005	0.000002	0.0017	0.00037	0.88

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-1-48	17-Jan-12	48	0.05	0.00005	0.000009	10.08	0.00010	0.00005	0.00043	0.00005	0.003	0.000017	0.0072	4.58	0.00047	0.006	0.000002	0.0016	0.00041	0.89
HC-1-49	24-Jan-12	49	0.05	0.00005	0.000010	10.42	0.00010	0.00005	0.00047	0.00005	0.004	0.000024	0.0071	4.81	0.00048	0.006	0.000002	0.0015	0.00045	0.90
HC-1-50	31-Jan-12	50	0.05	0.00005	0.000011	10.76	0.00010	0.00005	0.00050	0.00005	0.005	0.000030	0.0070	5.05	0.00050	0.007	0.000002	0.0014	0.00048	0.91
HC-1-51	07-Feb-12	51	0.05	0.00005	0.000012	11.10	0.00010	0.00004	0.00054	0.00005	0.006	0.000036	0.0069	5.28	0.00051	0.007	0.000002	0.0013	0.00052	0.92
HC-1-52	14-Feb-12	52	0.05	0.00005	0.000012	10.47	0.00010	0.00004	0.00048	0.00005	0.005	0.000031	0.0067	4.99	0.00042	0.006	0.000002	0.0014	0.00047	0.91
HC-1-53	21-Feb-12	53	0.05	0.00005	0.000012	9.84	0.00010	0.00003	0.00042	0.00005	0.004	0.000025	0.0066	4.71	0.00034	0.005	0.000002	0.0014	0.00043	0.89
HC-1-54	28-Feb-12	54	0.05	0.00005	0.000011	9.21	0.00010	0.00003	0.00036	0.00005	0.002	0.000020	0.0064	4.42	0.00025	0.003	0.000002	0.0015	0.00038	0.88
HC-1-55	06-Mar-12	55	0.05	0.00005	0.000011	8.58	0.00010	0.00002	0.00030	0.00005	0.001	0.000014	0.0062	4.13	0.00016	0.002	0.000002	0.0015	0.00033	0.86
HC-1-56	13-Mar-12	56	0.05	0.00005	0.000011	8.88	0.00010	0.00002	0.00040	0.00005	0.002	0.000018	0.0061	4.32	0.00017	0.003	0.000002	0.0015	0.00034	0.86
HC-1-57	20-Mar-12	57	0.05	0.00005	0.000011	9.17	0.00010	0.00002	0.00051	0.00005	0.003	0.000022	0.0061	4.51	0.00019	0.004	0.000002	0.0015	0.00034	0.86
HC-1-58	27-Mar-12	58	0.05	0.00005	0.000010	9.47	0.00010	0.00002	0.00061	0.00005	0.003	0.000026	0.0060	4.69	0.00020	0.005	0.000002	0.0015	0.00035	0.86
HC-1-59	03-Apr-12	59	0.05	0.00005	0.000010	9.76	0.00010	0.00003	0.00071	0.00005	0.004	0.000030	0.0059	4.88	0.00021	0.006	0.000002	0.0014	0.00035	0.86
HC-1-60	10-Apr-12	60	0.05	0.00005	0.000009	9.63	0.00010	0.00002	0.00064	0.00005	0.004	0.000029	0.0057	4.85	0.00022	0.008	0.000002	0.0014	0.00036	0.86
HC-1-61	17-Apr-12	61	0.05	0.00005	0.000008	9.49	0.00010	0.00002	0.00057	0.00005	0.003	0.000029	0.0055	4.83	0.00022	0.011	0.000002	0.0013	0.00037	0.87
HC-1-62	24-Apr-12	62	0.05	0.00005	0.000006	9.36	0.00010	0.00002	0.00050	0.00005	0.003	0.000028	0.0053	4.80	0.00023	0.013	0.000002	0.0013	0.00038	0.87
HC-1-63	01-May-12	63	0.05	0.00005	0.000005	9.22	0.00010	0.00002	0.00043	0.00005	0.002	0.000027	0.0051	4.77	0.00024	0.016	0.000002	0.0012	0.00040	0.87
HC-1-64	08-May-12	64	0.05	0.00005	0.000006	9.21	0.00010	0.00002	0.00047	0.00005	0.006	0.000400	0.0051	4.77	0.00029	0.015	0.000002	0.0012	0.00037	0.85
HC-1-65	15-May-12	65	0.05	0.00005	0.000007	9.20	0.00010	0.00002	0.00051	0.00005	0.009	0.000774	0.0050	4.77	0.00033	0.015	0.000002	0.0012	0.00035	0.82
HC-1-66	22-May-12	66	0.05	0.00005	0.000009	9.19	0.00010	0.00002	0.00055	0.00005	0.013	0.001147	0.0049	4.77	0.00038	0.014	0.000002	0.0013	0.00033	0.80
HC-1-67	29-May-12	67	0.05	0.00005	0.000010	9.18	0.00010	0.00002	0.00060	0.00005	0.016	0.001520	0.0049	4.77	0.00043	0.014	0.000002	0.0013	0.00031	0.77
HC-1-68	05-Jun-12	68	0.05	0.00005	0.000010	9.24	0.00010	0.00002	0.00050	0.00005	0.012	0.001145	0.0049	4.81	0.00037	0.013	0.000002	0.0012	0.00031	0.78
HC-1-69	12-Jun-12	69	0.05	0.00005	0.000010	9.31	0.00010	0.00002	0.00041	0.00005	0.009	0.000771	0.0049	4.85	0.00030	0.011	0.000002	0.0012	0.00031	0.78
HC-1-70	19-Jun-12	70	0.05	0.00005	0.000010	9.37	0.00010	0.00002	0.00032	0.00005	0.005	0.000396	0.0050	4.89	0.00024	0.010	0.000002	0.0011	0.00031	0.79
HC-1-71	26-Jun-12	71	0.05	0.00005	0.000010	9.43	0.00010	0.00002	0.00022	0.00005	0.002	0.000021	0.0050	4.93	0.00018	0.008	0.000002	0.0011	0.00032	0.79
HC-1-72	03-Jul-12	72	0.05	0.00005	0.000009	9.82	0.00010	0.00002	0.00033	0.00005	0.002	0.000022	0.0050	5.16	0.00021	0.007	0.000002	0.0011	0.00033	0.80
HC-1-73	10-Jul-12	73	0.05	0.00005	0.000008	10.22	0.00010	0.00003	0.00045	0.00005	0.002	0.000023	0.0050	5.39	0.00025	0.006	0.000002	0.0010	0.00035	0.82
HC-1-74	17-Jul-12	74	0.05	0.00005	0.000007	10.61	0.00010	0.00003	0.00056	0.00005	0.002	0.000023	0.0050	5.61	0.00028	0.004	0.000002	0.0010	0.00036	0.83
HC-1-75	24-Jul-12	75	0.05	0.00005	0.000006	11.00	0.00010	0.00003	0.00067	0.00005	0.002	0.000024	0.0050	5.84	0.00032	0.003	0.000002	0.0010	0.00038	0.84
HC-1-76	31-Jul-12	76	0.05	0.00005	0.000008	10.56	0.00010	0.00003	0.00075	0.00005	0.002	0.000043	0.0047	5.63	0.00035	0.004	0.000002	0.0009	0.00037	0.82
HC-1-77	07-Aug-12	77	0.05	0.00005	0.000009	10.12	0.00010	0.00003	0.00084	0.00005	0.003	0.000062	0.0045	5.42	0.00039	0.004	0.000002	0.0009	0.00036	0.80
HC-1-78	14-Aug-12	78	0.05	0.00005	0.000011	9.68	0.00010	0.00003	0.00093	0.00005	0.003	0.000081	0.0042	5.20	0.00043	0.004	0.000002	0.0009	0.00035	0.78
HC-1-79	21-Aug-12	79	0.05	0.00005	0.000013	9.24	0.00010	0.00004	0.00102	0.00005	0.003	0.000100	0.0040	4.99	0.00047	0.005	0.000002	0.0009	0.00035	0.76
HC-1-80	28-Aug-12	80	0.05	0.00005	0.000018	9.86	0.00010	0.00004	0.00194	0.00005	0.004	0.000103	0.0040	5.28	0.00057	0.005	0.000002	0.0008	0.00037	0.75
HC-1-81	04-Sep-12	81	0.05	0.00005	0.000024	10.47	0.00010	0.00005	0.00285	0.00005	0.004	0.000105	0.0041	5.58	0.00067	0.006	0.000002	0.0008	0.00039	0.75
HC-1-82	11-Sep-12	82	0.05	0.00005	0.000029	11.09	0.00010	0.00005	0.00377	0.00005	0.005	0.000108	0.0041	5.87	0.00077	0.007	0.000002	0.0008	0.00040	0.74
HC-1-83	18-Sep-12	83	0.05	0.00005	0.000034	11.70	0.00010	0.00006	0.00468	0.00005	0.006	0.000110	0.0041	6.16	0.00088	0.008	0.000002	0.0008	0.00042	0.74
HC-1-84	25-Sep-12	84	0.05	0.00005	0.000031	10.71	0.00010	0.00005	0.00372	0.00005	0.006	0.000090	0.0039	5.70	0.00069	0.008	0.000002	0.0008	0.00040	0.71
HC-1-85	02-Oct-12	85	0.05	0.00005	0.000027	9.71	0.00010	0.00004	0.00276	0.00005	0.006	0.000070	0.0036	5.25	0.00051	0.009	0.000002	0.0007	0.00037	0.69
HC-1-86	09-Oct-12	86	0.05	0.00005	0.000024	8.72	0.00010	0.00004	0.00181	0.00005	0.006	0.000049	0.0034	4.79	0.00033	0.009	0.000002	0.0007	0.00035	0.66
HC-1-87	16-Oct-12	87	0.05	0.00005	0.000020	7.72	0.00010	0.00003	0.00085	0.00005	0.006	0.000029	0.0032	4.33	0.00014	0.009	0.000002	0.0006	0.00033	0.64
HC-1-88	23-Oct-12	88	0.05	0.00005	0.000022	8.18	0.00011	0.00003	0.00074	0.00005	0.022	0.000025	0.0032	4.56	0.00031	0.007	0.000927	0.0007	0.00034	0.64
HC-1-89	30-Oct-12	89	0.05	0.00005	0.000025	8.64	0.00011	0.00003	0.00063	0.00005	0.039	0.000022	0.0033	4.79	0.00047	0.006	0.001851	0.0007	0.00036	0.65
HC-1-90	06-Nov-12	90	0.05	0.00005	0.000027	9.09	0.00012	0.00003	0.00052	0.00005	0.056	0.000018	0.0033	5.02	0.00063	0.004	0.002776	0.0008	0.00037	0.66
HC-1-91	13-Nov-12	91	0.05	0.00005	0.000029	9.55	0.00012	0.00003	0.00041	0.00005	0.072	0.000014	0.0034	5.25	0.00079	0.002	0.003700	0.0008	0.00039	0.67
HC-1-92	20-Nov-12	92	0.05	0.00005	0.000028	9.31	0.00012	0.00003	0.00056	0.00005	0.055	0.000014	0.0033	5.16	0.00069	0.002	0.002776	0.0008	0.00039	0.65
HC-1-93	27-Nov-12	93	0.05	0.00005	0.000028	9.06	0.00011	0.00003	0.00070	0.00005	0.037	0.000015	0.0033	5.08	0.00060	0.003	0.001851	0.0007	0.00040	0.64
HC-1-94	04-Dec-12	94	0.05	0.00005	0.000027	8.82	0.00011	0.00003	0.00085	0.00005	0.019	0.000015	0.0033	4.99	0.00051	0.003	0.000927	0.0007	0.00040	0.63
HC-1-95	11-Dec-12	95	0.05	0.00005	0.000026	8.57	0.00010	0.00003	0.00099	0.00005	0.001	0.000015	0.0032	4.90	0.00041	0.003	0.000002	0.0007	0.00041	0.62
HC-1-96	18-Dec-12	96	0.05	0.00005	0.000025	8.55	0.00010	0.00002	0.00081	0.00005	0.001	0.000014	0.0032	4.93	0.00034	0.003	0.000002	0.0007	0.00036	0.61

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-1-97	25-Dec-12	97	0.05	0.00005	0.000024	8.53	0.00010	0.00002	0.00062	0.00005	0.001	0.000014	0.0031	4.95	0.00026	0.003	0.000002	0.0007	0.00031	0.60
HC-1-98	01-Jan-13	98	0.05	0.00005	0.000022	8.51	0.00010	0.00002	0.00044	0.00005	0.001	0.000013	0.0030	4.98	0.00019	0.002	0.000002	0.0007	0.00026	0.58
HC-1-99	08-Jan-13	99	0.05	0.00005	0.000021	8.49	0.00010	0.00002	0.00025	0.00005	0.002	0.000012	0.0030	5.00	0.00011	0.002	0.000002	0.0007	0.00021	0.57
HC-1-100	15-Jan-13	100	0.05	0.00005	0.000021	8.48	0.00010	0.00002	0.00026	0.00005	0.002	0.000014	0.0029	4.96	0.00018	0.002	0.000002	0.0007	0.00021	0.58
HC-1-101	22-Jan-13	101	0.05	0.00005	0.000021	8.47	0.00010	0.00002	0.00028	0.00005	0.002	0.000017	0.0029	4.91	0.00025	0.002	0.000002	0.0007	0.00021	0.59
HC-1-102	29-Jan-13	102	0.05	0.00005	0.000021	8.46	0.00010	0.00002	0.00029	0.00005	0.002	0.000019	0.0028	4.87	0.00032	0.002	0.000002	0.0007	0.00021	0.59
HC-1-103	05-Feb-13	103	0.05	0.00005	0.000021	8.45	0.00010	0.00002	0.00030	0.00005	0.002	0.000021	0.0027	4.82	0.00040	0.002	0.000002	0.0007	0.00021	0.60
HC-1-104	12-Feb-13	104	0.05	0.00005	0.000021	8.49	0.00010	0.00002	0.00028	0.00005	0.003	0.000031	0.0028	4.82	0.00042	0.002	0.000002	0.0007	0.00023	0.60
HC-1-105	19-Feb-13	105	0.05	0.00005	0.000020	8.52	0.00010	0.00003	0.00025	0.00005	0.003	0.000042	0.0029	4.81	0.00045	0.002	0.000002	0.0007	0.00025	0.61
HC-1-106	26-Feb-13	106	0.05	0.00005	0.000020	8.56	0.00010	0.00003	0.00023	0.00005	0.003	0.000052	0.0030	4.81	0.00047	0.002	0.000002	0.0008	0.00027	0.61
HC-1-107	05-Mar-13	107	0.05	0.00005	0.000019	8.59	0.00010	0.00003	0.00021	0.00005	0.003	0.000062	0.0031	4.80	0.00050	0.002	0.000002	0.0008	0.00029	0.62
HC-1-108	12-Mar-13	108	0.05	0.00005	0.000020	8.56	0.00010	0.00003	0.00025	0.00005	0.003	0.000051	0.0030	4.80	0.00045	0.002	0.000002	0.0008	0.00027	0.60
HC-1-109	19-Mar-13	109	0.05	0.00005	0.000021	8.54	0.00010	0.00002	0.00028	0.00005	0.003	0.000039	0.0029	4.79	0.00039	0.002	0.000002	0.0007	0.00025	0.58
HC-1-110	26-Mar-13	110	0.05	0.00005	0.000021	8.51	0.00010	0.00002	0.00032	0.00005	0.003	0.000028	0.0028	4.79	0.00034	0.002	0.000002	0.0007	0.00023	0.56
HC-1-111	02-Apr-13	111	0.05	0.00005	0.000022	8.48	0.00010	0.00002	0.00036	0.00005	0.003	0.000016	0.0028	4.78	0.00029	0.002	0.000002	0.0007	0.00021	0.55
HC-1-112	09-Apr-13	112	0.05	0.00005	0.000024	8.44	0.00010	0.00002	0.00033	0.00005	0.003	0.000427	0.0028	4.83	0.00035	0.002	0.000002	0.0006	0.00021	0.55
HC-1-113	16-Apr-13	113	0.05	0.00005	0.000026	8.41	0.00010	0.00002	0.00030	0.00005	0.003	0.000838	0.0028	4.88	0.00042	0.002	0.000002	0.0006	0.00021	0.55
HC-1-114	23-Apr-13	114	0.05	0.00005	0.000027	8.37	0.00010	0.00003	0.00027	0.00005	0.002	0.001249	0.0028	4.92	0.00049	0.002	0.000002	0.0006	0.00021	0.55
HC-1-115	30-Apr-13	115	0.05	0.00005	0.000029	8.33	0.00010	0.00003	0.00024	0.00005	0.002	0.001660	0.0027	4.97	0.00055	0.002	0.000002	0.0006	0.00021	0.55
HC-1-116	07-May-13	116	0.05	0.00005	0.000026	8.30	0.00011	0.00003	0.00022	0.00005	0.002	0.001292	0.0027	4.89	0.00050	0.002	0.000002	0.0006	0.00022	0.54
HC-1-117	14-May-13	117	0.05	0.00005	0.000023	8.28	0.00011	0.00003	0.00020	0.00005	0.002	0.000925	0.0026	4.82	0.00046	0.002	0.000002	0.0006	0.00024	0.54
HC-1-118	21-May-13	118	0.05	0.00005	0.000019	8.25	0.00012	0.00002	0.00018	0.00005	0.002	0.000557	0.0026	4.74	0.00041	0.002	0.000002	0.0006	0.00025	0.54
HC-1-119	28-May-13	119	0.05	0.00005	0.000016	8.22	0.00012	0.00002	0.00016	0.00005	0.002	0.000189	0.0025	4.66	0.00036	0.002	0.000002	0.0006	0.00026	0.54
HC-1-120	04-Jun-13	120	0.05	0.00005	0.000015	8.14	0.00013	0.00002	0.00016	0.00005	0.002	0.000143	0.0025	4.65	0.00033	0.007	0.000002	0.0006	0.00025	0.53
HC-1-121	11-Jun-13	121	0.05	0.00005	0.000013	8.05	0.00015	0.00002	0.00017	0.00005	0.002	0.000097	0.0024	4.65	0.00030	0.012	0.000002	0.0006	0.00023	0.52
HC-1-122	18-Jun-13	122	0.05	0.00005	0.000012	7.97	0.00016	0.00002	0.00017	0.00005	0.001	0.000051	0.0023	4.64	0.00027	0.017	0.000002	0.0006	0.00022	0.52
HC-1-123	25-Jun-13	123	0.05	0.00005	0.000010	7.88	0.00017	0.00003	0.00017	0.00005	0.001	0.000005	0.0022	4.63	0.00023	0.022	0.000002	0.0006	0.00021	0.51
HC-1-124	02-Jul-13	124	0.05	0.00005	0.000010	7.99	0.00017	0.00002	0.00020	0.00005	0.002	0.000006	0.0022	4.69	0.00026	0.017	0.000002	0.0006	0.00021	0.51
HC-1-125	09-Jul-13	125	0.05	0.00005	0.000010	8.10	0.00018	0.00002	0.00024	0.00005	0.003	0.000007	0.0023	4.76	0.00029	0.013	0.000002	0.0006	0.00021	0.51
HC-1-126	16-Jul-13	126	0.05	0.00005	0.000009	8.20	0.00018	0.00002	0.00028	0.00005	0.004	0.000008	0.0023	4.82	0.00031	0.008	0.000002	0.0006	0.00022	0.51
HC-1-127	23-Jul-13	127	0.05	0.00005	0.000009	8.31	0.00018	0.00002	0.00032	0.00005	0.005	0.000009	0.0023	4.88	0.00034	0.004	0.000002	0.0006	0.00022	0.52
HC-1-128	30-Jul-13	128	0.05	0.00005	0.000010	8.54	0.00016	0.00002	0.00031	0.00005	0.004	0.000021	0.0023	4.95	0.00037	0.003	0.000002	0.0006	0.00022	0.49
HC-1-129	06-Aug-13	129	0.05	0.00005	0.000010	8.78	0.00014	0.00003	0.00031	0.00005	0.003	0.000033	0.0022	5.02	0.00041	0.003	0.000002	0.0006	0.00022	0.47
HC-1-130	13-Aug-13	130	0.05	0.00005	0.000011	9.01	0.00012	0.00003	0.00031	0.00005	0.002	0.000044	0.0022	5.08	0.00044	0.002	0.000002	0.0006	0.00022	0.45
HC-1-131	20-Aug-13	131	0.05	0.00005	0.000011	9.24	0.00010	0.00003	0.00030	0.00005	0.001	0.000056	0.0022	5.15	0.00048	0.002	0.000002	0.0006	0.00022	0.42
HC-1-132	27-Aug-13	132	0.05	0.00005	0.000010	9.19	0.00010	0.00003	0.00034	0.00005	0.001	0.000044	0.0022	5.16	0.00046	0.003	0.000002	0.0006	0.00025	0.44
HC-1-133	03-Sep-13	133	0.05	0.00005	0.000009	9.14	0.00010	0.00003	0.00037	0.00005	0.002	0.000033	0.0023	5.16	0.00044	0.004	0.000002	0.0006	0.00027	0.47
HC-1-134	10-Sep-13	134	0.05	0.00005	0.000007	9.09	0.00010	0.00002	0.00041	0.00005	0.002	0.000021	0.0023	5.17	0.00042	0.006	0.000002	0.0006	0.00030	0.49
HC-1-135	17-Sep-13	135	0.05	0.00005	0.000006	9.04	0.00010	0.00002	0.00045	0.00005	0.003	0.000009	0.0024	5.17	0.00040	0.007	0.000002	0.0006	0.00033	0.51
HC-1-136	24-Sep-13	136	0.05	0.00005	0.000006	9.10	0.00010	0.00002	0.00039	0.00005	0.002	0.000012	0.0024	5.22	0.00046	0.006	0.000002	0.0005	0.00031	0.50
HC-1-137	01-Oct-13	137	0.05	0.00005	0.000006	9.16	0.00010	0.00002	0.00033	0.00005	0.002	0.000016	0.0024	5.27	0.00052	0.004	0.000002	0.0005	0.00029	0.50
HC-1-138	08-Oct-13	138	0.05	0.00005	0.000005	9.21	0.00010	0.00001	0.00027	0.00005	0.001	0.000019	0.0025	5.32	0.00057	0.003	0.000002	0.0005	0.00028	0.49
HC-1-139	15-Oct-13	139	0.05	0.00005	0.000005	9.27	0.00010	0.00001	0.00021	0.00005	0.001	0.000022	0.0025	5.37	0.00063	0.002	0.000002	0.0005	0.00026	0.49
HC-1-140	22-Oct-13	140	0.05	0.00005	0.000006	9.37	0.00010	0.00002	0.00043	0.00005	0.001	0.000078	0.0025	5.28	0.00072	0.003	0.000002	0.0005	0.00039	0.49
HC-1-141	29-Oct-13	141	0.05	0.00005	0.000006	9.46	0.00010	0.00003	0.00065	0.00005	0.001	0.000134	0.0024	5.20	0.00082	0.004	0.000002	0.0005	0.00052	0.48
HC-1-142	05-Nov-13	142	0.05	0.00005	0.000007	9.56	0.00010	0.00004	0.00086	0.00005	0.002	0.000189	0.0024	5.11	0.00091	0.005	0.000002	0.0005	0.00065	0.47
HC-1-143	12-Nov-13	143	0.05	0.00005	0.000007	9.65	0.00010	0.00004	0.00108	0.00005	0.002	0.000245	0.0023	5.02	0.00101	0.006	0.000002	0.0006	0.00079	0.47
HC-1-144	19-Nov-13	144	0.05	0.00005	0.000009	9.56	0.00010	0.00004	0.00088	0.00005	0.002	0.000185	0.0023	5.11	0.00085	0.008	0.000002	0.0006	0.00064	0.48
HC-1-145	26-Nov-13	145	0.05	0.00005	0.000012	9.46	0.00010	0.00003	0.00068	0.00005	0.001	0.000125	0.0024	5.21	0.00069	0.009	0.000002	0.0005	0.00050	0.50

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-1-146	03-Dec-13	146	0.05	0.00005	0.000014	9.37	0.00010	0.00003	0.00048	0.00005	0.001	0.000065	0.0024	5.30	0.00052	0.010	0.000002	0.0005	0.00035	0.51
HC-1-147	10-Dec-13	147	0.05	0.00005	0.000016	9.27	0.00010	0.00002	0.00028	0.00005	0.001	0.000005	0.0024	5.39	0.00036	0.012	0.000002	0.0005	0.00021	0.53
HC-1-148	17-Dec-13	148	0.05	0.00005	0.000014	9.14	0.00010	0.00002	0.00025	0.00005	0.001	0.000005	0.0024	5.35	0.00033	0.011	0.000002	0.0005	0.00021	0.51
HC-1-149	24-Dec-13	149	0.05	0.00005	0.000012	9.02	0.00010	0.00002	0.00021	0.00005	0.001	0.000005	0.0023	5.32	0.00029	0.010	0.000002	0.0006	0.00021	0.49
HC-1-150	31-Dec-13	150	0.05	0.00005	0.000010	8.89	0.00010	0.00002	0.00018	0.00005	0.001	0.000005	0.0023	5.28	0.00026	0.010	0.000002	0.0006	0.00022	0.48
HC-1-151	07-Jan-14	151	0.05	0.00005	0.000008	8.76	0.00010	0.00002	0.00014	0.00005	0.001	0.000005	0.0023	5.24	0.00022	0.009	0.000002	0.0006	0.00022	0.46
HC-1-152	14-Jan-14	152	0.05	0.00005	0.000008	8.66	0.00010	0.00002	0.00015	0.00005	0.001	0.000005	0.0022	5.17	0.00025	0.008	0.000002	0.0005	0.00022	0.45
HC-1-153	21-Jan-14	153	0.05	0.00005	0.000007	8.57	0.00010	0.00002	0.00015	0.00005	0.001	0.000005	0.0021	5.10	0.00029	0.007	0.000002	0.0005	0.00022	0.44
HC-1-154	28-Jan-14	154	0.05	0.00005	0.000007	8.47	0.00010	0.00002	0.00015	0.00005	0.001	0.000005	0.0021	5.03	0.00032	0.005	0.000002	0.0005	0.00022	0.43
HC-1-155	04-Feb-14	155	0.05	0.00005	0.000006	8.37	0.00010	0.00002	0.00016	0.00005	0.001	0.000005	0.0020	4.96	0.00035	0.004	0.000002	0.0004	0.00021	0.42
HC-1-156	11-Feb-14	156	0.05	0.00005	0.000006	8.22	0.00010	0.00002	0.00016	0.00005	0.001	0.000005	0.0019	4.88	0.00034	0.005	0.002227	0.0004	0.00021	0.41
HC-1-157	18-Feb-14	157	0.05	0.00005	0.000006	8.07	0.00010	0.00002	0.00015	0.00005	0.001	0.000005	0.0018	4.81	0.00034	0.005	0.004451	0.0005	0.00021	0.40
HC-1-158	25-Feb-14	158	0.05	0.00005	0.000005	7.92	0.00010	0.00002	0.00015	0.00005	0.001	0.000005	0.0018	4.73	0.00033	0.006	0.006676	0.0005	0.00020	0.39
HC-1-159	04-Mar-14	159	0.05	0.00005	0.000005	7.77	0.00010	0.00002	0.00015	0.00005	0.001	0.000005	0.0017	4.65	0.00033	0.007	0.008900	0.0005	0.00020	0.38
HC-1-160	11-Mar-14	160	0.05	0.00005	0.000006	8.02	0.00010	0.00002	0.00015	0.00005	0.001	0.000005	0.0017	4.72	0.00033	0.006	0.006676	0.0005	0.00020	0.39
HC-1-161	18-Mar-14	161	0.05	0.00005	0.000007	8.26	0.00010	0.00002	0.00014	0.00005	0.002	0.000005	0.0017	4.80	0.00033	0.006	0.004451	0.0005	0.00020	0.40
HC-1-162	25-Mar-14	162	0.05	0.00005	0.000007	8.51	0.00010	0.00002	0.00014	0.00005	0.002	0.000005	0.0018	4.87	0.00033	0.005	0.002227	0.0005	0.00019	0.41
HC-1-163	01-Apr-14	163	0.05	0.00005	0.000008	8.75	0.00010	0.00002	0.00014	0.00005	0.003	0.000005	0.0018	4.94	0.00034	0.005	0.000002	0.0005	0.00019	0.42
HC-1-164	08-Apr-14	164	0.05	0.00005	0.000009	8.96	0.00010	0.00002	0.00015	0.00005	0.002	0.000005	0.0018	5.07	0.00039	0.004	0.000002	0.0005	0.00020	0.43
HC-1-165	15-Apr-14	165	0.05	0.00005	0.000009	9.17	0.00010	0.00002	0.00017	0.00005	0.002	0.000005	0.0018	5.21	0.00044	0.004	0.000002	0.0005	0.00021	0.43
HC-1-166	22-Apr-14	166	0.05	0.00005	0.000010	9.38	0.00010	0.00002	0.00018	0.00005	0.001	0.000005	0.0018	5.34	0.00049	0.003	0.000002	0.0005	0.00023	0.43
HC-1-167	29-Apr-14	167	0.05	0.00005	0.000010	9.59	0.00010	0.00002	0.00019	0.00005	0.001	0.000005	0.0018	5.47	0.00055	0.003	0.000002	0.0005	0.00024	0.44
Mean all weeks			0.05	0.00005	0.000013	7.60	0.00011	0.00003	0.00054	0.00005	0.005	0.000121	0.0064	4.09	0.00042	0.007	0.000499	0.0036	0.00033	0.60
<b>HC4 Boulder Creek Conglomerate</b>																				
HC-4-0	15-Feb-11	0	0.05	0.00006	0.000021	0.05	0.00020	0.00007	0.00054	0.00005	0.021	0.000159	0.0071	0.05	0.00035	0.053	0.000010	0.0352	0.00059	0.12
HC-4-1	22-Feb-11	1	0.07	0.00008	0.000092	0.20	0.00030	0.00011	0.00222	0.00005	0.010	0.000081	0.0251	0.09	0.00038	0.014	0.000010	0.1690	0.00100	0.30
HC-4-2	01-Mar-11	2	0.06	0.00011	0.000042	0.16	0.00010	0.00016	0.00037	0.00005	0.012	0.000065	0.0213	0.07	0.00028	0.019	0.000010	0.1130	0.00058	0.25
HC-4-3	08-Mar-11	3	0.05	0.00010	0.000005	0.54	0.00010	0.00013	0.00049	0.00005	0.010	0.000039	0.0167	0.06	0.00017	0.002	0.000002	0.0537	0.00036	0.34
HC-4-4	15-Mar-11	4	0.05	0.00010	0.000014	0.17	0.00010	0.00014	0.00029	0.00005	0.008	0.000036	0.0201	0.05	0.00019	0.017	0.000010	0.0416	0.00034	0.25
HC-4-5	22-Mar-11	5	0.05	0.00007	0.000005	0.18	0.00010	0.00009	0.00031	0.00005	0.007	0.000027	0.0159	0.05	0.00010	0.024	0.000010	0.0375	0.00026	0.18
HC-4-6	29-Mar-11	6	0.05	0.00010	0.000012	0.17	0.00010	0.00011	0.00058	0.00005	0.007	0.000030	0.0181	0.05	0.00018	0.009	0.000010	0.0342	0.00029	0.23
HC-4-7	05-Apr-11	7	0.05	0.00007	0.000014	0.20	0.00010	0.00010	0.00049	0.00005	0.005	0.000032	0.0174	0.06	0.00015	0.010	0.000002	0.0312	0.00030	0.21
HC-4-8	12-Apr-11	8	0.05	0.00001	0.000070	0.12	0.00010	0.00008	0.00029	0.00005	0.005	0.000026	0.0173	0.05	0.00013	0.012	0.000003	0.0179	0.00024	0.21
HC-4-9	19-Apr-11	9	0.05	0.00007	0.000016	0.15	0.00010	0.00007	0.00016	0.00005	0.004	0.000015	0.0167	0.05	0.00014	0.010	0.000002	0.0247	0.00017	0.21
HC-4-10	26-Apr-11	10	0.05	0.00006	0.000008	0.16	0.00010	0.00007	0.00033	0.00005	0.005	0.000026	0.0169	0.05	0.00014	0.015	0.000002	0.0171	0.00027	0.19
HC-4-11	03-May-11	11	0.05	0.00005	0.000012	0.15	0.00010	0.00007	0.00032	0.00005	0.005	0.000016	0.0147	0.05	0.00021	0.011	0.000002	0.0229	0.00026	0.18
HC-4-12	10-May-11	12	0.05	0.00007	0.000006	0.14	0.00010	0.00008	0.00026	0.00005	0.003	0.000018	0.0170	0.06	0.00013	0.012	0.000002	0.0190	0.00017	0.21
HC-4-13	17-May-11	13	0.05	0.00006	0.000011	0.16	0.00010	0.00007	0.00028	0.00005	0.004	0.000016	0.0179	0.05	0.00008	0.006	0.000002	0.0181	0.00013	0.20
HC-4-14	24-May-11	14	0.05	0.00006	0.000005	0.24	0.00010	0.00006	0.00033	0.00005	0.004	0.000013	0.0182	0.08	0.00006	0.009	0.000002	0.0177	0.00037	0.23
HC-4-15	31-May-11	15	0.05	0.00007	0.000012	0.24	0.00010	0.00008	0.00033	0.00005	0.002	0.000019	0.0199	0.08	0.00016	0.007	0.000002	0.0180	0.00021	0.23
HC-4-16	07-Jun-11	16	0.05	0.00007	0.000005	0.21	0.00010	0.00009	0.00015	0.00005	0.004	0.000105	0.0200	0.11	0.00029	0.004	0.000002	0.0171	0.00022	0.25
HC-4-17	14-Jun-11	17	0.05	0.00009	0.000005	0.27	0.00010	0.00006	0.00027	0.00005	0.002	0.000011	0.0208	0.10	0.00044	0.002	0.000002	0.0142	0.00024	0.27
HC-4-18	21-Jun-11	18	0.05	0.00008	0.000011	0.36	0.00010	0.00009	0.00022	0.00005	0.001	0.000010	0.0234	0.16	0.00033	0.009	0.000002	0.0128	0.00024	0.32
HC-4-19	28-Jun-11	19	0.05	0.00007	0.000014	0.46	0.00010	0.00014	0.00016	0.00005	0.001	0.000019	0.0254	0.24	0.00047	0.010	0.000002	0.0113	0.00028	0.37
HC-4-20	05-Jul-11	20	0.05	0.00010	0.000015	0.71	0.00010	0.00033	0.00020	0.00005	0.001	0.000018	0.0271	0.39	0.00092	0.008	0.000002	0.0095	0.00062	0.41
HC-4-21	12-Jul-11	21	0.05	0.00012	0.000016	0.97	0.00010	0.00052	0.00023	0.00005	0.001	0.000017	0.0289	0.54	0.00138	0.006	0.000002	0.0076	0.00096	0.45
HC-4-22	19-Jul-11	22	0.05	0.00015	0.000017	1.22	0.00010	0.00072	0.00027	0.00005	0.001	0.000016	0.0306	0.68	0.00183	0.004	0.000002	0.0058	0.00130	0.48
HC-4-23	26-Jul-11	23	0.05	0.00017	0.000018	1.47	0.00010	0.00091	0.00030	0.00005	0.001	0.000015	0.0323	0.83	0.00228	0.002	0.000002	0.0040	0.00164	0.52
HC-4-24	02-Aug-11	24	0.05	0.00018	0.000041	2.43	0.00010	0.00201	0.00029	0.00005	0.002	0.000030	0.0356	1.38	0.00400	0.010	0.000002	0.0035	0.00406	0.64

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-4-25	09-Aug-11	25	0.05	0.00020	0.000064	3.40	0.00010	0.00312	0.00029	0.00005	0.002	0.000045	0.0389	1.93	0.00571	0.017	0.000002	0.0031	0.00647	0.77
HC-4-26	16-Aug-11	26	0.05	0.00021	0.000087	4.36	0.00010	0.00422	0.00028	0.00005	0.003	0.000059	0.0421	2.48	0.00743	0.025	0.000002	0.0027	0.00889	0.89
HC-4-27	23-Aug-11	27	0.05	0.00022	0.000110	5.32	0.00010	0.00532	0.00027	0.00005	0.003	0.000074	0.0454	3.03	0.00914	0.032	0.000002	0.0023	0.01130	1.01
HC-4-28	30-Aug-11	28	0.05	0.00023	0.000150	5.94	0.00010	0.00784	0.00029	0.00005	0.003	0.000061	0.0446	3.45	0.01383	0.025	0.000002	0.0019	0.01623	1.06
HC-4-29	06-Sep-11	29	0.05	0.00025	0.000189	6.56	0.00010	0.01036	0.00031	0.00005	0.003	0.000048	0.0437	3.88	0.01852	0.019	0.000002	0.0016	0.02115	1.10
HC-4-30	13-Sep-11	30	0.05	0.00026	0.000229	7.17	0.00010	0.01288	0.00032	0.00005	0.002	0.000034	0.0429	4.30	0.02321	0.012	0.000002	0.0013	0.02608	1.15
HC-4-31	20-Sep-11	31	0.05	0.00027	0.000268	7.79	0.00010	0.01540	0.00034	0.00005	0.002	0.000021	0.0420	4.72	0.02790	0.005	0.000002	0.0009	0.03100	1.19
HC-4-32	27-Sep-11	32	0.05	0.00029	0.000330	8.82	0.00010	0.01875	0.00046	0.00005	0.002	0.000057	0.0410	5.31	0.03660	0.005	0.000002	0.0008	0.03720	1.29
HC-4-33	04-Oct-11	33	0.05	0.00031	0.000393	9.85	0.00010	0.02210	0.00058	0.00005	0.003	0.000092	0.0400	5.89	0.04530	0.006	0.000002	0.0007	0.04340	1.40
HC-4-34	11-Oct-11	34	0.05	0.00032	0.000455	10.87	0.00010	0.02545	0.00069	0.00005	0.003	0.000128	0.0389	6.48	0.05400	0.006	0.000002	0.0005	0.04960	1.50
HC-4-35	18-Oct-11	35	0.05	0.00034	0.000517	11.90	0.00010	0.02880	0.00081	0.00005	0.003	0.000163	0.0379	7.06	0.06270	0.006	0.000002	0.0004	0.05580	1.60
HC-4-36	25-Oct-11	36	0.05	0.00034	0.000574	11.85	0.00010	0.03183	0.00088	0.00005	0.003	0.000134	0.0367	7.21	0.07085	0.008	0.000002	0.0003	0.06188	1.59
HC-4-37	01-Nov-11	37	0.05	0.00033	0.000631	11.80	0.00010	0.03485	0.00095	0.00005	0.003	0.000106	0.0354	7.37	0.07900	0.009	0.000002	0.0003	0.06795	1.57
HC-4-38	08-Nov-11	38	0.05	0.00033	0.000688	11.75	0.00010	0.03788	0.00101	0.00005	0.003	0.000077	0.0342	7.52	0.08715	0.011	0.000002	0.0002	0.07403	1.56
HC-4-39	15-Nov-11	39	0.05	0.00032	0.000745	11.70	0.00010	0.04090	0.00108	0.00005	0.003	0.000048	0.0329	7.67	0.09530	0.012	0.000002	0.0002	0.08010	1.54
HC-4-40	22-Nov-11	40	0.05	0.00032	0.000773	11.65	0.00010	0.04215	0.00137	0.00005	0.005	0.000054	0.0317	7.58	0.10223	0.010	0.000002	0.0002	0.08160	1.51
HC-4-41	29-Nov-11	41	0.05	0.00032	0.000801	11.60	0.00010	0.04340	0.00166	0.00005	0.006	0.000060	0.0305	7.48	0.10915	0.009	0.000002	0.0001	0.08310	1.47
HC-4-42	06-Dec-11	42	0.05	0.00032	0.000828	11.55	0.00010	0.04465	0.00195	0.00005	0.008	0.000065	0.0293	7.39	0.11608	0.007	0.000002	0.0001	0.08460	1.44
HC-4-43	13-Dec-11	43	0.05	0.00032	0.000856	11.50	0.00010	0.04590	0.00224	0.00005	0.009	0.000071	0.0281	7.29	0.12300	0.005	0.000002	0.0001	0.08610	1.40
HC-4-44	20-Dec-11	44	0.05	0.00032	0.000887	11.78	0.00010	0.04735	0.00216	0.00005	0.009	0.000074	0.0274	7.35	0.12825	0.004	0.000002	0.0001	0.08983	1.39
HC-4-45	27-Dec-11	45	0.05	0.00032	0.000919	12.05	0.00010	0.04880	0.00207	0.00005	0.009	0.000078	0.0267	7.41	0.13350	0.004	0.000002	0.0001	0.09355	1.39
HC-4-46	03-Jan-12	46	0.05	0.00031	0.000950	12.33	0.00010	0.05025	0.00199	0.00005	0.008	0.000081	0.0260	7.47	0.13875	0.003	0.000002	0.0001	0.09728	1.38
HC-4-47	10-Jan-12	47	0.05	0.00031	0.000981	12.60	0.00010	0.05170	0.00190	0.00005	0.008	0.000084	0.0253	7.53	0.14400	0.002	0.000002	0.0001	0.10100	1.37
HC-4-48	17-Jan-12	48	0.05	0.00033	0.001041	12.88	0.00010	0.05548	0.00181	0.00005	0.008	0.000075	0.0253	7.88	0.15675	0.002	0.000002	0.0001	0.10700	1.45
HC-4-49	24-Jan-12	49	0.05	0.00034	0.001101	13.15	0.00010	0.05925	0.00173	0.00005	0.008	0.000066	0.0252	8.23	0.16950	0.003	0.000002	0.0001	0.11300	1.52
HC-4-50	31-Jan-12	50	0.05	0.00036	0.001160	13.43	0.00010	0.06303	0.00164	0.00005	0.008	0.000056	0.0252	8.58	0.18225	0.003	0.000002	0.0001	0.11900	1.60
HC-4-51	07-Feb-12	51	0.05	0.00037	0.001220	13.70	0.00010	0.06680	0.00155	0.00005	0.008	0.000047	0.0251	8.93	0.19500	0.003	0.000002	0.0001	0.12500	1.67
HC-4-52	14-Feb-12	52	0.05	0.00037	0.001258	13.65	0.00010	0.06710	0.00165	0.00005	0.008	0.000055	0.0248	8.96	0.20050	0.004	0.000002	0.0001	0.12625	1.68
HC-4-53	21-Feb-12	53	0.05	0.00038	0.001295	13.60	0.00010	0.06740	0.00175	0.00005	0.009	0.000062	0.0245	8.99	0.20600	0.004	0.000002	0.0001	0.12750	1.70
HC-4-54	28-Feb-12	54	0.05	0.00038	0.001333	13.55	0.00010	0.06770	0.00184	0.00005	0.009	0.000070	0.0241	9.02	0.21150	0.005	0.000002	0.0001	0.12875	1.71
HC-4-55	06-Mar-12	55	0.05	0.00038	0.001370	13.50	0.00010	0.06800	0.00194	0.00005	0.009	0.000077	0.0238	9.05	0.21700	0.005	0.000002	0.0001	0.13000	1.72
HC-4-56	13-Mar-12	56	0.05	0.00038	0.001348	13.10	0.00010	0.06608	0.00191	0.00005	0.009	0.000073	0.0227	8.94	0.21325	0.005	0.000002	0.0001	0.12700	1.67
HC-4-57	20-Mar-12	57	0.05	0.00037	0.001325	12.70	0.00010	0.06415	0.00189	0.00005	0.009	0.000068	0.0216	8.83	0.20950	0.005	0.000002	0.0001	0.12400	1.61
HC-4-58	27-Mar-12	58	0.05	0.00037	0.001303	12.30	0.00010	0.06223	0.00186	0.00005	0.009	0.000064	0.0204	8.71	0.20575	0.004	0.000002	0.0001	0.12100	1.56
HC-4-59	03-Apr-12	59	0.05	0.00036	0.001280	11.90	0.00010	0.06030	0.00183	0.00005	0.009	0.000059	0.0193	8.60	0.20200	0.004	0.000002	0.0001	0.11800	1.50
HC-4-60	10-Apr-12	60	0.05	0.00036	0.001293	11.93	0.00010	0.06038	0.00180	0.00005	0.009	0.000067	0.0192	8.73	0.20475	0.005	0.000002	0.0001	0.11800	1.53
HC-4-61	17-Apr-12	61	0.05	0.00035	0.001305	11.95	0.00010	0.06045	0.00177	0.00005	0.009	0.000074	0.0192	8.87	0.20750	0.005	0.000002	0.0001	0.11800	1.56
HC-4-62	24-Apr-12	62	0.05	0.00035	0.001318	11.98	0.00010	0.06053	0.00174	0.00005	0.008	0.000082	0.0191	9.00	0.21025	0.006	0.000002	0.0001	0.11800	1.59
HC-4-63	01-May-12	63	0.05	0.00034	0.001330	12.00	0.00010	0.06060	0.00171	0.00005	0.008	0.000089	0.0190	9.13	0.21300	0.007	0.000002	0.0002	0.11800	1.62
HC-4-64	08-May-12	64	0.05	0.00034	0.001363	11.98	0.00010	0.06155	0.00174	0.00005	0.009	0.000087	0.0187	9.15	0.21775	0.008	0.000002	0.0001	0.11975	1.60
HC-4-65	15-May-12	65	0.05	0.00035	0.001395	11.95	0.00010	0.06250	0.00177	0.00005	0.010	0.000085	0.0184	9.16	0.22250	0.009	0.000002	0.0001	0.12150	1.58
HC-4-66	22-May-12	66	0.05	0.00035	0.001428	11.93	0.00010	0.06345	0.00180	0.00005	0.011	0.000082	0.0180	9.18	0.22725	0.011	0.000002	0.0001	0.12325	1.55
HC-4-67	29-May-12	67	0.05	0.00035	0.001460	11.90	0.00010	0.06440	0.00183	0.00005	0.012	0.000080	0.0177	9.19	0.23200	0.012	0.000003	0.0001	0.12500	1.53
HC-4-68	05-Jun-12	68	0.05	0.00038	0.001450	11.90	0.00010	0.06190	0.00176	0.00005	0.012	0.000081	0.0174	8.96	0.22750	0.012	0.000002	0.0001	0.11975	1.51
HC-4-69	12-Jun-12	69	0.05	0.00040	0.001440	11.90	0.00010	0.05940	0.00169	0.00005	0.012	0.000081	0.0170	8.74	0.22300	0.011	0.000002	0.0001	0.11450	1.49
HC-4-70	19-Jun-12	70	0.05	0.00043	0.001430	11.90	0.00010	0.05690	0.00162	0.00005	0.012	0.000082	0.0167	8.51	0.21850	0.011	0.000002	0.0001	0.10925	1.47
HC-4-71	26-Jun-12	71	0.05	0.00045	0.001420	11.90	0.00010	0.05440	0.00155	0.00005	0.012	0.000082	0.0163	8.28	0.21400	0.011	0.000002	0.0001	0.10400	1.45
HC-4-72	03-Jul-12	72	0.05	0.00042	0.001453	11.93	0.00010	0.05500	0.00158	0.00005	0.013	0.000084	0.0162	8.51	0.21725	0.009	0.000002	0.0001	0.10600	1.47
HC-4-73	10-Jul-12	73	0.05	0.00039	0.001485	11.95	0.00010	0.05560	0.00161	0.00005	0.014	0.000085	0.0162	8.73	0.22050	0.007	0.000002	0.0001	0.10800	1.48



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-4-74	17-Jul-12	74	0.05	0.00037	0.001518	11.98	0.00010	0.05620	0.00164	0.00005	0.015	0.000086	0.0161	8.96	0.22375	0.006	0.000002	0.0001	0.11000	1.50
HC-4-75	24-Jul-12	75	0.05	0.00034	0.001550	12.00	0.00010	0.05680	0.00167	0.00005	0.016	0.000088	0.0160	9.18	0.22700	0.004	0.000002	0.0001	0.11200	1.51
HC-4-76	31-Jul-12	76	0.05	0.00034	0.001525	11.40	0.00010	0.05593	0.00167	0.00005	0.015	0.000087	0.0155	9.02	0.22400	0.004	0.000002	0.0001	0.11050	1.50
HC-4-77	07-Aug-12	77	0.05	0.00034	0.001500	10.79	0.00010	0.05505	0.00168	0.00005	0.014	0.000087	0.0151	8.86	0.22100	0.003	0.000002	0.0001	0.10900	1.49
HC-4-78	14-Aug-12	78	0.05	0.00034	0.001475	10.19	0.00010	0.05418	0.00168	0.00005	0.014	0.000086	0.0146	8.69	0.21800	0.003	0.000002	0.0001	0.10750	1.48
HC-4-79	21-Aug-12	79	0.05	0.00035	0.001450	9.58	0.00010	0.05330	0.00168	0.00005	0.013	0.000086	0.0141	8.53	0.21500	0.002	0.000002	0.0001	0.10600	1.47
HC-4-80	28-Aug-12	80	0.05	0.00033	0.001478	9.99	0.00010	0.05420	0.00272	0.00005	0.019	0.000119	0.0139	8.76	0.21925	0.003	0.000002	0.0001	0.10675	1.46
HC-4-81	04-Sep-12	81	0.05	0.00031	0.001505	10.39	0.00010	0.05510	0.00377	0.00005	0.025	0.000153	0.0138	9.00	0.22350	0.004	0.000002	0.0001	0.10750	1.46
HC-4-82	11-Sep-12	82	0.05	0.00030	0.001533	10.80	0.00010	0.05600	0.00481	0.00005	0.031	0.000186	0.0136	9.23	0.22775	0.005	0.000002	0.0001	0.10825	1.45
HC-4-83	18-Sep-12	83	0.05	0.00028	0.001560	11.20	0.00010	0.05690	0.00585	0.00005	0.036	0.000219	0.0134	9.46	0.23200	0.006	0.000002	0.0001	0.10900	1.44
HC-4-84	25-Sep-12	84	0.05	0.00030	0.001545	10.87	0.00010	0.05538	0.00481	0.00005	0.032	0.000188	0.0133	9.27	0.22925	0.006	0.000002	0.0001	0.10700	1.40
HC-4-85	02-Oct-12	85	0.05	0.00032	0.001530	10.55	0.00010	0.05385	0.00377	0.00005	0.029	0.000157	0.0133	9.07	0.22650	0.007	0.000002	0.0001	0.10500	1.37
HC-4-86	09-Oct-12	86	0.05	0.00034	0.001515	10.22	0.00010	0.05233	0.00273	0.00005	0.025	0.000126	0.0132	8.88	0.22375	0.007	0.000002	0.0001	0.10300	1.33
HC-4-87	16-Oct-12	87	0.05	0.00037	0.001500	9.89	0.00010	0.05080	0.00169	0.00005	0.021	0.000095	0.0131	8.68	0.22100	0.008	0.000002	0.0001	0.10100	1.29
HC-4-88	23-Oct-12	88	0.05	0.00036	0.001500	9.94	0.00010	0.05058	0.00168	0.00005	0.020	0.000094	0.0132	8.82	0.22250	0.007	0.000002	0.0001	0.10073	1.31
HC-4-89	30-Oct-12	89	0.05	0.00035	0.001500	10.00	0.00010	0.05035	0.00166	0.00005	0.019	0.000094	0.0132	8.97	0.22400	0.006	0.000002	0.0001	0.10045	1.33
HC-4-90	06-Nov-12	90	0.05	0.00034	0.001500	10.05	0.00010	0.05013	0.00165	0.00005	0.018	0.000093	0.0133	9.11	0.22550	0.005	0.000002	0.0001	0.10018	1.34
HC-4-91	13-Nov-12	91	0.05	0.00033	0.001500	10.10	0.00010	0.04990	0.00163	0.00005	0.017	0.000092	0.0133	9.25	0.22700	0.005	0.000002	0.0001	0.09990	1.36
HC-4-92	20-Nov-12	92	0.05	0.00034	0.001475	9.91	0.00011	0.04860	0.00156	0.00005	0.016	0.000086	0.0131	9.15	0.21900	0.005	0.000002	0.0001	0.09858	1.34
HC-4-93	27-Nov-12	93	0.05	0.00035	0.001450	9.73	0.00013	0.04730	0.00150	0.00005	0.016	0.000080	0.0129	9.05	0.21100	0.005	0.000002	0.0001	0.09725	1.33
HC-4-94	04-Dec-12	94	0.05	0.00036	0.001425	9.54	0.00014	0.04600	0.00143	0.00005	0.016	0.000073	0.0127	8.94	0.20300	0.005	0.000002	0.0001	0.09593	1.31
HC-4-95	11-Dec-12	95	0.05	0.00036	0.001400	9.35	0.00015	0.04470	0.00136	0.00005	0.015	0.000067	0.0125	8.84	0.19500	0.005	0.000002	0.0001	0.09460	1.29
HC-4-96	18-Dec-12	96	0.05	0.00034	0.001373	9.14	0.00014	0.04403	0.00132	0.00005	0.014	0.000104	0.0121	8.76	0.19425	0.004	0.000002	0.0001	0.09273	1.26
HC-4-97	25-Dec-12	97	0.05	0.00032	0.001345	8.93	0.00013	0.04335	0.00129	0.00005	0.013	0.000142	0.0116	8.68	0.19350	0.004	0.000002	0.0001	0.09085	1.24
HC-4-98	01-Jan-13	98	0.05	0.00031	0.001318	8.72	0.00011	0.04268	0.00125	0.00005	0.012	0.000179	0.0112	8.59	0.19275	0.003	0.000002	0.0001	0.08898	1.21
HC-4-99	08-Jan-13	99	0.05	0.00029	0.001290	8.51	0.00010	0.04200	0.00121	0.00005	0.010	0.000216	0.0107	8.51	0.19200	0.002	0.000002	0.0001	0.08710	1.18
HC-4-100	15-Jan-13	100	0.05	0.00027	0.001303	8.35	0.00010	0.04178	0.00121	0.00005	0.013	0.000189	0.0106	8.35	0.18950	0.005	0.000002	0.0001	0.08598	1.17
HC-4-101	22-Jan-13	101	0.05	0.00025	0.001315	8.19	0.00010	0.04155	0.00121	0.00005	0.016	0.000162	0.0106	8.19	0.18700	0.007	0.000002	0.0001	0.08485	1.16
HC-4-102	29-Jan-13	102	0.05	0.00023	0.001328	8.03	0.00010	0.04133	0.00120	0.00005	0.019	0.000134	0.0105	8.02	0.18450	0.010	0.000002	0.0001	0.08373	1.14
HC-4-103	05-Feb-13	103	0.05	0.00021	0.001340	7.87	0.00010	0.04110	0.00120	0.00005	0.022	0.000107	0.0104	7.86	0.18200	0.013	0.000002	0.0001	0.08260	1.13
HC-4-104	12-Feb-13	104	0.05	0.00022	0.001345	7.80	0.00010	0.04068	0.00136	0.00005	0.022	0.000212	0.0105	7.93	0.18175	0.010	0.000002	0.0001	0.08280	1.15
HC-4-105	19-Feb-13	105	0.05	0.00022	0.001350	7.74	0.00010	0.04025	0.00151	0.00005	0.022	0.000317	0.0107	8.00	0.18150	0.007	0.000002	0.0001	0.08300	1.17
HC-4-106	26-Feb-13	106	0.05	0.00023	0.001355	7.67	0.00010	0.03983	0.00167	0.00005	0.022	0.000422	0.0108	8.06	0.18125	0.005	0.000002	0.0001	0.08320	1.19
HC-4-107	05-Mar-13	107	0.05	0.00023	0.001360	7.60	0.00010	0.03940	0.00182	0.00005	0.022	0.000527	0.0109	8.13	0.18100	0.002	0.000002	0.0001	0.08340	1.21
HC-4-108	12-Mar-13	108	0.05	0.00023	0.001340	7.58	0.00010	0.03830	0.00187	0.00005	0.024	0.000445	0.0105	7.95	0.17650	0.002	0.000002	0.0001	0.08105	1.14
HC-4-109	19-Mar-13	109	0.05	0.00022	0.001320	7.56	0.00010	0.03720	0.00192	0.00005	0.026	0.000363	0.0102	7.77	0.17200	0.002	0.000002	0.0001	0.07870	1.07
HC-4-110	26-Mar-13	110	0.05	0.00022	0.001300	7.54	0.00010	0.03610	0.00197	0.00005	0.028	0.000281	0.0098	7.58	0.16750	0.002	0.000002	0.0001	0.07635	1.01
HC-4-111	02-Apr-13	111	0.05	0.00022	0.001280	7.52	0.00010	0.03500	0.00202	0.00005	0.031	0.000199	0.0095	7.40	0.16300	0.002	0.000002	0.0001	0.07400	0.94
HC-4-112	09-Apr-13	112	0.05	0.00021	0.001295	7.43	0.00010	0.03525	0.00185	0.00005	0.032	0.000196	0.0095	7.48	0.16525	0.002	0.000002	0.0001	0.07420	0.97
HC-4-113	16-Apr-13	113	0.05	0.00021	0.001310	7.35	0.00010	0.03550	0.00168	0.00005	0.034	0.000193	0.0096	7.56	0.16750	0.002	0.000002	0.0001	0.07440	1.00
HC-4-114	23-Apr-13	114	0.05	0.00021	0.001325	7.26	0.00010	0.03575	0.00151	0.00005	0.036	0.000189	0.0097	7.64	0.16975	0.003	0.000002	0.0001	0.07460	1.04
HC-4-115	30-Apr-13	115	0.05	0.00020	0.001340	7.17	0.00010	0.03600	0.00134	0.00005	0.038	0.000186	0.0098	7.72	0.17200	0.003	0.000002	0.0001	0.07480	1.07
HC-4-116	07-May-13	116	0.05	0.00020	0.001363	7.24	0.00010	0.03630	0.00139	0.00005	0.039	0.000174	0.0098	7.76	0.17375	0.003	0.000002	0.0001	0.07580	1.09
HC-4-117	14-May-13	117	0.05	0.00021	0.001385	7.32	0.00010	0.03660	0.00145	0.00005	0.041	0.000161	0.0098	7.81	0.17550	0.002	0.000002	0.0001	0.07680	1.10
HC-4-118	21-May-13	118	0.05	0.00021	0.001408	7.39	0.00010	0.03690	0.00150	0.00005	0.042	0.000149	0.0098	7.85	0.17725	0.002	0.000002	0.0001	0.07780	1.12
HC-4-119	28-May-13	119	0.05	0.00021	0.001430	7.46	0.00010	0.03720	0.00155	0.00005	0.043	0.000136	0.0098	7.89	0.17900	0.002	0.000002	0.0001	0.07880	1.13
HC-4-120	04-Jun-13	120	0.05	0.00021	0.001430	7.48	0.00011	0.03665	0.00155	0.00005	0.044	0.000497	0.0097	7.89	0.17750	0.006	0.000002	0.0001	0.07783	1.12
HC-4-121	11-Jun-13	121	0.05	0.00020	0.001430	7.50	0.00013	0.03610	0.00154	0.00005	0.046	0.000858	0.0097	7.88	0.17600	0.010	0.000002	0.0001	0.07685	1.10
HC-4-122	18-Jun-13	122	0.05	0.00020	0.001430	7.51	0.00014	0.03555	0.00154	0.00005	0.047	0.001219	0.0097	7.88	0.17450	0.014	0.000002	0.0001	0.07588	1.09

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-4-123	25-Jun-13	123	0.05	0.00020	0.001430	7.53	0.00015	0.03500	0.00153	0.00005	0.049	0.001580	0.0096	7.87	0.17300	0.018	0.000002	0.0001	0.07490	1.07
HC-4-124	02-Jul-13	124	0.05	0.00020	0.001423	7.36	0.00015	0.03478	0.00161	0.00005	0.049	0.001220	0.0095	7.87	0.17100	0.014	0.000002	0.0001	0.07413	1.05
HC-4-125	09-Jul-13	125	0.05	0.00020	0.001415	7.19	0.00016	0.03455	0.00169	0.00005	0.049	0.000860	0.0093	7.88	0.16900	0.011	0.000002	0.0001	0.07335	1.03
HC-4-126	16-Jul-13	126	0.05	0.00020	0.001408	7.02	0.00016	0.03433	0.00176	0.00005	0.049	0.000500	0.0092	7.88	0.16700	0.007	0.000002	0.0001	0.07258	1.01
HC-4-127	23-Jul-13	127	0.05	0.00019	0.001400	6.85	0.00016	0.03410	0.00184	0.00005	0.049	0.000140	0.0090	7.88	0.16500	0.004	0.000002	0.0001	0.07180	0.98
HC-4-128	30-Jul-13	128	0.05	0.00018	0.001398	6.86	0.00015	0.03438	0.00182	0.00005	0.052	0.000141	0.0088	7.80	0.16750	0.003	0.000002	0.0001	0.07270	0.95
HC-4-129	06-Aug-13	129	0.05	0.00017	0.001395	6.86	0.00013	0.03465	0.00181	0.00005	0.055	0.000142	0.0086	7.72	0.17000	0.003	0.000002	0.0001	0.07360	0.92
HC-4-130	13-Aug-13	130	0.05	0.00016	0.001393	6.87	0.00012	0.03493	0.00179	0.00005	0.057	0.000142	0.0083	7.63	0.17250	0.002	0.000002	0.0001	0.07450	0.88
HC-4-131	20-Aug-13	131	0.05	0.00015	0.001390	6.87	0.00010	0.03520	0.00177	0.00005	0.060	0.000143	0.0081	7.55	0.17500	0.002	0.000002	0.0001	0.07540	0.85
HC-4-132	27-Aug-13	132	0.05	0.00017	0.001420	6.94	0.00010	0.03563	0.00185	0.00005	0.058	0.000144	0.0084	7.66	0.17550	0.004	0.000002	0.0001	0.07618	0.87
HC-4-133	03-Sep-13	133	0.05	0.00019	0.001450	7.00	0.00010	0.03605	0.00194	0.00005	0.056	0.000145	0.0086	7.76	0.17600	0.006	0.000002	0.0001	0.07695	0.90
HC-4-134	10-Sep-13	134	0.05	0.00020	0.001480	7.07	0.00010	0.03648	0.00202	0.00005	0.054	0.000145	0.0089	7.87	0.17650	0.008	0.000002	0.0001	0.07773	0.93
HC-4-135	17-Sep-13	135	0.05	0.00022	0.001510	7.13	0.00010	0.03690	0.00210	0.00005	0.053	0.000146	0.0092	7.97	0.17700	0.010	0.000002	0.0001	0.07850	0.96
HC-4-136	24-Sep-13	136	0.05	0.00022	0.001525	7.31	0.00010	0.03705	0.00211	0.00005	0.050	0.000150	0.0094	8.14	0.17875	0.008	0.000002	0.0001	0.07910	0.97
HC-4-137	01-Oct-13	137	0.05	0.00022	0.001540	7.49	0.00010	0.03720	0.00212	0.00005	0.047	0.000154	0.0097	8.31	0.18050	0.006	0.000002	0.0001	0.07970	0.99
HC-4-138	08-Oct-13	138	0.05	0.00021	0.001555	7.66	0.00010	0.03735	0.00213	0.00005	0.044	0.000157	0.0099	8.48	0.18225	0.004	0.000002	0.0001	0.08030	1.00
HC-4-139	15-Oct-13	139	0.05	0.00021	0.001570	7.84	0.00010	0.03750	0.00214	0.00005	0.041	0.000161	0.0102	8.65	0.18400	0.002	0.000002	0.0001	0.08090	1.02
HC-4-140	22-Oct-13	140	0.05	0.00022	0.001558	7.82	0.00010	0.03748	0.00237	0.00005	0.042	0.000159	0.0100	8.64	0.18475	0.003	0.000002	0.0001	0.08070	1.02
HC-4-141	29-Oct-13	141	0.05	0.00022	0.001545	7.81	0.00010	0.03745	0.00261	0.00005	0.043	0.000157	0.0099	8.64	0.18550	0.004	0.000002	0.0001	0.08050	1.02
HC-4-142	05-Nov-13	142	0.05	0.00023	0.001533	7.79	0.00010	0.03743	0.00284	0.00005	0.044	0.000154	0.0097	8.63	0.18625	0.005	0.000002	0.0001	0.08030	1.01
HC-4-143	12-Nov-13	143	0.05	0.00023	0.001520	7.77	0.00010	0.03740	0.00307	0.00005	0.045	0.000152	0.0095	8.62	0.18700	0.006	0.000002	0.0001	0.08010	1.01
HC-4-144	19-Nov-13	144	0.05	0.00025	0.001543	7.67	0.00010	0.03778	0.00286	0.00005	0.047	0.000149	0.0098	8.68	0.18900	0.008	0.000002	0.0001	0.08158	1.01
HC-4-145	26-Nov-13	145	0.05	0.00026	0.001565	7.58	0.00010	0.03815	0.00266	0.00005	0.049	0.000147	0.0101	8.73	0.19100	0.009	0.000002	0.0001	0.08305	1.02
HC-4-146	03-Dec-13	146	0.05	0.00027	0.001588	7.48	0.00010	0.03853	0.00245	0.00005	0.051	0.000144	0.0103	8.79	0.19300	0.010	0.000002	0.0001	0.08453	1.02
HC-4-147	10-Dec-13	147	0.05	0.00028	0.001610	7.38	0.00010	0.03890	0.00224	0.00005	0.053	0.000141	0.0106	8.84	0.19500	0.012	0.000002	0.0001	0.08600	1.02
HC-4-148	17-Dec-13	148	0.05	0.00027	0.001628	7.41	0.00010	0.03895	0.00253	0.00005	0.055	0.000148	0.0106	8.78	0.19450	0.011	0.000002	0.0001	0.08573	1.01
HC-4-149	24-Dec-13	149	0.05	0.00026	0.001645	7.44	0.00010	0.03900	0.00283	0.00005	0.057	0.000155	0.0105	8.71	0.19400	0.010	0.000002	0.0001	0.08545	1.00
HC-4-150	31-Dec-13	150	0.05	0.00025	0.001663	7.47	0.00010	0.03905	0.00312	0.00005	0.060	0.000161	0.0105	8.65	0.19350	0.009	0.000002	0.0001	0.08518	0.99
HC-4-151	07-Jan-14	151	0.05	0.00024	0.001680	7.50	0.00010	0.03910	0.00341	0.00005	0.062	0.000168	0.0104	8.58	0.19300	0.008	0.000002	0.0001	0.08490	0.99
HC-4-152	14-Jan-14	152	0.05	0.00023	0.001710	7.60	0.00010	0.03975	0.00344	0.00005	0.063	0.000172	0.0103	8.73	0.19425	0.007	0.000002	0.0001	0.08630	0.97
HC-4-153	21-Jan-14	153	0.05	0.00022	0.001740	7.71	0.00010	0.04040	0.00348	0.00005	0.063	0.000176	0.0101	8.87	0.19550	0.006	0.000002	0.0001	0.08770	0.96
HC-4-154	28-Jan-14	154	0.05	0.00022	0.001770	7.81	0.00010	0.04105	0.00351	0.00005	0.064	0.000180	0.0100	9.02	0.19675	0.005	0.000002	0.0001	0.08910	0.95
HC-4-155	04-Feb-14	155	0.05	0.00021	0.001800	7.91	0.00010	0.04170	0.00354	0.00005	0.065	0.000184	0.0098	9.16	0.19800	0.004	0.000002	0.0001	0.09050	0.93
HC-4-156	11-Feb-14	156	0.05	0.00021	0.001818	7.82	0.00010	0.04275	0.00394	0.00005	0.068	0.000191	0.0099	9.26	0.19975	0.006	0.000002	0.0001	0.09338	0.92
HC-4-157	18-Feb-14	157	0.05	0.00021	0.001835	7.73	0.00010	0.04380	0.00433	0.00005	0.071	0.000197	0.0100	9.36	0.20150	0.007	0.000002	0.0001	0.09625	0.91
HC-4-158	25-Feb-14	158	0.05	0.00021	0.001853	7.64	0.00010	0.04485	0.00473	0.00005	0.074	0.000204	0.0100	9.46	0.20325	0.008	0.000002	0.0001	0.09913	0.90
HC-4-159	04-Mar-14	159	0.05	0.00021	0.001870	7.55	0.00010	0.04590	0.00512	0.00005	0.078	0.000210	0.0101	9.56	0.20500	0.010	0.000002	0.0001	0.10200	0.89
HC-4-160	11-Mar-14	160	0.05	0.00021	0.001935	7.82	0.00010	0.04658	0.00511	0.00005	0.080	0.000217	0.0103	9.65	0.20975	0.008	0.000002	0.0001	0.10350	0.92
HC-4-161	18-Mar-14	161	0.05	0.00022	0.002000	8.09	0.00010	0.04725	0.00510	0.00005	0.082	0.000224	0.0105	9.74	0.21450	0.006	0.000002	0.0001	0.10500	0.95
HC-4-162	25-Mar-14	162	0.05	0.00023	0.002065	8.36	0.00010	0.04793	0.00508	0.00005	0.084	0.000231	0.0106	9.82	0.21925	0.005	0.000002	0.0001	0.10650	0.98
HC-4-163	01-Apr-14	163	0.05	0.00024	0.002130	8.63	0.00010	0.04860	0.00507	0.00005	0.086	0.000238	0.0108	9.91	0.22400	0.003	0.000002	0.0001	0.10800	1.01
HC-4-164	08-Apr-14	164	0.05	0.00024	0.002205	8.88	0.00010	0.05018	0.00544	0.00005	0.089	0.000254	0.0111	10.23	0.22825	0.003	0.000002	0.0001	0.11200	1.03
HC-4-165	15-Apr-14	165	0.05	0.00025	0.002280	9.12	0.00010	0.05175	0.00581	0.00005	0.093	0.000270	0.0113	10.56	0.23250	0.003	0.000002	0.0001	0.11600	1.05
HC-4-166	22-Apr-14	166	0.05	0.00025	0.002355	9.37	0.00010	0.05333	0.00618	0.00006	0.096	0.000285	0.0116	10.88	0.23675	0.004	0.000002	0.0001	0.12000	1.06
HC-4-167	29-Apr-14	167	0.05	0.00026	0.002430	9.61	0.00010	0.05490	0.00655	0.00006	0.099	0.000301	0.0118	11.20	0.24100	0.004	0.000002	0.0001	0.12400	1.08
Mean all weeks			0.05	0.00025	0.001145	7.99	0.00011	0.03742	0.00192	0.00005	0.026	0.000157	0.0173	7.02	0.15122	0.007	0.000002	0.0047	0.07625	1.09

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC6 Upper Gates Carbonaceous Mudstone																				
HC-6-0	15-Feb-11	0	0.05	0.00005	0.000007	1.11	0.00020	0.00002	0.00039	0.00005	0.014	0.000056	0.0578	0.16	0.00040	0.042	0.000010	0.0133	0.00016	0.67
HC-6-1	22-Feb-11	1	0.05	0.00005	0.000053	1.72	0.00020	0.00005	0.00055	0.00005	0.009	0.000061	0.0960	0.35	0.00101	0.036	0.000010	0.0929	0.00027	0.78
HC-6-2	01-Mar-11	2	0.05	0.00005	0.000005	0.83	0.00010	0.00003	0.00038	0.00005	0.005	0.000079	0.0801	0.19	0.00058	0.020	0.000010	0.0540	0.00019	0.58
HC-6-3	08-Mar-11	3	0.05	0.00005	0.000005	0.77	0.00010	0.00003	0.00057	0.00005	0.005	0.000023	0.0691	0.15	0.00053	0.018	0.000002	0.0350	0.00015	0.52
HC-6-4	15-Mar-11	4	0.05	0.00005	0.000014	1.11	0.00010	0.00003	0.00025	0.00005	0.004	0.000023	0.0674	0.27	0.00086	0.017	0.000010	0.0248	0.00015	0.61
HC-6-5	22-Mar-11	5	0.05	0.00005	0.000005	0.93	0.00010	0.00003	0.00026	0.00005	0.006	0.000028	0.0523	0.20	0.00062	0.026	0.000010	0.0199	0.00014	0.49
HC-6-6	29-Mar-11	6	0.05	0.00005	0.000005	1.02	0.00010	0.00003	0.00030	0.00005	0.006	0.000024	0.0449	0.21	0.00085	0.010	0.000010	0.0180	0.00025	0.50
HC-6-7	05-Apr-11	7	0.05	0.00005	0.000005	1.12	0.00010	0.00003	0.00027	0.00005	0.006	0.000034	0.0437	0.25	0.00096	0.014	0.000002	0.0188	0.00014	0.51
HC-6-8	12-Apr-11	8	0.05	0.00001	0.000050	1.01	0.00010	0.00003	0.00022	0.00005	0.004	0.000031	0.0423	0.24	0.00110	0.013	0.000003	0.0094	0.00013	0.53
HC-6-9	19-Apr-11	9	0.05	0.00005	0.000006	1.39	0.00010	0.00003	0.00018	0.00005	0.004	0.000019	0.0382	0.37	0.00146	0.014	0.000002	0.0166	0.00012	0.55
HC-6-10	26-Apr-11	10	0.05	0.00005	0.000010	1.45	0.00010	0.00003	0.00020	0.00005	0.005	0.000052	0.0357	0.36	0.00122	0.016	0.000002	0.0155	0.00014	0.55
HC-6-11	03-May-11	11	0.05	0.00005	0.000007	1.56	0.00010	0.00003	0.00021	0.00005	0.005	0.000020	0.0347	0.33	0.00155	0.011	0.000002	0.0150	0.00018	0.54
HC-6-12	10-May-11	12	0.05	0.00005	0.000005	1.73	0.00010	0.00003	0.00051	0.00005	0.004	0.000049	0.0352	0.45	0.00147	0.011	0.000002	0.0139	0.00014	0.64
HC-6-13	17-May-11	13	0.05	0.00005	0.000007	1.95	0.00010	0.00002	0.00026	0.00005	0.002	0.000016	0.0367	0.46	0.00121	0.008	0.000002	0.0158	0.00010	0.69
HC-6-14	24-May-11	14	0.05	0.00005	0.000005	2.83	0.00010	0.00003	0.00023	0.00005	0.002	0.000021	0.0343	0.63	0.00263	0.009	0.000002	0.0132	0.00009	0.65
HC-6-15	31-May-11	15	0.05	0.00005	0.000005	2.61	0.00010	0.00004	0.00022	0.00005	0.002	0.000024	0.0347	0.77	0.00233	0.007	0.000002	0.0137	0.00014	0.68
HC-6-16	07-Jun-11	16	0.05	0.00005	0.000016	3.26	0.00010	0.00005	0.01360	0.00005	0.004	0.000171	0.0335	1.08	0.00288	0.003	0.000002	0.0125	0.00015	0.75
HC-6-17	14-Jun-11	17	0.05	0.00005	0.000006	3.79	0.00010	0.00004	0.00022	0.00005	0.001	0.000030	0.0322	1.10	0.00369	0.002	0.000002	0.0137	0.00013	0.78
HC-6-18	21-Jun-11	18	0.05	0.00005	0.000015	3.51	0.00010	0.00004	0.00013	0.00005	0.001	0.000008	0.0275	1.23	0.00276	0.006	0.000002	0.0124	0.00014	0.76
HC-6-19	28-Jun-11	19	0.05	0.00005	0.000005	4.42	0.00010	0.00009	0.00194	0.00005	0.010	0.000223	0.0289	1.79	0.00434	0.010	0.000002	0.0145	0.00018	0.93
HC-6-20	05-Jul-11	20	0.05	0.00005	0.000007	5.17	0.00010	0.00009	0.00154	0.00005	0.008	0.000175	0.0271	2.03	0.00500	0.008	0.000002	0.0138	0.00020	0.94
HC-6-21	12-Jul-11	21	0.05	0.00005	0.000009	5.93	0.00010	0.00009	0.00114	0.00005	0.006	0.000127	0.0254	2.28	0.00567	0.006	0.000002	0.0131	0.00021	0.94
HC-6-22	19-Jul-11	22	0.05	0.00005	0.000011	6.68	0.00010	0.00009	0.00073	0.00005	0.004	0.000078	0.0236	2.52	0.00633	0.004	0.000002	0.0123	0.00023	0.95
HC-6-23	26-Jul-11	23	0.05	0.00005	0.000013	7.43	0.00010	0.00009	0.00033	0.00005	0.002	0.000030	0.0218	2.76	0.00699	0.002	0.000002	0.0116	0.00024	0.95
HC-6-24	02-Aug-11	24	0.05	0.00005	0.000011	8.47	0.00010	0.00011	0.00030	0.00005	0.002	0.000042	0.0213	3.07	0.00787	0.010	0.000002	0.0116	0.00032	1.01
HC-6-25	09-Aug-11	25	0.05	0.00005	0.000009	9.52	0.00010	0.00013	0.00026	0.00005	0.002	0.000054	0.0209	3.39	0.00875	0.018	0.000002	0.0116	0.00040	1.07
HC-6-26	16-Aug-11	26	0.05	0.00005	0.000007	10.56	0.00010	0.00015	0.00023	0.00005	0.001	0.000066	0.0204	3.70	0.00962	0.025	0.000002	0.0115	0.00047	1.12
HC-6-27	23-Aug-11	27	0.05	0.00005	0.000005	11.60	0.00010	0.00017	0.00019	0.00005	0.001	0.000078	0.0199	4.01	0.01050	0.033	0.000002	0.0115	0.00055	1.18
HC-6-28	30-Aug-11	28	0.05	0.00005	0.000008	11.90	0.00010	0.00018	0.00020	0.00005	0.001	0.000064	0.0191	4.29	0.01031	0.026	0.000002	0.0113	0.00056	1.21
HC-6-29	06-Sep-11	29	0.05	0.00005	0.000011	12.20	0.00010	0.00018	0.00022	0.00005	0.002	0.000049	0.0184	4.57	0.01011	0.019	0.000002	0.0111	0.00057	1.23
HC-6-30	13-Sep-11	30	0.05	0.00005	0.000014	12.50	0.00010	0.00018	0.00023	0.00005	0.002	0.000035	0.0176	4.84	0.00992	0.011	0.000002	0.0109	0.00057	1.26
HC-6-31	20-Sep-11	31	0.05	0.00005	0.000017	12.80	0.00010	0.00018	0.00024	0.00005	0.002	0.000020	0.0168	5.12	0.00972	0.004	0.000002	0.0107	0.00058	1.28
HC-6-32	27-Sep-11	32	0.05	0.00005	0.000017	13.60	0.00010	0.00020	0.00027	0.00005	0.003	0.000031	0.0160	5.36	0.00999	0.005	0.000002	0.0104	0.00059	1.32
HC-6-33	04-Oct-11	33	0.05	0.00005	0.000018	14.40	0.00010	0.00021	0.00030	0.00005	0.003	0.000042	0.0152	5.61	0.01026	0.005	0.000002	0.0101	0.00061	1.36
HC-6-34	11-Oct-11	34	0.05	0.00005	0.000018	15.20	0.00010	0.00022	0.00033	0.00005	0.004	0.000053	0.0144	5.85	0.01053	0.006	0.000002	0.0098	0.00062	1.39
HC-6-35	18-Oct-11	35	0.05	0.00005	0.000018	16.00	0.00010	0.00023	0.00036	0.00005	0.004	0.000064	0.0136	6.09	0.01080	0.006	0.000002	0.0094	0.00063	1.43
HC-6-36	25-Oct-11	36	0.05	0.00005	0.000019	15.23	0.00010	0.00021	0.00032	0.00005	0.003	0.000052	0.0129	5.94	0.01039	0.007	0.000002	0.0094	0.00060	1.40
HC-6-37	01-Nov-11	37	0.05	0.00005	0.000021	14.45	0.00010	0.00019	0.00028	0.00005	0.003	0.000040	0.0122	5.80	0.00999	0.008	0.000002	0.0093	0.00057	1.37
HC-6-38	08-Nov-11	38	0.05	0.00005	0.000022	13.68	0.00010	0.00017	0.00024	0.00005	0.002	0.000028	0.0114	5.65	0.00958	0.008	0.000002	0.0093	0.00054	1.33
HC-6-39	15-Nov-11	39	0.05	0.00005	0.000023	12.90	0.00010	0.00016	0.00020	0.00005	0.001	0.000016	0.0107	5.50	0.00917	0.009	0.000002	0.0092	0.00051	1.30
HC-6-40	22-Nov-11	40	0.05	0.00005	0.000022	12.78	0.00010	0.00015	0.00023	0.00005	0.001	0.000016	0.0106	5.43	0.00848	0.008	0.000002	0.0091	0.00049	1.30
HC-6-41	29-Nov-11	41	0.05	0.00005	0.000020	12.65	0.00010	0.00015	0.00025	0.00005	0.001	0.000016	0.0104	5.35	0.00779	0.007	0.000002	0.0089	0.00047	1.30
HC-6-42	06-Dec-11	42	0.05	0.00005	0.000019	12.53	0.00010	0.00015	0.00028	0.00005	0.001	0.000016	0.0103	5.28	0.00709	0.006	0.000002	0.0088	0.00044	1.30
HC-6-43	13-Dec-11	43	0.05	0.00005	0.000017	12.40	0.00010	0.00015	0.00030	0.00005	0.001	0.000016	0.0101	5.20	0.00640	0.005	0.000002	0.0087	0.00042	1.30
HC-6-44	20-Dec-11	44	0.05	0.00005	0.000017	12.38	0.00010	0.00014	0.00030	0.00005	0.002	0.000018	0.0097	5.10	0.00595	0.004	0.000002	0.0085	0.00043	1.28
HC-6-45	27-Dec-11	45	0.05	0.00005	0.000017	12.35	0.00010	0.00013	0.00030	0.00005	0.002	0.000020	0.0093	5.00	0.00551	0.004	0.000002	0.0083	0.00044	1.26
HC-6-46	03-Jan-12	46	0.05	0.00005	0.000017	12.33	0.00010	0.00012	0.00030	0.00005	0.003	0.000022	0.0088	4.90	0.00506	0.003	0.000002	0.0081	0.00044	1.23
HC-6-47	10-Jan-12	47	0.05	0.00005	0.000017	12.30	0.00010	0.00011	0.00030	0.00005	0.003	0.000024	0.0084	4.80	0.00461	0.002	0.000002	0.0079	0.00045	1.21

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-6-48	17-Jan-12	48	0.05	0.00005	0.000017	12.50	0.00010	0.00011	0.00028	0.00005	0.003	0.000020	0.0083	4.99	0.00456	0.004	0.000002	0.0075	0.00044	1.23
HC-6-49	24-Jan-12	49	0.05	0.00005	0.000016	12.70	0.00010	0.00012	0.00026	0.00005	0.003	0.000016	0.0082	5.18	0.00450	0.005	0.000002	0.0071	0.00044	1.26
HC-6-50	31-Jan-12	50	0.05	0.00005	0.000016	12.90	0.00010	0.00012	0.00024	0.00005	0.002	0.000012	0.0081	5.37	0.00445	0.007	0.000002	0.0067	0.00043	1.28
HC-6-51	07-Feb-12	51	0.05	0.00005	0.000015	13.10	0.00010	0.00012	0.00022	0.00005	0.002	0.000008	0.0080	5.56	0.00439	0.008	0.000002	0.0063	0.00042	1.30
HC-6-52	14-Feb-12	52	0.05	0.00005	0.000016	12.83	0.00010	0.00011	0.00024	0.00005	0.002	0.000009	0.0079	5.48	0.00411	0.007	0.000002	0.0063	0.00040	1.30
HC-6-53	21-Feb-12	53	0.05	0.00005	0.000017	12.55	0.00010	0.00009	0.00026	0.00005	0.002	0.000011	0.0079	5.39	0.00383	0.006	0.000002	0.0064	0.00037	1.29
HC-6-54	28-Feb-12	54	0.05	0.00005	0.000017	12.28	0.00010	0.00008	0.00027	0.00005	0.001	0.000012	0.0078	5.31	0.00354	0.005	0.000002	0.0064	0.00035	1.29
HC-6-55	06-Mar-12	55	0.05	0.00005	0.000018	12.00	0.00010	0.00007	0.00029	0.00005	0.001	0.000013	0.0077	5.22	0.00326	0.004	0.000002	0.0065	0.00032	1.28
HC-6-56	13-Mar-12	56	0.05	0.00005	0.000016	11.60	0.00010	0.00007	0.00036	0.00005	0.002	0.000014	0.0074	5.02	0.00303	0.004	0.000002	0.0066	0.00034	1.23
HC-6-57	20-Mar-12	57	0.05	0.00005	0.000014	11.20	0.00010	0.00007	0.00042	0.00005	0.003	0.000014	0.0072	4.81	0.00279	0.004	0.000002	0.0067	0.00035	1.17
HC-6-58	27-Mar-12	58	0.05	0.00005	0.000012	10.80	0.00010	0.00007	0.00049	0.00005	0.004	0.000015	0.0069	4.61	0.00256	0.003	0.000002	0.0069	0.00037	1.12
HC-6-59	03-Apr-12	59	0.05	0.00005	0.000010	10.40	0.00010	0.00007	0.00055	0.00005	0.005	0.000015	0.0066	4.40	0.00232	0.003	0.000002	0.0070	0.00038	1.06
HC-6-60	10-Apr-12	60	0.05	0.00005	0.000011	10.20	0.00010	0.00008	0.00050	0.00005	0.004	0.000017	0.0064	4.39	0.00225	0.007	0.000002	0.0066	0.00039	1.05
HC-6-61	17-Apr-12	61	0.05	0.00005	0.000011	10.01	0.00010	0.00009	0.00045	0.00005	0.003	0.000019	0.0062	4.38	0.00218	0.010	0.000002	0.0061	0.00041	1.04
HC-6-62	24-Apr-12	62	0.05	0.00005	0.000012	9.81	0.00010	0.00010	0.00040	0.00005	0.002	0.000021	0.0060	4.37	0.00210	0.014	0.000002	0.0056	0.00042	1.02
HC-6-63	01-May-12	63	0.05	0.00005	0.000012	9.61	0.00010	0.00011	0.00035	0.00005	0.001	0.000023	0.0058	4.36	0.00203	0.018	0.000002	0.0052	0.00043	1.01
HC-6-64	08-May-12	64	0.05	0.00005	0.000011	9.76	0.00010	0.00010	0.00061	0.00005	0.002	0.000025	0.0058	4.39	0.00202	0.016	0.000002	0.0053	0.00048	1.00
HC-6-65	15-May-12	65	0.05	0.00005	0.000011	9.91	0.00010	0.00009	0.00087	0.00005	0.003	0.000026	0.0058	4.42	0.00200	0.014	0.000002	0.0055	0.00052	0.99
HC-6-66	22-May-12	66	0.05	0.00005	0.000010	10.05	0.00010	0.00008	0.00114	0.00005	0.003	0.000028	0.0059	4.44	0.00199	0.013	0.000002	0.0056	0.00056	0.98
HC-6-67	29-May-12	67	0.05	0.00005	0.000009	10.20	0.00010	0.00007	0.00140	0.00005	0.004	0.000030	0.0059	4.47	0.00197	0.011	0.000002	0.0057	0.00061	0.98
HC-6-68	05-Jun-12	68	0.05	0.00006	0.000010	10.40	0.00010	0.00007	0.00114	0.00005	0.003	0.000024	0.0060	4.53	0.00204	0.010	0.000002	0.0057	0.00053	1.01
HC-6-69	12-Jun-12	69	0.05	0.00006	0.000011	10.60	0.00010	0.00006	0.00088	0.00005	0.003	0.000018	0.0061	4.59	0.00212	0.010	0.000002	0.0056	0.00045	1.04
HC-6-70	19-Jun-12	70	0.05	0.00007	0.000012	10.80	0.00010	0.00006	0.00061	0.00005	0.002	0.000012	0.0062	4.64	0.00219	0.009	0.000002	0.0055	0.00037	1.08
HC-6-71	26-Jun-12	71	0.05	0.00007	0.000013	11.00	0.00010	0.00005	0.00035	0.00005	0.002	0.000006	0.0063	4.70	0.00226	0.009	0.000002	0.0055	0.00029	1.11
HC-6-72	03-Jul-12	72	0.05	0.00007	0.000013	11.68	0.00011	0.00005	0.00035	0.00005	0.002	0.000008	0.0064	4.95	0.00231	0.008	0.000002	0.0054	0.00029	1.13
HC-6-73	10-Jul-12	73	0.05	0.00006	0.000014	12.35	0.00011	0.00006	0.00035	0.00005	0.002	0.000011	0.0065	5.21	0.00237	0.006	0.000002	0.0053	0.00029	1.16
HC-6-74	17-Jul-12	74	0.05	0.00006	0.000015	13.03	0.00012	0.00006	0.00035	0.00005	0.002	0.000013	0.0067	5.46	0.00242	0.005	0.000002	0.0052	0.00029	1.18
HC-6-75	24-Jul-12	75	0.05	0.00005	0.000015	13.70	0.00012	0.00007	0.00036	0.00005	0.003	0.000016	0.0068	5.71	0.00247	0.003	0.000002	0.0051	0.00029	1.20
HC-6-76	31-Jul-12	76	0.05	0.00005	0.000016	13.18	0.00012	0.00006	0.00037	0.00005	0.003	0.000019	0.0065	5.59	0.00262	0.003	0.000002	0.0050	0.00030	1.19
HC-6-77	07-Aug-12	77	0.05	0.00005	0.000017	12.65	0.00011	0.00006	0.00038	0.00005	0.003	0.000022	0.0063	5.47	0.00277	0.003	0.000002	0.0049	0.00031	1.18
HC-6-78	14-Aug-12	78	0.05	0.00005	0.000018	12.13	0.00011	0.00005	0.00040	0.00005	0.003	0.000026	0.0060	5.34	0.00291	0.002	0.000002	0.0047	0.00031	1.16
HC-6-79	21-Aug-12	79	0.05	0.00005	0.000019	11.60	0.00010	0.00005	0.00041	0.00005	0.003	0.000029	0.0058	5.22	0.00306	0.002	0.000002	0.0046	0.00032	1.15
HC-6-80	28-Aug-12	80	0.05	0.00005	0.000025	11.90	0.00010	0.00005	0.00046	0.00005	0.004	0.000025	0.0057	5.41	0.00314	0.004	0.000002	0.0046	0.00034	1.11
HC-6-81	04-Sep-12	81	0.05	0.00005	0.000031	12.20	0.00010	0.00005	0.00050	0.00005	0.005	0.000020	0.0056	5.59	0.00323	0.007	0.000002	0.0045	0.00035	1.08
HC-6-82	11-Sep-12	82	0.05	0.00005	0.000037	12.50	0.00010	0.00006	0.00054	0.00005	0.005	0.000016	0.0055	5.78	0.00331	0.009	0.000002	0.0044	0.00036	1.04
HC-6-83	18-Sep-12	83	0.05	0.00005	0.000043	12.80	0.00010	0.00006	0.00059	0.00005	0.006	0.000011	0.0054	5.96	0.00339	0.012	0.000002	0.0044	0.00038	1.00
HC-6-84	25-Sep-12	84	0.05	0.00005	0.000038	12.25	0.00010	0.00005	0.00051	0.00005	0.005	0.000011	0.0053	5.73	0.00270	0.010	0.000002	0.0041	0.00034	0.99
HC-6-85	02-Oct-12	85	0.05	0.00005	0.000032	11.70	0.00010	0.00004	0.00043	0.00005	0.004	0.000011	0.0053	5.49	0.00201	0.009	0.000002	0.0039	0.00029	0.97
HC-6-86	09-Oct-12	86	0.05	0.00005	0.000027	11.15	0.00010	0.00004	0.00035	0.00005	0.002	0.000011	0.0052	5.26	0.00131	0.008	0.000002	0.0037	0.00025	0.96
HC-6-87	16-Oct-12	87	0.05	0.00005	0.000021	10.60	0.00010	0.00003	0.00027	0.00005	0.001	0.000011	0.0051	5.02	0.00062	0.007	0.000002	0.0035	0.00021	0.94
HC-6-88	23-Oct-12	88	0.05	0.00005	0.000027	10.85	0.00010	0.00003	0.00029	0.00005	0.001	0.000011	0.0050	5.07	0.00119	0.006	0.000002	0.0036	0.00023	0.95
HC-6-89	30-Oct-12	89	0.05	0.00005	0.000034	11.10	0.00010	0.00004	0.00031	0.00005	0.002	0.000012	0.0049	5.11	0.00176	0.005	0.000002	0.0037	0.00025	0.97
HC-6-90	06-Nov-12	90	0.05	0.00005	0.000040	11.35	0.00010	0.00005	0.00033	0.00005	0.002	0.000012	0.0047	5.16	0.00232	0.003	0.000002	0.0039	0.00027	0.98
HC-6-91	13-Nov-12	91	0.05	0.00005	0.000046	11.60	0.00010	0.00005	0.00035	0.00005	0.002	0.000012	0.0046	5.20	0.00289	0.002	0.000002	0.0040	0.00029	0.99
HC-6-92	20-Nov-12	92	0.05	0.00005	0.000039	11.83	0.00012	0.00005	0.00034	0.00005	0.002	0.000013	0.0048	5.40	0.00277	0.002	0.000002	0.0043	0.00031	1.03
HC-6-93	27-Nov-12	93	0.05	0.00005	0.000033	12.05	0.00013	0.00005	0.00033	0.00005	0.002	0.000014	0.0051	5.61	0.00265	0.002	0.000002	0.0045	0.00032	1.06
HC-6-94	04-Dec-12	94	0.05	0.00005	0.000026	12.28	0.00015	0.00006	0.00032	0.00005	0.002	0.000014	0.0053	5.81	0.00252	0.002	0.000002	0.0048	0.00033	1.10
HC-6-95	11-Dec-12	95	0.05	0.00005	0.000019	12.50	0.00016	0.00006	0.00031	0.00005	0.002	0.000015	0.0055	6.01	0.00240	0.002	0.000002	0.0050	0.00034	1.14
HC-6-96	18-Dec-12	96	0.05	0.00005	0.000019	12.23	0.00015	0.00005	0.00029	0.00005	0.002	0.000014	0.0052	5.86	0.00197	0.002	0.000002	0.0048	0.00032	1.11

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-6-97	25-Dec-12	97	0.05	0.00005	0.000020	11.95	0.00013	0.00004	0.00028	0.00005	0.002	0.000013	0.0049	5.72	0.00155	0.002	0.000002	0.0046	0.00030	1.07
HC-6-98	01-Jan-13	98	0.05	0.00005	0.000020	11.68	0.00012	0.00004	0.00026	0.00005	0.002	0.000011	0.0046	5.57	0.00112	0.002	0.000002	0.0045	0.00027	1.04
HC-6-99	08-Jan-13	99	0.05	0.00005	0.000020	11.40	0.00010	0.00003	0.00025	0.00005	0.002	0.000010	0.0043	5.42	0.00069	0.002	0.000002	0.0043	0.00025	1.00
HC-6-100	15-Jan-13	100	0.05	0.00005	0.000021	11.18	0.00010	0.00004	0.00027	0.00005	0.002	0.000015	0.0042	5.35	0.00105	0.004	0.000002	0.0042	0.00026	0.98
HC-6-101	22-Jan-13	101	0.05	0.00005	0.000022	10.95	0.00010	0.00004	0.00029	0.00005	0.003	0.000020	0.0042	5.27	0.00141	0.006	0.000002	0.0041	0.00027	0.96
HC-6-102	29-Jan-13	102	0.05	0.00005	0.000022	10.73	0.00010	0.00005	0.00031	0.00005	0.003	0.000025	0.0041	5.20	0.00176	0.008	0.000002	0.0040	0.00028	0.93
HC-6-103	05-Feb-13	103	0.05	0.00005	0.000023	10.50	0.00010	0.00006	0.00033	0.00005	0.004	0.000030	0.0040	5.12	0.00212	0.010	0.000002	0.0039	0.00029	0.91
HC-6-104	12-Feb-13	104	0.05	0.00005	0.000032	10.90	0.00010	0.00005	0.00036	0.00005	0.004	0.000028	0.0042	5.27	0.00224	0.008	0.000002	0.0039	0.00030	0.96
HC-6-105	19-Feb-13	105	0.05	0.00005	0.000042	11.30	0.00010	0.00005	0.00039	0.00005	0.004	0.000027	0.0043	5.42	0.00235	0.006	0.000002	0.0039	0.00031	1.00
HC-6-106	26-Feb-13	106	0.05	0.00005	0.000051	11.70	0.00010	0.00004	0.00042	0.00005	0.004	0.000025	0.0044	5.57	0.00247	0.004	0.000002	0.0040	0.00032	1.05
HC-6-107	05-Mar-13	107	0.05	0.00005	0.000060	12.10	0.00010	0.00004	0.00045	0.00005	0.004	0.000023	0.0046	5.72	0.00258	0.002	0.000002	0.0040	0.00033	1.09
HC-6-108	12-Mar-13	108	0.05	0.00005	0.000049	11.68	0.00010	0.00004	0.00044	0.00005	0.004	0.000020	0.0043	5.49	0.00233	0.002	0.000002	0.0040	0.00030	1.04
HC-6-109	19-Mar-13	109	0.05	0.00005	0.000038	11.25	0.00010	0.00004	0.00043	0.00005	0.004	0.000016	0.0041	5.25	0.00208	0.002	0.000002	0.0039	0.00028	0.99
HC-6-110	26-Mar-13	110	0.05	0.00005	0.000027	10.83	0.00010	0.00003	0.00042	0.00005	0.005	0.000013	0.0039	5.02	0.00182	0.002	0.000002	0.0039	0.00026	0.94
HC-6-111	02-Apr-13	111	0.05	0.00005	0.000016	10.40	0.00010	0.00003	0.00040	0.00005	0.005	0.000009	0.0037	4.78	0.00157	0.002	0.000002	0.0038	0.00023	0.89
HC-6-112	09-Apr-13	112	0.05	0.00005	0.000018	10.78	0.00010	0.00004	0.00036	0.00005	0.004	0.000022	0.0038	4.99	0.00175	0.002	0.000002	0.0038	0.00025	0.91
HC-6-113	16-Apr-13	113	0.05	0.00005	0.000021	11.15	0.00010	0.00004	0.00032	0.00005	0.004	0.000036	0.0039	5.20	0.00193	0.002	0.000002	0.0038	0.00027	0.94
HC-6-114	23-Apr-13	114	0.05	0.00005	0.000023	11.53	0.00010	0.00004	0.00028	0.00005	0.003	0.000049	0.0041	5.41	0.00210	0.002	0.000002	0.0037	0.00029	0.96
HC-6-115	30-Apr-13	115	0.05	0.00005	0.000025	11.90	0.00010	0.00005	0.00024	0.00005	0.002	0.000062	0.0042	5.62	0.00228	0.002	0.000002	0.0037	0.00031	0.98
HC-6-116	07-May-13	116	0.05	0.00005	0.000024	11.73	0.00010	0.00004	0.00021	0.00005	0.002	0.000048	0.0041	5.54	0.00220	0.002	0.000002	0.0037	0.00029	0.97
HC-6-117	14-May-13	117	0.05	0.00005	0.000023	11.55	0.00011	0.00004	0.00019	0.00005	0.002	0.000034	0.0040	5.45	0.00213	0.002	0.000002	0.0036	0.00027	0.97
HC-6-118	21-May-13	118	0.05	0.00005	0.000021	11.38	0.00011	0.00004	0.00017	0.00005	0.002	0.000019	0.0040	5.37	0.00205	0.002	0.000002	0.0035	0.00026	0.96
HC-6-119	28-May-13	119	0.05	0.00005	0.000020	11.20	0.00011	0.00003	0.00014	0.00005	0.001	0.000005	0.0039	5.28	0.00197	0.002	0.000002	0.0035	0.00024	0.96
HC-6-120	04-Jun-13	120	0.05	0.00005	0.000020	11.28	0.00012	0.00003	0.00014	0.00005	0.001	0.000005	0.0039	5.33	0.00190	0.006	0.000002	0.0035	0.00025	0.96
HC-6-121	11-Jun-13	121	0.05	0.00005	0.000020	11.35	0.00013	0.00003	0.00014	0.00005	0.001	0.000005	0.0038	5.38	0.00183	0.010	0.000002	0.0036	0.00026	0.96
HC-6-122	18-Jun-13	122	0.05	0.00005	0.000019	11.43	0.00014	0.00003	0.00014	0.00005	0.001	0.000005	0.0038	5.43	0.00176	0.015	0.000002	0.0036	0.00027	0.96
HC-6-123	25-Jun-13	123	0.05	0.00005	0.000019	11.50	0.00015	0.00003	0.00014	0.00005	0.002	0.000005	0.0038	5.48	0.00169	0.019	0.000002	0.0036	0.00028	0.96
HC-6-124	02-Jul-13	124	0.05	0.00005	0.000018	11.50	0.00015	0.00003	0.00015	0.00005	0.002	0.000005	0.0038	5.53	0.00182	0.015	0.000002	0.0036	0.00027	0.95
HC-6-125	09-Jul-13	125	0.05	0.00005	0.000017	11.50	0.00016	0.00003	0.00017	0.00005	0.003	0.000006	0.0039	5.57	0.00194	0.011	0.000002	0.0036	0.00027	0.94
HC-6-126	16-Jul-13	126	0.05	0.00005	0.000016	11.50	0.00016	0.00004	0.00019	0.00005	0.003	0.000006	0.0039	5.62	0.00207	0.006	0.000002	0.0036	0.00026	0.94
HC-6-127	23-Jul-13	127	0.05	0.00005	0.000015	11.50	0.00016	0.00004	0.00021	0.00005	0.004	0.000006	0.0039	5.66	0.00219	0.002	0.000002	0.0037	0.00026	0.93
HC-6-128	30-Jul-13	128	0.05	0.00005	0.000020	11.40	0.00015	0.00004	0.00029	0.00005	0.003	0.000006	0.0039	5.73	0.00225	0.003	0.000002	0.0038	0.00026	0.91
HC-6-129	06-Aug-13	129	0.05	0.00005	0.000025	11.30	0.00013	0.00004	0.00037	0.00005	0.003	0.000006	0.0039	5.80	0.00230	0.003	0.000002	0.0039	0.00026	0.90
HC-6-130	13-Aug-13	130	0.05	0.00005	0.000029	11.20	0.00012	0.00004	0.00045	0.00005	0.002	0.000005	0.0038	5.86	0.00236	0.003	0.000002	0.0040	0.00026	0.88
HC-6-131	20-Aug-13	131	0.05	0.00005	0.000034	11.10	0.00010	0.00004	0.00054	0.00005	0.001	0.000005	0.0038	5.93	0.00241	0.003	0.000002	0.0041	0.00026	0.86
HC-6-132	27-Aug-13	132	0.05	0.00005	0.000029	11.03	0.00010	0.00004	0.00047	0.00005	0.001	0.000005	0.0037	5.73	0.00228	0.004	0.000002	0.0039	0.00027	0.85
HC-6-133	03-Sep-13	133	0.05	0.00005	0.000025	10.95	0.00010	0.00004	0.00040	0.00005	0.001	0.000005	0.0036	5.53	0.00215	0.005	0.000002	0.0037	0.00029	0.84
HC-6-134	10-Sep-13	134	0.05	0.00005	0.000020	10.88	0.00010	0.00004	0.00034	0.00005	0.001	0.000005	0.0035	5.32	0.00201	0.006	0.000002	0.0035	0.00030	0.82
HC-6-135	17-Sep-13	135	0.05	0.00005	0.000015	10.80	0.00010	0.00004	0.00027	0.00005	0.001	0.000005	0.0035	5.12	0.00188	0.007	0.000002	0.0033	0.00031	0.81
HC-6-136	24-Sep-13	136	0.05	0.00005	0.000021	11.43	0.00010	0.00004	0.00024	0.00005	0.001	0.000005	0.0036	5.34	0.00181	0.006	0.000002	0.0032	0.00030	0.84
HC-6-137	01-Oct-13	137	0.05	0.00005	0.000027	12.05	0.00010	0.00003	0.00022	0.00005	0.001	0.000005	0.0037	5.56	0.00174	0.005	0.000002	0.0032	0.00029	0.88
HC-6-138	08-Oct-13	138	0.05	0.00005	0.000032	12.68	0.00010	0.00003	0.00019	0.00005	0.001	0.000005	0.0038	5.78	0.00166	0.003	0.000002	0.0032	0.00028	0.91
HC-6-139	15-Oct-13	139	0.05	0.00005	0.000038	13.30	0.00010	0.00003	0.00016	0.00005	0.001	0.000005	0.0039	6.00	0.00159	0.002	0.000002	0.0032	0.00027	0.95
HC-6-140	22-Oct-13	140	0.05	0.00005	0.000033	13.23	0.00010	0.00003	0.00018	0.00005	0.001	0.000005	0.0037	5.96	0.00159	0.003	0.000002	0.0033	0.00036	0.94
HC-6-141	29-Oct-13	141	0.05	0.00005	0.000027	13.15	0.00010	0.00003	0.00021	0.00005	0.001	0.000006	0.0036	5.92	0.00160	0.003	0.000002	0.0033	0.00044	0.93
HC-6-142	05-Nov-13	142	0.05	0.00005	0.000022	13.08	0.00010	0.00003	0.00023	0.00005	0.001	0.000006	0.0035	5.88	0.00160	0.004	0.000002	0.0034	0.00053	0.92
HC-6-143	12-Nov-13	143	0.05	0.00005	0.000016	13.00	0.00010	0.00004	0.00026	0.00005	0.001	0.000006	0.0033	5.84	0.00160	0.005	0.000002	0.0034	0.00061	0.91
HC-6-144	19-Nov-13	144	0.05	0.00005	0.000017	12.78	0.00010	0.00003	0.00032	0.00005	0.001	0.000006	0.0034	5.85	0.00166	0.006	0.000002	0.0033	0.00052	0.91
HC-6-145	26-Nov-13	145	0.05	0.00005	0.000018	12.55	0.00010	0.00003	0.00037	0.00005	0.001	0.000006	0.0035	5.86	0.00171	0.007	0.000002	0.0033	0.00043	0.91

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-6-146	03-Dec-13	146	0.05	0.00005	0.000019	12.33	0.00010	0.00003	0.00043	0.00005	0.001	0.000005	0.0036	5.86	0.00177	0.008	0.000002	0.0032	0.00035	0.91
HC-6-147	10-Dec-13	147	0.05	0.00005	0.000020	12.10	0.00010	0.00003	0.00049	0.00005	0.001	0.000005	0.0037	5.87	0.00182	0.009	0.000002	0.0032	0.00026	0.92
HC-6-148	17-Dec-13	148	0.05	0.00005	0.000022	11.85	0.00010	0.00004	0.00087	0.00005	0.001	0.000010	0.0036	5.78	0.00186	0.010	0.000002	0.0032	0.00030	0.89
HC-6-149	24-Dec-13	149	0.05	0.00005	0.000023	11.60	0.00010	0.00004	0.00125	0.00005	0.001	0.000014	0.0036	5.69	0.00190	0.010	0.000002	0.0032	0.00035	0.87
HC-6-150	31-Dec-13	150	0.05	0.00005	0.000025	11.35	0.00010	0.00004	0.00163	0.00005	0.001	0.000019	0.0036	5.60	0.00194	0.010	0.000002	0.0033	0.00039	0.85
HC-6-151	07-Jan-14	151	0.05	0.00005	0.000026	11.10	0.00010	0.00004	0.00201	0.00005	0.001	0.000023	0.0036	5.51	0.00198	0.010	0.000002	0.0033	0.00043	0.82
HC-6-152	14-Jan-14	152	0.05	0.00005	0.000025	11.30	0.00010	0.00004	0.00155	0.00005	0.001	0.000019	0.0035	5.63	0.00206	0.009	0.000002	0.0032	0.00038	0.82
HC-6-153	21-Jan-14	153	0.05	0.00005	0.000024	11.50	0.00010	0.00004	0.00109	0.00005	0.001	0.000014	0.0034	5.75	0.00214	0.008	0.000002	0.0031	0.00034	0.83
HC-6-154	28-Jan-14	154	0.05	0.00005	0.000023	11.70	0.00010	0.00004	0.00063	0.00005	0.001	0.000010	0.0033	5.87	0.00222	0.006	0.000002	0.0030	0.00029	0.83
HC-6-155	04-Feb-14	155	0.05	0.00005	0.000022	11.90	0.00010	0.00004	0.00018	0.00005	0.002	0.000005	0.0033	5.99	0.00230	0.005	0.000002	0.0029	0.00025	0.84
HC-6-156	11-Feb-14	156	0.05	0.00005	0.000022	11.58	0.00010	0.00004	0.00018	0.00005	0.001	0.000005	0.0032	5.88	0.00238	0.006	0.000002	0.0030	0.00025	0.81
HC-6-157	18-Feb-14	157	0.05	0.00005	0.000023	11.25	0.00010	0.00004	0.00018	0.00005	0.001	0.000005	0.0031	5.77	0.00246	0.006	0.000002	0.0031	0.00025	0.79
HC-6-158	25-Feb-14	158	0.05	0.00005	0.000023	10.93	0.00010	0.00004	0.00019	0.00005	0.001	0.000005	0.0030	5.65	0.00254	0.007	0.000002	0.0031	0.00026	0.76
HC-6-159	04-Mar-14	159	0.05	0.00005	0.000023	10.60	0.00010	0.00004	0.00019	0.00005	0.001	0.000005	0.0029	5.54	0.00262	0.008	0.000002	0.0032	0.00026	0.74
HC-6-160	11-Mar-14	160	0.05	0.00005	0.000022	10.90	0.00010	0.00004	0.00018	0.00005	0.001	0.000005	0.0029	5.53	0.00242	0.007	0.000002	0.0031	0.00025	0.75
HC-6-161	18-Mar-14	161	0.05	0.00005	0.000020	11.20	0.00010	0.00004	0.00018	0.00005	0.001	0.000005	0.0029	5.52	0.00221	0.005	0.000002	0.0030	0.00024	0.77
HC-6-162	25-Mar-14	162	0.05	0.00005	0.000019	11.50	0.00010	0.00004	0.00017	0.00005	0.001	0.000005	0.0029	5.50	0.00201	0.004	0.000002	0.0029	0.00023	0.78
HC-6-163	01-Apr-14	163	0.05	0.00005	0.000017	11.80	0.00010	0.00003	0.00017	0.00005	0.001	0.000005	0.0029	5.49	0.00180	0.003	0.000002	0.0027	0.00023	0.80
HC-6-164	08-Apr-14	164	0.05	0.00005	0.000019	11.93	0.00010	0.00004	0.00016	0.00005	0.001	0.000005	0.0029	5.64	0.00200	0.003	0.000002	0.0028	0.00027	0.81
HC-6-165	15-Apr-14	165	0.05	0.00005	0.000020	12.05	0.00010	0.00004	0.00016	0.00005	0.001	0.000005	0.0030	5.78	0.00220	0.004	0.000002	0.0028	0.00031	0.83
HC-6-166	22-Apr-14	166	0.05	0.00005	0.000022	12.18	0.00010	0.00004	0.00015	0.00005	0.001	0.000005	0.0030	5.93	0.00240	0.004	0.000002	0.0028	0.00035	0.84
HC-6-167	29-Apr-14	167	0.05	0.00005	0.000023	12.30	0.00010	0.00004	0.00015	0.00005	0.001	0.000005	0.0030	6.07	0.00260	0.004	0.000002	0.0028	0.00039	0.85
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00005</b>	<b>0.000020</b>	<b>10.47</b>	<b>0.00011</b>	<b>0.00007</b>	<b>0.00047</b>	<b>0.00005</b>	<b>0.003</b>	<b>0.000023</b>	<b>0.0115</b>	<b>4.69</b>	<b>0.00318</b>	<b>0.007</b>	<b>0.000002</b>	<b>0.0074</b>	<b>0.00033</b>	<b>0.98</b>
<b>HC7 Hasler Mudstone</b>																				
HC-7-0	15-Feb-11	0	0.12	0.00011	0.000026	0.22	0.00080	0.00033	0.00096	0.00013	0.451	0.001330	0.0830	0.15	0.00290	0.213	0.000010	0.0238	0.00126	0.35
HC-7-1	22-Feb-11	1	0.11	0.00005	0.000069	0.23	0.00030	0.00007	0.00096	0.00005	0.022	0.000161	0.1730	0.07	0.00037	0.084	0.000020	0.1380	0.00035	0.39
HC-7-2	01-Mar-11	2	0.09	0.00005	0.000032	0.19	0.00010	0.00006	0.00051	0.00005	0.015	0.000081	0.1440	0.06	0.00017	0.055	0.000020	0.0630	0.00032	0.25
HC-7-3	08-Mar-11	3	0.10	0.00005	0.000005	0.19	0.00020	0.00007	0.00071	0.00005	0.017	0.000089	0.1150	0.06	0.00028	0.043	0.000002	0.0359	0.00026	0.22
HC-7-4	15-Mar-11	4	0.11	0.00005	0.000007	0.21	0.00020	0.00008	0.00062	0.00005	0.026	0.000118	0.1120	0.07	0.00028	0.100	0.000020	0.0311	0.00036	0.24
HC-7-5	22-Mar-11	5	0.09	0.00005	0.000005	0.30	0.00010	0.00008	0.00075	0.00005	0.017	0.000139	0.0939	0.08	0.00022	0.039	0.000020	0.0237	0.00027	0.22
HC-7-6	29-Mar-11	6	0.08	0.00005	0.000005	0.25	0.00010	0.00006	0.00051	0.00005	0.016	0.000077	0.0847	0.07	0.00024	0.023	0.000020	0.0184	0.00026	0.19
HC-7-7	05-Apr-11	7	0.07	0.00005	0.000005	0.24	0.00010	0.00007	0.00052	0.00005	0.013	0.000102	0.0783	0.07	0.00024	0.025	0.000002	0.0097	0.00024	0.18
HC-7-8	12-Apr-11	8	0.08	0.00001	0.000050	0.08	0.00010	0.00013	0.00064	0.00005	0.027	0.000149	0.0809	0.05	0.00022	0.040	0.000003	0.0085	0.00042	0.18
HC-7-9	19-Apr-11	9	0.06	0.00005	0.000005	0.21	0.00010	0.00007	0.00042	0.00005	0.020	0.000082	0.0720	0.06	0.00026	0.021	0.000002	0.0155	0.00022	0.17
HC-7-10	26-Apr-11	10	0.07	0.00005	0.000006	0.18	0.00010	0.00007	0.00045	0.00005	0.019	0.000098	0.0605	0.05	0.00016	0.024	0.000002	0.0145	0.00020	0.17
HC-7-11	03-May-11	11	0.06	0.00005	0.000005	0.16	0.00010	0.00011	0.00065	0.00005	0.032	0.000147	0.0602	0.05	0.00039	0.028	0.000002	0.0139	0.00035	0.15
HC-7-12	10-May-11	12	0.07	0.00005	0.000005	0.13	0.00010	0.00007	0.00057	0.00005	0.020	0.000087	0.0589	0.05	0.00017	0.026	0.000002	0.0115	0.00026	0.14
HC-7-13	17-May-11	13	0.07	0.00005	0.000015	0.13	0.00010	0.00005	0.00051	0.00005	0.017	0.000066	0.0621	0.05	0.00013	0.030	0.000002	0.0110	0.00015	0.18
HC-7-14	24-May-11	14	0.07	0.00005	0.000007	0.15	0.00020	0.00006	0.00057	0.00005	0.024	0.000077	0.0588	0.05	0.00014	0.021	0.000002	0.0115	0.00019	0.16
HC-7-15	31-May-11	15	0.07	0.00005	0.000005	0.15	0.00010	0.00007	0.00059	0.00005	0.023	0.000082	0.0565	0.05	0.00017	0.028	0.000002	0.0116	0.00022	0.15
HC-7-16	07-Jun-11	16	0.06	0.00005	0.000005	0.08	0.00020	0.00009	0.00062	0.00005	0.030	0.000204	0.0540	0.05	0.00019	0.011	0.000002	0.0101	0.00026	0.16
HC-7-17	14-Jun-11	17	0.06	0.00005	0.000005	0.18	0.00010	0.00003	0.00056	0.00005	0.009	0.000047	0.0531	0.05	0.00011	0.010	0.000002	0.0109	0.00008	0.16
HC-7-18	21-Jun-11	18	0.06	0.00005	0.000010	0.23	0.00010	0.00007	0.00072	0.00005	0.028	0.000074	0.0619	0.07	0.00016	0.024	0.000002	0.0085	0.00022	0.20
HC-7-19	28-Jun-11	19	0.05	0.00005	0.000008	0.21	0.00010	0.00007	0.00111	0.00005	0.021	0.000091	0.0579	0.06	0.00018	0.069	0.000002	0.0071	0.00040	0.20
HC-7-20	05-Jul-11	20	0.05	0.00005	0.000007	0.23	0.00010	0.00007	0.00097	0.00005	0.019	0.000089	0.0602	0.07	0.00024	0.058	0.000002	0.0063	0.00034	0.20
HC-7-21	12-Jul-11	21	0.05	0.00005	0.000007	0.25	0.00010	0.00006	0.00083	0.00005	0.017	0.000088	0.0626	0.09	0.00030	0.048	0.000002	0.0055	0.00028	0.20
HC-7-22	19-Jul-11	22	0.05	0.00005	0.000006	0.26	0.00010	0.00006	0.00068	0.00005	0.014	0.000086	0.0649	0.10	0.00035	0.037	0.000002	0.0047	0.00022	0.20
HC-7-23	26-Jul-11	23	0.05	0.00005	0.000005	0.28	0.00010	0.00005	0.00054	0.00005	0.012	0.000084	0.0672	0.11	0.00041	0.026	0.000002	0.0040	0.00016	0.20
HC-7-24	02-Aug-11	24	0.05	0.00005	0.000005	0.29	0.00010	0.00005	0.00050	0.00005	0.013	0.000075	0.0655	0.12	0.00043	0.028	0.000003	0.0037	0.00018	0.21

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-7-25	09-Aug-11	25	0.05	0.00005	0.000005	0.30	0.00010	0.00005	0.00046	0.00005	0.014	0.000066	0.0638	0.13	0.00045	0.031	0.000003	0.0035	0.00020	0.21
HC-7-26	16-Aug-11	26	0.05	0.00005	0.000005	0.31	0.00010	0.00005	0.00042	0.00005	0.014	0.000057	0.0620	0.13	0.00047	0.033	0.000004	0.0032	0.00021	0.22
HC-7-27	23-Aug-11	27	0.05	0.00005	0.000005	0.32	0.00010	0.00005	0.00038	0.00005	0.015	0.000048	0.0603	0.14	0.00049	0.035	0.000004	0.0029	0.00023	0.22
HC-7-28	30-Aug-11	28	0.05	0.00005	0.000005	0.41	0.00010	0.00006	0.00039	0.00005	0.013	0.000042	0.0610	0.20	0.00092	0.028	0.000004	0.0026	0.00023	0.24
HC-7-29	06-Sep-11	29	0.05	0.00005	0.000005	0.50	0.00010	0.00007	0.00039	0.00005	0.011	0.000036	0.0616	0.25	0.00135	0.021	0.000003	0.0022	0.00023	0.25
HC-7-30	13-Sep-11	30	0.05	0.00005	0.000005	0.59	0.00010	0.00008	0.00040	0.00005	0.008	0.000029	0.0623	0.31	0.00178	0.013	0.000003	0.0018	0.00023	0.27
HC-7-31	20-Sep-11	31	0.05	0.00005	0.000005	0.68	0.00010	0.00009	0.00040	0.00005	0.006	0.000023	0.0629	0.36	0.00221	0.006	0.000002	0.0014	0.00023	0.28
HC-7-32	27-Sep-11	32	0.05	0.00005	0.000006	0.75	0.00010	0.00009	0.00047	0.00005	0.007	0.000027	0.0604	0.40	0.00231	0.007	0.000002	0.0013	0.00025	0.31
HC-7-33	04-Oct-11	33	0.05	0.00005	0.000007	0.81	0.00010	0.00008	0.00053	0.00005	0.009	0.000032	0.0580	0.43	0.00242	0.007	0.000002	0.0011	0.00027	0.35
HC-7-34	11-Oct-11	34	0.05	0.00005	0.000007	0.88	0.00010	0.00008	0.00060	0.00005	0.010	0.000036	0.0555	0.47	0.00252	0.008	0.000002	0.0010	0.00029	0.38
HC-7-35	18-Oct-11	35	0.05	0.00005	0.000008	0.94	0.00010	0.00008	0.00066	0.00005	0.011	0.000040	0.0530	0.50	0.00262	0.008	0.000002	0.0008	0.00031	0.41
HC-7-36	25-Oct-11	36	0.05	0.00005	0.000009	1.01	0.00010	0.00007	0.00061	0.00005	0.012	0.000043	0.0500	0.56	0.00242	0.009	0.000002	0.0008	0.00033	0.41
HC-7-37	01-Nov-11	37	0.05	0.00005	0.000009	1.09	0.00010	0.00006	0.00056	0.00005	0.013	0.000047	0.0470	0.62	0.00223	0.011	0.000002	0.0008	0.00036	0.41
HC-7-38	08-Nov-11	38	0.05	0.00005	0.000010	1.16	0.00010	0.00006	0.00050	0.00005	0.013	0.000050	0.0440	0.68	0.00203	0.012	0.000002	0.0007	0.00038	0.41
HC-7-39	15-Nov-11	39	0.05	0.00005	0.000010	1.23	0.00010	0.00005	0.00045	0.00005	0.014	0.000053	0.0410	0.74	0.00183	0.013	0.000002	0.0007	0.00040	0.41
HC-7-40	22-Nov-11	40	0.05	0.00005	0.000010	1.43	0.00010	0.00006	0.00047	0.00005	0.015	0.000051	0.0398	0.83	0.00224	0.012	0.000002	0.0007	0.00037	0.43
HC-7-41	29-Nov-11	41	0.05	0.00005	0.000009	1.63	0.00010	0.00007	0.00048	0.00005	0.016	0.000048	0.0385	0.92	0.00265	0.011	0.000002	0.0008	0.00035	0.44
HC-7-42	06-Dec-11	42	0.05	0.00005	0.000009	1.82	0.00010	0.00008	0.00050	0.00005	0.017	0.000046	0.0373	1.01	0.00306	0.009	0.000002	0.0008	0.00032	0.46
HC-7-43	13-Dec-11	43	0.05	0.00005	0.000008	2.02	0.00010	0.00010	0.00051	0.00005	0.018	0.000043	0.0360	1.10	0.00347	0.008	0.000002	0.0008	0.00029	0.47
HC-7-44	20-Dec-11	44	0.05	0.00005	0.000008	2.36	0.00010	0.00008	0.00048	0.00005	0.015	0.000037	0.0351	1.27	0.00313	0.007	0.000002	0.0008	0.00028	0.49
HC-7-45	27-Dec-11	45	0.05	0.00005	0.000008	2.70	0.00010	0.00007	0.00045	0.00005	0.012	0.000031	0.0341	1.44	0.00278	0.006	0.000002	0.0008	0.00027	0.50
HC-7-46	03-Jan-12	46	0.05	0.00005	0.000007	3.03	0.00010	0.00006	0.00042	0.00005	0.008	0.000024	0.0332	1.60	0.00244	0.004	0.000002	0.0007	0.00025	0.52
HC-7-47	10-Jan-12	47	0.05	0.00005	0.000007	3.37	0.00010	0.00004	0.00039	0.00005	0.005	0.000018	0.0322	1.77	0.00209	0.003	0.000002	0.0007	0.00024	0.53
HC-7-48	17-Jan-12	48	0.05	0.00005	0.000009	3.99	0.00010	0.00005	0.00038	0.00005	0.004	0.000016	0.0322	2.19	0.00281	0.004	0.000002	0.0006	0.00034	0.56
HC-7-49	24-Jan-12	49	0.05	0.00005	0.000010	4.61	0.00010	0.00006	0.00037	0.00005	0.004	0.000013	0.0322	2.62	0.00354	0.005	0.000002	0.0005	0.00044	0.59
HC-7-50	31-Jan-12	50	0.05	0.00005	0.000012	5.22	0.00010	0.00008	0.00036	0.00005	0.003	0.000011	0.0321	3.04	0.00426	0.006	0.000002	0.0005	0.00054	0.62
HC-7-51	07-Feb-12	51	0.05	0.00005	0.000013	5.84	0.00010	0.00009	0.00035	0.00005	0.002	0.000008	0.0321	3.46	0.00498	0.007	0.000002	0.0004	0.00064	0.65
HC-7-52	14-Feb-12	52	0.05	0.00005	0.000014	6.13	0.00010	0.00008	0.00033	0.00005	0.002	0.000010	0.0319	3.56	0.00499	0.006	0.000002	0.0004	0.00067	0.68
HC-7-53	21-Feb-12	53	0.05	0.00005	0.000014	6.41	0.00010	0.00008	0.00032	0.00005	0.003	0.000011	0.0317	3.65	0.00500	0.005	0.000002	0.0003	0.00069	0.70
HC-7-54	28-Feb-12	54	0.05	0.00005	0.000015	6.70	0.00010	0.00007	0.00030	0.00005	0.003	0.000013	0.0315	3.75	0.00501	0.004	0.000002	0.0003	0.00072	0.73
HC-7-55	06-Mar-12	55	0.05	0.00005	0.000015	6.98	0.00010	0.00006	0.00028	0.00005	0.003	0.000014	0.0313	3.84	0.00502	0.003	0.000002	0.0003	0.00074	0.75
HC-7-56	13-Mar-12	56	0.05	0.00005	0.000015	6.88	0.00010	0.00006	0.00034	0.00005	0.004	0.000023	0.0298	3.87	0.00436	0.003	0.000002	0.0003	0.00071	0.74
HC-7-57	20-Mar-12	57	0.05	0.00005	0.000016	6.79	0.00010	0.00005	0.00041	0.00005	0.004	0.000031	0.0284	3.90	0.00369	0.004	0.000002	0.0003	0.00068	0.72
HC-7-58	27-Mar-12	58	0.05	0.00005	0.000016	6.69	0.00010	0.00005	0.00047	0.00005	0.005	0.000040	0.0269	3.93	0.00303	0.004	0.000002	0.0003	0.00064	0.71
HC-7-59	03-Apr-12	59	0.05	0.00005	0.000016	6.59	0.00010	0.00005	0.00053	0.00005	0.005	0.000048	0.0254	3.96	0.00236	0.004	0.000002	0.0003	0.00061	0.69
HC-7-60	10-Apr-12	60	0.05	0.00005	0.000016	6.93	0.00010	0.00004	0.00056	0.00005	0.005	0.000043	0.0250	4.15	0.00205	0.005	0.000002	0.0003	0.00061	0.72
HC-7-61	17-Apr-12	61	0.05	0.00005	0.000015	7.28	0.00010	0.00004	0.00058	0.00005	0.005	0.000037	0.0247	4.34	0.00175	0.007	0.000002	0.0003	0.00060	0.75
HC-7-62	24-Apr-12	62	0.05	0.00005	0.000015	7.62	0.00010	0.00004	0.00061	0.00005	0.005	0.000032	0.0243	4.53	0.00144	0.008	0.000002	0.0003	0.00060	0.78
HC-7-63	01-May-12	63	0.05	0.00005	0.000014	7.96	0.00010	0.00004	0.00063	0.00005	0.005	0.000026	0.0239	4.72	0.00113	0.009	0.000002	0.0003	0.00060	0.81
HC-7-64	08-May-12	64	0.05	0.00005	0.000013	8.08	0.00010	0.00004	0.00055	0.00005	0.005	0.000024	0.0234	4.82	0.00131	0.010	0.000002	0.0003	0.00063	0.80
HC-7-65	15-May-12	65	0.05	0.00005	0.000012	8.21	0.00010	0.00004	0.00046	0.00005	0.004	0.000021	0.0229	4.92	0.00149	0.010	0.000002	0.0002	0.00066	0.80
HC-7-66	22-May-12	66	0.05	0.00005	0.000011	8.33	0.00010	0.00004	0.00037	0.00005	0.004	0.000019	0.0224	5.01	0.00166	0.010	0.000002	0.0002	0.00070	0.79
HC-7-67	29-May-12	67	0.05	0.00005	0.000010	8.45	0.00010	0.00004	0.00028	0.00005	0.003	0.000016	0.0219	5.11	0.00184	0.010	0.000003	0.0002	0.00073	0.79
HC-7-68	05-Jun-12	68	0.05	0.00005	0.000012	8.43	0.00010	0.00003	0.00029	0.00005	0.003	0.000017	0.0217	5.17	0.00188	0.010	0.000002	0.0002	0.00073	0.80
HC-7-69	12-Jun-12	69	0.05	0.00005	0.000014	8.42	0.00010	0.00003	0.00031	0.00005	0.003	0.000018	0.0215	5.24	0.00192	0.011	0.000002	0.0002	0.00072	0.81
HC-7-70	19-Jun-12	70	0.05	0.00005	0.000017	8.40	0.00010	0.00003	0.00032	0.00005	0.003	0.000019	0.0212	5.30	0.00196	0.011	0.000002	0.0002	0.00072	0.82
HC-7-71	26-Jun-12	71	0.05	0.00005	0.000019	8.38	0.00010	0.00003	0.00033	0.00005	0.002	0.000019	0.0210	5.36	0.00200	0.011	0.000002	0.0002	0.00072	0.83
HC-7-72	03-Jul-12	72	0.05	0.00005	0.000022	9.09	0.00010	0.00003	0.00051	0.00005	0.003	0.000039	0.0209	5.79	0.00264	0.010	0.000002	0.0002	0.00084	0.86
HC-7-73	10-Jul-12	73	0.05	0.00005	0.000024	9.79	0.00010	0.00004	0.00068	0.00005	0.004	0.000058	0.0207	6.22	0.00329	0.008	0.000002	0.0002	0.00096	0.89



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-7-74	17-Jul-12	74	0.05	0.00005	0.000027	10.50	0.00010	0.00004	0.00086	0.00005	0.005	0.000078	0.0206	6.64	0.00393	0.007	0.000002	0.0001	0.00108	0.91
HC-7-75	24-Jul-12	75	0.05	0.00005	0.000030	11.20	0.00010	0.00005	0.00104	0.00005	0.006	0.000097	0.0204	7.07	0.00457	0.005	0.000002	0.0001	0.00120	0.94
HC-7-76	31-Jul-12	76	0.05	0.00005	0.000042	10.95	0.00010	0.00007	0.00088	0.00005	0.005	0.000076	0.0194	6.93	0.00710	0.004	0.000002	0.0001	0.00130	0.95
HC-7-77	07-Aug-12	77	0.05	0.00005	0.000054	10.70	0.00010	0.00008	0.00072	0.00005	0.004	0.000056	0.0183	6.79	0.00964	0.004	0.000002	0.0001	0.00139	0.96
HC-7-78	14-Aug-12	78	0.05	0.00005	0.000066	10.45	0.00010	0.00010	0.00056	0.00005	0.003	0.000035	0.0173	6.64	0.01217	0.003	0.000002	0.0001	0.00149	0.96
HC-7-79	21-Aug-12	79	0.05	0.00005	0.000078	10.20	0.00010	0.00012	0.00040	0.00005	0.002	0.000015	0.0162	6.50	0.01470	0.002	0.000002	0.0001	0.00158	0.97
HC-7-80	28-Aug-12	80	0.05	0.00005	0.000092	10.68	0.00010	0.00013	0.00148	0.00005	0.004	0.000039	0.0159	6.92	0.01808	0.004	0.000002	0.0001	0.00183	0.97
HC-7-81	04-Sep-12	81	0.05	0.00005	0.000106	11.15	0.00010	0.00015	0.00255	0.00005	0.005	0.000064	0.0156	7.34	0.02145	0.006	0.000002	0.0001	0.00207	0.97
HC-7-82	11-Sep-12	82	0.05	0.00005	0.000120	11.63	0.00010	0.00017	0.00362	0.00005	0.007	0.000088	0.0153	7.75	0.02483	0.008	0.000002	0.0001	0.00232	0.96
HC-7-83	18-Sep-12	83	0.05	0.00005	0.000134	12.10	0.00010	0.00018	0.00469	0.00005	0.008	0.000112	0.0150	8.17	0.02820	0.010	0.000002	0.0001	0.00256	0.96
HC-7-84	25-Sep-12	84	0.05	0.00005	0.000129	11.68	0.00010	0.00014	0.00357	0.00005	0.007	0.000086	0.0144	7.96	0.02373	0.009	0.000002	0.0001	0.00248	0.95
HC-7-85	02-Oct-12	85	0.05	0.00005	0.000123	11.25	0.00010	0.00011	0.00244	0.00005	0.005	0.000060	0.0138	7.76	0.01925	0.008	0.000002	0.0001	0.00241	0.94
HC-7-86	09-Oct-12	86	0.05	0.00005	0.000118	10.83	0.00010	0.00007	0.00132	0.00005	0.003	0.000033	0.0132	7.55	0.01478	0.007	0.000002	0.0001	0.00233	0.92
HC-7-87	16-Oct-12	87	0.05	0.00005	0.000112	10.40	0.00010	0.00003	0.00019	0.00005	0.001	0.000007	0.0126	7.34	0.01030	0.006	0.000002	0.0001	0.00225	0.91
HC-7-88	23-Oct-12	88	0.05	0.00005	0.000103	10.68	0.00011	0.00005	0.00028	0.00005	0.017	0.000008	0.0122	7.37	0.01258	0.005	0.000002	0.0001	0.00214	0.91
HC-7-89	30-Oct-12	89	0.05	0.00005	0.000095	10.95	0.00011	0.00008	0.00037	0.00005	0.033	0.000008	0.0119	7.39	0.01485	0.004	0.000002	0.0002	0.00204	0.91
HC-7-90	06-Nov-12	90	0.05	0.00005	0.000086	11.23	0.00012	0.00010	0.00045	0.00005	0.048	0.000009	0.0115	7.42	0.01713	0.003	0.000002	0.0002	0.00193	0.91
HC-7-91	13-Nov-12	91	0.05	0.00005	0.000077	11.50	0.00012	0.00012	0.00054	0.00005	0.064	0.000009	0.0111	7.44	0.01940	0.002	0.000002	0.0002	0.00182	0.91
HC-7-92	20-Nov-12	92	0.05	0.00005	0.000080	11.13	0.00013	0.00013	0.00047	0.00005	0.048	0.000012	0.0107	7.35	0.01895	0.002	0.000002	0.0002	0.00188	0.90
HC-7-93	27-Nov-12	93	0.05	0.00005	0.000083	10.75	0.00015	0.00014	0.00040	0.00005	0.033	0.000016	0.0104	7.27	0.01850	0.003	0.000002	0.0002	0.00193	0.89
HC-7-94	04-Dec-12	94	0.05	0.00005	0.000085	10.38	0.00016	0.00014	0.00032	0.00005	0.017	0.000019	0.0100	7.18	0.01805	0.003	0.000002	0.0002	0.00199	0.89
HC-7-95	11-Dec-12	95	0.05	0.00005	0.000088	10.00	0.00017	0.00015	0.00025	0.00005	0.001	0.000022	0.0097	7.09	0.01760	0.003	0.000002	0.0002	0.00204	0.88
HC-7-96	18-Dec-12	96	0.05	0.00005	0.000086	10.08	0.00015	0.00012	0.00025	0.00005	0.001	0.000021	0.0095	7.16	0.01593	0.003	0.000002	0.0002	0.00195	0.88
HC-7-97	25-Dec-12	97	0.05	0.00005	0.000085	10.15	0.00014	0.00010	0.00024	0.00005	0.001	0.000021	0.0092	7.24	0.01425	0.004	0.000002	0.0001	0.00185	0.87
HC-7-98	01-Jan-13	98	0.05	0.00005	0.000083	10.23	0.00012	0.00008	0.00024	0.00005	0.002	0.000020	0.0090	7.31	0.01258	0.004	0.000002	0.0001	0.00176	0.86
HC-7-99	08-Jan-13	99	0.05	0.00005	0.000081	10.30	0.00010	0.00005	0.00024	0.00005	0.002	0.000019	0.0088	7.38	0.01090	0.004	0.000002	0.0001	0.00166	0.85
HC-7-100	15-Jan-13	100	0.05	0.00005	0.000087	10.05	0.00010	0.00010	0.00023	0.00005	0.002	0.000017	0.0086	7.26	0.01430	0.005	0.000002	0.0001	0.00179	0.84
HC-7-101	22-Jan-13	101	0.05	0.00005	0.000093	9.80	0.00010	0.00015	0.00022	0.00005	0.002	0.000015	0.0085	7.14	0.01770	0.006	0.000002	0.0001	0.00192	0.83
HC-7-102	29-Jan-13	102	0.05	0.00005	0.000099	9.55	0.00010	0.00019	0.00021	0.00005	0.002	0.000012	0.0083	7.01	0.02110	0.007	0.000002	0.0001	0.00205	0.81
HC-7-103	05-Feb-13	103	0.05	0.00005	0.000105	9.30	0.00010	0.00024	0.00021	0.00005	0.002	0.000010	0.0082	6.89	0.02450	0.008	0.000002	0.0001	0.00218	0.80
HC-7-104	12-Feb-13	104	0.05	0.00005	0.000110	10.23	0.00010	0.00022	0.00024	0.00005	0.002	0.000019	0.0081	6.78	0.02373	0.007	0.000002	0.0001	0.00213	0.81
HC-7-105	19-Feb-13	105	0.05	0.00005	0.000116	11.15	0.00010	0.00021	0.00027	0.00005	0.003	0.000028	0.0081	6.67	0.02295	0.005	0.000002	0.0001	0.00208	0.82
HC-7-106	26-Feb-13	106	0.05	0.00005	0.000121	12.08	0.00010	0.00019	0.00031	0.00005	0.004	0.000037	0.0080	6.55	0.02218	0.004	0.000002	0.0001	0.00203	0.83
HC-7-107	05-Mar-13	107	0.05	0.00005	0.000126	13.00	0.00010	0.00018	0.00034	0.00005	0.005	0.000046	0.0080	6.44	0.02140	0.002	0.000002	0.0001	0.00198	0.84
HC-7-108	12-Mar-13	108	0.05	0.00005	0.000121	12.04	0.00010	0.00017	0.00033	0.00011	0.004	0.000082	0.0080	6.40	0.02008	0.004	0.000002	0.0001	0.00196	1.40
HC-7-109	19-Mar-13	109	0.05	0.00005	0.000116	11.07	0.00010	0.00016	0.00032	0.00017	0.004	0.000118	0.0081	6.36	0.01875	0.005	0.000002	0.0001	0.00194	1.96
HC-7-110	26-Mar-13	110	0.05	0.00005	0.000111	10.11	0.00010	0.00015	0.00032	0.00024	0.003	0.000153	0.0081	6.31	0.01743	0.007	0.000002	0.0001	0.00191	2.51
HC-7-111	02-Apr-13	111	0.05	0.00005	0.000106	9.14	0.00010	0.00014	0.00031	0.00030	0.003	0.000189	0.0081	6.27	0.01610	0.009	0.000002	0.0001	0.00189	3.07
HC-7-112	09-Apr-13	112	0.05	0.00005	0.000115	9.13	0.00010	0.00019	0.00027	0.00024	0.003	0.000148	0.0080	6.31	0.02043	0.007	0.000002	0.0001	0.00203	2.49
HC-7-113	16-Apr-13	113	0.05	0.00005	0.000125	9.12	0.00010	0.00024	0.00023	0.00017	0.002	0.000108	0.0079	6.34	0.02475	0.006	0.000002	0.0001	0.00217	1.90
HC-7-114	23-Apr-13	114	0.05	0.00005	0.000134	9.11	0.00010	0.00029	0.00020	0.00011	0.002	0.000067	0.0078	6.38	0.02908	0.005	0.000002	0.0001	0.00231	1.32
HC-7-115	30-Apr-13	115	0.05	0.00005	0.000143	9.10	0.00010	0.00035	0.00016	0.00005	0.002	0.000026	0.0077	6.41	0.03340	0.003	0.000002	0.0001	0.00245	0.73
HC-7-116	07-May-13	116	0.05	0.00005	0.000132	8.91	0.00010	0.00035	0.00016	0.00005	0.002	0.000021	0.0076	6.26	0.03288	0.003	0.000002	0.0001	0.00244	0.74
HC-7-117	14-May-13	117	0.05	0.00005	0.000121	8.72	0.00011	0.00036	0.00016	0.00005	0.002	0.000016	0.0075	6.11	0.03235	0.003	0.000002	0.0001	0.00244	0.74
HC-7-118	21-May-13	118	0.05	0.00005	0.000109	8.52	0.00011	0.00036	0.00016	0.00005	0.002	0.000011	0.0074	5.96	0.03183	0.002	0.000002	0.0001	0.00243	0.75
HC-7-119	28-May-13	119	0.05	0.00005	0.000098	8.33	0.00011	0.00037	0.00016	0.00005	0.002	0.000006	0.0072	5.81	0.03130	0.002	0.000002	0.0001	0.00242	0.75
HC-7-120	04-Jun-13	120	0.05	0.00005	0.000100	8.28	0.00013	0.00037	0.00017	0.00005	0.002	0.000006	0.0073	5.83	0.03050	0.007	0.000002	0.0001	0.00239	0.75
HC-7-121	11-Jun-13	121	0.05	0.00005	0.000102	8.24	0.00015	0.00037	0.00018	0.00005	0.002	0.000006	0.0073	5.86	0.02970	0.013	0.000002	0.0001	0.00236	0.75
HC-7-122	18-Jun-13	122	0.05	0.00005	0.000104	8.19	0.00016	0.00037	0.00018	0.00005	0.002	0.000005	0.0073	5.88	0.02890	0.018	0.000002	0.0001	0.00232	0.75

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-7-123	25-Jun-13	123	0.05	0.00005	0.000106	8.14	0.00018	0.00037	0.00019	0.00005	0.002	0.000005	0.0073	5.90	0.02810	0.024	0.000002	0.0001	0.00229	0.75
HC-7-124	02-Jul-13	124	0.05	0.00005	0.000107	8.13	0.00017	0.00041	0.00019	0.00005	0.002	0.000006	0.0074	5.94	0.02868	0.020	0.000002	0.0001	0.00230	0.74
HC-7-125	09-Jul-13	125	0.05	0.00005	0.000108	8.13	0.00016	0.00044	0.00020	0.00005	0.003	0.000007	0.0075	5.97	0.02925	0.016	0.000002	0.0001	0.00232	0.73
HC-7-126	16-Jul-13	126	0.05	0.00005	0.000109	8.12	0.00015	0.00048	0.00020	0.00005	0.004	0.000007	0.0076	6.01	0.02983	0.011	0.000002	0.0001	0.00233	0.72
HC-7-127	23-Jul-13	127	0.05	0.00005	0.000110	8.11	0.00014	0.00052	0.00020	0.00005	0.004	0.000008	0.0077	6.04	0.03040	0.007	0.000002	0.0001	0.00234	0.71
HC-7-128	30-Jul-13	128	0.05	0.00005	0.000115	8.25	0.00013	0.00052	0.00021	0.00005	0.003	0.000013	0.0078	6.05	0.03150	0.007	0.000002	0.0001	0.00240	0.69
HC-7-129	06-Aug-13	129	0.05	0.00005	0.000119	8.39	0.00012	0.00052	0.00021	0.00005	0.003	0.000019	0.0078	6.05	0.03260	0.006	0.000002	0.0001	0.00246	0.68
HC-7-130	13-Aug-13	130	0.05	0.00005	0.000124	8.52	0.00011	0.00053	0.00022	0.00005	0.002	0.000024	0.0079	6.06	0.03370	0.006	0.000002	0.0001	0.00252	0.67
HC-7-131	20-Aug-13	131	0.05	0.00005	0.000128	8.66	0.00010	0.00053	0.00023	0.00005	0.001	0.000029	0.0080	6.06	0.03480	0.005	0.000002	0.0001	0.00258	0.66
HC-7-132	27-Aug-13	132	0.05	0.00005	0.000128	8.61	0.00010	0.00055	0.00024	0.00005	0.001	0.000023	0.0079	6.01	0.03468	0.007	0.000002	0.0001	0.00257	0.68
HC-7-133	03-Sep-13	133	0.05	0.00005	0.000128	8.55	0.00010	0.00057	0.00026	0.00005	0.001	0.000017	0.0078	5.96	0.03455	0.009	0.000002	0.0001	0.00257	0.70
HC-7-134	10-Sep-13	134	0.05	0.00005	0.000127	8.50	0.00010	0.00059	0.00028	0.00005	0.001	0.000011	0.0078	5.90	0.03443	0.011	0.000002	0.0001	0.00256	0.72
HC-7-135	17-Sep-13	135	0.05	0.00005	0.000127	8.44	0.00010	0.00061	0.00030	0.00005	0.001	0.000005	0.0077	5.85	0.03430	0.013	0.000002	0.0001	0.00255	0.74
HC-7-136	24-Sep-13	136	0.05	0.00005	0.000134	8.55	0.00010	0.00060	0.00028	0.00005	0.001	0.000005	0.0078	5.90	0.03605	0.011	0.000002	0.0001	0.00262	0.74
HC-7-137	01-Oct-13	137	0.05	0.00005	0.000141	8.65	0.00010	0.00059	0.00025	0.00005	0.001	0.000005	0.0078	5.95	0.03780	0.009	0.000002	0.0001	0.00270	0.75
HC-7-138	08-Oct-13	138	0.05	0.00005	0.000147	8.76	0.00010	0.00058	0.00023	0.00005	0.001	0.000005	0.0078	6.00	0.03955	0.007	0.000002	0.0001	0.00277	0.76
HC-7-139	15-Oct-13	139	0.05	0.00005	0.000154	8.86	0.00010	0.00057	0.00021	0.00005	0.001	0.000005	0.0078	6.05	0.04130	0.005	0.000002	0.0001	0.00284	0.77
HC-7-140	22-Oct-13	140	0.05	0.00005	0.000150	8.69	0.00010	0.00058	0.00023	0.00005	0.001	0.000005	0.0077	5.89	0.04018	0.006	0.000002	0.0001	0.00323	0.75
HC-7-141	29-Oct-13	141	0.05	0.00005	0.000146	8.53	0.00010	0.00059	0.00025	0.00005	0.001	0.000005	0.0075	5.73	0.03905	0.008	0.000002	0.0001	0.00361	0.73
HC-7-142	05-Nov-13	142	0.05	0.00005	0.000141	8.36	0.00010	0.00059	0.00028	0.00005	0.001	0.000005	0.0074	5.56	0.03793	0.009	0.000002	0.0001	0.00400	0.72
HC-7-143	12-Nov-13	143	0.05	0.00005	0.000137	8.19	0.00010	0.00060	0.00030	0.00005	0.001	0.000005	0.0073	5.40	0.03680	0.011	0.000002	0.0001	0.00438	0.70
HC-7-144	19-Nov-13	144	0.05	0.00005	0.000142	8.12	0.00010	0.00064	0.00028	0.00005	0.001	0.000005	0.0074	5.46	0.03925	0.012	0.000002	0.0001	0.00406	0.72
HC-7-145	26-Nov-13	145	0.05	0.00005	0.000147	8.05	0.00010	0.00067	0.00025	0.00005	0.001	0.000005	0.0076	5.52	0.04170	0.013	0.000002	0.0001	0.00374	0.74
HC-7-146	03-Dec-13	146	0.05	0.00005	0.000152	7.98	0.00010	0.00071	0.00022	0.00005	0.001	0.000005	0.0077	5.58	0.04415	0.014	0.000002	0.0001	0.00341	0.76
HC-7-147	10-Dec-13	147	0.05	0.00005	0.000157	7.91	0.00010	0.00074	0.00020	0.00005	0.001	0.000005	0.0079	5.64	0.04660	0.015	0.000002	0.0001	0.00309	0.78
HC-7-148	17-Dec-13	148	0.05	0.00005	0.000155	7.70	0.00010	0.00075	0.00023	0.00005	0.001	0.000005	0.0078	5.54	0.04588	0.015	0.000002	0.0001	0.00307	0.76
HC-7-149	24-Dec-13	149	0.05	0.00005	0.000152	7.50	0.00010	0.00076	0.00027	0.00005	0.001	0.000005	0.0078	5.45	0.04515	0.015	0.000002	0.0001	0.00305	0.74
HC-7-150	31-Dec-13	150	0.05	0.00005	0.000150	7.29	0.00010	0.00077	0.00030	0.00005	0.001	0.000005	0.0077	5.35	0.04443	0.015	0.000002	0.0001	0.00302	0.72
HC-7-151	07-Jan-14	151	0.05	0.00005	0.000147	7.08	0.00010	0.00078	0.00034	0.00005	0.001	0.000005	0.0077	5.25	0.04370	0.015	0.000002	0.0001	0.00300	0.70
HC-7-152	14-Jan-14	152	0.05	0.00005	0.000150	7.04	0.00010	0.00082	0.00030	0.00005	0.001	0.000005	0.0074	5.14	0.04493	0.014	0.000002	0.0001	0.00302	0.69
HC-7-153	21-Jan-14	153	0.05	0.00005	0.000154	7.01	0.00010	0.00085	0.00025	0.00005	0.001	0.000005	0.0072	5.03	0.04615	0.013	0.000002	0.0001	0.00303	0.68
HC-7-154	28-Jan-14	154	0.05	0.00005	0.000157	6.97	0.00010	0.00089	0.00021	0.00005	0.001	0.000005	0.0070	4.91	0.04738	0.012	0.000002	0.0001	0.00305	0.66
HC-7-155	04-Feb-14	155	0.05	0.00005	0.000160	6.93	0.00010	0.00093	0.00017	0.00005	0.001	0.000005	0.0068	4.80	0.04860	0.010	0.000002	0.0001	0.00306	0.65
HC-7-156	11-Feb-14	156	0.05	0.00005	0.000157	6.61	0.00010	0.00090	0.00019	0.00005	0.001	0.000005	0.0067	4.76	0.04748	0.012	0.000002	0.0001	0.00307	0.64
HC-7-157	18-Feb-14	157	0.05	0.00005	0.000154	6.30	0.00010	0.00087	0.00020	0.00005	0.001	0.000005	0.0066	4.71	0.04635	0.013	0.000002	0.0001	0.00308	0.62
HC-7-158	25-Feb-14	158	0.05	0.00005	0.000150	5.98	0.00010	0.00085	0.00022	0.00005	0.001	0.000005	0.0065	4.67	0.04523	0.014	0.000002	0.0001	0.00309	0.61
HC-7-159	04-Mar-14	159	0.05	0.00005	0.000147	5.66	0.00010	0.00082	0.00023	0.00005	0.001	0.000005	0.0065	4.62	0.04410	0.015	0.000002	0.0001	0.00310	0.59
HC-7-160	11-Mar-14	160	0.05	0.00005	0.000152	5.90	0.00010	0.00085	0.00024	0.00005	0.002	0.000005	0.0066	4.64	0.04650	0.015	0.000002	0.0001	0.00316	0.61
HC-7-161	18-Mar-14	161	0.05	0.00005	0.000158	6.15	0.00010	0.00089	0.00025	0.00005	0.002	0.000005	0.0067	4.65	0.04890	0.014	0.000002	0.0001	0.00321	0.63
HC-7-162	25-Mar-14	162	0.05	0.00005	0.000163	6.39	0.00010	0.00092	0.00026	0.00005	0.002	0.000005	0.0068	4.67	0.05130	0.013	0.000002	0.0001	0.00327	0.65
HC-7-163	01-Apr-14	163	0.05	0.00005	0.000168	6.63	0.00010	0.00095	0.00026	0.00005	0.002	0.000005	0.0069	4.68	0.05370	0.012	0.000002	0.0001	0.00332	0.67
HC-7-164	08-Apr-14	164	0.05	0.00005	0.000173	6.56	0.00010	0.00102	0.00026	0.00005	0.002	0.000006	0.0070	4.81	0.05603	0.012	0.000002	0.0001	0.00341	0.67
HC-7-165	15-Apr-14	165	0.05	0.00005	0.000178	6.48	0.00010	0.00108	0.00026	0.00005	0.002	0.000006	0.0071	4.94	0.05835	0.012	0.000002	0.0001	0.00350	0.68
HC-7-166	22-Apr-14	166	0.05	0.00005	0.000182	6.41	0.00010	0.00115	0.00026	0.00005	0.002	0.000007	0.0073	5.06	0.06068	0.012	0.000002	0.0001	0.00358	0.68
HC-7-167	29-Apr-14	167	0.05	0.00005	0.000187	6.33	0.00010	0.00121	0.00026	0.00005	0.002	0.000007	0.0074	5.19	0.06300	0.012	0.000002	0.0001	0.00367	0.69
Mean all weeks			0.05	0.00005	0.000072	6.36	0.00011	0.00027	0.00055	0.00006	0.010	0.000046	0.0275	4.23	0.01777	0.014	0.000003	0.0033	0.00158	0.69

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC8 Hasler Mudstone																				
HC-8-0	15-Feb-11	0	0.12	0.00005	0.000005	0.45	0.00030	0.00011	0.00076	0.00005	0.069	0.000222	0.0717	0.08	0.00054	0.135	0.000010	0.0056	0.00045	0.40
HC-8-1	22-Feb-11	1	0.12	0.00005	0.000015	0.31	0.00020	0.00009	0.00045	0.00005	0.022	0.000066	0.1400	0.13	0.00052	0.063	0.000010	0.0259	0.00046	0.46
HC-8-2	01-Mar-11	2	0.11	0.00005	0.000005	0.36	0.00010	0.00008	0.00044	0.00005	0.031	0.000069	0.1040	0.14	0.00042	0.045	0.000010	0.0143	0.00040	0.37
HC-8-3	08-Mar-11	3	0.11	0.00005	0.000009	0.28	0.00020	0.00008	0.00063	0.00005	0.025	0.000065	0.0935	0.10	0.00035	0.030	0.000002	0.0130	0.00038	0.36
HC-8-4	15-Mar-11	4	0.10	0.00005	0.000005	0.26	0.00020	0.00012	0.00049	0.00005	0.035	0.000070	0.0868	0.10	0.00036	0.071	0.000010	0.0091	0.00041	0.35
HC-8-5	22-Mar-11	5	0.09	0.00005	0.000005	0.42	0.00010	0.00006	0.00039	0.00005	0.023	0.000053	0.0754	0.12	0.00026	0.034	0.000010	0.0072	0.00019	0.33
HC-8-6	29-Mar-11	6	0.08	0.00005	0.000007	0.37	0.00020	0.00022	0.00041	0.00005	0.037	0.000066	0.0678	0.11	0.00030	0.013	0.000010	0.0074	0.00200	0.33
HC-8-7	05-Apr-11	7	0.08	0.00005	0.000010	0.38	0.00010	0.00006	0.00043	0.00005	0.020	0.000050	0.0631	0.12	0.00027	0.016	0.000002	0.0060	0.00024	0.32
HC-8-8	12-Apr-11	8	0.07	0.00001	0.000050	0.29	0.00020	0.00007	0.00041	0.00005	0.034	0.000063	0.0579	0.12	0.00033	0.022	0.000004	0.0042	0.00035	0.35
HC-8-9	19-Apr-11	9	0.07	0.00005	0.000005	0.36	0.00020	0.00007	0.00057	0.00005	0.044	0.000047	0.0579	0.14	0.00058	0.011	0.000002	0.0074	0.00024	0.32
HC-8-10	26-Apr-11	10	0.07	0.00005	0.000008	0.32	0.00010	0.00006	0.00033	0.00005	0.021	0.000037	0.0527	0.12	0.00024	0.012	0.000002	0.0069	0.00021	0.30
HC-8-11	03-May-11	11	0.06	0.00005	0.000006	0.42	0.00010	0.00018	0.00060	0.00005	0.063	0.000115	0.0512	0.13	0.00070	0.019	0.000002	0.0069	0.00065	0.33
HC-8-12	10-May-11	12	0.07	0.00006	0.000005	0.73	0.00020	0.00016	0.00063	0.00005	0.085	0.000104	0.0506	0.15	0.00049	0.019	0.000002	0.0062	0.00056	0.36
HC-8-13	17-May-11	13	0.07	0.00006	0.000009	0.41	0.00020	0.00008	0.00046	0.00005	0.039	0.000063	0.0496	0.14	0.00031	0.028	0.000002	0.0066	0.00029	0.40
HC-8-14	24-May-11	14	0.06	0.00005	0.000010	0.52	0.00020	0.00008	0.00028	0.00005	0.036	0.000052	0.0478	0.18	0.00027	0.010	0.000002	0.0063	0.00031	0.39
HC-8-15	31-May-11	15	0.06	0.00006	0.000011	0.43	0.00010	0.00014	0.00281	0.00005	0.044	0.000308	0.0416	0.14	0.00034	0.007	0.000002	0.0062	0.00043	0.30
HC-8-16	07-Jun-11	16	0.05	0.00006	0.000016	0.36	0.00020	0.00014	0.01450	0.00005	0.046	0.000296	0.0418	0.14	0.00045	0.008	0.000002	0.0060	0.00048	0.31
HC-8-17	14-Jun-11	17	0.05	0.00006	0.000005	0.46	0.00020	0.00005	0.00040	0.00005	0.028	0.000052	0.0398	0.14	0.00057	0.003	0.000002	0.0064	0.00023	0.32
HC-8-18	21-Jun-11	18	0.05	0.00007	0.000008	0.46	0.00010	0.00014	0.00043	0.00005	0.052	0.000080	0.0387	0.14	0.00038	0.026	0.000002	0.0055	0.00044	0.29
HC-8-19	28-Jun-11	19	0.06	0.00005	0.000010	0.61	0.00010	0.00015	0.00049	0.00005	0.042	0.000079	0.0421	0.21	0.00044	0.022	0.000002	0.0061	0.00048	0.36
HC-8-20	05-Jul-11	20	0.06	0.00006	0.000009	0.60	0.00015	0.00015	0.00048	0.00005	0.046	0.000079	0.0399	0.21	0.00043	0.022	0.000002	0.0056	0.00046	0.35
HC-8-21	12-Jul-11	21	0.06	0.00007	0.000008	0.59	0.00020	0.00014	0.00048	0.00005	0.050	0.000079	0.0377	0.21	0.00043	0.023	0.000002	0.0052	0.00045	0.35
HC-8-22	19-Jul-11	22	0.05	0.00008	0.000006	0.57	0.00025	0.00014	0.00047	0.00005	0.053	0.000079	0.0355	0.21	0.00042	0.023	0.000002	0.0047	0.00043	0.34
HC-8-23	26-Jul-11	23	0.05	0.00009	0.000005	0.56	0.00030	0.00014	0.00046	0.00005	0.057	0.000079	0.0333	0.21	0.00041	0.023	0.000002	0.0042	0.00041	0.33
HC-8-24	02-Aug-11	24	0.05	0.00008	0.000005	0.99	0.00025	0.00012	0.00041	0.00005	0.048	0.000258	0.0364	0.37	0.00041	0.019	0.000003	0.0044	0.00041	0.40
HC-8-25	09-Aug-11	25	0.06	0.00007	0.000005	1.41	0.00020	0.00011	0.00036	0.00005	0.039	0.000436	0.0394	0.54	0.00040	0.016	0.000004	0.0046	0.00042	0.48
HC-8-26	16-Aug-11	26	0.06	0.00006	0.000005	1.84	0.00015	0.00009	0.00031	0.00005	0.030	0.000615	0.0425	0.70	0.00040	0.012	0.000004	0.0047	0.00042	0.55
HC-8-27	23-Aug-11	27	0.06	0.00005	0.000005	2.26	0.00010	0.00007	0.00026	0.00005	0.021	0.000793	0.0455	0.86	0.00039	0.008	0.000005	0.0049	0.00042	0.62
HC-8-28	30-Aug-11	28	0.06	0.00006	0.000006	2.13	0.00013	0.00008	0.00032	0.00005	0.027	0.000648	0.0430	0.83	0.00040	0.009	0.000004	0.0044	0.00043	0.60
HC-8-29	06-Sep-11	29	0.06	0.00006	0.000006	2.01	0.00015	0.00008	0.00037	0.00005	0.033	0.000503	0.0405	0.80	0.00041	0.010	0.000004	0.0039	0.00043	0.57
HC-8-30	13-Sep-11	30	0.05	0.00007	0.000007	1.88	0.00018	0.00009	0.00043	0.00005	0.039	0.000357	0.0379	0.77	0.00042	0.010	0.000003	0.0035	0.00044	0.55
HC-8-31	20-Sep-11	31	0.05	0.00007	0.000007	1.75	0.00020	0.00009	0.00048	0.00005	0.045	0.000212	0.0354	0.74	0.00043	0.011	0.000002	0.0030	0.00044	0.52
HC-8-32	27-Sep-11	32	0.05	0.00007	0.000009	2.76	0.00018	0.00008	0.00046	0.00005	0.035	0.000166	0.0370	1.12	0.00050	0.009	0.000002	0.0028	0.00040	0.60
HC-8-33	04-Oct-11	33	0.05	0.00008	0.000010	3.76	0.00015	0.00006	0.00043	0.00005	0.025	0.000119	0.0386	1.49	0.00057	0.008	0.000002	0.0026	0.00037	0.68
HC-8-34	11-Oct-11	34	0.05	0.00008	0.000012	4.77	0.00013	0.00004	0.00041	0.00005	0.015	0.000073	0.0402	1.87	0.00064	0.006	0.000002	0.0025	0.00033	0.75
HC-8-35	18-Oct-11	35	0.05	0.00008	0.000013	5.77	0.00010	0.00002	0.00038	0.00005	0.005	0.000026	0.0418	2.24	0.00071	0.004	0.000002	0.0023	0.00029	0.83
HC-8-36	25-Oct-11	36	0.05	0.00007	0.000013	7.20	0.00010	0.00004	0.00034	0.00005	0.004	0.000025	0.0421	3.06	0.00105	0.005	0.000002	0.0023	0.00041	0.93
HC-8-37	01-Nov-11	37	0.05	0.00007	0.000012	8.64	0.00010	0.00006	0.00029	0.00005	0.004	0.000023	0.0424	3.87	0.00140	0.006	0.000002	0.0023	0.00052	1.03
HC-8-38	08-Nov-11	38	0.05	0.00006	0.000012	10.07	0.00010	0.00008	0.00025	0.00005	0.003	0.000022	0.0426	4.69	0.00174	0.007	0.000002	0.0023	0.00064	1.13
HC-8-39	15-Nov-11	39	0.05	0.00005	0.000011	11.50	0.00010	0.00010	0.00020	0.00005	0.002	0.000020	0.0429	5.50	0.00208	0.008	0.000002	0.0024	0.00075	1.23
HC-8-40	22-Nov-11	40	0.05	0.00005	0.000015	12.65	0.00010	0.00019	0.00020	0.00005	0.002	0.000019	0.0397	5.87	0.00406	0.008	0.000002	0.0021	0.00091	1.20
HC-8-41	29-Nov-11	41	0.05	0.00005	0.000019	13.80	0.00010	0.00027	0.00020	0.00005	0.002	0.000019	0.0365	6.25	0.00603	0.007	0.000002	0.0018	0.00106	1.17
HC-8-42	06-Dec-11	42	0.05	0.00005	0.000023	14.95	0.00010	0.00036	0.00020	0.00005	0.002	0.000018	0.0333	6.62	0.00801	0.007	0.000002	0.0016	0.00122	1.14
HC-8-43	13-Dec-11	43	0.05	0.00005	0.000027	16.10	0.00010	0.00044	0.00020	0.00005	0.002	0.000017	0.0301	6.99	0.00998	0.006	0.000002	0.0013	0.00137	1.11
HC-8-44	20-Dec-11	44	0.05	0.00005	0.000028	17.60	0.00010	0.00050	0.00021	0.00005	0.002	0.000016	0.0287	7.31	0.01076	0.008	0.000002	0.0013	0.00144	1.13
HC-8-45	27-Dec-11	45	0.05	0.00005	0.000029	19.10	0.00010	0.00056	0.00023	0.00005	0.002	0.000015	0.0274	7.62	0.01154	0.010	0.000002	0.0012	0.00152	1.15
HC-8-46	03-Jan-12	46	0.05	0.00005	0.000029	20.60	0.00010	0.00062	0.00024	0.00005	0.001	0.000013	0.0260	7.94	0.01232	0.011	0.000002	0.0011	0.00159	1.17
HC-8-47	10-Jan-12	47	0.05	0.00005	0.000030	22.10	0.00010	0.00068	0.00025	0.00005	0.001	0.000012	0.0246	8.25	0.01310	0.013	0.000002	0.0011	0.00166	1.19

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-8-48	17-Jan-12	48	0.05	0.00005	0.000034	23.35	0.00010	0.00076	0.00026	0.00005	0.001	0.000011	0.0234	9.14	0.01420	0.012	0.000002	0.0010	0.00190	1.25
HC-8-49	24-Jan-12	49	0.05	0.00005	0.000038	24.60	0.00010	0.00084	0.00028	0.00005	0.001	0.000010	0.0222	10.03	0.01530	0.010	0.000002	0.0009	0.00214	1.30
HC-8-50	31-Jan-12	50	0.05	0.00005	0.000041	25.85	0.00010	0.00092	0.00029	0.00005	0.001	0.000008	0.0209	10.91	0.01640	0.009	0.000002	0.0008	0.00237	1.36
HC-8-51	07-Feb-12	51	0.05	0.00005	0.000045	27.10	0.00010	0.00100	0.00030	0.00005	0.001	0.000007	0.0197	11.80	0.01750	0.007	0.000002	0.0007	0.00261	1.41
HC-8-52	14-Feb-12	52	0.05	0.00005	0.000047	27.35	0.00010	0.00104	0.00028	0.00005	0.001	0.000008	0.0191	11.80	0.01790	0.006	0.000002	0.0007	0.00268	1.40
HC-8-53	21-Feb-12	53	0.05	0.00006	0.000049	27.60	0.00010	0.00109	0.00025	0.00005	0.002	0.000008	0.0184	11.80	0.01830	0.005	0.000002	0.0007	0.00274	1.39
HC-8-54	28-Feb-12	54	0.05	0.00006	0.000050	27.85	0.00010	0.00113	0.00023	0.00005	0.002	0.000009	0.0178	11.80	0.01870	0.004	0.000002	0.0007	0.00281	1.38
HC-8-55	06-Mar-12	55	0.05	0.00006	0.000052	28.10	0.00010	0.00117	0.00020	0.00005	0.002	0.000009	0.0171	11.80	0.01910	0.003	0.000002	0.0007	0.00287	1.37
HC-8-56	13-Mar-12	56	0.05	0.00006	0.000050	28.48	0.00010	0.00117	0.00023	0.00005	0.002	0.000010	0.0163	12.00	0.01848	0.004	0.000002	0.0007	0.00294	1.36
HC-8-57	20-Mar-12	57	0.05	0.00006	0.000048	28.85	0.00010	0.00117	0.00025	0.00005	0.003	0.000011	0.0155	12.20	0.01785	0.004	0.000002	0.0007	0.00300	1.34
HC-8-58	27-Mar-12	58	0.05	0.00005	0.000046	29.23	0.00010	0.00117	0.00028	0.00005	0.003	0.000012	0.0147	12.40	0.01723	0.005	0.000002	0.0007	0.00307	1.33
HC-8-59	03-Apr-12	59	0.05	0.00005	0.000044	29.60	0.00010	0.00117	0.00030	0.00005	0.003	0.000013	0.0139	12.60	0.01660	0.005	0.000002	0.0006	0.00313	1.31
HC-8-60	10-Apr-12	60	0.05	0.00005	0.000047	30.58	0.00010	0.00123	0.00030	0.00005	0.003	0.000014	0.0134	13.18	0.01788	0.006	0.000002	0.0006	0.00331	1.33
HC-8-61	17-Apr-12	61	0.05	0.00005	0.000051	31.55	0.00010	0.00129	0.00030	0.00005	0.002	0.000015	0.0130	13.75	0.01915	0.007	0.000002	0.0006	0.00348	1.35
HC-8-62	24-Apr-12	62	0.05	0.00005	0.000054	32.53	0.00010	0.00135	0.00029	0.00005	0.002	0.000015	0.0125	14.33	0.02043	0.007	0.000002	0.0005	0.00366	1.37
HC-8-63	01-May-12	63	0.05	0.00005	0.000057	33.50	0.00010	0.00141	0.00029	0.00005	0.001	0.000016	0.0120	14.90	0.02170	0.008	0.000002	0.0005	0.00383	1.39
HC-8-64	08-May-12	64	0.05	0.00005	0.000058	33.50	0.00010	0.00145	0.00032	0.00005	0.001	0.000017	0.0119	14.88	0.02220	0.009	0.000002	0.0005	0.00394	1.37
HC-8-65	15-May-12	65	0.05	0.00005	0.000059	33.50	0.00010	0.00149	0.00035	0.00005	0.001	0.000019	0.0117	14.85	0.02270	0.010	0.000002	0.0005	0.00405	1.35
HC-8-66	22-May-12	66	0.05	0.00005	0.000061	33.50	0.00010	0.00152	0.00038	0.00005	0.002	0.000020	0.0116	14.83	0.02320	0.011	0.000002	0.0004	0.00415	1.32
HC-8-67	29-May-12	67	0.05	0.00005	0.000062	33.50	0.00010	0.00156	0.00040	0.00005	0.002	0.000022	0.0114	14.80	0.02370	0.012	0.000002	0.0004	0.00426	1.30
HC-8-68	05-Jun-12	68	0.05	0.00007	0.000062	34.00	0.00010	0.00159	0.00037	0.00005	0.002	0.000018	0.0112	14.90	0.02433	0.012	0.000002	0.0004	0.00429	1.31
HC-8-69	12-Jun-12	69	0.05	0.00009	0.000063	34.50	0.00010	0.00161	0.00033	0.00005	0.002	0.000014	0.0110	15.00	0.02495	0.012	0.000002	0.0004	0.00431	1.32
HC-8-70	19-Jun-12	70	0.05	0.00011	0.000064	35.00	0.00010	0.00164	0.00029	0.00005	0.002	0.000009	0.0108	15.10	0.02558	0.012	0.000002	0.0004	0.00434	1.33
HC-8-71	26-Jun-12	71	0.05	0.00014	0.000064	35.50	0.00010	0.00166	0.00026	0.00005	0.002	0.000005	0.0106	15.20	0.02620	0.012	0.000002	0.0004	0.00436	1.34
HC-8-72	03-Jul-12	72	0.05	0.00012	0.000069	36.78	0.00010	0.00175	0.00038	0.00005	0.002	0.000023	0.0106	15.73	0.02885	0.011	0.000002	0.0003	0.00464	1.35
HC-8-73	10-Jul-12	73	0.05	0.00011	0.000074	38.05	0.00010	0.00185	0.00050	0.00005	0.002	0.000040	0.0106	16.25	0.03150	0.010	0.000002	0.0003	0.00492	1.37
HC-8-74	17-Jul-12	74	0.05	0.00009	0.000079	39.33	0.00010	0.00194	0.00062	0.00005	0.003	0.000058	0.0105	16.78	0.03415	0.009	0.000002	0.0003	0.00520	1.38
HC-8-75	24-Jul-12	75	0.05	0.00008	0.000083	40.60	0.00010	0.00203	0.00074	0.00005	0.003	0.000075	0.0105	17.30	0.03680	0.008	0.000002	0.0003	0.00548	1.39
HC-8-76	31-Jul-12	76	0.05	0.00008	0.000087	39.78	0.00010	0.00218	0.00084	0.00005	0.004	0.000080	0.0102	17.23	0.04198	0.006	0.000002	0.0002	0.00571	1.38
HC-8-77	07-Aug-12	77	0.05	0.00007	0.000090	38.95	0.00010	0.00233	0.00095	0.00005	0.005	0.000085	0.0100	17.15	0.04715	0.005	0.000002	0.0002	0.00593	1.36
HC-8-78	14-Aug-12	78	0.05	0.00007	0.000093	38.13	0.00010	0.00247	0.00106	0.00005	0.006	0.000090	0.0097	17.08	0.05233	0.003	0.000002	0.0002	0.00616	1.35
HC-8-79	21-Aug-12	79	0.05	0.00007	0.000096	37.30	0.00010	0.00262	0.00117	0.00005	0.006	0.000095	0.0095	17.00	0.05750	0.002	0.000002	0.0002	0.00638	1.33
HC-8-80	28-Aug-12	80	0.05	0.00006	0.000104	38.28	0.00010	0.00292	0.00194	0.00005	0.006	0.000099	0.0093	17.35	0.06258	0.004	0.000002	0.0002	0.00690	1.31
HC-8-81	04-Sep-12	81	0.05	0.00006	0.000112	39.25	0.00010	0.00322	0.00271	0.00005	0.006	0.000103	0.0092	17.70	0.06765	0.007	0.000002	0.0002	0.00742	1.28
HC-8-82	11-Sep-12	82	0.05	0.00006	0.000120	40.23	0.00010	0.00352	0.00348	0.00005	0.006	0.000107	0.0091	18.05	0.07273	0.009	0.000002	0.0002	0.00793	1.26
HC-8-83	18-Sep-12	83	0.05	0.00006	0.000128	41.20	0.00010	0.00382	0.00425	0.00005	0.006	0.000111	0.0090	18.40	0.07780	0.012	0.000002	0.0002	0.00845	1.23
HC-8-84	25-Sep-12	84	0.05	0.00006	0.000135	39.05	0.00010	0.00388	0.00327	0.00005	0.006	0.000086	0.0091	18.38	0.08150	0.010	0.000002	0.0002	0.00878	1.22
HC-8-85	02-Oct-12	85	0.05	0.00006	0.000143	36.90	0.00010	0.00394	0.00229	0.00005	0.006	0.000061	0.0091	18.35	0.08520	0.009	0.000002	0.0002	0.00910	1.22
HC-8-86	09-Oct-12	86	0.05	0.00006	0.000150	34.75	0.00010	0.00400	0.00131	0.00005	0.005	0.000035	0.0092	18.33	0.08890	0.008	0.000002	0.0002	0.00943	1.21
HC-8-87	16-Oct-12	87	0.05	0.00006	0.000157	32.60	0.00010	0.00406	0.00033	0.00005	0.005	0.000010	0.0093	18.30	0.09260	0.007	0.000002	0.0002	0.00975	1.20
HC-8-88	23-Oct-12	88	0.05	0.00006	0.000162	34.45	0.00010	0.00434	0.00032	0.00005	0.004	0.000013	0.0092	18.45	0.09870	0.006	0.000002	0.0002	0.01014	1.20
HC-8-89	30-Oct-12	89	0.05	0.00006	0.000167	36.30	0.00010	0.00461	0.00030	0.00005	0.004	0.000016	0.0091	18.60	0.10480	0.005	0.000002	0.0001	0.01053	1.19
HC-8-90	06-Nov-12	90	0.05	0.00006	0.000172	38.15	0.00010	0.00489	0.00029	0.00005	0.003	0.000018	0.0090	18.75	0.11090	0.003	0.000002	0.0001	0.01091	1.19
HC-8-91	13-Nov-12	91	0.05	0.00006	0.000177	40.00	0.00010	0.00516	0.00028	0.00005	0.002	0.000021	0.0090	18.90	0.11700	0.002	0.000002	0.0001	0.01130	1.18
HC-8-92	20-Nov-12	92	0.05	0.00006	0.000179	39.63	0.00011	0.00526	0.00028	0.00005	0.002	0.000017	0.0089	18.93	0.11825	0.003	0.000002	0.0001	0.01150	1.19
HC-8-93	27-Nov-12	93	0.05	0.00006	0.000182	39.25	0.00011	0.00537	0.00028	0.00005	0.002	0.000014	0.0088	18.95	0.11950	0.003	0.000002	0.0001	0.01170	1.19
HC-8-94	04-Dec-12	94	0.05	0.00005	0.000184	38.88	0.00012	0.00547	0.00028	0.00005	0.002	0.000010	0.0088	18.98	0.12075	0.004	0.000002	0.0001	0.01190	1.20
HC-8-95	11-Dec-12	95	0.05	0.00005	0.000186	38.50	0.00012	0.00557	0.00029	0.00005	0.003	0.000006	0.0087	19.00	0.12200	0.004	0.000002	0.0001	0.01210	1.20
HC-8-96	18-Dec-12	96	0.05	0.00006	0.000199	39.58	0.00012	0.00575	0.00031	0.00005	0.002	0.000012	0.0086	19.50	0.12825	0.004	0.000002	0.0001	0.01295	1.19

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-8-97	25-Dec-12	97	0.05	0.00006	0.000212	40.65	0.00011	0.00592	0.00034	0.00005	0.002	0.000017	0.0086	20.00	0.13450	0.003	0.000002	0.0001	0.01380	1.18
HC-8-98	01-Jan-13	98	0.05	0.00007	0.000224	41.73	0.00011	0.00610	0.00037	0.00005	0.002	0.000023	0.0086	20.50	0.14075	0.003	0.000002	0.0001	0.01465	1.16
HC-8-99	08-Jan-13	99	0.05	0.00007	0.000237	42.80	0.00010	0.00627	0.00040	0.00005	0.002	0.000028	0.0085	21.00	0.14700	0.002	0.000002	0.0001	0.01550	1.15
HC-8-100	15-Jan-13	100	0.05	0.00007	0.000233	40.85	0.00010	0.00634	0.00037	0.00005	0.003	0.000028	0.0084	20.23	0.14525	0.004	0.000002	0.0001	0.01535	1.14
HC-8-101	22-Jan-13	101	0.05	0.00006	0.000229	38.90	0.00010	0.00641	0.00034	0.00005	0.003	0.000028	0.0084	19.45	0.14350	0.006	0.000002	0.0001	0.01520	1.12
HC-8-102	29-Jan-13	102	0.05	0.00006	0.000224	36.95	0.00010	0.00647	0.00032	0.00005	0.004	0.000027	0.0083	18.68	0.14175	0.007	0.000002	0.0001	0.01505	1.11
HC-8-103	05-Feb-13	103	0.05	0.00005	0.000220	35.00	0.00010	0.00654	0.00029	0.00005	0.005	0.000027	0.0082	17.90	0.14000	0.009	0.000002	0.0001	0.01490	1.09
HC-8-104	12-Feb-13	104	0.05	0.00005	0.000226	35.13	0.00010	0.00656	0.00029	0.00005	0.005	0.000029	0.0082	17.93	0.14050	0.007	0.000002	0.0001	0.01515	1.09
HC-8-105	19-Feb-13	105	0.05	0.00005	0.000233	35.25	0.00010	0.00657	0.00029	0.00005	0.005	0.000032	0.0082	17.95	0.14100	0.006	0.000002	0.0001	0.01540	1.08
HC-8-106	26-Feb-13	106	0.05	0.00005	0.000239	35.38	0.00010	0.00659	0.00029	0.00005	0.005	0.000034	0.0082	17.98	0.14150	0.004	0.000002	0.0001	0.01565	1.08
HC-8-107	05-Mar-13	107	0.05	0.00005	0.000245	35.50	0.00010	0.00660	0.00029	0.00005	0.004	0.000036	0.0082	18.00	0.14200	0.002	0.000002	0.0001	0.01590	1.07
HC-8-108	12-Mar-13	108	0.05	0.00005	0.000240	34.65	0.00010	0.00631	0.00031	0.00005	0.004	0.000031	0.0080	17.70	0.13900	0.002	0.000002	0.0001	0.01568	1.04
HC-8-109	19-Mar-13	109	0.05	0.00005	0.000235	33.80	0.00010	0.00601	0.00032	0.00005	0.004	0.000026	0.0079	17.40	0.13600	0.002	0.000002	0.0001	0.01545	1.00
HC-8-110	26-Mar-13	110	0.05	0.00005	0.000230	32.95	0.00010	0.00572	0.00033	0.00005	0.004	0.000021	0.0077	17.10	0.13300	0.002	0.000002	0.0001	0.01523	0.97
HC-8-111	02-Apr-13	111	0.05	0.00005	0.000225	32.10	0.00010	0.00542	0.00034	0.00005	0.004	0.000016	0.0076	16.80	0.13000	0.002	0.000002	0.0001	0.01500	0.94
HC-8-112	09-Apr-13	112	0.05	0.00005	0.000245	31.50	0.00010	0.00636	0.00036	0.00005	0.006	0.000017	0.0077	16.55	0.14400	0.002	0.000002	0.0001	0.01605	0.94
HC-8-113	16-Apr-13	113	0.05	0.00005	0.000265	30.90	0.00010	0.00729	0.00038	0.00005	0.007	0.000018	0.0078	16.30	0.15800	0.002	0.000002	0.0001	0.01710	0.95
HC-8-114	23-Apr-13	114	0.05	0.00005	0.000285	30.30	0.00010	0.00823	0.00041	0.00005	0.008	0.000019	0.0079	16.05	0.17200	0.002	0.000002	0.0001	0.01815	0.95
HC-8-115	30-Apr-13	115	0.05	0.00005	0.000305	29.70	0.00010	0.00916	0.00043	0.00005	0.009	0.000020	0.0080	15.80	0.18600	0.002	0.000002	0.0001	0.01920	0.95
HC-8-116	07-May-13	116	0.05	0.00005	0.000310	29.90	0.00011	0.00945	0.00043	0.00005	0.011	0.000028	0.0080	15.75	0.19000	0.002	0.000002	0.0001	0.01955	0.95
HC-8-117	14-May-13	117	0.05	0.00005	0.000315	30.10	0.00013	0.00973	0.00044	0.00005	0.012	0.000035	0.0080	15.70	0.19400	0.002	0.000002	0.0001	0.01990	0.94
HC-8-118	21-May-13	118	0.05	0.00005	0.000320	30.30	0.00014	0.01002	0.00044	0.00005	0.013	0.000043	0.0079	15.65	0.19800	0.002	0.000002	0.0001	0.02025	0.94
HC-8-119	28-May-13	119	0.05	0.00005	0.000325	30.50	0.00015	0.01030	0.00045	0.00005	0.014	0.000050	0.0079	15.60	0.20200	0.002	0.000002	0.0001	0.02060	0.94
HC-8-120	04-Jun-13	120	0.05	0.00005	0.000339	30.15	0.00015	0.01020	0.00046	0.00005	0.015	0.000171	0.0079	15.40	0.20050	0.005	0.000002	0.0001	0.02050	0.93
HC-8-121	11-Jun-13	121	0.05	0.00005	0.000354	29.80	0.00014	0.01010	0.00048	0.00005	0.015	0.000292	0.0079	15.20	0.19900	0.009	0.000002	0.0001	0.02040	0.92
HC-8-122	18-Jun-13	122	0.05	0.00005	0.000368	29.45	0.00014	0.00999	0.00050	0.00005	0.016	0.000412	0.0079	15.00	0.19750	0.012	0.000002	0.0001	0.02030	0.92
HC-8-123	25-Jun-13	123	0.05	0.00005	0.000382	29.10	0.00013	0.00989	0.00051	0.00005	0.017	0.000533	0.0078	14.80	0.19600	0.015	0.000002	0.0001	0.02020	0.91
HC-8-124	02-Jul-13	124	0.05	0.00005	0.000376	29.20	0.00014	0.00997	0.00058	0.00005	0.021	0.000406	0.0080	14.80	0.19750	0.013	0.000002	0.0001	0.02063	0.90
HC-8-125	09-Jul-13	125	0.05	0.00005	0.000371	29.30	0.00014	0.01005	0.00064	0.00005	0.025	0.000278	0.0081	14.80	0.19900	0.010	0.000002	0.0001	0.02105	0.88
HC-8-126	16-Jul-13	126	0.05	0.00005	0.000365	29.40	0.00015	0.01012	0.00071	0.00005	0.029	0.000151	0.0082	14.80	0.20050	0.008	0.000002	0.0001	0.02148	0.87
HC-8-127	23-Jul-13	127	0.05	0.00005	0.000359	29.50	0.00015	0.01020	0.00078	0.00005	0.033	0.000023	0.0083	14.80	0.20200	0.006	0.000002	0.0001	0.02190	0.86
HC-8-128	30-Jul-13	128	0.05	0.00005	0.000372	28.98	0.00014	0.01095	0.00087	0.00005	0.033	0.000027	0.0085	15.03	0.21375	0.005	0.000002	0.0001	0.02310	0.87
HC-8-129	06-Aug-13	129	0.05	0.00005	0.000385	28.45	0.00013	0.01170	0.00096	0.00005	0.032	0.000031	0.0087	15.25	0.22550	0.005	0.000002	0.0001	0.02430	0.88
HC-8-130	13-Aug-13	130	0.05	0.00005	0.000398	27.93	0.00011	0.01245	0.00105	0.00005	0.032	0.000034	0.0089	15.48	0.23725	0.004	0.000002	0.0001	0.02550	0.89
HC-8-131	20-Aug-13	131	0.05	0.00005	0.000411	27.40	0.00010	0.01320	0.00114	0.00005	0.032	0.000038	0.0091	15.70	0.24900	0.004	0.000002	0.0001	0.02670	0.90
HC-8-132	27-Aug-13	132	0.05	0.00005	0.000405	27.28	0.00010	0.01273	0.00107	0.00005	0.032	0.000042	0.0088	15.33	0.24100	0.006	0.000002	0.0001	0.02628	0.89
HC-8-133	03-Sep-13	133	0.05	0.00005	0.000399	27.15	0.00010	0.01225	0.00100	0.00005	0.032	0.000045	0.0085	14.95	0.23300	0.008	0.000002	0.0001	0.02585	0.88
HC-8-134	10-Sep-13	134	0.05	0.00005	0.000392	27.03	0.00010	0.01178	0.00093	0.00005	0.033	0.000049	0.0083	14.58	0.22500	0.010	0.000002	0.0001	0.02543	0.87
HC-8-135	17-Sep-13	135	0.05	0.00005	0.000386	26.90	0.00010	0.01130	0.00087	0.00005	0.033	0.000052	0.0080	14.20	0.21700	0.012	0.000002	0.0001	0.02500	0.87
HC-8-136	24-Sep-13	136	0.05	0.00005	0.000388	27.25	0.00010	0.01155	0.00091	0.00005	0.027	0.000053	0.0081	14.30	0.22000	0.009	0.000002	0.0001	0.02545	0.89
HC-8-137	01-Oct-13	137	0.05	0.00005	0.000389	27.60	0.00010	0.01180	0.00096	0.00005	0.022	0.000054	0.0081	14.40	0.22300	0.007	0.000002	0.0001	0.02590	0.91
HC-8-138	08-Oct-13	138	0.05	0.00005	0.000391	27.95	0.00010	0.01205	0.00101	0.00005	0.016	0.000055	0.0082	14.50	0.22600	0.005	0.000002	0.0001	0.02635	0.93
HC-8-139	15-Oct-13	139	0.05	0.00005	0.000392	28.30	0.00010	0.01230	0.00106	0.00005	0.010	0.000056	0.0083	14.60	0.22900	0.003	0.000002	0.0001	0.02680	0.95
HC-8-140	22-Oct-13	140	0.05	0.00005	0.000417	28.75	0.00010	0.01255	0.00138	0.00005	0.011	0.000091	0.0083	14.33	0.22925	0.004	0.000002	0.0001	0.02833	0.95
HC-8-141	29-Oct-13	141	0.05	0.00005	0.000442	29.20	0.00010	0.01280	0.00170	0.00005	0.012	0.000127	0.0082	14.05	0.22950	0.004	0.000002	0.0001	0.02985	0.94
HC-8-142	05-Nov-13	142	0.05	0.00005	0.000467	29.65	0.00010	0.01305	0.00201	0.00005	0.013	0.000162	0.0082	13.78	0.22975	0.005	0.000002	0.0001	0.03138	0.94
HC-8-143	12-Nov-13	143	0.05	0.00005	0.000492	30.10	0.00010	0.01330	0.00233	0.00005	0.014	0.000197	0.0082	13.50	0.23000	0.006	0.000002	0.0001	0.03290	0.93
HC-8-144	19-Nov-13	144	0.05	0.00005	0.000501	29.25	0.00010	0.01328	0.00245	0.00006	0.015	0.000173	0.0085	13.63	0.23325	0.007	0.000002	0.0001	0.03313	0.93
HC-8-145	26-Nov-13	145	0.05	0.00005	0.000510	28.40	0.00010	0.01325	0.00257	0.00006	0.017	0.000149	0.0089	13.75	0.23650	0.008	0.000002	0.0001	0.03335	0.93

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-8-146	03-Dec-13	146	0.05	0.00005	0.000518	27.55	0.00010	0.01323	0.00269	0.00006	0.018	0.000125	0.0092	13.88	0.23975	0.009	0.000002	0.0001	0.03358	0.93
HC-8-147	10-Dec-13	147	0.05	0.00005	0.000527	26.70	0.00010	0.01320	0.00281	0.00007	0.020	0.000101	0.0096	14.00	0.24300	0.010	0.000002	0.0001	0.03380	0.93
HC-8-148	17-Dec-13	148	0.05	0.00005	0.000538	26.50	0.00010	0.01353	0.00308	0.00008	0.022	0.000110	0.0097	13.83	0.24200	0.010	0.000002	0.0001	0.03488	0.91
HC-8-149	24-Dec-13	149	0.05	0.00005	0.000550	26.30	0.00010	0.01385	0.00335	0.00009	0.025	0.000120	0.0098	13.65	0.24100	0.010	0.000002	0.0001	0.03595	0.89
HC-8-150	31-Dec-13	150	0.05	0.00005	0.000561	26.10	0.00010	0.01418	0.00362	0.00009	0.028	0.000129	0.0100	13.48	0.24000	0.009	0.000002	0.0001	0.03703	0.87
HC-8-151	07-Jan-14	151	0.05	0.00005	0.000572	25.90	0.00010	0.01450	0.00389	0.00010	0.031	0.000138	0.0101	13.30	0.23900	0.009	0.000002	0.0001	0.03810	0.84
HC-8-152	14-Jan-14	152	0.05	0.00005	0.000567	25.70	0.00010	0.01445	0.00381	0.00011	0.030	0.000132	0.0099	13.08	0.23600	0.008	0.000002	0.0001	0.03783	0.82
HC-8-153	21-Jan-14	153	0.05	0.00005	0.000562	25.50	0.00010	0.01440	0.00372	0.00012	0.030	0.000126	0.0097	12.85	0.23300	0.007	0.000002	0.0001	0.03755	0.79
HC-8-154	28-Jan-14	154	0.05	0.00005	0.000557	25.30	0.00010	0.01435	0.00364	0.00013	0.030	0.000119	0.0095	12.63	0.23000	0.006	0.000002	0.0001	0.03728	0.76
HC-8-155	04-Feb-14	155	0.05	0.00005	0.000552	25.10	0.00010	0.01430	0.00355	0.00014	0.030	0.000113	0.0093	12.40	0.22700	0.005	0.000002	0.0001	0.03700	0.73
HC-8-156	11-Feb-14	156	0.05	0.00005	0.000559	24.33	0.00010	0.01450	0.00376	0.00014	0.030	0.000126	0.0095	12.45	0.22775	0.006	0.000002	0.0001	0.03763	0.73
HC-8-157	18-Feb-14	157	0.05	0.00005	0.000566	23.55	0.00010	0.01470	0.00397	0.00014	0.030	0.000139	0.0096	12.50	0.22850	0.006	0.000002	0.0001	0.03825	0.72
HC-8-158	25-Feb-14	158	0.05	0.00005	0.000573	22.78	0.00010	0.01490	0.00418	0.00014	0.030	0.000152	0.0098	12.55	0.22925	0.007	0.000002	0.0001	0.03888	0.71
HC-8-159	04-Mar-14	159	0.05	0.00005	0.000580	22.00	0.00010	0.01510	0.00439	0.00014	0.031	0.000165	0.0099	12.60	0.23000	0.007	0.000002	0.0001	0.03950	0.70
HC-8-160	11-Mar-14	160	0.05	0.00005	0.000583	22.53	0.00010	0.01485	0.00429	0.00015	0.031	0.000166	0.0100	12.63	0.23025	0.007	0.000002	0.0001	0.03898	0.71
HC-8-161	18-Mar-14	161	0.05	0.00005	0.000585	23.05	0.00010	0.01460	0.00419	0.00016	0.031	0.000167	0.0101	12.65	0.23050	0.007	0.000002	0.0001	0.03845	0.73
HC-8-162	25-Mar-14	162	0.05	0.00005	0.000588	23.58	0.00010	0.01435	0.00409	0.00017	0.031	0.000167	0.0101	12.68	0.23075	0.006	0.000002	0.0001	0.03793	0.74
HC-8-163	01-Apr-14	163	0.05	0.00005	0.000590	24.10	0.00010	0.01410	0.00399	0.00017	0.032	0.000168	0.0102	12.70	0.23100	0.006	0.000002	0.0001	0.03740	0.75
HC-8-164	08-Apr-14	164	0.05	0.00005	0.000569	23.75	0.00010	0.01348	0.00380	0.00017	0.034	0.000163	0.0102	12.50	0.22475	0.005	0.000002	0.0001	0.03588	0.75
HC-8-165	15-Apr-14	165	0.05	0.00005	0.000548	23.40	0.00010	0.01285	0.00361	0.00017	0.036	0.000158	0.0102	12.30	0.21850	0.005	0.000002	0.0001	0.03435	0.75
HC-8-166	22-Apr-14	166	0.05	0.00005	0.000527	23.05	0.00010	0.01223	0.00342	0.00017	0.038	0.000153	0.0101	12.10	0.21225	0.004	0.000002	0.0001	0.03283	0.76
HC-8-167	29-Apr-14	167	0.05	0.00005	0.000506	22.70	0.00010	0.01160	0.00323	0.00017	0.041	0.000148	0.0101	11.90	0.20600	0.004	0.000002	0.0001	0.03130	0.76
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00006</b>	<b>0.000200</b>	<b>23.68</b>	<b>0.00012</b>	<b>0.00539</b>	<b>0.00112</b>	<b>0.00006</b>	<b>0.017</b>	<b>0.000093</b>	<b>0.0210</b>	<b>11.44</b>	<b>0.10063</b>	<b>0.010</b>	<b>0.000002</b>	<b>0.0016</b>	<b>0.01291</b>	<b>0.94</b>
<b>HC9 Hasler Mudstone</b>																				
HC-9-0	15-Feb-11	0	0.07	0.00013	0.000018	0.11	0.00050	0.00009	0.00159	0.00007	0.195	0.000616	0.0461	0.08	0.00093	0.096	0.000010	0.0026	0.00085	0.46
HC-9-1	22-Feb-11	1	0.08	0.00005	0.000014	0.12	0.00020	0.00003	0.00081	0.00005	0.022	0.000144	0.1180	0.05	0.00019	0.050	0.000020	0.0175	0.00025	0.32
HC-9-2	01-Mar-11	2	0.07	0.00005	0.000010	0.10	0.00010	0.00004	0.00039	0.00005	0.016	0.000112	0.0954	0.05	0.00020	0.029	0.000020	0.0119	0.00018	0.25
HC-9-3	08-Mar-11	3	0.07	0.00005	0.000005	0.08	0.00010	0.00004	0.00076	0.00005	0.020	0.000066	0.0769	0.05	0.00019	0.030	0.000002	0.0097	0.00028	0.21
HC-9-4	15-Mar-11	4	0.07	0.00005	0.000005	0.09	0.00030	0.00006	0.00054	0.00005	0.040	0.000089	0.0709	0.05	0.00022	0.071	0.000020	0.0089	0.00030	0.24
HC-9-5	22-Mar-11	5	0.06	0.00005	0.000012	0.19	0.00010	0.00005	0.00054	0.00005	0.037	0.000108	0.0640	0.05	0.00021	0.041	0.000020	0.0075	0.00027	0.20
HC-9-6	29-Mar-11	6	0.05	0.00008	0.000005	0.16	0.00030	0.00008	0.00063	0.00005	0.053	0.000123	0.0550	0.05	0.00031	0.048	0.000020	0.0073	0.00044	0.39
HC-9-7	05-Apr-11	7	0.05	0.00005	0.000005	0.13	0.00010	0.00004	0.00057	0.00005	0.030	0.000082	0.0491	0.05	0.00021	0.017	0.000002	0.0056	0.00028	0.18
HC-9-8	12-Apr-11	8	0.05	0.00001	0.000050	0.07	0.00030	0.00007	0.00064	0.00005	0.056	0.000115	0.0473	0.05	0.00029	0.022	0.000003	0.0044	0.00072	0.23
HC-9-9	19-Apr-11	9	0.05	0.00008	0.000005	0.11	0.00030	0.00007	0.00049	0.00005	0.052	0.000121	0.0453	0.05	0.00028	0.023	0.000002	0.0077	0.00045	0.21
HC-9-10	26-Apr-11	10	0.05	0.00005	0.000005	0.10	0.00020	0.00004	0.00043	0.00005	0.034	0.000065	0.0389	0.05	0.00015	0.016	0.000002	0.0078	0.00028	0.17
HC-9-11	03-May-11	11	0.05	0.00006	0.000006	0.11	0.00020	0.00006	0.00051	0.00005	0.047	0.000131	0.0382	0.05	0.00032	0.022	0.000002	0.0079	0.00039	0.18
HC-9-12	10-May-11	12	0.05	0.00007	0.000005	0.09	0.00030	0.00008	0.00063	0.00005	0.065	0.000117	0.0385	0.05	0.00031	0.031	0.000002	0.0074	0.00058	0.21
HC-9-13	17-May-11	13	0.05	0.00005	0.000012	0.09	0.00020	0.00003	0.00037	0.00005	0.021	0.000054	0.0388	0.05	0.00010	0.022	0.000002	0.0078	0.00016	0.15
HC-9-14	24-May-11	14	0.05	0.00005	0.000005	0.11	0.00010	0.00004	0.00035	0.00005	0.029	0.000064	0.0346	0.05	0.00014	0.013	0.000002	0.0077	0.00016	0.15
HC-9-15	31-May-11	15	0.05	0.00005	0.000005	0.12	0.00010	0.00003	0.00063	0.00005	0.022	0.000066	0.0358	0.05	0.00012	0.008	0.000002	0.0087	0.00031	0.14
HC-9-16	07-Jun-11	16	0.05	0.00005	0.000010	0.05	0.00010	0.00004	0.01550	0.00005	0.025	0.000237	0.0338	0.05	0.00017	0.011	0.000002	0.0079	0.00023	0.15
HC-9-17	14-Jun-11	17	0.05	0.00006	0.000005	0.11	0.00020	0.00005	0.00053	0.00005	0.038	0.000085	0.0307	0.05	0.00015	0.021	0.000002	0.0079	0.00027	0.16
HC-9-18	21-Jun-11	18	0.05	0.00005	0.000005	0.09	0.00010	0.00003	0.00034	0.00005	0.025	0.000047	0.0297	0.05	0.00011	0.019	0.000002	0.0071	0.00017	0.15
HC-9-19	28-Jun-11	19	0.05	0.00005	0.000012	0.14	0.00020	0.00003	0.00042	0.00005	0.020	0.000065	0.0291	0.05	0.00014	0.022	0.000002	0.0078	0.00019	0.14
HC-9-20	05-Jul-11	20	0.05	0.00005	0.000010	0.12	0.00020	0.00003	0.00043	0.00005	0.024	0.000066	0.0275	0.05	0.00015	0.024	0.000002	0.0076	0.00020	0.14
HC-9-21	12-Jul-11	21	0.05	0.00006	0.000009	0.11	0.00020	0.00004	0.00043	0.00005	0.027	0.000067	0.0259	0.05	0.00016	0.025	0.000002	0.0073	0.00022	0.15
HC-9-22	19-Jul-11	22	0.05	0.00006	0.000007	0.09	0.00020	0.00004	0.00044	0.00005	0.031	0.000068	0.0242	0.05	0.00016	0.027	0.000002	0.0071	0.00023	0.15
HC-9-23	26-Jul-11	23	0.05	0.00006	0.000005	0.07	0.00020	0.00004	0.00044	0.00005	0.034	0.000069	0.0226	0.05	0.00017	0.028	0.000002	0.0069	0.00024	0.15
HC-9-24	02-Aug-11	24	0.05	0.00006	0.000005	0.08	0.00023	0.00004	0.00045	0.00005	0.036	0.000079	0.0231	0.05	0.00022	0.027	0.000002	0.0068	0.00025	0.16

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-9-25	09-Aug-11	25	0.05	0.00006	0.000005	0.09	0.00025	0.00004	0.00046	0.00005	0.038	0.000089	0.0236	0.05	0.00027	0.025	0.000002	0.0068	0.00026	0.16
HC-9-26	16-Aug-11	26	0.05	0.00005	0.000005	0.09	0.00028	0.00004	0.00046	0.00005	0.039	0.000098	0.0240	0.05	0.00032	0.024	0.000002	0.0068	0.00026	0.17
HC-9-27	23-Aug-11	27	0.05	0.00005	0.000005	0.10	0.00030	0.00005	0.00047	0.00005	0.041	0.000108	0.0245	0.05	0.00037	0.022	0.000002	0.0068	0.00027	0.17
HC-9-28	30-Aug-11	28	0.05	0.00005	0.000005	0.11	0.00025	0.00004	0.00047	0.00005	0.034	0.000093	0.0245	0.05	0.00033	0.019	0.000002	0.0064	0.00023	0.16
HC-9-29	06-Sep-11	29	0.05	0.00005	0.000005	0.13	0.00020	0.00004	0.00047	0.00005	0.027	0.000078	0.0245	0.05	0.00030	0.015	0.000002	0.0060	0.00020	0.16
HC-9-30	13-Sep-11	30	0.05	0.00005	0.000005	0.14	0.00015	0.00003	0.00047	0.00005	0.019	0.000062	0.0245	0.05	0.00026	0.012	0.000002	0.0056	0.00016	0.15
HC-9-31	20-Sep-11	31	0.05	0.00005	0.000005	0.15	0.00010	0.00002	0.00047	0.00005	0.012	0.000047	0.0245	0.05	0.00022	0.008	0.000002	0.0052	0.00012	0.14
HC-9-32	27-Sep-11	32	0.05	0.00005	0.000005	0.16	0.00010	0.00003	0.00048	0.00005	0.014	0.000050	0.0250	0.05	0.00038	0.009	0.000002	0.0046	0.00014	0.16
HC-9-33	04-Oct-11	33	0.05	0.00005	0.000005	0.17	0.00010	0.00003	0.00050	0.00005	0.016	0.000052	0.0254	0.06	0.00053	0.009	0.000002	0.0041	0.00015	0.17
HC-9-34	11-Oct-11	34	0.05	0.00005	0.000005	0.18	0.00010	0.00003	0.00051	0.00005	0.017	0.000055	0.0259	0.06	0.00069	0.010	0.000002	0.0035	0.00017	0.19
HC-9-35	18-Oct-11	35	0.05	0.00005	0.000005	0.19	0.00010	0.00003	0.00052	0.00005	0.019	0.000057	0.0263	0.06	0.00084	0.010	0.000002	0.0029	0.00018	0.20
HC-9-36	25-Oct-11	36	0.05	0.00005	0.000009	0.23	0.00010	0.00010	0.00047	0.00005	0.016	0.000053	0.0283	0.08	0.00170	0.016	0.000002	0.0028	0.00034	0.22
HC-9-37	01-Nov-11	37	0.05	0.00005	0.000013	0.26	0.00010	0.00016	0.00042	0.00005	0.012	0.000049	0.0303	0.10	0.00255	0.021	0.000002	0.0027	0.00049	0.24
HC-9-38	08-Nov-11	38	0.05	0.00005	0.000016	0.30	0.00010	0.00022	0.00037	0.00005	0.009	0.000045	0.0323	0.12	0.00341	0.027	0.000002	0.0026	0.00065	0.25
HC-9-39	15-Nov-11	39	0.05	0.00005	0.000020	0.33	0.00010	0.00028	0.00032	0.00005	0.005	0.000041	0.0343	0.14	0.00426	0.032	0.000002	0.0025	0.00080	0.27
HC-9-40	22-Nov-11	40	0.05	0.00005	0.000023	0.42	0.00010	0.00035	0.00045	0.00005	0.005	0.000038	0.0377	0.17	0.00513	0.028	0.000002	0.0022	0.00099	0.29
HC-9-41	29-Nov-11	41	0.05	0.00005	0.000027	0.50	0.00010	0.00043	0.00057	0.00005	0.005	0.000035	0.0411	0.20	0.00600	0.025	0.000002	0.0020	0.00117	0.32
HC-9-42	06-Dec-11	42	0.05	0.00005	0.000030	0.59	0.00010	0.00050	0.00070	0.00005	0.005	0.000031	0.0444	0.23	0.00687	0.021	0.000002	0.0017	0.00136	0.34
HC-9-43	13-Dec-11	43	0.05	0.00005	0.000033	0.67	0.00010	0.00058	0.00082	0.00005	0.005	0.000028	0.0478	0.26	0.00774	0.017	0.000002	0.0015	0.00154	0.36
HC-9-44	20-Dec-11	44	0.05	0.00005	0.000047	1.10	0.00010	0.00102	0.00075	0.00005	0.009	0.000031	0.0500	0.41	0.01111	0.017	0.000002	0.0013	0.00272	0.42
HC-9-45	27-Dec-11	45	0.05	0.00005	0.000060	1.52	0.00010	0.00147	0.00068	0.00005	0.012	0.000035	0.0522	0.55	0.01447	0.016	0.000002	0.0011	0.00390	0.48
HC-9-46	03-Jan-12	46	0.05	0.00005	0.000074	1.95	0.00010	0.00191	0.00060	0.00005	0.016	0.000038	0.0544	0.70	0.01784	0.016	0.000002	0.0008	0.00508	0.53
HC-9-47	10-Jan-12	47	0.05	0.00005	0.000087	2.37	0.00010	0.00236	0.00053	0.00005	0.019	0.000041	0.0566	0.84	0.02120	0.015	0.000002	0.0006	0.00626	0.59
HC-9-48	17-Jan-12	48	0.05	0.00005	0.000119	3.02	0.00010	0.00349	0.00084	0.00005	0.039	0.000070	0.0585	1.20	0.02868	0.016	0.000002	0.0006	0.00927	0.71
HC-9-49	24-Jan-12	49	0.05	0.00005	0.000151	3.68	0.00010	0.00463	0.00115	0.00005	0.059	0.000099	0.0604	1.56	0.03615	0.016	0.000002	0.0005	0.01228	0.83
HC-9-50	31-Jan-12	50	0.05	0.00005	0.000182	4.33	0.00010	0.00576	0.00145	0.00005	0.078	0.000128	0.0623	1.92	0.04363	0.017	0.000002	0.0004	0.01529	0.95
HC-9-51	07-Feb-12	51	0.05	0.00005	0.000214	4.98	0.00010	0.00689	0.00176	0.00005	0.098	0.000157	0.0642	2.28	0.05110	0.017	0.000002	0.0003	0.01830	1.07
HC-9-52	14-Feb-12	52	0.05	0.00005	0.000226	5.12	0.00010	0.00726	0.00193	0.00005	0.112	0.000152	0.0629	2.32	0.05518	0.017	0.000002	0.0003	0.01958	1.09
HC-9-53	21-Feb-12	53	0.05	0.00005	0.000238	5.27	0.00010	0.00763	0.00210	0.00005	0.126	0.000147	0.0616	2.36	0.05925	0.017	0.000002	0.0003	0.02085	1.12
HC-9-54	28-Feb-12	54	0.05	0.00005	0.000250	5.41	0.00010	0.00799	0.00227	0.00005	0.140	0.000142	0.0603	2.40	0.06333	0.017	0.000002	0.0002	0.02213	1.14
HC-9-55	06-Mar-12	55	0.05	0.00005	0.000262	5.55	0.00010	0.00836	0.00244	0.00005	0.154	0.000137	0.0590	2.44	0.06740	0.017	0.000002	0.0002	0.02340	1.16
HC-9-56	13-Mar-12	56	0.05	0.00005	0.000269	5.77	0.00010	0.00870	0.00264	0.00005	0.152	0.000140	0.0574	2.53	0.07080	0.016	0.000002	0.0002	0.02443	1.19
HC-9-57	20-Mar-12	57	0.05	0.00005	0.000275	5.98	0.00010	0.00904	0.00285	0.00005	0.150	0.000142	0.0559	2.62	0.07420	0.014	0.000002	0.0002	0.02545	1.22
HC-9-58	27-Mar-12	58	0.05	0.00005	0.000282	6.20	0.00010	0.00937	0.00305	0.00005	0.147	0.000145	0.0543	2.71	0.07760	0.013	0.000002	0.0001	0.02648	1.24
HC-9-59	03-Apr-12	59	0.05	0.00005	0.000288	6.41	0.00010	0.00971	0.00325	0.00005	0.145	0.000147	0.0527	2.80	0.08100	0.011	0.000002	0.0001	0.02750	1.27
HC-9-60	10-Apr-12	60	0.05	0.00005	0.000301	6.71	0.00010	0.01026	0.00331	0.00005	0.167	0.000164	0.0509	2.95	0.08535	0.012	0.000002	0.0001	0.02915	1.31
HC-9-61	17-Apr-12	61	0.05	0.00005	0.000314	7.01	0.00010	0.01081	0.00338	0.00005	0.189	0.000181	0.0492	3.09	0.08970	0.012	0.000002	0.0001	0.03080	1.36
HC-9-62	24-Apr-12	62	0.05	0.00005	0.000326	7.30	0.00010	0.01135	0.00344	0.00005	0.211	0.000197	0.0474	3.24	0.09405	0.013	0.000002	0.0001	0.03245	1.40
HC-9-63	01-May-12	63	0.05	0.00005	0.000339	7.60	0.00010	0.01190	0.00350	0.00005	0.233	0.000214	0.0456	3.38	0.09840	0.014	0.000002	0.0001	0.03410	1.44
HC-9-64	08-May-12	64	0.05	0.00006	0.000335	7.55	0.00010	0.01200	0.00356	0.00005	0.235	0.000212	0.0446	3.33	0.09905	0.014	0.000002	0.0001	0.03430	1.41
HC-9-65	15-May-12	65	0.05	0.00006	0.000331	7.50	0.00010	0.01210	0.00362	0.00005	0.237	0.000210	0.0435	3.27	0.09970	0.015	0.000002	0.0001	0.03450	1.38
HC-9-66	22-May-12	66	0.05	0.00007	0.000326	7.44	0.00010	0.01220	0.00367	0.00005	0.238	0.000207	0.0425	3.22	0.10035	0.015	0.000002	0.0001	0.03470	1.34
HC-9-67	29-May-12	67	0.05	0.00008	0.000322	7.39	0.00010	0.01230	0.00373	0.00005	0.240	0.000205	0.0414	3.16	0.10100	0.016	0.000002	0.0001	0.03490	1.31
HC-9-68	05-Jun-12	68	0.05	0.00011	0.000347	7.65	0.00010	0.01310	0.00428	0.00005	0.230	0.000225	0.0411	3.33	0.10850	0.015	0.000002	0.0001	0.03730	1.38
HC-9-69	12-Jun-12	69	0.05	0.00014	0.000371	7.91	0.00011	0.01390	0.00483	0.00005	0.221	0.000245	0.0407	3.51	0.11600	0.015	0.000002	0.0001	0.03970	1.46
HC-9-70	19-Jun-12	70	0.05	0.00017	0.000396	8.16	0.00011	0.01470	0.00537	0.00005	0.211	0.000265	0.0404	3.68	0.12350	0.015	0.000002	0.0001	0.04210	1.53
HC-9-71	26-Jun-12	71	0.05	0.00020	0.000420	8.42	0.00011	0.01550	0.00592	0.00005	0.201	0.000285	0.0400	3.85	0.13100	0.015	0.000002	0.0001	0.04450	1.60
HC-9-72	03-Jul-12	72	0.05	0.00017	0.000457	9.24	0.00012	0.01705	0.00744	0.00009	0.212	0.000400	0.0400	4.17	0.14175	0.014	0.000002	0.0001	0.05003	1.68
HC-9-73	10-Jul-12	73	0.05	0.00014	0.000495	10.06	0.00013	0.01860	0.00896	0.00012	0.223	0.000516	0.0399	4.50	0.15250	0.013	0.000002	0.0001	0.05555	1.76



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-9-74	17-Jul-12	74	0.05	0.00010	0.000532	10.88	0.00013	0.02015	0.01048	0.00015	0.234	0.000631	0.0399	4.82	0.16325	0.012	0.000002	0.0001	0.06108	1.84
HC-9-75	24-Jul-12	75	0.05	0.00007	0.000569	11.70	0.00014	0.02170	0.01200	0.00019	0.245	0.000746	0.0398	5.14	0.17400	0.011	0.000002	0.0001	0.06660	1.92
HC-9-76	31-Jul-12	76	0.05	0.00008	0.000699	13.98	0.00016	0.02873	0.01485	0.00026	0.276	0.000955	0.0418	6.33	0.22150	0.008	0.000002	0.0001	0.09045	2.13
HC-9-77	07-Aug-12	77	0.05	0.00008	0.000830	16.25	0.00017	0.03575	0.01770	0.00033	0.308	0.001163	0.0437	7.52	0.26900	0.006	0.000002	0.0001	0.11430	2.35
HC-9-78	14-Aug-12	78	0.05	0.00009	0.000960	18.53	0.00019	0.04278	0.02055	0.00039	0.339	0.001372	0.0457	8.70	0.31650	0.004	0.000002	0.0001	0.13815	2.56
HC-9-79	21-Aug-12	79	0.05	0.00009	0.001090	20.80	0.00020	0.04980	0.02340	0.00046	0.370	0.001580	0.0476	9.89	0.36400	0.002	0.000002	0.0001	0.16200	2.77
HC-9-80	28-Aug-12	80	0.05	0.00011	0.001408	26.03	0.00030	0.06385	0.03033	0.00068	0.457	0.001943	0.0544	11.99	0.44250	0.004	0.000002	0.0001	0.21675	2.96
HC-9-81	04-Sep-12	81	0.05	0.00012	0.001725	31.25	0.00040	0.07790	0.03725	0.00089	0.544	0.002305	0.0613	14.10	0.52100	0.007	0.000002	0.0001	0.27150	3.15
HC-9-82	11-Sep-12	82	0.05	0.00013	0.002043	36.48	0.00049	0.09195	0.04418	0.00110	0.630	0.002668	0.0681	16.20	0.59950	0.009	0.000002	0.0001	0.32625	3.34
HC-9-83	18-Sep-12	83	0.05	0.00015	0.002360	41.70	0.00059	0.10600	0.05110	0.00131	0.717	0.003030	0.0749	18.30	0.67800	0.012	0.000002	0.0001	0.38100	3.53
HC-9-84	25-Sep-12	84	0.05	0.00017	0.002448	43.05	0.00075	0.10975	0.05460	0.00157	0.700	0.003293	0.0805	19.05	0.70350	0.012	0.000002	0.0001	0.40150	3.70
HC-9-85	02-Oct-12	85	0.05	0.00018	0.002535	44.40	0.00091	0.11350	0.05810	0.00183	0.683	0.003555	0.0861	19.80	0.72900	0.011	0.000002	0.0001	0.42200	3.87
HC-9-86	09-Oct-12	86	0.05	0.00020	0.002623	45.75	0.00107	0.11725	0.06160	0.00208	0.665	0.003818	0.0916	20.55	0.75450	0.011	0.000002	0.0001	0.44250	4.03
HC-9-87	16-Oct-12	87	0.05	0.00022	0.002710	47.10	0.00123	0.12100	0.06510	0.00234	0.648	0.004080	0.0972	21.30	0.78000	0.011	0.000002	0.0001	0.46300	4.20
HC-9-88	23-Oct-12	88	0.05	0.00021	0.002638	46.55	0.00142	0.11750	0.06498	0.00253	0.695	0.003990	0.0965	21.28	0.77575	0.009	0.000002	0.0001	0.45275	4.23
HC-9-89	30-Oct-12	89	0.05	0.00020	0.002565	46.00	0.00162	0.11400	0.06485	0.00272	0.742	0.003900	0.0958	21.25	0.77150	0.007	0.000002	0.0001	0.44250	4.27
HC-9-90	06-Nov-12	90	0.05	0.00019	0.002493	45.45	0.00181	0.11050	0.06473	0.00290	0.789	0.003810	0.0951	21.23	0.76725	0.005	0.000002	0.0001	0.43225	4.30
HC-9-91	13-Nov-12	91	0.05	0.00018	0.002420	44.90	0.00200	0.10700	0.06460	0.00309	0.836	0.003720	0.0944	21.20	0.76300	0.003	0.000002	0.0001	0.42200	4.33
HC-9-92	20-Nov-12	92	0.05	0.00017	0.002348	43.78	0.00209	0.10260	0.06243	0.00319	0.831	0.003520	0.0943	20.80	0.73450	0.004	0.000002	0.0001	0.40600	4.30
HC-9-93	27-Nov-12	93	0.05	0.00016	0.002275	42.65	0.00218	0.09820	0.06025	0.00329	0.826	0.003320	0.0942	20.40	0.70600	0.004	0.000002	0.0001	0.39000	4.27
HC-9-94	04-Dec-12	94	0.05	0.00015	0.002203	41.53	0.00227	0.09380	0.05808	0.00338	0.820	0.003120	0.0941	20.00	0.67750	0.005	0.000002	0.0001	0.37400	4.23
HC-9-95	11-Dec-12	95	0.05	0.00014	0.002130	40.40	0.00236	0.08940	0.05590	0.00348	0.815	0.002920	0.0940	19.60	0.64900	0.006	0.000002	0.0001	0.35800	4.20
HC-9-96	18-Dec-12	96	0.05	0.00015	0.002140	40.70	0.00259	0.08995	0.05680	0.00378	0.834	0.003040	0.0934	19.88	0.66150	0.005	0.000002	0.0001	0.36150	4.19
HC-9-97	25-Dec-12	97	0.05	0.00015	0.002150	41.00	0.00283	0.09050	0.05770	0.00409	0.854	0.003160	0.0929	20.15	0.67400	0.004	0.000002	0.0001	0.36500	4.18
HC-9-98	01-Jan-13	98	0.05	0.00016	0.002160	41.30	0.00306	0.09105	0.05860	0.00439	0.873	0.003280	0.0923	20.43	0.68650	0.004	0.000002	0.0001	0.36850	4.17
HC-9-99	08-Jan-13	99	0.05	0.00017	0.002170	41.60	0.00329	0.09160	0.05950	0.00469	0.892	0.003400	0.0917	20.70	0.69900	0.003	0.000002	0.0001	0.37200	4.16
HC-9-100	15-Jan-13	100	0.05	0.00017	0.002033	39.13	0.00315	0.08620	0.05653	0.00454	0.905	0.003180	0.0882	19.70	0.66000	0.005	0.000002	0.0001	0.35125	4.08
HC-9-101	22-Jan-13	101	0.05	0.00016	0.001895	36.65	0.00301	0.08080	0.05355	0.00438	0.918	0.002960	0.0848	18.70	0.62100	0.007	0.000002	0.0001	0.33050	4.00
HC-9-102	29-Jan-13	102	0.05	0.00016	0.001758	34.18	0.00286	0.07540	0.05058	0.00423	0.931	0.002740	0.0813	17.70	0.58200	0.009	0.000002	0.0001	0.30975	3.92
HC-9-103	05-Feb-13	103	0.05	0.00015	0.001620	31.70	0.00272	0.07000	0.04760	0.00407	0.944	0.002520	0.0778	16.70	0.54300	0.011	0.000002	0.0001	0.28900	3.84
HC-9-104	12-Feb-13	104	0.05	0.00014	0.001458	28.28	0.00252	0.06168	0.04310	0.00374	0.884	0.002833	0.0691	14.84	0.48050	0.009	0.000002	0.0001	0.25600	3.52
HC-9-105	19-Feb-13	105	0.05	0.00012	0.001296	24.85	0.00233	0.05335	0.03860	0.00340	0.825	0.003145	0.0604	12.99	0.41800	0.007	0.000002	0.0001	0.22300	3.20
HC-9-106	26-Feb-13	106	0.05	0.00011	0.001133	21.43	0.00213	0.04503	0.03410	0.00307	0.765	0.003458	0.0516	11.13	0.35550	0.004	0.000002	0.0001	0.19000	2.88
HC-9-107	05-Mar-13	107	0.05	0.00010	0.000971	18.00	0.00193	0.03670	0.02960	0.00273	0.705	0.003770	0.0429	9.27	0.29300	0.002	0.000002	0.0001	0.15700	2.56
HC-9-108	12-Mar-13	108	0.05	0.00011	0.001068	19.90	0.00204	0.04013	0.03260	0.00294	0.729	0.003458	0.0498	10.25	0.32400	0.002	0.000002	0.0001	0.17125	2.76
HC-9-109	19-Mar-13	109	0.05	0.00011	0.001166	21.80	0.00215	0.04355	0.03560	0.00314	0.753	0.003145	0.0567	11.24	0.35500	0.002	0.000002	0.0001	0.18550	2.97
HC-9-110	26-Mar-13	110	0.05	0.00012	0.001263	23.70	0.00226	0.04698	0.03860	0.00335	0.777	0.002833	0.0636	12.22	0.38600	0.002	0.000002	0.0001	0.19975	3.17
HC-9-111	02-Apr-13	111	0.05	0.00013	0.001360	25.60	0.00237	0.05040	0.04160	0.00355	0.801	0.002520	0.0705	13.20	0.41700	0.002	0.000002	0.0001	0.21400	3.37
HC-9-112	09-Apr-13	112	0.05	0.00012	0.001350	25.03	0.00237	0.04968	0.04100	0.00362	0.810	0.002553	0.0696	13.08	0.41175	0.002	0.000002	0.0001	0.21075	3.36
HC-9-113	16-Apr-13	113	0.05	0.00012	0.001340	24.45	0.00236	0.04895	0.04040	0.00369	0.819	0.002585	0.0687	12.95	0.40650	0.002	0.000002	0.0001	0.20750	3.36
HC-9-114	23-Apr-13	114	0.05	0.00011	0.001330	23.88	0.00236	0.04823	0.03980	0.00375	0.828	0.002618	0.0677	12.83	0.40125	0.002	0.000002	0.0001	0.20425	3.35
HC-9-115	30-Apr-13	115	0.05	0.00011	0.001320	23.30	0.00235	0.04750	0.03920	0.00382	0.837	0.002650	0.0668	12.70	0.39600	0.002	0.000002	0.0001	0.20100	3.34
HC-9-116	07-May-13	116	0.05	0.00011	0.001268	22.60	0.00234	0.04555	0.03805	0.00377	0.822	0.002538	0.0649	12.23	0.38300	0.002	0.000004	0.0001	0.19325	3.26
HC-9-117	14-May-13	117	0.05	0.00011	0.001215	21.90	0.00233	0.04360	0.03690	0.00372	0.806	0.002425	0.0630	11.75	0.37000	0.002	0.000006	0.0001	0.18550	3.18
HC-9-118	21-May-13	118	0.05	0.00011	0.001163	21.20	0.00232	0.04165	0.03575	0.00366	0.791	0.002313	0.0611	11.28	0.35700	0.002	0.000008	0.0001	0.17775	3.09
HC-9-119	28-May-13	119	0.05	0.00011	0.001110	20.50	0.00231	0.03970	0.03460	0.00361	0.775	0.002200	0.0592	10.80	0.34400	0.002	0.000010	0.0001	0.17000	3.01
HC-9-120	04-Jun-13	120	0.05	0.00012	0.001100	20.10	0.00226	0.03880	0.03413	0.00357	0.763	0.002110	0.0593	10.78	0.33800	0.008	0.000008	0.0001	0.16675	3.04
HC-9-121	11-Jun-13	121	0.05	0.00012	0.001090	19.70	0.00222	0.03790	0.03365	0.00353	0.750	0.002020	0.0593	10.75	0.33200	0.013	0.000006	0.0001	0.16350	3.07
HC-9-122	18-Jun-13	122	0.05	0.00013	0.001080	19.30	0.00217	0.03700	0.03318	0.00348	0.738	0.001930	0.0594	10.73	0.32600	0.019	0.000004	0.0001	0.16025	3.09

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-9-123	25-Jun-13	123	0.05	0.00013	0.001070	18.90	0.00212	0.03610	0.03270	0.00344	0.725	0.001840	0.0594	10.70	0.32000	0.025	0.000002	0.0001	0.15700	3.12
HC-9-124	02-Jul-13	124	0.05	0.00013	0.001055	18.25	0.00208	0.03515	0.03220	0.00342	0.728	0.001845	0.0590	10.43	0.31125	0.020	0.000002	0.0001	0.15300	3.02
HC-9-125	09-Jul-13	125	0.05	0.00012	0.001040	17.60	0.00204	0.03420	0.03170	0.00340	0.730	0.001850	0.0585	10.16	0.30250	0.015	0.000002	0.0001	0.14900	2.91
HC-9-126	16-Jul-13	126	0.05	0.00011	0.001025	16.95	0.00200	0.03325	0.03120	0.00338	0.733	0.001855	0.0581	9.89	0.29375	0.011	0.000002	0.0001	0.14500	2.81
HC-9-127	23-Jul-13	127	0.05	0.00011	0.001010	16.30	0.00196	0.03230	0.03070	0.00336	0.735	0.001860	0.0576	9.62	0.28500	0.006	0.000002	0.0001	0.14100	2.70
HC-9-128	30-Jul-13	128	0.05	0.00011	0.000997	16.05	0.00196	0.03280	0.03168	0.00330	0.722	0.002085	0.0566	9.63	0.29075	0.006	0.000002	0.0001	0.14350	2.72
HC-9-129	06-Aug-13	129	0.05	0.00010	0.000984	15.80	0.00196	0.03330	0.03265	0.00324	0.709	0.002310	0.0556	9.64	0.29650	0.006	0.000002	0.0001	0.14600	2.74
HC-9-130	13-Aug-13	130	0.05	0.00010	0.000970	15.55	0.00195	0.03380	0.03363	0.00318	0.696	0.002535	0.0545	9.65	0.30225	0.006	0.000002	0.0001	0.14850	2.75
HC-9-131	20-Aug-13	131	0.05	0.00010	0.000957	15.30	0.00195	0.03430	0.03460	0.00312	0.683	0.002760	0.0535	9.66	0.30800	0.006	0.000002	0.0001	0.15100	2.77
HC-9-132	27-Aug-13	132	0.05	0.00010	0.000948	15.13	0.00190	0.03330	0.03388	0.00315	0.683	0.002533	0.0528	9.45	0.29750	0.007	0.000002	0.0001	0.14725	2.74
HC-9-133	03-Sep-13	133	0.05	0.00011	0.000940	14.95	0.00186	0.03230	0.03315	0.00319	0.683	0.002305	0.0520	9.23	0.28700	0.009	0.000002	0.0001	0.14350	2.72
HC-9-134	10-Sep-13	134	0.05	0.00011	0.000931	14.78	0.00181	0.03130	0.03243	0.00322	0.683	0.002078	0.0513	9.02	0.27650	0.010	0.000002	0.0001	0.13975	2.69
HC-9-135	17-Sep-13	135	0.05	0.00012	0.000922	14.60	0.00176	0.03030	0.03170	0.00325	0.683	0.001850	0.0505	8.80	0.26600	0.012	0.000002	0.0001	0.13600	2.66
HC-9-136	24-Sep-13	136	0.05	0.00011	0.000907	14.83	0.00174	0.02945	0.03095	0.00317	0.656	0.001780	0.0505	8.70	0.26050	0.010	0.000002	0.0001	0.13275	2.64
HC-9-137	01-Oct-13	137	0.05	0.00011	0.000892	15.05	0.00173	0.02860	0.03020	0.00309	0.628	0.001710	0.0505	8.60	0.25500	0.008	0.000002	0.0001	0.12950	2.61
HC-9-138	08-Oct-13	138	0.05	0.00010	0.000876	15.28	0.00171	0.02775	0.02945	0.00300	0.601	0.001640	0.0504	8.50	0.24950	0.006	0.000002	0.0001	0.12625	2.59
HC-9-139	15-Oct-13	139	0.05	0.00010	0.000861	15.50	0.00169	0.02690	0.02870	0.00292	0.573	0.001570	0.0504	8.40	0.24400	0.004	0.000002	0.0001	0.12300	2.56
HC-9-140	22-Oct-13	140	0.05	0.00010	0.000852	15.23	0.00165	0.02655	0.02895	0.00298	0.578	0.001590	0.0484	8.29	0.24100	0.005	0.000002	0.0001	0.12150	2.54
HC-9-141	29-Oct-13	141	0.05	0.00010	0.000844	14.95	0.00160	0.02620	0.02920	0.00304	0.582	0.001610	0.0464	8.19	0.23800	0.006	0.000002	0.0001	0.12000	2.52
HC-9-142	05-Nov-13	142	0.05	0.00010	0.000835	14.68	0.00156	0.02585	0.02945	0.00309	0.587	0.001630	0.0443	8.08	0.23500	0.008	0.000002	0.0001	0.11850	2.50
HC-9-143	12-Nov-13	143	0.05	0.00010	0.000826	14.40	0.00151	0.02550	0.02970	0.00315	0.591	0.001650	0.0423	7.97	0.23200	0.009	0.000002	0.0001	0.11700	2.48
HC-9-144	19-Nov-13	144	0.05	0.00010	0.000808	13.65	0.00150	0.02463	0.02890	0.00311	0.590	0.001628	0.0424	7.83	0.22700	0.010	0.000002	0.0001	0.11400	2.45
HC-9-145	26-Nov-13	145	0.05	0.00010	0.000791	12.90	0.00148	0.02375	0.02810	0.00307	0.588	0.001605	0.0426	7.69	0.22200	0.010	0.000002	0.0001	0.11100	2.42
HC-9-146	03-Dec-13	146	0.05	0.00010	0.000773	12.15	0.00147	0.02288	0.02730	0.00302	0.587	0.001583	0.0427	7.54	0.21700	0.010	0.000002	0.0001	0.10800	2.38
HC-9-147	10-Dec-13	147	0.05	0.00011	0.000755	11.40	0.00145	0.02200	0.02650	0.00298	0.585	0.001560	0.0428	7.40	0.21200	0.011	0.000002	0.0001	0.10500	2.35
HC-9-148	17-Dec-13	148	0.05	0.00010	0.000744	11.10	0.00143	0.02160	0.02605	0.00291	0.580	0.001530	0.0423	7.18	0.20550	0.010	0.000002	0.0001	0.10200	2.30
HC-9-149	24-Dec-13	149	0.05	0.00010	0.000733	10.80	0.00141	0.02120	0.02560	0.00284	0.575	0.001500	0.0418	6.96	0.19900	0.009	0.000002	0.0001	0.09900	2.25
HC-9-150	31-Dec-13	150	0.05	0.00010	0.000721	10.50	0.00139	0.02080	0.02515	0.00277	0.570	0.001470	0.0412	6.73	0.19250	0.008	0.000002	0.0001	0.09600	2.20
HC-9-151	07-Jan-14	151	0.05	0.00010	0.000710	10.20	0.00137	0.02040	0.02470	0.00270	0.565	0.001440	0.0407	6.51	0.18600	0.007	0.000002	0.0001	0.09300	2.15
HC-9-152	14-Jan-14	152	0.05	0.00009	0.000692	10.08	0.00137	0.01990	0.02423	0.00266	0.561	0.001400	0.0396	6.34	0.18125	0.007	0.000002	0.0001	0.09085	2.11
HC-9-153	21-Jan-14	153	0.05	0.00009	0.000673	9.97	0.00138	0.01940	0.02375	0.00262	0.558	0.001360	0.0386	6.16	0.17650	0.007	0.000002	0.0001	0.08870	2.07
HC-9-154	28-Jan-14	154	0.05	0.00008	0.000655	9.85	0.00138	0.01890	0.02328	0.00257	0.554	0.001320	0.0375	5.99	0.17175	0.007	0.000002	0.0001	0.08655	2.02
HC-9-155	04-Feb-14	155	0.05	0.00008	0.000636	9.73	0.00138	0.01840	0.02280	0.00253	0.550	0.001280	0.0364	5.81	0.16700	0.006	0.000002	0.0001	0.08440	1.98
HC-9-156	11-Feb-14	156	0.05	0.00008	0.000631	9.46	0.00133	0.01833	0.02290	0.00251	0.543	0.001285	0.0355	5.74	0.16500	0.006	0.000002	0.0001	0.08395	1.92
HC-9-157	18-Feb-14	157	0.05	0.00008	0.000626	9.19	0.00129	0.01825	0.02300	0.00249	0.536	0.001290	0.0345	5.68	0.16300	0.007	0.000002	0.0001	0.08350	1.87
HC-9-158	25-Feb-14	158	0.05	0.00008	0.000620	8.92	0.00124	0.01818	0.02310	0.00246	0.528	0.001295	0.0336	5.61	0.16100	0.007	0.000002	0.0001	0.08305	1.81
HC-9-159	04-Mar-14	159	0.05	0.00008	0.000615	8.65	0.00119	0.01810	0.02320	0.00244	0.521	0.001300	0.0326	5.54	0.15900	0.007	0.000002	0.0001	0.08260	1.75
HC-9-160	11-Mar-14	160	0.05	0.00008	0.000608	8.53	0.00118	0.01750	0.02268	0.00240	0.518	0.001285	0.0326	5.43	0.15625	0.006	0.000002	0.0001	0.08038	1.77
HC-9-161	18-Mar-14	161	0.05	0.00008	0.000601	8.40	0.00117	0.01690	0.02215	0.00236	0.515	0.001270	0.0326	5.32	0.15350	0.006	0.000002	0.0001	0.07815	1.80
HC-9-162	25-Mar-14	162	0.05	0.00009	0.000593	8.28	0.00116	0.01630	0.02163	0.00231	0.511	0.001255	0.0326	5.20	0.15075	0.005	0.000002	0.0001	0.07593	1.82
HC-9-163	01-Apr-14	163	0.05	0.00009	0.000586	8.15	0.00115	0.01570	0.02110	0.00227	0.508	0.001240	0.0326	5.09	0.14800	0.005	0.000002	0.0001	0.07370	1.84
HC-9-164	08-Apr-14	164	0.05	0.00009	0.000590	8.12	0.00115	0.01573	0.02123	0.00230	0.517	0.001240	0.0330	5.20	0.14750	0.005	0.000002	0.0001	0.07363	1.86
HC-9-165	15-Apr-14	165	0.05	0.00009	0.000593	8.09	0.00115	0.01575	0.02135	0.00233	0.526	0.001240	0.0335	5.31	0.14700	0.005	0.000002	0.0001	0.07355	1.88
HC-9-166	22-Apr-14	166	0.05	0.00009	0.000597	8.05	0.00114	0.01578	0.02148	0.00236	0.534	0.001240	0.0339	5.41	0.14650	0.006	0.000002	0.0001	0.07348	1.89
HC-9-167	29-Apr-14	167	0.05	0.00009	0.000600	8.02	0.00114	0.01580	0.02160	0.00239	0.543	0.001240	0.0343	5.52	0.14600	0.006	0.000002	0.0001	0.07340	1.91
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00009</b>	<b>0.000743</b>	<b>13.34</b>	<b>0.00101</b>	<b>0.02831</b>	<b>0.02084</b>	<b>0.00162</b>	<b>0.406</b>	<b>0.001296</b>	<b>0.0519</b>	<b>6.84</b>	<b>0.22105</b>	<b>0.013</b>	<b>0.000003</b>	<b>0.0017</b>	<b>0.11331</b>	<b>1.90</b>

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC10 Hulcross Mudstone																				
HC-10-0	05-Apr-11	0	0.05	0.00005	0.000009	0.36	0.00030	0.00003	0.00080	0.00005	0.037	0.000278	0.0612	0.07	0.00032	0.114	0.000002	0.0091	0.00044	0.64
HC-10-1	12-Apr-11	1	0.05	0.00001	0.000050	0.65	0.00020	0.00003	0.00054	0.00005	0.023	0.000153	0.1200	0.16	0.00043	0.032	0.000005	0.0476	0.00035	0.68
HC-10-2	19-Apr-11	2	0.05	0.00005	0.000005	1.16	0.00010	0.00001	0.00041	0.00005	0.013	0.000080	0.1020	0.33	0.00056	0.012	0.000002	0.0439	0.00020	0.62
HC-10-3	26-Apr-11	3	0.05	0.00005	0.000019	0.48	0.00010	0.00002	0.00042	0.00005	0.027	0.000115	0.0800	0.12	0.00040	0.012	0.000002	0.0318	0.00017	0.43
HC-10-4	03-May-11	4	0.05	0.00005	0.000006	0.45	0.00010	0.00001	0.00035	0.00005	0.023	0.000092	0.0751	0.12	0.00050	0.009	0.000002	0.0285	0.00017	0.42
HC-10-5	10-May-11	5	0.05	0.00005	0.000005	0.44	0.00010	0.00001	0.00199	0.00005	0.020	0.000089	0.0756	0.12	0.00031	0.013	0.000002	0.0245	0.00055	0.44
HC-10-6	17-May-11	6	0.05	0.00005	0.000005	0.36	0.00020	0.00004	0.00053	0.00005	0.054	0.000265	0.0704	0.09	0.00044	0.063	0.000002	0.0249	0.00027	0.42
HC-10-7	24-May-11	7	0.05	0.00006	0.000017	0.63	0.00030	0.00006	0.00048	0.00005	0.065	0.000249	0.0646	0.17	0.00046	0.012	0.000002	0.0254	0.00029	0.48
HC-10-8	31-May-11	8	0.05	0.00005	0.000010	0.49	0.00020	0.00004	0.00057	0.00005	0.045	0.000194	0.0612	0.13	0.00036	0.007	0.000002	0.0267	0.00025	0.41
HC-10-9	07-Jun-11	9	0.05	0.00005	0.000010	0.38	0.00020	0.00003	0.02010	0.00005	0.033	0.000301	0.0545	0.11	0.00029	0.009	0.000002	0.0231	0.00023	0.36
HC-10-10	14-Jun-11	10	0.05	0.00005	0.000005	0.50	0.00020	0.00004	0.00045	0.00005	0.045	0.000197	0.0527	0.13	0.00037	0.011	0.000002	0.0234	0.00026	0.36
HC-10-11	21-Jun-11	11	0.05	0.00005	0.000006	0.38	0.00020	0.00004	0.00037	0.00005	0.045	0.000166	0.0492	0.10	0.00025	0.023	0.000002	0.0229	0.00023	0.37
HC-10-12	28-Jun-11	12	0.05	0.00005	0.000010	0.37	0.00020	0.00004	0.00039	0.00005	0.037	0.000160	0.0479	0.11	0.00034	0.011	0.000002	0.0237	0.00025	0.39
HC-10-13	05-Jul-11	13	0.05	0.00005	0.000015	0.54	0.00010	0.00002	0.00031	0.00005	0.018	0.000068	0.0477	0.15	0.00088	0.013	0.000002	0.0214	0.00015	0.39
HC-10-14	12-Jul-11	14	0.05	0.00005	0.000013	0.48	0.00020	0.00003	0.00032	0.00005	0.035	0.000139	0.0461	0.14	0.00032	0.022	0.000002	0.0222	0.00025	0.41
HC-10-15	19-Jul-11	15	0.05	0.00005	0.000005	0.98	0.00010	0.00003	0.00037	0.00005	0.018	0.000092	0.0469	0.26	0.00022	0.011	0.000002	0.0230	0.00014	0.47
HC-10-16	26-Jul-11	16	0.05	0.00005	0.000005	0.42	0.00020	0.00003	0.00038	0.00005	0.030	0.000108	0.0335	0.13	0.00026	0.002	0.000002	0.0184	0.00021	0.33
HC-10-17	02-Aug-11	17	0.05	0.00005	0.000005	0.50	0.00010	0.00003	0.00043	0.00005	0.026	0.000103	0.0401	0.15	0.00027	0.015	0.000003	0.0224	0.00018	0.37
HC-10-18	09-Aug-11	18	0.05	0.00005	0.000005	0.64	0.00010	0.00007	0.00059	0.00005	0.022	0.000144	0.0391	0.20	0.00048	0.040	0.000002	0.0258	0.00030	0.46
HC-10-19	16-Aug-11	19	0.05	0.00005	0.000005	0.35	0.00030	0.00003	0.00051	0.00005	0.031	0.000174	0.0222	0.09	0.00035	0.065	0.000002	0.0121	0.00045	0.26
HC-10-20	23-Aug-11	20	0.05	0.00005	0.000006	0.38	0.00025	0.00003	0.00045	0.00005	0.028	0.000155	0.0243	0.11	0.00032	0.050	0.000002	0.0135	0.00038	0.29
HC-10-21	30-Aug-11	21	0.05	0.00005	0.000006	0.42	0.00020	0.00003	0.00039	0.00005	0.025	0.000136	0.0265	0.13	0.00029	0.035	0.000002	0.0148	0.00031	0.31
HC-10-22	06-Sep-11	22	0.05	0.00005	0.000007	0.45	0.00015	0.00003	0.00032	0.00005	0.021	0.000117	0.0286	0.15	0.00026	0.020	0.000002	0.0162	0.00024	0.34
HC-10-23	13-Sep-11	23	0.05	0.00005	0.000007	0.48	0.00010	0.00003	0.00026	0.00005	0.018	0.000098	0.0307	0.17	0.00023	0.005	0.000002	0.0175	0.00017	0.36
HC-10-24	20-Sep-11	24	0.05	0.00006	0.000008	0.55	0.00013	0.00003	0.00030	0.00005	0.022	0.000110	0.0304	0.19	0.00029	0.005	0.000002	0.0174	0.00020	0.38
HC-10-25	27-Sep-11	25	0.05	0.00006	0.000009	0.62	0.00015	0.00003	0.00033	0.00005	0.026	0.000122	0.0301	0.21	0.00035	0.005	0.000002	0.0174	0.00022	0.41
HC-10-26	04-Oct-11	26	0.05	0.00007	0.000009	0.69	0.00018	0.00004	0.00037	0.00005	0.030	0.000133	0.0297	0.23	0.00041	0.005	0.000002	0.0173	0.00025	0.43
HC-10-27	11-Oct-11	27	0.05	0.00007	0.000010	0.76	0.00020	0.00004	0.00040	0.00005	0.034	0.000145	0.0294	0.25	0.00047	0.005	0.000002	0.0172	0.00027	0.45
HC-10-28	18-Oct-11	28	0.05	0.00007	0.000009	1.02	0.00018	0.00003	0.00038	0.00005	0.029	0.000131	0.0288	0.36	0.00041	0.006	0.000002	0.0177	0.00024	0.50
HC-10-29	25-Oct-11	29	0.05	0.00006	0.000008	1.29	0.00015	0.00003	0.00037	0.00005	0.024	0.000118	0.0282	0.46	0.00035	0.006	0.000002	0.0182	0.00020	0.56
HC-10-30	01-Nov-11	30	0.05	0.00006	0.000006	1.55	0.00013	0.00002	0.00035	0.00005	0.019	0.000104	0.0275	0.57	0.00029	0.007	0.000002	0.0187	0.00017	0.61
HC-10-31	08-Nov-11	31	0.05	0.00005	0.000005	1.81	0.00010	0.00002	0.00033	0.00005	0.014	0.000090	0.0269	0.67	0.00023	0.007	0.000002	0.0192	0.00013	0.66
HC-10-32	15-Nov-11	32	0.05	0.00005	0.000005	2.07	0.00010	0.00002	0.00043	0.00005	0.013	0.000097	0.0283	0.77	0.00029	0.008	0.000002	0.0195	0.00015	0.70
HC-10-33	22-Nov-11	33	0.05	0.00005	0.000005	2.32	0.00010	0.00002	0.00053	0.00005	0.012	0.000105	0.0297	0.87	0.00036	0.010	0.000002	0.0198	0.00017	0.74
HC-10-34	29-Nov-11	34	0.05	0.00005	0.000005	2.58	0.00010	0.00002	0.00062	0.00005	0.011	0.000112	0.0310	0.97	0.00042	0.011	0.000002	0.0201	0.00018	0.77
HC-10-35	06-Dec-11	35	0.05	0.00005	0.000005	2.83	0.00010	0.00002	0.00072	0.00005	0.010	0.000119	0.0324	1.07	0.00048	0.012	0.000002	0.0204	0.00020	0.81
HC-10-36	13-Dec-11	36	0.05	0.00005	0.000007	3.21	0.00010	0.00002	0.00059	0.00005	0.011	0.000149	0.0330	1.25	0.00044	0.013	0.000002	0.0201	0.00020	0.89
HC-10-37	20-Dec-11	37	0.05	0.00005	0.000009	3.59	0.00010	0.00002	0.00046	0.00005	0.012	0.000178	0.0336	1.42	0.00040	0.014	0.000002	0.0199	0.00021	0.97
HC-10-38	27-Dec-11	38	0.05	0.00005	0.000011	3.97	0.00010	0.00002	0.00032	0.00005	0.013	0.000208	0.0341	1.60	0.00035	0.015	0.000002	0.0196	0.00021	1.04
HC-10-39	03-Jan-12	39	0.05	0.00005	0.000013	4.35	0.00010	0.00002	0.00019	0.00005	0.014	0.000237	0.0347	1.77	0.00031	0.016	0.000002	0.0193	0.00021	1.12
HC-10-40	10-Jan-12	40	0.05	0.00005	0.000011	4.86	0.00010	0.00003	0.00023	0.00005	0.011	0.000186	0.0329	1.96	0.00046	0.013	0.000002	0.0193	0.00022	1.15
HC-10-41	17-Jan-12	41	0.05	0.00005	0.000009	5.37	0.00010	0.00003	0.00028	0.00005	0.009	0.000134	0.0311	2.14	0.00061	0.011	0.000002	0.0193	0.00024	1.19
HC-10-42	24-Jan-12	42	0.05	0.00005	0.000007	5.87	0.00010	0.00004	0.00032	0.00005	0.006	0.000083	0.0292	2.33	0.00076	0.008	0.000002	0.0192	0.00025	1.22
HC-10-43	31-Jan-12	43	0.05	0.00005	0.000005	6.38	0.00010	0.00004	0.00036	0.00005	0.003	0.000031	0.0274	2.51	0.00091	0.005	0.000002	0.0192	0.00026	1.25
HC-10-44	07-Feb-12	44	0.05	0.00005	0.000006	6.71	0.00010	0.00004	0.00033	0.00005	0.003	0.000029	0.0268	2.64	0.00101	0.005	0.000002	0.0182	0.00027	1.29
HC-10-45	14-Feb-12	45	0.05	0.00005	0.000007	7.03	0.00010	0.00004	0.00030	0.00005	0.004	0.000027	0.0262	2.78	0.00111	0.005	0.000002	0.0171	0.00028	1.34
HC-10-46	21-Feb-12	46	0.05	0.00005	0.000007	7.36	0.00010	0.00004	0.00027	0.00005	0.004	0.000024	0.0255	2.91	0.00121	0.005	0.000002	0.0161	0.00028	1.38
HC-10-47	28-Feb-12	47	0.05	0.00005	0.000008	7.68	0.00010	0.00004	0.00024	0.00005	0.004	0.000022	0.0249	3.04	0.00131	0.005	0.000002	0.0150	0.00029	1.42

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date		Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
	Sampled	Week No.	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
HC-10-48	06-Mar-12	48	0.05	0.00005	0.000010	7.99	0.00010	0.00003	0.00025	0.00005	0.004	0.000019	0.0235	2.99	0.00128	0.005	0.000002	0.0146	0.00029	1.42
HC-10-49	13-Mar-12	49	0.05	0.00005	0.000011	8.31	0.00010	0.00003	0.00026	0.00005	0.003	0.000016	0.0222	2.93	0.00125	0.005	0.000002	0.0142	0.00029	1.42
HC-10-50	20-Mar-12	50	0.05	0.00005	0.000013	8.62	0.00010	0.00003	0.00026	0.00005	0.003	0.000012	0.0208	2.88	0.00122	0.004	0.000002	0.0138	0.00029	1.42
HC-10-51	27-Mar-12	51	0.05	0.00005	0.000014	8.93	0.00010	0.00003	0.00027	0.00005	0.002	0.000009	0.0194	2.82	0.00119	0.004	0.000002	0.0134	0.00029	1.42
HC-10-52	03-Apr-12	52	0.05	0.00005	0.000012	9.27	0.00010	0.00003	0.00028	0.00005	0.002	0.000010	0.0191	3.01	0.00120	0.004	0.000002	0.0135	0.00029	1.46
HC-10-53	10-Apr-12	53	0.05	0.00005	0.000011	9.62	0.00010	0.00003	0.00030	0.00005	0.002	0.000012	0.0188	3.20	0.00122	0.004	0.000002	0.0136	0.00029	1.50
HC-10-54	17-Apr-12	54	0.05	0.00005	0.000009	9.96	0.00010	0.00003	0.00031	0.00005	0.003	0.000013	0.0185	3.39	0.00123	0.004	0.000002	0.0136	0.00028	1.54
HC-10-55	24-Apr-12	55	0.05	0.00005	0.000007	10.30	0.00010	0.00003	0.00033	0.00005	0.003	0.000014	0.0182	3.58	0.00124	0.004	0.000003	0.0137	0.00028	1.58
HC-10-56	01-May-12	56	0.05	0.00005	0.000008	10.63	0.00010	0.00003	0.00033	0.00005	0.003	0.000013	0.0180	3.75	0.00124	0.005	0.000002	0.0139	0.00030	1.64
HC-10-57	08-May-12	57	0.05	0.00005	0.000009	10.95	0.00010	0.00003	0.00034	0.00005	0.002	0.000011	0.0178	3.91	0.00125	0.005	0.000002	0.0142	0.00032	1.69
HC-10-58	15-May-12	58	0.05	0.00005	0.000009	11.28	0.00010	0.00003	0.00034	0.00005	0.002	0.000010	0.0175	4.08	0.00125	0.005	0.000002	0.0144	0.00034	1.75
HC-10-59	22-May-12	59	0.05	0.00005	0.000010	11.60	0.00010	0.00003	0.00035	0.00005	0.002	0.000008	0.0173	4.24	0.00125	0.006	0.000002	0.0146	0.00036	1.80
HC-10-60	29-May-12	60	0.05	0.00005	0.000010	11.65	0.00010	0.00004	0.00032	0.00005	0.002	0.000009	0.0165	4.23	0.00139	0.005	0.000002	0.0144	0.00036	1.75
HC-10-61	05-Jun-12	61	0.05	0.00005	0.000010	11.70	0.00010	0.00004	0.00029	0.00005	0.002	0.000009	0.0156	4.23	0.00152	0.005	0.000002	0.0142	0.00035	1.71
HC-10-62	12-Jun-12	62	0.05	0.00005	0.000011	11.75	0.00010	0.00004	0.00026	0.00005	0.001	0.000009	0.0148	4.22	0.00166	0.005	0.000002	0.0139	0.00035	1.66
HC-10-63	19-Jun-12	63	0.05	0.00005	0.000011	11.80	0.00010	0.00004	0.00023	0.00005	0.001	0.000010	0.0139	4.21	0.00179	0.004	0.000002	0.0137	0.00035	1.61
HC-10-64	26-Jun-12	64	0.05	0.00005	0.000011	11.95	0.00010	0.00004	0.00021	0.00005	0.002	0.000010	0.0138	4.32	0.00202	0.004	0.000002	0.0136	0.00035	1.64
HC-10-65	03-Jul-12	65	0.05	0.00005	0.000011	12.10	0.00010	0.00004	0.00020	0.00005	0.002	0.000010	0.0136	4.43	0.00226	0.003	0.000002	0.0134	0.00035	1.67
HC-10-66	10-Jul-12	66	0.05	0.00005	0.000012	12.25	0.00010	0.00004	0.00018	0.00005	0.002	0.000011	0.0135	4.54	0.00249	0.003	0.000002	0.0133	0.00036	1.70
HC-10-67	17-Jul-12	67	0.05	0.00005	0.000012	12.40	0.00010	0.00004	0.00017	0.00005	0.003	0.000011	0.0133	4.65	0.00272	0.002	0.000002	0.0131	0.00036	1.73
HC-10-68	24-Jul-12	68	0.05	0.00005	0.000010	12.55	0.00010	0.00004	0.00030	0.00005	0.003	0.000023	0.0129	4.68	0.00260	0.003	0.000002	0.0130	0.00038	1.74
HC-10-69	31-Jul-12	69	0.05	0.00005	0.000009	12.70	0.00010	0.00005	0.00044	0.00005	0.003	0.000035	0.0125	4.70	0.00248	0.003	0.000002	0.0130	0.00039	1.76
HC-10-70	07-Aug-12	70	0.05	0.00005	0.000007	12.85	0.00010	0.00005	0.00057	0.00005	0.003	0.000047	0.0121	4.73	0.00236	0.004	0.000002	0.0129	0.00041	1.77
HC-10-71	14-Aug-12	71	0.05	0.00005	0.000005	13.00	0.00010	0.00005	0.00071	0.00005	0.004	0.000059	0.0117	4.75	0.00224	0.004	0.000002	0.0128	0.00043	1.78
HC-10-72	21-Aug-12	72	0.05	0.00005	0.000007	13.43	0.00010	0.00005	0.00081	0.00005	0.003	0.000051	0.0110	4.80	0.00239	0.005	0.000002	0.0122	0.00042	1.76
HC-10-73	28-Aug-12	73	0.05	0.00005	0.000008	13.85	0.00010	0.00006	0.00091	0.00005	0.003	0.000042	0.0103	4.86	0.00254	0.007	0.000002	0.0117	0.00041	1.74
HC-10-74	04-Sep-12	74	0.05	0.00005	0.000010	14.28	0.00010	0.00006	0.00101	0.00005	0.003	0.000034	0.0096	4.91	0.00268	0.008	0.000002	0.0111	0.00040	1.71
HC-10-75	11-Sep-12	75	0.05	0.00005	0.000011	14.70	0.00010	0.00006	0.00111	0.00005	0.003	0.000025	0.0089	4.96	0.00283	0.009	0.000002	0.0105	0.00039	1.69
HC-10-76	18-Sep-12	76	0.05	0.00005	0.000011	14.60	0.00010	0.00005	0.00112	0.00005	0.005	0.000040	0.0090	5.04	0.00229	0.009	0.000002	0.0106	0.00039	1.70
HC-10-77	25-Sep-12	77	0.05	0.00005	0.000010	14.50	0.00010	0.00004	0.00113	0.00005	0.007	0.000056	0.0091	5.13	0.00176	0.010	0.000002	0.0108	0.00040	1.72
HC-10-78	02-Oct-12	78	0.05	0.00005	0.000010	14.40	0.00010	0.00003	0.00113	0.00005	0.009	0.000071	0.0092	5.21	0.00122	0.010	0.000002	0.0109	0.00041	1.73
HC-10-79	09-Oct-12	79	0.05	0.00005	0.000009	14.30	0.00010	0.00002	0.00114	0.00005	0.011	0.000086	0.0093	5.29	0.00068	0.010	0.000002	0.0110	0.00042	1.74
HC-10-80	16-Oct-12	80	0.05	0.00005	0.000010	14.13	0.00010	0.00003	0.00096	0.00005	0.009	0.000067	0.0089	5.18	0.00108	0.008	0.000002	0.0105	0.00043	1.74
HC-10-81	23-Oct-12	81	0.05	0.00005	0.000011	13.95	0.00010	0.00003	0.00077	0.00005	0.007	0.000049	0.0084	5.08	0.00147	0.006	0.000002	0.0100	0.00044	1.73
HC-10-82	30-Oct-12	82	0.05	0.00005	0.000012	13.78	0.00010	0.00003	0.00059	0.00005	0.005	0.000030	0.0080	4.97	0.00187	0.004	0.000002	0.0094	0.00045	1.73
HC-10-83	06-Nov-12	83	0.05	0.00006	0.000013	13.60	0.00010	0.00004	0.00041	0.00005	0.003	0.000011	0.0076	4.86	0.00226	0.002	0.000002	0.0089	0.00045	1.72
HC-10-84	13-Nov-12	84	0.05	0.00004	0.000022	14.08	0.00010	0.00004	0.00087	0.00005	0.003	0.000011	0.0075	4.93	0.00223	0.003	0.000002	0.0090	0.00046	1.72
HC-10-85	20-Nov-12	85	0.05	0.00003	0.000032	14.55	0.00010	0.00004	0.00132	0.00005	0.003	0.000011	0.0075	5.01	0.00220	0.004	0.000002	0.0091	0.00047	1.73
HC-10-86	27-Nov-12	86	0.05	0.00002	0.000041	15.03	0.00010	0.00004	0.00178	0.00005	0.002	0.000010	0.0074	5.08	0.00217	0.005	0.000002	0.0093	0.00048	1.73
HC-10-87	04-Dec-12	87	0.05	0.00001	0.000050	15.50	0.00010	0.00005	0.00224	0.00005	0.002	0.000010	0.0074	5.15	0.00214	0.007	0.000002	0.0094	0.00048	1.73
HC-10-88	11-Dec-12	88	0.05	0.00002	0.000040	15.03	0.00010	0.00004	0.00175	0.00005	0.002	0.000015	0.0074	5.20	0.00182	0.005	0.000002	0.0094	0.00046	1.72
HC-10-89	18-Dec-12	89	0.05	0.00003	0.000030	14.55	0.00010	0.00003	0.00126	0.00005	0.002	0.000020	0.0074	5.24	0.00150	0.004	0.000002	0.0095	0.00044	1.70
HC-10-90	25-Dec-12	90	0.05	0.00004	0.000019	14.08	0.00010	0.00002	0.00077	0.00005	0.002	0.000024	0.0075	5.29	0.00118	0.003	0.000002	0.0096	0.00041	1.69
HC-10-91	01-Jan-13	91	0.05	0.00005	0.000009	13.60	0.00010	0.00002	0.00028	0.00005	0.002	0.000029	0.0075	5.33	0.00086	0.002	0.000002	0.0096	0.00039	1.67
HC-10-92	08-Jan-13	92	0.05	0.00005	0.000009	13.95	0.00010	0.00002	0.00037	0.00005	0.002	0.000024	0.0072	5.28	0.00134	0.005	0.000002	0.0093	0.00040	1.65
HC-10-93	15-Jan-13	93	0.05	0.00005	0.000009	14.30	0.00010	0.00003	0.00047	0.00005	0.002	0.000019	0.0069	5.24	0.00181	0.008	0.000002	0.0090	0.00040	1.62
HC-10-94	22-Jan-13	94	0.05	0.00005	0.000009	14.65	0.00010	0.00004	0.00056	0.00005	0.002	0.000013	0.0066	5.19	0.00228	0.011	0.000002	0.0086	0.00041	1.60
HC-10-95	29-Jan-13	95	0.05	0.00005	0.000009	15.00	0.00010	0.00005	0.00065	0.00005	0.002	0.000008	0.0063	5.14	0.00275	0.014	0.000002	0.0083	0.00041	1.57
HC-10-96	05-Feb-13	96	0.05	0.00005	0.000010	15.00	0.00011	0.00005	0.00057	0.00005	0.003	0.000010	0.0062	5.17	0.00289	0.012	0.000002	0.0082	0.00042	1.59

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-10-97	12-Feb-13	97	0.05	0.00005	0.000010	15.00	0.00011	0.00005	0.00050	0.00005	0.004	0.000012	0.0062	5.19	0.00303	0.010	0.000002	0.0082	0.00042	1.62
HC-10-98	19-Feb-13	98	0.05	0.00005	0.000011	15.00	0.00012	0.00005	0.00042	0.00005	0.005	0.000014	0.0061	5.22	0.00316	0.009	0.000002	0.0081	0.00042	1.64
HC-10-99	26-Feb-13	99	0.05	0.00005	0.000011	15.00	0.00012	0.00005	0.00035	0.00005	0.006	0.000016	0.0061	5.24	0.00330	0.007	0.000002	0.0081	0.00042	1.66
HC-10-100	05-Mar-13	100	0.05	0.00005	0.000012	15.20	0.00012	0.00005	0.00036	0.00005	0.005	0.000014	0.0061	5.37	0.00359	0.007	0.000002	0.0080	0.00044	1.65
HC-10-101	12-Mar-13	101	0.05	0.00005	0.000014	15.40	0.00011	0.00006	0.00037	0.00005	0.005	0.000012	0.0061	5.50	0.00387	0.007	0.000002	0.0079	0.00046	1.65
HC-10-102	19-Mar-13	102	0.05	0.00005	0.000015	15.60	0.00011	0.00007	0.00038	0.00005	0.004	0.000010	0.0061	5.62	0.00416	0.008	0.000002	0.0078	0.00048	1.64
HC-10-103	26-Mar-13	103	0.05	0.00005	0.000016	15.80	0.00010	0.00007	0.00039	0.00005	0.004	0.000008	0.0061	5.75	0.00444	0.008	0.000002	0.0077	0.00049	1.63
HC-10-104	02-Apr-13	104	0.05	0.00005	0.000015	15.75	0.00010	0.00007	0.00031	0.00005	0.003	0.000008	0.0059	5.75	0.00415	0.006	0.000002	0.0075	0.00047	1.62
HC-10-105	09-Apr-13	105	0.05	0.00005	0.000014	15.70	0.00010	0.00006	0.00022	0.00005	0.003	0.000009	0.0057	5.74	0.00386	0.005	0.000002	0.0073	0.00044	1.61
HC-10-106	16-Apr-13	106	0.05	0.00005	0.000013	15.65	0.00010	0.00006	0.00014	0.00005	0.002	0.000009	0.0055	5.74	0.00357	0.003	0.000002	0.0071	0.00041	1.60
HC-10-107	23-Apr-13	107	0.05	0.00005	0.000012	15.60	0.00010	0.00006	0.00005	0.00005	0.002	0.000009	0.0053	5.73	0.00328	0.002	0.000002	0.0069	0.00038	1.59
HC-10-108	30-Apr-13	108	0.05	0.00005	0.000012	15.70	0.00010	0.00006	0.00006	0.00005	0.002	0.000011	0.0055	5.75	0.00322	0.002	0.000002	0.0068	0.00043	1.58
HC-10-109	07-May-13	109	0.05	0.00005	0.000012	15.80	0.00010	0.00006	0.00006	0.00005	0.002	0.000013	0.0057	5.76	0.00316	0.002	0.000002	0.0066	0.00048	1.56
HC-10-110	14-May-13	110	0.05	0.00005	0.000011	15.90	0.00010	0.00006	0.00007	0.00005	0.002	0.000015	0.0059	5.78	0.00310	0.002	0.000002	0.0065	0.00053	1.55
HC-10-111	21-May-13	111	0.05	0.00005	0.000011	16.00	0.00010	0.00006	0.00008	0.00005	0.002	0.000017	0.0060	5.79	0.00304	0.002	0.000002	0.0063	0.00059	1.53
HC-10-112	28-May-13	112	0.05	0.00005	0.000013	16.68	0.00010	0.00006	0.00010	0.00005	0.001	0.000014	0.0059	6.01	0.00362	0.008	0.000002	0.0063	0.00058	1.54
HC-10-113	04-Jun-13	113	0.05	0.00005	0.000015	17.35	0.00011	0.00007	0.00012	0.00005	0.001	0.000011	0.0058	6.23	0.00421	0.014	0.000002	0.0063	0.00057	1.54
HC-10-114	11-Jun-13	114	0.05	0.00005	0.000016	18.03	0.00011	0.00007	0.00014	0.00005	0.001	0.000008	0.0057	6.44	0.00479	0.021	0.000002	0.0062	0.00057	1.55
HC-10-115	18-Jun-13	115	0.05	0.00005	0.000018	18.70	0.00011	0.00008	0.00016	0.00005	0.001	0.000005	0.0056	6.66	0.00537	0.027	0.000002	0.0062	0.00056	1.55
HC-10-116	25-Jun-13	116	0.05	0.00005	0.000019	18.53	0.00012	0.00008	0.00021	0.00005	0.002	0.000006	0.0055	6.72	0.00530	0.021	0.000002	0.0062	0.00059	1.53
HC-10-117	02-Jul-13	117	0.05	0.00005	0.000021	18.35	0.00014	0.00008	0.00026	0.00005	0.003	0.000007	0.0054	6.78	0.00523	0.014	0.000002	0.0061	0.00062	1.51
HC-10-118	09-Jul-13	118	0.05	0.00005	0.000022	18.18	0.00015	0.00008	0.00031	0.00005	0.004	0.000007	0.0053	6.83	0.00516	0.008	0.000002	0.0060	0.00065	1.49
HC-10-119	16-Jul-13	119	0.05	0.00005	0.000023	18.00	0.00016	0.00008	0.00036	0.00005	0.004	0.000008	0.0052	6.89	0.00509	0.002	0.000003	0.0060	0.00068	1.47
HC-10-120	23-Jul-13	120	0.05	0.00005	0.000024	18.40	0.00015	0.00009	0.00031	0.00005	0.004	0.000007	0.0051	7.19	0.00604	0.002	0.000002	0.0059	0.00071	1.48
HC-10-121	30-Jul-13	121	0.05	0.00005	0.000024	18.80	0.00013	0.00009	0.00026	0.00005	0.003	0.000007	0.0049	7.48	0.00698	0.003	0.000002	0.0057	0.00075	1.48
HC-10-122	06-Aug-13	122	0.05	0.00005	0.000025	19.20	0.00012	0.00010	0.00021	0.00005	0.002	0.000006	0.0048	7.78	0.00793	0.003	0.000002	0.0056	0.00078	1.49
HC-10-123	13-Aug-13	123	0.05	0.00005	0.000025	19.60	0.00010	0.00011	0.00016	0.00005	0.002	0.000005	0.0047	8.07	0.00887	0.004	0.000002	0.0055	0.00081	1.49
HC-10-124	20-Aug-13	124	0.05	0.00005	0.000025	20.45	0.00010	0.00011	0.00018	0.00005	0.002	0.000005	0.0049	8.25	0.00856	0.005	0.000002	0.0054	0.00092	1.48
HC-10-125	27-Aug-13	125	0.05	0.00005	0.000025	21.30	0.00010	0.00011	0.00020	0.00005	0.001	0.000005	0.0051	8.42	0.00825	0.006	0.000002	0.0054	0.00103	1.47
HC-10-126	03-Sep-13	126	0.05	0.00005	0.000025	22.15	0.00010	0.00011	0.00022	0.00005	0.001	0.000005	0.0053	8.60	0.00794	0.007	0.000002	0.0054	0.00113	1.46
HC-10-127	10-Sep-13	127	0.05	0.00005	0.000025	23.00	0.00010	0.00011	0.00024	0.00005	0.001	0.000005	0.0055	8.77	0.00763	0.008	0.000002	0.0054	0.00124	1.45
HC-10-128	17-Sep-13	128	0.05	0.00005	0.000026	23.73	0.00010	0.00011	0.00021	0.00005	0.001	0.000005	0.0053	8.90	0.00784	0.007	0.000002	0.0051	0.00113	1.47
HC-10-129	24-Sep-13	129	0.05	0.00005	0.000027	24.45	0.00010	0.00011	0.00018	0.00005	0.001	0.000005	0.0051	9.04	0.00805	0.006	0.000002	0.0048	0.00101	1.49
HC-10-130	01-Oct-13	130	0.05	0.00005	0.000028	25.18	0.00010	0.00011	0.00016	0.00005	0.001	0.000005	0.0049	9.17	0.00825	0.005	0.000002	0.0045	0.00090	1.50
HC-10-131	08-Oct-13	131	0.05	0.00005	0.000029	25.90	0.00010	0.00012	0.00013	0.00005	0.001	0.000005	0.0047	9.30	0.00846	0.004	0.000002	0.0042	0.00079	1.52
HC-10-132	15-Oct-13	132	0.05	0.00005	0.000029	27.20	0.00010	0.00013	0.00015	0.00005	0.001	0.000005	0.0050	9.63	0.00887	0.003	0.000002	0.0042	0.00082	1.52
HC-10-133	22-Oct-13	133	0.05	0.00005	0.000029	28.50	0.00010	0.00013	0.00017	0.00005	0.001	0.000005	0.0053	9.95	0.00928	0.003	0.000002	0.0042	0.00086	1.53
HC-10-134	29-Oct-13	134	0.05	0.00005	0.000029	29.80	0.00010	0.00014	0.00020	0.00005	0.001	0.000005	0.0056	10.28	0.00969	0.002	0.000002	0.0042	0.00090	1.53
HC-10-135	05-Nov-13	135	0.05	0.00005	0.000029	31.10	0.00010	0.00015	0.00022	0.00005	0.001	0.000005	0.0059	10.60	0.01010	0.002	0.000002	0.0042	0.00094	1.53
HC-10-136	12-Nov-13	136	0.05	0.00005	0.000032	31.18	0.00010	0.00016	0.00028	0.00005	0.007	0.000010	0.0057	10.95	0.01175	0.004	0.000002	0.0040	0.00100	1.55
HC-10-137	19-Nov-13	137	0.05	0.00005	0.000034	31.25	0.00010	0.00017	0.00034	0.00005	0.014	0.000015	0.0056	11.30	0.01340	0.006	0.000002	0.0039	0.00107	1.57
HC-10-138	26-Nov-13	138	0.05	0.00005	0.000037	31.33	0.00010	0.00018	0.00040	0.00005	0.020	0.000019	0.0054	11.65	0.01505	0.008	0.000002	0.0037	0.00113	1.58
HC-10-139	03-Dec-13	139	0.05	0.00005	0.000039	31.40	0.00010	0.00019	0.00046	0.00005	0.027	0.000024	0.0053	12.00	0.01670	0.010	0.000002	0.0036	0.00120	1.60
HC-10-140	10-Dec-13	140	0.05	0.00005	0.000042	32.98	0.00010	0.00018	0.00199	0.00005	0.020	0.000019	0.0054	12.53	0.01675	0.008	0.000002	0.0035	0.00130	1.62
HC-10-141	17-Dec-13	141	0.05	0.00005	0.000044	34.55	0.00010	0.00017	0.00352	0.00005	0.014	0.000015	0.0055	13.05	0.01680	0.006	0.000002	0.0035	0.00141	1.65
HC-10-142	24-Dec-13	142	0.05	0.00005	0.000047	36.13	0.00010	0.00016	0.00505	0.00005	0.008	0.000010	0.0057	13.58	0.01685	0.004	0.000002	0.0035	0.00151	1.67
HC-10-143	31-Dec-13	143	0.05	0.00005	0.000049	37.70	0.00010	0.00015	0.00658	0.00005	0.001	0.000005	0.0058	14.10	0.01690	0.002	0.000002	0.0035	0.00161	1.69
HC-10-144	07-Jan-14	144	0.05	0.00005	0.000050	37.95	0.00010	0.00018	0.00496	0.00005	0.001	0.000005	0.0056	14.18	0.01825	0.002	0.000002	0.0033	0.00157	1.67
HC-10-145	14-Jan-14	145	0.05	0.00005	0.000051	38.20	0.00010	0.00020	0.00333	0.00005	0.001	0.000005	0.0055	14.25	0.01960	0.002	0.000002	0.0031	0.00153	1.66

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-10-146	21-Jan-14	146	0.05	0.00005	0.000052	38.45	0.00010	0.00022	0.00171	0.00005	0.001	0.000005	0.0053	14.33	0.02095	0.002	0.000002	0.0030	0.00149	1.64
HC-10-147	28-Jan-14	147	0.05	0.00005	0.000053	38.70	0.00010	0.00024	0.00008	0.00005	0.001	0.000005	0.0052	14.40	0.02230	0.002	0.000002	0.0028	0.00145	1.62
HC-10-148	04-Feb-14	148	0.05	0.00005	0.000058	38.98	0.00010	0.00027	0.00008	0.00005	0.001	0.000005	0.0051	14.63	0.02343	0.003	0.000003	0.0027	0.00152	1.60
HC-10-149	11-Feb-14	149	0.05	0.00005	0.000063	39.25	0.00010	0.00029	0.00009	0.00005	0.001	0.000005	0.0050	14.85	0.02455	0.003	0.000004	0.0027	0.00159	1.59
HC-10-150	18-Feb-14	150	0.05	0.00005	0.000068	39.53	0.00010	0.00031	0.00009	0.00005	0.001	0.000005	0.0048	15.08	0.02568	0.004	0.000005	0.0026	0.00166	1.57
HC-10-151	25-Feb-14	151	0.05	0.00005	0.000073	39.80	0.00010	0.00034	0.00010	0.00005	0.002	0.000005	0.0047	15.30	0.02680	0.005	0.000006	0.0025	0.00173	1.55
HC-10-152	04-Mar-14	152	0.05	0.00005	0.000072	40.13	0.00010	0.00034	0.00011	0.00005	0.001	0.000008	0.0046	15.63	0.02718	0.004	0.000006	0.0024	0.00180	1.55
HC-10-153	11-Mar-14	153	0.05	0.00005	0.000071	40.45	0.00010	0.00035	0.00012	0.00005	0.001	0.000010	0.0045	15.95	0.02755	0.003	0.000007	0.0023	0.00188	1.55
HC-10-154	18-Mar-14	154	0.05	0.00005	0.000069	40.78	0.00010	0.00035	0.00013	0.00005	0.001	0.000013	0.0043	16.28	0.02793	0.003	0.000007	0.0022	0.00195	1.54
HC-10-155	25-Mar-14	155	0.05	0.00005	0.000068	41.10	0.00010	0.00035	0.00015	0.00005	0.001	0.000015	0.0042	16.60	0.02830	0.002	0.000007	0.0022	0.00202	1.54
HC-10-156	01-Apr-14	156	0.05	0.00005	0.000072	43.73	0.00010	0.00039	0.00015	0.00005	0.001	0.000013	0.0044	17.40	0.03078	0.003	0.000006	0.0021	0.00219	1.56
HC-10-157	08-Apr-14	157	0.05	0.00005	0.000076	46.35	0.00010	0.00043	0.00015	0.00005	0.001	0.000010	0.0046	18.20	0.03325	0.003	0.000005	0.0020	0.00237	1.58
HC-10-158	15-Apr-14	158	0.05	0.00005	0.000079	48.98	0.00010	0.00047	0.00015	0.00005	0.001	0.000008	0.0047	19.00	0.03573	0.004	0.000003	0.0020	0.00254	1.59
HC-10-159	22-Apr-14	159	0.05	0.00005	0.000083	51.60	0.00010	0.00051	0.00015	0.00005	0.001	0.000005	0.0049	19.80	0.03820	0.004	0.000002	0.0019	0.00271	1.61
Mean all weeks			0.05	0.00005	0.000020	15.04	0.00012	0.00008	0.00069	0.00005	0.009	0.000050	0.0184	5.57	0.00556	0.009	0.000002	0.0118	0.00061	1.32
HC11 Hulcross Mudstone																				
HC-11-0	05-Apr-11	0	0.07	0.00006	0.000005	0.46	0.00050	0.00003	0.00444	0.00006	0.053	0.000414	0.0508	0.12	0.00051	0.172	0.000002	0.0241	0.00022	0.71
HC-11-1	12-Apr-11	1	0.08	0.00003	0.000050	0.95	0.00020	0.00003	0.00611	0.00005	0.034	0.000230	0.1040	0.29	0.00068	0.068	0.000013	0.1090	0.00030	0.79
HC-11-2	19-Apr-11	2	0.07	0.00005	0.000005	2.08	0.00010	0.00002	0.00273	0.00005	0.013	0.000062	0.0913	0.73	0.00171	0.014	0.000002	0.0896	0.00018	0.68
HC-11-3	26-Apr-11	3	0.06	0.00005	0.000019	1.05	0.00010	0.00002	0.00195	0.00005	0.018	0.000110	0.0724	0.32	0.00068	0.019	0.000002	0.0684	0.00016	0.50
HC-11-4	03-May-11	4	0.06	0.00005	0.000024	0.97	0.00010	0.00001	0.00161	0.00005	0.015	0.000062	0.0703	0.30	0.00070	0.014	0.000002	0.0592	0.00018	0.49
HC-11-5	10-May-11	5	0.07	0.00005	0.000012	1.09	0.00010	0.00002	0.00155	0.00005	0.014	0.000067	0.0670	0.36	0.00072	0.015	0.000002	0.0462	0.00006	0.50
HC-11-6	17-May-11	6	0.06	0.00005	0.000005	1.11	0.00010	0.00001	0.00158	0.00005	0.020	0.000085	0.0665	0.32	0.00066	0.023	0.000002	0.0499	0.00014	0.51
HC-11-7	24-May-11	7	0.06	0.00005	0.000005	1.49	0.00010	0.00002	0.00113	0.00005	0.015	0.000060	0.0548	0.44	0.00073	0.008	0.000002	0.0433	0.00010	0.46
HC-11-8	31-May-11	8	0.05	0.00005	0.000005	1.26	0.00010	0.00002	0.00131	0.00005	0.016	0.000076	0.0552	0.40	0.00065	0.008	0.000002	0.0457	0.00010	0.47
HC-11-9	07-Jun-11	9	0.05	0.00005	0.000007	1.29	0.00010	0.00001	0.01320	0.00005	0.015	0.000195	0.0527	0.43	0.00075	0.008	0.000002	0.0408	0.00012	0.50
HC-11-10	14-Jun-11	10	0.05	0.00005	0.000016	1.55	0.00020	0.00003	0.00206	0.00005	0.045	0.000184	0.0482	0.47	0.00160	0.026	0.000002	0.0385	0.00027	0.50
HC-11-11	21-Jun-11	11	0.05	0.00005	0.000011	1.25	0.00010	0.00002	0.00096	0.00005	0.017	0.000063	0.0453	0.42	0.00089	0.027	0.000002	0.0379	0.00013	0.48
HC-11-12	28-Jun-11	12	0.05	0.00005	0.000016	1.55	0.00010	0.00002	0.00096	0.00005	0.015	0.000084	0.0459	0.59	0.00122	0.021	0.000002	0.0360	0.00010	0.54
HC-11-13	05-Jul-11	13	0.05	0.00005	0.000011	1.95	0.00010	0.00003	0.00080	0.00005	0.007	0.000033	0.0443	0.69	0.00263	0.008	0.000002	0.0313	0.00014	0.53
HC-11-14	12-Jul-11	14	0.05	0.00005	0.000006	2.26	0.00010	0.00003	0.00101	0.00005	0.018	0.000192	0.0420	0.82	0.00166	0.020	0.000002	0.0332	0.00019	0.59
HC-11-15	19-Jul-11	15	0.05	0.00005	0.000005	2.87	0.00010	0.00002	0.00069	0.00005	0.007	0.000048	0.0437	1.02	0.00233	0.016	0.000002	0.0269	0.00012	0.60
HC-11-16	26-Jul-11	16	0.05	0.00005	0.000013	4.07	0.00010	0.00002	0.00112	0.00005	0.002	0.000012	0.0465	1.54	0.00241	0.002	0.000002	0.0253	0.00013	0.65
HC-11-17	02-Aug-11	17	0.05	0.00005	0.000012	5.34	0.00010	0.00004	0.00118	0.00005	0.002	0.000016	0.0485	1.97	0.00313	0.004	0.000002	0.0249	0.00019	0.74
HC-11-18	09-Aug-11	18	0.05	0.00005	0.000010	5.52	0.00010	0.00006	0.00101	0.00005	0.006	0.000044	0.0420	2.19	0.00310	0.036	0.000002	0.0340	0.00030	0.78
HC-11-19	16-Aug-11	19	0.05	0.00005	0.000015	6.69	0.00010	0.00004	0.00092	0.00005	0.006	0.000043	0.0400	2.33	0.00330	0.054	0.000002	0.0287	0.00041	0.70
HC-11-20	23-Aug-11	20	0.05	0.00005	0.000017	7.92	0.00010	0.00004	0.00088	0.00005	0.005	0.000047	0.0387	2.82	0.00365	0.042	0.000002	0.0274	0.00040	0.76
HC-11-21	30-Aug-11	21	0.05	0.00005	0.000019	9.15	0.00010	0.00004	0.00083	0.00005	0.005	0.000052	0.0374	3.30	0.00400	0.030	0.000002	0.0261	0.00038	0.82
HC-11-22	06-Sep-11	22	0.05	0.00005	0.000020	10.37	0.00010	0.00005	0.00079	0.00005	0.004	0.000056	0.0361	3.79	0.00435	0.017	0.000002	0.0248	0.00037	0.88
HC-11-23	13-Sep-11	23	0.05	0.00005	0.000022	11.60	0.00010	0.00005	0.00074	0.00005	0.003	0.000060	0.0348	4.27	0.00470	0.005	0.000002	0.0235	0.00035	0.94
HC-11-24	20-Sep-11	24	0.05	0.00005	0.000023	12.23	0.00010	0.00005	0.00079	0.00005	0.003	0.000055	0.0327	4.39	0.00439	0.005	0.000002	0.0238	0.00037	0.97
HC-11-25	27-Sep-11	25	0.05	0.00005	0.000023	12.85	0.00010	0.00005	0.00083	0.00005	0.003	0.000051	0.0307	4.51	0.00408	0.005	0.000002	0.0242	0.00039	0.99
HC-11-26	04-Oct-11	26	0.05	0.00005	0.000024	13.48	0.00010	0.00005	0.00088	0.00005	0.002	0.000046	0.0286	4.63	0.00377	0.005	0.000002	0.0245	0.00041	1.02
HC-11-27	11-Oct-11	27	0.05	0.00005	0.000024	14.10	0.00010	0.00005	0.00092	0.00005	0.002	0.000041	0.0265	4.75	0.00346	0.005	0.000002	0.0248	0.00043	1.04
HC-11-28	18-Oct-11	28	0.05	0.00005	0.000027	14.75	0.00010	0.00005	0.00089	0.00005	0.003	0.000084	0.0244	5.02	0.00315	0.006	0.000002	0.0247	0.00045	1.07
HC-11-29	25-Oct-11	29	0.05	0.00005	0.000030	15.40	0.00010	0.00005	0.00087	0.00005	0.003	0.000126	0.0222	5.30	0.00285	0.006	0.000002	0.0247	0.00046	1.10
HC-11-30	01-Nov-11	30	0.05	0.00005	0.000032	16.05	0.00010	0.00005	0.00084	0.00005	0.004	0.000169	0.0201	5.57	0.00254	0.007	0.000002	0.0246	0.00048	1.13
HC-11-31	08-Nov-11	31	0.05	0.00005	0.000035	16.70	0.00010	0.00005	0.00081	0.00005	0.004	0.000211	0.0179	5.84	0.00223	0.007	0.000002	0.0245	0.00049	1.16
HC-11-32	15-Nov-11	32	0.05	0.00005	0.000033	16.45	0.00010	0.00005	0.00083	0.00005	0.005	0.000175	0.0178	5.91	0.00228	0.008	0.000002	0.0240	0.00059	1.17

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-11-33	22-Nov-11	33	0.05	0.00005	0.000032	16.20	0.00010	0.00005	0.00084	0.00005	0.006	0.000139	0.0177	5.99	0.00233	0.009	0.000002	0.0236	0.00070	1.17
HC-11-34	29-Nov-11	34	0.05	0.00005	0.000030	15.95	0.00010	0.00004	0.00086	0.00005	0.006	0.000102	0.0176	6.06	0.00238	0.009	0.000002	0.0231	0.00080	1.18
HC-11-35	06-Dec-11	35	0.05	0.00005	0.000028	15.70	0.00010	0.00004	0.00087	0.00005	0.007	0.000066	0.0175	6.13	0.00243	0.010	0.000002	0.0226	0.00090	1.18
HC-11-36	13-Dec-11	36	0.05	0.00005	0.000027	15.60	0.00010	0.00004	0.00078	0.00005	0.006	0.000063	0.0168	5.99	0.00193	0.011	0.000002	0.0218	0.00082	1.18
HC-11-37	20-Dec-11	37	0.05	0.00005	0.000027	15.50	0.00010	0.00003	0.00069	0.00005	0.005	0.000059	0.0162	5.84	0.00144	0.013	0.000002	0.0210	0.00073	1.19
HC-11-38	27-Dec-11	38	0.05	0.00005	0.000026	15.40	0.00010	0.00002	0.00059	0.00005	0.004	0.000056	0.0155	5.70	0.00094	0.014	0.000002	0.0202	0.00065	1.19
HC-11-39	03-Jan-12	39	0.05	0.00005	0.000025	15.30	0.00010	0.00001	0.00050	0.00005	0.003	0.000052	0.0148	5.55	0.00044	0.015	0.000002	0.0194	0.00056	1.19
HC-11-40	10-Jan-12	40	0.05	0.00005	0.000028	15.50	0.00010	0.00002	0.00048	0.00005	0.003	0.000042	0.0140	5.60	0.00070	0.013	0.000002	0.0196	0.00056	1.15
HC-11-41	17-Jan-12	41	0.05	0.00005	0.000031	15.70	0.00010	0.00003	0.00045	0.00005	0.003	0.000032	0.0132	5.65	0.00096	0.010	0.000002	0.0198	0.00056	1.11
HC-11-42	24-Jan-12	42	0.05	0.00005	0.000034	15.90	0.00010	0.00003	0.00043	0.00005	0.003	0.000021	0.0124	5.69	0.00121	0.008	0.000002	0.0199	0.00055	1.06
HC-11-43	31-Jan-12	43	0.05	0.00005	0.000037	16.10	0.00010	0.00004	0.00040	0.00005	0.003	0.000011	0.0116	5.74	0.00147	0.005	0.000002	0.0201	0.00055	1.02
HC-11-44	07-Feb-12	44	0.05	0.00005	0.000036	16.30	0.00010	0.00004	0.00041	0.00005	0.003	0.000012	0.0114	5.79	0.00157	0.004	0.000002	0.0191	0.00056	1.04
HC-11-45	14-Feb-12	45	0.05	0.00005	0.000035	16.50	0.00010	0.00005	0.00042	0.00005	0.003	0.000013	0.0112	5.83	0.00166	0.004	0.000002	0.0182	0.00057	1.05
HC-11-46	21-Feb-12	46	0.05	0.00005	0.000033	16.70	0.00010	0.00005	0.00043	0.00005	0.002	0.000013	0.0109	5.88	0.00176	0.003	0.000002	0.0172	0.00057	1.07
HC-11-47	28-Feb-12	47	0.05	0.00005	0.000032	16.90	0.00010	0.00006	0.00044	0.00005	0.002	0.000014	0.0107	5.92	0.00185	0.002	0.000002	0.0162	0.00058	1.08
HC-11-48	06-Mar-12	48	0.05	0.00005	0.000033	16.60	0.00010	0.00005	0.00045	0.00005	0.002	0.000014	0.0103	5.89	0.00183	0.003	0.000002	0.0164	0.00056	1.07
HC-11-49	13-Mar-12	49	0.05	0.00005	0.000034	16.30	0.00010	0.00005	0.00046	0.00005	0.003	0.000013	0.0099	5.86	0.00182	0.003	0.000002	0.0165	0.00055	1.06
HC-11-50	20-Mar-12	50	0.05	0.00005	0.000035	16.00	0.00010	0.00004	0.00047	0.00005	0.003	0.000013	0.0094	5.83	0.00180	0.004	0.000002	0.0167	0.00053	1.05
HC-11-51	27-Mar-12	51	0.05	0.00005	0.000036	15.70	0.00010	0.00004	0.00048	0.00005	0.003	0.000012	0.0090	5.80	0.00178	0.004	0.000002	0.0168	0.00051	1.04
HC-11-52	03-Apr-12	52	0.05	0.00005	0.000040	16.00	0.00010	0.00004	0.00055	0.00005	0.003	0.000014	0.0088	5.90	0.00179	0.005	0.000002	0.0166	0.00052	1.06
HC-11-53	10-Apr-12	53	0.05	0.00005	0.000044	16.30	0.00010	0.00004	0.00063	0.00005	0.003	0.000016	0.0087	6.00	0.00180	0.005	0.000002	0.0165	0.00052	1.07
HC-11-54	17-Apr-12	54	0.05	0.00005	0.000047	16.60	0.00010	0.00005	0.00070	0.00005	0.004	0.000018	0.0085	6.09	0.00181	0.006	0.000002	0.0163	0.00053	1.09
HC-11-55	24-Apr-12	55	0.05	0.00005	0.000051	16.90	0.00010	0.00005	0.00078	0.00005	0.004	0.000020	0.0083	6.19	0.00182	0.006	0.000003	0.0161	0.00054	1.10
HC-11-56	01-May-12	56	0.05	0.00005	0.000049	16.83	0.00010	0.00004	0.00078	0.00005	0.004	0.000018	0.0082	6.11	0.00171	0.006	0.000002	0.0159	0.00053	1.11
HC-11-57	08-May-12	57	0.05	0.00005	0.000047	16.75	0.00010	0.00004	0.00078	0.00005	0.003	0.000015	0.0081	6.03	0.00160	0.006	0.000002	0.0156	0.00053	1.12
HC-11-58	15-May-12	58	0.05	0.00005	0.000045	16.68	0.00010	0.00003	0.00079	0.00005	0.003	0.000013	0.0080	5.95	0.00148	0.006	0.000002	0.0154	0.00053	1.12
HC-11-59	22-May-12	59	0.05	0.00005	0.000044	16.60	0.00010	0.00002	0.00079	0.00005	0.002	0.000010	0.0079	5.87	0.00137	0.006	0.000002	0.0151	0.00053	1.13
HC-11-60	29-May-12	60	0.05	0.00005	0.000043	16.28	0.00010	0.00003	0.00072	0.00005	0.002	0.000010	0.0077	5.79	0.00135	0.006	0.000002	0.0148	0.00050	1.09
HC-11-61	05-Jun-12	61	0.05	0.00005	0.000043	15.95	0.00010	0.00003	0.00064	0.00005	0.002	0.000009	0.0075	5.70	0.00134	0.006	0.000002	0.0145	0.00048	1.04
HC-11-62	12-Jun-12	62	0.05	0.00005	0.000043	15.63	0.00010	0.00003	0.00056	0.00005	0.002	0.000009	0.0073	5.62	0.00132	0.006	0.000002	0.0142	0.00045	1.00
HC-11-63	19-Jun-12	63	0.05	0.00005	0.000043	15.30	0.00010	0.00004	0.00049	0.00005	0.001	0.000008	0.0070	5.53	0.00130	0.006	0.000002	0.0139	0.00042	0.96
HC-11-64	26-Jun-12	64	0.05	0.00005	0.000044	15.75	0.00010	0.00004	0.00048	0.00005	0.002	0.000010	0.0069	5.71	0.00157	0.005	0.000002	0.0137	0.00045	0.97
HC-11-65	03-Jul-12	65	0.05	0.00005	0.000046	16.20	0.00010	0.00004	0.00047	0.00005	0.002	0.000011	0.0068	5.88	0.00185	0.004	0.000002	0.0135	0.00048	0.97
HC-11-66	10-Jul-12	66	0.05	0.00005	0.000047	16.65	0.00010	0.00004	0.00046	0.00005	0.002	0.000012	0.0067	6.06	0.00212	0.003	0.000002	0.0132	0.00051	0.98
HC-11-67	17-Jul-12	67	0.05	0.00005	0.000048	17.10	0.00010	0.00005	0.00046	0.00005	0.003	0.000013	0.0065	6.23	0.00239	0.002	0.000002	0.0130	0.00053	0.99
HC-11-68	24-Jul-12	68	0.05	0.00005	0.000048	17.00	0.00010	0.00005	0.00061	0.00005	0.003	0.000028	0.0066	6.21	0.00231	0.002	0.000002	0.0132	0.00052	0.99
HC-11-69	31-Jul-12	69	0.05	0.00005	0.000047	16.90	0.00010	0.00005	0.00077	0.00005	0.004	0.000042	0.0067	6.20	0.00223	0.003	0.000002	0.0133	0.00052	1.00
HC-11-70	07-Aug-12	70	0.05	0.00005	0.000047	16.80	0.00010	0.00005	0.00093	0.00005	0.004	0.000057	0.0068	6.18	0.00214	0.003	0.000002	0.0135	0.00051	1.00
HC-11-71	14-Aug-12	71	0.05	0.00005	0.000046	16.70	0.00010	0.00005	0.00109	0.00005	0.005	0.000071	0.0068	6.16	0.00206	0.004	0.000002	0.0136	0.00050	1.00
HC-11-72	21-Aug-12	72	0.05	0.00005	0.000045	17.78	0.00010	0.00005	0.00111	0.00005	0.004	0.000059	0.0065	6.33	0.00221	0.005	0.000002	0.0131	0.00051	1.01
HC-11-73	28-Aug-12	73	0.05	0.00005	0.000044	18.85	0.00010	0.00006	0.00113	0.00005	0.004	0.000046	0.0062	6.51	0.00236	0.006	0.000002	0.0127	0.00053	1.01
HC-11-74	04-Sep-12	74	0.05	0.00005	0.000042	19.93	0.00010	0.00006	0.00115	0.00005	0.004	0.000034	0.0059	6.68	0.00251	0.007	0.000002	0.0122	0.00054	1.02
HC-11-75	11-Sep-12	75	0.05	0.00005	0.000041	21.00	0.00010	0.00006	0.00117	0.00005	0.004	0.000021	0.0056	6.85	0.00266	0.008	0.000002	0.0117	0.00056	1.02
HC-11-76	18-Sep-12	76	0.05	0.00005	0.000046	20.20	0.00010	0.00005	0.00146	0.00005	0.005	0.000055	0.0057	6.73	0.00214	0.008	0.000002	0.0116	0.00061	1.00
HC-11-77	25-Sep-12	77	0.05	0.00005	0.000051	19.40	0.00010	0.00004	0.00174	0.00005	0.006	0.000089	0.0057	6.60	0.00163	0.008	0.000002	0.0114	0.00065	0.98
HC-11-78	02-Oct-12	78	0.05	0.00005	0.000055	18.60	0.00010	0.00002	0.00203	0.00005	0.007	0.000122	0.0057	6.48	0.00111	0.008	0.000002	0.0113	0.00070	0.95
HC-11-79	09-Oct-12	79	0.05	0.00005	0.000060	17.80	0.00010	0.00001	0.00231	0.00005	0.008	0.000156	0.0057	6.35	0.00059	0.008	0.000002	0.0111	0.00075	0.93
HC-11-80	16-Oct-12	80	0.05	0.00005	0.000058	17.78	0.00010	0.00002	0.00209	0.00005	0.007	0.000119	0.0056	6.36	0.00071	0.007	0.000002	0.0108	0.00072	0.94
HC-11-81	23-Oct-12	81	0.05	0.00005	0.000056	17.75	0.00010	0.00002	0.00188	0.00005	0.006	0.000083	0.0055	6.38	0.00083	0.005	0.000002	0.0106	0.00069	0.96



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-11-82	30-Oct-12	82	0.05	0.00005	0.000053	17.73	0.00010	0.00003	0.00166	0.00005	0.004	0.000046	0.0054	6.39	0.00095	0.004	0.000002	0.0103	0.00066	0.97
HC-11-83	06-Nov-12	83	0.05	0.00005	0.000051	17.70	0.00010	0.00003	0.00144	0.00005	0.003	0.000009	0.0053	6.40	0.00107	0.002	0.000002	0.0100	0.00063	0.98
HC-11-84	13-Nov-12	84	0.05	0.00006	0.000051	18.43	0.00010	0.00003	0.00129	0.00005	0.002	0.000012	0.0052	6.63	0.00118	0.004	0.000002	0.0099	0.00060	1.02
HC-11-85	20-Nov-12	85	0.05	0.00006	0.000051	19.15	0.00010	0.00003	0.00115	0.00005	0.002	0.000015	0.0052	6.86	0.00129	0.007	0.000002	0.0098	0.00058	1.05
HC-11-86	27-Nov-12	86	0.05	0.00007	0.000050	19.88	0.00010	0.00003	0.00100	0.00005	0.002	0.000018	0.0052	7.09	0.00140	0.009	0.000002	0.0096	0.00055	1.09
HC-11-87	04-Dec-12	87	0.05	0.00007	0.000050	20.60	0.00010	0.00003	0.00086	0.00005	0.001	0.000021	0.0052	7.32	0.00151	0.011	0.000002	0.0095	0.00053	1.12
HC-11-88	11-Dec-12	88	0.05	0.00007	0.000049	20.05	0.00011	0.00002	0.00079	0.00005	0.001	0.000022	0.0050	7.19	0.00125	0.009	0.000002	0.0094	0.00053	1.08
HC-11-89	18-Dec-12	89	0.05	0.00006	0.000048	19.50	0.00011	0.00002	0.00073	0.00005	0.002	0.000023	0.0048	7.05	0.00100	0.007	0.000002	0.0093	0.00053	1.05
HC-11-90	25-Dec-12	90	0.05	0.00006	0.000046	18.95	0.00012	0.00001	0.00066	0.00005	0.002	0.000023	0.0047	6.92	0.00074	0.004	0.000002	0.0092	0.00053	1.01
HC-11-91	01-Jan-13	91	0.05	0.00005	0.000045	18.40	0.00012	0.00001	0.00060	0.00005	0.002	0.000024	0.0045	6.78	0.00049	0.002	0.000002	0.0091	0.00053	0.97
HC-11-92	08-Jan-13	92	0.05	0.00005	0.000058	18.70	0.00012	0.00002	0.00064	0.00005	0.002	0.000019	0.0045	6.81	0.00094	0.004	0.000002	0.0092	0.00053	0.96
HC-11-93	15-Jan-13	93	0.05	0.00005	0.000071	19.00	0.00011	0.00002	0.00068	0.00005	0.002	0.000015	0.0046	6.83	0.00140	0.006	0.000002	0.0092	0.00053	0.95
HC-11-94	22-Jan-13	94	0.05	0.00005	0.000083	19.30	0.00011	0.00003	0.00072	0.00005	0.002	0.000010	0.0046	6.86	0.00185	0.008	0.000002	0.0092	0.00053	0.93
HC-11-95	29-Jan-13	95	0.05	0.00005	0.000096	19.60	0.00010	0.00004	0.00076	0.00005	0.002	0.000005	0.0047	6.88	0.00231	0.009	0.000002	0.0093	0.00053	0.92
HC-11-96	05-Feb-13	96	0.05	0.00005	0.000092	19.60	0.00010	0.00003	0.00077	0.00005	0.003	0.000007	0.0046	6.89	0.00209	0.009	0.000002	0.0091	0.00053	0.94
HC-11-97	12-Feb-13	97	0.05	0.00005	0.000087	19.60	0.00011	0.00003	0.00078	0.00005	0.004	0.000008	0.0046	6.89	0.00188	0.008	0.000002	0.0089	0.00052	0.96
HC-11-98	19-Feb-13	98	0.05	0.00005	0.000083	19.60	0.00011	0.00003	0.00079	0.00005	0.006	0.000010	0.0045	6.90	0.00166	0.007	0.000002	0.0087	0.00052	0.98
HC-11-99	26-Feb-13	99	0.05	0.00005	0.000078	19.60	0.00011	0.00003	0.00081	0.00005	0.007	0.000011	0.0045	6.90	0.00144	0.006	0.000002	0.0085	0.00052	0.99
HC-11-100	05-Mar-13	100	0.05	0.00005	0.000083	20.38	0.00011	0.00003	0.00074	0.00005	0.005	0.000010	0.0046	7.15	0.00158	0.005	0.000002	0.0083	0.00054	1.02
HC-11-101	12-Mar-13	101	0.05	0.00005	0.000089	21.15	0.00011	0.00003	0.00068	0.00005	0.004	0.000009	0.0047	7.39	0.00173	0.004	0.000002	0.0082	0.00056	1.04
HC-11-102	19-Mar-13	102	0.05	0.00005	0.000094	21.93	0.00010	0.00003	0.00062	0.00005	0.002	0.000008	0.0048	7.64	0.00187	0.003	0.000002	0.0081	0.00059	1.07
HC-11-103	26-Mar-13	103	0.05	0.00005	0.000099	22.70	0.00010	0.00003	0.00056	0.00005	0.001	0.000007	0.0049	7.88	0.00201	0.002	0.000002	0.0080	0.00061	1.09
HC-11-104	02-Apr-13	104	0.05	0.00005	0.000089	22.05	0.00013	0.00004	0.00054	0.00005	0.002	0.000008	0.0046	7.76	0.00193	0.002	0.000002	0.0078	0.00062	1.04
HC-11-105	09-Apr-13	105	0.05	0.00005	0.000079	21.40	0.00016	0.00004	0.00051	0.00005	0.003	0.000008	0.0044	7.65	0.00185	0.002	0.000002	0.0076	0.00064	0.99
HC-11-106	16-Apr-13	106	0.05	0.00005	0.000068	20.75	0.00018	0.00004	0.00049	0.00005	0.004	0.000009	0.0042	7.53	0.00176	0.002	0.000002	0.0074	0.00066	0.93
HC-11-107	23-Apr-13	107	0.05	0.00005	0.000058	20.10	0.00021	0.00005	0.00047	0.00005	0.005	0.000009	0.0040	7.41	0.00168	0.003	0.000002	0.0072	0.00068	0.88
HC-11-108	30-Apr-13	108	0.05	0.00005	0.000060	20.33	0.00018	0.00004	0.00049	0.00005	0.004	0.000008	0.0040	7.43	0.00163	0.002	0.000002	0.0070	0.00067	0.88
HC-11-109	07-May-13	109	0.05	0.00005	0.000062	20.55	0.00016	0.00004	0.00051	0.00005	0.003	0.000007	0.0041	7.45	0.00159	0.002	0.000002	0.0068	0.00066	0.89
HC-11-110	14-May-13	110	0.05	0.00005	0.000064	20.78	0.00013	0.00004	0.00053	0.00005	0.002	0.000006	0.0042	7.47	0.00154	0.002	0.000002	0.0066	0.00065	0.89
HC-11-111	21-May-13	111	0.05	0.00005	0.000066	21.00	0.00010	0.00004	0.00055	0.00005	0.001	0.000005	0.0043	7.49	0.00149	0.002	0.000002	0.0064	0.00064	0.90
HC-11-112	28-May-13	112	0.05	0.00005	0.000070	21.83	0.00010	0.00004	0.00053	0.00005	0.001	0.000006	0.0042	7.77	0.00177	0.007	0.000002	0.0064	0.00062	0.91
HC-11-113	04-Jun-13	113	0.05	0.00005	0.000074	22.65	0.00010	0.00004	0.00051	0.00005	0.001	0.000006	0.0042	8.05	0.00205	0.013	0.000002	0.0064	0.00060	0.93
HC-11-114	11-Jun-13	114	0.05	0.00005	0.000078	23.48	0.00010	0.00004	0.00049	0.00005	0.001	0.000007	0.0042	8.32	0.00232	0.018	0.000002	0.0064	0.00059	0.94
HC-11-115	18-Jun-13	115	0.05	0.00005	0.000082	24.30	0.00010	0.00004	0.00048	0.00005	0.001	0.000007	0.0041	8.60	0.00260	0.024	0.000002	0.0064	0.00057	0.95
HC-11-116	25-Jun-13	116	0.05	0.00005	0.000091	24.55	0.00010	0.00004	0.00053	0.00005	0.001	0.000017	0.0041	8.70	0.00265	0.018	0.000002	0.0063	0.00060	0.96
HC-11-117	02-Jul-13	117	0.05	0.00005	0.000100	24.80	0.00010	0.00004	0.00058	0.00005	0.002	0.000026	0.0040	8.79	0.00270	0.013	0.000002	0.0062	0.00064	0.96
HC-11-118	09-Jul-13	118	0.05	0.00005	0.000108	25.05	0.00010	0.00004	0.00063	0.00005	0.002	0.000036	0.0040	8.89	0.00275	0.007	0.000002	0.0062	0.00068	0.96
HC-11-119	16-Jul-13	119	0.05	0.00005	0.000117	25.30	0.00010	0.00004	0.00068	0.00005	0.002	0.000045	0.0039	8.98	0.00280	0.002	0.000002	0.0061	0.00072	0.96
HC-11-120	23-Jul-13	120	0.05	0.00005	0.000118	25.60	0.00010	0.00004	0.00065	0.00005	0.002	0.000035	0.0039	9.22	0.00281	0.002	0.000002	0.0060	0.00074	0.96
HC-11-121	30-Jul-13	121	0.05	0.00005	0.000119	25.90	0.00010	0.00004	0.00062	0.00005	0.002	0.000025	0.0040	9.45	0.00282	0.002	0.000002	0.0059	0.00076	0.95
HC-11-122	06-Aug-13	122	0.05	0.00005	0.000120	26.20	0.00010	0.00004	0.00059	0.00005	0.001	0.000015	0.0040	9.69	0.00283	0.003	0.000002	0.0057	0.00078	0.94
HC-11-123	13-Aug-13	123	0.05	0.00005	0.000121	26.50	0.00010	0.00005	0.00056	0.00005	0.001	0.000005	0.0040	9.92	0.00284	0.003	0.000002	0.0056	0.00081	0.94
HC-11-124	20-Aug-13	124	0.05	0.00005	0.000118	27.20	0.00010	0.00004	0.00054	0.00005	0.001	0.000005	0.0041	10.12	0.00258	0.005	0.000002	0.0054	0.00081	1.00
HC-11-125	27-Aug-13	125	0.05	0.00005	0.000116	27.90	0.00010	0.00004	0.00052	0.00005	0.001	0.000005	0.0041	10.31	0.00232	0.006	0.000002	0.0052	0.00081	1.05
HC-11-126	03-Sep-13	126	0.05	0.00005	0.000113	28.60	0.00010	0.00004	0.00050	0.00005	0.001	0.000005	0.0042	10.51	0.00205	0.008	0.000002	0.0050	0.00081	1.11
HC-11-127	10-Sep-13	127	0.05	0.00005	0.000110	29.30	0.00010	0.00004	0.00048	0.00005	0.001	0.000005	0.0042	10.70	0.00179	0.010	0.000002	0.0048	0.00082	1.17
HC-11-128	17-Sep-13	128	0.05	0.00005	0.000111	29.75	0.00010	0.00004	0.00046	0.00005	0.001	0.000005	0.0041	10.85	0.00200	0.009	0.000002	0.0046	0.00083	1.14
HC-11-129	24-Sep-13	129	0.05	0.00005	0.000112	30.20	0.00010	0.00005	0.00044	0.00005	0.001	0.000005	0.0040	11.00	0.00221	0.007	0.000002	0.0045	0.00085	1.10
HC-11-130	01-Oct-13	130	0.05	0.00005	0.000112	30.65	0.00010	0.00005	0.00042	0.00005	0.001	0.000005	0.0039	11.15	0.00241	0.006	0.000002	0.0043	0.00086	1.07

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-11-131	08-Oct-13	131	0.05	0.00005	0.000113	31.10	0.00010	0.00005	0.00040	0.00005	0.001	0.000005	0.0037	11.30	0.00262	0.004	0.000002	0.0041	0.00088	1.03
HC-11-132	15-Oct-13	132	0.05	0.00005	0.000111	32.73	0.00010	0.00005	0.00041	0.00005	0.001	0.000005	0.0039	11.68	0.00246	0.004	0.000002	0.0042	0.00089	1.03
HC-11-133	22-Oct-13	133	0.05	0.00005	0.000109	34.35	0.00010	0.00005	0.00042	0.00005	0.001	0.000005	0.0041	12.05	0.00230	0.003	0.000002	0.0044	0.00090	1.02
HC-11-134	29-Oct-13	134	0.05	0.00005	0.000107	35.98	0.00010	0.00005	0.00043	0.00005	0.001	0.000005	0.0043	12.43	0.00214	0.003	0.000002	0.0045	0.00091	1.02
HC-11-135	05-Nov-13	135	0.05	0.00005	0.000105	37.60	0.00010	0.00004	0.00044	0.00005	0.001	0.000005	0.0045	12.80	0.00198	0.002	0.000002	0.0047	0.00092	1.01
HC-11-136	12-Nov-13	136	0.05	0.00005	0.000111	37.33	0.00010	0.00005	0.00048	0.00005	0.001	0.000011	0.0044	12.80	0.00245	0.003	0.000002	0.0044	0.00094	1.01
HC-11-137	19-Nov-13	137	0.05	0.00005	0.000117	37.05	0.00010	0.00006	0.00051	0.00005	0.001	0.000017	0.0042	12.80	0.00291	0.005	0.000002	0.0042	0.00096	1.01
HC-11-138	26-Nov-13	138	0.05	0.00005	0.000122	36.78	0.00010	0.00007	0.00055	0.00005	0.001	0.000022	0.0040	12.80	0.00338	0.006	0.000002	0.0039	0.00097	1.00
HC-11-139	03-Dec-13	139	0.05	0.00005	0.000128	36.50	0.00010	0.00008	0.00058	0.00005	0.001	0.000028	0.0039	12.80	0.00384	0.008	0.000002	0.0037	0.00099	1.00
HC-11-140	10-Dec-13	140	0.05	0.00005	0.000128	37.78	0.00010	0.00007	0.00264	0.00005	0.001	0.000023	0.0040	13.38	0.00298	0.006	0.000002	0.0037	0.00102	1.02
HC-11-141	17-Dec-13	141	0.05	0.00005	0.000127	39.05	0.00010	0.00006	0.00469	0.00005	0.001	0.000018	0.0041	13.95	0.00212	0.005	0.000002	0.0038	0.00104	1.04
HC-11-142	24-Dec-13	142	0.05	0.00005	0.000127	40.33	0.00010	0.00004	0.00675	0.00005	0.001	0.000012	0.0043	14.53	0.00126	0.003	0.000002	0.0038	0.00107	1.06
HC-11-143	31-Dec-13	143	0.05	0.00005	0.000126	41.60	0.00010	0.00003	0.00880	0.00005	0.002	0.000007	0.0044	15.10	0.00040	0.002	0.000002	0.0038	0.00109	1.08
HC-11-144	07-Jan-14	144	0.05	0.00005	0.000126	41.85	0.00010	0.00003	0.00667	0.00005	0.001	0.000029	0.0044	15.08	0.00082	0.002	0.000002	0.0036	0.00108	1.07
HC-11-145	14-Jan-14	145	0.05	0.00005	0.000125	42.10	0.00010	0.00003	0.00454	0.00005	0.001	0.000051	0.0043	15.05	0.00125	0.002	0.000002	0.0034	0.00107	1.05
HC-11-146	21-Jan-14	146	0.05	0.00005	0.000125	42.35	0.00010	0.00003	0.00241	0.00005	0.001	0.000072	0.0043	15.03	0.00167	0.002	0.000002	0.0033	0.00106	1.04
HC-11-147	28-Jan-14	147	0.05	0.00005	0.000124	42.60	0.00010	0.00003	0.00029	0.00005	0.001	0.000094	0.0042	15.00	0.00210	0.002	0.000002	0.0031	0.00105	1.02
HC-11-148	04-Feb-14	148	0.05	0.00005	0.000126	42.40	0.00010	0.00003	0.00032	0.00009	0.001	0.000072	0.0040	15.08	0.00231	0.002	0.000002	0.0030	0.00109	1.00
HC-11-149	11-Feb-14	149	0.05	0.00005	0.000128	42.20	0.00010	0.00004	0.00035	0.00014	0.001	0.000050	0.0039	15.15	0.00252	0.003	0.000002	0.0029	0.00114	0.97
HC-11-150	18-Feb-14	150	0.05	0.00005	0.000130	42.00	0.00010	0.00004	0.00038	0.00018	0.001	0.000027	0.0037	15.23	0.00272	0.003	0.000003	0.0029	0.00118	0.95
HC-11-151	25-Feb-14	151	0.05	0.00005	0.000132	41.80	0.00010	0.00004	0.00042	0.00022	0.001	0.000005	0.0035	15.30	0.00293	0.004	0.000003	0.0028	0.00122	0.93
HC-11-152	04-Mar-14	152	0.05	0.00005	0.000127	42.38	0.00010	0.00004	0.00039	0.00018	0.001	0.000007	0.0034	15.78	0.00263	0.003	0.000003	0.0027	0.00121	0.93
HC-11-153	11-Mar-14	153	0.05	0.00005	0.000122	42.95	0.00010	0.00004	0.00036	0.00014	0.001	0.000009	0.0034	16.25	0.00234	0.003	0.000002	0.0027	0.00120	0.94
HC-11-154	18-Mar-14	154	0.05	0.00005	0.000117	43.53	0.00010	0.00004	0.00033	0.00009	0.001	0.000010	0.0034	16.73	0.00204	0.002	0.000002	0.0027	0.00119	0.95
HC-11-155	25-Mar-14	155	0.05	0.00005	0.000112	44.10	0.00010	0.00005	0.00030	0.00005	0.001	0.000012	0.0033	17.20	0.00174	0.002	0.000002	0.0026	0.00118	0.96
HC-11-156	01-Apr-14	156	0.05	0.00005	0.000113	44.90	0.00010	0.00005	0.00032	0.00005	0.001	0.000011	0.0034	17.43	0.00187	0.002	0.000002	0.0026	0.00127	0.96
HC-11-157	08-Apr-14	157	0.05	0.00005	0.000114	45.70	0.00010	0.00004	0.00034	0.00005	0.001	0.000010	0.0035	17.65	0.00200	0.003	0.000002	0.0025	0.00135	0.96
HC-11-158	15-Apr-14	158	0.05	0.00005	0.000114	46.50	0.00010	0.00004	0.00036	0.00005	0.001	0.000008	0.0036	17.88	0.00212	0.003	0.000002	0.0024	0.00144	0.97
HC-11-159	22-Apr-14	159	0.05	0.00005	0.000115	47.30	0.00010	0.00004	0.00037	0.00005	0.001	0.000007	0.0037	18.10	0.00225	0.004	0.000002	0.0023	0.00152	0.97
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00005</b>	<b>0.000063</b>	<b>20.68</b>	<b>0.00011</b>	<b>0.00004</b>	<b>0.00110</b>	<b>0.00005</b>	<b>0.004</b>	<b>0.000040</b>	<b>0.0143</b>	<b>7.45</b>	<b>0.00196</b>	<b>0.009</b>	<b>0.000002</b>	<b>0.0153</b>	<b>0.00063</b>	<b>0.96</b>
<b>HC12 Hulcross Mudstone</b>																				
HC-12-0	05-Apr-11	0	0.06	0.00005	0.000005	0.23	0.02350	0.00004	0.00137	0.00005	0.193	0.000087	0.0515	0.05	0.00238	0.129	0.000002	0.0157	0.00070	0.49
HC-12-1	12-Apr-11	1	0.06	0.00001	0.000050	0.57	0.00020	0.00002	0.00059	0.00005	0.022	0.000068	0.1340	0.19	0.00027	0.034	0.000006	0.1130	0.00030	0.66
HC-12-2	19-Apr-11	2	0.05	0.00005	0.000012	1.19	0.00020	0.00002	0.00045	0.00005	0.015	0.000038	0.1100	0.50	0.00063	0.012	0.000002	0.0844	0.00024	0.58
HC-12-3	26-Apr-11	3	0.05	0.00005	0.000010	0.49	0.00010	0.00001	0.00041	0.00005	0.019	0.000044	0.0871	0.15	0.00021	0.010	0.000002	0.0607	0.00014	0.42
HC-12-4	03-May-11	4	0.05	0.00005	0.000005	0.48	0.00010	0.00002	0.00043	0.00005	0.028	0.000077	0.0813	0.15	0.00030	0.011	0.000002	0.0533	0.00025	0.40
HC-12-5	10-May-11	5	0.05	0.00005	0.000005	0.57	0.00010	0.00002	0.00035	0.00005	0.022	0.000047	0.0837	0.18	0.00026	0.013	0.000002	0.0523	0.00014	0.42
HC-12-6	17-May-11	6	0.05	0.00005	0.000011	0.51	0.00010	0.00001	0.00031	0.00016	0.013	0.000068	0.0780	0.14	0.00021	0.105	0.000002	0.0534	0.00013	0.55
HC-12-7	24-May-11	7	0.05	0.00005	0.000017	0.63	0.00020	0.00002	0.00028	0.00005	0.028	0.000047	0.0646	0.20	0.00015	0.011	0.000002	0.0467	0.00019	0.40
HC-12-8	31-May-11	8	0.05	0.00005	0.000005	0.56	0.00020	0.00002	0.00035	0.00005	0.024	0.000047	0.0629	0.17	0.00025	0.008	0.000002	0.0526	0.00015	0.38
HC-12-9	07-Jun-11	9	0.05	0.00005	0.000015	0.50	0.00020	0.00002	0.01450	0.00005	0.023	0.000190	0.0605	0.18	0.00022	0.010	0.000002	0.0495	0.00014	0.41
HC-12-10	14-Jun-11	10	0.05	0.00005	0.000005	0.68	0.00030	0.00002	0.00031	0.00005	0.037	0.000090	0.0578	0.21	0.00035	0.019	0.000002	0.0490	0.00024	0.38
HC-12-11	21-Jun-11	11	0.05	0.00005	0.000014	0.65	0.00010	0.00001	0.00017	0.00005	0.014	0.000029	0.0635	0.21	0.00016	0.010	0.000002	0.0463	0.00010	0.42
HC-12-12	28-Jun-11	12	0.05	0.00005	0.000006	0.47	0.00010	0.00002	0.00019	0.00005	0.017	0.000053	0.0532	0.16	0.00025	0.010	0.000002	0.0454	0.00012	0.40
HC-12-13	05-Jul-11	13	0.05	0.00005	0.000011	0.59	0.00010	0.00002	0.00027	0.00005	0.017	0.000034	0.0541	0.20	0.00086	0.010	0.000002	0.0472	0.00020	0.42
HC-12-14	12-Jul-11	14	0.05	0.00005	0.000018	0.62	0.00010	0.00002	0.00026	0.00005	0.017	0.000045	0.0498	0.21	0.00026	0.009	0.000002	0.0463	0.00019	0.43
HC-12-15	19-Jul-11	15	0.05	0.00005	0.000013	0.66	0.00010	0.00002	0.00020	0.00005	0.014	0.000033	0.0481	0.22	0.00091	0.004	0.000002	0.0445	0.00011	0.41
HC-12-16	26-Jul-11	16	0.05	0.00005	0.000005	0.46	0.00020	0.00002	0.00025	0.00005	0.026	0.000059	0.0410	0.16	0.00024	0.039	0.000002	0.0412	0.00022	0.37
HC-12-17	02-Aug-11	17	0.05	0.00005	0.000007	0.56	0.00010	0.00002	0.00023	0.00005	0.019	0.000036	0.0448	0.20	0.00022	0.002	0.000002	0.0383	0.00015	0.43

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-12-18	09-Aug-11	18	0.05	0.00005	0.000018	0.68	0.00010	0.00001	0.00067	0.00005	0.012	0.000022	0.0438	0.27	0.00023	0.002	0.000002	0.0466	0.00014	0.47
HC-12-19	16-Aug-11	19	0.05	0.00005	0.000005	0.78	0.00020	0.00002	0.00030	0.00005	0.021	0.000037	0.0428	0.25	0.00029	0.127	0.000002	0.0438	0.00039	0.42
HC-12-20	23-Aug-11	20	0.05	0.00005	0.000005	0.79	0.00018	0.00002	0.00028	0.00005	0.018	0.000042	0.0420	0.27	0.00027	0.097	0.000002	0.0425	0.00033	0.44
HC-12-21	30-Aug-11	21	0.05	0.00005	0.000005	0.81	0.00015	0.00002	0.00025	0.00005	0.015	0.000048	0.0411	0.30	0.00025	0.066	0.000002	0.0411	0.00027	0.45
HC-12-22	06-Sep-11	22	0.05	0.00005	0.000005	0.82	0.00013	0.00002	0.00023	0.00005	0.012	0.000053	0.0403	0.32	0.00023	0.036	0.000002	0.0398	0.00021	0.47
HC-12-23	13-Sep-11	23	0.05	0.00005	0.000005	0.83	0.00010	0.00001	0.00020	0.00005	0.009	0.000058	0.0394	0.34	0.00021	0.005	0.000002	0.0384	0.00015	0.48
HC-12-24	20-Sep-11	24	0.05	0.00005	0.000005	0.98	0.00010	0.00001	0.00020	0.00005	0.009	0.000064	0.0388	0.38	0.00025	0.005	0.000002	0.0390	0.00015	0.51
HC-12-25	27-Sep-11	25	0.05	0.00005	0.000005	1.12	0.00010	0.00001	0.00020	0.00005	0.009	0.000071	0.0381	0.42	0.00030	0.005	0.000002	0.0396	0.00015	0.54
HC-12-26	04-Oct-11	26	0.05	0.00005	0.000005	1.27	0.00010	0.00002	0.00019	0.00005	0.009	0.000077	0.0375	0.46	0.00034	0.004	0.000002	0.0401	0.00015	0.56
HC-12-27	11-Oct-11	27	0.05	0.00005	0.000005	1.41	0.00010	0.00002	0.00019	0.00005	0.009	0.000083	0.0368	0.50	0.00038	0.004	0.000002	0.0407	0.00015	0.59
HC-12-28	18-Oct-11	28	0.05	0.00005	0.000006	1.84	0.00010	0.00002	0.00023	0.00005	0.008	0.000080	0.0364	0.68	0.00044	0.004	0.000002	0.0410	0.00015	0.67
HC-12-29	25-Oct-11	29	0.05	0.00005	0.000007	2.28	0.00010	0.00002	0.00026	0.00005	0.008	0.000077	0.0359	0.85	0.00050	0.004	0.000002	0.0412	0.00015	0.75
HC-12-30	01-Nov-11	30	0.05	0.00005	0.000007	2.71	0.00010	0.00002	0.00030	0.00005	0.007	0.000073	0.0355	1.03	0.00056	0.004	0.000002	0.0415	0.00014	0.83
HC-12-31	08-Nov-11	31	0.05	0.00005	0.000008	3.14	0.00010	0.00002	0.00033	0.00005	0.006	0.000070	0.0350	1.20	0.00062	0.004	0.000002	0.0417	0.00014	0.91
HC-12-32	15-Nov-11	32	0.05	0.00005	0.000007	3.53	0.00010	0.00002	0.00034	0.00005	0.006	0.000060	0.0361	1.37	0.00072	0.006	0.000002	0.0412	0.00016	0.96
HC-12-33	22-Nov-11	33	0.05	0.00005	0.000007	3.93	0.00010	0.00002	0.00035	0.00005	0.006	0.000049	0.0372	1.53	0.00083	0.008	0.000002	0.0407	0.00018	1.02
HC-12-34	29-Nov-11	34	0.05	0.00005	0.000006	4.32	0.00010	0.00002	0.00035	0.00005	0.006	0.000039	0.0382	1.70	0.00093	0.010	0.000002	0.0402	0.00020	1.07
HC-12-35	06-Dec-11	35	0.05	0.00005	0.000005	4.71	0.00010	0.00003	0.00036	0.00005	0.006	0.000028	0.0393	1.86	0.00103	0.012	0.000002	0.0397	0.00022	1.12
HC-12-36	13-Dec-11	36	0.05	0.00005	0.000006	5.15	0.00010	0.00002	0.00039	0.00005	0.005	0.000041	0.0390	2.03	0.00091	0.014	0.000002	0.0382	0.00023	1.17
HC-12-37	20-Dec-11	37	0.05	0.00005	0.000007	5.59	0.00010	0.00002	0.00041	0.00005	0.004	0.000054	0.0387	2.20	0.00078	0.015	0.000002	0.0367	0.00024	1.23
HC-12-38	27-Dec-11	38	0.05	0.00005	0.000007	6.03	0.00010	0.00002	0.00044	0.00005	0.003	0.000067	0.0384	2.36	0.00066	0.017	0.000002	0.0352	0.00024	1.28
HC-12-39	03-Jan-12	39	0.05	0.00005	0.000008	6.47	0.00010	0.00002	0.00046	0.00005	0.002	0.000080	0.0381	2.53	0.00053	0.018	0.000002	0.0337	0.00025	1.33
HC-12-40	10-Jan-12	40	0.05	0.00005	0.000010	7.16	0.00010	0.00002	0.00036	0.00005	0.002	0.000062	0.0366	2.88	0.00071	0.016	0.000002	0.0339	0.00027	1.38
HC-12-41	17-Jan-12	41	0.05	0.00005	0.000011	7.84	0.00010	0.00003	0.00026	0.00005	0.002	0.000043	0.0351	3.22	0.00090	0.013	0.000002	0.0340	0.00030	1.43
HC-12-42	24-Jan-12	42	0.05	0.00005	0.000013	8.53	0.00010	0.00004	0.00016	0.00005	0.002	0.000025	0.0335	3.57	0.00108	0.011	0.000002	0.0342	0.00032	1.47
HC-12-43	31-Jan-12	43	0.05	0.00005	0.000014	9.21	0.00010	0.00005	0.00006	0.00005	0.002	0.000006	0.0320	3.91	0.00126	0.008	0.000002	0.0343	0.00034	1.52
HC-12-44	07-Feb-12	44	0.05	0.00005	0.000014	9.76	0.00010	0.00005	0.00019	0.00005	0.003	0.000008	0.0309	4.07	0.00137	0.007	0.000003	0.0326	0.00044	1.55
HC-12-45	14-Feb-12	45	0.05	0.00005	0.000014	10.31	0.00010	0.00005	0.00032	0.00005	0.003	0.000010	0.0297	4.22	0.00148	0.006	0.000004	0.0308	0.00054	1.57
HC-12-46	21-Feb-12	46	0.05	0.00005	0.000013	10.85	0.00010	0.00005	0.00045	0.00005	0.004	0.000011	0.0286	4.38	0.00159	0.004	0.000005	0.0291	0.00064	1.60
HC-12-47	28-Feb-12	47	0.05	0.00005	0.000013	11.40	0.00010	0.00005	0.00058	0.00005	0.004	0.000013	0.0274	4.53	0.00170	0.003	0.000006	0.0273	0.00074	1.62
HC-12-48	06-Mar-12	48	0.05	0.00005	0.000013	12.15	0.00010	0.00005	0.00048	0.00005	0.004	0.000012	0.0266	4.49	0.00161	0.004	0.000005	0.0277	0.00064	1.63
HC-12-49	13-Mar-12	49	0.05	0.00005	0.000013	12.90	0.00010	0.00004	0.00039	0.00005	0.004	0.000011	0.0259	4.45	0.00151	0.005	0.000004	0.0282	0.00055	1.64
HC-12-50	20-Mar-12	50	0.05	0.00005	0.000012	13.65	0.00010	0.00004	0.00029	0.00005	0.003	0.000010	0.0251	4.40	0.00142	0.006	0.000003	0.0286	0.00045	1.64
HC-12-51	27-Mar-12	51	0.05	0.00005	0.000012	14.40	0.00010	0.00004	0.00019	0.00005	0.003	0.000009	0.0243	4.36	0.00132	0.007	0.000002	0.0290	0.00035	1.65
HC-12-52	03-Apr-12	52	0.05	0.00005	0.000011	14.03	0.00010	0.00004	0.00044	0.00005	0.003	0.000038	0.0235	4.45	0.00128	0.007	0.000002	0.0280	0.00036	1.69
HC-12-53	10-Apr-12	53	0.05	0.00005	0.000009	13.65	0.00010	0.00004	0.00069	0.00005	0.004	0.000066	0.0227	4.55	0.00124	0.007	0.000002	0.0269	0.00038	1.72
HC-12-54	17-Apr-12	54	0.05	0.00005	0.000008	13.28	0.00010	0.00004	0.00094	0.00005	0.004	0.000095	0.0218	4.64	0.00120	0.006	0.000002	0.0259	0.00039	1.76
HC-12-55	24-Apr-12	55	0.05	0.00005	0.000006	12.90	0.00010	0.00005	0.00119	0.00005	0.004	0.000123	0.0210	4.73	0.00116	0.006	0.000003	0.0248	0.00040	1.79
HC-12-56	01-May-12	56	0.05	0.00006	0.000007	13.18	0.00010	0.00004	0.00094	0.00005	0.004	0.000094	0.0206	4.85	0.00106	0.006	0.000002	0.0251	0.00041	1.84
HC-12-57	08-May-12	57	0.05	0.00006	0.000009	13.45	0.00010	0.00004	0.00069	0.00005	0.003	0.000065	0.0201	4.97	0.00097	0.006	0.000002	0.0253	0.00041	1.89
HC-12-58	15-May-12	58	0.05	0.00006	0.000010	13.73	0.00010	0.00003	0.00044	0.00005	0.003	0.000035	0.0197	5.08	0.00087	0.007	0.000002	0.0256	0.00041	1.93
HC-12-59	22-May-12	59	0.05	0.00007	0.000011	14.00	0.00010	0.00003	0.00020	0.00005	0.002	0.000006	0.0192	5.20	0.00077	0.007	0.000002	0.0258	0.00041	1.98
HC-12-60	29-May-12	60	0.05	0.00006	0.000010	14.23	0.00010	0.00003	0.00020	0.00005	0.002	0.000006	0.0184	5.30	0.00084	0.007	0.000002	0.0257	0.00043	1.96
HC-12-61	05-Jun-12	61	0.05	0.00006	0.000009	14.45	0.00010	0.00003	0.00020	0.00005	0.002	0.000006	0.0177	5.40	0.00090	0.007	0.000002	0.0256	0.00044	1.93
HC-12-62	12-Jun-12	62	0.05	0.00005	0.000009	14.68	0.00010	0.00003	0.00020	0.00005	0.002	0.000005	0.0169	5.49	0.00097	0.006	0.000002	0.0255	0.00045	1.91
HC-12-63	19-Jun-12	63	0.05	0.00005	0.000008	14.90	0.00010	0.00003	0.00020	0.00005	0.002	0.000005	0.0161	5.59	0.00103	0.006	0.000002	0.0254	0.00047	1.88
HC-12-64	26-Jun-12	64	0.05	0.00005	0.000010	15.25	0.00010	0.00003	0.00018	0.00005	0.002	0.000006	0.0159	5.74	0.00102	0.005	0.000002	0.0245	0.00046	1.90
HC-12-65	03-Jul-12	65	0.05	0.00005	0.000011	15.60	0.00010	0.00003	0.00015	0.00005	0.002	0.000006	0.0156	5.90	0.00102	0.004	0.000002	0.0235	0.00045	1.93
HC-12-66	10-Jul-12	66	0.05	0.00005	0.000013	15.95	0.00010	0.00003	0.00013	0.00005	0.003	0.000007	0.0154	6.05	0.00101	0.003	0.000002	0.0226	0.00045	1.95

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-12-67	17-Jul-12	67	0.05	0.00005	0.000015	16.30	0.00010	0.00003	0.00010	0.00005	0.003	0.000007	0.0151	6.20	0.00100	0.002	0.000002	0.0216	0.00044	1.97
HC-12-68	24-Jul-12	68	0.05	0.00005	0.000015	16.23	0.00010	0.00003	0.00013	0.00005	0.003	0.000008	0.0148	6.30	0.00100	0.002	0.000002	0.0217	0.00046	2.00
HC-12-69	31-Jul-12	69	0.05	0.00005	0.000015	16.15	0.00010	0.00003	0.00017	0.00005	0.003	0.000009	0.0145	6.40	0.00099	0.003	0.000002	0.0218	0.00049	2.03
HC-12-70	07-Aug-12	70	0.05	0.00005	0.000015	16.08	0.00010	0.00003	0.00020	0.00005	0.003	0.000009	0.0141	6.50	0.00099	0.003	0.000002	0.0219	0.00051	2.06
HC-12-71	14-Aug-12	71	0.05	0.00005	0.000015	16.00	0.00010	0.00003	0.00024	0.00005	0.002	0.000010	0.0138	6.60	0.00098	0.004	0.000002	0.0220	0.00053	2.09
HC-12-72	21-Aug-12	72	0.05	0.00005	0.000015	17.08	0.00010	0.00004	0.00045	0.00005	0.003	0.000016	0.0131	6.72	0.00115	0.005	0.000002	0.0212	0.00056	2.06
HC-12-73	28-Aug-12	73	0.05	0.00005	0.000015	18.15	0.00010	0.00005	0.00067	0.00005	0.003	0.000022	0.0123	6.84	0.00132	0.006	0.000002	0.0205	0.00058	2.02
HC-12-74	04-Sep-12	74	0.05	0.00005	0.000015	19.23	0.00010	0.00006	0.00089	0.00005	0.004	0.000027	0.0116	6.96	0.00148	0.007	0.000002	0.0197	0.00061	1.99
HC-12-75	11-Sep-12	75	0.05	0.00005	0.000015	20.30	0.00010	0.00006	0.00111	0.00005	0.004	0.000033	0.0108	7.08	0.00165	0.008	0.000002	0.0189	0.00064	1.95
HC-12-76	18-Sep-12	76	0.05	0.00005	0.000016	19.60	0.00010	0.00005	0.00129	0.00005	0.005	0.000049	0.0107	6.96	0.00135	0.008	0.000002	0.0186	0.00063	1.93
HC-12-77	25-Sep-12	77	0.05	0.00005	0.000017	18.90	0.00010	0.00004	0.00146	0.00005	0.006	0.000065	0.0107	6.83	0.00104	0.009	0.000002	0.0183	0.00061	1.90
HC-12-78	02-Oct-12	78	0.05	0.00005	0.000018	18.20	0.00010	0.00003	0.00164	0.00005	0.007	0.000080	0.0106	6.71	0.00074	0.010	0.000002	0.0180	0.00060	1.88
HC-12-79	09-Oct-12	79	0.05	0.00005	0.000019	17.50	0.00010	0.00002	0.00181	0.00005	0.008	0.000096	0.0105	6.58	0.00044	0.011	0.000002	0.0177	0.00059	1.85
HC-12-80	16-Oct-12	80	0.05	0.00005	0.000019	17.55	0.00010	0.00002	0.00140	0.00005	0.006	0.000073	0.0102	6.57	0.00068	0.009	0.000002	0.0172	0.00058	1.87
HC-12-81	23-Oct-12	81	0.05	0.00005	0.000018	17.60	0.00010	0.00003	0.00099	0.00005	0.005	0.000051	0.0099	6.57	0.00093	0.006	0.000002	0.0167	0.00056	1.88
HC-12-82	30-Oct-12	82	0.05	0.00005	0.000018	17.65	0.00010	0.00004	0.00058	0.00005	0.003	0.000028	0.0095	6.56	0.00118	0.004	0.000002	0.0162	0.00055	1.90
HC-12-83	06-Nov-12	83	0.05	0.00005	0.000017	17.70	0.00010	0.00005	0.00017	0.00005	0.002	0.000005	0.0092	6.55	0.00143	0.002	0.000002	0.0157	0.00054	1.91
HC-12-84	13-Nov-12	84	0.05	0.00004	0.000025	18.78	0.00010	0.00005	0.00021	0.00005	0.002	0.000005	0.0093	6.75	0.00136	0.004	0.000002	0.0160	0.00055	1.95
HC-12-85	20-Nov-12	85	0.05	0.00004	0.000034	19.85	0.00010	0.00004	0.00024	0.00005	0.001	0.000005	0.0094	6.95	0.00129	0.005	0.000002	0.0162	0.00056	1.98
HC-12-86	27-Nov-12	86	0.05	0.00003	0.000042	20.93	0.00010	0.00004	0.00028	0.00005	0.001	0.000005	0.0095	7.14	0.00121	0.007	0.000002	0.0165	0.00057	2.02
HC-12-87	04-Dec-12	87	0.05	0.00002	0.000050	22.00	0.00010	0.00004	0.00032	0.00005	0.001	0.000005	0.0096	7.34	0.00114	0.008	0.000002	0.0167	0.00058	2.05
HC-12-88	11-Dec-12	88	0.05	0.00003	0.000042	21.38	0.00010	0.00003	0.00027	0.00005	0.001	0.000007	0.0093	7.34	0.00089	0.007	0.000002	0.0163	0.00057	2.02
HC-12-89	18-Dec-12	89	0.05	0.00004	0.000034	20.75	0.00010	0.00002	0.00023	0.00005	0.002	0.000010	0.0090	7.33	0.00063	0.006	0.000002	0.0158	0.00057	2.00
HC-12-90	25-Dec-12	90	0.05	0.00004	0.000026	20.13	0.00010	0.00002	0.00019	0.00005	0.002	0.000012	0.0087	7.33	0.00038	0.005	0.000002	0.0154	0.00057	1.97
HC-12-91	01-Jan-13	91	0.05	0.00005	0.000018	19.50	0.00010	0.00001	0.00015	0.00005	0.002	0.000014	0.0083	7.32	0.00013	0.003	0.000002	0.0149	0.00057	1.94
HC-12-92	08-Jan-13	92	0.05	0.00005	0.000021	19.55	0.00010	0.00002	0.00014	0.00005	0.002	0.000012	0.0082	7.26	0.00049	0.006	0.000002	0.0149	0.00058	1.90
HC-12-93	15-Jan-13	93	0.05	0.00005	0.000023	19.60	0.00010	0.00003	0.00013	0.00005	0.002	0.000010	0.0081	7.21	0.00086	0.008	0.000002	0.0150	0.00059	1.86
HC-12-94	22-Jan-13	94	0.05	0.00005	0.000026	19.65	0.00010	0.00003	0.00012	0.00005	0.001	0.000007	0.0079	7.15	0.00122	0.011	0.000002	0.0150	0.00059	1.82
HC-12-95	29-Jan-13	95	0.05	0.00005	0.000028	19.70	0.00010	0.00004	0.00011	0.00005	0.001	0.000005	0.0078	7.09	0.00159	0.013	0.000002	0.0150	0.00060	1.78
HC-12-96	05-Feb-13	96	0.05	0.00005	0.000026	20.10	0.00010	0.00005	0.00013	0.00005	0.002	0.000005	0.0077	7.25	0.00158	0.012	0.000002	0.0148	0.00061	1.83
HC-12-97	12-Feb-13	97	0.05	0.00005	0.000024	20.50	0.00010	0.00005	0.00015	0.00005	0.003	0.000005	0.0077	7.41	0.00158	0.010	0.000002	0.0145	0.00061	1.89
HC-12-98	19-Feb-13	98	0.05	0.00005	0.000021	20.90	0.00010	0.00005	0.00016	0.00005	0.003	0.000005	0.0077	7.56	0.00157	0.008	0.000002	0.0143	0.00062	1.94
HC-12-99	26-Feb-13	99	0.05	0.00005	0.000019	21.30	0.00010	0.00006	0.00018	0.00005	0.004	0.000005	0.0076	7.72	0.00156	0.006	0.000002	0.0140	0.00063	1.99
HC-12-100	05-Mar-13	100	0.05	0.00005	0.000019	21.80	0.00010	0.00006	0.00023	0.00005	0.004	0.000006	0.0077	7.93	0.00162	0.007	0.000002	0.0141	0.00066	2.00
HC-12-101	12-Mar-13	101	0.05	0.00005	0.000019	22.30	0.00011	0.00005	0.00028	0.00005	0.004	0.000006	0.0078	8.14	0.00169	0.007	0.000002	0.0141	0.00070	2.01
HC-12-102	19-Mar-13	102	0.05	0.00005	0.000019	22.80	0.00011	0.00005	0.00033	0.00005	0.004	0.000007	0.0079	8.34	0.00175	0.007	0.000002	0.0142	0.00073	2.02
HC-12-103	26-Mar-13	103	0.05	0.00005	0.000019	23.30	0.00011	0.00005	0.00038	0.00005	0.004	0.000007	0.0079	8.55	0.00181	0.007	0.000002	0.0142	0.00077	2.03
HC-12-104	02-Apr-13	104	0.05	0.00005	0.000019	23.45	0.00011	0.00005	0.00030	0.00005	0.003	0.000007	0.0075	8.50	0.00184	0.006	0.000002	0.0135	0.00074	1.95
HC-12-105	09-Apr-13	105	0.05	0.00005	0.000020	23.60	0.00011	0.00005	0.00023	0.00005	0.003	0.000008	0.0071	8.45	0.00186	0.005	0.000002	0.0129	0.00072	1.87
HC-12-106	16-Apr-13	106	0.05	0.00005	0.000020	23.75	0.00010	0.00005	0.00016	0.00005	0.002	0.000008	0.0068	8.39	0.00189	0.004	0.000002	0.0122	0.00069	1.79
HC-12-107	23-Apr-13	107	0.05	0.00005	0.000020	23.90	0.00010	0.00005	0.00009	0.00005	0.001	0.000008	0.0064	8.34	0.00191	0.003	0.000002	0.0115	0.00066	1.71
HC-12-108	30-Apr-13	108	0.05	0.00005	0.000022	24.75	0.00010	0.00006	0.00009	0.00005	0.001	0.000013	0.0067	8.61	0.00196	0.003	0.000002	0.0112	0.00075	1.75
HC-12-109	07-May-13	109	0.05	0.00005	0.000024	25.60	0.00010	0.00006	0.00009	0.00005	0.001	0.000018	0.0070	8.88	0.00201	0.003	0.000002	0.0109	0.00084	1.78
HC-12-110	14-May-13	110	0.05	0.00005	0.000025	26.45	0.00010	0.00007	0.00009	0.00005	0.001	0.000023	0.0073	9.15	0.00205	0.002	0.000002	0.0106	0.00093	1.82
HC-12-111	21-May-13	111	0.05	0.00005	0.000027	27.30	0.00010	0.00008	0.00009	0.00005	0.001	0.000028	0.0076	9.42	0.00210	0.002	0.000002	0.0103	0.00102	1.85
HC-12-112	28-May-13	112	0.05	0.00005	0.000029	27.93	0.00010	0.00008	0.00009	0.00005	0.001	0.000022	0.0074	9.77	0.00276	0.006	0.000002	0.0103	0.00098	1.87
HC-12-113	04-Jun-13	113	0.05	0.00005	0.000031	28.55	0.00010	0.00009	0.00010	0.00005	0.001	0.000017	0.0072	10.11	0.00341	0.010	0.000002	0.0103	0.00093	1.90
HC-12-114	11-Jun-13	114	0.05	0.00005	0.000033	29.18	0.00010	0.00009	0.00011	0.00005	0.001	0.000011	0.0070	10.46	0.00407	0.014	0.000002	0.0103	0.00089	1.92
HC-12-115	18-Jun-13	115	0.05	0.00005	0.000035	29.80	0.00010	0.00009	0.00011	0.00005	0.001	0.000005	0.0068	10.80	0.00472	0.019	0.000002	0.0103	0.00085	1.94

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC-12-116	25-Jun-13	116	0.05	0.00005	0.000038	29.73	0.00010	0.00010	0.00013	0.00005	0.001	0.000005	0.0067	11.20	0.00459	0.014	0.000002	0.0100	0.00091	1.93
HC-12-117	02-Jul-13	117	0.05	0.00005	0.000040	29.65	0.00010	0.00010	0.00015	0.00005	0.001	0.000005	0.0066	11.60	0.00447	0.010	0.000002	0.0097	0.00096	1.93
HC-12-118	09-Jul-13	118	0.05	0.00005	0.000043	29.58	0.00010	0.00010	0.00016	0.00005	0.002	0.000005	0.0065	12.00	0.00434	0.006	0.000002	0.0093	0.00102	1.92
HC-12-119	16-Jul-13	119	0.05	0.00005	0.000045	29.50	0.00010	0.00011	0.00018	0.00005	0.002	0.000005	0.0064	12.40	0.00421	0.002	0.000002	0.0090	0.00108	1.91
HC-12-120	23-Jul-13	120	0.05	0.00005	0.000045	31.43	0.00010	0.00011	0.00022	0.00005	0.002	0.000005	0.0064	13.00	0.00481	0.002	0.000002	0.0089	0.00115	1.92
HC-12-121	30-Jul-13	121	0.05	0.00005	0.000044	33.35	0.00010	0.00012	0.00026	0.00005	0.001	0.000005	0.0065	13.60	0.00540	0.002	0.000002	0.0088	0.00122	1.93
HC-12-122	06-Aug-13	122	0.05	0.00005	0.000044	35.28	0.00010	0.00013	0.00030	0.00005	0.001	0.000005	0.0065	14.20	0.00600	0.003	0.000002	0.0086	0.00128	1.93
HC-12-123	13-Aug-13	123	0.05	0.00005	0.000043	37.20	0.00010	0.00014	0.00034	0.00005	0.001	0.000005	0.0066	14.80	0.00659	0.003	0.000002	0.0085	0.00135	1.94
HC-12-124	20-Aug-13	124	0.05	0.00005	0.000045	38.85	0.00010	0.00014	0.00028	0.00005	0.001	0.000005	0.0066	15.15	0.00672	0.005	0.000002	0.0083	0.00138	2.03
HC-12-125	27-Aug-13	125	0.05	0.00005	0.000046	40.50	0.00010	0.00014	0.00023	0.00005	0.001	0.000005	0.0065	15.50	0.00686	0.008	0.000002	0.0080	0.00141	2.12
HC-12-126	03-Sep-13	126	0.05	0.00005	0.000048	42.15	0.00010	0.00014	0.00018	0.00005	0.001	0.000005	0.0065	15.85	0.00699	0.011	0.000002	0.0078	0.00143	2.20
HC-12-127	10-Sep-13	127	0.05	0.00005	0.000049	43.80	0.00010	0.00014	0.00013	0.00005	0.001	0.000005	0.0064	16.20	0.00712	0.013	0.000002	0.0076	0.00146	2.29
HC-12-128	17-Sep-13	128	0.05	0.00005	0.000050	44.43	0.00010	0.00015	0.00012	0.00005	0.001	0.000005	0.0063	16.93	0.00778	0.011	0.000002	0.0072	0.00155	2.29
HC-12-129	24-Sep-13	129	0.05	0.00005	0.000050	45.05	0.00010	0.00016	0.00010	0.00005	0.001	0.000005	0.0063	17.65	0.00843	0.009	0.000002	0.0067	0.00164	2.28
HC-12-130	01-Oct-13	130	0.05	0.00005	0.000051	45.68	0.00010	0.00016	0.00008	0.00005	0.001	0.000005	0.0062	18.38	0.00909	0.007	0.000002	0.0063	0.00172	2.28
HC-12-131	08-Oct-13	131	0.05	0.00005	0.000051	46.30	0.00010	0.00017	0.00006	0.00005	0.001	0.000005	0.0061	19.10	0.00974	0.005	0.000002	0.0058	0.00181	2.27
HC-12-132	15-Oct-13	132	0.05	0.00005	0.000055	49.63	0.00010	0.00018	0.00009	0.00005	0.001	0.000005	0.0065	19.98	0.00986	0.004	0.000002	0.0059	0.00193	2.27
HC-12-133	22-Oct-13	133	0.05	0.00005	0.000058	52.95	0.00010	0.00019	0.00013	0.00005	0.001	0.000005	0.0069	20.85	0.00997	0.004	0.000002	0.0060	0.00205	2.28
HC-12-134	29-Oct-13	134	0.05	0.00005	0.000062	56.28	0.00010	0.00020	0.00016	0.00005	0.001	0.000005	0.0073	21.73	0.01009	0.003	0.000002	0.0061	0.00217	2.28
HC-12-135	05-Nov-13	135	0.05	0.00005	0.000065	59.60	0.00010	0.00021	0.00019	0.00005	0.001	0.000005	0.0078	22.60	0.01020	0.002	0.000002	0.0061	0.00229	2.28
HC-12-136	12-Nov-13	136	0.05	0.00005	0.000071	60.25	0.00010	0.00024	0.00030	0.00005	0.001	0.000005	0.0076	22.88	0.01233	0.003	0.000002	0.0059	0.00246	2.29
HC-12-137	19-Nov-13	137	0.05	0.00005	0.000077	60.90	0.00010	0.00028	0.00041	0.00005	0.001	0.000006	0.0075	23.15	0.01445	0.004	0.000002	0.0057	0.00264	2.30
HC-12-138	26-Nov-13	138	0.05	0.00005	0.000082	61.55	0.00010	0.00031	0.00052	0.00005	0.001	0.000006	0.0073	23.43	0.01658	0.005	0.000002	0.0054	0.00281	2.31
HC-12-139	03-Dec-13	139	0.05	0.00005	0.000088	62.20	0.00010	0.00034	0.00063	0.00005	0.001	0.000006	0.0072	23.70	0.01870	0.006	0.000002	0.0052	0.00298	2.32
HC-12-140	10-Dec-13	140	0.05	0.00005	0.000092	65.18	0.00010	0.00032	0.00076	0.00005	0.001	0.000006	0.0074	25.08	0.01810	0.005	0.000002	0.0050	0.00311	2.36
HC-12-141	17-Dec-13	141	0.05	0.00005	0.000095	68.15	0.00010	0.00029	0.00088	0.00005	0.001	0.000006	0.0077	26.45	0.01750	0.004	0.000002	0.0049	0.00325	2.40
HC-12-142	24-Dec-13	142	0.05	0.00005	0.000099	71.13	0.00010	0.00027	0.00101	0.00005	0.002	0.000005	0.0079	27.83	0.01690	0.003	0.000002	0.0048	0.00338	2.44
HC-12-143	31-Dec-13	143	0.05	0.00005	0.000102	74.10	0.00010	0.00024	0.00113	0.00005	0.002	0.000005	0.0082	29.20	0.01630	0.002	0.000002	0.0046	0.00351	2.48
HC-12-144	07-Jan-14	144	0.05	0.00005	0.000108	73.65	0.00010	0.00031	0.00087	0.00005	0.002	0.000005	0.0080	29.20	0.01908	0.002	0.000002	0.0043	0.00378	2.44
HC-12-145	14-Jan-14	145	0.05	0.00005	0.000115	73.20	0.00010	0.00038	0.00061	0.00005	0.001	0.000005	0.0079	29.20	0.02185	0.002	0.000002	0.0040	0.00404	2.41
HC-12-146	21-Jan-14	146	0.05	0.00005	0.000121	72.75	0.00010	0.00046	0.00035	0.00005	0.001	0.000005	0.0077	29.20	0.02463	0.002	0.000002	0.0037	0.00431	2.37
HC-12-147	28-Jan-14	147	0.05	0.00005	0.000127	72.30	0.00010	0.00053	0.00009	0.00005	0.001	0.000005	0.0076	29.20	0.02740	0.002	0.000002	0.0034	0.00457	2.33
HC-12-148	04-Feb-14	148	0.05	0.00005	0.000144	73.08	0.00010	0.00063	0.00009	0.00005	0.001	0.000005	0.0075	29.75	0.03155	0.003	0.000003	0.0032	0.00522	2.32
HC-12-149	11-Feb-14	149	0.05	0.00005	0.000161	73.85	0.00010	0.00073	0.00009	0.00005	0.001	0.000005	0.0074	30.30	0.03570	0.004	0.000004	0.0030	0.00587	2.32
HC-12-150	18-Feb-14	150	0.05	0.00005	0.000177	74.63	0.00010	0.00084	0.00009	0.00005	0.001	0.000005	0.0073	30.85	0.03985	0.005	0.000006	0.0028	0.00651	2.31
HC-12-151	25-Feb-14	151	0.05	0.00005	0.000194	75.40	0.00010	0.00094	0.00009	0.00005	0.001	0.000005	0.0072	31.40	0.04400	0.006	0.000007	0.0026	0.00716	2.30
HC-12-152	04-Mar-14	152	0.05	0.00005	0.000209	74.80	0.00010	0.00100	0.00010	0.00005	0.001	0.000007	0.0073	32.03	0.04585	0.005	0.000006	0.0025	0.00775	2.33
HC-12-153	11-Mar-14	153	0.05	0.00005	0.000225	74.20	0.00010	0.00106	0.00011	0.00005	0.001	0.000009	0.0073	32.65	0.04770	0.004	0.000004	0.0024	0.00835	2.37
HC-12-154	18-Mar-14	154	0.05	0.00005	0.000240	73.60	0.00010	0.00112	0.00011	0.00005	0.001	0.000011	0.0074	33.28	0.04955	0.003	0.000003	0.0023	0.00894	2.40
HC-12-155	25-Mar-14	155	0.05	0.00005	0.000255	73.00	0.00010	0.00118	0.00012	0.00005	0.001	0.000013	0.0074	33.90	0.05140	0.002	0.000002	0.0023	0.00953	2.43
HC-12-156	01-Apr-14	156	0.05	0.00005	0.000281	74.53	0.00010	0.00137	0.00015	0.00005	0.002	0.000012	0.0078	34.15	0.05713	0.002	0.000002	0.0021	0.01102	2.40
HC-12-157	08-Apr-14	157	0.05	0.00005	0.000307	76.05	0.00010	0.00156	0.00017	0.00005	0.002	0.000010	0.0081	34.40	0.06285	0.003	0.000002	0.0020	0.01252	2.38
HC-12-158	15-Apr-14	158	0.05	0.00005	0.000333	77.58	0.00010	0.00175	0.00019	0.00005	0.003	0.000009	0.0085	34.65	0.06858	0.003	0.000002	0.0018	0.01401	2.35
HC-12-159	22-Apr-14	159	0.05	0.00005	0.000359	79.10	0.00010	0.00194	0.00022	0.00005	0.003	0.000007	0.0088	34.90	0.07430	0.003	0.000002	0.0017	0.01550	2.32
Mean all weeks			0.05	0.00005	0.000042	24.85	0.00025	0.00016	0.00044	0.00005	0.006	0.000027	0.0218	9.74	0.00687	0.010	0.000002	0.0223	0.00147	1.66

Note: Where concentrations were below detection limits, they were reported as the detection limit value

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC1 Upper Gates Siltstone																		
HC-1-0	15-Feb-11	0	0.00075	0.0105	0.60	0.000043	39.1	0.024	0.00002	0.000011	0.000006	0.0000	0.0005	0.00016	0.00041	0.0040	0.0011	0.0002
HC-1-1	22-Feb-11	1	0.00073	0.0186	0.80	0.000041	60.8	0.037	0.00002	0.000009	0.000005	0.0000	0.0005	0.00032	0.00245	0.0033	0.0014	0.0002
HC-1-2	01-Mar-11	2	0.00058	0.0171	0.70	0.000005	47.8	0.025	0.00002	0.000007	0.000005	0.0000	0.0005	0.00016	0.00267	0.0036	0.0007	0.0001
HC-1-3	08-Mar-11	3	0.00072	0.0126	0.70	0.000007	45.4	0.039	0.00002	0.000006	0.000005	0.0000	0.0005	0.00008	0.00220	0.0024	0.0004	0.0001
HC-1-4	15-Mar-11	4	0.00053	0.0114	0.60	0.000006	41.2	0.024	0.00002	0.000005	0.000005	0.0001	0.0005	0.00039	0.00210	0.0029	0.0003	0.0001
HC-1-5	22-Mar-11	5	0.00051	0.0078	0.60	0.000011	33.8	0.024	0.00002	0.000004	0.000005	0.0001	0.0005	0.00004	0.00163	0.0021	0.0008	0.0001
HC-1-6	29-Mar-11	6	0.00054	0.0083	0.60	0.000006	34.8	0.028	0.00002	0.000006	0.000005	0.0000	0.0005	0.00002	0.00157	0.0020	0.0008	0.0001
HC-1-7	05-Apr-11	7	0.00054	0.0076	0.60	0.000005	33.8	0.032	0.00002	0.000004	0.000005	0.0000	0.0005	0.00002	0.00128	0.0018	0.0007	0.0001
HC-1-8	12-Apr-11	8	0.00054	0.0067	0.50	0.000005	30.1	0.029	0.00002	0.000004	0.000005	0.0000	0.0005	0.00002	0.00069	0.0016	0.0017	0.0001
HC-1-9	19-Apr-11	9	0.00059	0.0057	0.50	0.000005	28.8	0.036	0.00002	0.000006	0.000005	0.0000	0.0005	0.00002	0.00127	0.0013	0.0011	0.0001
HC-1-10	26-Apr-11	10	0.00051	0.0049	0.50	0.000005	26.1	0.038	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00108	0.0013	0.0007	0.0001
HC-1-11	03-May-11	11	0.00053	0.0052	0.60	0.000005	25.2	0.036	0.00002	0.000037	0.000005	0.0000	0.0005	0.00002	0.00100	0.0013	0.0038	0.0001
HC-1-12	10-May-11	12	0.00051	0.0046	0.60	0.000007	26.2	0.041	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00090	0.0011	0.0011	0.0001
HC-1-13	17-May-11	13	0.00061	0.0045	0.50	0.000005	23.8	0.046	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00075	0.0011	0.0011	0.0001
HC-1-14	24-May-11	14	0.00063	0.0038	0.50	0.000006	24.5	0.060	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00086	0.0009	0.0008	0.0001
HC-1-15	31-May-11	15	0.00050	0.0033	0.50	0.000013	19.2	0.048	0.00002	0.000006	0.000005	0.0001	0.0006	0.00001	0.00058	0.0010	0.0011	0.0001
HC-1-16	07-Jun-11	16	0.00057	0.0040	0.50	0.000007	19.5	0.056	0.00002	0.000004	0.000005	0.0000	0.0005	0.00001	0.00054	0.0008	0.0012	0.0001
HC-1-17	14-Jun-11	17	0.00049	0.0034	0.40	0.000012	19.1	0.067	0.00002	0.000006	0.000005	0.0001	0.0005	0.00001	0.00054	0.0006	0.0009	0.0001
HC-1-18	21-Jun-11	18	0.00055	0.0032	0.40	0.000005	19.8	0.074	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00050	0.0005	0.0014	0.0001
HC-1-19	28-Jun-11	19	0.00059	0.0032	0.40	0.000007	20.8	0.077	0.00002	0.000004	0.000005	0.0000	0.0005	0.00001	0.00049	0.0004	0.0015	0.0001
HC-1-20	05-Jul-11	20	0.00059	0.0030	0.40	0.000007	19.1	0.085	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00043	0.0004	0.0013	0.0001
HC-1-21	12-Jul-11	21	0.00059	0.0027	0.40	0.000007	17.4	0.094	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00037	0.0004	0.0011	0.0001
HC-1-22	19-Jul-11	22	0.00058	0.0025	0.40	0.000006	15.6	0.102	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00031	0.0003	0.0009	0.0001
HC-1-23	26-Jul-11	23	0.00058	0.0023	0.40	0.000006	13.9	0.111	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00025	0.0003	0.0007	0.0001
HC-1-24	02-Aug-11	24	0.00062	0.0023	0.38	0.000006	14.3	0.131	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00025	0.0003	0.0009	0.0001
HC-1-25	09-Aug-11	25	0.00067	0.0023	0.35	0.000006	14.6	0.151	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00026	0.0003	0.0011	0.0001
HC-1-26	16-Aug-11	26	0.00071	0.0024	0.33	0.000005	15.0	0.170	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00026	0.0002	0.0012	0.0001
HC-1-27	23-Aug-11	27	0.00075	0.0024	0.30	0.000005	15.3	0.190	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00027	0.0002	0.0014	0.0001
HC-1-28	30-Aug-11	28	0.00073	0.0023	0.30	0.000005	14.4	0.203	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00025	0.0002	0.0011	0.0001
HC-1-29	06-Sep-11	29	0.00071	0.0023	0.30	0.000005	13.6	0.217	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00022	0.0002	0.0009	0.0001
HC-1-30	13-Sep-11	30	0.00069	0.0023	0.30	0.000005	12.7	0.230	0.00002	0.000008	0.000005	0.0001	0.0005	0.00001	0.00020	0.0002	0.0006	0.0001
HC-1-31	20-Sep-11	31	0.00067	0.0022	0.30	0.000005	11.8	0.243	0.00002	0.000008	0.000005	0.0001	0.0005	0.00001	0.00018	0.0002	0.0003	0.0001
HC-1-32	27-Sep-11	32	0.00070	0.0022	0.30	0.000005	10.9	0.246	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00017	0.0002	0.0004	0.0001
HC-1-33	04-Oct-11	33	0.00074	0.0021	0.30	0.000005	9.9	0.250	0.00002	0.000010	0.000005	0.0001	0.0005	0.00001	0.00016	0.0002	0.0005	0.0001
HC-1-34	11-Oct-11	34	0.00077	0.0021	0.30	0.000005	9.0	0.253	0.00002	0.000010	0.000005	0.0001	0.0005	0.00001	0.00015	0.0002	0.0005	0.0001
HC-1-35	18-Oct-11	35	0.00080	0.0020	0.30	0.000005	8.1	0.256	0.00002	0.000011	0.000005	0.0001	0.0005	0.00001	0.00014	0.0002	0.0006	0.0001
HC-1-36	25-Oct-11	36	0.00082	0.0021	0.30	0.000005	8.0	0.273	0.00002	0.000011	0.000005	0.0001	0.0005	0.00001	0.00014	0.0002	0.0008	0.0001
HC-1-37	01-Nov-11	37	0.00084	0.0022	0.30	0.000005	7.8	0.289	0.00002	0.000012	0.000005	0.0001	0.0005	0.00001	0.00014	0.0002	0.0009	0.0001
HC-1-38	08-Nov-11	38	0.00086	0.0023	0.30	0.000005	7.7	0.306	0.00002	0.000012	0.000005	0.0001	0.0005	0.00001	0.00014	0.0002	0.0011	0.0001
HC-1-39	15-Nov-11	39	0.00088	0.0024	0.30	0.000005	7.5	0.322	0.00002	0.000012	0.000005	0.0001	0.0005	0.00001	0.00015	0.0002	0.0012	0.0001
HC-1-40	22-Nov-11	40	0.00086	0.0025	0.30	0.000005	7.0	0.309	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0012	0.0001
HC-1-41	29-Nov-11	41	0.00084	0.0025	0.30	0.000005	6.5	0.296	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00015	0.0002	0.0012	0.0001
HC-1-42	06-Dec-11	42	0.00082	0.0025	0.30	0.000005	6.0	0.283	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00015	0.0002	0.0011	0.0001
HC-1-43	13-Dec-11	43	0.00080	0.0025	0.30	0.000005	5.5	0.270	0.00002	0.000012	0.000005	0.0004	0.0005	0.00001	0.00015	0.0002	0.0011	0.0001
HC-1-44	20-Dec-11	44	0.00080	0.0025	0.30	0.000005	5.2	0.273	0.00002	0.000012	0.000005	0.0004	0.0005	0.00001	0.00015	0.0002	0.0010	0.0001
HC-1-45	27-Dec-11	45	0.00079	0.0025	0.30	0.000005	5.0	0.277	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00015	0.0002	0.0008	0.0001
HC-1-46	03-Jan-12	46	0.00079	0.0024	0.30	0.000005	4.7	0.280	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00015	0.0002	0.0007	0.0001
HC-1-47	10-Jan-12	47	0.00078	0.0024	0.30	0.000005	4.4	0.283	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0005	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-1-48	17-Jan-12	48	0.00079	0.0023	0.30	0.000005	4.2	0.295	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0007	0.0001
HC-1-49	24-Jan-12	49	0.00080	0.0023	0.30	0.000005	3.9	0.308	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0009	0.0001
HC-1-50	31-Jan-12	50	0.00081	0.0023	0.30	0.000005	3.7	0.320	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0010	0.0001
HC-1-51	07-Feb-12	51	0.00082	0.0022	0.30	0.000005	3.5	0.332	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0012	0.0001
HC-1-52	14-Feb-12	52	0.00083	0.0022	0.30	0.000005	3.3	0.317	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0013	0.0001
HC-1-53	21-Feb-12	53	0.00083	0.0023	0.30	0.000005	3.1	0.301	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0013	0.0001
HC-1-54	28-Feb-12	54	0.00084	0.0023	0.30	0.000005	2.9	0.286	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00019	0.0002	0.0014	0.0001
HC-1-55	06-Mar-12	55	0.00084	0.0023	0.30	0.000005	2.7	0.270	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00020	0.0002	0.0014	0.0001
HC-1-56	13-Mar-12	56	0.00085	0.0023	0.30	0.000005	2.6	0.274	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00019	0.0002	0.0015	0.0001
HC-1-57	20-Mar-12	57	0.00087	0.0023	0.30	0.000005	2.5	0.279	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00019	0.0002	0.0016	0.0001
HC-1-58	27-Mar-12	58	0.00088	0.0023	0.30	0.000005	2.5	0.283	0.00002	0.000010	0.000005	0.0004	0.0005	0.00001	0.00018	0.0002	0.0017	0.0001
HC-1-59	03-Apr-12	59	0.00089	0.0023	0.30	0.000005	2.4	0.287	0.00002	0.000010	0.000005	0.0005	0.0005	0.00001	0.00017	0.0002	0.0018	0.0001
HC-1-60	10-Apr-12	60	0.00091	0.0022	0.30	0.000005	2.3	0.280	0.00002	0.000010	0.000005	0.0004	0.0005	0.00001	0.00016	0.0002	0.0015	0.0001
HC-1-61	17-Apr-12	61	0.00093	0.0021	0.30	0.000006	2.1	0.273	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00014	0.0002	0.0012	0.0001
HC-1-62	24-Apr-12	62	0.00094	0.0020	0.30	0.000006	2.0	0.266	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00013	0.0002	0.0009	0.0001
HC-1-63	01-May-12	63	0.00096	0.0020	0.30	0.000006	1.8	0.259	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-1-64	08-May-12	64	0.00094	0.0019	0.29	0.000006	1.8	0.258	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-1-65	15-May-12	65	0.00092	0.0018	0.28	0.000006	1.7	0.257	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-1-66	22-May-12	66	0.00090	0.0017	0.26	0.000005	1.6	0.256	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-1-67	29-May-12	67	0.00089	0.0017	0.25	0.000005	1.6	0.255	0.00002	0.000012	0.000005	0.0004	0.0005	0.00001	0.00013	0.0002	0.0007	0.0001
HC-1-68	05-Jun-12	68	0.00087	0.0017	0.25	0.000005	1.5	0.261	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-1-69	12-Jun-12	69	0.00086	0.0017	0.26	0.000005	1.5	0.267	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-1-70	19-Jun-12	70	0.00084	0.0017	0.26	0.000005	1.4	0.272	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-1-71	26-Jun-12	71	0.00083	0.0017	0.26	0.000005	1.4	0.278	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-1-72	03-Jul-12	72	0.00085	0.0016	0.26	0.000005	1.3	0.283	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0007	0.0001
HC-1-73	10-Jul-12	73	0.00087	0.0016	0.27	0.000005	1.3	0.287	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00011	0.0002	0.0007	0.0001
HC-1-74	17-Jul-12	74	0.00089	0.0016	0.27	0.000005	1.2	0.292	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00011	0.0002	0.0007	0.0001
HC-1-75	24-Jul-12	75	0.00091	0.0015	0.27	0.000005	1.2	0.296	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0007	0.0001
HC-1-76	31-Jul-12	76	0.00091	0.0015	0.27	0.000005	1.1	0.282	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0008	0.0001
HC-1-77	07-Aug-12	77	0.00090	0.0015	0.26	0.000005	1.0	0.268	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-1-78	14-Aug-12	78	0.00089	0.0015	0.26	0.000005	0.9	0.254	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-1-79	21-Aug-12	79	0.00088	0.0015	0.25	0.000005	0.8	0.240	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0010	0.0001
HC-1-80	28-Aug-12	80	0.00082	0.0015	0.26	0.000005	0.8	0.250	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0010	0.0001
HC-1-81	04-Sep-12	81	0.00076	0.0015	0.27	0.000005	0.9	0.261	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0010	0.0001
HC-1-82	11-Sep-12	82	0.00070	0.0014	0.27	0.000005	0.9	0.271	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0010	0.0001
HC-1-83	18-Sep-12	83	0.00064	0.0014	0.28	0.000005	0.9	0.281	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0010	0.0001
HC-1-84	25-Sep-12	84	0.00068	0.0013	0.27	0.000006	0.8	0.259	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00009	0.0002	0.0011	0.0001
HC-1-85	02-Oct-12	85	0.00071	0.0012	0.26	0.000007	0.7	0.237	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00008	0.0002	0.0012	0.0001
HC-1-86	09-Oct-12	86	0.00074	0.0011	0.24	0.000008	0.6	0.214	0.00002	0.000009	0.000005	0.0004	0.0005	0.00001	0.00007	0.0002	0.0013	0.0001
HC-1-87	16-Oct-12	87	0.00078	0.0010	0.23	0.000009	0.5	0.192	0.00002	0.000008	0.000005	0.0004	0.0005	0.00001	0.00006	0.0002	0.0014	0.0001
HC-1-88	23-Oct-12	88	0.00079	0.0011	0.23	0.000008	0.5	0.200	0.00002	0.000009	0.000005	0.0004	0.0005	0.00001	0.00007	0.0002	0.0013	0.0001
HC-1-89	30-Oct-12	89	0.00080	0.0011	0.24	0.000007	0.5	0.208	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00008	0.0002	0.0012	0.0001
HC-1-90	06-Nov-12	90	0.00081	0.0012	0.24	0.000006	0.5	0.215	0.00003	0.000010	0.000005	0.0003	0.0005	0.00001	0.00009	0.0002	0.0011	0.0001
HC-1-91	13-Nov-12	91	0.00083	0.0012	0.24	0.000005	0.6	0.223	0.00003	0.000010	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0010	0.0001
HC-1-92	20-Nov-12	92	0.00082	0.0012	0.24	0.000005	0.5	0.215	0.00003	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-1-93	27-Nov-12	93	0.00081	0.0012	0.24	0.000005	0.5	0.206	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0008	0.0001
HC-1-94	04-Dec-12	94	0.00081	0.0011	0.24	0.000005	0.5	0.198	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0007	0.0001
HC-1-95	11-Dec-12	95	0.00080	0.0011	0.24	0.000005	0.5	0.189	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0006	0.0001
HC-1-96	18-Dec-12	96	0.00078	0.0012	0.24	0.000005	0.5	0.189	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0006	0.0001



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-1-97	25-Dec-12	97	0.00075	0.0012	0.24	0.000005	0.4	0.190	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0006	0.0001
HC-1-98	01-Jan-13	98	0.00073	0.0012	0.24	0.000005	0.4	0.190	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0007	0.0001
HC-1-99	08-Jan-13	99	0.00070	0.0013	0.24	0.000005	0.4	0.190	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0007	0.0001
HC-1-100	15-Jan-13	100	0.00069	0.0013	0.24	0.000005	0.4	0.192	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0007	0.0001
HC-1-101	22-Jan-13	101	0.00068	0.0014	0.24	0.000005	0.4	0.194	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0006	0.0001
HC-1-102	29-Jan-13	102	0.00067	0.0014	0.23	0.000005	0.4	0.195	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0006	0.0001
HC-1-103	05-Feb-13	103	0.00066	0.0014	0.23	0.000005	0.4	0.197	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0006	0.0001
HC-1-104	12-Feb-13	104	0.00067	0.0014	0.24	0.000005	0.4	0.196	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0008	0.0001
HC-1-105	19-Feb-13	105	0.00069	0.0013	0.24	0.000005	0.4	0.196	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00011	0.0003	0.0011	0.0001
HC-1-106	26-Feb-13	106	0.00070	0.0012	0.25	0.000005	0.4	0.195	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00012	0.0003	0.0013	0.0001
HC-1-107	05-Mar-13	107	0.00072	0.0012	0.25	0.000005	0.4	0.194	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00013	0.0003	0.0016	0.0001
HC-1-108	12-Mar-13	108	0.00069	0.0011	0.25	0.000007	0.4	0.191	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00012	0.0003	0.0014	0.0001
HC-1-109	19-Mar-13	109	0.00065	0.0011	0.24	0.000009	0.3	0.187	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00011	0.0003	0.0011	0.0001
HC-1-110	26-Mar-13	110	0.00062	0.0011	0.24	0.000010	0.3	0.184	0.00002	0.000007	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-1-111	02-Apr-13	111	0.00059	0.0011	0.23	0.000012	0.3	0.180	0.00002	0.000007	0.000005	0.0004	0.0005	0.00001	0.00009	0.0002	0.0007	0.0001
HC-1-112	09-Apr-13	112	0.00058	0.0010	0.23	0.000011	0.3	0.180	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0006	0.0001
HC-1-113	16-Apr-13	113	0.00056	0.0010	0.23	0.000011	0.3	0.180	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0006	0.0001
HC-1-114	23-Apr-13	114	0.00055	0.0010	0.22	0.000010	0.3	0.180	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0005	0.0001
HC-1-115	30-Apr-13	115	0.00054	0.0010	0.22	0.000009	0.3	0.180	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0004	0.0001
HC-1-116	07-May-13	116	0.00052	0.0010	0.22	0.000008	0.3	0.178	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0004	0.0001
HC-1-117	14-May-13	117	0.00050	0.0010	0.23	0.000007	0.3	0.176	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0003	0.0004	0.0001
HC-1-118	21-May-13	118	0.00048	0.0010	0.23	0.000006	0.3	0.174	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00009	0.0003	0.0004	0.0001
HC-1-119	28-May-13	119	0.00046	0.0011	0.23	0.000005	0.2	0.172	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00009	0.0004	0.0003	0.0001
HC-1-120	04-Jun-13	120	0.00046	0.0010	0.23	0.000005	0.2	0.170	0.00002	0.000007	0.000005	0.0004	0.0005	0.00001	0.00008	0.0003	0.0003	0.0001
HC-1-121	11-Jun-13	121	0.00045	0.0010	0.23	0.000005	0.2	0.168	0.00002	0.000007	0.000005	0.0006	0.0005	0.00001	0.00008	0.0003	0.0004	0.0001
HC-1-122	18-Jun-13	122	0.00045	0.0010	0.22	0.000005	0.2	0.165	0.00002	0.000006	0.000005	0.0008	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-1-123	25-Jun-13	123	0.00044	0.0009	0.22	0.000005	0.2	0.163	0.00002	0.000006	0.000005	0.0010	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-124	02-Jul-13	124	0.00048	0.0009	0.22	0.000005	0.2	0.163	0.00002	0.000006	0.000005	0.0008	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-125	09-Jul-13	125	0.00051	0.0010	0.23	0.000005	0.2	0.164	0.00002	0.000007	0.000005	0.0007	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-126	16-Jul-13	126	0.00054	0.0010	0.23	0.000005	0.3	0.164	0.00002	0.000007	0.000005	0.0005	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-1-127	23-Jul-13	127	0.00057	0.0010	0.23	0.000005	0.3	0.164	0.00002	0.000007	0.000005	0.0003	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-1-128	30-Jul-13	128	0.00054	0.0010	0.24	0.000005	0.2	0.163	0.00002	0.000006	0.000005	0.0003	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-1-129	06-Aug-13	129	0.00050	0.0010	0.25	0.000005	0.2	0.162	0.00002	0.000006	0.000005	0.0003	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-1-130	13-Aug-13	130	0.00047	0.0010	0.25	0.000005	0.2	0.161	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0003	0.0001
HC-1-131	20-Aug-13	131	0.00043	0.0011	0.26	0.000005	0.2	0.160	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0003	0.0001
HC-1-132	27-Aug-13	132	0.00048	0.0011	0.26	0.000005	0.2	0.164	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0005	0.0001
HC-1-133	03-Sep-13	133	0.00052	0.0011	0.25	0.000005	0.2	0.167	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0006	0.0001
HC-1-134	10-Sep-13	134	0.00057	0.0011	0.25	0.000005	0.2	0.171	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0008	0.0001
HC-1-135	17-Sep-13	135	0.00061	0.0011	0.24	0.000005	0.2	0.174	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0009	0.0001
HC-1-136	24-Sep-13	136	0.00059	0.0010	0.25	0.000006	0.2	0.171	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0008	0.0001
HC-1-137	01-Oct-13	137	0.00057	0.0010	0.26	0.000006	0.2	0.168	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0007	0.0001
HC-1-138	08-Oct-13	138	0.00055	0.0010	0.26	0.000007	0.2	0.165	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0006	0.0001
HC-1-139	15-Oct-13	139	0.00054	0.0009	0.27	0.000007	0.2	0.162	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0005	0.0001
HC-1-140	22-Oct-13	140	0.00054	0.0009	0.27	0.000007	0.2	0.160	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0009	0.0001
HC-1-141	29-Oct-13	141	0.00055	0.0009	0.28	0.000006	0.2	0.159	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0013	0.0001
HC-1-142	05-Nov-13	142	0.00056	0.0009	0.28	0.000006	0.2	0.157	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0017	0.0001
HC-1-143	12-Nov-13	143	0.00057	0.0009	0.28	0.000005	0.2	0.155	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0021	0.0001
HC-1-144	19-Nov-13	144	0.00056	0.0009	0.27	0.000005	0.2	0.157	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0017	0.0001
HC-1-145	26-Nov-13	145	0.00056	0.0009	0.27	0.000005	0.2	0.160	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0013	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-1-146	03-Dec-13	146	0.00055	0.0009	0.26	0.000005	0.2	0.162	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00009	0.0003	0.0009	0.0001
HC-1-147	10-Dec-13	147	0.00055	0.0010	0.25	0.000005	0.2	0.164	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00009	0.0003	0.0005	0.0001
HC-1-148	17-Dec-13	148	0.00054	0.0009	0.25	0.000005	0.2	0.163	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00008	0.0003	0.0004	0.0001
HC-1-149	24-Dec-13	149	0.00053	0.0009	0.26	0.000005	0.2	0.161	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-1-150	31-Dec-13	150	0.00052	0.0009	0.26	0.000005	0.2	0.160	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0003	0.0001
HC-1-151	07-Jan-14	151	0.00051	0.0009	0.26	0.000005	0.2	0.158	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0003	0.0001
HC-1-152	14-Jan-14	152	0.00049	0.0008	0.26	0.000005	0.2	0.156	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0003	0.0001
HC-1-153	21-Jan-14	153	0.00048	0.0008	0.25	0.000005	0.2	0.154	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0003	0.0001
HC-1-154	28-Jan-14	154	0.00046	0.0008	0.25	0.000005	0.2	0.152	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-1-155	04-Feb-14	155	0.00044	0.0008	0.24	0.000005	0.2	0.150	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-1-156	11-Feb-14	156	0.00044	0.0008	0.23	0.000006	0.2	0.147	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-157	18-Feb-14	157	0.00044	0.0008	0.23	0.000006	0.1	0.144	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-158	25-Feb-14	158	0.00045	0.0008	0.22	0.000007	0.1	0.140	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-159	04-Mar-14	159	0.00045	0.0008	0.21	0.000007	0.1	0.137	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0003	0.0001
HC-1-160	11-Mar-14	160	0.00046	0.0008	0.22	0.000007	0.1	0.138	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-161	18-Mar-14	161	0.00047	0.0008	0.23	0.000006	0.1	0.139	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-162	25-Mar-14	162	0.00048	0.0008	0.24	0.000006	0.1	0.140	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-163	01-Apr-14	163	0.00049	0.0008	0.25	0.000005	0.1	0.141	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0005	0.0001
HC-1-164	08-Apr-14	164	0.00049	0.0008	0.25	0.000005	0.1	0.144	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-165	15-Apr-14	165	0.00049	0.0008	0.26	0.000005	0.1	0.148	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-166	22-Apr-14	166	0.00048	0.0008	0.26	0.000005	0.2	0.151	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-1-167	29-Apr-14	167	0.00048	0.0009	0.26	0.000005	0.2	0.154	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
Mean all weeks			0.00067	0.0022	0.30	0.000006	6.0	0.189	0.00002	0.000009	0.000005	0.0002	0.0005	0.00002	0.00024	0.0004	0.0008	0.0001
<b>HC4 Boulder Creek Conglomerate</b>																		
HC-4-0	15-Feb-11	0	0.00032	0.0076	0.80	0.000007	15.0	0.002	0.00002	0.000002	0.000007	0.0000	0.0008	0.00012	0.00006	0.0065	0.0009	0.0001
HC-4-1	22-Feb-11	1	0.00060	0.0238	1.00	0.000005	49.3	0.014	0.00002	0.000008	0.000005	0.0000	0.0005	0.00025	0.00041	0.0023	0.0042	0.0001
HC-4-2	01-Mar-11	2	0.00062	0.0194	0.90	0.000005	43.0	0.011	0.00002	0.000010	0.000005	0.0000	0.0008	0.00017	0.00051	0.0029	0.0008	0.0001
HC-4-3	08-Mar-11	3	0.00109	0.0134	0.80	0.000005	36.3	0.006	0.00002	0.000016	0.000005	0.0000	0.0005	0.00006	0.00031	0.0022	0.0002	0.0001
HC-4-4	15-Mar-11	4	0.00067	0.0130	0.80	0.000005	38.5	0.008	0.00002	0.000010	0.000005	0.0000	0.0005	0.00006	0.00033	0.0024	0.0004	0.0001
HC-4-5	22-Mar-11	5	0.00046	0.0088	0.70	0.000005	32.7	0.006	0.00002	0.000006	0.000005	0.0000	0.0005	0.00004	0.00030	0.0016	0.0004	0.0001
HC-4-6	29-Mar-11	6	0.00051	0.0091	0.60	0.000005	35.9	0.007	0.00002	0.000006	0.000005	0.0000	0.0005	0.00004	0.00036	0.0016	0.0009	0.0001
HC-4-7	05-Apr-11	7	0.00045	0.0090	0.60	0.000005	35.6	0.007	0.00002	0.000006	0.000005	0.0000	0.0005	0.00003	0.00034	0.0017	0.0004	0.0001
HC-4-8	12-Apr-11	8	0.00050	0.0082	0.60	0.000005	32.5	0.007	0.00002	0.000010	0.000005	0.0000	0.0005	0.00002	0.00025	0.0013	0.0004	0.0001
HC-4-9	19-Apr-11	9	0.00046	0.0060	0.50	0.000005	30.5	0.007	0.00002	0.000009	0.000005	0.0000	0.0005	0.00002	0.00031	0.0011	0.0008	0.0001
HC-4-10	26-Apr-11	10	0.00050	0.0058	0.50	0.000005	26.6	0.007	0.00002	0.000007	0.000005	0.0000	0.0005	0.00002	0.00026	0.0009	0.0007	0.0001
HC-4-11	03-May-11	11	0.00030	0.0064	0.60	0.000005	25.8	0.005	0.00002	0.000007	0.000005	0.0001	0.0005	0.00002	0.00031	0.0012	0.0009	0.0001
HC-4-12	10-May-11	12	0.00049	0.0061	0.60	0.000005	27.9	0.007	0.00002	0.000011	0.000005	0.0000	0.0005	0.00001	0.00030	0.0009	0.0004	0.0001
HC-4-13	17-May-11	13	0.00048	0.0062	0.60	0.000005	24.8	0.006	0.00002	0.000007	0.000005	0.0000	0.0005	0.00002	0.00024	0.0010	0.0007	0.0001
HC-4-14	24-May-11	14	0.00043	0.0051	0.60	0.000005	27.2	0.009	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00025	0.0008	0.0004	0.0001
HC-4-15	31-May-11	15	0.00038	0.0054	0.50	0.000005	28.7	0.009	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00028	0.0008	0.0004	0.0001
HC-4-16	07-Jun-11	16	0.00052	0.0050	0.50	0.000005	28.9	0.012	0.00002	0.000009	0.000005	0.0000	0.0005	0.00001	0.00026	0.0008	0.0004	0.0001
HC-4-17	14-Jun-11	17	0.00058	0.0048	0.50	0.000005	27.9	0.012	0.00002	0.000009	0.000005	0.0000	0.0005	0.00001	0.00019	0.0005	0.0004	0.0001
HC-4-18	21-Jun-11	18	0.00067	0.0044	0.50	0.000005	32.0	0.017	0.00002	0.000011	0.000005	0.0000	0.0005	0.00001	0.00018	0.0002	0.0009	0.0001
HC-4-19	28-Jun-11	19	0.00079	0.0043	0.50	0.000005	35.8	0.021	0.00002	0.000012	0.000005	0.0000	0.0005	0.00001	0.00016	0.0005	0.0014	0.0001
HC-4-20	05-Jul-11	20	0.00089	0.0042	0.50	0.000005	34.9	0.033	0.00002	0.000016	0.000005	0.0000	0.0005	0.00001	0.00012	0.0004	0.0016	0.0001
HC-4-21	12-Jul-11	21	0.00100	0.0041	0.50	0.000005	34.1	0.044	0.00002	0.000019	0.000005	0.0000	0.0005	0.00001	0.00009	0.0004	0.0018	0.0001
HC-4-22	19-Jul-11	22	0.00110	0.0040	0.50	0.000005	33.2	0.056	0.00002	0.000023	0.000005	0.0000	0.0005	0.00001	0.00005	0.0003	0.0019	0.0001
HC-4-23	26-Jul-11	23	0.00120	0.0039	0.50	0.000005	32.3	0.067	0.00002	0.000026	0.000005	0.0000	0.0005	0.00001	0.00002	0.0002	0.0021	0.0001
HC-4-24	02-Aug-11	24	0.00150	0.0044	0.53	0.000005	33.7	0.100	0.00002	0.000032	0.000005	0.0000	0.0005	0.00001	0.00002	0.0002	0.0040	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-4-25	09-Aug-11	25	0.00181	0.0048	0.55	0.000005	35.1	0.132	0.00002	0.000038	0.000005	0.0000	0.0005	0.00001	0.00001	0.0002	0.0060	0.0001
HC-4-26	16-Aug-11	26	0.00211	0.0052	0.58	0.000005	36.5	0.165	0.00002	0.000043	0.000005	0.0000	0.0005	0.00001	0.00001	0.0002	0.0079	0.0001
HC-4-27	23-Aug-11	27	0.00241	0.0057	0.60	0.000005	37.9	0.197	0.00002	0.000049	0.000005	0.0000	0.0005	0.00001	0.00001	0.0002	0.0098	0.0001
HC-4-28	30-Aug-11	28	0.00246	0.0059	0.60	0.000005	35.1	0.211	0.00002	0.000057	0.000005	0.0000	0.0005	0.00001	0.00001	0.0002	0.0138	0.0001
HC-4-29	06-Sep-11	29	0.00252	0.0062	0.60	0.000005	32.3	0.225	0.00002	0.000064	0.000005	0.0001	0.0005	0.00001	0.00001	0.0002	0.0178	0.0001
HC-4-30	13-Sep-11	30	0.00257	0.0065	0.60	0.000005	29.5	0.238	0.00002	0.000072	0.000005	0.0001	0.0005	0.00001	0.00001	0.0002	0.0218	0.0001
HC-4-31	20-Sep-11	31	0.00262	0.0067	0.60	0.000005	26.7	0.252	0.00002	0.000079	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0258	0.0001
HC-4-32	27-Sep-11	32	0.00283	0.0068	0.60	0.000005	24.8	0.270	0.00002	0.000084	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0321	0.0001
HC-4-33	04-Oct-11	33	0.00305	0.0068	0.60	0.000005	22.8	0.288	0.00002	0.000090	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0385	0.0001
HC-4-34	11-Oct-11	34	0.00326	0.0069	0.60	0.000005	20.9	0.305	0.00002	0.000095	0.000005	0.0001	0.0005	0.00001	0.00001	0.0002	0.0448	0.0001
HC-4-35	18-Oct-11	35	0.00347	0.0070	0.60	0.000005	18.9	0.323	0.00002	0.000100	0.000005	0.0001	0.0005	0.00001	0.00001	0.0002	0.0511	0.0001
HC-4-36	25-Oct-11	36	0.00351	0.0071	0.58	0.000005	17.7	0.325	0.00002	0.000104	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0571	0.0001
HC-4-37	01-Nov-11	37	0.00355	0.0072	0.55	0.000005	16.4	0.327	0.00002	0.000108	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0632	0.0001
HC-4-38	08-Nov-11	38	0.00359	0.0074	0.53	0.000005	15.2	0.328	0.00002	0.000111	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0692	0.0001
HC-4-39	15-Nov-11	39	0.00363	0.0075	0.50	0.000005	13.9	0.330	0.00002	0.000115	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0752	0.0001
HC-4-40	22-Nov-11	40	0.00359	0.0074	0.50	0.000005	13.2	0.317	0.00002	0.000114	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0798	0.0001
HC-4-41	29-Nov-11	41	0.00356	0.0073	0.50	0.000005	12.5	0.304	0.00002	0.000112	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0843	0.0001
HC-4-42	06-Dec-11	42	0.00352	0.0072	0.50	0.000005	11.8	0.291	0.00002	0.000111	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0889	0.0001
HC-4-43	13-Dec-11	43	0.00348	0.0070	0.50	0.000005	11.1	0.278	0.00002	0.000109	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0934	0.0001
HC-4-44	20-Dec-11	44	0.00341	0.0071	0.50	0.000005	10.3	0.273	0.00002	0.000115	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0988	0.0001
HC-4-45	27-Dec-11	45	0.00335	0.0072	0.50	0.000005	9.4	0.269	0.00002	0.000120	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1042	0.0001
HC-4-46	03-Jan-12	46	0.00328	0.0072	0.50	0.000005	8.6	0.264	0.00002	0.000126	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1096	0.0001
HC-4-47	10-Jan-12	47	0.00321	0.0073	0.50	0.000005	7.8	0.259	0.00002	0.000131	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1150	0.0001
HC-4-48	17-Jan-12	48	0.00335	0.0073	0.50	0.000005	7.3	0.267	0.00002	0.000135	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1198	0.0001
HC-4-49	24-Jan-12	49	0.00349	0.0074	0.50	0.000005	6.8	0.276	0.00002	0.000139	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1245	0.0001
HC-4-50	31-Jan-12	50	0.00362	0.0074	0.50	0.000005	6.3	0.284	0.00002	0.000143	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1293	0.0001
HC-4-51	07-Feb-12	51	0.00376	0.0075	0.50	0.000005	5.7	0.292	0.00002	0.000147	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1340	0.0001
HC-4-52	14-Feb-12	52	0.00385	0.0074	0.50	0.000005	5.3	0.289	0.00002	0.000150	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1393	0.0001
HC-4-53	21-Feb-12	53	0.00393	0.0073	0.50	0.000005	4.9	0.287	0.00002	0.000154	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.1445	0.0001
HC-4-54	28-Feb-12	54	0.00402	0.0073	0.50	0.000005	4.5	0.284	0.00002	0.000157	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.1498	0.0001
HC-4-55	06-Mar-12	55	0.00410	0.0072	0.50	0.000005	4.1	0.281	0.00002	0.000160	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.1550	0.0001
HC-4-56	13-Mar-12	56	0.00398	0.0070	0.48	0.000005	3.6	0.271	0.00002	0.000157	0.000005	0.0004	0.0005	0.00001	0.00001	0.0002	0.1533	0.0001
HC-4-57	20-Mar-12	57	0.00386	0.0068	0.45	0.000005	3.2	0.260	0.00002	0.000153	0.000005	0.0004	0.0005	0.00001	0.00001	0.0002	0.1515	0.0001
HC-4-58	27-Mar-12	58	0.00373	0.0066	0.43	0.000005	2.8	0.250	0.00002	0.000150	0.000005	0.0005	0.0005	0.00001	0.00001	0.0002	0.1498	0.0001
HC-4-59	03-Apr-12	59	0.00361	0.0064	0.40	0.000005	2.3	0.239	0.00002	0.000146	0.000005	0.0005	0.0005	0.00001	0.00001	0.0002	0.1480	0.0001
HC-4-60	10-Apr-12	60	0.00369	0.0063	0.42	0.000005	2.1	0.238	0.00002	0.000150	0.000005	0.0004	0.0005	0.00001	0.00001	0.0002	0.1483	0.0001
HC-4-61	17-Apr-12	61	0.00376	0.0062	0.45	0.000005	2.0	0.236	0.00002	0.000153	0.000005	0.0004	0.0005	0.00001	0.00001	0.0002	0.1485	0.0001
HC-4-62	24-Apr-12	62	0.00384	0.0061	0.47	0.000005	1.8	0.235	0.00002	0.000157	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.1488	0.0001
HC-4-63	01-May-12	63	0.00391	0.0060	0.49	0.000005	1.7	0.233	0.00002	0.000160	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1490	0.0001
HC-4-64	08-May-12	64	0.00391	0.0059	0.49	0.000005	1.5	0.234	0.00002	0.000161	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1530	0.0001
HC-4-65	15-May-12	65	0.00391	0.0058	0.49	0.000005	1.4	0.236	0.00002	0.000162	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1570	0.0001
HC-4-66	22-May-12	66	0.00390	0.0056	0.49	0.000005	1.3	0.237	0.00002	0.000163	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1610	0.0001
HC-4-67	29-May-12	67	0.00390	0.0055	0.49	0.000005	1.2	0.238	0.00002	0.000164	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1650	0.0001
HC-4-68	05-Jun-12	68	0.00397	0.0056	0.51	0.000005	1.0	0.233	0.00002	0.000170	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1623	0.0001
HC-4-69	12-Jun-12	69	0.00404	0.0057	0.52	0.000005	0.9	0.229	0.00002	0.000177	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1595	0.0001
HC-4-70	19-Jun-12	70	0.00411	0.0058	0.54	0.000005	0.8	0.224	0.00002	0.000183	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1568	0.0001
HC-4-71	26-Jun-12	71	0.00418	0.0059	0.55	0.000005	0.7	0.219	0.00002	0.000189	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1540	0.0001
HC-4-72	03-Jul-12	72	0.00410	0.0056	0.54	0.000005	0.7	0.218	0.00002	0.000186	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1573	0.0001
HC-4-73	10-Jul-12	73	0.00403	0.0054	0.52	0.000005	0.7	0.216	0.00002	0.000183	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1605	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-4-74	17-Jul-12	74	0.00395	0.0051	0.51	0.000005	0.6	0.215	0.00002	0.000179	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1638	0.0001
HC-4-75	24-Jul-12	75	0.00387	0.0049	0.49	0.000005	0.6	0.213	0.00002	0.000176	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1670	0.0001
HC-4-76	31-Jul-12	76	0.00392	0.0048	0.48	0.000005	0.6	0.209	0.00002	0.000177	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1675	0.0001
HC-4-77	07-Aug-12	77	0.00396	0.0047	0.46	0.000005	0.5	0.204	0.00002	0.000178	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1680	0.0001
HC-4-78	14-Aug-12	78	0.00401	0.0046	0.45	0.000005	0.5	0.200	0.00002	0.000179	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1685	0.0001
HC-4-79	21-Aug-12	79	0.00405	0.0045	0.43	0.000005	0.4	0.195	0.00002	0.000180	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1690	0.0001
HC-4-80	28-Aug-12	80	0.00396	0.0045	0.43	0.000005	0.4	0.197	0.00002	0.000177	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.1725	0.0001
HC-4-81	04-Sep-12	81	0.00386	0.0045	0.44	0.000005	0.4	0.199	0.00002	0.000173	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.1760	0.0001
HC-4-82	11-Sep-12	82	0.00377	0.0044	0.44	0.000005	0.4	0.200	0.00002	0.000170	0.000005	0.0002	0.0005	0.00001	0.00002	0.0004	0.1795	0.0001
HC-4-83	18-Sep-12	83	0.00367	0.0044	0.44	0.000005	0.4	0.202	0.00002	0.000166	0.000005	0.0002	0.0005	0.00001	0.00002	0.0004	0.1830	0.0001
HC-4-84	25-Sep-12	84	0.00364	0.0045	0.45	0.000005	0.4	0.195	0.00002	0.000168	0.000005	0.0002	0.0005	0.00001	0.00002	0.0004	0.1823	0.0001
HC-4-85	02-Oct-12	85	0.00361	0.0045	0.45	0.000005	0.4	0.189	0.00002	0.000171	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.1815	0.0001
HC-4-86	09-Oct-12	86	0.00357	0.0046	0.46	0.000005	0.3	0.182	0.00002	0.000173	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.1808	0.0001
HC-4-87	16-Oct-12	87	0.00354	0.0047	0.46	0.000005	0.3	0.175	0.00002	0.000175	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1800	0.0001
HC-4-88	23-Oct-12	88	0.00358	0.0047	0.47	0.000005	0.3	0.177	0.00002	0.000178	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1793	0.0001
HC-4-89	30-Oct-12	89	0.00363	0.0046	0.47	0.000005	0.3	0.179	0.00002	0.000182	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1785	0.0001
HC-4-90	06-Nov-12	90	0.00367	0.0046	0.48	0.000005	0.3	0.180	0.00002	0.000185	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1778	0.0001
HC-4-91	13-Nov-12	91	0.00371	0.0046	0.48	0.000005	0.3	0.182	0.00002	0.000188	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1770	0.0001
HC-4-92	20-Nov-12	92	0.00365	0.0045	0.48	0.000005	0.3	0.177	0.00002	0.000183	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1748	0.0001
HC-4-93	27-Nov-12	93	0.00359	0.0044	0.47	0.000005	0.3	0.172	0.00002	0.000178	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1725	0.0001
HC-4-94	04-Dec-12	94	0.00353	0.0043	0.47	0.000005	0.3	0.166	0.00002	0.000172	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1703	0.0001
HC-4-95	11-Dec-12	95	0.00347	0.0042	0.46	0.000005	0.3	0.161	0.00002	0.000167	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.1680	0.0001
HC-4-96	18-Dec-12	96	0.00344	0.0041	0.45	0.000005	0.2	0.158	0.00002	0.000165	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1660	0.0001
HC-4-97	25-Dec-12	97	0.00341	0.0040	0.43	0.000005	0.2	0.155	0.00002	0.000163	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1640	0.0001
HC-4-98	01-Jan-13	98	0.00337	0.0039	0.42	0.000005	0.2	0.151	0.00002	0.000161	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1620	0.0001
HC-4-99	08-Jan-13	99	0.00334	0.0038	0.40	0.000005	0.2	0.148	0.00002	0.000159	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1600	0.0001
HC-4-100	15-Jan-13	100	0.00327	0.0037	0.40	0.000005	0.2	0.146	0.00002	0.000156	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1595	0.0001
HC-4-101	22-Jan-13	101	0.00321	0.0037	0.39	0.000005	0.2	0.145	0.00002	0.000153	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1590	0.0001
HC-4-102	29-Jan-13	102	0.00314	0.0036	0.39	0.000005	0.2	0.143	0.00002	0.000149	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1585	0.0001
HC-4-103	05-Feb-13	103	0.00307	0.0035	0.38	0.000005	0.2	0.141	0.00002	0.000146	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.1580	0.0001
HC-4-104	12-Feb-13	104	0.00307	0.0035	0.39	0.000005	0.2	0.141	0.00002	0.000149	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.1608	0.0001
HC-4-105	19-Feb-13	105	0.00306	0.0035	0.41	0.000005	0.2	0.141	0.00002	0.000151	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.1635	0.0001
HC-4-106	26-Feb-13	106	0.00306	0.0034	0.42	0.000005	0.2	0.140	0.00002	0.000154	0.000005	0.0002	0.0005	0.00001	0.00001	0.0004	0.1663	0.0001
HC-4-107	05-Mar-13	107	0.00305	0.0034	0.43	0.000005	0.2	0.140	0.00002	0.000156	0.000005	0.0002	0.0005	0.00001	0.00002	0.0005	0.1690	0.0001
HC-4-108	12-Mar-13	108	0.00293	0.0033	0.43	0.000005	0.2	0.138	0.00002	0.000150	0.000005	0.0002	0.0005	0.00001	0.00001	0.0004	0.1660	0.0001
HC-4-109	19-Mar-13	109	0.00281	0.0033	0.42	0.000005	0.2	0.136	0.00002	0.000144	0.000005	0.0002	0.0005	0.00001	0.00001	0.0004	0.1630	0.0001
HC-4-110	26-Mar-13	110	0.00269	0.0033	0.42	0.000005	0.1	0.133	0.00002	0.000137	0.000005	0.0003	0.0005	0.00001	0.00001	0.0003	0.1600	0.0001
HC-4-111	02-Apr-13	111	0.00257	0.0032	0.41	0.000005	0.1	0.131	0.00002	0.000131	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.1570	0.0001
HC-4-112	09-Apr-13	112	0.00262	0.0032	0.40	0.000005	0.2	0.130	0.00002	0.000133	0.000005	0.0003	0.0005	0.00001	0.00001	0.0003	0.1595	0.0001
HC-4-113	16-Apr-13	113	0.00267	0.0032	0.40	0.000005	0.2	0.129	0.00002	0.000134	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.1620	0.0001
HC-4-114	23-Apr-13	114	0.00271	0.0032	0.39	0.000005	0.2	0.127	0.00002	0.000136	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.1645	0.0001
HC-4-115	30-Apr-13	115	0.00276	0.0032	0.38	0.000005	0.2	0.126	0.00002	0.000137	0.000005	0.0002	0.0005	0.00001	0.00002	0.0004	0.1670	0.0001
HC-4-116	07-May-13	116	0.00275	0.0032	0.39	0.000005	0.2	0.127	0.00002	0.000138	0.000005	0.0002	0.0005	0.00001	0.00002	0.0005	0.1710	0.0001
HC-4-117	14-May-13	117	0.00274	0.0033	0.40	0.000005	0.2	0.128	0.00002	0.000138	0.000005	0.0002	0.0005	0.00001	0.00002	0.0006	0.1750	0.0001
HC-4-118	21-May-13	118	0.00272	0.0033	0.41	0.000005	0.2	0.129	0.00002	0.000139	0.000005	0.0002	0.0005	0.00001	0.00002	0.0007	0.1790	0.0001
HC-4-119	28-May-13	119	0.00271	0.0034	0.42	0.000005	0.2	0.130	0.00002	0.000139	0.000005	0.0002	0.0005	0.00001	0.00002	0.0008	0.1830	0.0001
HC-4-120	04-Jun-13	120	0.00267	0.0033	0.42	0.000005	0.2	0.129	0.00002	0.000137	0.000005	0.0004	0.0005	0.00001	0.00002	0.0006	0.1805	0.0001
HC-4-121	11-Jun-13	121	0.00263	0.0032	0.42	0.000005	0.2	0.128	0.00002	0.000134	0.000005	0.0006	0.0005	0.00001	0.00002	0.0005	0.1780	0.0001
HC-4-122	18-Jun-13	122	0.00258	0.0031	0.41	0.000005	0.2	0.127	0.00002	0.000132	0.000005	0.0008	0.0005	0.00001	0.00002	0.0003	0.1755	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-4-123	25-Jun-13	123	0.00254	0.0030	0.41	0.000005	0.2	0.126	0.00002	0.000129	0.000005	0.0010	0.0005	0.00001	0.00002	0.0002	0.1730	0.0001
HC-4-124	02-Jul-13	124	0.00256	0.0030	0.40	0.000005	0.2	0.124	0.00002	0.000130	0.000005	0.0008	0.0005	0.00001	0.00002	0.0002	0.1725	0.0001
HC-4-125	09-Jul-13	125	0.00259	0.0029	0.40	0.000005	0.2	0.123	0.00002	0.000131	0.000005	0.0006	0.0005	0.00001	0.00002	0.0002	0.1720	0.0001
HC-4-126	16-Jul-13	126	0.00261	0.0029	0.39	0.000005	0.1	0.121	0.00002	0.000131	0.000005	0.0005	0.0005	0.00001	0.00002	0.0002	0.1715	0.0001
HC-4-127	23-Jul-13	127	0.00263	0.0028	0.38	0.000005	0.1	0.119	0.00002	0.000132	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.1710	0.0001
HC-4-128	30-Jul-13	128	0.00256	0.0029	0.38	0.000005	0.1	0.117	0.00002	0.000127	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.1770	0.0001
HC-4-129	06-Aug-13	129	0.00249	0.0029	0.38	0.000005	0.1	0.115	0.00002	0.000122	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1830	0.0001
HC-4-130	13-Aug-13	130	0.00242	0.0029	0.37	0.000005	0.1	0.113	0.00002	0.000116	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1890	0.0001
HC-4-131	20-Aug-13	131	0.00235	0.0029	0.37	0.000005	0.1	0.111	0.00002	0.000111	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1950	0.0001
HC-4-132	27-Aug-13	132	0.00253	0.0030	0.38	0.000005	0.1	0.114	0.00002	0.000126	0.000005	0.0002	0.0006	0.00001	0.00002	0.0002	0.1988	0.0001
HC-4-133	03-Sep-13	133	0.00271	0.0030	0.39	0.000005	0.1	0.117	0.00002	0.000141	0.000005	0.0002	0.0006	0.00001	0.00002	0.0002	0.2025	0.0001
HC-4-134	10-Sep-13	134	0.00288	0.0030	0.40	0.000005	0.1	0.119	0.00002	0.000156	0.000005	0.0002	0.0007	0.00001	0.00002	0.0002	0.2063	0.0001
HC-4-135	17-Sep-13	135	0.00306	0.0031	0.41	0.000005	0.2	0.122	0.00002	0.000171	0.000005	0.0002	0.0008	0.00001	0.00002	0.0002	0.2100	0.0001
HC-4-136	24-Sep-13	136	0.00297	0.0031	0.44	0.000005	0.2	0.120	0.00002	0.000168	0.000005	0.0002	0.0007	0.00001	0.00002	0.0002	0.2130	0.0001
HC-4-137	01-Oct-13	137	0.00289	0.0031	0.46	0.000005	0.2	0.119	0.00002	0.000166	0.000005	0.0002	0.0006	0.00001	0.00002	0.0002	0.2160	0.0001
HC-4-138	08-Oct-13	138	0.00280	0.0031	0.49	0.000005	0.2	0.117	0.00002	0.000163	0.000005	0.0002	0.0006	0.00001	0.00002	0.0002	0.2190	0.0001
HC-4-139	15-Oct-13	139	0.00271	0.0031	0.51	0.000005	0.2	0.115	0.00002	0.000160	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.2220	0.0001
HC-4-140	22-Oct-13	140	0.00280	0.0031	0.52	0.000005	0.1	0.116	0.00002	0.000158	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.2203	0.0001
HC-4-141	29-Oct-13	141	0.00289	0.0031	0.52	0.000005	0.1	0.117	0.00002	0.000157	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.2185	0.0001
HC-4-142	05-Nov-13	142	0.00298	0.0030	0.53	0.000005	0.1	0.118	0.00002	0.000155	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.2168	0.0001
HC-4-143	12-Nov-13	143	0.00307	0.0030	0.53	0.000005	0.1	0.119	0.00002	0.000153	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.2150	0.0001
HC-4-144	19-Nov-13	144	0.00307	0.0030	0.52	0.000005	0.1	0.121	0.00002	0.000159	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.2203	0.0001
HC-4-145	26-Nov-13	145	0.00307	0.0030	0.51	0.000005	0.1	0.122	0.00002	0.000166	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.2255	0.0001
HC-4-146	03-Dec-13	146	0.00307	0.0031	0.50	0.000005	0.1	0.124	0.00002	0.000172	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.2308	0.0001
HC-4-147	10-Dec-13	147	0.00307	0.0031	0.49	0.000005	0.2	0.125	0.00002	0.000178	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.2360	0.0001
HC-4-148	17-Dec-13	148	0.00302	0.0031	0.51	0.000005	0.1	0.125	0.00002	0.000175	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.2368	0.0001
HC-4-149	24-Dec-13	149	0.00297	0.0031	0.52	0.000005	0.1	0.126	0.00002	0.000172	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.2375	0.0001
HC-4-150	31-Dec-13	150	0.00291	0.0031	0.54	0.000005	0.1	0.126	0.00002	0.000168	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.2383	0.0001
HC-4-151	07-Jan-14	151	0.00286	0.0031	0.55	0.000005	0.1	0.126	0.00002	0.000165	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.2390	0.0001
HC-4-152	14-Jan-14	152	0.00279	0.0030	0.55	0.000005	0.1	0.126	0.00002	0.000161	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.2438	0.0001
HC-4-153	21-Jan-14	153	0.00272	0.0030	0.55	0.000005	0.1	0.125	0.00002	0.000157	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.2485	0.0001
HC-4-154	28-Jan-14	154	0.00265	0.0029	0.55	0.000005	0.1	0.125	0.00002	0.000152	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.2533	0.0001
HC-4-155	04-Feb-14	155	0.00258	0.0029	0.55	0.000005	0.1	0.124	0.00002	0.000148	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.2580	0.0001
HC-4-156	11-Feb-14	156	0.00262	0.0029	0.54	0.000005	0.1	0.125	0.00002	0.000155	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.2670	0.0001
HC-4-157	18-Feb-14	157	0.00266	0.0030	0.52	0.000005	0.1	0.126	0.00002	0.000162	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.2760	0.0001
HC-4-158	25-Feb-14	158	0.00270	0.0030	0.51	0.000005	0.1	0.126	0.00002	0.000168	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.2850	0.0001
HC-4-159	04-Mar-14	159	0.00274	0.0030	0.49	0.000005	0.1	0.127	0.00002	0.000175	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.2940	0.0001
HC-4-160	11-Mar-14	160	0.00282	0.0030	0.53	0.000005	0.1	0.128	0.00002	0.000176	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.3003	0.0001
HC-4-161	18-Mar-14	161	0.00289	0.0030	0.57	0.000005	0.1	0.128	0.00002	0.000177	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.3065	0.0001
HC-4-162	25-Mar-14	162	0.00297	0.0030	0.60	0.000005	0.1	0.129	0.00002	0.000178	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.3128	0.0001
HC-4-163	01-Apr-14	163	0.00304	0.0030	0.64	0.000005	0.1	0.129	0.00002	0.000179	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.3190	0.0001
HC-4-164	08-Apr-14	164	0.00308	0.0031	0.67	0.000005	0.1	0.134	0.00002	0.000183	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.3308	0.0001
HC-4-165	15-Apr-14	165	0.00313	0.0031	0.70	0.000005	0.1	0.139	0.00002	0.000187	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.3425	0.0001
HC-4-166	22-Apr-14	166	0.00317	0.0032	0.72	0.000005	0.1	0.143	0.00002	0.000191	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.3543	0.0001
HC-4-167	29-Apr-14	167	0.00321	0.0032	0.75	0.000005	0.1	0.148	0.00002	0.000195	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.3660	0.0001
<b>Mean all weeks</b>			<b>0.00283</b>	<b>0.0050</b>	<b>0.50</b>	<b>0.000005</b>	<b>8.1</b>	<b>0.158</b>	<b>0.00002</b>	<b>0.000128</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0005</b>	<b>0.00001</b>	<b>0.00005</b>	<b>0.0004</b>	<b>0.1448</b>	<b>0.0001</b>

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC6 Upper Gates Carbonaceous Mudstone																		
HC-6-0	15-Feb-11	0	0.00088	0.0062	1.30	0.000005	56.3	0.025	0.00002	0.000002	0.000005	0.0000	0.0005	0.00029	0.00039	0.0104	0.0006	0.0001
HC-6-1	22-Feb-11	1	0.00117	0.0135	1.20	0.000010	94.1	0.056	0.00002	0.000005	0.000005	0.0000	0.0005	0.00089	0.00119	0.0034	0.0020	0.0001
HC-6-2	01-Mar-11	2	0.00083	0.0136	0.70	0.000005	79.7	0.036	0.00002	0.000003	0.000005	0.0000	0.0005	0.00049	0.00116	0.0035	0.0006	0.0001
HC-6-3	08-Mar-11	3	0.00073	0.0097	0.80	0.000005	74.9	0.032	0.00002	0.000004	0.000005	0.0000	0.0005	0.00025	0.00105	0.0027	0.0004	0.0001
HC-6-4	15-Mar-11	4	0.00101	0.0078	0.80	0.000005	67.7	0.043	0.00002	0.000004	0.000005	0.0000	0.0005	0.00012	0.00090	0.0023	0.0004	0.0001
HC-6-5	22-Mar-11	5	0.00075	0.0053	0.70	0.000005	57.9	0.032	0.00002	0.000002	0.000005	0.0000	0.0005	0.00007	0.00079	0.0018	0.0007	0.0001
HC-6-6	29-Mar-11	6	0.00074	0.0047	0.60	0.000005	48.9	0.034	0.00002	0.000004	0.000005	0.0000	0.0005	0.00005	0.00063	0.0014	0.0007	0.0001
HC-6-7	05-Apr-11	7	0.00070	0.0049	0.60	0.000005	52.0	0.037	0.00002	0.000004	0.000005	0.0000	0.0005	0.00005	0.00065	0.0015	0.0004	0.0001
HC-6-8	12-Apr-11	8	0.00073	0.0046	0.60	0.000005	49.6	0.040	0.00002	0.000007	0.000005	0.0000	0.0005	0.00002	0.00038	0.0012	0.0004	0.0001
HC-6-9	19-Apr-11	9	0.00064	0.0042	0.50	0.000005	44.2	0.045	0.00002	0.000004	0.000005	0.0000	0.0005	0.00004	0.00058	0.0009	0.0009	0.0001
HC-6-10	26-Apr-11	10	0.00087	0.0036	0.50	0.000005	39.5	0.051	0.00002	0.000007	0.000005	0.0000	0.0005	0.00004	0.00049	0.0008	0.0009	0.0001
HC-6-11	03-May-11	11	0.00076	0.0036	0.50	0.000005	36.6	0.050	0.00002	0.000007	0.000005	0.0000	0.0005	0.00003	0.00051	0.0007	0.0009	0.0001
HC-6-12	10-May-11	12	0.00078	0.0034	0.60	0.000005	37.4	0.060	0.00002	0.000006	0.000005	0.0000	0.0005	0.00002	0.00044	0.0006	0.0008	0.0001
HC-6-13	17-May-11	13	0.00099	0.0032	0.50	0.000005	34.5	0.067	0.00002	0.000006	0.000005	0.0000	0.0005	0.00002	0.00040	0.0006	0.0008	0.0001
HC-6-14	24-May-11	14	0.00080	0.0028	0.50	0.000005	33.3	0.083	0.00002	0.000004	0.000005	0.0000	0.0005	0.00002	0.00034	0.0004	0.0003	0.0001
HC-6-15	31-May-11	15	0.00077	0.0026	0.40	0.000005	32.5	0.104	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00031	0.0004	0.0005	0.0001
HC-6-16	07-Jun-11	16	0.00081	0.0024	0.40	0.000005	30.5	0.133	0.00002	0.000004	0.000005	0.0000	0.0005	0.00001	0.00025	0.0003	0.0006	0.0001
HC-6-17	14-Jun-11	17	0.00082	0.0022	0.40	0.000005	25.8	0.146	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00023	0.0002	0.0008	0.0001
HC-6-18	21-Jun-11	18	0.00076	0.0020	0.40	0.000005	22.5	0.150	0.00002	0.000003	0.000005	0.0000	0.0005	0.00001	0.00023	0.0002	0.0012	0.0001
HC-6-19	28-Jun-11	19	0.00077	0.0023	0.40	0.000005	24.1	0.182	0.00002	0.000003	0.000005	0.0001	0.0005	0.00001	0.00026	0.0002	0.0017	0.0001
HC-6-20	05-Jul-11	20	0.00081	0.0023	0.40	0.000005	21.1	0.212	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00024	0.0002	0.0017	0.0001
HC-6-21	12-Jul-11	21	0.00086	0.0023	0.40	0.000005	18.1	0.242	0.00002	0.000005	0.000005	0.0001	0.0005	0.00001	0.00022	0.0002	0.0017	0.0001
HC-6-22	19-Jul-11	22	0.00090	0.0022	0.40	0.000005	15.1	0.271	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00019	0.0002	0.0016	0.0001
HC-6-23	26-Jul-11	23	0.00094	0.0022	0.40	0.000005	12.1	0.301	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00017	0.0002	0.0016	0.0001
HC-6-24	02-Aug-11	24	0.00093	0.0022	0.40	0.000005	11.1	0.332	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00018	0.0002	0.0015	0.0001
HC-6-25	09-Aug-11	25	0.00093	0.0022	0.40	0.000005	10.1	0.362	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00018	0.0002	0.0014	0.0001
HC-6-26	16-Aug-11	26	0.00092	0.0022	0.40	0.000005	9.1	0.393	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00019	0.0002	0.0013	0.0001
HC-6-27	23-Aug-11	27	0.00091	0.0022	0.40	0.000005	8.1	0.423	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00019	0.0002	0.0012	0.0001
HC-6-28	30-Aug-11	28	0.00091	0.0022	0.38	0.000005	7.2	0.443	0.00002	0.000005	0.000005	0.0001	0.0005	0.00001	0.00019	0.0002	0.0011	0.0001
HC-6-29	06-Sep-11	29	0.00092	0.0022	0.35	0.000005	6.4	0.464	0.00002	0.000005	0.000005	0.0001	0.0005	0.00001	0.00019	0.0002	0.0010	0.0001
HC-6-30	13-Sep-11	30	0.00092	0.0021	0.33	0.000005	5.5	0.484	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00019	0.0002	0.0009	0.0001
HC-6-31	20-Sep-11	31	0.00092	0.0021	0.30	0.000005	4.7	0.504	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00019	0.0002	0.0008	0.0001
HC-6-32	27-Sep-11	32	0.00095	0.0022	0.33	0.000005	4.1	0.513	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0009	0.0001
HC-6-33	04-Oct-11	33	0.00097	0.0022	0.35	0.000005	3.6	0.523	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0010	0.0001
HC-6-34	11-Oct-11	34	0.00100	0.0023	0.38	0.000005	3.1	0.532	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0010	0.0001
HC-6-35	18-Oct-11	35	0.00102	0.0024	0.40	0.000005	2.5	0.541	0.00002	0.000005	0.000005	0.0001	0.0005	0.00001	0.00018	0.0002	0.0011	0.0001
HC-6-36	25-Oct-11	36	0.00099	0.0024	0.38	0.000005	2.3	0.523	0.00002	0.000005	0.000005	0.0001	0.0005	0.00001	0.00018	0.0002	0.0011	0.0001
HC-6-37	01-Nov-11	37	0.00096	0.0024	0.35	0.000005	2.0	0.505	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00018	0.0002	0.0011	0.0001
HC-6-38	08-Nov-11	38	0.00092	0.0024	0.33	0.000005	1.8	0.486	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00018	0.0002	0.0011	0.0001
HC-6-39	15-Nov-11	39	0.00089	0.0024	0.30	0.000005	1.5	0.468	0.00002	0.000003	0.000005	0.0001	0.0005	0.00001	0.00018	0.0002	0.0011	0.0001
HC-6-40	22-Nov-11	40	0.00089	0.0024	0.33	0.000005	1.4	0.450	0.00002	0.000003	0.000005	0.0001	0.0005	0.00001	0.00018	0.0002	0.0010	0.0001
HC-6-41	29-Nov-11	41	0.00089	0.0025	0.35	0.000005	1.3	0.432	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00019	0.0002	0.0009	0.0001
HC-6-42	06-Dec-11	42	0.00089	0.0026	0.38	0.000005	1.2	0.414	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00020	0.0002	0.0008	0.0001
HC-6-43	13-Dec-11	43	0.00089	0.0026	0.40	0.000005	1.1	0.396	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00021	0.0002	0.0007	0.0001
HC-6-44	20-Dec-11	44	0.00086	0.0026	0.38	0.000005	1.0	0.378	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00021	0.0002	0.0007	0.0001
HC-6-45	27-Dec-11	45	0.00084	0.0027	0.35	0.000005	0.9	0.360	0.00002	0.000005	0.000005	0.0001	0.0005	0.00001	0.00021	0.0002	0.0007	0.0001
HC-6-46	03-Jan-12	46	0.00081	0.0027	0.33	0.000005	0.8	0.341	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00020	0.0002	0.0007	0.0001
HC-6-47	10-Jan-12	47	0.00078	0.0027	0.30	0.000005	0.7	0.323	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00020	0.0002	0.0007	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-6-48	17-Jan-12	48	0.00080	0.0026	0.33	0.000005	0.7	0.329	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00020	0.0002	0.0008	0.0001
HC-6-49	24-Jan-12	49	0.00082	0.0026	0.35	0.000005	0.6	0.335	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00020	0.0002	0.0008	0.0001
HC-6-50	31-Jan-12	50	0.00083	0.0025	0.38	0.000005	0.6	0.341	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00020	0.0002	0.0009	0.0001
HC-6-51	07-Feb-12	51	0.00085	0.0024	0.40	0.000005	0.6	0.347	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00020	0.0002	0.0009	0.0001
HC-6-52	14-Feb-12	52	0.00087	0.0025	0.38	0.000005	0.5	0.340	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00020	0.0002	0.0009	0.0001
HC-6-53	21-Feb-12	53	0.00088	0.0025	0.35	0.000005	0.5	0.334	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00019	0.0002	0.0009	0.0001
HC-6-54	28-Feb-12	54	0.00090	0.0026	0.33	0.000005	0.5	0.327	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00019	0.0002	0.0008	0.0001
HC-6-55	06-Mar-12	55	0.00091	0.0026	0.30	0.000005	0.4	0.320	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00018	0.0002	0.0008	0.0001
HC-6-56	13-Mar-12	56	0.00085	0.0026	0.30	0.000005	0.4	0.304	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00018	0.0004	0.0009	0.0001
HC-6-57	20-Mar-12	57	0.00078	0.0025	0.30	0.000005	0.4	0.289	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00018	0.0005	0.0010	0.0001
HC-6-58	27-Mar-12	58	0.00072	0.0025	0.30	0.000005	0.3	0.273	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00018	0.0007	0.0011	0.0001
HC-6-59	03-Apr-12	59	0.00065	0.0024	0.30	0.000005	0.3	0.257	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00018	0.0008	0.0012	0.0001
HC-6-60	10-Apr-12	60	0.00065	0.0024	0.30	0.000005	0.3	0.248	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00017	0.0007	0.0011	0.0001
HC-6-61	17-Apr-12	61	0.00065	0.0023	0.30	0.000005	0.3	0.240	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00017	0.0005	0.0010	0.0001
HC-6-62	24-Apr-12	62	0.00066	0.0023	0.30	0.000005	0.3	0.231	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00016	0.0004	0.0008	0.0001
HC-6-63	01-May-12	63	0.00066	0.0023	0.30	0.000005	0.3	0.222	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0007	0.0001
HC-6-64	08-May-12	64	0.00063	0.0023	0.29	0.000005	0.3	0.225	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00016	0.0002	0.0009	0.0001
HC-6-65	15-May-12	65	0.00059	0.0022	0.29	0.000005	0.2	0.227	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00016	0.0002	0.0012	0.0001
HC-6-66	22-May-12	66	0.00056	0.0022	0.28	0.000005	0.2	0.230	0.00002	0.000004	0.000005	0.0005	0.0005	0.00001	0.00016	0.0002	0.0014	0.0001
HC-6-67	29-May-12	67	0.00053	0.0022	0.27	0.000005	0.2	0.232	0.00002	0.000004	0.000005	0.0006	0.0005	0.00001	0.00016	0.0002	0.0016	0.0001
HC-6-68	05-Jun-12	68	0.00058	0.0022	0.28	0.000005	0.2	0.238	0.00002	0.000003	0.000005	0.0005	0.0005	0.00001	0.00016	0.0002	0.0014	0.0001
HC-6-69	12-Jun-12	69	0.00064	0.0022	0.29	0.000005	0.2	0.244	0.00002	0.000003	0.000005	0.0004	0.0005	0.00001	0.00016	0.0002	0.0011	0.0001
HC-6-70	19-Jun-12	70	0.00069	0.0022	0.30	0.000005	0.2	0.249	0.00002	0.000002	0.000005	0.0003	0.0005	0.00001	0.00015	0.0002	0.0009	0.0001
HC-6-71	26-Jun-12	71	0.00074	0.0022	0.31	0.000005	0.2	0.255	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0006	0.0001
HC-6-72	03-Jul-12	72	0.00076	0.0023	0.32	0.000005	0.2	0.260	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0006	0.0001
HC-6-73	10-Jul-12	73	0.00078	0.0023	0.33	0.000005	0.2	0.264	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0006	0.0001
HC-6-74	17-Jul-12	74	0.00079	0.0023	0.33	0.000005	0.2	0.269	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0006	0.0001
HC-6-75	24-Jul-12	75	0.00081	0.0023	0.34	0.000005	0.2	0.273	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0006	0.0001
HC-6-76	31-Jul-12	76	0.00080	0.0023	0.34	0.000005	0.2	0.261	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00016	0.0002	0.0007	0.0001
HC-6-77	07-Aug-12	77	0.00078	0.0023	0.33	0.000005	0.2	0.249	0.00002	0.000005	0.000005	0.0003	0.0005	0.00001	0.00017	0.0002	0.0007	0.0001
HC-6-78	14-Aug-12	78	0.00076	0.0024	0.33	0.000005	0.2	0.236	0.00002	0.000005	0.000005	0.0003	0.0005	0.00001	0.00017	0.0002	0.0008	0.0001
HC-6-79	21-Aug-12	79	0.00075	0.0024	0.32	0.000005	0.2	0.224	0.00002	0.000005	0.000005	0.0004	0.0005	0.00001	0.00018	0.0002	0.0008	0.0001
HC-6-80	28-Aug-12	80	0.00074	0.0023	0.31	0.000005	0.2	0.226	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00017	0.0002	0.0010	0.0001
HC-6-81	04-Sep-12	81	0.00073	0.0023	0.31	0.000005	0.2	0.228	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00016	0.0002	0.0011	0.0001
HC-6-82	11-Sep-12	82	0.00071	0.0022	0.30	0.000005	0.2	0.229	0.00002	0.000003	0.000005	0.0004	0.0005	0.00001	0.00016	0.0003	0.0013	0.0001
HC-6-83	18-Sep-12	83	0.00070	0.0022	0.29	0.000005	0.2	0.231	0.00002	0.000002	0.000005	0.0004	0.0005	0.00001	0.00015	0.0003	0.0014	0.0001
HC-6-84	25-Sep-12	84	0.00069	0.0022	0.28	0.000005	0.2	0.220	0.00002	0.000002	0.000005	0.0003	0.0005	0.00001	0.00014	0.0003	0.0012	0.0001
HC-6-85	02-Oct-12	85	0.00068	0.0022	0.27	0.000005	0.2	0.209	0.00002	0.000002	0.000005	0.0003	0.0005	0.00001	0.00013	0.0002	0.0010	0.0001
HC-6-86	09-Oct-12	86	0.00067	0.0022	0.26	0.000005	0.2	0.197	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0008	0.0001
HC-6-87	16-Oct-12	87	0.00066	0.0022	0.25	0.000005	0.2	0.186	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-6-88	23-Oct-12	88	0.00068	0.0021	0.26	0.000005	0.2	0.187	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-6-89	30-Oct-12	89	0.00071	0.0021	0.27	0.000005	0.1	0.187	0.00003	0.000004	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0007	0.0001
HC-6-90	06-Nov-12	90	0.00073	0.0020	0.27	0.000005	0.1	0.188	0.00003	0.000005	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0007	0.0001
HC-6-91	13-Nov-12	91	0.00075	0.0019	0.28	0.000005	0.1	0.188	0.00004	0.000006	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0007	0.0001
HC-6-92	20-Nov-12	92	0.00075	0.0020	0.29	0.000005	0.1	0.189	0.00003	0.000006	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0006	0.0001
HC-6-93	27-Nov-12	93	0.00076	0.0022	0.30	0.000005	0.1	0.190	0.00003	0.000006	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0006	0.0001
HC-6-94	04-Dec-12	94	0.00077	0.0023	0.31	0.000005	0.2	0.191	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0006	0.0001
HC-6-95	11-Dec-12	95	0.00078	0.0025	0.32	0.000005	0.2	0.192	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0005	0.0001
HC-6-96	18-Dec-12	96	0.00078	0.0024	0.31	0.000005	0.2	0.185	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0005	0.0001



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-6-97	25-Dec-12	97	0.00078	0.0023	0.30	0.000005	0.1	0.178	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0006	0.0001
HC-6-98	01-Jan-13	98	0.00078	0.0023	0.29	0.000005	0.1	0.170	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0006	0.0001
HC-6-99	08-Jan-13	99	0.00078	0.0022	0.28	0.000005	0.1	0.163	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0006	0.0001
HC-6-100	15-Jan-13	100	0.00076	0.0021	0.27	0.000005	0.1	0.161	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0006	0.0001
HC-6-101	22-Jan-13	101	0.00074	0.0021	0.26	0.000005	0.1	0.159	0.00002	0.000002	0.000005	0.0003	0.0005	0.00001	0.00016	0.0002	0.0007	0.0001
HC-6-102	29-Jan-13	102	0.00072	0.0020	0.24	0.000005	0.1	0.156	0.00002	0.000002	0.000005	0.0003	0.0005	0.00001	0.00016	0.0002	0.0008	0.0001
HC-6-103	05-Feb-13	103	0.00071	0.0020	0.23	0.000005	0.1	0.154	0.00002	0.000002	0.000005	0.0004	0.0005	0.00001	0.00015	0.0002	0.0009	0.0001
HC-6-104	12-Feb-13	104	0.00072	0.0021	0.25	0.000005	0.1	0.157	0.00002	0.000003	0.000005	0.0004	0.0005	0.00001	0.00016	0.0003	0.0008	0.0001
HC-6-105	19-Feb-13	105	0.00074	0.0022	0.27	0.000005	0.1	0.160	0.00002	0.000003	0.000005	0.0004	0.0005	0.00001	0.00016	0.0003	0.0008	0.0001
HC-6-106	26-Feb-13	106	0.00076	0.0023	0.28	0.000005	0.1	0.162	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00016	0.0003	0.0007	0.0001
HC-6-107	05-Mar-13	107	0.00077	0.0024	0.30	0.000005	0.1	0.165	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00017	0.0003	0.0007	0.0001
HC-6-108	12-Mar-13	108	0.00075	0.0022	0.29	0.000005	0.1	0.157	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00016	0.0003	0.0007	0.0001
HC-6-109	19-Mar-13	109	0.00072	0.0021	0.28	0.000005	0.1	0.150	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00014	0.0003	0.0006	0.0001
HC-6-110	26-Mar-13	110	0.00070	0.0019	0.26	0.000005	0.1	0.142	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0006	0.0001
HC-6-111	02-Apr-13	111	0.00067	0.0018	0.25	0.000005	0.1	0.134	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0006	0.0001
HC-6-112	09-Apr-13	112	0.00066	0.0019	0.25	0.000005	0.1	0.139	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0006	0.0001
HC-6-113	16-Apr-13	113	0.00064	0.0020	0.26	0.000005	0.1	0.143	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0007	0.0001
HC-6-114	23-Apr-13	114	0.00062	0.0020	0.26	0.000005	0.1	0.148	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0007	0.0001
HC-6-115	30-Apr-13	115	0.00061	0.0021	0.26	0.000005	0.1	0.152	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0008	0.0001
HC-6-116	07-May-13	116	0.00059	0.0022	0.26	0.000005	0.1	0.148	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00014	0.0003	0.0007	0.0001
HC-6-117	14-May-13	117	0.00058	0.0022	0.27	0.000005	0.1	0.144	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00014	0.0004	0.0006	0.0001
HC-6-118	21-May-13	118	0.00056	0.0022	0.27	0.000005	0.1	0.139	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00014	0.0005	0.0005	0.0001
HC-6-119	28-May-13	119	0.00054	0.0022	0.27	0.000005	0.1	0.135	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00014	0.0006	0.0004	0.0001
HC-6-120	04-Jun-13	120	0.00057	0.0022	0.27	0.000005	0.1	0.135	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00014	0.0005	0.0005	0.0001
HC-6-121	11-Jun-13	121	0.00059	0.0022	0.27	0.000005	0.1	0.136	0.00002	0.000005	0.000005	0.0006	0.0005	0.00001	0.00013	0.0004	0.0006	0.0001
HC-6-122	18-Jun-13	122	0.00061	0.0022	0.27	0.000005	0.1	0.136	0.00002	0.000005	0.000005	0.0008	0.0005	0.00001	0.00013	0.0003	0.0007	0.0001
HC-6-123	25-Jun-13	123	0.00064	0.0022	0.27	0.000005	0.1	0.136	0.00002	0.000005	0.000005	0.0010	0.0005	0.00001	0.00013	0.0002	0.0008	0.0001
HC-6-124	02-Jul-13	124	0.00063	0.0021	0.27	0.000005	0.1	0.136	0.00002	0.000005	0.000005	0.0008	0.0005	0.00001	0.00013	0.0002	0.0007	0.0001
HC-6-125	09-Jul-13	125	0.00062	0.0021	0.28	0.000005	0.1	0.135	0.00002	0.000006	0.000005	0.0006	0.0005	0.00001	0.00013	0.0002	0.0005	0.0001
HC-6-126	16-Jul-13	126	0.00061	0.0021	0.28	0.000005	0.1	0.135	0.00002	0.000006	0.000005	0.0005	0.0005	0.00001	0.00013	0.0002	0.0004	0.0001
HC-6-127	23-Jul-13	127	0.00060	0.0020	0.28	0.000005	0.1	0.134	0.00002	0.000006	0.000005	0.0003	0.0005	0.00001	0.00014	0.0002	0.0003	0.0001
HC-6-128	30-Jul-13	128	0.00060	0.0021	0.28	0.000005	0.1	0.131	0.00002	0.000005	0.000005	0.0003	0.0005	0.00001	0.00014	0.0002	0.0003	0.0001
HC-6-129	06-Aug-13	129	0.00060	0.0021	0.28	0.000005	0.1	0.128	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0004	0.0001
HC-6-130	13-Aug-13	130	0.00059	0.0021	0.28	0.000005	0.1	0.124	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0004	0.0001
HC-6-131	20-Aug-13	131	0.00059	0.0022	0.28	0.000005	0.1	0.121	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0004	0.0001
HC-6-132	27-Aug-13	132	0.00059	0.0021	0.27	0.000005	0.1	0.120	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0005	0.0001
HC-6-133	03-Sep-13	133	0.00059	0.0021	0.26	0.000005	0.1	0.119	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0006	0.0001
HC-6-134	10-Sep-13	134	0.00059	0.0020	0.25	0.000005	0.1	0.117	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0006	0.0001
HC-6-135	17-Sep-13	135	0.00059	0.0020	0.24	0.000005	0.1	0.116	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0007	0.0001
HC-6-136	24-Sep-13	136	0.00059	0.0020	0.26	0.000005	0.1	0.116	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0007	0.0001
HC-6-137	01-Oct-13	137	0.00059	0.0020	0.28	0.000005	0.1	0.115	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0007	0.0001
HC-6-138	08-Oct-13	138	0.00059	0.0020	0.29	0.000005	0.1	0.115	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0006	0.0001
HC-6-139	15-Oct-13	139	0.00059	0.0021	0.31	0.000005	0.1	0.114	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0006	0.0001
HC-6-140	22-Oct-13	140	0.00061	0.0020	0.32	0.000005	0.1	0.115	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0007	0.0001
HC-6-141	29-Oct-13	141	0.00064	0.0020	0.32	0.000005	0.1	0.116	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0008	0.0001
HC-6-142	05-Nov-13	142	0.00066	0.0020	0.33	0.000005	0.1	0.117	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0010	0.0001
HC-6-143	12-Nov-13	143	0.00069	0.0020	0.33	0.000005	0.1	0.118	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0011	0.0001
HC-6-144	19-Nov-13	144	0.00068	0.0020	0.32	0.000005	0.1	0.117	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0009	0.0001
HC-6-145	26-Nov-13	145	0.00068	0.0019	0.31	0.000005	0.1	0.115	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0007	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-6-146	03-Dec-13	146	0.00067	0.0019	0.30	0.000005	0.1	0.114	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0006	0.0001
HC-6-147	10-Dec-13	147	0.00066	0.0019	0.29	0.000005	0.1	0.112	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00013	0.0003	0.0004	0.0001
HC-6-148	17-Dec-13	148	0.00065	0.0019	0.29	0.000005	0.1	0.110	0.00002	0.000005	0.000005	0.0002	0.0008	0.00001	0.00013	0.0002	0.0007	0.0001
HC-6-149	24-Dec-13	149	0.00065	0.0020	0.29	0.000005	0.1	0.109	0.00002	0.000005	0.000005	0.0002	0.0010	0.00001	0.00012	0.0002	0.0011	0.0001
HC-6-150	31-Dec-13	150	0.00064	0.0020	0.28	0.000005	0.1	0.107	0.00002	0.000006	0.000005	0.0002	0.0013	0.00001	0.00012	0.0002	0.0014	0.0001
HC-6-151	07-Jan-14	151	0.00063	0.0021	0.28	0.000005	0.1	0.105	0.00002	0.000006	0.000005	0.0002	0.0016	0.00001	0.00011	0.0002	0.0018	0.0001
HC-6-152	14-Jan-14	152	0.00061	0.0020	0.28	0.000005	0.1	0.105	0.00002	0.000006	0.000005	0.0002	0.0013	0.00001	0.00011	0.0002	0.0014	0.0001
HC-6-153	21-Jan-14	153	0.00060	0.0020	0.28	0.000005	0.1	0.105	0.00002	0.000006	0.000005	0.0002	0.0010	0.00001	0.00011	0.0002	0.0011	0.0001
HC-6-154	28-Jan-14	154	0.00058	0.0019	0.27	0.000005	0.1	0.105	0.00002	0.000006	0.000005	0.0002	0.0008	0.00001	0.00011	0.0002	0.0007	0.0001
HC-6-155	04-Feb-14	155	0.00057	0.0018	0.27	0.000005	0.1	0.105	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0004	0.0001
HC-6-156	11-Feb-14	156	0.00057	0.0018	0.27	0.000005	0.1	0.104	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0004	0.0001
HC-6-157	18-Feb-14	157	0.00057	0.0018	0.26	0.000005	0.1	0.104	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0004	0.0001
HC-6-158	25-Feb-14	158	0.00057	0.0017	0.26	0.000005	0.1	0.103	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0004	0.0001
HC-6-159	04-Mar-14	159	0.00058	0.0017	0.25	0.000005	0.1	0.102	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0004	0.0001
HC-6-160	11-Mar-14	160	0.00058	0.0017	0.26	0.000005	0.1	0.100	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0004	0.0001
HC-6-161	18-Mar-14	161	0.00059	0.0017	0.27	0.000005	0.1	0.098	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0004	0.0001
HC-6-162	25-Mar-14	162	0.00060	0.0017	0.27	0.000005	0.1	0.096	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0004	0.0001
HC-6-163	01-Apr-14	163	0.00061	0.0017	0.28	0.000005	0.1	0.094	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0004	0.0001
HC-6-164	08-Apr-14	164	0.00061	0.0018	0.28	0.000005	0.1	0.096	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0003	0.0001
HC-6-165	15-Apr-14	165	0.00062	0.0018	0.29	0.000005	0.1	0.098	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0003	0.0001
HC-6-166	22-Apr-14	166	0.00062	0.0019	0.29	0.000005	0.1	0.100	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0003	0.0001
HC-6-167	29-Apr-14	167	0.00062	0.0020	0.29	0.000005	0.1	0.102	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0003	0.0001
<b>Mean all weeks</b>			<b>0.00073</b>	<b>0.0025</b>	<b>0.34</b>	<b>0.000005</b>	<b>6.7</b>	<b>0.203</b>	<b>0.00002</b>	<b>0.000004</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0005</b>	<b>0.00002</b>	<b>0.00020</b>	<b>0.0004</b>	<b>0.0008</b>	<b>0.0001</b>
<b>HC7 Hasler Mudstone</b>																		
HC-7-0	15-Feb-11	0	0.00138	0.0123	2.70	0.000016	29.4	0.009	0.00002	0.000008	0.000062	0.0001	0.0016	0.00834	0.00036	0.0258	0.0049	0.0002
HC-7-1	22-Feb-11	1	0.00058	0.0367	1.30	0.000154	66.7	0.012	0.00002	0.000005	0.000006	0.0000	0.0005	0.00894	0.00480	0.0069	0.0013	0.0001
HC-7-2	01-Mar-11	2	0.00049	0.0336	0.90	0.000005	53.8	0.009	0.00002	0.000005	0.000005	0.0000	0.0005	0.00246	0.00429	0.0047	0.0009	0.0001
HC-7-3	08-Mar-11	3	0.00034	0.0246	1.00	0.000005	46.7	0.008	0.00002	0.000003	0.000005	0.0000	0.0005	0.00101	0.00372	0.0041	0.0007	0.0001
HC-7-4	15-Mar-11	4	0.00042	0.0205	1.20	0.000006	44.6	0.009	0.00002	0.000003	0.000005	0.0000	0.0005	0.00073	0.00367	0.0056	0.0012	0.0001
HC-7-5	22-Mar-11	5	0.00051	0.0147	1.10	0.000006	41.4	0.009	0.00002	0.000002	0.000005	0.0001	0.0005	0.00049	0.00300	0.0039	0.0008	0.0001
HC-7-6	29-Mar-11	6	0.00035	0.0125	0.90	0.000005	37.0	0.007	0.00002	0.000002	0.000005	0.0000	0.0005	0.00036	0.00251	0.0033	0.0009	0.0001
HC-7-7	05-Apr-11	7	0.00037	0.0114	0.80	0.000005	35.9	0.007	0.00002	0.000002	0.000005	0.0000	0.0005	0.00014	0.00146	0.0027	0.0008	0.0001
HC-7-8	12-Apr-11	8	0.00041	0.0106	0.90	0.000005	38.6	0.003	0.00002	0.000002	0.000005	0.0000	0.0005	0.00013	0.00128	0.0030	0.0016	0.0001
HC-7-9	19-Apr-11	9	0.00036	0.0081	0.80	0.000005	32.1	0.007	0.00002	0.000003	0.000005	0.0000	0.0005	0.00020	0.00169	0.0019	0.0013	0.0001
HC-7-10	26-Apr-11	10	0.00039	0.0076	0.80	0.000005	28.2	0.006	0.00002	0.000006	0.000005	0.0000	0.0005	0.00016	0.00142	0.0020	0.0012	0.0001
HC-7-11	03-May-11	11	0.00044	0.0072	0.80	0.000005	26.9	0.005	0.00002	0.000007	0.000005	0.0000	0.0005	0.00015	0.00144	0.0022	0.0018	0.0001
HC-7-12	10-May-11	12	0.00033	0.0065	0.80	0.000005	27.3	0.005	0.00002	0.000003	0.000005	0.0000	0.0005	0.00012	0.00110	0.0019	0.0011	0.0001
HC-7-13	17-May-11	13	0.00039	0.0064	0.80	0.000005	27.4	0.004	0.00002	0.000002	0.000005	0.0000	0.0005	0.00010	0.00085	0.0017	0.0011	0.0001
HC-7-14	24-May-11	14	0.00035	0.0057	0.90	0.000008	26.0	0.005	0.00002	0.000003	0.000005	0.0000	0.0007	0.00009	0.00090	0.0016	0.0011	0.0001
HC-7-15	31-May-11	15	0.00035	0.0055	0.70	0.000005	26.8	0.004	0.00002	0.000003	0.000005	0.0000	0.0006	0.00009	0.00092	0.0017	0.0010	0.0001
HC-7-16	07-Jun-11	16	0.00039	0.0051	0.80	0.000007	25.6	0.004	0.00002	0.000002	0.000005	0.0000	0.0005	0.00008	0.00079	0.0015	0.0010	0.0001
HC-7-17	14-Jun-11	17	0.00023	0.0048	0.70	0.000007	25.0	0.005	0.00002	0.000003	0.000005	0.0000	0.0005	0.00007	0.00061	0.0012	0.0016	0.0001
HC-7-18	21-Jun-11	18	0.00036	0.0043	0.80	0.000014	30.8	0.008	0.00002	0.000002	0.000006	0.0000	0.0008	0.00005	0.00028	0.0010	0.0017	0.0001
HC-7-19	28-Jun-11	19	0.00032	0.0043	0.70	0.000021	32.4	0.006	0.00002	0.000002	0.000005	0.0000	0.0005	0.00001	0.00022	0.0012	0.0024	0.0001
HC-7-20	05-Jul-11	20	0.00030	0.0040	0.68	0.000018	32.3	0.008	0.00002	0.000002	0.000005	0.0000	0.0005	0.00001	0.00018	0.0010	0.0021	0.0001
HC-7-21	12-Jul-11	21	0.00027	0.0038	0.65	0.000015	32.3	0.009	0.00002	0.000003	0.000005	0.0000	0.0005	0.00002	0.00013	0.0008	0.0017	0.0001
HC-7-22	19-Jul-11	22	0.00025	0.0036	0.63	0.000012	32.2	0.011	0.00002	0.000003	0.000005	0.0000	0.0005	0.00002	0.00009	0.0006	0.0014	0.0001
HC-7-23	26-Jul-11	23	0.00022	0.0033	0.60	0.000009	32.1	0.013	0.00002	0.000003	0.000005	0.0000	0.0005	0.00002	0.00005	0.0004	0.0010	0.0001
HC-7-24	02-Aug-11	24	0.00023	0.0033	0.58	0.000009	32.0	0.013	0.00002	0.000003	0.000005	0.0000	0.0005	0.00002	0.00005	0.0004	0.0011	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-7-25	09-Aug-11	25	0.00024	0.0032	0.55	0.000009	31.9	0.013	0.00002	0.000003	0.000005	0.0000	0.0006	0.00002	0.00005	0.0004	0.0011	0.0001
HC-7-26	16-Aug-11	26	0.00025	0.0032	0.53	0.000009	31.7	0.014	0.00002	0.000002	0.000005	0.0000	0.0006	0.00002	0.00006	0.0003	0.0012	0.0001
HC-7-27	23-Aug-11	27	0.00026	0.0031	0.50	0.000009	31.6	0.014	0.00002	0.000002	0.000005	0.0000	0.0006	0.00002	0.00006	0.0003	0.0012	0.0001
HC-7-28	30-Aug-11	28	0.00026	0.0030	0.45	0.000010	32.1	0.020	0.00002	0.000002	0.000005	0.0000	0.0006	0.00002	0.00005	0.0003	0.0011	0.0001
HC-7-29	06-Sep-11	29	0.00027	0.0029	0.40	0.000012	32.5	0.026	0.00002	0.000002	0.000005	0.0001	0.0006	0.00002	0.00004	0.0003	0.0009	0.0001
HC-7-30	13-Sep-11	30	0.00027	0.0027	0.35	0.000013	33.0	0.032	0.00002	0.000002	0.000005	0.0001	0.0006	0.00001	0.00004	0.0002	0.0008	0.0001
HC-7-31	20-Sep-11	31	0.00027	0.0026	0.30	0.000014	33.4	0.038	0.00002	0.000002	0.000005	0.0001	0.0006	0.00001	0.00003	0.0002	0.0006	0.0001
HC-7-32	27-Sep-11	32	0.00028	0.0025	0.33	0.000017	32.4	0.039	0.00002	0.000002	0.000005	0.0001	0.0006	0.00001	0.00003	0.0002	0.0007	0.0001
HC-7-33	04-Oct-11	33	0.00029	0.0024	0.35	0.000020	31.5	0.041	0.00002	0.000003	0.000005	0.0002	0.0006	0.00001	0.00003	0.0002	0.0008	0.0001
HC-7-34	11-Oct-11	34	0.00030	0.0023	0.38	0.000023	30.5	0.043	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0008	0.0001
HC-7-35	18-Oct-11	35	0.00031	0.0022	0.40	0.000026	29.5	0.045	0.00002	0.000003	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-7-36	25-Oct-11	36	0.00032	0.0023	0.35	0.000027	27.8	0.049	0.00002	0.000003	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0011	0.0001
HC-7-37	01-Nov-11	37	0.00032	0.0024	0.30	0.000028	26.1	0.053	0.00002	0.000003	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0012	0.0001
HC-7-38	08-Nov-11	38	0.00033	0.0026	0.25	0.000028	24.4	0.057	0.00002	0.000002	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0014	0.0001
HC-7-39	15-Nov-11	39	0.00033	0.0027	0.20	0.000029	22.7	0.060	0.00002	0.000002	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0015	0.0001
HC-7-40	22-Nov-11	40	0.00031	0.0028	0.23	0.000029	21.8	0.066	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0014	0.0001
HC-7-41	29-Nov-11	41	0.00030	0.0028	0.25	0.000028	20.8	0.071	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0013	0.0001
HC-7-42	06-Dec-11	42	0.00028	0.0029	0.28	0.000028	19.9	0.076	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00002	0.0002	0.0011	0.0001
HC-7-43	13-Dec-11	43	0.00026	0.0029	0.30	0.000027	18.9	0.081	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00003	0.0002	0.0010	0.0001
HC-7-44	20-Dec-11	44	0.00028	0.0029	0.30	0.000023	18.5	0.088	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-7-45	27-Dec-11	45	0.00029	0.0028	0.30	0.000019	18.1	0.094	0.00002	0.000003	0.000005	0.0001	0.0005	0.00001	0.00002	0.0002	0.0008	0.0001
HC-7-46	03-Jan-12	46	0.00031	0.0027	0.30	0.000015	17.7	0.101	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-7-47	10-Jan-12	47	0.00032	0.0027	0.30	0.000011	17.3	0.107	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0005	0.0001
HC-7-48	17-Jan-12	48	0.00033	0.0026	0.30	0.000010	17.2	0.123	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0008	0.0001
HC-7-49	24-Jan-12	49	0.00034	0.0025	0.30	0.000010	17.2	0.139	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0011	0.0001
HC-7-50	31-Jan-12	50	0.00034	0.0025	0.30	0.000009	17.1	0.154	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0014	0.0001
HC-7-51	07-Feb-12	51	0.00035	0.0024	0.30	0.000008	17.0	0.170	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0017	0.0001
HC-7-52	14-Feb-12	52	0.00040	0.0025	0.30	0.000011	16.2	0.174	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0017	0.0001
HC-7-53	21-Feb-12	53	0.00046	0.0026	0.30	0.000013	15.3	0.179	0.00002	0.000003	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0018	0.0001
HC-7-54	28-Feb-12	54	0.00051	0.0027	0.30	0.000016	14.5	0.183	0.00002	0.000003	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0018	0.0001
HC-7-55	06-Mar-12	55	0.00056	0.0029	0.30	0.000018	13.6	0.187	0.00002	0.000003	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0018	0.0001
HC-7-56	13-Mar-12	56	0.00053	0.0029	0.28	0.000017	12.9	0.186	0.00002	0.000003	0.000005	0.0004	0.0005	0.00001	0.00001	0.0003	0.0018	0.0001
HC-7-57	20-Mar-12	57	0.00050	0.0029	0.25	0.000016	12.2	0.186	0.00002	0.000003	0.000005	0.0006	0.0005	0.00001	0.00001	0.0004	0.0017	0.0001
HC-7-58	27-Mar-12	58	0.00047	0.0029	0.23	0.000015	11.4	0.185	0.00002	0.000003	0.000005	0.0007	0.0005	0.00001	0.00001	0.0005	0.0017	0.0001
HC-7-59	03-Apr-12	59	0.00044	0.0029	0.20	0.000014	10.7	0.184	0.00002	0.000003	0.000005	0.0008	0.0005	0.00001	0.00001	0.0006	0.0016	0.0001
HC-7-60	10-Apr-12	60	0.00044	0.0028	0.23	0.000013	10.8	0.183	0.00002	0.000003	0.000005	0.0007	0.0005	0.00001	0.00001	0.0005	0.0016	0.0001
HC-7-61	17-Apr-12	61	0.00044	0.0027	0.27	0.000013	10.8	0.182	0.00002	0.000004	0.000005	0.0006	0.0005	0.00001	0.00001	0.0004	0.0015	0.0001
HC-7-62	24-Apr-12	62	0.00044	0.0026	0.30	0.000012	10.9	0.181	0.00002	0.000004	0.000005	0.0005	0.0005	0.00001	0.00001	0.0003	0.0015	0.0001
HC-7-63	01-May-12	63	0.00044	0.0026	0.33	0.000011	10.9	0.180	0.00002	0.000004	0.000005	0.0005	0.0005	0.00001	0.00001	0.0002	0.0015	0.0001
HC-7-64	08-May-12	64	0.00044	0.0025	0.32	0.000014	10.5	0.183	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00001	0.0002	0.0015	0.0001
HC-7-65	15-May-12	65	0.00044	0.0025	0.30	0.000017	10.1	0.186	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0015	0.0001
HC-7-66	22-May-12	66	0.00044	0.0024	0.29	0.000019	9.7	0.189	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0015	0.0001
HC-7-67	29-May-12	67	0.00044	0.0024	0.27	0.000022	9.4	0.192	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0015	0.0001
HC-7-68	05-Jun-12	68	0.00048	0.0023	0.27	0.000024	8.9	0.198	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0015	0.0001
HC-7-69	12-Jun-12	69	0.00052	0.0023	0.28	0.000027	8.5	0.203	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0015	0.0001
HC-7-70	19-Jun-12	70	0.00056	0.0023	0.28	0.000029	8.1	0.209	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0015	0.0001
HC-7-71	26-Jun-12	71	0.00060	0.0023	0.28	0.000031	7.6	0.214	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0015	0.0001
HC-7-72	03-Jul-12	72	0.00063	0.0022	0.29	0.000025	7.4	0.222	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0019	0.0001
HC-7-73	10-Jul-12	73	0.00066	0.0022	0.31	0.000020	7.1	0.231	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00000	0.0002	0.0022	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-7-74	17-Jul-12	74	0.00068	0.0021	0.32	0.000014	6.8	0.239	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00000	0.0002	0.0026	0.0001
HC-7-75	24-Jul-12	75	0.00071	0.0021	0.33	0.000008	6.6	0.247	0.00002	0.000005	0.000005	0.0004	0.0005	0.00001	0.00000	0.0002	0.0029	0.0001
HC-7-76	31-Jul-12	76	0.00073	0.0021	0.33	0.000009	6.1	0.243	0.00002	0.000005	0.000005	0.0003	0.0005	0.00001	0.00000	0.0002	0.0033	0.0001
HC-7-77	07-Aug-12	77	0.00074	0.0020	0.33	0.000009	5.6	0.238	0.00002	0.000005	0.000005	0.0003	0.0005	0.00001	0.00000	0.0002	0.0037	0.0001
HC-7-78	14-Aug-12	78	0.00075	0.0020	0.32	0.000010	5.1	0.234	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0040	0.0001
HC-7-79	21-Aug-12	79	0.00077	0.0020	0.32	0.000010	4.6	0.229	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0044	0.0001
HC-7-80	28-Aug-12	80	0.00073	0.0020	0.34	0.000010	4.3	0.238	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0052	0.0001
HC-7-81	04-Sep-12	81	0.00070	0.0020	0.36	0.000010	4.0	0.248	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0060	0.0001
HC-7-82	11-Sep-12	82	0.00067	0.0020	0.37	0.000010	3.7	0.257	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0069	0.0001
HC-7-83	18-Sep-12	83	0.00063	0.0020	0.39	0.000010	3.4	0.266	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0077	0.0001
HC-7-84	25-Sep-12	84	0.00066	0.0020	0.38	0.000010	3.1	0.258	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0071	0.0001
HC-7-85	02-Oct-12	85	0.00070	0.0019	0.37	0.000009	2.7	0.250	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0065	0.0001
HC-7-86	09-Oct-12	86	0.00073	0.0019	0.35	0.000009	2.4	0.242	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0059	0.0001
HC-7-87	16-Oct-12	87	0.00076	0.0018	0.34	0.000008	2.0	0.234	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0053	0.0001
HC-7-88	23-Oct-12	88	0.00076	0.0018	0.35	0.000009	1.9	0.232	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0050	0.0001
HC-7-89	30-Oct-12	89	0.00077	0.0018	0.37	0.000010	1.8	0.231	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0047	0.0001
HC-7-90	06-Nov-12	90	0.00078	0.0018	0.38	0.000010	1.6	0.229	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0043	0.0001
HC-7-91	13-Nov-12	91	0.00079	0.0018	0.39	0.000011	1.5	0.227	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0040	0.0001
HC-7-92	20-Nov-12	92	0.00079	0.0018	0.38	0.000012	1.4	0.221	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0039	0.0001
HC-7-93	27-Nov-12	93	0.00078	0.0017	0.37	0.000012	1.3	0.214	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0038	0.0001
HC-7-94	04-Dec-12	94	0.00078	0.0017	0.36	0.000013	1.2	0.208	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0037	0.0001
HC-7-95	11-Dec-12	95	0.00077	0.0016	0.35	0.000013	1.1	0.201	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.0036	0.0001
HC-7-96	18-Dec-12	96	0.00075	0.0017	0.36	0.000013	1.0	0.201	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0039	0.0001
HC-7-97	25-Dec-12	97	0.00073	0.0018	0.36	0.000012	1.0	0.201	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0042	0.0001
HC-7-98	01-Jan-13	98	0.00071	0.0019	0.37	0.000012	0.9	0.200	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0046	0.0001
HC-7-99	08-Jan-13	99	0.00069	0.0020	0.37	0.000011	0.9	0.200	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0049	0.0001
HC-7-100	15-Jan-13	100	0.00067	0.0020	0.37	0.000010	0.8	0.198	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0049	0.0001
HC-7-101	22-Jan-13	101	0.00066	0.0019	0.36	0.000010	0.8	0.195	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0049	0.0001
HC-7-102	29-Jan-13	102	0.00064	0.0018	0.36	0.000009	0.7	0.193	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0049	0.0001
HC-7-103	05-Feb-13	103	0.00062	0.0018	0.35	0.000008	0.7	0.190	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0050	0.0001
HC-7-104	12-Feb-13	104	0.00066	0.0019	0.40	0.000008	0.6	0.188	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0051	0.0001
HC-7-105	19-Feb-13	105	0.00070	0.0020	0.45	0.000007	0.6	0.187	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0053	0.0001
HC-7-106	26-Feb-13	106	0.00074	0.0021	0.49	0.000007	0.6	0.185	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0004	0.0055	0.0001
HC-7-107	05-Mar-13	107	0.00078	0.0022	0.54	0.000006	0.6	0.183	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0005	0.0057	0.0001
HC-7-108	12-Mar-13	108	0.00074	0.0020	0.50	0.000006	0.5	0.184	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0004	0.0055	0.0001
HC-7-109	19-Mar-13	109	0.00071	0.0018	0.47	0.000007	0.5	0.186	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0052	0.0001
HC-7-110	26-Mar-13	110	0.00067	0.0016	0.43	0.000007	0.5	0.187	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0050	0.0001
HC-7-111	02-Apr-13	111	0.00063	0.0014	0.39	0.000007	0.5	0.188	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0048	0.0001
HC-7-112	09-Apr-13	112	0.00060	0.0014	0.39	0.000007	0.5	0.185	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0049	0.0001
HC-7-113	16-Apr-13	113	0.00056	0.0014	0.38	0.000007	0.5	0.182	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0050	0.0001
HC-7-114	23-Apr-13	114	0.00052	0.0014	0.38	0.000006	0.5	0.178	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0052	0.0001
HC-7-115	30-Apr-13	115	0.00049	0.0014	0.37	0.000006	0.5	0.175	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0053	0.0001
HC-7-116	07-May-13	116	0.00048	0.0014	0.37	0.000006	0.4	0.171	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0004	0.0052	0.0001
HC-7-117	14-May-13	117	0.00048	0.0013	0.37	0.000006	0.4	0.166	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0005	0.0052	0.0001
HC-7-118	21-May-13	118	0.00048	0.0013	0.37	0.000005	0.4	0.162	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0007	0.0051	0.0001
HC-7-119	28-May-13	119	0.00047	0.0013	0.37	0.000005	0.4	0.157	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0009	0.0050	0.0001
HC-7-120	04-Jun-13	120	0.00048	0.0012	0.38	0.000005	0.4	0.157	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00000	0.0007	0.0057	0.0001
HC-7-121	11-Jun-13	121	0.00049	0.0012	0.39	0.000005	0.4	0.157	0.00002	0.000004	0.000005	0.0006	0.0005	0.00001	0.00000	0.0005	0.0063	0.0001
HC-7-122	18-Jun-13	122	0.00049	0.0012	0.40	0.000005	0.4	0.157	0.00002	0.000004	0.000005	0.0008	0.0005	0.00001	0.00000	0.0004	0.0069	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-7-123	25-Jun-13	123	0.00050	0.0012	0.41	0.000005	0.4	0.157	0.00002	0.000004	0.000005	0.0010	0.0005	0.00001	0.00000	0.0002	0.0075	0.0001
HC-7-124	02-Jul-13	124	0.00049	0.0012	0.41	0.000006	0.4	0.156	0.00002	0.000004	0.000005	0.0008	0.0005	0.00001	0.00000	0.0002	0.0071	0.0001
HC-7-125	09-Jul-13	125	0.00048	0.0012	0.41	0.000006	0.4	0.154	0.00002	0.000004	0.000005	0.0006	0.0005	0.00001	0.00000	0.0002	0.0068	0.0001
HC-7-126	16-Jul-13	126	0.00047	0.0012	0.40	0.000007	0.4	0.153	0.00002	0.000004	0.000005	0.0004	0.0005	0.00001	0.00000	0.0002	0.0064	0.0001
HC-7-127	23-Jul-13	127	0.00047	0.0012	0.40	0.000007	0.4	0.151	0.00002	0.000004	0.000005	0.0003	0.0005	0.00001	0.00000	0.0002	0.0060	0.0001
HC-7-128	30-Jul-13	128	0.00047	0.0012	0.42	0.000007	0.4	0.152	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0062	0.0001
HC-7-129	06-Aug-13	129	0.00047	0.0012	0.43	0.000006	0.4	0.152	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0064	0.0001
HC-7-130	13-Aug-13	130	0.00047	0.0012	0.45	0.000006	0.4	0.153	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0066	0.0001
HC-7-131	20-Aug-13	131	0.00047	0.0012	0.46	0.000005	0.4	0.153	0.00002	0.000002	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0068	0.0001
HC-7-132	27-Aug-13	132	0.00052	0.0012	0.46	0.000005	0.4	0.155	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0067	0.0001
HC-7-133	03-Sep-13	133	0.00057	0.0012	0.46	0.000006	0.4	0.157	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0067	0.0001
HC-7-134	10-Sep-13	134	0.00062	0.0012	0.45	0.000006	0.4	0.158	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0066	0.0001
HC-7-135	17-Sep-13	135	0.00068	0.0012	0.45	0.000006	0.4	0.160	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0065	0.0001
HC-7-136	24-Sep-13	136	0.00066	0.0012	0.47	0.000006	0.4	0.157	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0066	0.0001
HC-7-137	01-Oct-13	137	0.00064	0.0012	0.48	0.000006	0.4	0.155	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0068	0.0001
HC-7-138	08-Oct-13	138	0.00062	0.0011	0.50	0.000005	0.4	0.152	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0069	0.0001
HC-7-139	15-Oct-13	139	0.00060	0.0011	0.51	0.000005	0.4	0.149	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0070	0.0001
HC-7-140	22-Oct-13	140	0.00062	0.0011	0.52	0.000005	0.3	0.150	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0071	0.0001
HC-7-141	29-Oct-13	141	0.00065	0.0012	0.53	0.000005	0.3	0.150	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0072	0.0001
HC-7-142	05-Nov-13	142	0.00067	0.0012	0.54	0.000005	0.3	0.151	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0073	0.0001
HC-7-143	12-Nov-13	143	0.00070	0.0012	0.55	0.000005	0.3	0.151	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0074	0.0001
HC-7-144	19-Nov-13	144	0.00071	0.0012	0.55	0.000005	0.3	0.149	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0074	0.0001
HC-7-145	26-Nov-13	145	0.00073	0.0011	0.55	0.000005	0.3	0.147	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0075	0.0001
HC-7-146	03-Dec-13	146	0.00074	0.0011	0.54	0.000005	0.3	0.145	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0075	0.0001
HC-7-147	10-Dec-13	147	0.00076	0.0011	0.54	0.000005	0.3	0.143	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0076	0.0001
HC-7-148	17-Dec-13	148	0.00074	0.0011	0.53	0.000005	0.3	0.141	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0075	0.0001
HC-7-149	24-Dec-13	149	0.00073	0.0011	0.53	0.000005	0.3	0.139	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0074	0.0001
HC-7-150	31-Dec-13	150	0.00072	0.0011	0.52	0.000005	0.3	0.137	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0073	0.0001
HC-7-151	07-Jan-14	151	0.00071	0.0010	0.51	0.000005	0.3	0.135	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0073	0.0001
HC-7-152	14-Jan-14	152	0.00068	0.0010	0.51	0.000005	0.3	0.133	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0073	0.0001
HC-7-153	21-Jan-14	153	0.00066	0.0009	0.51	0.000005	0.3	0.131	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0074	0.0001
HC-7-154	28-Jan-14	154	0.00064	0.0009	0.51	0.000005	0.3	0.128	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0074	0.0001
HC-7-155	04-Feb-14	155	0.00062	0.0008	0.51	0.000005	0.3	0.126	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0074	0.0001
HC-7-156	11-Feb-14	156	0.00063	0.0009	0.49	0.000005	0.3	0.123	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0074	0.0001
HC-7-157	18-Feb-14	157	0.00064	0.0009	0.47	0.000005	0.3	0.121	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0074	0.0001
HC-7-158	25-Feb-14	158	0.00064	0.0009	0.45	0.000005	0.3	0.118	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0073	0.0001
HC-7-159	04-Mar-14	159	0.00065	0.0009	0.43	0.000005	0.3	0.115	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0073	0.0001
HC-7-160	11-Mar-14	160	0.00067	0.0009	0.46	0.000005	0.3	0.116	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0075	0.0001
HC-7-161	18-Mar-14	161	0.00070	0.0009	0.50	0.000005	0.3	0.117	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0077	0.0001
HC-7-162	25-Mar-14	162	0.00073	0.0009	0.53	0.000005	0.3	0.118	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0080	0.0001
HC-7-163	01-Apr-14	163	0.00075	0.0009	0.56	0.000005	0.3	0.119	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0082	0.0001
HC-7-164	08-Apr-14	164	0.00076	0.0009	0.56	0.000005	0.3	0.121	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0084	0.0001
HC-7-165	15-Apr-14	165	0.00076	0.0009	0.56	0.000005	0.3	0.122	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0086	0.0001
HC-7-166	22-Apr-14	166	0.00077	0.0008	0.55	0.000005	0.3	0.124	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0088	0.0001
HC-7-167	29-Apr-14	167	0.00078	0.0008	0.55	0.000005	0.3	0.125	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0090	0.0001
Mean all weeks			0.00054	0.0031	0.47	0.000011	11.2	0.135	0.00002	0.000004	0.000005	0.0002	0.0005	0.00015	0.00022	0.0007	0.0040	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC8 Hasler Mudstone																		
HC-8-0	15-Feb-11	0	0.00066	0.0065	1.90	0.000016	45.6	0.008	0.00002	0.000007	0.000014	0.0000	0.0008	0.03300	0.00012	0.0152	0.0018	0.0001
HC-8-1	22-Feb-11	1	0.00082	0.0147	1.10	0.000243	89.2	0.021	0.00002	0.000012	0.000005	0.0000	0.0005	0.01620	0.00071	0.0019	0.0017	0.0001
HC-8-2	01-Mar-11	2	0.00058	0.0128	0.90	0.000005	68.1	0.015	0.00002	0.000009	0.000005	0.0000	0.0005	0.00535	0.00067	0.0025	0.0007	0.0001
HC-8-3	08-Mar-11	3	0.00065	0.0094	0.90	0.000008	66.7	0.011	0.00002	0.000008	0.000005	0.0000	0.0005	0.00362	0.00092	0.0027	0.0006	0.0001
HC-8-4	15-Mar-11	4	0.00072	0.0074	1.00	0.000006	60.9	0.011	0.00002	0.000007	0.000005	0.0000	0.0005	0.00221	0.00099	0.0030	0.0012	0.0001
HC-8-5	22-Mar-11	5	0.00061	0.0063	1.00	0.000005	54.0	0.012	0.00002	0.000005	0.000005	0.0000	0.0005	0.00180	0.00091	0.0023	0.0006	0.0001
HC-8-6	29-Mar-11	6	0.00052	0.0052	0.80	0.000005	51.2	0.010	0.00002	0.000005	0.000005	0.0000	0.0005	0.00154	0.00087	0.0023	0.0012	0.0001
HC-8-7	05-Apr-11	7	0.00056	0.0048	0.80	0.000005	50.2	0.012	0.00002	0.000009	0.000005	0.0000	0.0005	0.00099	0.00084	0.0021	0.0008	0.0001
HC-8-8	12-Apr-11	8	0.00068	0.0044	0.90	0.000005	46.0	0.013	0.00002	0.000009	0.000005	0.0000	0.0007	0.00065	0.00068	0.0024	0.0009	0.0001
HC-8-9	19-Apr-11	9	0.00056	0.0039	0.80	0.000005	44.3	0.013	0.00002	0.000008	0.000005	0.0000	0.0006	0.00104	0.00097	0.0018	0.0012	0.0001
HC-8-10	26-Apr-11	10	0.00058	0.0034	0.80	0.000005	39.5	0.013	0.00002	0.000007	0.000005	0.0000	0.0006	0.00079	0.00084	0.0017	0.0010	0.0001
HC-8-11	03-May-11	11	0.00062	0.0036	0.90	0.000010	38.9	0.014	0.00002	0.000012	0.000005	0.0000	0.0005	0.00074	0.00086	0.0019	0.0029	0.0001
HC-8-12	10-May-11	12	0.00068	0.0050	1.50	0.000009	40.9	0.015	0.00002	0.000011	0.000005	0.0000	0.0005	0.00060	0.00081	0.0018	0.0026	0.0001
HC-8-13	17-May-11	13	0.00090	0.0034	1.00	0.000005	36.3	0.014	0.00002	0.000009	0.000005	0.0000	0.0010	0.00063	0.00067	0.0020	0.0014	0.0001
HC-8-14	24-May-11	14	0.00064	0.0030	1.00	0.000006	36.8	0.017	0.00002	0.000008	0.000005	0.0000	0.0009	0.00068	0.00075	0.0018	0.0008	0.0001
HC-8-15	31-May-11	15	0.00059	0.0028	0.70	0.000009	32.6	0.014	0.00002	0.000008	0.000005	0.0001	0.0008	0.00053	0.00071	0.0017	0.0017	0.0001
HC-8-16	07-Jun-11	16	0.00060	0.0027	0.80	0.000008	32.8	0.014	0.00002	0.000008	0.000005	0.0000	0.0006	0.00046	0.00066	0.0016	0.0020	0.0001
HC-8-17	14-Jun-11	17	0.00063	0.0027	0.80	0.000005	31.6	0.015	0.00002	0.000009	0.000005	0.0000	0.0012	0.00046	0.00063	0.0015	0.0007	0.0001
HC-8-18	21-Jun-11	18	0.00053	0.0025	0.70	0.000006	31.6	0.015	0.00002	0.000008	0.000005	0.0000	0.0005	0.00041	0.00055	0.0011	0.0021	0.0001
HC-8-19	28-Jun-11	19	0.00056	0.0025	0.70	0.000008	37.7	0.020	0.00002	0.000008	0.000005	0.0000	0.0006	0.00035	0.00064	0.0014	0.0038	0.0001
HC-8-20	05-Jul-11	20	0.00063	0.0024	0.75	0.000007	34.7	0.020	0.00002	0.000009	0.000006	0.0000	0.0008	0.00032	0.00057	0.0014	0.0033	0.0001
HC-8-21	12-Jul-11	21	0.00070	0.0023	0.80	0.000007	31.7	0.020	0.00002	0.000010	0.000006	0.0000	0.0011	0.00029	0.00050	0.0014	0.0027	0.0002
HC-8-22	19-Jul-11	22	0.00077	0.0022	0.85	0.000006	28.7	0.020	0.00002	0.000011	0.000007	0.0000	0.0013	0.00026	0.00043	0.0014	0.0022	0.0002
HC-8-23	26-Jul-11	23	0.00084	0.0021	0.90	0.000005	25.7	0.020	0.00002	0.000012	0.000007	0.0000	0.0015	0.00023	0.00036	0.0014	0.0016	0.0002
HC-8-24	02-Aug-11	24	0.00083	0.0022	0.88	0.000005	28.0	0.031	0.00002	0.000014	0.000007	0.0000	0.0014	0.00026	0.00037	0.0012	0.0020	0.0002
HC-8-25	09-Aug-11	25	0.00083	0.0022	0.85	0.000005	30.3	0.043	0.00002	0.000016	0.000006	0.0000	0.0012	0.00029	0.00039	0.0011	0.0024	0.0002
HC-8-26	16-Aug-11	26	0.00082	0.0022	0.83	0.000005	32.6	0.054	0.00002	0.000017	0.000006	0.0000	0.0011	0.00032	0.00041	0.0009	0.0027	0.0001
HC-8-27	23-Aug-11	27	0.00081	0.0022	0.80	0.000005	34.9	0.066	0.00002	0.000019	0.000005	0.0000	0.0009	0.00035	0.00043	0.0007	0.0031	0.0001
HC-8-28	30-Aug-11	28	0.00084	0.0021	0.78	0.000005	33.2	0.062	0.00002	0.000018	0.000005	0.0001	0.0010	0.00031	0.00035	0.0007	0.0029	0.0001
HC-8-29	06-Sep-11	29	0.00087	0.0020	0.75	0.000005	31.5	0.059	0.00002	0.000017	0.000005	0.0001	0.0011	0.00027	0.00028	0.0006	0.0026	0.0001
HC-8-30	13-Sep-11	30	0.00089	0.0020	0.73	0.000005	29.7	0.055	0.00002	0.000016	0.000005	0.0002	0.0011	0.00022	0.00020	0.0006	0.0024	0.0001
HC-8-31	20-Sep-11	31	0.00092	0.0019	0.70	0.000005	28.0	0.052	0.00002	0.000015	0.000005	0.0002	0.0012	0.00018	0.00013	0.0005	0.0021	0.0001
HC-8-32	27-Sep-11	32	0.00100	0.0020	0.68	0.000005	28.4	0.074	0.00002	0.000016	0.000005	0.0003	0.0010	0.00016	0.00012	0.0004	0.0018	0.0001
HC-8-33	04-Oct-11	33	0.00108	0.0020	0.65	0.000005	28.8	0.097	0.00002	0.000017	0.000005	0.0004	0.0009	0.00014	0.00010	0.0004	0.0016	0.0001
HC-8-34	11-Oct-11	34	0.00115	0.0021	0.63	0.000005	29.1	0.119	0.00002	0.000018	0.000005	0.0004	0.0007	0.00012	0.00009	0.0003	0.0013	0.0001
HC-8-35	18-Oct-11	35	0.00123	0.0022	0.60	0.000005	29.5	0.142	0.00002	0.000019	0.000005	0.0005	0.0005	0.00010	0.00008	0.0002	0.0010	0.0001
HC-8-36	25-Oct-11	36	0.00133	0.0022	0.60	0.000005	28.9	0.184	0.00002	0.000021	0.000005	0.0004	0.0005	0.00010	0.00009	0.0002	0.0010	0.0001
HC-8-37	01-Nov-11	37	0.00144	0.0023	0.60	0.000005	28.2	0.227	0.00002	0.000024	0.000005	0.0004	0.0005	0.00010	0.00009	0.0002	0.0011	0.0001
HC-8-38	08-Nov-11	38	0.00154	0.0024	0.60	0.000005	27.6	0.269	0.00002	0.000026	0.000005	0.0003	0.0005	0.00010	0.00009	0.0002	0.0011	0.0001
HC-8-39	15-Nov-11	39	0.00164	0.0024	0.60	0.000005	26.9	0.311	0.00002	0.000028	0.000005	0.0002	0.0005	0.00010	0.00009	0.0002	0.0011	0.0001
HC-8-40	22-Nov-11	40	0.00166	0.0025	0.55	0.000005	24.4	0.324	0.00002	0.000029	0.000005	0.0002	0.0005	0.00008	0.00008	0.0002	0.0013	0.0001
HC-8-41	29-Nov-11	41	0.00169	0.0025	0.50	0.000005	22.0	0.338	0.00002	0.000029	0.000005	0.0001	0.0005	0.00007	0.00007	0.0002	0.0014	0.0001
HC-8-42	06-Dec-11	42	0.00171	0.0025	0.45	0.000005	19.5	0.351	0.00002	0.000030	0.000005	0.0001	0.0005	0.00005	0.00005	0.0002	0.0016	0.0001
HC-8-43	13-Dec-11	43	0.00173	0.0026	0.40	0.000005	17.0	0.364	0.00002	0.000030	0.000005	0.0001	0.0005	0.00003	0.00004	0.0002	0.0017	0.0001
HC-8-44	20-Dec-11	44	0.00173	0.0026	0.43	0.000005	15.5	0.374	0.00002	0.000031	0.000005	0.0001	0.0005	0.00003	0.00004	0.0002	0.0018	0.0001
HC-8-45	27-Dec-11	45	0.00173	0.0026	0.45	0.000005	14.0	0.384	0.00002	0.000032	0.000005	0.0001	0.0005	0.00003	0.00004	0.0002	0.0019	0.0001
HC-8-46	03-Jan-12	46	0.00173	0.0025	0.48	0.000005	12.5	0.394	0.00002	0.000033	0.000005	0.0002	0.0005	0.00002	0.00003	0.0002	0.0020	0.0001
HC-8-47	10-Jan-12	47	0.00173	0.0025	0.50	0.000005	11.0	0.404	0.00002	0.000034	0.000005	0.0002	0.0005	0.00002	0.00003	0.0002	0.0021	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-8-48	17-Jan-12	48	0.00179	0.0025	0.50	0.000005	9.9	0.426	0.00002	0.000035	0.000005	0.0002	0.0005	0.00002	0.00003	0.0002	0.0025	0.0001
HC-8-49	24-Jan-12	49	0.00185	0.0025	0.50	0.000005	8.9	0.448	0.00002	0.000036	0.000005	0.0002	0.0005	0.00002	0.00003	0.0002	0.0030	0.0001
HC-8-50	31-Jan-12	50	0.00190	0.0025	0.50	0.000005	7.8	0.470	0.00002	0.000037	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0034	0.0001
HC-8-51	07-Feb-12	51	0.00196	0.0025	0.50	0.000005	6.7	0.492	0.00002	0.000038	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0038	0.0001
HC-8-52	14-Feb-12	52	0.00202	0.0024	0.48	0.000005	5.9	0.495	0.00002	0.000040	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0039	0.0001
HC-8-53	21-Feb-12	53	0.00208	0.0024	0.45	0.000005	5.1	0.498	0.00002	0.000042	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0039	0.0001
HC-8-54	28-Feb-12	54	0.00213	0.0024	0.43	0.000005	4.3	0.500	0.00002	0.000043	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0040	0.0001
HC-8-55	06-Mar-12	55	0.00219	0.0024	0.40	0.000005	3.5	0.503	0.00002	0.000045	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0040	0.0001
HC-8-56	13-Mar-12	56	0.00216	0.0023	0.40	0.000005	3.1	0.500	0.00002	0.000045	0.000005	0.0004	0.0005	0.00001	0.00002	0.0003	0.0041	0.0001
HC-8-57	20-Mar-12	57	0.00213	0.0023	0.40	0.000005	2.7	0.498	0.00002	0.000045	0.000005	0.0005	0.0005	0.00001	0.00002	0.0003	0.0041	0.0001
HC-8-58	27-Mar-12	58	0.00209	0.0023	0.40	0.000005	2.2	0.495	0.00002	0.000044	0.000005	0.0005	0.0005	0.00001	0.00002	0.0004	0.0042	0.0001
HC-8-59	03-Apr-12	59	0.00206	0.0023	0.40	0.000005	1.8	0.492	0.00002	0.000044	0.000005	0.0006	0.0005	0.00001	0.00002	0.0004	0.0042	0.0001
HC-8-60	10-Apr-12	60	0.00215	0.0023	0.42	0.000005	1.7	0.493	0.00002	0.000046	0.000005	0.0005	0.0005	0.00001	0.00002	0.0004	0.0043	0.0001
HC-8-61	17-Apr-12	61	0.00224	0.0023	0.43	0.000005	1.6	0.494	0.00002	0.000049	0.000005	0.0004	0.0005	0.00001	0.00002	0.0003	0.0045	0.0001
HC-8-62	24-Apr-12	62	0.00232	0.0024	0.45	0.000005	1.5	0.495	0.00002	0.000051	0.000005	0.0003	0.0005	0.00001	0.00002	0.0003	0.0046	0.0001
HC-8-63	01-May-12	63	0.00241	0.0024	0.46	0.000005	1.4	0.496	0.00002	0.000053	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0048	0.0001
HC-8-64	08-May-12	64	0.00239	0.0023	0.46	0.000005	1.3	0.494	0.00002	0.000053	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0072	0.0001
HC-8-65	15-May-12	65	0.00237	0.0022	0.46	0.000005	1.2	0.492	0.00002	0.000053	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0096	0.0001
HC-8-66	22-May-12	66	0.00235	0.0021	0.45	0.000005	1.0	0.490	0.00002	0.000053	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0120	0.0001
HC-8-67	29-May-12	67	0.00233	0.0019	0.45	0.000005	0.9	0.488	0.00002	0.000054	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0144	0.0001
HC-8-68	05-Jun-12	68	0.00237	0.0020	0.45	0.000005	0.8	0.486	0.00002	0.000055	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0122	0.0001
HC-8-69	12-Jun-12	69	0.00240	0.0020	0.46	0.000005	0.8	0.484	0.00002	0.000057	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0100	0.0001
HC-8-70	19-Jun-12	70	0.00244	0.0021	0.46	0.000005	0.7	0.482	0.00002	0.000058	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0078	0.0001
HC-8-71	26-Jun-12	71	0.00247	0.0021	0.46	0.000005	0.6	0.480	0.00002	0.000060	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0056	0.0001
HC-8-72	03-Jul-12	72	0.00252	0.0021	0.47	0.000005	0.6	0.478	0.00002	0.000062	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0061	0.0001
HC-8-73	10-Jul-12	73	0.00258	0.0021	0.48	0.000005	0.6	0.476	0.00002	0.000063	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0066	0.0001
HC-8-74	17-Jul-12	74	0.00263	0.0020	0.49	0.000005	0.6	0.473	0.00002	0.000064	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0071	0.0001
HC-8-75	24-Jul-12	75	0.00268	0.0020	0.50	0.000005	0.6	0.471	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0076	0.0001
HC-8-76	31-Jul-12	76	0.00268	0.0019	0.49	0.000005	0.5	0.462	0.00002	0.000065	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0083	0.0001
HC-8-77	07-Aug-12	77	0.00267	0.0019	0.48	0.000005	0.5	0.453	0.00002	0.000064	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0089	0.0001
HC-8-78	14-Aug-12	78	0.00267	0.0018	0.46	0.000005	0.5	0.443	0.00002	0.000063	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0096	0.0001
HC-8-79	21-Aug-12	79	0.00266	0.0018	0.45	0.000005	0.4	0.434	0.00002	0.000062	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0103	0.0001
HC-8-80	28-Aug-12	80	0.00268	0.0018	0.46	0.000005	0.4	0.430	0.00002	0.000062	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0107	0.0001
HC-8-81	04-Sep-12	81	0.00269	0.0019	0.47	0.000005	0.4	0.425	0.00002	0.000063	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0111	0.0001
HC-8-82	11-Sep-12	82	0.00271	0.0020	0.48	0.000005	0.4	0.421	0.00002	0.000063	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0115	0.0001
HC-8-83	18-Sep-12	83	0.00272	0.0021	0.49	0.000005	0.4	0.416	0.00002	0.000063	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0119	0.0001
HC-8-84	25-Sep-12	84	0.00269	0.0020	0.47	0.000005	0.4	0.408	0.00002	0.000064	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0129	0.0001
HC-8-85	02-Oct-12	85	0.00266	0.0019	0.45	0.000005	0.4	0.399	0.00002	0.000065	0.000005	0.0004	0.0005	0.00001	0.00001	0.0002	0.0138	0.0001
HC-8-86	09-Oct-12	86	0.00262	0.0018	0.43	0.000005	0.4	0.391	0.00002	0.000065	0.000005	0.0005	0.0005	0.00001	0.00001	0.0002	0.0148	0.0001
HC-8-87	16-Oct-12	87	0.00259	0.0018	0.41	0.000005	0.4	0.382	0.00002	0.000066	0.000005	0.0007	0.0005	0.00001	0.00001	0.0002	0.0157	0.0001
HC-8-88	23-Oct-12	88	0.00261	0.0019	0.43	0.000005	0.4	0.377	0.00002	0.000067	0.000005	0.0005	0.0005	0.00001	0.00001	0.0002	0.0158	0.0001
HC-8-89	30-Oct-12	89	0.00264	0.0020	0.46	0.000005	0.3	0.372	0.00002	0.000068	0.000005	0.0004	0.0005	0.00001	0.00001	0.0002	0.0159	0.0001
HC-8-90	06-Nov-12	90	0.00266	0.0020	0.48	0.000005	0.3	0.366	0.00002	0.000069	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0160	0.0001
HC-8-91	13-Nov-12	91	0.00268	0.0021	0.50	0.000005	0.3	0.361	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0161	0.0001
HC-8-92	20-Nov-12	92	0.00259	0.0021	0.50	0.000005	0.3	0.351	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0166	0.0001
HC-8-93	27-Nov-12	93	0.00250	0.0020	0.50	0.000005	0.3	0.340	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0172	0.0001
HC-8-94	04-Dec-12	94	0.00241	0.0020	0.49	0.000005	0.3	0.330	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0177	0.0001
HC-8-95	11-Dec-12	95	0.00232	0.0020	0.49	0.000005	0.3	0.319	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0182	0.0001
HC-8-96	18-Dec-12	96	0.00234	0.0020	0.49	0.000005	0.3	0.328	0.00002	0.000071	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0191	0.0001



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-8-97	25-Dec-12	97	0.00237	0.0020	0.49	0.000005	0.3	0.337	0.00002	0.000072	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0201	0.0001
HC-8-98	01-Jan-13	98	0.00239	0.0020	0.49	0.000005	0.3	0.346	0.00002	0.000072	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0210	0.0001
HC-8-99	08-Jan-13	99	0.00241	0.0020	0.49	0.000005	0.3	0.355	0.00002	0.000073	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0219	0.0001
HC-8-100	15-Jan-13	100	0.00235	0.0020	0.49	0.000005	0.3	0.335	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0216	0.0001
HC-8-101	22-Jan-13	101	0.00230	0.0020	0.48	0.000005	0.3	0.315	0.00002	0.000067	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0214	0.0001
HC-8-102	29-Jan-13	102	0.00224	0.0020	0.48	0.000005	0.3	0.295	0.00002	0.000064	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0211	0.0001
HC-8-103	05-Feb-13	103	0.00218	0.0020	0.47	0.000005	0.3	0.275	0.00002	0.000061	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0208	0.0001
HC-8-104	12-Feb-13	104	0.00217	0.0020	0.48	0.000005	0.3	0.273	0.00002	0.000063	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0211	0.0001
HC-8-105	19-Feb-13	105	0.00217	0.0019	0.48	0.000005	0.3	0.271	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0213	0.0001
HC-8-106	26-Feb-13	106	0.00216	0.0019	0.49	0.000005	0.3	0.268	0.00002	0.000068	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.0216	0.0001
HC-8-107	05-Mar-13	107	0.00215	0.0018	0.49	0.000005	0.3	0.266	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.0218	0.0001
HC-8-108	12-Mar-13	108	0.00215	0.0018	0.49	0.000005	0.3	0.256	0.00002	0.000068	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.0217	0.0001
HC-8-109	19-Mar-13	109	0.00216	0.0018	0.48	0.000005	0.3	0.247	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00001	0.0003	0.0216	0.0001
HC-8-110	26-Mar-13	110	0.00216	0.0018	0.48	0.000005	0.3	0.237	0.00002	0.000064	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0214	0.0001
HC-8-111	02-Apr-13	111	0.00216	0.0018	0.47	0.000005	0.2	0.227	0.00002	0.000062	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0213	0.0001
HC-8-112	09-Apr-13	112	0.00210	0.0018	0.47	0.000005	0.2	0.224	0.00002	0.000060	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0236	0.0001
HC-8-113	16-Apr-13	113	0.00204	0.0018	0.48	0.000005	0.2	0.220	0.00002	0.000059	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0260	0.0001
HC-8-114	23-Apr-13	114	0.00198	0.0018	0.48	0.000005	0.2	0.217	0.00002	0.000057	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0283	0.0001
HC-8-115	30-Apr-13	115	0.00192	0.0018	0.48	0.000005	0.3	0.213	0.00002	0.000055	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0306	0.0001
HC-8-116	07-May-13	116	0.00190	0.0017	0.49	0.000005	0.3	0.211	0.00002	0.000056	0.000005	0.0002	0.0005	0.00001	0.00001	0.0004	0.0307	0.0001
HC-8-117	14-May-13	117	0.00189	0.0017	0.50	0.000005	0.3	0.208	0.00002	0.000058	0.000005	0.0002	0.0005	0.00001	0.00001	0.0006	0.0308	0.0001
HC-8-118	21-May-13	118	0.00187	0.0017	0.50	0.000005	0.3	0.206	0.00002	0.000059	0.000005	0.0002	0.0005	0.00001	0.00001	0.0008	0.0309	0.0001
HC-8-119	28-May-13	119	0.00185	0.0017	0.51	0.000005	0.3	0.203	0.00002	0.000060	0.000005	0.0002	0.0005	0.00001	0.00001	0.0009	0.0310	0.0001
HC-8-120	04-Jun-13	120	0.00182	0.0016	0.52	0.000005	0.3	0.199	0.00002	0.000057	0.000005	0.0003	0.0005	0.00001	0.00001	0.0008	0.0330	0.0001
HC-8-121	11-Jun-13	121	0.00180	0.0016	0.53	0.000005	0.3	0.195	0.00002	0.000054	0.000005	0.0005	0.0005	0.00001	0.00001	0.0006	0.0349	0.0001
HC-8-122	18-Jun-13	122	0.00177	0.0016	0.54	0.000005	0.3	0.190	0.00002	0.000051	0.000005	0.0006	0.0005	0.00001	0.00001	0.0004	0.0369	0.0001
HC-8-123	25-Jun-13	123	0.00174	0.0016	0.55	0.000005	0.3	0.186	0.00002	0.000048	0.000005	0.0008	0.0005	0.00001	0.00001	0.0002	0.0388	0.0001
HC-8-124	02-Jul-13	124	0.00174	0.0016	0.55	0.000005	0.3	0.185	0.00002	0.000048	0.000005	0.0007	0.0005	0.00001	0.00001	0.0002	0.0376	0.0001
HC-8-125	09-Jul-13	125	0.00175	0.0017	0.55	0.000005	0.3	0.184	0.00002	0.000048	0.000005	0.0006	0.0005	0.00001	0.00001	0.0002	0.0363	0.0001
HC-8-126	16-Jul-13	126	0.00175	0.0017	0.54	0.000005	0.2	0.183	0.00002	0.000048	0.000005	0.0004	0.0005	0.00001	0.00001	0.0002	0.0351	0.0001
HC-8-127	23-Jul-13	127	0.00175	0.0018	0.54	0.000005	0.2	0.182	0.00002	0.000048	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0338	0.0001
HC-8-128	30-Jul-13	128	0.00175	0.0018	0.55	0.000005	0.2	0.183	0.00002	0.000048	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0365	0.0001
HC-8-129	06-Aug-13	129	0.00175	0.0017	0.56	0.000005	0.3	0.183	0.00002	0.000048	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0393	0.0001
HC-8-130	13-Aug-13	130	0.00175	0.0017	0.56	0.000005	0.3	0.184	0.00002	0.000048	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0420	0.0001
HC-8-131	20-Aug-13	131	0.00175	0.0017	0.57	0.000005	0.3	0.184	0.00002	0.000048	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0447	0.0001
HC-8-132	27-Aug-13	132	0.00180	0.0016	0.57	0.000005	0.3	0.180	0.00002	0.000050	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0434	0.0001
HC-8-133	03-Sep-13	133	0.00186	0.0016	0.57	0.000005	0.3	0.175	0.00002	0.000052	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0422	0.0001
HC-8-134	10-Sep-13	134	0.00191	0.0016	0.57	0.000005	0.3	0.171	0.00002	0.000054	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0409	0.0001
HC-8-135	17-Sep-13	135	0.00196	0.0015	0.57	0.000005	0.3	0.166	0.00002	0.000056	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0396	0.0001
HC-8-136	24-Sep-13	136	0.00193	0.0015	0.60	0.000005	0.3	0.160	0.00002	0.000057	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0414	0.0001
HC-8-137	01-Oct-13	137	0.00189	0.0015	0.63	0.000005	0.3	0.154	0.00002	0.000058	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0431	0.0001
HC-8-138	08-Oct-13	138	0.00186	0.0015	0.65	0.000005	0.3	0.147	0.00002	0.000058	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0449	0.0001
HC-8-139	15-Oct-13	139	0.00182	0.0015	0.68	0.000005	0.3	0.141	0.00002	0.000059	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0466	0.0001
HC-8-140	22-Oct-13	140	0.00199	0.0015	0.72	0.000005	0.3	0.146	0.00002	0.000061	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0496	0.0001
HC-8-141	29-Oct-13	141	0.00216	0.0016	0.76	0.000005	0.3	0.151	0.00002	0.000064	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0526	0.0001
HC-8-142	05-Nov-13	142	0.00233	0.0016	0.79	0.000005	0.2	0.155	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0556	0.0001
HC-8-143	12-Nov-13	143	0.00250	0.0016	0.83	0.000005	0.2	0.160	0.00002	0.000068	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0586	0.0001
HC-8-144	19-Nov-13	144	0.00243	0.0016	0.82	0.000005	0.2	0.158	0.00002	0.000069	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0585	0.0001
HC-8-145	26-Nov-13	145	0.00237	0.0016	0.81	0.000005	0.3	0.156	0.00002	0.000069	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0585	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-8-146	03-Dec-13	146	0.00230	0.0015	0.79	0.000005	0.3	0.154	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0584	0.0001
HC-8-147	10-Dec-13	147	0.00223	0.0015	0.78	0.000005	0.3	0.152	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00005	0.0003	0.0583	0.0001
HC-8-148	17-Dec-13	148	0.00222	0.0015	0.77	0.000005	0.3	0.150	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0620	0.0001
HC-8-149	24-Dec-13	149	0.00221	0.0015	0.77	0.000005	0.3	0.148	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0658	0.0001
HC-8-150	31-Dec-13	150	0.00219	0.0014	0.76	0.000005	0.3	0.145	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0695	0.0001
HC-8-151	07-Jan-14	151	0.00218	0.0014	0.75	0.000005	0.2	0.143	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0732	0.0001
HC-8-152	14-Jan-14	152	0.00209	0.0014	0.75	0.000005	0.2	0.139	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0727	0.0001
HC-8-153	21-Jan-14	153	0.00199	0.0014	0.75	0.000005	0.2	0.135	0.00002	0.000063	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0721	0.0001
HC-8-154	28-Jan-14	154	0.00190	0.0013	0.74	0.000005	0.2	0.131	0.00002	0.000059	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0716	0.0001
HC-8-155	04-Feb-14	155	0.00180	0.0013	0.74	0.000005	0.2	0.127	0.00002	0.000055	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0710	0.0001
HC-8-156	11-Feb-14	156	0.00183	0.0013	0.73	0.000005	0.2	0.127	0.00002	0.000059	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0727	0.0001
HC-8-157	18-Feb-14	157	0.00187	0.0013	0.72	0.000005	0.2	0.126	0.00002	0.000063	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0743	0.0001
HC-8-158	25-Feb-14	158	0.00190	0.0013	0.71	0.000005	0.2	0.126	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0760	0.0001
HC-8-159	04-Mar-14	159	0.00193	0.0013	0.70	0.000005	0.2	0.125	0.00002	0.000070	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0776	0.0001
HC-8-160	11-Mar-14	160	0.00196	0.0013	0.75	0.000005	0.2	0.125	0.00002	0.000069	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0771	0.0001
HC-8-161	18-Mar-14	161	0.00198	0.0013	0.80	0.000005	0.2	0.125	0.00002	0.000068	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0765	0.0001
HC-8-162	25-Mar-14	162	0.00201	0.0014	0.85	0.000005	0.2	0.124	0.00002	0.000067	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0760	0.0001
HC-8-163	01-Apr-14	163	0.00203	0.0014	0.90	0.000005	0.2	0.124	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0754	0.0001
HC-8-164	08-Apr-14	164	0.00200	0.0014	0.89	0.000005	0.2	0.121	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0719	0.0001
HC-8-165	15-Apr-14	165	0.00197	0.0014	0.88	0.000005	0.2	0.118	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0683	0.0001
HC-8-166	22-Apr-14	166	0.00193	0.0014	0.86	0.000005	0.2	0.114	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0648	0.0001
HC-8-167	29-Apr-14	167	0.00190	0.0014	0.85	0.000005	0.2	0.111	0.00002	0.000066	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0612	0.0001
<b>Mean all weeks</b>			<b>0.00183</b>	<b>0.0023</b>	<b>0.62</b>	<b>0.000007</b>	<b>10.5</b>	<b>0.240</b>	<b>0.00002</b>	<b>0.000047</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0006</b>	<b>0.00046</b>	<b>0.00015</b>	<b>0.0006</b>	<b>0.0224</b>	<b>0.0001</b>
<b>HC9 Hasler Mudstone</b>																		
HC-9-0	15-Feb-11	0	0.00107	0.0023	2.10	0.000011	19.9	0.004	0.00002	0.000004	0.000045	0.0001	0.0015	0.00198	0.00005	0.0172	0.0077	0.0002
HC-9-1	22-Feb-11	1	0.00054	0.0066	1.40	0.000092	51.0	0.006	0.00002	0.000018	0.000005	0.0000	0.0005	0.00633	0.00035	0.0050	0.0016	0.0001
HC-9-2	01-Mar-11	2	0.00044	0.0055	1.00	0.000006	42.3	0.006	0.00002	0.000008	0.000005	0.0000	0.0005	0.00272	0.00033	0.0036	0.0008	0.0001
HC-9-3	08-Mar-11	3	0.00041	0.0036	1.00	0.000005	38.2	0.005	0.00002	0.000003	0.000005	0.0000	0.0005	0.00109	0.00033	0.0036	0.0004	0.0001
HC-9-4	15-Mar-11	4	0.00054	0.0028	1.30	0.000005	34.4	0.005	0.00002	0.000003	0.000005	0.0000	0.0013	0.00066	0.00032	0.0045	0.0008	0.0001
HC-9-5	22-Mar-11	5	0.00042	0.0023	1.30	0.000005	31.1	0.005	0.00002	0.000002	0.000005	0.0000	0.0005	0.00035	0.00027	0.0033	0.0014	0.0001
HC-9-6	29-Mar-11	6	0.00064	0.0018	1.20	0.000005	30.7	0.004	0.00002	0.000007	0.000005	0.0000	0.0014	0.00023	0.00025	0.0038	0.0019	0.0001
HC-9-7	05-Apr-11	7	0.00043	0.0016	1.00	0.000005	27.4	0.003	0.00002	0.000003	0.000005	0.0000	0.0005	0.00016	0.00020	0.0033	0.0011	0.0001
HC-9-8	12-Apr-11	8	0.00064	0.0016	1.20	0.000005	27.2	0.004	0.00002	0.000005	0.000005	0.0000	0.0016	0.00011	0.00017	0.0034	0.0011	0.0002
HC-9-9	19-Apr-11	9	0.00065	0.0013	1.00	0.000005	24.9	0.004	0.00003	0.000005	0.000005	0.0000	0.0007	0.00014	0.00019	0.0030	0.0017	0.0002
HC-9-10	26-Apr-11	10	0.00052	0.0012	1.00	0.000005	21.8	0.003	0.00002	0.000004	0.000005	0.0000	0.0011	0.00012	0.00017	0.0027	0.0012	0.0001
HC-9-11	03-May-11	11	0.00047	0.0013	1.10	0.000005	20.8	0.003	0.00002	0.000007	0.000005	0.0000	0.0013	0.00011	0.00019	0.0028	0.0023	0.0001
HC-9-12	10-May-11	12	0.00074	0.0012	1.30	0.000005	21.9	0.003	0.00002	0.000004	0.000008	0.0000	0.0017	0.00009	0.00014	0.0030	0.0016	0.0002
HC-9-13	17-May-11	13	0.00038	0.0012	0.90	0.000005	19.8	0.003	0.00002	0.000002	0.000005	0.0000	0.0005	0.00010	0.00014	0.0024	0.0012	0.0001
HC-9-14	24-May-11	14	0.00040	0.0011	1.00	0.000006	19.3	0.003	0.00002	0.000003	0.000005	0.0000	0.0007	0.00009	0.00012	0.0024	0.0009	0.0001
HC-9-15	31-May-11	15	0.00024	0.0012	0.90	0.000005	20.3	0.003	0.00002	0.000002	0.000005	0.0000	0.0005	0.00009	0.00014	0.0025	0.0010	0.0001
HC-9-16	07-Jun-11	16	0.00034	0.0012	0.80	0.000005	20.1	0.003	0.00002	0.000002	0.000005	0.0000	0.0005	0.00008	0.00014	0.0023	0.0008	0.0001
HC-9-17	14-Jun-11	17	0.00047	0.0011	1.00	0.000005	17.9	0.003	0.00002	0.000002	0.000005	0.0000	0.0008	0.00007	0.00011	0.0024	0.0016	0.0001
HC-9-18	21-Jun-11	18	0.00041	0.0010	0.90	0.000005	18.2	0.002	0.00002	0.000002	0.000005	0.0000	0.0006	0.00007	0.00010	0.0019	0.0013	0.0001
HC-9-19	28-Jun-11	19	0.00034	0.0011	0.80	0.000005	19.8	0.003	0.00002	0.000002	0.000005	0.0000	0.0005	0.00001	0.00011	0.0023	0.0022	0.0001
HC-9-20	05-Jul-11	20	0.00034	0.0010	0.83	0.000005	18.3	0.002	0.00002	0.000002	0.000005	0.0000	0.0005	0.00002	0.00010	0.0022	0.0020	0.0001
HC-9-21	12-Jul-11	21	0.00034	0.0010	0.85	0.000005	16.9	0.002	0.00002	0.000003	0.000005	0.0000	0.0005	0.00003	0.00008	0.0021	0.0018	0.0001
HC-9-22	19-Jul-11	22	0.00033	0.0009	0.88	0.000005	15.4	0.002	0.00002	0.000003	0.000005	0.0000	0.0005	0.00003	0.00007	0.0020	0.0015	0.0001
HC-9-23	26-Jul-11	23	0.00033	0.0009	0.90	0.000005	13.9	0.002	0.00002	0.000003	0.000005	0.0000	0.0005	0.00004	0.00006	0.0019	0.0013	0.0001
HC-9-24	02-Aug-11	24	0.00038	0.0009	0.90	0.000005	14.4	0.003	0.00002	0.000003	0.000005	0.0000	0.0007	0.00004	0.00005	0.0019	0.0014	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-9-25	09-Aug-11	25	0.00044	0.0009	0.90	0.000005	14.9	0.003	0.00002	0.000003	0.000005	0.0000	0.0010	0.00004	0.00005	0.0019	0.0014	0.0001
HC-9-26	16-Aug-11	26	0.00049	0.0009	0.90	0.000005	15.3	0.003	0.00002	0.000003	0.000005	0.0000	0.0012	0.00003	0.00004	0.0019	0.0015	0.0001
HC-9-27	23-Aug-11	27	0.00054	0.0009	0.90	0.000005	15.8	0.004	0.00002	0.000003	0.000005	0.0000	0.0014	0.00003	0.00004	0.0019	0.0015	0.0001
HC-9-28	30-Aug-11	28	0.00047	0.0009	0.83	0.000005	15.7	0.004	0.00002	0.000003	0.000005	0.0001	0.0012	0.00003	0.00003	0.0016	0.0012	0.0001
HC-9-29	06-Sep-11	29	0.00041	0.0009	0.75	0.000005	15.6	0.005	0.00002	0.000003	0.000005	0.0001	0.0011	0.00003	0.00003	0.0014	0.0010	0.0001
HC-9-30	13-Sep-11	30	0.00034	0.0008	0.68	0.000005	15.4	0.005	0.00002	0.000002	0.000005	0.0001	0.0009	0.00002	0.00002	0.0011	0.0007	0.0001
HC-9-31	20-Sep-11	31	0.00027	0.0008	0.60	0.000005	15.3	0.006	0.00002	0.000002	0.000005	0.0002	0.0007	0.00002	0.00001	0.0008	0.0004	0.0001
HC-9-32	27-Sep-11	32	0.00027	0.0009	0.63	0.000005	15.4	0.006	0.00002	0.000002	0.000005	0.0002	0.0007	0.00002	0.00001	0.0007	0.0005	0.0001
HC-9-33	04-Oct-11	33	0.00027	0.0009	0.65	0.000006	15.5	0.006	0.00002	0.000003	0.000005	0.0002	0.0006	0.00002	0.00001	0.0007	0.0007	0.0001
HC-9-34	11-Oct-11	34	0.00027	0.0009	0.68	0.000006	15.5	0.007	0.00002	0.000003	0.000005	0.0002	0.0006	0.00001	0.00001	0.0006	0.0008	0.0001
HC-9-35	18-Oct-11	35	0.00027	0.0009	0.70	0.000006	15.6	0.007	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00001	0.0005	0.0009	0.0001
HC-9-36	25-Oct-11	36	0.00033	0.0011	0.73	0.000006	16.9	0.009	0.00002	0.000003	0.000005	0.0002	0.0005	0.00001	0.00000	0.0005	0.0017	0.0001
HC-9-37	01-Nov-11	37	0.00038	0.0013	0.75	0.000006	18.2	0.010	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0005	0.0026	0.0001
HC-9-38	08-Nov-11	38	0.00044	0.0014	0.78	0.000005	19.5	0.012	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0004	0.0034	0.0001
HC-9-39	15-Nov-11	39	0.00049	0.0016	0.80	0.000005	20.8	0.014	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00000	0.0004	0.0042	0.0001
HC-9-40	22-Nov-11	40	0.00049	0.0019	0.83	0.000005	22.6	0.016	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00000	0.0004	0.0050	0.0001
HC-9-41	29-Nov-11	41	0.00049	0.0022	0.85	0.000005	24.3	0.018	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00000	0.0004	0.0058	0.0001
HC-9-42	06-Dec-11	42	0.00048	0.0025	0.88	0.000005	26.1	0.021	0.00002	0.000003	0.000005	0.0001	0.0005	0.00001	0.00000	0.0004	0.0066	0.0001
HC-9-43	13-Dec-11	43	0.00048	0.0027	0.90	0.000005	27.8	0.023	0.00002	0.000003	0.000005	0.0001	0.0005	0.00001	0.00000	0.0004	0.0074	0.0001
HC-9-44	20-Dec-11	44	0.00058	0.0029	0.95	0.000005	29.4	0.033	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00000	0.0004	0.0127	0.0001
HC-9-45	27-Dec-11	45	0.00068	0.0031	1.00	0.000005	31.0	0.042	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0180	0.0001
HC-9-46	03-Jan-12	46	0.00078	0.0032	1.05	0.000005	32.5	0.051	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00000	0.0003	0.0232	0.0001
HC-9-47	10-Jan-12	47	0.00088	0.0034	1.10	0.000005	34.1	0.060	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0285	0.0001
HC-9-48	17-Jan-12	48	0.00108	0.0034	1.15	0.000005	34.8	0.078	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0408	0.0001
HC-9-49	24-Jan-12	49	0.00128	0.0035	1.20	0.000005	35.6	0.095	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0530	0.0001
HC-9-50	31-Jan-12	50	0.00147	0.0036	1.25	0.000005	36.3	0.112	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0653	0.0001
HC-9-51	07-Feb-12	51	0.00167	0.0037	1.30	0.000005	37.0	0.129	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0775	0.0001
HC-9-52	14-Feb-12	52	0.00167	0.0037	1.23	0.000005	35.3	0.134	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0836	0.0001
HC-9-53	21-Feb-12	53	0.00166	0.0037	1.15	0.000005	33.6	0.138	0.00002	0.000016	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0898	0.0001
HC-9-54	28-Feb-12	54	0.00166	0.0038	1.08	0.000005	31.9	0.143	0.00002	0.000017	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0959	0.0001
HC-9-55	06-Mar-12	55	0.00165	0.0038	1.00	0.000005	30.2	0.147	0.00002	0.000018	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.1020	0.0001
HC-9-56	13-Mar-12	56	0.00175	0.0037	1.05	0.000005	29.0	0.152	0.00002	0.000019	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.1065	0.0001
HC-9-57	20-Mar-12	57	0.00184	0.0036	1.10	0.000005	27.8	0.158	0.00002	0.000020	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.1110	0.0001
HC-9-58	27-Mar-12	58	0.00194	0.0035	1.15	0.000005	26.5	0.163	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1155	0.0001
HC-9-59	03-Apr-12	59	0.00203	0.0035	1.20	0.000005	25.3	0.168	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1200	0.0001
HC-9-60	10-Apr-12	60	0.00209	0.0033	1.23	0.000005	24.7	0.169	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1268	0.0001
HC-9-61	17-Apr-12	61	0.00215	0.0032	1.26	0.000005	24.2	0.170	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1335	0.0001
HC-9-62	24-Apr-12	62	0.00221	0.0031	1.29	0.000005	23.6	0.170	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1403	0.0001
HC-9-63	01-May-12	63	0.00227	0.0030	1.32	0.000005	23.0	0.171	0.00002	0.000024	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1470	0.0001
HC-9-64	08-May-12	64	0.00224	0.0029	1.30	0.000005	21.9	0.170	0.00002	0.000024	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1488	0.0001
HC-9-65	15-May-12	65	0.00222	0.0029	1.27	0.000005	20.7	0.169	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1505	0.0001
HC-9-66	22-May-12	66	0.00219	0.0028	1.25	0.000005	19.6	0.167	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.1523	0.0001
HC-9-67	29-May-12	67	0.00216	0.0028	1.22	0.000005	18.4	0.166	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.1540	0.0001
HC-9-68	05-Jun-12	68	0.00233	0.0028	1.27	0.000005	18.0	0.173	0.00002	0.000024	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.1638	0.0001
HC-9-69	12-Jun-12	69	0.00251	0.0028	1.33	0.000005	17.5	0.181	0.00002	0.000025	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.1735	0.0001
HC-9-70	19-Jun-12	70	0.00268	0.0028	1.38	0.000005	17.1	0.188	0.00002	0.000026	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.1833	0.0001
HC-9-71	26-Jun-12	71	0.00285	0.0029	1.43	0.000005	16.6	0.195	0.00002	0.000027	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.1930	0.0001
HC-9-72	03-Jul-12	72	0.00303	0.0029	1.50	0.000005	16.6	0.205	0.00002	0.000030	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.2180	0.0001
HC-9-73	10-Jul-12	73	0.00321	0.0029	1.57	0.000005	16.6	0.215	0.00002	0.000032	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.2430	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-9-74	17-Jul-12	74	0.00338	0.0029	1.64	0.000005	16.6	0.225	0.00002	0.000035	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.2680	0.0001
HC-9-75	24-Jul-12	75	0.00356	0.0029	1.71	0.000005	16.6	0.235	0.00002	0.000037	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.2930	0.0001
HC-9-76	31-Jul-12	76	0.00400	0.0031	1.86	0.000005	16.6	0.279	0.00002	0.000043	0.000008	0.0002	0.0005	0.00001	0.00020	0.0002	0.3830	0.0001
HC-9-77	07-Aug-12	77	0.00444	0.0033	2.01	0.000005	16.5	0.322	0.00002	0.000049	0.000010	0.0002	0.0005	0.00001	0.00026	0.0002	0.4730	0.0001
HC-9-78	14-Aug-12	78	0.00487	0.0035	2.16	0.000005	16.5	0.366	0.00002	0.000055	0.000013	0.0002	0.0005	0.00001	0.00031	0.0002	0.5630	0.0001
HC-9-79	21-Aug-12	79	0.00531	0.0037	2.31	0.000005	16.4	0.409	0.00002	0.000061	0.000015	0.0002	0.0005	0.00001	0.00037	0.0002	0.6530	0.0001
HC-9-80	28-Aug-12	80	0.00572	0.0041	3.04	0.000005	16.2	0.492	0.00002	0.000067	0.000044	0.0002	0.0005	0.00001	0.00059	0.0002	0.8248	0.0001
HC-9-81	04-Sep-12	81	0.00612	0.0046	3.77	0.000006	16.1	0.575	0.00002	0.000072	0.000074	0.0002	0.0005	0.00001	0.00081	0.0002	0.9965	0.0001
HC-9-82	11-Sep-12	82	0.00653	0.0050	4.49	0.000006	15.9	0.658	0.00002	0.000078	0.000103	0.0002	0.0005	0.00001	0.00102	0.0002	1.1683	0.0001
HC-9-83	18-Sep-12	83	0.00693	0.0055	5.22	0.000006	15.7	0.741	0.00002	0.000083	0.000132	0.0002	0.0005	0.00001	0.00124	0.0002	1.3400	0.0001
HC-9-84	25-Sep-12	84	0.00737	0.0055	5.49	0.000007	14.6	0.753	0.00002	0.000091	0.000161	0.0003	0.0005	0.00001	0.00139	0.0002	1.4075	0.0001
HC-9-85	02-Oct-12	85	0.00782	0.0054	5.76	0.000007	13.5	0.765	0.00002	0.000100	0.000189	0.0004	0.0005	0.00001	0.00155	0.0002	1.4750	0.0001
HC-9-86	09-Oct-12	86	0.00826	0.0053	6.02	0.000008	12.3	0.777	0.00002	0.000108	0.000218	0.0004	0.0005	0.00001	0.00170	0.0002	1.5425	0.0001
HC-9-87	16-Oct-12	87	0.00870	0.0053	6.29	0.000008	11.2	0.789	0.00002	0.000116	0.000246	0.0005	0.0005	0.00001	0.00185	0.0002	1.6100	0.0001
HC-9-88	23-Oct-12	88	0.00874	0.0048	6.57	0.000007	10.1	0.770	0.00002	0.000117	0.000267	0.0004	0.0005	0.00001	0.00187	0.0002	1.5800	0.0001
HC-9-89	30-Oct-12	89	0.00879	0.0043	6.84	0.000007	9.0	0.751	0.00002	0.000119	0.000288	0.0004	0.0005	0.00001	0.00189	0.0002	1.5500	0.0001
HC-9-90	06-Nov-12	90	0.00883	0.0038	7.12	0.000006	7.8	0.731	0.00002	0.000120	0.000308	0.0003	0.0005	0.00001	0.00190	0.0002	1.5200	0.0001
HC-9-91	13-Nov-12	91	0.00887	0.0034	7.39	0.000005	6.7	0.712	0.00002	0.000121	0.000329	0.0002	0.0005	0.00001	0.00192	0.0002	1.4900	0.0001
HC-9-92	20-Nov-12	92	0.00851	0.0032	7.55	0.000005	5.9	0.684	0.00002	0.000119	0.000324	0.0002	0.0005	0.00001	0.00191	0.0002	1.4325	0.0001
HC-9-93	27-Nov-12	93	0.00816	0.0030	7.72	0.000005	5.1	0.656	0.00002	0.000116	0.000320	0.0002	0.0005	0.00001	0.00191	0.0002	1.3750	0.0001
HC-9-94	04-Dec-12	94	0.00780	0.0029	7.88	0.000005	4.3	0.628	0.00002	0.000114	0.000315	0.0002	0.0005	0.00001	0.00190	0.0002	1.3175	0.0001
HC-9-95	11-Dec-12	95	0.00744	0.0027	8.04	0.000005	3.5	0.600	0.00002	0.000111	0.000310	0.0002	0.0005	0.00001	0.00189	0.0002	1.2600	0.0001
HC-9-96	18-Dec-12	96	0.00764	0.0028	8.03	0.000013	3.3	0.601	0.00002	0.000113	0.000350	0.0002	0.0005	0.00001	0.00201	0.0002	1.2775	0.0001
HC-9-97	25-Dec-12	97	0.00783	0.0028	8.02	0.000022	3.0	0.602	0.00002	0.000116	0.000391	0.0002	0.0005	0.00001	0.00213	0.0002	1.2950	0.0001
HC-9-98	01-Jan-13	98	0.00803	0.0029	8.01	0.000030	2.7	0.602	0.00002	0.000118	0.000431	0.0002	0.0005	0.00001	0.00225	0.0002	1.3125	0.0001
HC-9-99	08-Jan-13	99	0.00822	0.0029	8.00	0.000038	2.4	0.603	0.00002	0.000120	0.000471	0.0002	0.0005	0.00001	0.00237	0.0002	1.3300	0.0001
HC-9-100	15-Jan-13	100	0.00805	0.0028	7.77	0.000037	2.2	0.569	0.00002	0.000118	0.000449	0.0002	0.0005	0.00001	0.00224	0.0002	1.2500	0.0001
HC-9-101	22-Jan-13	101	0.00789	0.0026	7.54	0.000036	2.0	0.534	0.00002	0.000116	0.000427	0.0002	0.0005	0.00001	0.00211	0.0002	1.1700	0.0001
HC-9-102	29-Jan-13	102	0.00772	0.0024	7.31	0.000034	1.7	0.500	0.00002	0.000114	0.000404	0.0002	0.0005	0.00001	0.00197	0.0002	1.0900	0.0001
HC-9-103	05-Feb-13	103	0.00755	0.0023	7.08	0.000033	1.5	0.465	0.00002	0.000112	0.000382	0.0002	0.0005	0.00001	0.00184	0.0002	1.0100	0.0001
HC-9-104	12-Feb-13	104	0.00707	0.0020	6.41	0.000032	1.2	0.405	0.00002	0.000105	0.000360	0.0002	0.0005	0.00001	0.00169	0.0003	0.9028	0.0001
HC-9-105	19-Feb-13	105	0.00658	0.0018	5.75	0.000031	1.0	0.345	0.00002	0.000099	0.000338	0.0002	0.0005	0.00001	0.00153	0.0003	0.7955	0.0001
HC-9-106	26-Feb-13	106	0.00610	0.0016	5.08	0.000030	0.8	0.284	0.00002	0.000092	0.000315	0.0002	0.0005	0.00001	0.00138	0.0004	0.6883	0.0001
HC-9-107	05-Mar-13	107	0.00561	0.0013	4.41	0.000029	0.6	0.224	0.00002	0.000085	0.000293	0.0002	0.0005	0.00001	0.00122	0.0005	0.5810	0.0001
HC-9-108	12-Mar-13	108	0.00590	0.0014	5.18	0.000029	0.6	0.251	0.00002	0.000089	0.000295	0.0002	0.0005	0.00001	0.00131	0.0004	0.6353	0.0001
HC-9-109	19-Mar-13	109	0.00620	0.0016	5.96	0.000030	0.7	0.279	0.00002	0.000094	0.000297	0.0002	0.0005	0.00001	0.00139	0.0003	0.6895	0.0001
HC-9-110	26-Mar-13	110	0.00649	0.0017	6.73	0.000030	0.8	0.306	0.00002	0.000098	0.000299	0.0002	0.0005	0.00001	0.00148	0.0003	0.7438	0.0001
HC-9-111	02-Apr-13	111	0.00678	0.0018	7.50	0.000030	0.8	0.333	0.00002	0.000102	0.000301	0.0002	0.0005	0.00001	0.00156	0.0002	0.7980	0.0001
HC-9-112	09-Apr-13	112	0.00678	0.0018	7.36	0.000028	0.8	0.327	0.00002	0.000100	0.000301	0.0002	0.0005	0.00001	0.00156	0.0002	0.7935	0.0001
HC-9-113	16-Apr-13	113	0.00678	0.0018	7.22	0.000026	0.8	0.322	0.00002	0.000098	0.000301	0.0002	0.0005	0.00001	0.00155	0.0002	0.7890	0.0001
HC-9-114	23-Apr-13	114	0.00678	0.0018	7.08	0.000023	0.7	0.316	0.00002	0.000095	0.000300	0.0002	0.0005	0.00001	0.00155	0.0002	0.7845	0.0001
HC-9-115	30-Apr-13	115	0.00678	0.0018	6.94	0.000021	0.7	0.310	0.00002	0.000093	0.000300	0.0002	0.0005	0.00001	0.00154	0.0002	0.7800	0.0001
HC-9-116	07-May-13	116	0.00663	0.0017	6.90	0.000024	0.7	0.300	0.00002	0.000093	0.000283	0.0002	0.0005	0.00001	0.00150	0.0004	0.7453	0.0001
HC-9-117	14-May-13	117	0.00648	0.0017	6.86	0.000026	0.6	0.290	0.00002	0.000093	0.000267	0.0002	0.0005	0.00001	0.00146	0.0006	0.7105	0.0001
HC-9-118	21-May-13	118	0.00632	0.0016	6.81	0.000029	0.6	0.280	0.00002	0.000092	0.000250	0.0002	0.0005	0.00001	0.00141	0.0008	0.6758	0.0001
HC-9-119	28-May-13	119	0.00617	0.0016	6.77	0.000031	0.6	0.270	0.00002	0.000092	0.000233	0.0002	0.0005	0.00001	0.00137	0.0010	0.6410	0.0001
HC-9-120	04-Jun-13	120	0.00622	0.0016	6.72	0.000029	0.6	0.265	0.00002	0.000091	0.000228	0.0005	0.0005	0.00001	0.00136	0.0008	0.6328	0.0001
HC-9-121	11-Jun-13	121	0.00628	0.0016	6.67	0.000027	0.6	0.260	0.00002	0.000091	0.000223	0.0007	0.0005	0.00001	0.00134	0.0006	0.6245	0.0001
HC-9-122	18-Jun-13	122	0.00633	0.0015	6.61	0.000025	0.6	0.255	0.00002	0.000090	0.000218	0.0010	0.0005	0.00001	0.00133	0.0004	0.6163	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-9-123	25-Jun-13	123	0.00638	0.0015	6.56	0.000023	0.6	0.250	0.00002	0.000089	0.000213	0.0012	0.0005	0.00001	0.00131	0.0002	0.6080	0.0001
HC-9-124	02-Jul-13	124	0.00625	0.0015	6.46	0.000025	0.5	0.244	0.00002	0.000088	0.000219	0.0010	0.0005	0.00001	0.00129	0.0002	0.5935	0.0001
HC-9-125	09-Jul-13	125	0.00611	0.0015	6.36	0.000028	0.5	0.238	0.00002	0.000087	0.000224	0.0007	0.0005	0.00001	0.00127	0.0002	0.5790	0.0001
HC-9-126	16-Jul-13	126	0.00598	0.0014	6.25	0.000030	0.5	0.231	0.00002	0.000086	0.000230	0.0005	0.0005	0.00001	0.00124	0.0002	0.5645	0.0001
HC-9-127	23-Jul-13	127	0.00584	0.0014	6.15	0.000032	0.4	0.225	0.00002	0.000085	0.000235	0.0002	0.0005	0.00001	0.00122	0.0002	0.5500	0.0001
HC-9-128	30-Jul-13	128	0.00573	0.0014	5.99	0.000032	0.4	0.223	0.00002	0.000083	0.000224	0.0002	0.0005	0.00001	0.00120	0.0002	0.5615	0.0001
HC-9-129	06-Aug-13	129	0.00562	0.0014	5.83	0.000032	0.4	0.221	0.00002	0.000080	0.000213	0.0002	0.0005	0.00001	0.00118	0.0002	0.5730	0.0001
HC-9-130	13-Aug-13	130	0.00551	0.0013	5.66	0.000031	0.4	0.219	0.00002	0.000078	0.000202	0.0002	0.0005	0.00001	0.00115	0.0002	0.5845	0.0001
HC-9-131	20-Aug-13	131	0.00540	0.0013	5.50	0.000031	0.4	0.217	0.00002	0.000075	0.000191	0.0002	0.0005	0.00001	0.00113	0.0002	0.5960	0.0001
HC-9-132	27-Aug-13	132	0.00567	0.0013	5.56	0.000033	0.4	0.215	0.00002	0.000083	0.000178	0.0002	0.0005	0.00001	0.00115	0.0002	0.5795	0.0001
HC-9-133	03-Sep-13	133	0.00594	0.0014	5.62	0.000036	0.4	0.213	0.00002	0.000090	0.000165	0.0002	0.0005	0.00001	0.00117	0.0002	0.5630	0.0001
HC-9-134	10-Sep-13	134	0.00621	0.0014	5.68	0.000038	0.4	0.211	0.00002	0.000098	0.000152	0.0002	0.0006	0.00001	0.00119	0.0002	0.5465	0.0001
HC-9-135	17-Sep-13	135	0.00648	0.0015	5.74	0.000040	0.4	0.209	0.00002	0.000105	0.000139	0.0002	0.0006	0.00001	0.00121	0.0002	0.5300	0.0001
HC-9-136	24-Sep-13	136	0.00618	0.0015	6.01	0.000035	0.4	0.202	0.00002	0.000101	0.000131	0.0002	0.0006	0.00001	0.00117	0.0002	0.5268	0.0001
HC-9-137	01-Oct-13	137	0.00589	0.0015	6.29	0.000030	0.4	0.196	0.00002	0.000098	0.000123	0.0002	0.0005	0.00001	0.00113	0.0002	0.5235	0.0001
HC-9-138	08-Oct-13	138	0.00559	0.0015	6.56	0.000024	0.4	0.189	0.00002	0.000094	0.000114	0.0002	0.0005	0.00001	0.00108	0.0002	0.5203	0.0001
HC-9-139	15-Oct-13	139	0.00529	0.0015	6.83	0.000019	0.4	0.182	0.00002	0.000090	0.000106	0.0002	0.0005	0.00001	0.00104	0.0002	0.5170	0.0001
HC-9-140	22-Oct-13	140	0.00544	0.0015	6.84	0.000017	0.4	0.183	0.00002	0.000089	0.000103	0.0002	0.0005	0.00001	0.00105	0.0002	0.5070	0.0001
HC-9-141	29-Oct-13	141	0.00558	0.0014	6.85	0.000014	0.4	0.185	0.00002	0.000088	0.000101	0.0002	0.0005	0.00001	0.00105	0.0002	0.4970	0.0001
HC-9-142	05-Nov-13	142	0.00573	0.0014	6.86	0.000012	0.4	0.186	0.00002	0.000087	0.000098	0.0002	0.0005	0.00001	0.00106	0.0002	0.4870	0.0001
HC-9-143	12-Nov-13	143	0.00587	0.0014	6.87	0.000009	0.4	0.187	0.00002	0.000086	0.000095	0.0002	0.0005	0.00001	0.00106	0.0002	0.4770	0.0001
HC-9-144	19-Nov-13	144	0.00568	0.0014	6.61	0.000014	0.4	0.182	0.00002	0.000084	0.000102	0.0002	0.0005	0.00001	0.00104	0.0002	0.4683	0.0001
HC-9-145	26-Nov-13	145	0.00549	0.0013	6.35	0.000020	0.4	0.177	0.00002	0.000082	0.000110	0.0002	0.0005	0.00001	0.00102	0.0002	0.4595	0.0001
HC-9-146	03-Dec-13	146	0.00530	0.0013	6.08	0.000025	0.4	0.171	0.00002	0.000080	0.000117	0.0002	0.0005	0.00001	0.00100	0.0002	0.4508	0.0001
HC-9-147	10-Dec-13	147	0.00511	0.0012	5.82	0.000030	0.4	0.166	0.00002	0.000078	0.000124	0.0002	0.0005	0.00001	0.00098	0.0002	0.4420	0.0001
HC-9-148	17-Dec-13	148	0.00505	0.0012	5.69	0.000030	0.3	0.163	0.00002	0.000077	0.000128	0.0002	0.0005	0.00001	0.00096	0.0002	0.4290	0.0001
HC-9-149	24-Dec-13	149	0.00499	0.0012	5.55	0.000030	0.3	0.160	0.00002	0.000077	0.000132	0.0002	0.0005	0.00001	0.00094	0.0002	0.4160	0.0001
HC-9-150	31-Dec-13	150	0.00492	0.0012	5.42	0.000030	0.3	0.157	0.00002	0.000076	0.000136	0.0002	0.0005	0.00001	0.00092	0.0002	0.4030	0.0001
HC-9-151	07-Jan-14	151	0.00486	0.0012	5.28	0.000030	0.3	0.154	0.00002	0.000075	0.000140	0.0002	0.0005	0.00001	0.00090	0.0002	0.3900	0.0001
HC-9-152	14-Jan-14	152	0.00477	0.0012	5.21	0.000029	0.3	0.150	0.00002	0.000074	0.000139	0.0002	0.0005	0.00001	0.00088	0.0002	0.3765	0.0001
HC-9-153	21-Jan-14	153	0.00467	0.0012	5.14	0.000028	0.3	0.146	0.00002	0.000073	0.000138	0.0002	0.0005	0.00001	0.00086	0.0002	0.3630	0.0001
HC-9-154	28-Jan-14	154	0.00458	0.0012	5.06	0.000026	0.3	0.142	0.00002	0.000071	0.000136	0.0002	0.0005	0.00001	0.00083	0.0002	0.3495	0.0001
HC-9-155	04-Feb-14	155	0.00448	0.0012	4.99	0.000025	0.3	0.138	0.00002	0.000070	0.000135	0.0002	0.0005	0.00001	0.00081	0.0002	0.3360	0.0001
HC-9-156	11-Feb-14	156	0.00445	0.0012	4.83	0.000028	0.3	0.136	0.00002	0.000071	0.000134	0.0002	0.0005	0.00001	0.00082	0.0002	0.3368	0.0001
HC-9-157	18-Feb-14	157	0.00441	0.0012	4.68	0.000031	0.3	0.135	0.00002	0.000072	0.000133	0.0002	0.0005	0.00001	0.00083	0.0002	0.3375	0.0001
HC-9-158	25-Feb-14	158	0.00438	0.0012	4.52	0.000034	0.3	0.133	0.00002	0.000073	0.000131	0.0002	0.0005	0.00001	0.00083	0.0002	0.3383	0.0001
HC-9-159	04-Mar-14	159	0.00434	0.0012	4.36	0.000037	0.3	0.131	0.00002	0.000074	0.000130	0.0002	0.0005	0.00001	0.00084	0.0002	0.3390	0.0001
HC-9-160	11-Mar-14	160	0.00440	0.0012	4.44	0.000038	0.3	0.128	0.00002	0.000074	0.000126	0.0002	0.0005	0.00001	0.00082	0.0002	0.3315	0.0001
HC-9-161	18-Mar-14	161	0.00446	0.0012	4.52	0.000038	0.3	0.125	0.00002	0.000074	0.000122	0.0002	0.0005	0.00001	0.00080	0.0002	0.3240	0.0001
HC-9-162	25-Mar-14	162	0.00452	0.0012	4.59	0.000039	0.3	0.122	0.00002	0.000074	0.000118	0.0002	0.0005	0.00001	0.00079	0.0002	0.3165	0.0001
HC-9-163	01-Apr-14	163	0.00458	0.0012	4.67	0.000039	0.2	0.119	0.00002	0.000074	0.000114	0.0002	0.0005	0.00001	0.00077	0.0002	0.3090	0.0001
HC-9-164	08-Apr-14	164	0.00455	0.0012	4.73	0.000036	0.2	0.121	0.00002	0.000074	0.000116	0.0002	0.0005	0.00001	0.00077	0.0002	0.3113	0.0001
HC-9-165	15-Apr-14	165	0.00452	0.0012	4.78	0.000032	0.3	0.123	0.00002	0.000073	0.000118	0.0002	0.0005	0.00001	0.00078	0.0002	0.3135	0.0001
HC-9-166	22-Apr-14	166	0.00449	0.0012	4.84	0.000029	0.3	0.124	0.00002	0.000073	0.000119	0.0002	0.0005	0.00001	0.00079	0.0002	0.3158	0.0001
HC-9-167	29-Apr-14	167	0.00446	0.0012	4.89	0.000025	0.3	0.126	0.00002	0.000072	0.000121	0.0002	0.0005	0.00001	0.00079	0.0002	0.3180	0.0001
<b>Mean all weeks</b>			<b>0.00385</b>	<b>0.0022</b>	<b>3.73</b>	<b>0.000016</b>	<b>12.2</b>	<b>0.211</b>	<b>0.00002</b>	<b>0.000054</b>	<b>0.000115</b>	<b>0.0002</b>	<b>0.0006</b>	<b>0.00010</b>	<b>0.00072</b>	<b>0.0008</b>	<b>0.4268</b>	<b>0.0001</b>

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC10 Hulcross Mudstone																		
HC-10-0	05-Apr-11	0	0.00094	0.0036	2.00	0.000007	40.4	0.015	0.00002	0.000009	0.000005	0.0001	0.0018	0.00049	0.00014	0.0225	0.0014	0.0001
HC-10-1	12-Apr-11	1	0.00099	0.0068	1.30	0.000079	72.1	0.038	0.00002	0.000011	0.000005	0.0000	0.0005	0.00059	0.00022	0.0048	0.0008	0.0001
HC-10-2	19-Apr-11	2	0.00089	0.0049	1.20	0.000005	60.0	0.037	0.00002	0.000007	0.000005	0.0000	0.0005	0.00037	0.00035	0.0042	0.0010	0.0001
HC-10-3	26-Apr-11	3	0.00066	0.0027	1.10	0.000005	46.8	0.018	0.00002	0.000006	0.000005	0.0000	0.0007	0.00018	0.00029	0.0045	0.0010	0.0001
HC-10-4	03-May-11	4	0.00070	0.0023	1.20	0.000005	46.2	0.017	0.00002	0.000006	0.000005	0.0001	0.0007	0.00017	0.00035	0.0051	0.0008	0.0001
HC-10-5	10-May-11	5	0.00068	0.0018	1.20	0.000005	48.6	0.018	0.00002	0.000006	0.000005	0.0000	0.0005	0.00014	0.00036	0.0050	0.0009	0.0001
HC-10-6	17-May-11	6	0.00078	0.0017	1.20	0.000005	41.3	0.017	0.00002	0.000006	0.000005	0.0000	0.0007	0.00012	0.00033	0.0052	0.0013	0.0001
HC-10-7	24-May-11	7	0.00101	0.0013	1.40	0.000005	41.3	0.024	0.00002	0.000008	0.000007	0.0001	0.0018	0.00011	0.00041	0.0050	0.0012	0.0001
HC-10-8	31-May-11	8	0.00070	0.0013	1.20	0.000005	41.6	0.018	0.00002	0.000007	0.000005	0.0001	0.0010	0.00012	0.00046	0.0048	0.0011	0.0001
HC-10-9	07-Jun-11	9	0.00059	0.0011	1.00	0.000005	36.4	0.015	0.00002	0.000004	0.000005	0.0001	0.0007	0.00010	0.00035	0.0042	0.0009	0.0001
HC-10-10	14-Jun-11	10	0.00068	0.0010	1.20	0.000005	32.6	0.017	0.00002	0.000005	0.000005	0.0001	0.0016	0.00009	0.00032	0.0038	0.0012	0.0001
HC-10-11	21-Jun-11	11	0.00064	0.0010	1.10	0.000005	34.8	0.015	0.00002	0.000003	0.000005	0.0001	0.0008	0.00007	0.00033	0.0037	0.0016	0.0001
HC-10-12	28-Jun-11	12	0.00059	0.0009	1.00	0.000005	36.2	0.016	0.00002	0.000003	0.000005	0.0001	0.0009	0.00001	0.00034	0.0035	0.0018	0.0001
HC-10-13	05-Jul-11	13	0.00051	0.0009	0.90	0.000005	33.2	0.023	0.00002	0.000004	0.000005	0.0001	0.0005	0.00007	0.00032	0.0029	0.0008	0.0001
HC-10-14	12-Jul-11	14	0.00062	0.0008	1.00	0.000005	31.4	0.021	0.00002	0.000004	0.000006	0.0000	0.0009	0.00005	0.00032	0.0031	0.0011	0.0001
HC-10-15	19-Jul-11	15	0.00074	0.0009	0.90	0.000005	29.9	0.037	0.00002	0.000005	0.000005	0.0001	0.0005	0.00004	0.00029	0.0021	0.0021	0.0001
HC-10-16	26-Jul-11	16	0.00050	0.0008	0.80	0.000005	23.6	0.019	0.00002	0.000003	0.000005	0.0000	0.0005	0.00003	0.00023	0.0027	0.0008	0.0001
HC-10-17	02-Aug-11	17	0.00055	0.0009	0.80	0.000005	29.1	0.021	0.00002	0.000004	0.000005	0.0000	0.0005	0.00002	0.00026	0.0028	0.0012	0.0001
HC-10-18	09-Aug-11	18	0.00062	0.0009	0.80	0.000005	29.2	0.025	0.00002	0.000005	0.000005	0.0001	0.0009	0.00004	0.00030	0.0024	0.0157	0.0001
HC-10-19	16-Aug-11	19	0.00042	0.0006	0.60	0.000005	15.2	0.014	0.00002	0.000004	0.000005	0.0001	0.0010	0.00001	0.00014	0.0019	0.0030	0.0001
HC-10-20	23-Aug-11	20	0.00043	0.0006	0.60	0.000005	16.1	0.017	0.00002	0.000004	0.000005	0.0001	0.0009	0.00001	0.00016	0.0018	0.0025	0.0001
HC-10-21	30-Aug-11	21	0.00045	0.0007	0.60	0.000005	17.0	0.021	0.00002	0.000003	0.000005	0.0001	0.0008	0.00002	0.00018	0.0018	0.0019	0.0001
HC-10-22	06-Sep-11	22	0.00046	0.0008	0.60	0.000005	17.8	0.024	0.00002	0.000003	0.000005	0.0001	0.0006	0.00002	0.00020	0.0017	0.0014	0.0001
HC-10-23	13-Sep-11	23	0.00047	0.0008	0.60	0.000005	18.7	0.027	0.00002	0.000002	0.000005	0.0001	0.0005	0.00002	0.00021	0.0016	0.0008	0.0001
HC-10-24	20-Sep-11	24	0.00054	0.0009	0.65	0.000005	18.7	0.028	0.00002	0.000003	0.000005	0.0001	0.0006	0.00002	0.00020	0.0017	0.0008	0.0001
HC-10-25	27-Sep-11	25	0.00060	0.0009	0.70	0.000005	18.8	0.030	0.00002	0.000003	0.000005	0.0001	0.0007	0.00002	0.00019	0.0018	0.0009	0.0001
HC-10-26	04-Oct-11	26	0.00067	0.0009	0.75	0.000005	18.8	0.031	0.00002	0.000004	0.000005	0.0001	0.0008	0.00001	0.00018	0.0019	0.0009	0.0001
HC-10-27	11-Oct-11	27	0.00073	0.0009	0.80	0.000005	18.8	0.033	0.00002	0.000004	0.000005	0.0001	0.0009	0.00001	0.00017	0.0020	0.0009	0.0001
HC-10-28	18-Oct-11	28	0.00073	0.0010	0.78	0.000005	19.4	0.044	0.00002	0.000005	0.000005	0.0001	0.0009	0.00001	0.00017	0.0018	0.0009	0.0001
HC-10-29	25-Oct-11	29	0.00074	0.0010	0.75	0.000005	20.1	0.055	0.00002	0.000005	0.000005	0.0001	0.0009	0.00001	0.00016	0.0015	0.0009	0.0001
HC-10-30	01-Nov-11	30	0.00074	0.0010	0.73	0.000005	20.7	0.066	0.00002	0.000006	0.000005	0.0001	0.0008	0.00001	0.00016	0.0013	0.0008	0.0001
HC-10-31	08-Nov-11	31	0.00074	0.0011	0.70	0.000005	21.3	0.077	0.00002	0.000006	0.000005	0.0002	0.0008	0.00001	0.00015	0.0010	0.0008	0.0001
HC-10-32	15-Nov-11	32	0.00078	0.0011	0.65	0.000005	21.2	0.083	0.00002	0.000006	0.000005	0.0002	0.0007	0.00001	0.00014	0.0009	0.0009	0.0001
HC-10-33	22-Nov-11	33	0.00081	0.0012	0.60	0.000005	21.1	0.090	0.00002	0.000006	0.000005	0.0002	0.0007	0.00001	0.00014	0.0009	0.0011	0.0001
HC-10-34	29-Nov-11	34	0.00085	0.0013	0.55	0.000005	20.9	0.096	0.00002	0.000005	0.000005	0.0002	0.0006	0.00001	0.00013	0.0008	0.0012	0.0001
HC-10-35	06-Dec-11	35	0.00088	0.0014	0.50	0.000005	20.8	0.103	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00012	0.0007	0.0013	0.0001
HC-10-36	13-Dec-11	36	0.00097	0.0014	0.53	0.000005	20.4	0.117	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00013	0.0007	0.0013	0.0001
HC-10-37	20-Dec-11	37	0.00106	0.0014	0.55	0.000005	20.0	0.131	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00013	0.0007	0.0012	0.0001
HC-10-38	27-Dec-11	38	0.00114	0.0013	0.58	0.000005	19.5	0.144	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00014	0.0006	0.0012	0.0001
HC-10-39	03-Jan-12	39	0.00123	0.0013	0.60	0.000005	19.1	0.158	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00014	0.0006	0.0011	0.0001
HC-10-40	10-Jan-12	40	0.00130	0.0013	0.58	0.000005	18.0	0.168	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00015	0.0006	0.0022	0.0001
HC-10-41	17-Jan-12	41	0.00137	0.0013	0.55	0.000005	16.8	0.179	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00015	0.0006	0.0033	0.0001
HC-10-42	24-Jan-12	42	0.00144	0.0013	0.53	0.000005	15.7	0.189	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00015	0.0005	0.0043	0.0001
HC-10-43	31-Jan-12	43	0.00151	0.0013	0.50	0.000005	14.5	0.199	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00016	0.0005	0.0054	0.0001
HC-10-44	07-Feb-12	44	0.00154	0.0013	0.53	0.000005	13.8	0.202	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00014	0.0005	0.0042	0.0001
HC-10-45	14-Feb-12	45	0.00156	0.0013	0.55	0.000005	13.0	0.205	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00013	0.0004	0.0030	0.0001
HC-10-46	21-Feb-12	46	0.00159	0.0013	0.58	0.000005	12.3	0.207	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00011	0.0004	0.0018	0.0001
HC-10-47	28-Feb-12	47	0.00161	0.0013	0.60	0.000005	11.5	0.210	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0003	0.0006	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-10-48	06-Mar-12	48	0.00166	0.0013	0.60	0.000005	10.7	0.206	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00009	0.0003	0.0006	0.0001
HC-10-49	13-Mar-12	49	0.00170	0.0012	0.60	0.000005	9.9	0.203	0.00002	0.000012	0.000005	0.0002	0.0005	0.00002	0.00009	0.0003	0.0006	0.0001
HC-10-50	20-Mar-12	50	0.00175	0.0012	0.60	0.000005	9.2	0.199	0.00002	0.000013	0.000005	0.0002	0.0005	0.00002	0.00009	0.0002	0.0005	0.0001
HC-10-51	27-Mar-12	51	0.00179	0.0012	0.60	0.000005	8.4	0.195	0.00002	0.000013	0.000005	0.0002	0.0005	0.00002	0.00008	0.0002	0.0005	0.0001
HC-10-52	03-Apr-12	52	0.00189	0.0012	0.60	0.000005	7.9	0.203	0.00002	0.000013	0.000005	0.0002	0.0005	0.00002	0.00009	0.0002	0.0005	0.0001
HC-10-53	10-Apr-12	53	0.00200	0.0013	0.61	0.000005	7.4	0.211	0.00002	0.000013	0.000005	0.0002	0.0005	0.00002	0.00009	0.0002	0.0005	0.0001
HC-10-54	17-Apr-12	54	0.00210	0.0013	0.61	0.000005	7.0	0.218	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0005	0.0001
HC-10-55	24-Apr-12	55	0.00220	0.0013	0.61	0.000005	6.5	0.226	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0005	0.0001
HC-10-56	01-May-12	56	0.00232	0.0013	0.63	0.000005	6.1	0.235	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0005	0.0001
HC-10-57	08-May-12	57	0.00244	0.0013	0.65	0.000005	5.8	0.244	0.00002	0.000013	0.000005	0.0002	0.0005	0.00002	0.00011	0.0003	0.0005	0.0001
HC-10-58	15-May-12	58	0.00255	0.0013	0.66	0.000005	5.4	0.253	0.00002	0.000013	0.000005	0.0002	0.0005	0.00002	0.00012	0.0003	0.0006	0.0001
HC-10-59	22-May-12	59	0.00267	0.0013	0.68	0.000005	5.0	0.262	0.00002	0.000012	0.000005	0.0002	0.0005	0.00003	0.00013	0.0003	0.0006	0.0001
HC-10-60	29-May-12	60	0.00253	0.0013	0.67	0.000005	4.6	0.260	0.00002	0.000013	0.000005	0.0002	0.0005	0.00002	0.00013	0.0003	0.0007	0.0001
HC-10-61	05-Jun-12	61	0.00239	0.0012	0.66	0.000005	4.1	0.258	0.00002	0.000014	0.000005	0.0002	0.0005	0.00002	0.00013	0.0003	0.0007	0.0001
HC-10-62	12-Jun-12	62	0.00224	0.0012	0.64	0.000005	3.7	0.256	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0008	0.0001
HC-10-63	19-Jun-12	63	0.00210	0.0012	0.63	0.000005	3.3	0.254	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0009	0.0001
HC-10-64	26-Jun-12	64	0.00211	0.0012	0.63	0.000005	3.1	0.253	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0008	0.0001
HC-10-65	03-Jul-12	65	0.00212	0.0011	0.63	0.000005	3.0	0.252	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0007	0.0001
HC-10-66	10-Jul-12	66	0.00212	0.0011	0.63	0.000005	2.9	0.251	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0006	0.0001
HC-10-67	17-Jul-12	67	0.00213	0.0011	0.63	0.000005	2.7	0.250	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0006	0.0001
HC-10-68	24-Jul-12	68	0.00222	0.0011	0.63	0.000005	2.5	0.254	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0007	0.0001
HC-10-69	31-Jul-12	69	0.00232	0.0011	0.62	0.000005	2.2	0.258	0.00002	0.000015	0.000005	0.0002	0.0005	0.00002	0.00010	0.0002	0.0009	0.0001
HC-10-70	07-Aug-12	70	0.00241	0.0011	0.62	0.000005	2.0	0.262	0.00002	0.000014	0.000005	0.0002	0.0005	0.00002	0.00011	0.0002	0.0010	0.0001
HC-10-71	14-Aug-12	71	0.00250	0.0010	0.61	0.000005	1.7	0.266	0.00002	0.000013	0.000005	0.0002	0.0005	0.00003	0.00012	0.0002	0.0011	0.0001
HC-10-72	21-Aug-12	72	0.00239	0.0010	0.64	0.000005	1.6	0.255	0.00002	0.000014	0.000005	0.0002	0.0005	0.00002	0.00011	0.0003	0.0014	0.0001
HC-10-73	28-Aug-12	73	0.00228	0.0010	0.67	0.000005	1.5	0.244	0.00002	0.000014	0.000005	0.0002	0.0005	0.00002	0.00010	0.0003	0.0016	0.0001
HC-10-74	04-Sep-12	74	0.00216	0.0010	0.70	0.000005	1.4	0.232	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00009	0.0004	0.0018	0.0001
HC-10-75	11-Sep-12	75	0.00205	0.0010	0.73	0.000005	1.3	0.221	0.00002	0.000015	0.000005	0.0003	0.0005	0.00001	0.00008	0.0004	0.0021	0.0001
HC-10-76	18-Sep-12	76	0.00208	0.0010	0.71	0.000005	1.2	0.228	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00008	0.0004	0.0018	0.0001
HC-10-77	25-Sep-12	77	0.00211	0.0010	0.69	0.000005	1.1	0.236	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00009	0.0003	0.0014	0.0001
HC-10-78	02-Oct-12	78	0.00213	0.0011	0.66	0.000005	1.0	0.243	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00010	0.0003	0.0011	0.0001
HC-10-79	09-Oct-12	79	0.00216	0.0011	0.64	0.000005	1.0	0.250	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0008	0.0001
HC-10-80	16-Oct-12	80	0.00222	0.0010	0.62	0.000005	0.9	0.247	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0008	0.0001
HC-10-81	23-Oct-12	81	0.00227	0.0009	0.60	0.000005	0.8	0.244	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0008	0.0001
HC-10-82	30-Oct-12	82	0.00233	0.0009	0.57	0.000005	0.8	0.240	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0008	0.0001
HC-10-83	06-Nov-12	83	0.00238	0.0008	0.55	0.000005	0.7	0.237	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0008	0.0001
HC-10-84	13-Nov-12	84	0.00249	0.0008	0.57	0.000005	0.7	0.238	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0008	0.0001
HC-10-85	20-Nov-12	85	0.00260	0.0009	0.60	0.000005	0.6	0.238	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0008	0.0001
HC-10-86	27-Nov-12	86	0.00271	0.0010	0.62	0.000005	0.6	0.239	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0008	0.0001
HC-10-87	04-Dec-12	87	0.00282	0.0010	0.64	0.000005	0.6	0.239	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0008	0.0001
HC-10-88	11-Dec-12	88	0.00277	0.0010	0.62	0.000005	0.6	0.240	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-10-89	18-Dec-12	89	0.00272	0.0010	0.60	0.000005	0.6	0.240	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0011	0.0001
HC-10-90	25-Dec-12	90	0.00267	0.0009	0.57	0.000005	0.5	0.241	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0012	0.0001
HC-10-91	01-Jan-13	91	0.00262	0.0009	0.55	0.000005	0.5	0.241	0.00002	0.000016	0.000005	0.0002	0.0005	0.00002	0.00009	0.0002	0.0013	0.0001
HC-10-92	08-Jan-13	92	0.00251	0.0010	0.56	0.000005	0.5	0.237	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0012	0.0001
HC-10-93	15-Jan-13	93	0.00240	0.0010	0.57	0.000005	0.5	0.233	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0011	0.0001
HC-10-94	22-Jan-13	94	0.00228	0.0011	0.57	0.000005	0.4	0.228	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0010	0.0001
HC-10-95	29-Jan-13	95	0.00217	0.0011	0.58	0.000005	0.4	0.224	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0009	0.0001
HC-10-96	05-Feb-13	96	0.00218	0.0011	0.58	0.000005	0.4	0.224	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0009	0.0001



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-10-97	12-Feb-13	97	0.00218	0.0010	0.58	0.000005	0.4	0.223	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0010	0.0001
HC-10-98	19-Feb-13	98	0.00219	0.0010	0.57	0.000005	0.4	0.223	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0010	0.0001
HC-10-99	26-Feb-13	99	0.00219	0.0010	0.57	0.000005	0.4	0.222	0.00002	0.000016	0.000005	0.0003	0.0005	0.00001	0.00008	0.0002	0.0011	0.0001
HC-10-100	05-Mar-13	100	0.00227	0.0010	0.56	0.000005	0.4	0.225	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0012	0.0001
HC-10-101	12-Mar-13	101	0.00234	0.0010	0.55	0.000005	0.4	0.228	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0013	0.0001
HC-10-102	19-Mar-13	102	0.00242	0.0010	0.53	0.000005	0.3	0.231	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0014	0.0001
HC-10-103	26-Mar-13	103	0.00249	0.0010	0.52	0.000005	0.3	0.234	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0015	0.0001
HC-10-104	02-Apr-13	104	0.00242	0.0010	0.51	0.000005	0.3	0.231	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0013	0.0001
HC-10-105	09-Apr-13	105	0.00236	0.0010	0.51	0.000005	0.3	0.228	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0012	0.0001
HC-10-106	16-Apr-13	106	0.00229	0.0010	0.50	0.000005	0.3	0.225	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0010	0.0001
HC-10-107	23-Apr-13	107	0.00222	0.0010	0.49	0.000005	0.3	0.222	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0009	0.0001
HC-10-108	30-Apr-13	108	0.00221	0.0010	0.49	0.000005	0.3	0.219	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0015	0.0001
HC-10-109	07-May-13	109	0.00220	0.0010	0.50	0.000005	0.3	0.216	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0022	0.0001
HC-10-110	14-May-13	110	0.00219	0.0010	0.50	0.000005	0.3	0.213	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0029	0.0001
HC-10-111	21-May-13	111	0.00218	0.0010	0.50	0.000005	0.3	0.210	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0036	0.0001
HC-10-112	28-May-13	112	0.00221	0.0010	0.51	0.000005	0.3	0.216	0.00002	0.000019	0.000005	0.0003	0.0005	0.00001	0.00005	0.0002	0.0030	0.0001
HC-10-113	04-Jun-13	113	0.00223	0.0011	0.52	0.000005	0.3	0.221	0.00002	0.000022	0.000005	0.0003	0.0005	0.00001	0.00005	0.0002	0.0024	0.0001
HC-10-114	11-Jun-13	114	0.00226	0.0011	0.53	0.000005	0.3	0.227	0.00002	0.000024	0.000005	0.0004	0.0005	0.00001	0.00006	0.0002	0.0018	0.0001
HC-10-115	18-Jun-13	115	0.00228	0.0012	0.54	0.000005	0.3	0.232	0.00002	0.000026	0.000005	0.0004	0.0005	0.00001	0.00006	0.0002	0.0013	0.0001
HC-10-116	25-Jun-13	116	0.00222	0.0012	0.51	0.000005	0.3	0.230	0.00002	0.000025	0.000005	0.0004	0.0005	0.00001	0.00006	0.0002	0.0013	0.0001
HC-10-117	02-Jul-13	117	0.00217	0.0012	0.48	0.000005	0.3	0.228	0.00002	0.000025	0.000005	0.0003	0.0005	0.00001	0.00006	0.0002	0.0013	0.0001
HC-10-118	09-Jul-13	118	0.00211	0.0011	0.44	0.000005	0.2	0.226	0.00002	0.000024	0.000005	0.0003	0.0005	0.00001	0.00006	0.0002	0.0014	0.0001
HC-10-119	16-Jul-13	119	0.00205	0.0011	0.41	0.000005	0.2	0.224	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0014	0.0001
HC-10-120	23-Jul-13	120	0.00209	0.0011	0.42	0.000005	0.2	0.228	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0014	0.0001
HC-10-121	30-Jul-13	121	0.00214	0.0011	0.43	0.000005	0.2	0.233	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0014	0.0001
HC-10-122	06-Aug-13	122	0.00218	0.0010	0.44	0.000005	0.2	0.237	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0014	0.0001
HC-10-123	13-Aug-13	123	0.00222	0.0010	0.45	0.000005	0.2	0.241	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0014	0.0001
HC-10-124	20-Aug-13	124	0.00223	0.0010	0.46	0.000005	0.2	0.247	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0015	0.0001
HC-10-125	27-Aug-13	125	0.00224	0.0011	0.47	0.000005	0.2	0.252	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0017	0.0001
HC-10-126	03-Sep-13	126	0.00225	0.0011	0.47	0.000005	0.3	0.258	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0018	0.0001
HC-10-127	10-Sep-13	127	0.00226	0.0011	0.48	0.000005	0.3	0.263	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0020	0.0001
HC-10-128	17-Sep-13	128	0.00225	0.0011	0.49	0.000005	0.2	0.260	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0019	0.0001
HC-10-129	24-Sep-13	129	0.00223	0.0011	0.50	0.000005	0.2	0.258	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0018	0.0001
HC-10-130	01-Oct-13	130	0.00222	0.0010	0.51	0.000005	0.2	0.255	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0017	0.0001
HC-10-131	08-Oct-13	131	0.00220	0.0010	0.52	0.000005	0.2	0.252	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0017	0.0001
HC-10-132	15-Oct-13	132	0.00217	0.0010	0.52	0.000005	0.2	0.250	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0017	0.0001
HC-10-133	22-Oct-13	133	0.00214	0.0011	0.52	0.000005	0.2	0.248	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0018	0.0001
HC-10-134	29-Oct-13	134	0.00211	0.0012	0.52	0.000005	0.2	0.246	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0019	0.0001
HC-10-135	05-Nov-13	135	0.00208	0.0012	0.52	0.000005	0.2	0.244	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0020	0.0001
HC-10-136	12-Nov-13	136	0.00212	0.0012	0.50	0.000005	0.2	0.249	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0022	0.0001
HC-10-137	19-Nov-13	137	0.00216	0.0013	0.49	0.000005	0.2	0.253	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0024	0.0001
HC-10-138	26-Nov-13	138	0.00220	0.0013	0.47	0.000005	0.2	0.258	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0025	0.0001
HC-10-139	03-Dec-13	139	0.00224	0.0013	0.45	0.000005	0.2	0.262	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0027	0.0001
HC-10-140	10-Dec-13	140	0.00226	0.0013	0.46	0.000005	0.2	0.273	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0028	0.0001
HC-10-141	17-Dec-13	141	0.00228	0.0013	0.47	0.000005	0.2	0.283	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0029	0.0001
HC-10-142	24-Dec-13	142	0.00230	0.0013	0.48	0.000005	0.2	0.294	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0030	0.0001
HC-10-143	31-Dec-13	143	0.00232	0.0013	0.49	0.000005	0.2	0.304	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0032	0.0001
HC-10-144	07-Jan-14	144	0.00230	0.0013	0.49	0.000005	0.2	0.297	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0032	0.0001
HC-10-145	14-Jan-14	145	0.00227	0.0012	0.49	0.000005	0.2	0.290	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0032	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-10-146	21-Jan-14	146	0.00225	0.0012	0.49	0.000005	0.2	0.282	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0032	0.0001
HC-10-147	28-Jan-14	147	0.00222	0.0011	0.49	0.000005	0.2	0.275	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0032	0.0001
HC-10-148	04-Feb-14	148	0.00223	0.0011	0.48	0.000006	0.2	0.274	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0034	0.0001
HC-10-149	11-Feb-14	149	0.00224	0.0011	0.48	0.000007	0.2	0.274	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0035	0.0001
HC-10-150	18-Feb-14	150	0.00224	0.0012	0.47	0.000007	0.2	0.273	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0037	0.0001
HC-10-151	25-Feb-14	151	0.00225	0.0012	0.46	0.000008	0.2	0.272	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0039	0.0001
HC-10-152	04-Mar-14	152	0.00224	0.0012	0.46	0.000007	0.2	0.270	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0042	0.0001
HC-10-153	11-Mar-14	153	0.00223	0.0012	0.46	0.000007	0.2	0.267	0.00002	0.000024	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0044	0.0001
HC-10-154	18-Mar-14	154	0.00221	0.0012	0.46	0.000006	0.2	0.265	0.00002	0.000024	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0047	0.0001
HC-10-155	25-Mar-14	155	0.00220	0.0012	0.46	0.000005	0.2	0.262	0.00002	0.000024	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0050	0.0001
HC-10-156	01-Apr-14	156	0.00223	0.0013	0.47	0.000005	0.2	0.270	0.00002	0.000025	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0052	0.0001
HC-10-157	08-Apr-14	157	0.00227	0.0013	0.48	0.000005	0.2	0.277	0.00002	0.000026	0.000005	0.0002	0.0006	0.00001	0.00003	0.0002	0.0054	0.0001
HC-10-158	15-Apr-14	158	0.00230	0.0013	0.49	0.000005	0.2	0.285	0.00002	0.000027	0.000005	0.0002	0.0006	0.00001	0.00003	0.0002	0.0056	0.0001
HC-10-159	22-Apr-14	159	0.00233	0.0013	0.50	0.000005	0.2	0.292	0.00002	0.000028	0.000005	0.0002	0.0007	0.00001	0.00003	0.0002	0.0058	0.0001
<b>Mean all weeks</b>			<b>0.00183</b>	<b>0.0012</b>	<b>0.63</b>	<b>0.000006</b>	<b>9.0</b>	<b>0.192</b>	<b>0.00002</b>	<b>0.000015</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0006</b>	<b>0.00003</b>	<b>0.00012</b>	<b>0.0009</b>	<b>0.0018</b>	<b>0.0001</b>
<b>HC11 Hulcross Mudstone</b>																		
HC-11-0	05-Apr-11	0	0.00114	0.0054	2.10	0.000013	45.8	0.022	0.00002	0.000011	0.000016	0.0001	0.0036	0.00043	0.00029	0.0211	0.0043	0.0003
HC-11-1	12-Apr-11	1	0.00118	0.0118	1.50	0.000458	88.6	0.066	0.00002	0.000015	0.000005	0.0000	0.0009	0.00046	0.00058	0.0078	0.0010	0.0001
HC-11-2	19-Apr-11	2	0.00117	0.0074	1.10	0.000005	75.4	0.072	0.00002	0.000015	0.000005	0.0000	0.0005	0.00009	0.00060	0.0027	0.0011	0.0001
HC-11-3	26-Apr-11	3	0.00077	0.0050	1.10	0.000005	64.7	0.045	0.00002	0.000009	0.000005	0.0000	0.0005	0.00007	0.00070	0.0032	0.0011	0.0001
HC-11-4	03-May-11	4	0.00094	0.0037	1.10	0.000005	63.7	0.045	0.00002	0.000009	0.000005	0.0000	0.0005	0.00008	0.00083	0.0034	0.0008	0.0001
HC-11-5	10-May-11	5	0.00093	0.0028	1.10	0.000005	60.4	0.045	0.00002	0.000011	0.000005	0.0000	0.0005	0.00005	0.00082	0.0036	0.0006	0.0001
HC-11-6	17-May-11	6	0.00099	0.0026	1.10	0.000005	54.8	0.043	0.00002	0.000008	0.000005	0.0000	0.0005	0.00006	0.00079	0.0036	0.0011	0.0001
HC-11-7	24-May-11	7	0.00083	0.0020	1.10	0.000005	48.2	0.054	0.00002	0.000008	0.000005	0.0000	0.0005	0.00006	0.00078	0.0028	0.0007	0.0001
HC-11-8	31-May-11	8	0.00067	0.0020	1.10	0.000005	49.9	0.048	0.00002	0.000009	0.000005	0.0000	0.0006	0.00005	0.00091	0.0034	0.0005	0.0001
HC-11-9	07-Jun-11	9	0.00090	0.0018	1.10	0.000005	48.1	0.051	0.00002	0.000007	0.000005	0.0000	0.0006	0.00004	0.00086	0.0030	0.0007	0.0001
HC-11-10	14-Jun-11	10	0.00083	0.0016	1.10	0.000005	41.9	0.053	0.00002	0.000008	0.000005	0.0001	0.0008	0.00004	0.00073	0.0026	0.0016	0.0001
HC-11-11	21-Jun-11	11	0.00083	0.0016	1.00	0.000005	40.4	0.049	0.00002	0.000007	0.000005	0.0000	0.0006	0.00003	0.00068	0.0022	0.0014	0.0001
HC-11-12	28-Jun-11	12	0.00083	0.0015	1.00	0.000005	42.7	0.065	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00073	0.0019	0.0073	0.0001
HC-11-13	05-Jul-11	13	0.00091	0.0014	0.90	0.000005	36.8	0.077	0.00002	0.000008	0.000005	0.0001	0.0005	0.00002	0.00060	0.0016	0.0010	0.0001
HC-11-14	12-Jul-11	14	0.00093	0.0014	0.90	0.000005	35.0	0.089	0.00002	0.000009	0.000005	0.0000	0.0005	0.00002	0.00055	0.0018	0.0014	0.0001
HC-11-15	19-Jul-11	15	0.00096	0.0014	0.90	0.000011	31.7	0.113	0.00002	0.000008	0.000005	0.0000	0.0005	0.00002	0.00038	0.0009	0.0008	0.0001
HC-11-16	26-Jul-11	16	0.00077	0.0016	0.80	0.000005	34.0	0.166	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00034	0.0009	0.0008	0.0001
HC-11-17	02-Aug-11	17	0.00087	0.0016	0.80	0.000005	35.3	0.205	0.00002	0.000009	0.000005	0.0000	0.0005	0.00001	0.00037	0.0007	0.0016	0.0001
HC-11-18	09-Aug-11	18	0.00089	0.0017	0.80	0.000005	30.2	0.221	0.00002	0.000010	0.000005	0.0000	0.0005	0.00001	0.00048	0.0008	0.0063	0.0001
HC-11-19	16-Aug-11	19	0.00066	0.0017	0.70	0.000005	26.1	0.222	0.00002	0.000008	0.000005	0.0000	0.0006	0.00001	0.00043	0.0008	0.0413	0.0001
HC-11-20	23-Aug-11	20	0.00074	0.0018	0.68	0.000005	24.0	0.260	0.00003	0.000009	0.000005	0.0000	0.0006	0.00001	0.00039	0.0007	0.0313	0.0001
HC-11-21	30-Aug-11	21	0.00083	0.0019	0.65	0.000005	21.9	0.298	0.00003	0.000010	0.000005	0.0000	0.0006	0.00001	0.00036	0.0006	0.0214	0.0001
HC-11-22	06-Sep-11	22	0.00091	0.0020	0.63	0.000005	19.8	0.335	0.00004	0.000010	0.000005	0.0000	0.0005	0.00001	0.00032	0.0004	0.0114	0.0001
HC-11-23	13-Sep-11	23	0.00099	0.0022	0.60	0.000005	17.7	0.373	0.00004	0.000011	0.000005	0.0000	0.0005	0.00001	0.00029	0.0003	0.0014	0.0001
HC-11-24	20-Sep-11	24	0.00098	0.0021	0.63	0.000005	16.1	0.376	0.00004	0.000011	0.000005	0.0000	0.0005	0.00001	0.00029	0.0003	0.0014	0.0001
HC-11-25	27-Sep-11	25	0.00097	0.0020	0.65	0.000005	14.4	0.379	0.00003	0.000010	0.000005	0.0000	0.0005	0.00001	0.00029	0.0003	0.0014	0.0001
HC-11-26	04-Oct-11	26	0.00095	0.0020	0.68	0.000005	12.8	0.381	0.00003	0.000010	0.000005	0.0000	0.0005	0.00001	0.00029	0.0003	0.0013	0.0001
HC-11-27	11-Oct-11	27	0.00094	0.0019	0.70	0.000005	11.1	0.384	0.00002	0.000009	0.000005	0.0000	0.0005	0.00001	0.00029	0.0003	0.0013	0.0001
HC-11-28	18-Oct-11	28	0.00097	0.0019	0.70	0.000005	10.1	0.402	0.00002	0.000010	0.000005	0.0000	0.0005	0.00001	0.00030	0.0003	0.0015	0.0001
HC-11-29	25-Oct-11	29	0.00101	0.0019	0.70	0.000005	9.2	0.420	0.00002	0.000012	0.000005	0.0001	0.0005	0.00001	0.00032	0.0003	0.0016	0.0001
HC-11-30	01-Nov-11	30	0.00104	0.0018	0.70	0.000005	8.2	0.438	0.00002	0.000013	0.000005	0.0001	0.0005	0.00001	0.00033	0.0002	0.0018	0.0001
HC-11-31	08-Nov-11	31	0.00107	0.0018	0.70	0.000005	7.3	0.456	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00034	0.0002	0.0019	0.0001
HC-11-32	15-Nov-11	32	0.00109	0.0018	0.68	0.000005	6.6	0.446	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00035	0.0002	0.0021	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-11-33	22-Nov-11	33	0.00111	0.0017	0.65	0.000005	5.9	0.436	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00035	0.0003	0.0023	0.0001
HC-11-34	29-Nov-11	34	0.00113	0.0017	0.63	0.000005	5.1	0.426	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00036	0.0003	0.0025	0.0001
HC-11-35	06-Dec-11	35	0.00115	0.0017	0.60	0.000005	4.4	0.416	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00036	0.0003	0.0027	0.0001
HC-11-36	13-Dec-11	36	0.00112	0.0017	0.63	0.000005	4.0	0.407	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00036	0.0003	0.0036	0.0001
HC-11-37	20-Dec-11	37	0.00109	0.0016	0.65	0.000005	3.5	0.398	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00036	0.0003	0.0046	0.0001
HC-11-38	27-Dec-11	38	0.00105	0.0016	0.68	0.000005	3.1	0.389	0.00002	0.000014	0.000005	0.0001	0.0005	0.00001	0.00035	0.0002	0.0055	0.0001
HC-11-39	03-Jan-12	39	0.00102	0.0016	0.70	0.000005	2.7	0.380	0.00002	0.000015	0.000005	0.0001	0.0005	0.00001	0.00035	0.0002	0.0064	0.0001
HC-11-40	10-Jan-12	40	0.00099	0.0016	0.68	0.000005	2.4	0.381	0.00002	0.000014	0.000005	0.0001	0.0005	0.00001	0.00035	0.0003	0.0064	0.0001
HC-11-41	17-Jan-12	41	0.00095	0.0016	0.65	0.000005	2.1	0.382	0.00002	0.000013	0.000005	0.0001	0.0005	0.00001	0.00034	0.0003	0.0064	0.0001
HC-11-42	24-Jan-12	42	0.00092	0.0016	0.63	0.000005	1.9	0.382	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00034	0.0004	0.0064	0.0001
HC-11-43	31-Jan-12	43	0.00088	0.0016	0.60	0.000005	1.6	0.383	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00034	0.0004	0.0064	0.0001
HC-11-44	07-Feb-12	44	0.00092	0.0015	0.60	0.000005	1.5	0.375	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00032	0.0004	0.0054	0.0001
HC-11-45	14-Feb-12	45	0.00096	0.0015	0.60	0.000005	1.4	0.367	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00031	0.0003	0.0043	0.0001
HC-11-46	21-Feb-12	46	0.00099	0.0015	0.60	0.000005	1.3	0.359	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00029	0.0003	0.0033	0.0001
HC-11-47	28-Feb-12	47	0.00103	0.0015	0.60	0.000005	1.2	0.351	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00028	0.0002	0.0022	0.0001
HC-11-48	06-Mar-12	48	0.00103	0.0015	0.60	0.000005	1.1	0.343	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00028	0.0002	0.0023	0.0001
HC-11-49	13-Mar-12	49	0.00103	0.0015	0.60	0.000005	1.0	0.335	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00029	0.0002	0.0025	0.0001
HC-11-50	20-Mar-12	50	0.00103	0.0015	0.60	0.000005	1.0	0.326	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00029	0.0002	0.0026	0.0001
HC-11-51	27-Mar-12	51	0.00103	0.0015	0.60	0.000005	0.9	0.318	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00030	0.0002	0.0027	0.0001
HC-11-52	03-Apr-12	52	0.00098	0.0015	0.61	0.000005	0.8	0.320	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00030	0.0002	0.0026	0.0001
HC-11-53	10-Apr-12	53	0.00092	0.0014	0.63	0.000005	0.8	0.322	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00030	0.0002	0.0025	0.0001
HC-11-54	17-Apr-12	54	0.00087	0.0014	0.64	0.000005	0.8	0.323	0.00002	0.000013	0.000005	0.0003	0.0005	0.00001	0.00030	0.0002	0.0024	0.0001
HC-11-55	24-Apr-12	55	0.00081	0.0013	0.65	0.000005	0.7	0.325	0.00002	0.000013	0.000005	0.0003	0.0005	0.00001	0.00030	0.0002	0.0023	0.0001
HC-11-56	01-May-12	56	0.00088	0.0013	0.65	0.000005	0.7	0.324	0.00002	0.000013	0.000005	0.0003	0.0005	0.00001	0.00028	0.0002	0.0023	0.0001
HC-11-57	08-May-12	57	0.00095	0.0013	0.65	0.000005	0.6	0.322	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00027	0.0002	0.0022	0.0001
HC-11-58	15-May-12	58	0.00102	0.0013	0.64	0.000005	0.6	0.321	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00026	0.0002	0.0022	0.0001
HC-11-59	22-May-12	59	0.00109	0.0014	0.64	0.000005	0.6	0.319	0.00002	0.000015	0.000005	0.0002	0.0005	0.00002	0.00025	0.0002	0.0021	0.0001
HC-11-60	29-May-12	60	0.00100	0.0014	0.63	0.000005	0.5	0.312	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00025	0.0002	0.0020	0.0001
HC-11-61	05-Jun-12	61	0.00090	0.0014	0.61	0.000005	0.5	0.305	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00024	0.0002	0.0020	0.0001
HC-11-62	12-Jun-12	62	0.00081	0.0014	0.60	0.000005	0.5	0.298	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00024	0.0002	0.0019	0.0001
HC-11-63	19-Jun-12	63	0.00071	0.0014	0.58	0.000005	0.4	0.291	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00024	0.0002	0.0018	0.0001
HC-11-64	26-Jun-12	64	0.00077	0.0014	0.58	0.000005	0.4	0.293	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00023	0.0002	0.0020	0.0001
HC-11-65	03-Jul-12	65	0.00083	0.0013	0.57	0.000005	0.4	0.295	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00022	0.0002	0.0021	0.0001
HC-11-66	10-Jul-12	66	0.00089	0.0013	0.57	0.000005	0.4	0.296	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00021	0.0002	0.0023	0.0001
HC-11-67	17-Jul-12	67	0.00095	0.0013	0.56	0.000005	0.4	0.298	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00020	0.0002	0.0024	0.0001
HC-11-68	24-Jul-12	68	0.00093	0.0013	0.56	0.000005	0.4	0.299	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00021	0.0002	0.0026	0.0001
HC-11-69	31-Jul-12	69	0.00091	0.0013	0.56	0.000005	0.4	0.301	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00021	0.0002	0.0027	0.0001
HC-11-70	07-Aug-12	70	0.00088	0.0014	0.55	0.000005	0.3	0.302	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00022	0.0002	0.0029	0.0001
HC-11-71	14-Aug-12	71	0.00086	0.0014	0.55	0.000005	0.3	0.303	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00023	0.0002	0.0031	0.0001
HC-11-72	21-Aug-12	72	0.00090	0.0013	0.59	0.000006	0.3	0.294	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00022	0.0003	0.0031	0.0001
HC-11-73	28-Aug-12	73	0.00093	0.0013	0.62	0.000006	0.3	0.284	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00022	0.0003	0.0032	0.0001
HC-11-74	04-Sep-12	74	0.00097	0.0013	0.66	0.000007	0.3	0.275	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00021	0.0004	0.0033	0.0001
HC-11-75	11-Sep-12	75	0.00101	0.0012	0.69	0.000007	0.3	0.265	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00021	0.0005	0.0033	0.0001
HC-11-76	18-Sep-12	76	0.00093	0.0013	0.66	0.000007	0.3	0.266	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00020	0.0004	0.0031	0.0001
HC-11-77	25-Sep-12	77	0.00086	0.0013	0.62	0.000006	0.3	0.267	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00020	0.0003	0.0029	0.0001
HC-11-78	02-Oct-12	78	0.00078	0.0013	0.59	0.000006	0.3	0.268	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00019	0.0003	0.0027	0.0001
HC-11-79	09-Oct-12	79	0.00070	0.0014	0.55	0.000005	0.3	0.269	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0024	0.0001
HC-11-80	16-Oct-12	80	0.00077	0.0013	0.54	0.000005	0.3	0.268	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0024	0.0001
HC-11-81	23-Oct-12	81	0.00084	0.0012	0.53	0.000005	0.3	0.266	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0025	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-11-82	30-Oct-12	82	0.00091	0.0011	0.52	0.000005	0.3	0.265	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0025	0.0001
HC-11-83	06-Nov-12	83	0.00097	0.0010	0.51	0.000005	0.3	0.263	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0025	0.0001
HC-11-84	13-Nov-12	84	0.00100	0.0010	0.53	0.000005	0.3	0.263	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0024	0.0001
HC-11-85	20-Nov-12	85	0.00103	0.0011	0.54	0.000005	0.3	0.263	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0024	0.0001
HC-11-86	27-Nov-12	86	0.00105	0.0011	0.56	0.000005	0.3	0.263	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0024	0.0001
HC-11-87	04-Dec-12	87	0.00108	0.0011	0.57	0.000005	0.3	0.263	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0024	0.0001
HC-11-88	11-Dec-12	88	0.00105	0.0011	0.56	0.000005	0.3	0.256	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0025	0.0001
HC-11-89	18-Dec-12	89	0.00101	0.0012	0.54	0.000005	0.3	0.248	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0026	0.0001
HC-11-90	25-Dec-12	90	0.00098	0.0012	0.53	0.000005	0.3	0.241	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0027	0.0001
HC-11-91	01-Jan-13	91	0.00095	0.0012	0.51	0.000005	0.3	0.233	0.00002	0.000011	0.000005	0.0002	0.0005	0.00002	0.00014	0.0002	0.0028	0.0001
HC-11-92	08-Jan-13	92	0.00093	0.0012	0.51	0.000005	0.2	0.235	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0026	0.0001
HC-11-93	15-Jan-13	93	0.00091	0.0012	0.52	0.000005	0.2	0.237	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00016	0.0003	0.0024	0.0001
HC-11-94	22-Jan-13	94	0.00090	0.0011	0.52	0.000005	0.2	0.239	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00017	0.0003	0.0023	0.0001
HC-11-95	29-Jan-13	95	0.00088	0.0011	0.52	0.000005	0.2	0.241	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00017	0.0004	0.0021	0.0001
HC-11-96	05-Feb-13	96	0.00089	0.0011	0.52	0.000005	0.2	0.241	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00017	0.0003	0.0020	0.0001
HC-11-97	12-Feb-13	97	0.00090	0.0011	0.52	0.000005	0.2	0.241	0.00002	0.000013	0.000005	0.0003	0.0005	0.00001	0.00017	0.0003	0.0020	0.0001
HC-11-98	19-Feb-13	98	0.00091	0.0011	0.52	0.000005	0.2	0.241	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00018	0.0002	0.0019	0.0001
HC-11-99	26-Feb-13	99	0.00092	0.0011	0.52	0.000005	0.2	0.241	0.00002	0.000012	0.000005	0.0004	0.0005	0.00001	0.00018	0.0002	0.0019	0.0001
HC-11-100	05-Mar-13	100	0.00093	0.0011	0.52	0.000005	0.2	0.252	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00018	0.0002	0.0022	0.0001
HC-11-101	12-Mar-13	101	0.00094	0.0011	0.52	0.000005	0.2	0.264	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00018	0.0002	0.0025	0.0001
HC-11-102	19-Mar-13	102	0.00094	0.0011	0.51	0.000005	0.2	0.275	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00019	0.0002	0.0028	0.0001
HC-11-103	26-Mar-13	103	0.00095	0.0010	0.51	0.000005	0.2	0.286	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00019	0.0002	0.0032	0.0001
HC-11-104	02-Apr-13	104	0.00090	0.0011	0.48	0.000005	0.2	0.275	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0030	0.0001
HC-11-105	09-Apr-13	105	0.00084	0.0011	0.46	0.000005	0.2	0.263	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00018	0.0002	0.0029	0.0001
HC-11-106	16-Apr-13	106	0.00078	0.0012	0.43	0.000005	0.2	0.252	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0027	0.0001
HC-11-107	23-Apr-13	107	0.00072	0.0012	0.40	0.000005	0.2	0.240	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0026	0.0001
HC-11-108	30-Apr-13	108	0.00075	0.0012	0.41	0.000005	0.2	0.235	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0027	0.0001
HC-11-109	07-May-13	109	0.00077	0.0012	0.41	0.000005	0.2	0.229	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0028	0.0001
HC-11-110	14-May-13	110	0.00079	0.0011	0.42	0.000005	0.2	0.224	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0029	0.0001
HC-11-111	21-May-13	111	0.00082	0.0011	0.42	0.000005	0.2	0.218	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0030	0.0001
HC-11-112	28-May-13	112	0.00080	0.0011	0.43	0.000005	0.2	0.225	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0029	0.0001
HC-11-113	04-Jun-13	113	0.00079	0.0012	0.45	0.000005	0.2	0.232	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00013	0.0002	0.0029	0.0001
HC-11-114	11-Jun-13	114	0.00077	0.0012	0.46	0.000005	0.2	0.239	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00014	0.0002	0.0028	0.0001
HC-11-115	18-Jun-13	115	0.00076	0.0012	0.47	0.000005	0.2	0.246	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00016	0.0002	0.0027	0.0001
HC-11-116	25-Jun-13	116	0.00074	0.0013	0.46	0.000005	0.2	0.245	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00014	0.0002	0.0027	0.0001
HC-11-117	02-Jul-13	117	0.00073	0.0013	0.44	0.000005	0.2	0.244	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00013	0.0002	0.0027	0.0001
HC-11-118	09-Jul-13	118	0.00072	0.0013	0.43	0.000005	0.2	0.242	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0028	0.0001
HC-11-119	16-Jul-13	119	0.00070	0.0013	0.41	0.000005	0.2	0.241	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0028	0.0001
HC-11-120	23-Jul-13	120	0.00072	0.0013	0.43	0.000005	0.2	0.246	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0028	0.0001
HC-11-121	30-Jul-13	121	0.00074	0.0012	0.44	0.000005	0.2	0.251	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0027	0.0001
HC-11-122	06-Aug-13	122	0.00075	0.0012	0.46	0.000005	0.2	0.255	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0027	0.0001
HC-11-123	13-Aug-13	123	0.00077	0.0012	0.47	0.000005	0.2	0.260	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0027	0.0001
HC-11-124	20-Aug-13	124	0.00083	0.0012	0.47	0.000005	0.2	0.262	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0028	0.0001
HC-11-125	27-Aug-13	125	0.00090	0.0012	0.48	0.000005	0.2	0.263	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0029	0.0001
HC-11-126	03-Sep-13	126	0.00096	0.0012	0.48	0.000005	0.2	0.265	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0029	0.0001
HC-11-127	10-Sep-13	127	0.00102	0.0013	0.48	0.000005	0.2	0.266	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0030	0.0001
HC-11-128	17-Sep-13	128	0.00099	0.0012	0.48	0.000005	0.2	0.262	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0031	0.0001
HC-11-129	24-Sep-13	129	0.00096	0.0012	0.47	0.000005	0.2	0.257	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0031	0.0001
HC-11-130	01-Oct-13	130	0.00093	0.0011	0.47	0.000005	0.2	0.253	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0032	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-11-131	08-Oct-13	131	0.00090	0.0011	0.46	0.000005	0.2	0.248	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0032	0.0001
HC-11-132	15-Oct-13	132	0.00089	0.0011	0.47	0.000005	0.2	0.250	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0034	0.0001
HC-11-133	22-Oct-13	133	0.00089	0.0012	0.48	0.000005	0.2	0.252	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0035	0.0001
HC-11-134	29-Oct-13	134	0.00088	0.0012	0.49	0.000005	0.2	0.254	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0037	0.0001
HC-11-135	05-Nov-13	135	0.00088	0.0013	0.50	0.000005	0.2	0.256	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0038	0.0001
HC-11-136	12-Nov-13	136	0.00089	0.0013	0.48	0.000005	0.2	0.256	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0039	0.0001
HC-11-137	19-Nov-13	137	0.00090	0.0014	0.46	0.000005	0.2	0.256	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0039	0.0001
HC-11-138	26-Nov-13	138	0.00091	0.0014	0.44	0.000005	0.2	0.255	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0040	0.0001
HC-11-139	03-Dec-13	139	0.00093	0.0015	0.42	0.000005	0.2	0.255	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0041	0.0001
HC-11-140	10-Dec-13	140	0.00093	0.0014	0.43	0.000005	0.2	0.261	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0041	0.0001
HC-11-141	17-Dec-13	141	0.00093	0.0014	0.45	0.000005	0.2	0.268	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0042	0.0001
HC-11-142	24-Dec-13	142	0.00093	0.0013	0.46	0.000005	0.2	0.274	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0043	0.0001
HC-11-143	31-Dec-13	143	0.00093	0.0013	0.47	0.000005	0.2	0.280	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0044	0.0001
HC-11-144	07-Jan-14	144	0.00091	0.0013	0.47	0.000005	0.2	0.277	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0044	0.0001
HC-11-145	14-Jan-14	145	0.00090	0.0013	0.46	0.000005	0.2	0.274	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0043	0.0001
HC-11-146	21-Jan-14	146	0.00089	0.0012	0.46	0.000005	0.1	0.270	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0043	0.0001
HC-11-147	28-Jan-14	147	0.00088	0.0012	0.45	0.000005	0.1	0.267	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0043	0.0001
HC-11-148	04-Feb-14	148	0.00087	0.0012	0.44	0.000005	0.1	0.260	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0043	0.0001
HC-11-149	11-Feb-14	149	0.00086	0.0012	0.43	0.000005	0.1	0.253	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0044	0.0001
HC-11-150	18-Feb-14	150	0.00086	0.0012	0.42	0.000005	0.1	0.246	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0044	0.0001
HC-11-151	25-Feb-14	151	0.00085	0.0012	0.41	0.000005	0.1	0.239	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0044	0.0001
HC-11-152	04-Mar-14	152	0.00085	0.0012	0.41	0.000005	0.1	0.238	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0047	0.0001
HC-11-153	11-Mar-14	153	0.00084	0.0013	0.42	0.000005	0.2	0.237	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0050	0.0001
HC-11-154	18-Mar-14	154	0.00084	0.0013	0.42	0.000005	0.2	0.236	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0052	0.0001
HC-11-155	25-Mar-14	155	0.00084	0.0013	0.42	0.000005	0.2	0.235	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0055	0.0001
HC-11-156	01-Apr-14	156	0.00085	0.0013	0.43	0.000005	0.2	0.236	0.00002	0.000015	0.000005	0.0002	0.0006	0.00001	0.00007	0.0002	0.0055	0.0001
HC-11-157	08-Apr-14	157	0.00086	0.0013	0.44	0.000005	0.2	0.238	0.00002	0.000016	0.000005	0.0002	0.0006	0.00001	0.00008	0.0002	0.0055	0.0001
HC-11-158	15-Apr-14	158	0.00087	0.0013	0.45	0.000005	0.2	0.239	0.00002	0.000016	0.000005	0.0002	0.0007	0.00001	0.00008	0.0002	0.0055	0.0001
HC-11-159	22-Apr-14	159	0.00088	0.0014	0.46	0.000005	0.2	0.240	0.00002	0.000017	0.000005	0.0002	0.0008	0.00001	0.00008	0.0002	0.0055	0.0001
<b>Mean all weeks</b>			<b>0.00091</b>	<b>0.0016</b>	<b>0.60</b>	<b>0.000008</b>	<b>7.5</b>	<b>0.264</b>	<b>0.00002</b>	<b>0.000012</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0005</b>	<b>0.00002</b>	<b>0.00025</b>	<b>0.0006</b>	<b>0.0035</b>	<b>0.0001</b>
<b>HC12 Hulcross Mudstone</b>																		
HC-12-0	05-Apr-11	0	0.00074	0.0052	2.00	0.000005	35.6	0.010	0.00002	0.000005	0.000006	0.0000	0.0016	0.00014	0.00009	0.0285	0.0009	0.0001
HC-12-1	12-Apr-11	1	0.00118	0.0097	1.10	0.000156	85.4	0.046	0.00002	0.000008	0.000005	0.0000	0.0005	0.00029	0.00020	0.0046	0.0007	0.0001
HC-12-2	19-Apr-11	2	0.00102	0.0084	1.00	0.000005	70.6	0.046	0.00002	0.000006	0.000005	0.0000	0.0005	0.00018	0.00020	0.0030	0.0010	0.0001
HC-12-3	26-Apr-11	3	0.00071	0.0049	1.10	0.000005	55.7	0.023	0.00002	0.000006	0.000005	0.0000	0.0005	0.00020	0.00021	0.0036	0.0008	0.0001
HC-12-4	03-May-11	4	0.00074	0.0041	1.10	0.000005	52.9	0.021	0.00002	0.000005	0.000005	0.0001	0.0005	0.00015	0.00022	0.0044	0.0015	0.0001
HC-12-5	10-May-11	5	0.00087	0.0033	1.10	0.000005	57.2	0.023	0.00002	0.000006	0.000005	0.0000	0.0005	0.00026	0.00025	0.0039	0.0007	0.0001
HC-12-6	17-May-11	6	0.00071	0.0030	1.10	0.000005	48.4	0.020	0.00002	0.000003	0.000005	0.0001	0.0005	0.00014	0.00028	0.0040	0.0008	0.0001
HC-12-7	24-May-11	7	0.00083	0.0025	1.10	0.000005	45.9	0.024	0.00002	0.000007	0.000005	0.0000	0.0012	0.00006	0.00025	0.0043	0.0005	0.0001
HC-12-8	31-May-11	8	0.00071	0.0023	1.00	0.000005	46.1	0.020	0.00002	0.000005	0.000005	0.0000	0.0009	0.00006	0.00026	0.0038	0.0006	0.0001
HC-12-9	07-Jun-11	9	0.00070	0.0021	1.00	0.000005	44.7	0.021	0.00002	0.000006	0.000005	0.0000	0.0008	0.00007	0.00026	0.0039	0.0007	0.0001
HC-12-10	14-Jun-11	10	0.00082	0.0019	1.10	0.000005	41.7	0.024	0.00002	0.000007	0.000005	0.0000	0.0012	0.00007	0.00026	0.0033	0.0013	0.0004
HC-12-11	21-Jun-11	11	0.00080	0.0019	0.90	0.000005	46.4	0.026	0.00003	0.000005	0.000005	0.0000	0.0005	0.00007	0.00026	0.0023	0.0010	0.0001
HC-12-12	28-Jun-11	12	0.00070	0.0018	0.80	0.000005	42.4	0.021	0.00002	0.000003	0.000005	0.0000	0.0005	0.00001	0.00025	0.0027	0.0013	0.0001
HC-12-13	05-Jul-11	13	0.00061	0.0019	0.90	0.000005	41.8	0.026	0.00002	0.000004	0.000005	0.0000	0.0005	0.00003	0.00025	0.0026	0.0007	0.0001
HC-12-14	12-Jul-11	14	0.00076	0.0017	0.80	0.000005	39.1	0.028	0.00002	0.000005	0.000005	0.0000	0.0008	0.00005	0.00026	0.0023	0.0072	0.0001
HC-12-15	19-Jul-11	15	0.00076	0.0017	0.70	0.000005	33.4	0.028	0.00002	0.000007	0.000005	0.0001	0.0006	0.00004	0.00019	0.0019	0.0010	0.0001
HC-12-16	26-Jul-11	16	0.00065	0.0016	0.90	0.000005	29.6	0.021	0.00002	0.000005	0.000005	0.0000	0.0008	0.00003	0.00018	0.0025	0.0008	0.0001
HC-12-17	02-Aug-11	17	0.00066	0.0015	0.80	0.000005	34.9	0.026	0.00002	0.000005	0.000005	0.0000	0.0005	0.00002	0.00019	0.0023	0.0010	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-12-18	09-Aug-11	18	0.00079	0.0015	0.80	0.000005	35.9	0.032	0.00002	0.000006	0.000005	0.0000	0.0005	0.00003	0.00021	0.0018	0.0008	0.0001
HC-12-19	16-Aug-11	19	0.00070	0.0015	0.80	0.000005	32.5	0.028	0.00002	0.000004	0.000005	0.0000	0.0009	0.00002	0.00019	0.0019	0.0011	0.0001
HC-12-20	23-Aug-11	20	0.00072	0.0015	0.75	0.000005	31.4	0.031	0.00002	0.000004	0.000005	0.0000	0.0008	0.00002	0.00018	0.0018	0.0010	0.0001
HC-12-21	30-Aug-11	21	0.00074	0.0015	0.70	0.000005	30.2	0.034	0.00002	0.000004	0.000005	0.0000	0.0007	0.00002	0.00017	0.0017	0.0009	0.0001
HC-12-22	06-Sep-11	22	0.00076	0.0015	0.65	0.000005	29.1	0.037	0.00002	0.000004	0.000005	0.0000	0.0006	0.00002	0.00016	0.0015	0.0008	0.0001
HC-12-23	13-Sep-11	23	0.00078	0.0015	0.60	0.000005	27.9	0.040	0.00002	0.000004	0.000005	0.0000	0.0005	0.00002	0.00015	0.0014	0.0007	0.0001
HC-12-24	20-Sep-11	24	0.00081	0.0015	0.63	0.000005	27.4	0.043	0.00002	0.000004	0.000005	0.0000	0.0005	0.00002	0.00015	0.0014	0.0007	0.0001
HC-12-25	27-Sep-11	25	0.00084	0.0016	0.65	0.000005	26.9	0.046	0.00002	0.000005	0.000005	0.0000	0.0005	0.00002	0.00014	0.0014	0.0007	0.0001
HC-12-26	04-Oct-11	26	0.00086	0.0016	0.68	0.000005	26.4	0.049	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00014	0.0013	0.0007	0.0001
HC-12-27	11-Oct-11	27	0.00089	0.0017	0.70	0.000005	25.9	0.053	0.00002	0.000005	0.000005	0.0001	0.0005	0.00001	0.00014	0.0013	0.0007	0.0001
HC-12-28	18-Oct-11	28	0.00101	0.0017	0.70	0.000005	27.4	0.068	0.00002	0.000006	0.000005	0.0001	0.0005	0.00002	0.00014	0.0012	0.0007	0.0001
HC-12-29	25-Oct-11	29	0.00112	0.0018	0.70	0.000005	29.0	0.083	0.00002	0.000006	0.000005	0.0001	0.0006	0.00002	0.00014	0.0011	0.0008	0.0001
HC-12-30	01-Nov-11	30	0.00124	0.0019	0.70	0.000005	30.5	0.099	0.00002	0.000007	0.000005	0.0002	0.0006	0.00003	0.00015	0.0010	0.0008	0.0001
HC-12-31	08-Nov-11	31	0.00135	0.0020	0.70	0.000005	32.0	0.114	0.00002	0.000007	0.000005	0.0002	0.0006	0.00003	0.00015	0.0009	0.0008	0.0001
HC-12-32	15-Nov-11	32	0.00140	0.0021	0.68	0.000005	30.7	0.122	0.00002	0.000007	0.000005	0.0002	0.0006	0.00003	0.00014	0.0009	0.0007	0.0001
HC-12-33	22-Nov-11	33	0.00145	0.0022	0.65	0.000005	29.4	0.129	0.00002	0.000008	0.000005	0.0002	0.0006	0.00002	0.00013	0.0008	0.0006	0.0001
HC-12-34	29-Nov-11	34	0.00149	0.0023	0.63	0.000005	28.1	0.137	0.00002	0.000008	0.000005	0.0002	0.0005	0.00002	0.00012	0.0008	0.0005	0.0001
HC-12-35	06-Dec-11	35	0.00154	0.0025	0.60	0.000005	26.8	0.144	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00011	0.0007	0.0004	0.0001
HC-12-36	13-Dec-11	36	0.00158	0.0024	0.60	0.000005	25.7	0.156	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00011	0.0007	0.0006	0.0001
HC-12-37	20-Dec-11	37	0.00163	0.0023	0.60	0.000005	24.6	0.169	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00011	0.0006	0.0008	0.0001
HC-12-38	27-Dec-11	38	0.00167	0.0022	0.60	0.000005	23.5	0.181	0.00002	0.000013	0.000005	0.0001	0.0005	0.00001	0.00011	0.0006	0.0009	0.0001
HC-12-39	03-Jan-12	39	0.00171	0.0021	0.60	0.000005	22.4	0.193	0.00002	0.000014	0.000005	0.0001	0.0005	0.00001	0.00011	0.0005	0.0011	0.0001
HC-12-40	10-Jan-12	40	0.00182	0.0021	0.58	0.000005	21.4	0.211	0.00002	0.000014	0.000005	0.0001	0.0005	0.00001	0.00012	0.0005	0.0023	0.0001
HC-12-41	17-Jan-12	41	0.00194	0.0022	0.55	0.000005	20.4	0.229	0.00002	0.000014	0.000005	0.0001	0.0005	0.00001	0.00013	0.0005	0.0034	0.0001
HC-12-42	24-Jan-12	42	0.00205	0.0022	0.53	0.000005	19.4	0.247	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00013	0.0005	0.0046	0.0001
HC-12-43	31-Jan-12	43	0.00216	0.0022	0.50	0.000005	18.4	0.265	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00014	0.0005	0.0057	0.0001
HC-12-44	07-Feb-12	44	0.00221	0.0022	0.50	0.000005	17.1	0.266	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00012	0.0004	0.0045	0.0001
HC-12-45	14-Feb-12	45	0.00226	0.0022	0.50	0.000005	15.9	0.267	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00011	0.0004	0.0032	0.0001
HC-12-46	21-Feb-12	46	0.00230	0.0022	0.50	0.000005	14.6	0.268	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00009	0.0003	0.0020	0.0001
HC-12-47	28-Feb-12	47	0.00235	0.0022	0.50	0.000005	13.3	0.269	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0007	0.0001
HC-12-48	06-Mar-12	48	0.00230	0.0023	0.55	0.000005	12.4	0.271	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0008	0.0001
HC-12-49	13-Mar-12	49	0.00226	0.0024	0.60	0.000005	11.4	0.273	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0008	0.0001
HC-12-50	20-Mar-12	50	0.00221	0.0025	0.65	0.000005	10.5	0.274	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0009	0.0001
HC-12-51	27-Mar-12	51	0.00216	0.0027	0.70	0.000005	9.5	0.276	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0009	0.0001
HC-12-52	03-Apr-12	52	0.00224	0.0025	0.67	0.000005	8.9	0.273	0.00002	0.000016	0.000005	0.0003	0.0005	0.00001	0.00009	0.0002	0.0011	0.0001
HC-12-53	10-Apr-12	53	0.00232	0.0024	0.64	0.000005	8.3	0.271	0.00002	0.000016	0.000005	0.0004	0.0005	0.00001	0.00009	0.0002	0.0013	0.0001
HC-12-54	17-Apr-12	54	0.00239	0.0022	0.61	0.000005	7.7	0.268	0.00002	0.000017	0.000005	0.0004	0.0005	0.00001	0.00008	0.0002	0.0015	0.0001
HC-12-55	24-Apr-12	55	0.00247	0.0021	0.58	0.000005	7.1	0.265	0.00002	0.000017	0.000005	0.0005	0.0005	0.00001	0.00008	0.0002	0.0017	0.0001
HC-12-56	01-May-12	56	0.00257	0.0021	0.59	0.000005	6.5	0.275	0.00002	0.000018	0.000005	0.0004	0.0005	0.00001	0.00008	0.0002	0.0016	0.0001
HC-12-57	08-May-12	57	0.00267	0.0021	0.60	0.000005	6.0	0.285	0.00002	0.000018	0.000005	0.0004	0.0005	0.00001	0.00008	0.0002	0.0015	0.0001
HC-12-58	15-May-12	58	0.00277	0.0021	0.61	0.000005	5.4	0.295	0.00002	0.000019	0.000005	0.0003	0.0005	0.00001	0.00008	0.0002	0.0014	0.0001
HC-12-59	22-May-12	59	0.00287	0.0021	0.62	0.000005	4.9	0.305	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0012	0.0001
HC-12-60	29-May-12	60	0.00282	0.0020	0.62	0.000005	4.5	0.306	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0012	0.0001
HC-12-61	05-Jun-12	61	0.00277	0.0020	0.62	0.000005	4.1	0.307	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0011	0.0001
HC-12-62	12-Jun-12	62	0.00272	0.0019	0.62	0.000005	3.7	0.308	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0010	0.0001
HC-12-63	19-Jun-12	63	0.00267	0.0019	0.62	0.000005	3.4	0.309	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0009	0.0001
HC-12-64	26-Jun-12	64	0.00278	0.0019	0.62	0.000005	3.1	0.309	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0009	0.0001
HC-12-65	03-Jul-12	65	0.00289	0.0019	0.62	0.000005	2.9	0.309	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-12-66	10-Jul-12	66	0.00300	0.0019	0.61	0.000005	2.6	0.308	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0009	0.0001

Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-12-67	17-Jul-12	67	0.00311	0.0019	0.61	0.000005	2.4	0.308	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0009	0.0001
HC-12-68	24-Jul-12	68	0.00304	0.0019	0.60	0.000005	2.2	0.314	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0010	0.0001
HC-12-69	31-Jul-12	69	0.00296	0.0019	0.58	0.000005	2.0	0.320	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0011	0.0001
HC-12-70	07-Aug-12	70	0.00289	0.0019	0.57	0.000005	1.8	0.326	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0011	0.0001
HC-12-71	14-Aug-12	71	0.00281	0.0019	0.55	0.000005	1.6	0.332	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0012	0.0001
HC-12-72	21-Aug-12	72	0.00270	0.0019	0.59	0.000005	1.5	0.322	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00007	0.0003	0.0014	0.0001
HC-12-73	28-Aug-12	73	0.00258	0.0018	0.62	0.000005	1.4	0.312	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00007	0.0004	0.0016	0.0001
HC-12-74	04-Sep-12	74	0.00247	0.0018	0.66	0.000005	1.3	0.301	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00007	0.0004	0.0018	0.0001
HC-12-75	11-Sep-12	75	0.00235	0.0017	0.69	0.000005	1.2	0.291	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00007	0.0005	0.0020	0.0001
HC-12-76	18-Sep-12	76	0.00235	0.0018	0.67	0.000005	1.1	0.291	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00007	0.0004	0.0019	0.0001
HC-12-77	25-Sep-12	77	0.00236	0.0019	0.64	0.000005	1.0	0.292	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00006	0.0004	0.0018	0.0001
HC-12-78	02-Oct-12	78	0.00236	0.0020	0.62	0.000005	0.9	0.292	0.00002	0.000017	0.000005	0.0002	0.0005	0.00001	0.00006	0.0003	0.0016	0.0001
HC-12-79	09-Oct-12	79	0.00236	0.0021	0.59	0.000005	0.9	0.292	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0015	0.0001
HC-12-80	16-Oct-12	80	0.00240	0.0019	0.58	0.000005	0.8	0.291	0.00002	0.000018	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0014	0.0001
HC-12-81	23-Oct-12	81	0.00244	0.0018	0.57	0.000005	0.7	0.290	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0013	0.0001
HC-12-82	30-Oct-12	82	0.00248	0.0017	0.56	0.000005	0.7	0.289	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0012	0.0001
HC-12-83	06-Nov-12	83	0.00252	0.0016	0.55	0.000005	0.6	0.288	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0011	0.0001
HC-12-84	13-Nov-12	84	0.00261	0.0016	0.58	0.000005	0.6	0.294	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0011	0.0001
HC-12-85	20-Nov-12	85	0.00270	0.0017	0.60	0.000005	0.6	0.300	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0011	0.0001
HC-12-86	27-Nov-12	86	0.00279	0.0018	0.63	0.000005	0.6	0.306	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0011	0.0001
HC-12-87	04-Dec-12	87	0.00288	0.0018	0.65	0.000005	0.6	0.312	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0011	0.0001
HC-12-88	11-Dec-12	88	0.00282	0.0018	0.63	0.000005	0.5	0.302	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0012	0.0001
HC-12-89	18-Dec-12	89	0.00276	0.0017	0.62	0.000005	0.5	0.291	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0014	0.0001
HC-12-90	25-Dec-12	90	0.00269	0.0017	0.60	0.000005	0.5	0.281	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0015	0.0001
HC-12-91	01-Jan-13	91	0.00263	0.0016	0.58	0.000005	0.5	0.270	0.00002	0.000020	0.000005	0.0002	0.0005	0.00002	0.00004	0.0002	0.0017	0.0001
HC-12-92	08-Jan-13	92	0.00251	0.0017	0.57	0.000005	0.5	0.271	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00005	0.0003	0.0016	0.0001
HC-12-93	15-Jan-13	93	0.00238	0.0018	0.57	0.000005	0.4	0.271	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0003	0.0015	0.0001
HC-12-94	22-Jan-13	94	0.00226	0.0018	0.56	0.000005	0.4	0.272	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0004	0.0014	0.0001
HC-12-95	29-Jan-13	95	0.00213	0.0019	0.55	0.000005	0.4	0.272	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00006	0.0004	0.0013	0.0001
HC-12-96	05-Feb-13	96	0.00217	0.0018	0.55	0.000005	0.4	0.276	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00006	0.0004	0.0013	0.0001
HC-12-97	12-Feb-13	97	0.00220	0.0017	0.56	0.000005	0.4	0.280	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00006	0.0003	0.0013	0.0001
HC-12-98	19-Feb-13	98	0.00224	0.0015	0.56	0.000005	0.4	0.283	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00006	0.0003	0.0013	0.0001
HC-12-99	26-Feb-13	99	0.00227	0.0014	0.56	0.000005	0.3	0.287	0.00002	0.000024	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0013	0.0001
HC-12-100	05-Mar-13	100	0.00229	0.0014	0.56	0.000005	0.3	0.297	0.00002	0.000024	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0015	0.0001
HC-12-101	12-Mar-13	101	0.00232	0.0015	0.56	0.000005	0.3	0.306	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0017	0.0001
HC-12-102	19-Mar-13	102	0.00234	0.0015	0.55	0.000005	0.3	0.316	0.00002	0.000023	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0020	0.0001
HC-12-103	26-Mar-13	103	0.00236	0.0015	0.55	0.000005	0.3	0.325	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0022	0.0001
HC-12-104	02-Apr-13	104	0.00232	0.0016	0.54	0.000005	0.3	0.314	0.00002	0.000022	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0020	0.0001
HC-12-105	09-Apr-13	105	0.00227	0.0017	0.53	0.000005	0.3	0.304	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0019	0.0001
HC-12-106	16-Apr-13	106	0.00223	0.0018	0.51	0.000005	0.3	0.293	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0018	0.0001
HC-12-107	23-Apr-13	107	0.00218	0.0019	0.50	0.000005	0.3	0.282	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0016	0.0001
HC-12-108	30-Apr-13	108	0.00218	0.0018	0.50	0.000005	0.3	0.290	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0025	0.0001
HC-12-109	07-May-13	109	0.00218	0.0017	0.50	0.000005	0.3	0.298	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0033	0.0001
HC-12-110	14-May-13	110	0.00217	0.0016	0.50	0.000005	0.3	0.306	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0041	0.0001
HC-12-111	21-May-13	111	0.00217	0.0016	0.50	0.000005	0.3	0.314	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0050	0.0001
HC-12-112	28-May-13	112	0.00222	0.0016	0.51	0.000005	0.3	0.317	0.00002	0.000022	0.000005	0.0003	0.0005	0.00001	0.00006	0.0002	0.0042	0.0001
HC-12-113	04-Jun-13	113	0.00227	0.0017	0.51	0.000005	0.2	0.320	0.00002	0.000023	0.000005	0.0004	0.0005	0.00001	0.00005	0.0002	0.0034	0.0001
HC-12-114	11-Jun-13	114	0.00231	0.0017	0.52	0.000005	0.2	0.322	0.00002	0.000023	0.000005	0.0004	0.0005	0.00001	0.00005	0.0002	0.0026	0.0001
HC-12-115	18-Jun-13	115	0.00236	0.0018	0.52	0.000005	0.2	0.325	0.00002	0.000024	0.000005	0.0005	0.0005	0.00001	0.00005	0.0002	0.0019	0.0001



Appendix 5. Waste Rock Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-12-116	25-Jun-13	116	0.00231	0.0017	0.49	0.000005	0.2	0.328	0.00002	0.000024	0.000005	0.0004	0.0005	0.00001	0.00005	0.0002	0.0020	0.0001
HC-12-117	02-Jul-13	117	0.00226	0.0017	0.47	0.000005	0.2	0.331	0.00002	0.000025	0.000005	0.0004	0.0005	0.00001	0.00004	0.0002	0.0021	0.0001
HC-12-118	09-Jul-13	118	0.00220	0.0017	0.44	0.000005	0.2	0.333	0.00002	0.000025	0.000005	0.0003	0.0005	0.00001	0.00004	0.0002	0.0022	0.0001
HC-12-119	16-Jul-13	119	0.00215	0.0017	0.41	0.000005	0.2	0.336	0.00002	0.000025	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0024	0.0001
HC-12-120	23-Jul-13	120	0.00221	0.0016	0.43	0.000005	0.2	0.343	0.00002	0.000025	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0025	0.0001
HC-12-121	30-Jul-13	121	0.00227	0.0016	0.46	0.000005	0.2	0.350	0.00002	0.000026	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0026	0.0001
HC-12-122	06-Aug-13	122	0.00232	0.0015	0.48	0.000005	0.2	0.357	0.00002	0.000026	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0027	0.0001
HC-12-123	13-Aug-13	123	0.00238	0.0015	0.50	0.000005	0.2	0.364	0.00002	0.000026	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0028	0.0001
HC-12-124	20-Aug-13	124	0.00243	0.0015	0.50	0.000005	0.2	0.372	0.00002	0.000027	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0029	0.0001
HC-12-125	27-Aug-13	125	0.00249	0.0015	0.50	0.000005	0.2	0.380	0.00002	0.000028	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0031	0.0001
HC-12-126	03-Sep-13	126	0.00254	0.0015	0.49	0.000005	0.2	0.387	0.00002	0.000028	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0033	0.0001
HC-12-127	10-Sep-13	127	0.00259	0.0016	0.49	0.000005	0.2	0.395	0.00002	0.000029	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0035	0.0001
HC-12-128	17-Sep-13	128	0.00259	0.0016	0.50	0.000005	0.2	0.392	0.00002	0.000029	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0035	0.0001
HC-12-129	24-Sep-13	129	0.00260	0.0015	0.51	0.000005	0.2	0.388	0.00002	0.000029	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0035	0.0001
HC-12-130	01-Oct-13	130	0.00260	0.0015	0.51	0.000005	0.2	0.385	0.00002	0.000029	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0035	0.0001
HC-12-131	08-Oct-13	131	0.00260	0.0015	0.52	0.000005	0.2	0.381	0.00002	0.000029	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0035	0.0001
HC-12-132	15-Oct-13	132	0.00260	0.0015	0.53	0.000005	0.2	0.384	0.00002	0.000030	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0038	0.0001
HC-12-133	22-Oct-13	133	0.00259	0.0015	0.54	0.000005	0.2	0.387	0.00002	0.000031	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0041	0.0001
HC-12-134	29-Oct-13	134	0.00259	0.0015	0.55	0.000005	0.3	0.389	0.00002	0.000032	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0044	0.0001
HC-12-135	05-Nov-13	135	0.00258	0.0015	0.56	0.000005	0.3	0.392	0.00002	0.000033	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0047	0.0001
HC-12-136	12-Nov-13	136	0.00264	0.0016	0.55	0.000005	0.3	0.409	0.00002	0.000034	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0051	0.0001
HC-12-137	19-Nov-13	137	0.00270	0.0017	0.54	0.000005	0.2	0.426	0.00002	0.000035	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0054	0.0001
HC-12-138	26-Nov-13	138	0.00276	0.0017	0.53	0.000005	0.2	0.443	0.00002	0.000036	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0058	0.0001
HC-12-139	03-Dec-13	139	0.00282	0.0018	0.52	0.000005	0.2	0.460	0.00002	0.000037	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0062	0.0001
HC-12-140	10-Dec-13	140	0.00288	0.0019	0.53	0.000005	0.2	0.470	0.00002	0.000038	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0064	0.0001
HC-12-141	17-Dec-13	141	0.00294	0.0019	0.55	0.000005	0.2	0.479	0.00002	0.000039	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0066	0.0001
HC-12-142	24-Dec-13	142	0.00299	0.0020	0.56	0.000005	0.2	0.489	0.00002	0.000039	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0068	0.0001
HC-12-143	31-Dec-13	143	0.00305	0.0020	0.57	0.000005	0.3	0.498	0.00002	0.000040	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0070	0.0001
HC-12-144	07-Jan-14	144	0.00300	0.0020	0.57	0.000005	0.2	0.485	0.00002	0.000040	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0086	0.0001
HC-12-145	14-Jan-14	145	0.00296	0.0019	0.58	0.000005	0.2	0.471	0.00002	0.000040	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0103	0.0001
HC-12-146	21-Jan-14	146	0.00291	0.0018	0.58	0.000005	0.2	0.458	0.00002	0.000039	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0119	0.0001
HC-12-147	28-Jan-14	147	0.00286	0.0017	0.58	0.000005	0.2	0.444	0.00002	0.000039	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0135	0.0001
HC-12-148	04-Feb-14	148	0.00284	0.0019	0.58	0.000005	0.2	0.439	0.00002	0.000039	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0135	0.0001
HC-12-149	11-Feb-14	149	0.00283	0.0020	0.58	0.000005	0.2	0.434	0.00002	0.000040	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0135	0.0001
HC-12-150	18-Feb-14	150	0.00281	0.0021	0.58	0.000005	0.2	0.428	0.00002	0.000040	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0135	0.0001
HC-12-151	25-Feb-14	151	0.00279	0.0022	0.58	0.000005	0.2	0.423	0.00002	0.000040	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0135	0.0001
HC-12-152	04-Mar-14	152	0.00281	0.0024	0.59	0.000005	0.2	0.415	0.00002	0.000040	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0150	0.0001
HC-12-153	11-Mar-14	153	0.00283	0.0025	0.59	0.000005	0.2	0.407	0.00002	0.000041	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0164	0.0001
HC-12-154	18-Mar-14	154	0.00285	0.0026	0.60	0.000005	0.3	0.399	0.00002	0.000041	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0179	0.0001
HC-12-155	25-Mar-14	155	0.00287	0.0027	0.60	0.000005	0.3	0.391	0.00002	0.000041	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0193	0.0001
HC-12-156	01-Apr-14	156	0.00288	0.0028	0.63	0.000005	0.3	0.391	0.00002	0.000044	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0215	0.0001
HC-12-157	08-Apr-14	157	0.00288	0.0028	0.66	0.000005	0.3	0.390	0.00002	0.000047	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0237	0.0001
HC-12-158	15-Apr-14	158	0.00289	0.0029	0.68	0.000005	0.3	0.390	0.00002	0.000049	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0259	0.0001
HC-12-159	22-Apr-14	159	0.00289	0.0029	0.71	0.000005	0.3	0.389	0.00002	0.000052	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0281	0.0001
Mean all weeks			0.00214	0.0020	0.63	0.000006	11.1	0.265	0.00002	0.000020	0.000005	0.0002	0.0005	0.00002	0.00009	0.0009	0.0034	0.0001

Note: Where concentrations were below detection limits, they were reported as the detection limit value

## Appendix 6

### Waste Rock Humidity Cell Summary Figures

Figure A6-1

Acidity, Fluoride, and Chloride Production Rates for Waste Rock Humidity Cells

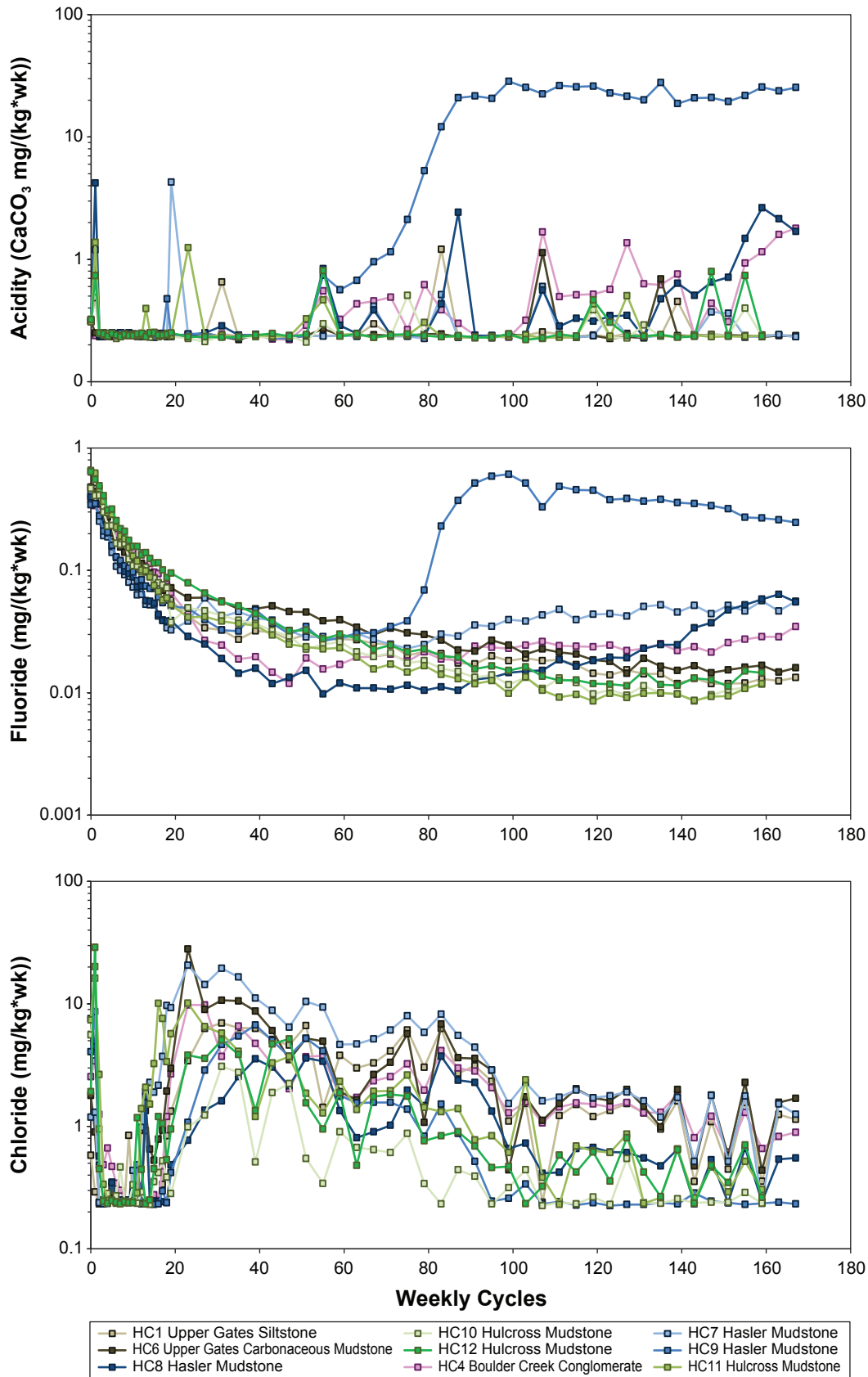


Figure A6-2

Antimony, Barium, and Beryllium Production Rates for Waste Rock Humidity Cells

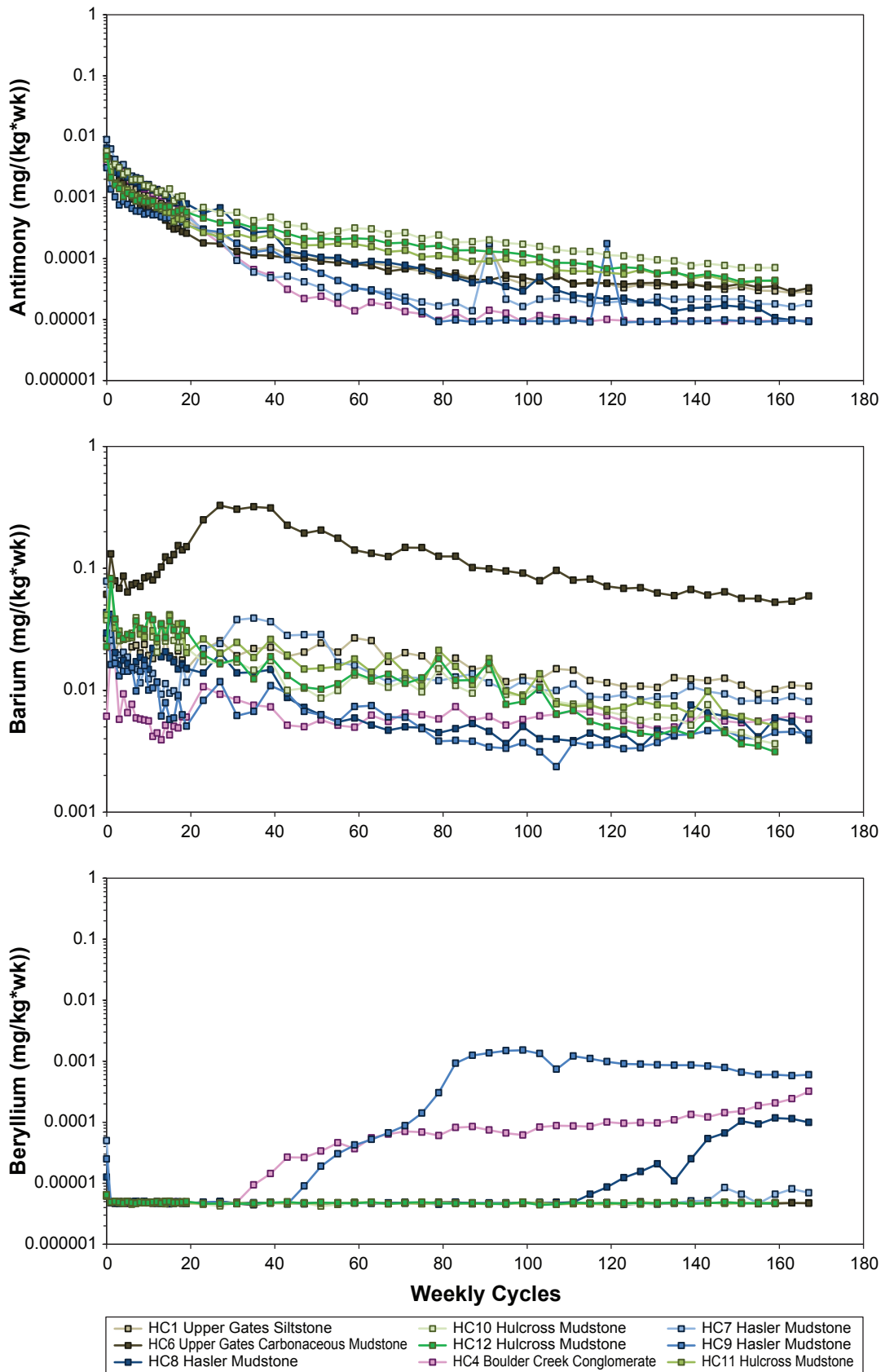


Figure A6-3

Bismuth, Boron, and Cesium Production Rates for Waste Rock Humidity Cells

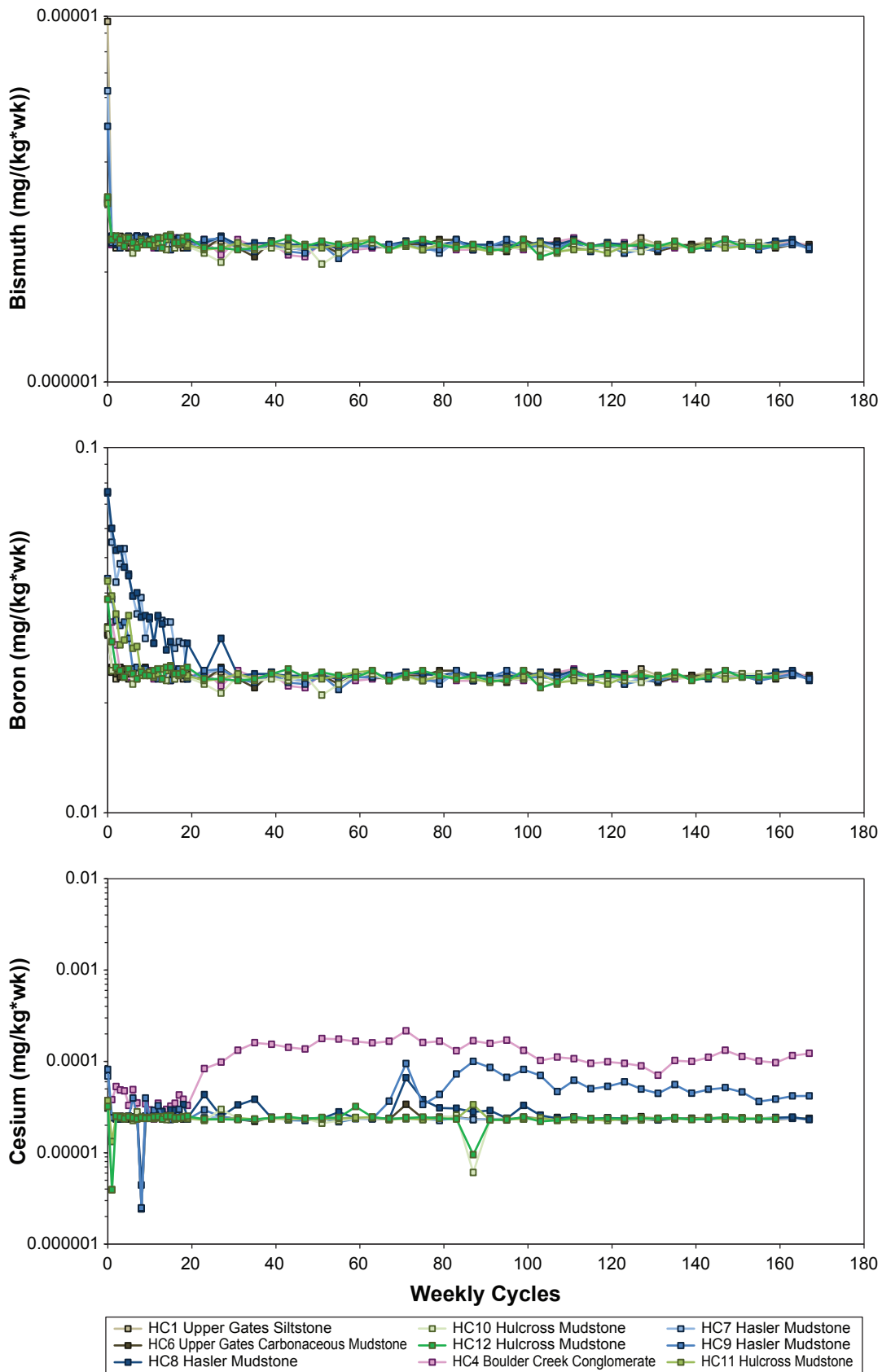


Figure A6-4

Chromium, Cobalt, and Copper Production Rates for Waste Rock Humidity Cells

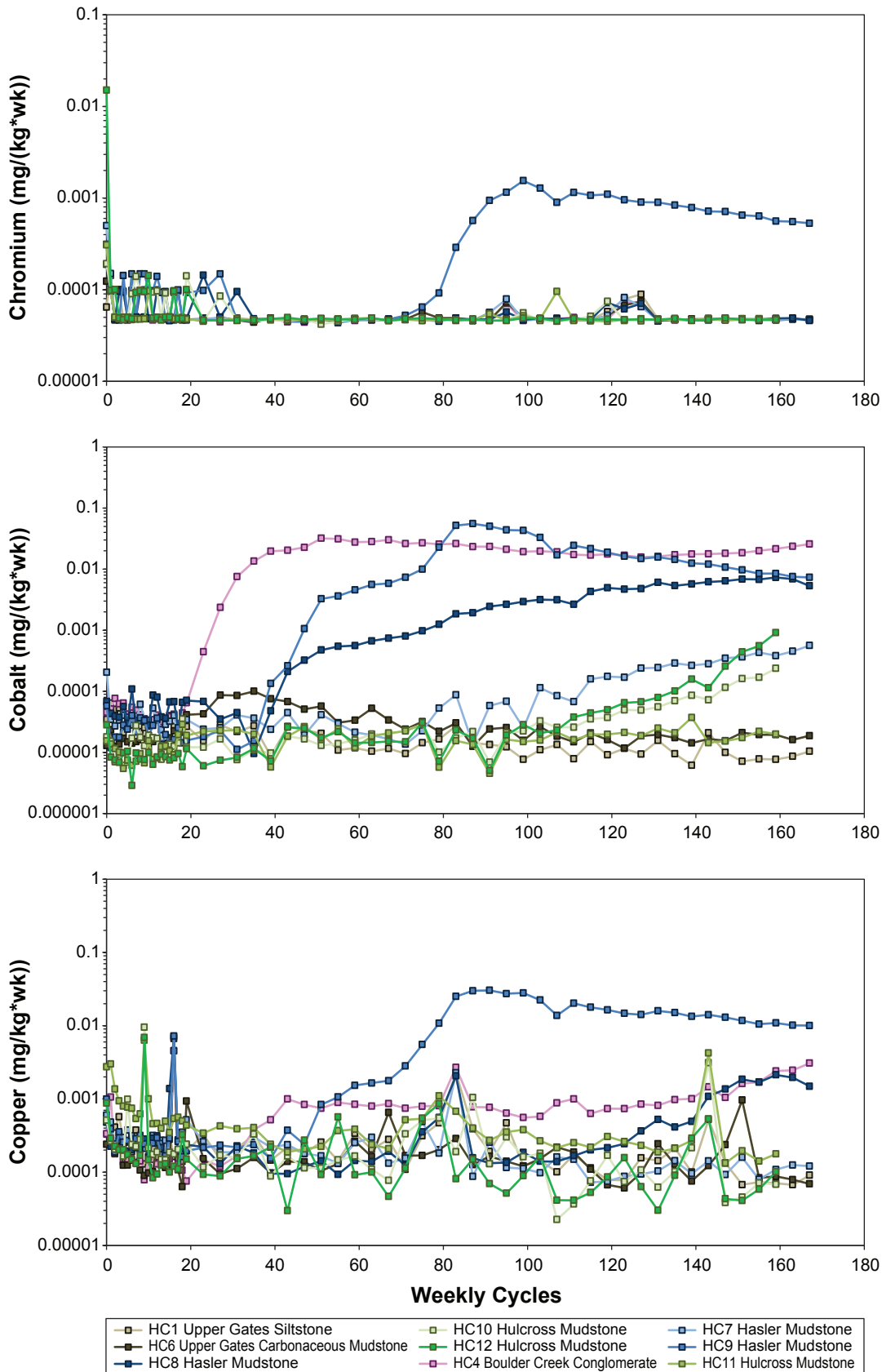


Figure A6-5

Lanthanum, Lead, and Lithium Production Rates for Waste Rock Humidity Cells

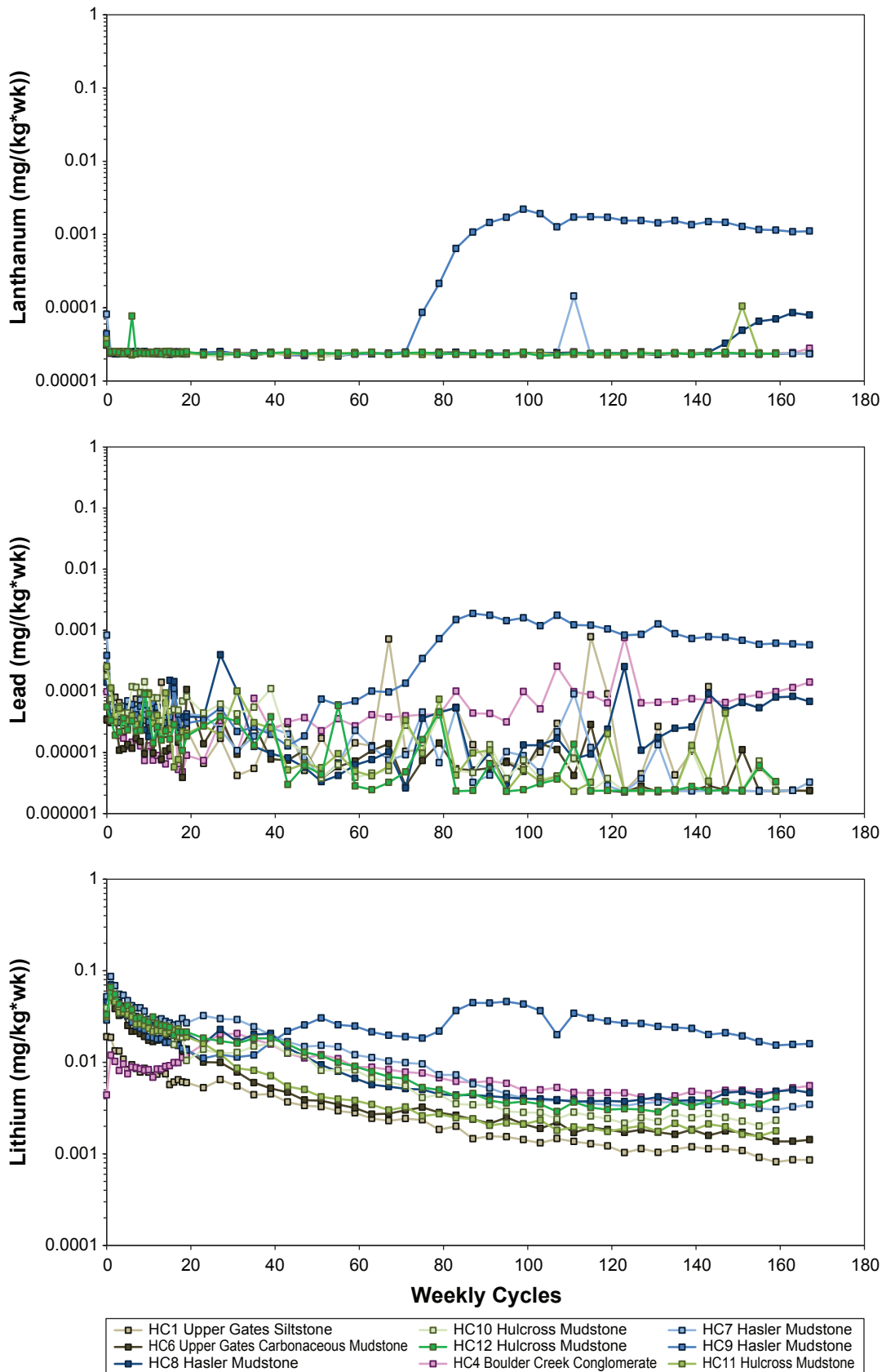


Figure A6-6

Mercury, Molybdenum, and Nickel Production Rates for Waste Rock Humidity Cells

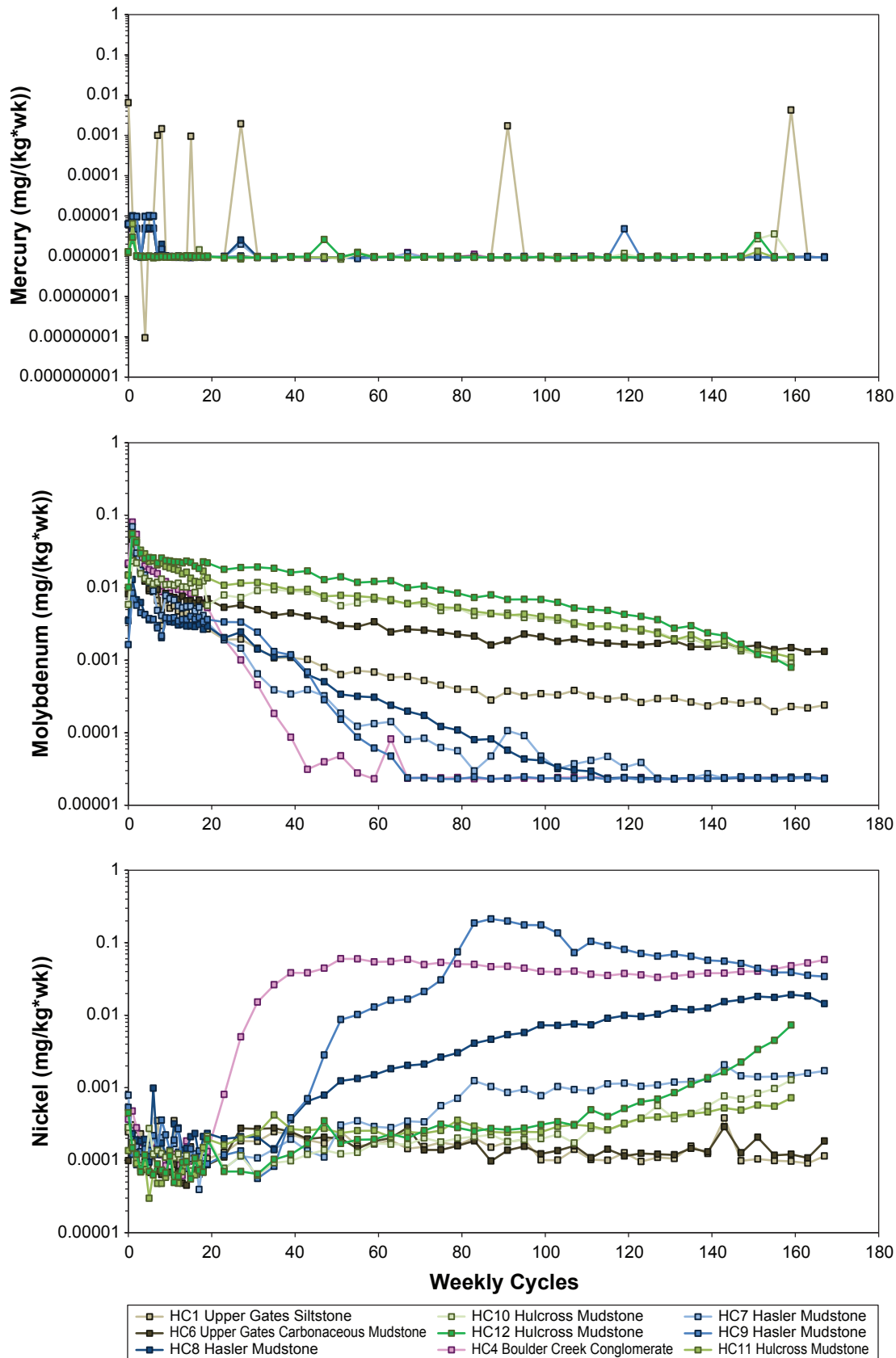




Figure A6-7

Phosphorus, Potassium, and Rubidium Production Rates for Waste Rock Humidity Cells

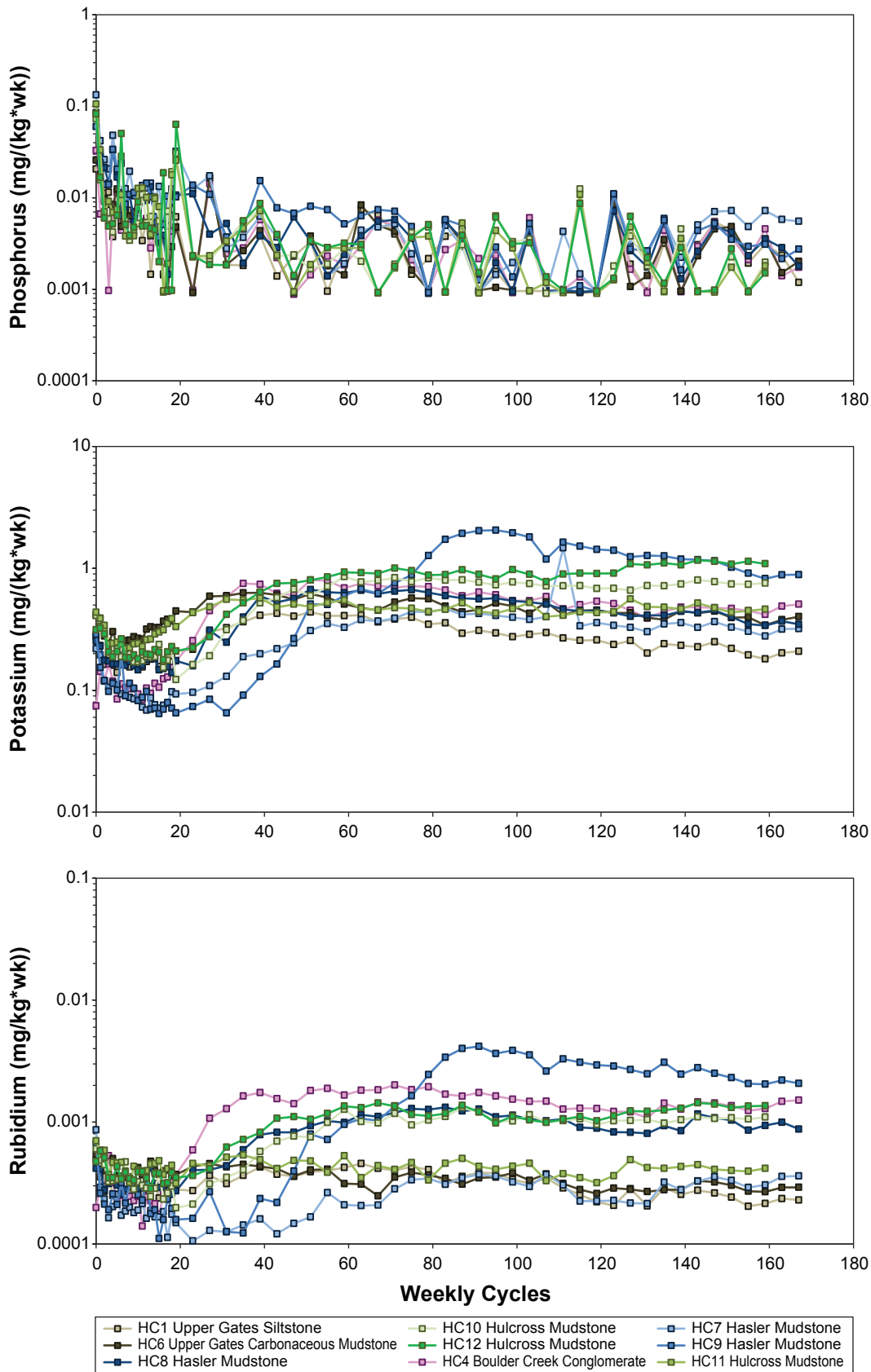


Figure A6-8

Silicon, Silver, and Sodium Production Rates for Waste Rock Humidity Cells

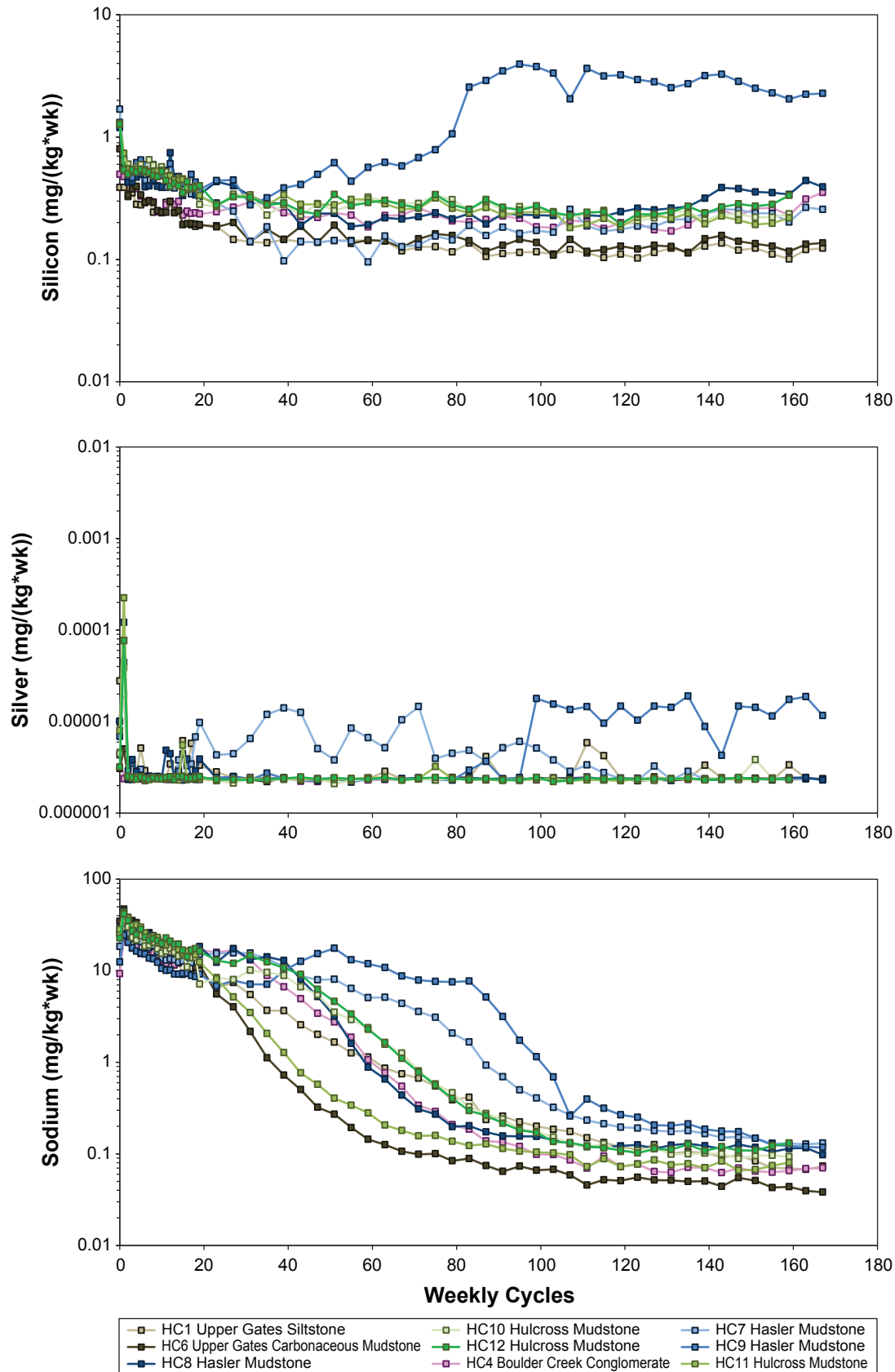


Figure A6-9

Strontium, Thallium, and Thorium Production Rates for Waste Rock Humidity Cells

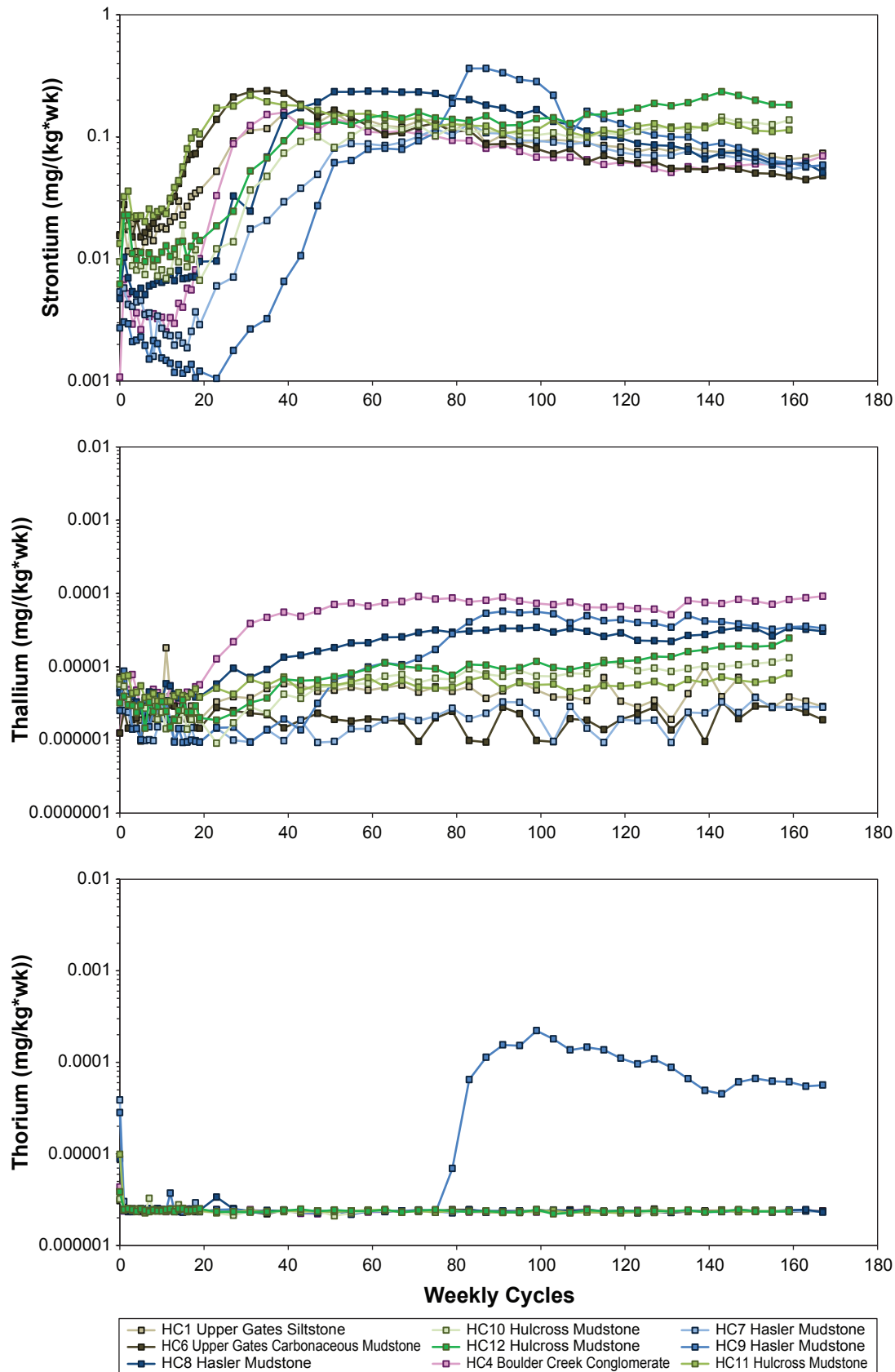


Figure A6-10

Tin, Titanium, and Tungsten Production Rates for Waste Rock Humidity Cells

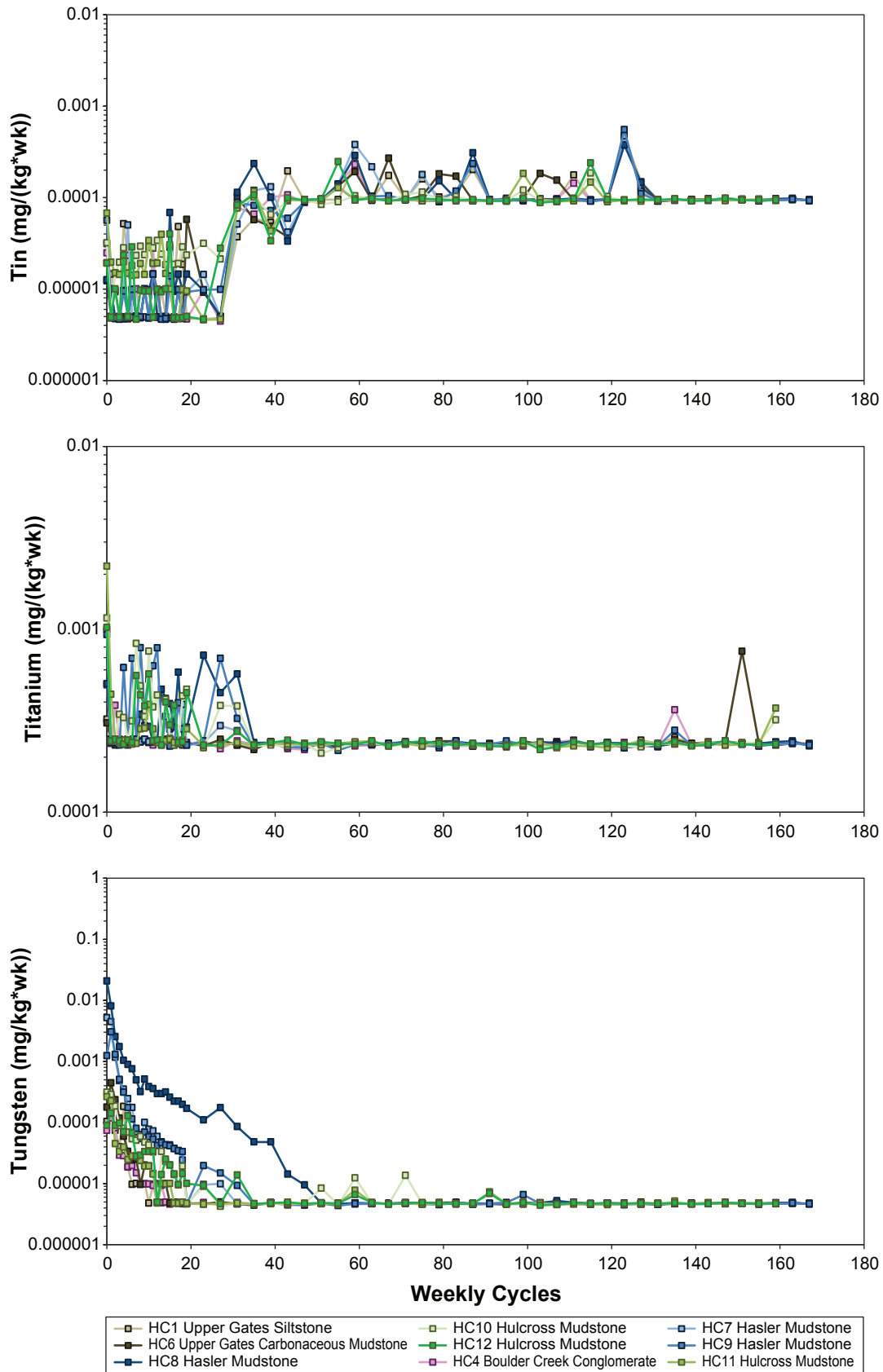
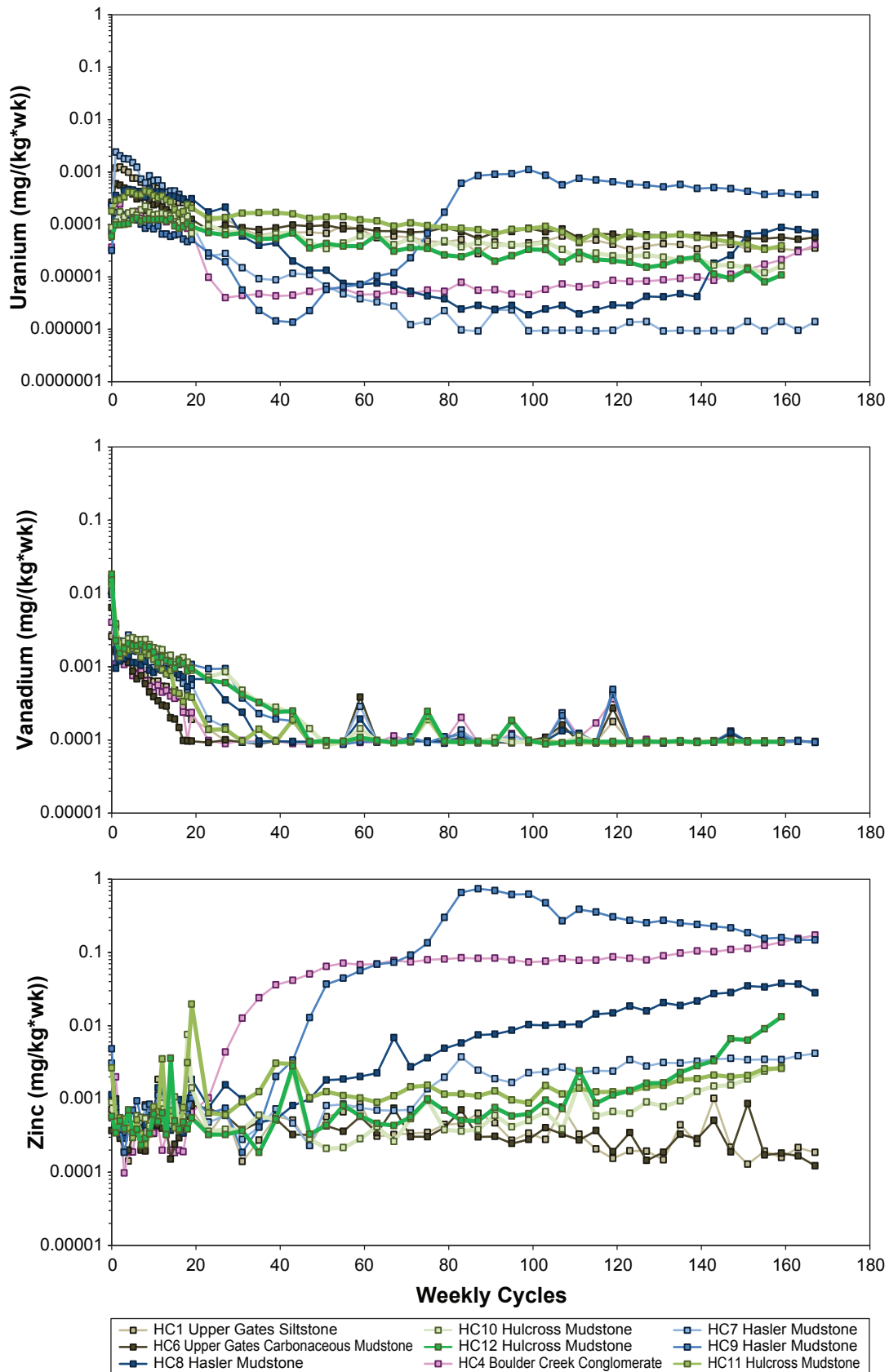


Figure A6-11

Uranium, Vanadium, and Zinc Production Rates for Waste Rock Humidity Cells



## Appendix 7

### Waste Rock Field Leach Barrel Results

Appendix 7. Waste Rock Field Leach Barrel Results

Barrel ID	Hasler									
	Date Sampled	Jun-11	Oct-11	Nov-11	Apr-12	May-12	Oct-12	May-13	Jun-13	Aug-13
<b>Physical Tests</b>										
Colour, True	-	27	53.4	-	9	-	-	-	21.6	14.3
Conductivity	-	613	1050	-	71.1	-	-	-	1190	1790
Hardness (as CaCO <sub>3</sub> )	-	21.8	10.5	-	15.5	26.2	-	-	24.7	20.1
pH	-	8.4	8.48	-	8.03	-	-	-	8.36	8.18
Total Suspended Solids	-	9.5	5.5	-	69	-	-	-	6.8	4.6
Total Dissolved Solids	-	-	743	-	312	-	-	-	-	-
Turbidity	-	172	77.9	-	280	-	-	-	162	45.6
<b>Anions and Nutrients</b>										
Acidity (as CaCO <sub>3</sub> )	-	0.5	0.5	-	3.3	-	-	-	0.5	1.3
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	-	203	287	-	32.9	-	-	-	199	278
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	-	5	13	-	0.5	-	-	-	1.6	0.5
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	-	0.5	0.5	-	0.5	-	-	-	0.5	0.5
Alkalinity, Total (as CaCO <sub>3</sub> )	-	208	300	-	34	-	-	-	201	278
Ammonia, Total (as N)	-	0.144	0.202	-	0.108	-	-	-	0.0547	0.0835
Bromide (Br <sup>-</sup> )	-	0.069	0.25	-	0.025	-	-	-	0.25	0.5
Chloride (Cl <sup>-</sup> )	-	10.2	11.6	-	2.07	-	-	-	2.5	5
Fluoride (F <sup>-</sup> )	-	1.44	1.78	-	0.314	-	-	-	1.67	1.73
Nitrate (as N)	-	0.438	10.2	-	0.359	-	-	-	6.14	22.5
Nitrite (as N)	-	0.0019	0.085	-	0.004	-	-	-	0.012	0.082
Total Kjeldahl Nitrogen	-	1.48	2.88	-	1.17	-	-	-	0.7	2.35
Total Nitrogen	-	1.92	13.2	-	1.53	-	-	-	7.09	23.4
Orthophosphate-Dissolved (as P)	-	0.15	0.227	-	0.0277	-	-	-	0.29	0.193
Phosphorus (P)-Total Dissolved	-	0.141	0.21	-	0.0267	-	-	-	0.308	0.208
Phosphorus (P)-Total	-	0.385	0.312	-	0.403	-	-	-	0.739	0.299
Sulphate (SO <sub>4</sub> <sup>2-</sup> )	-	93.4	173	-	4.11	-	-	-	372	582
Sulphide as S	-	0.01	0.01	-	-	-	-	-	-	-
<b>Cyanides</b>										
Cyanide, WAD	-	0.0005	0.0005	-	-	-	-	-	0.0005	0.0005
Cyanide, Total	-	0.0057	0.005	-	-	-	-	-	0.0005	0.0005
<b>Organic / Inorganic Carbon</b>										
Dissolved Organic Carbon	-	-	5.01	-	-	-	-	-	-	-
Total Organic Carbon	-	11.8	17.1	-	4.71	-	-	-	11	6.8
<b>Total Metals</b>										
Aluminum (Al)	-	15.1	24.7	-	7.02	-	-	-	17.7	3.63
Antimony (Sb)	-	0.00593	0.00174	-	0.00067	-	-	-	0.00443	0.00788
Arsenic (As)	-	0.0149	0.0148	-	0.00249	-	-	-	0.0145	0.00672
Barium (Ba)	-	0.385	2.81	-	0.814	-	-	-	1.59	0.686
Beryllium (Be)	-	0.00069	0.00137	-	0.00041	-	-	-	0.00077	0.0001
Bismuth (Bi)	-	0.0005	0.00025	-	0.00025	-	-	-	0.00025	0.0005
Boron (B)	-	0.155	0.108	-	0.031	-	-	-	0.167	0.272
Cadmium (Cd)	-	0.000125	0.000228	-	0.00009	-	-	-	0.00015	0.000045
Calcium (Ca)	-	8.51	5.8	-	6.66	-	-	-	9.75	7.48
Chromium (Cr)	-	0.0219	0.0355	-	0.0108	-	-	-	0.0239	0.00545
Cobalt (Co)	-	0.00576	0.0145	-	0.0037	-	-	-	0.00873	0.00196
Copper (Cu)	-	0.0128	0.0391	-	0.00851	-	-	-	0.0317	0.0465
Iron (Fe)	-	9.48	12.6	-	5.19	-	-	-	14.4	2.5
Lead (Pb)	-	0.00486	0.015	-	0.0037	-	-	-	0.00934	0.00239
Lithium (Li)	-	0.114	0.101	-	0.0152	-	-	-	0.336	0.61
Magnesium (Mg)	-	2.54	3.66	-	1.57	-	-	-	2.55	1.18
Manganese (Mn)	-	0.14	0.141	-	0.0669	-	-	-	0.203	0.0412
Mercury (Hg)	-	0.000025	0.000021	-	0.000025	-	-	-	0.000093	0.000015
Molybdenum (Mo)	-	0.0984	0.0495	-	0.00351	-	-	-	0.18	0.167
Nickel (Ni)	-	0.0215	0.0425	-	0.011	-	-	-	0.0267	0.007
Phosphorus (P)	-	0.39	0.58	-	0.15	-	-	-	0.74	0.31
Potassium (K)	-	6.8	7.81	-	2.64	-	-	-	5.55	2.1
Selenium (Se)	-	0.0288	0.0201	-	0.00206	-	-	-	0.0694	0.0758
Silicon (Si)	-	77	45	-	24.3	-	-	-	30.5	8.65
Silver (Ag)	-	0.000112	0.000139	-	0.000031	-	-	-	0.000126	0.000039
Sodium (Na)	-	134	74.1	-	5.35	-	-	-	268	404
Strontium (Sr)	-	0.0365	0.0742	-	0.0404	-	-	-	0.0806	0.0553
Thallium (Tl)	-	0.000366	0.000495	-	0.000172	-	-	-	0.000379	0.000097
Tin (Sn)	-	0.0112	0.00821	-	0.00427	-	-	-	0.00942	0.00361
Titanium (Ti)	-	0.618	0.184	-	0.195	-	-	-	0.085	0.034
Uranium (U)	-	0.00332	0.00336	-	0.000445	-	-	-	0.00571	0.00281
Vanadium (V)	-	0.0487	0.0777	-	0.0233	-	-	-	0.0485	0.0114
Zinc (Zn)	-	0.177	0.662	-	0.174	-	-	-	0.233	0.0526
<b>Dissolved Metals</b>										
Aluminum (Al)	-	0.994	10.8	-	0.229	4.84	-	-	2.56	1.31
Antimony (Sb)	-	0.00938	0.00299	-	0.00067	0.00391	-	-	0.0067	0.00841
Arsenic (As)	-	0.013	0.0121	-	0.00093	0.0241	-	-	0.00887	0.00565
Barium (Ba)	-	0.045	0.493	-	0.258	0.276	-	-	0.55	0.213
Beryllium (Be)	-	0.0001	0.00018	-	0.00005	0.00042	-	-	0.00017	0.0001
Bismuth (Bi)	-	0.0005	0.00025	-	0.00025	0.00025	-	-	0.00025	0.0005
Boron (B)	-	0.136	0.066	-	0.014	0.138	-	-	0.143	0.264
Cadmium (Cd)	-	0.000037	0.000052	-	0.00001	0.000115	-	-	0.00005	0.000025
Calcium (Ca)	-	6.96	3.15	-	5.73	8.4	-	-	8.31	6.74
Chromium (Cr)	-	0.00179	0.00269	-	0.0004	0.00793	-	-	0.00404	0.00215
Cobalt (Co)	-	0.00061	0.00277	-	0.00012	0.00619	-	-	0.00222	0.00053
Copper (Cu)	-	0.0047	0.0113	-	0.00087	0.0174	-	-	0.0144	0.0239
Iron (Fe)	-	0.485	2.35	-	0.074	10.7	-	-	3.58	0.645
Lead (Pb)	-	0.00029	0.0023	-	0.000061	0.00529	-	-	0.00283	0.00056

**Appendix 7. Waste Rock Field Leach Barrel Results**

Barrel ID Date Sampled	Hasler								
	Jun-11	Oct-11	Nov-11	Apr-12	May-12	Oct-12	May-13	Jun-13	Aug-13
<b>Dissolved Metals (cont'd)</b>									
Lithium (Li)	-	0.106	0.0768	-	0.009	0.057	-	0.304	0.571
Magnesium (Mg)	-	1.06	0.648	-	0.28	1.28	-	0.965	0.792
Manganese (Mn)	-	0.0309	0.0194	-	0.00572	0.178	-	0.0484	0.014
Mercury (Hg)	-	0.000025	0.000005	-	0.000025	0.000057	-	0.000022	0.000015
Molybdenum (Mo)	-	0.103	0.0554	-	0.00369	0.17	-	0.183	0.167
Nickel (Ni)	-	0.0056	0.00925	-	0.00062	0.0191	-	0.00797	0.0024
Phosphorus (P)	-	0.15	0.15	-	0.15	0.96	-	0.42	0.15
Potassium (K)	-	2.37	1.2	-	0.44	2.01	-	2.03	1.51
Selenium (Se)	-	0.0293	0.0211	-	0.00192	0.0473	-	0.0695	0.0737
Silicon (Si)	-	7.17	19.5	-	1.2	56.8	-	13.7	5.73
Silver (Ag)	-	0.00001	0.000018	-	0.000005	0.000024	-	0.000029	0.00001
Sodium (Na)	-	138	77.5	-	5.24	181	-	268	413
Strontium (Sr)	-	0.0248	0.0279	-	0.0315	0.0359	-	0.0496	0.0425
Thallium (Tl)	-	0.000047	0.000052	-	0.000005	0.000117	-	0.000081	0.000039
Tin (Sn)	-	0.00301	0.00305	-	0.0011	0.00925	-	0.00463	0.0021
Titanium (Ti)	-	0.027	0.156	-	0.005	0.428	-	0.078	0.017
Uranium (U)	-	0.0031	0.00293	-	0.000174	0.005	-	0.00523	0.00262
Vanadium (V)	-	0.0037	0.0059	-	0.0012	0.0138	-	0.0073	0.0046
Zinc (Zn)	-	0.013	0.119	-	0.0045	0.178	-	0.0723	0.0137

**Notes:**

- indicates insufficient water in barrel for the parameter to be sampled
- Highlighted values are above BC MOE chronic (30-day mean) water quality guidelines
- Bolded values are above BC MOE acute (maximum) water quality guidelines
- Acute guidelines were only applied in the absence of chronic guidelines
- Results below detection limits are reported as half of detection limit



Appendix 7. Waste Rock Field Leach Barrel Results

Barrel ID	Boulder Creek								
	Jun-11	Oct-11	Nov-11	Apr-12	May-12	Oct-12	May-13	Jun-13	Aug-13
<b>Physical Tests</b>									
Colour, True	-	22	8.4	-	-	36.6	-	16.8	18.3
Conductivity	-	880	661	-	-	882	-	213	1080
Hardness (as CaCO <sub>3</sub> )	-	50.6	60.1	-	-	43.8	-	22.6	41
pH	-	8.36	8.39	-	-	8.22	-	8.22	8.36
Total Suspended Solids	-	8.8	9.5	-	-	58	-	147	1.5
Total Dissolved Solids	-	-	490	-	-	-	-	-	-
Turbidity	-	21.3	56.9	-	-	71.7	-	122	41.2
<b>Anions and Nutrients</b>									
Acidity (as CaCO <sub>3</sub> )	-	0.5	0.5	-	-	1.6	-	1.5	0.5
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	-	208	107	-	-	185	-	70.6	149
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	-	0.5	2.3	-	-	1	-	1	0.5
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	-	0.5	0.5	-	-	1	-	1	0.5
Alkalinity, Total (as CaCO <sub>3</sub> )	-	208	109	-	-	185	-	70.6	149
Ammonia, Total (as N)	-	0.0327	-	-	-	-	-	0.0465	0.0106
Bromide (Br <sup>-</sup> )	-	0.25	0.025	-	-	0.25	-	0.025	0.25
Chloride (Cl <sup>-</sup> )	-	16.8	5.07	-	-	2.5	-	0.65	2.5
Fluoride (F <sup>-</sup> )	-	2.4	1.2	-	-	2.24	-	0.972	2.9
Nitrate (as N)	-	0.311	0.981	-	-	2.56	-	1.18	25.2
Nitrite (as N)	-	0.017	0.0026	-	-	0.014	-	0.001	0.005
Total Kjeldahl Nitrogen	-	0.5	-	-	-	-	-	0.89	2.45
Total Nitrogen	-	0.83	-	-	-	-	-	2.07	24.5
Orthophosphate-Dissolved (as P)	-	0.0203	0.0406	-	-	0.135	-	0.0656	0.153
Phosphorus (P)-Total Dissolved	-	0.0247	0.0493	-	-	0.317	-	0.0933	0.167
Phosphorus (P)-Total	-	0.0592	0.094	-	-	0.607	-	0.443	0.253
Sulphate (SO <sub>4</sub> <sup>2-</sup> )	-	201	190	-	-	264	-	33.7	285
Sulphide as S	-	0.01	-	-	-	-	-	-	-
<b>Cyanides</b>									
Cyanide, WAD	-	0.0005	-	-	-	-	-	0.0005	0.0005
Cyanide, Total	-	0.0053	-	-	-	-	-	0.0005	0.0005
<b>Organic / Inorganic Carbon</b>									
Dissolved Organic Carbon	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	7.97	-	-	-	-	-	14	6.08
<b>Total Metals</b>									
Aluminum (Al)	-	1.82	-	-	-	4.77	-	9.47	4.39
Antimony (Sb)	-	0.0177	-	-	-	0.00835	-	0.00327	0.00983
Arsenic (As)	-	0.0123	-	-	-	0.0154	-	0.00558	0.00685
Barium (Ba)	-	0.106	-	-	-	0.308	-	0.448	0.121
Beryllium (Be)	-	0.00005	-	-	-	0.00022	-	0.00044	0.00016
Bismuth (Bi)	-	0.00025	-	-	-	0.00025	-	0.00025	0.00025
Boron (B)	-	0.106	-	-	-	0.096	-	0.065	0.109
Cadmium (Cd)	-	0.000035	-	-	-	0.00006	-	0.0001	0.00004
Calcium (Ca)	-	15.2	-	-	-	14	-	9.66	11.3
Chromium (Cr)	-	0.00349	-	-	-	0.00974	-	0.0165	0.00526
Cobalt (Co)	-	0.00685	-	-	-	0.00542	-	0.00421	0.00372
Copper (Cu)	-	0.00599	-	-	-	0.0179	-	0.22	0.00696
Iron (Fe)	-	0.97	-	-	-	3.08	-	6.48	2.74
Lead (Pb)	-	0.00103	-	-	-	0.00227	-	0.00394	0.00186
Lithium (Li)	-	0.0433	-	-	-	0.006	-	0.0195	0.01
Magnesium (Mg)	-	2.82	-	-	-	2.39	-	1.32	3.13
Manganese (Mn)	-	0.164	-	-	-	0.0566	-	0.0899	0.0398
Mercury (Hg)	-	0.000025	-	-	-	0.00002	-	0.000026	0.000005
Molybdenum (Mo)	-	0.135	-	-	-	0.179	-	0.0582	0.157
Nickel (Ni)	-	0.0188	-	-	-	0.0158	-	0.0155	0.011
Phosphorus (P)	-	0.15	-	-	-	0.3	-	0.34	0.15
Potassium (K)	-	3.2	-	-	-	3.22	-	3.19	2.68
Selenium (Se)	-	0.0816	-	-	-	0.127	-	0.0105	0.0366
Silicon (Si)	-	12.2	-	-	-	17.8	-	20.3	9.72
Silver (Ag)	-	0.000108	-	-	-	0.000091	-	0.000106	0.000092
Sodium (Na)	-	179	-	-	-	206	-	40.2	213
Strontium (Sr)	-	0.13	-	-	-	0.0804	-	0.0432	0.0947
Thallium (Tl)	-	0.000092	-	-	-	0.000128	-	0.000253	0.000087
Tin (Sn)	-	0.013	-	-	-	0.00594	-	0.00748	0.00324
Titanium (Ti)	-	0.058	-	-	-	0.076	-	0.058	0.04
Uranium (U)	-	0.00294	-	-	-	0.00333	-	0.00122	0.00286
Vanadium (V)	-	0.0081	-	-	-	0.0169	-	0.033	0.0096
Zinc (Zn)	-	0.0409	-	-	-	0.0634	-	0.152	0.0414
<b>Dissolved Metals</b>									
Aluminum (Al)	-	0.395	0.306	-	-	2.94	-	1.54	2.48
Antimony (Sb)	-	0.0192	0.00596	-	-	0.00867	-	0.00311	0.0107
Arsenic (As)	-	0.0122	0.00919	-	-	0.015	-	0.00292	0.00629
Barium (Ba)	-	0.0667	0.058	-	-	0.148	-	0.131	0.0785
Beryllium (Be)	-	0.00005	0.00005	-	-	0.00017	-	0.00005	0.00005
Bismuth (Bi)	-	0.00025	0.00025	-	-	0.00025	-	0.00025	0.00025
Boron (B)	-	0.11	0.046	-	-	0.087	-	0.052	0.112
Cadmium (Cd)	-	0.00003	0.000041	-	-	0.000065	-	0.000015	0.000025
Calcium (Ca)	-	15.7	18	-	-	13.8	-	8.27	11.4
Chromium (Cr)	-	0.00091	0.00035	-	-	0.00606	-	0.00292	0.0025
Cobalt (Co)	-	0.00399	0.0135	-	-	0.00509	-	0.00059	0.00156
Copper (Cu)	-	0.00452	0.00572	-	-	0.0171	-	0.0743	0.00462
Iron (Fe)	-	0.101	0.059	-	-	3.17	-	0.987	1.28
Lead (Pb)	-	0.000131	0.000129	-	-	0.00165	-	0.000598	0.000718

Appendix 7. Waste Rock Field Leach Barrel Results

Barrel ID Date Sampled	Boulder Creek								
	Jun-11	Oct-11	Nov-11	Apr-12	May-12	Oct-12	May-13	Jun-13	Aug-13
<b>Dissolved Metals (cont'd)</b>									
Lithium (Li)	-	0.044	0.0255	-	-	0.00487	-	0.0135	0.00832
Magnesium (Mg)	-	2.75	3.67	-	-	2.25	-	0.476	3.05
Manganese (Mn)	-	0.143	0.0587	-	-	0.0488	-	0.00891	0.0136
Mercury (Hg)	-	0.000025	0.000005	-	-	0.000019	-	0.000005	0.000005
Molybdenum (Mo)	-	0.134	0.046	-	-	0.163	-	0.059	0.161
Nickel (Ni)	-	0.0136	0.0186	-	-	0.0143	-	0.00342	0.00541
Phosphorus (P)	-	0.15	0.15	-	-	0.3	-	0.15	0.15
Potassium (K)	-	2.78	1.17	-	-	2.53	-	1.02	2.37
Selenium (Se)	-	0.0822	0.106	-	-	0.135	-	0.0101	0.0357
Silicon (Si)	-	4.97	2.33	-	-	23.9	-	6.83	7.94
Silver (Ag)	-	0.000015	0.000005	-	-	0.000025	-	0.000005	0.000029
Sodium (Na)	-	180	122	-	-	195	-	38.9	218
Strontium (Sr)	-	0.127	0.21	-	-	0.0774	-	0.0333	0.0927
Thallium (Tl)	-	0.000054	0.000025	-	-	0.000073	-	0.000041	0.000035
Tin (Sn)	-	0.00775	0.00339	-	-	0.00859	-	0.00214	0.0032
Titanium (Ti)	-	0.005	0.005	-	-	0.141	-	0.026	0.03
Uranium (U)	-	0.00297	0.00335	-	-	0.00313	-	0.000772	0.00283
Vanadium (V)	-	0.0026	0.0017	-	-	0.0098	-	0.0055	0.004
Zinc (Zn)	-	0.0123	0.0181	-	-	0.0736	-	0.028	0.0177

Notes:

- indicates insufficient water in barrel for the parameter to be sampled
- Highlighted values are above BC MOE chronic (30-day mean) water quality guidelines
- Bolded values are above BC MOE acute (maximum) water quality guidelines
- Acute guidelines were only applied in the absence of chronic guidelines
- Results below detection limits are reported as half of detection limit

Appendix 7. Waste Rock Field Leach Barrel Results

Barrel ID	Hulcross								
	Jun-11	Oct-11	Nov-11	Apr-12	May-12	Oct-12	May-13	Jun-13	Aug-13
<b>Physical Tests</b>									
Colour, True	-	26.2	50.6	44.8	-	-	10.8	43	22.3
Conductivity	-	629	966	276	-	-	1200	784	881
Hardness (as CaCO <sub>3</sub> )	-	34.6	15	14	-	20	81.2	16	19.6
pH	-	8.28	8.51	8.58	-	-	8.33	8.13	8.32
Total Suspended Solids	-	22.8	13.5	1.5	-	-	18.1	6.1	1.5
Total Dissolved Solids	-	-	714	-	-	-	-	-	-
Turbidity	-	131	122	293	-	-	102	141	59.1
<b>Anions and Nutrients</b>									
Acidity (as CaCO <sub>3</sub> )	-	0.5	0.5	0.5	-	-	0.5	2.5	0.5
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	-	205	276	102	-	-	235	303	246
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	-	1.4	13.2	0.5	-	-	4.8	1	0.5
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	-	0.5	0.5	0.5	-	-	0.5	1	0.5
Alkalinity, Total (as CaCO <sub>3</sub> )	-	206	289	102	-	-	240	303	246
Ammonia, Total (as N)	-	0.0274	0.119	0.126	-	0.0278	0.0516	0.0568	0.0202
Bromide (Br <sup>-</sup> )	-	0.072	0.25	0.025	-	-	0.25	0.25	0.25
Chloride (Cl <sup>-</sup> )	-	27.6	32.3	4.68	-	-	2.5	2.5	2.5
Fluoride (F <sup>-</sup> )	-	<b>1.08</b>	<b>1.69</b>	<b>0.984</b>	-	-	<b>2.57</b>	<b>2.78</b>	<b>2.37</b>
Nitrate (as N)	-	0.396	7.07	0.809	-	-	7.18	2.67	10.5
Nitrite (as N)	-	0.0019	0.005	0.0058	-	-	0.005	0.005	0.005
Total Kjeldahl Nitrogen	-	1.17	1.32	0.74	-	-	0.75	0.92	1.05
Total Nitrogen	-	1.57	8.39	1.55	-	5.5	7.67	3.59	10.3
Orthophosphate-Dissolved (as P)	-	0.0724	0.124	0.126	-	-	0.115	0.464	0.395
Phosphorus (P)-Total Dissolved	-	0.0817	0.152	0.142	-	-	0.145	0.628	0.415
Phosphorus (P)-Total	-	0.308	0.296	0.632	-	-	0.256	0.897	0.514
Sulphate (SO <sub>4</sub> <sup>2-</sup> )	-	81.5	134	33.2	-	-	372	108	173
Sulphide as S	-	0.01	0.01	-	-	-	-	-	-
<b>Cyanides</b>									
Cyanide, WAD	-	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005
Cyanide, Total	-	0.0043	0.0067	0.0005	-	0.0005	0.0005	0.0005	0.0005
<b>Organic / Inorganic Carbon</b>									
Dissolved Organic Carbon	-	-	8.23	-	-	-	-	-	-
Total Organic Carbon	-	10.7	11.9	8.94	-	14.7	6.03	16.3	7.14
<b>Total Metals</b>									
Aluminum (Al)	-	10.3	11.3	19.5	-	12.2	12.4	20.1	6.49
Antimony (Sb)	-	0.00409	0.0016	0.00155	-	0.00358	0.00682	0.00497	0.00708
Arsenic (As)	-	<b>0.0109</b>	<b>0.0122</b>	<b>0.00682</b>	-	<b>0.0144</b>	<b>0.00714</b>	<b>0.0136</b>	<b>0.00857</b>
Barium (Ba)	-	0.239	1.07	1.1	-	0.481	0.563	0.653	0.272
Beryllium (Be)	-	0.00043	0.0006	0.00084	-	0.00053	0.0005	0.00087	0.00025
Bismuth (Bi)	-	0.00025	0.00025	0.00025	-	0.00025	0.00025	0.00025	0.00025
Boron (B)	-	0.101	0.062	0.057	-	0.101	0.085	0.132	0.134
Cadmium (Cd)	-	<b>0.000104</b>	<b>0.000109</b>	<b>0.000126</b>	-	<b>0.00007</b>	<b>0.000075</b>	<b>0.00015</b>	<b>0.000055</b>
Calcium (Ca)	-	11.6	5.95	3.49	-	5.88	22.7	6.18	4.75
Chromium (Cr)	-	<b>0.0169</b>	<b>0.0185</b>	<b>0.0329</b>	-	<b>0.0207</b>	<b>0.0206</b>	<b>0.0321</b>	<b>0.0116</b>
Cobalt (Co)	-	0.00254	0.00302	0.00471	-	0.00444	0.0213	0.00566	0.00152
Copper (Cu)	-	0.00697	0.0119	0.0146	-	0.012	0.0306	0.0441	0.0116
Iron (Fe)	-	<b>4.54</b>	<b>5.9</b>	<b>10.6</b>	-	<b>8.57</b>	<b>3.75</b>	<b>11.8</b>	<b>2.69</b>
Lead (Pb)	-	0.00219	0.00357	0.00598	-	0.0043	0.0064	0.00647	0.00194
Lithium (Li)	-	0.0946	0.0966	0.0536	-	0.0591	0.0202	0.154	0.195
Magnesium (Mg)	-	2.75	2.22	2.28	-	1.78	5	2.61	1.14
Manganese (Mn)	-	0.164	0.0762	0.135	-	0.098	0.0515	0.139	0.0303
Mercury (Hg)	-	0.000032	0.000025	0.000031	-	0.000042	0.000032	0.000085	0.000019
Molybdenum (Mo)	-	0.0603	0.0643	0.0317	-	0.273	0.125	0.415	0.358
Nickel (Ni)	-	0.0139	0.0165	0.0218	-	0.0189	0.0449	<b>0.0267</b>	0.00849
Phosphorus (P)	-	0.15	0.35	0.42	-	0.7	0.15	0.89	0.5
Potassium (K)	-	5.6	4.45	6.18	-	4.18	5.79	6.52	3.13
Selenium (Se)	-	0.00463	0.00601	0.00347	-	0.0118	0.155	0.0183	0.0098
Silicon (Si)	-	20.3	35.3	33.8	-	36.9	20	36.7	12.2
Silver (Ag)	-	0.000066	0.000048	0.000088	-	0.000096	0.00026	0.000122	0.000047
Sodium (Na)	-	119	92.5	44	-	153	254	196	208
Strontium (Sr)	-	0.0472	0.0642	0.0463	-	0.0365	0.122	0.0411	0.0311
Thallium (Tl)	-	0.000247	0.000253	<b>0.000406</b>	-	<b>0.000303</b>	0.000255	<b>0.000453</b>	0.000145
Tin (Sn)	-	0.016	0.00563	0.00442	-	0.00648	0.00377	0.00834	0.00553
Titanium (Ti)	-	0.116	0.33	0.225	-	0.214	0.125	0.096	0.049
Uranium (U)	-	0.00189	0.00249	0.00235	-	0.00426	0.0108	0.0078	0.00374
Vanadium (V)	-	0.0371	0.0416	0.0694	-	0.0409	0.0427	0.0665	0.0243
Zinc (Zn)	-	0.0733	0.239	0.268	-	0.151	0.249	0.284	0.0985
<b>Dissolved Metals</b>									
Aluminum (Al)	-	0.802	0.044	10.4	-	4.51	12.8	2.62	5.33
Antimony (Sb)	-	0.00469	0.00205	0.00107	-	0.00339	0.00751	0.0066	0.00757
Arsenic (As)	-	0.00965	0.0114	0.00462	-	0.0129	0.00744	0.0101	0.00805
Barium (Ba)	-	0.0508	0.146	0.972	-	0.287	0.437	0.218	0.208
Beryllium (Be)	-	0.00005	0.00005	0.00061	-	0.00037	0.00049	0.0002	0.00018
Bismuth (Bi)	-	0.00025	0.00025	0.00025	-	0.00025	0.00025	0.00025	0.00025
Boron (B)	-	0.088	0.038	0.037	-	0.087	0.08	0.105	0.122
Cadmium (Cd)	-	0.000028	0.000023	0.000112	-	0.00007	0.000075	0.0001	0.000045
Calcium (Ca)	-	10.9	4.65	3.38	-	6.1	24.4	5	5.97
Chromium (Cr)	-	0.00174	0.00062	0.0165	-	0.00833	0.0207	0.00484	0.00927
Cobalt (Co)	-	0.0002	0.00035	0.00385	-	0.00375	0.0212	0.00157	0.0009
Copper (Cu)	-	0.00297	0.00465	0.0124	-	0.0103	0.0301	0.0268	0.0088
Iron (Fe)	-	0.314	0.042	<b>5.08</b>	-	<b>9.36</b>	<b>3.31</b>	<b>2.69</b>	<b>1.37</b>
Lead (Pb)	-	0.000125	0.000051	0.00474	-	0.00309	0.00556	0.00209	0.00127

**Appendix 7. Waste Rock Field Leach Barrel Results**

Barrel ID Date Sampled	Hulcross								
	Jun-11	Oct-11	Nov-11	Apr-12	May-12	Oct-12	May-13	Jun-13	Aug-13
<b>Dissolved Metals (cont'd)</b>									
Lithium (Li)	-	0.0906	0.0869	0.0487	-	0.0582	0.0201	0.136	0.191
Magnesium (Mg)	-	1.77	0.819	1.35	-	1.15	4.92	0.858	1.15
Manganese (Mn)	-	0.01	0.00561	0.108	-	0.0779	0.0488	0.0348	0.0173
Mercury (Hg)	-	0.000025	0.000005	0.000032	-	0.000039	0.000028	0.00003	0.000005
Molybdenum (Mo)	-	0.064	0.0674	0.0175	-	0.233	0.119	0.426	0.355
Nickel (Ni)	-	0.00595	0.00353	0.0185	-	0.0173	0.0446	0.00965	0.0061
Phosphorus (P)	-	0.15	0.15	0.34	-	0.72	0.15	0.67	0.47
Potassium (K)	-	2.54	0.824	3.41	-	2.17	5.65	2.12	2.86
Selenium (Se)	-	0.00544	0.00684	0.00278	-	0.0121	0.183	0.0183	0.00809
Silicon (Si)	-	5.83	2.11	17.3	-	48.9	20.9	12.2	7.98
Silver (Ag)	-	0.000005	0.000005	0.000049	-	0.000024	0.000179	0.000023	0.000027
Sodium (Na)	-	127	94.7	43	-	161	266	201	216
Strontium (Sr)	-	0.0409	0.0438	0.0404	-	0.0343	0.119	0.0277	0.0318
Thallium (Tl)	-	0.000043	0.000005	0.00018	-	0.000094	0.000229	0.000079	0.0001
Tin (Sn)	-	0.00498	0.00222	0.00245	-	0.00687	0.00637	0.00685	0.00618
Titanium (Ti)	-	0.015	0.005	0.146	-	0.338	0.149	0.057	0.035
Uranium (U)	-	0.00171	0.00225	0.00203	-	0.00427	0.0114	0.0075	0.00366
Vanadium (V)	-	0.004	0.0014	0.0348	-	0.0144	0.0432	0.0086	0.02
Zinc (Zn)	-	0.0056	0.0037	0.274	-	0.165	0.254	0.106	0.066

**Notes:**

- indicates insufficient water in barrel for the parameter to be sampled

Highlighted values are above BC MOE chronic (30-day mean) water quality guidelines

Bolded values are above BC MOE acute (maximum) water quality guidelines

Acute guidelines were only applied in the absence of chronic guidelines

Results below detection limits are reported as half of detection limit

Appendix 7. Waste Rock Field Leach Barrel Results

Barrel ID	Upper Gates								
	Jun-11	Oct-11	Nov-11	Apr-12	May-12	Oct-12	May-13	Jun-13	Aug-13
<b>Physical Tests</b>									
Colour, True	33.2	31.5	71.2	-	-	-	-	54.7	29.7
Conductivity	751	818	876	-	-	-	-	996	1110
Hardness (as CaCO <sub>3</sub> )	130	25.3	16.6	-	-	-	-	12.5	7.14
pH	8.13	8.44	8.72	-	-	-	-	8.89	8.84
Total Suspended Solids	484	30.8	48.2	-	-	-	-	10.8	1.5
Total Dissolved Solids	-	-	613	-	-	-	-	-	-
Turbidity	0.84	220	77.3	-	-	-	-	123	64.9
<b>Anions and Nutrients</b>									
Acidity (as CaCO <sub>3</sub> )	-	0.5	-	-	-	-	-	0.5	0.5
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	-	342	-	-	-	-	-	464	457
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	-	10.6	-	-	-	-	-	58.3	36.2
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	-	0.5	-	-	-	-	-	0.5	0.5
Alkalinity, Total (as CaCO <sub>3</sub> )	183	352	-	-	-	-	-	522	493
Ammonia, Total (as N)	0.152	0.0511	-	-	-	-	-	0.0382	0.0277
Bromide (Br <sup>-</sup> )	0.025	0.25	0.25	-	-	-	-	0.25	0.25
Chloride (Cl <sup>-</sup> )	63.5	33.6	37.2	-	-	-	-	2.5	2.5
Fluoride (F <sup>-</sup> )	0.243	1.86	1.41	-	-	-	-	2.77	2.4
Nitrate (as N)	0.171	0.076	3.05	-	-	-	-	6.82	19.9
Nitrite (as N)	0.01	0.005	0.037	-	-	-	-	0.005	0.005
Total Kjeldahl Nitrogen	-	1.06	-	-	-	-	-	0.75	1.9
Total Nitrogen	-	1.14	-	-	-	-	-	7.31	19
Orthophosphate-Dissolved (as P)	-	0.23	0.534	-	-	-	-	1.04	1.05
Phosphorus (P)-Total Dissolved	-	0.218	0.58	-	-	-	-	1.16	0.99
Phosphorus (P)-Total	-	0.566	0.769	-	-	-	-	1.51	1.13
Sulphate (SO <sub>4</sub> <sup>2-</sup> )	108	45.8	67.6	-	-	-	-	36.9	41.4
Sulphide as S	0.01	0.01	-	-	-	-	-	-	-
<b>Cyanides</b>									
Cyanide, WAD	-	0.0005	-	-	-	-	-	0.0005	0.0005
Cyanide, Total	0.0076	0.0046	-	-	-	-	-	0.0005	0.0005
<b>Organic / Inorganic Carbon</b>									
Dissolved Organic Carbon	-	-	-	-	-	-	-	-	-
Total Organic Carbon	14	10.9	-	-	-	-	-	10.2	7.33
<b>Total Metals</b>									
Aluminum (Al)	0.284	10	-	-	-	-	-	22.3	8.8
Antimony (Sb)	0.00502	0.00978	-	-	-	-	-	0.00721	0.00992
Arsenic (As)	0.0417	0.0187	-	-	-	-	-	0.0368	0.0264
Barium (Ba)	0.0521	0.233	-	-	-	-	-	0.467	0.18
Beryllium (Be)	0.00005	0.00048	-	-	-	-	-	0.00092	0.00034
Bismuth (Bi)	0.00025	0.00025	-	-	-	-	-	0.00025	0.00025
Boron (B)	0.041	0.045	-	-	-	-	-	0.053	0.059
Cadmium (Cd)	0.000093	0.000075	-	-	-	-	-	0.00015	0.00005
Calcium (Ca)	38.1	9.89	-	-	-	-	-	4.15	2.36
Chromium (Cr)	0.00069	0.0104	-	-	-	-	-	0.0231	0.00889
Cobalt (Co)	0.00087	0.0053	-	-	-	-	-	0.0166	0.00554
Copper (Cu)	0.00462	0.00799	-	-	-	-	-	0.0324	0.00913
Iron (Fe)	0.119	6.03	-	-	-	-	-	16.6	4.84
Lead (Pb)	0.000058	0.00404	-	-	-	-	-	0.0137	0.00523
Lithium (Li)	0.00134	0.0148	-	-	-	-	-	0.0223	0.0195
Magnesium (Mg)	5.99	2.17	-	-	-	-	-	2.23	0.818
Manganese (Mn)	0.325	0.116	-	-	-	-	-	0.206	0.0571
Mercury (Hg)	-	0.000029	-	-	-	-	-	0.000117	0.000018
Molybdenum (Mo)	0.07	0.208	-	-	-	-	-	0.259	0.263
Nickel (Ni)	0.0136	0.0191	-	-	-	-	-	0.0506	0.0153
Phosphorus (P)	0.15	0.43	-	-	-	-	-	1.43	1.1
Potassium (K)	4.44	5.98	-	-	-	-	-	5.64	3.48
Selenium (Se)	0.0108	0.0186	-	-	-	-	-	0.0488	0.0634
Silicon (Si)	5.75	47.6	-	-	-	-	-	53.3	30.4
Silver (Ag)	0.000017	0.000106	-	-	-	-	-	0.000293	0.000137
Sodium (Na)	141	194	-	-	-	-	-	259	280
Strontium (Sr)	0.11	0.0371	-	-	-	-	-	0.034	0.0175
Thallium (Tl)	0.000058	0.000232	-	-	-	-	-	0.000377	0.000154
Tin (Sn)	0.0223	0.00919	-	-	-	-	-	0.00978	0.00484
Titanium (Ti)	0.005	0.403	-	-	-	-	-	0.182	0.143
Uranium (U)	0.00261	0.00582	-	-	-	-	-	0.00915	0.00689
Vanadium (V)	0.001	0.0229	-	-	-	-	-	0.0438	0.0206
Zinc (Zn)	0.0104	0.117	-	-	-	-	-	0.267	0.0896
<b>Dissolved Metals</b>									
Aluminum (Al)	0.0105	0.112	0.832	-	-	-	-	5.41	2.95
Antimony (Sb)	0.00519	0.0154	0.00771	-	-	-	-	0.0141	0.0138
Arsenic (As)	0.0447	0.0163	0.053	-	-	-	-	0.0322	0.0288
Barium (Ba)	0.0491	0.0192	0.0182	-	-	-	-	0.248	0.0903
Beryllium (Be)	0.00005	0.00005	0.00005	-	-	-	-	0.00049	0.00015
Bismuth (Bi)	0.00025	0.00025	0.00025	-	-	-	-	0.00025	0.00025
Boron (B)	0.041	0.035	0.039	-	-	-	-	0.045	0.052
Cadmium (Cd)	0.000072	0.000025	0.0001	-	-	-	-	0.0001	0.00005
Calcium (Ca)	41.3	8.1	4.54	-	-	-	-	3.67	2.18
Chromium (Cr)	0.00023	0.00055	0.00194	-	-	-	-	0.00592	0.00375
Cobalt (Co)	0.00077	0.00015	0.00337	-	-	-	-	0.0102	0.00332
Copper (Cu)	0.00425	0.00302	0.023	-	-	-	-	0.0203	0.00663
Iron (Fe)	0.015	0.015	0.247	-	-	-	-	8.72	2.9
Lead (Pb)	0.000025	0.000025	0.00026	-	-	-	-	0.00902	0.00286

**Appendix 7. Waste Rock Field Leach Barrel Results**

Barrel ID Date Sampled	Upper Gates								
	Jun-11	Oct-11	Nov-11	Apr-12	May-12	Oct-12	May-13	Jun-13	Aug-13
<b>Dissolved Metals (cont'd)</b>									
Lithium (Li)	0.00171	0.0102	0.00386	-	-	-	-	0.0139	0.0178
Magnesium (Mg)	6.43	1.23	1.26	-	-	-	-	0.808	0.414
Manganese (Mn)	0.325	0.000525	0.107	-	-	-	-	0.106	0.028
Mercury (Hg)	-	0.000025	0.000005	-	-	-	-	0.000059	0.000014
Molybdenum (Mo)	0.0619	0.214	0.249	-	-	-	-	0.263	0.284
Nickel (Ni)	0.013	0.00444	0.0136	-	-	-	-	0.03	0.00981
Phosphorus (P)	0.15	0.15	0.59	-	-	-	-	1.28	0.98
Potassium (K)	4.36	2.61	2.39	-	-	-	-	2.41	2.1
Selenium (Se)	0.0112	0.0183	0.0233	-	-	-	-	0.0484	0.0629
Silicon (Si)	7.6	3.52	6.61	-	-	-	-	36.5	22.8
Silver (Ag)	0.000005	0.000005	0.000034	-	-	-	-	0.00018	0.000065
Sodium (Na)	129	193	209	-	-	-	-	268	276
Strontium (Sr)	0.121	0.0267	0.0166	-	-	-	-	0.0247	0.0136
Thallium (Tl)	0.000055	0.00003	0.000032	-	-	-	-	0.00011	0.000053
Tin (Sn)	0.0177	0.00241	0.00548	-	-	-	-	0.00814	0.00386
Titanium (Ti)	0.005	0.005	0.005	-	-	-	-	0.173	0.103
Uranium (U)	0.00248	0.00572	0.00631	-	-	-	-	0.00971	0.007
Vanadium (V)	0.0005	0.0005	0.0031	-	-	-	-	0.012	0.0094
Zinc (Zn)	0.0031	0.0015	0.0084	-	-	-	-	0.18	0.0567

**Notes:**

- indicates insufficient water in barrel for the parameter to be sampled
- Highlighted values are above BC MOE chronic (30-day mean) water quality guidelines
- Bolded values are above BC MOE acute (maximum) water quality guidelines
- Acute guidelines were only applied in the absence of chronic guidelines
- Results below detection limits are reported as half of detection limit

## Appendix 8

### Coal ABA and Elemental Abundance Results

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Drillhole Govt ID	Drillhole Client ID	Formation	Coal Seam	Description	Lithology	Weight kg	Lab	Lab Certificate	Date	Paste pH pH Unit	Total S %	SO <sub>4</sub> _HCl %
MRC RX 22	MRC RX 22	P2R16	H19	Middle Gates	D	Top D	Sandstone	1.52	Maxxam		23-Mar-11	7.59	1.10	0.03
MRC RX 52	MRC RX 52	P1C45	H11	Middle Gates	D	Top D	Siltstone	1.79	Maxxam		23-Mar-11	9.14	0.32	0.01
MRC RX 68	MRC RX 68	P2C21	H2	Middle Gates	D	Top D	Siltstone	1.33	Maxxam		26-May-11	9.70	0.03	0.01
2128230	P2R18-6	P2R18	H15	Middle Gates	D	Top D	Medium grained Sandstone	1.93	Agat	10V452067	15-Nov-10	9.16	0.04	0.01
2212051	MRC RX 11	P2C26	H18	Middle Gates	D	Top D	Siltstone	0.36	Agat	10T462552	23-Dec-10	8.04	0.20	0.03
2128219	P2C26-6	P2C26	H18	Middle Gates	D	Top D	Siltstone	2.02	Agat	10V452067	15-Nov-10	9.23	0.76	0.02
2128219A	P2C26-6	P2C26	H18	Middle Gates	D	Top D	Siltstone	1.48	Maxxam		24-Feb-11	9.20	0.72	0.02
2212050	MRC RX 10	P2R18	H15	Middle Gates	D	Parting D	Carbonaceous Mudstone	0.32	Agat	10T462552	23-Dec-10	8.32	0.06	0.08
MRC RX 119	MRC RX 119	P2R6	H3	Middle Gates	D	Parting D	Mudstone	2.99	Maxxam		22-Jun-11	9.08	0.72	0.01
MRC RX 121	MRC RX 121	P1R31	H8	Middle Gates	D	Parting D	Siltstone	2.46	Maxxam		22-Jun-11	9.01	1.14	0.01
MRC RX 36	MRC RX 36	P2R6	H3	Middle Gates	D	Top D	Sandstone	1.87	Maxxam		23-Mar-11	9.40	0.06	0.01
2128203	P2R11-8	P2R11	H6	Middle Gates	D	Bottom D	Mudstone	1.91	Agat	10V452067	15-Nov-10	9.17	0.08	0.03
MRC RX 44	MRC RX 44	P1R31	H8	Middle Gates	D	Bottom D	Siltstone	2	Maxxam		23-Mar-11	8.97	0.69	0.01
MRC RX 23	MRC RX 23	P2R16	H19	Middle Gates	D	Bottom D	Sandstone	1.46	Maxxam		23-Mar-11	9.60	0.07	0.01
GF1057	RES 130798 1.70 SNK	Shaft	Shaft	Middle Gates	D	CCR	Coal	1.552	Maxxam	B331219	1-May-13	8.79	0.28	0.01
HY1946	H5-D_SINK (134129-3)	P2R5	H5	Middle Gates	D	CCR	Coal	2.03	Maxxam	B399406	1-Nov-13	9.24	0.15	0.01
HY1947	H13-D_SINK (134130-3)	P1R38	H13	Middle Gates	D	CCR	Coal	2.76	Maxxam	B399406	1-Nov-13	8.82	0.26	0.01
HY1950	H14-D_SINK (134133-3)	P2C27	H14	Middle Gates	D	CCR	Coal	2.579	Maxxam	B399406	1-Nov-13	7.97	0.52	0.01
ID6670	H15-D_SINK (134166-3)	P2R18	H15	Middle Gates	D	CCR	Coal	0.484	Maxxam	B3A8298	1-Dec-13	7.79	1.49	0.01
ID6674	H16-D_SINK (134171-3)	P1R39	H16	Middle Gates	D	CCR	Coal	0.323	Maxxam	B3A8298	1-Dec-13	7.68	0.76	0.01
ID6678	H18-D_SINK (134175-3)	P2C26	H18	Middle Gates	D	CCR	Coal	0.168	Maxxam	B3A8298	1-Dec-13	4.97	6.19	0.08
ID6683	H19-D_SINK (134180-3)	P2R16	H19	Middle Gates	D	CCR	Coal	0.378	Maxxam	B3A8298	1-Dec-13	8.42	0.62	0.01
HZ4740	NH8-D_SINK (134137-3)	P1R31	H8	Middle Gates	D	CCR	Coal	5.86	Maxxam	B3A1258	1-Dec-13	8.60	0.80	0.01
HZ4741	P1C44-D_SINK (134138-3)	P1C44	P1C44	Middle Gates	D	CCR	Coal	0.075	Maxxam	B3A1258	1-Dec-13	8.60	0.17	0.01
HZ4746	P1C50-D_SINK (134143-3)	P1C50	P1C50	Middle Gates	D	CCR	Coal	1.09	Maxxam	B3A1258	1-Dec-13	8.67	0.31	0.01
HZ4755	H7-D_SINK (134152-3)	P2R9	H7	Middle Gates	D	CCR	Coal	0.576	Maxxam	B3A1258	1-Dec-13	9.13	0.21	0.01
HZ4759	H9-D_SINK (134156-3)	P2R14	H9	Middle Gates	D	CCR	Coal	0.428	Maxxam	B3A1258	1-Dec-13	9.22	0.45	0.01
IE7572	BLOCK 1_D_TAILINGS	Composite	Composite	Middle Gates	D	Tailings	Coal	0.123	Maxxam	B3B0101	1-Dec-13	7.48	1.54	0.03
IE7573	H13_D_TAILINGS	P1R38	H13	Middle Gates	D	Tailings	Coal	0.15	Maxxam	B3B0101	1-Dec-13	7.97	0.69	0.01
IE7582	BLOCK 2_D_TAILINGS	Composite	Composite	Middle Gates	D	Tailings	Coal	0.20	Maxxam	B3B0101	1-Dec-13	7.83	0.66	0.01
IE7588	BLOCK 5_D_TAILINGS	P1R31	H8	Middle Gates	D	Tailings	Coal	0.19	Maxxam	B3B0101	1-Dec-13	7.91	1.22	0.02
GF1055	RES 130798 A(1) FLT 1.50	Shaft	Shaft	Middle Gates	D	Clean Coal	Coal	1.425	Maxxam	B331219	1-May-13	8.29	0.71	0.01
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	Shaft	Shaft	Middle Gates	D	Clean Coal	Coal	0.368	Maxxam	B331219	1-May-13	8.76	1.11	0.06
HZ4730	H5-D_RAW (134129-HR)	P2R5	H5	Middle Gates	D	Raw Coal	Coal	0.228	Maxxam	B3A1258	1-Dec-13	9.20	0.34	0.01
HZ4731	H13-D_RAW (134130-HR)	P1R38	H13	Middle Gates	D	Raw Coal	Coal	0.212	Maxxam	B3A1258	1-Dec-13	8.40	0.30	0.01
HZ4734	H14-D_RAW (134133-HR)	P2C27	H14	Middle Gates	D	Raw Coal	Coal	0.217	Maxxam	B3A1258	1-Dec-13	7.64	0.60	0.01
HZ4738	NH8-D_RAW (134137-HR)	P1R31	H8	Middle Gates	D	Raw Coal	Coal	0.012	Maxxam	B3A1258	1-Dec-13	8.35	0.82	0.01
2128231	P2R18-7	P2R18	H15	Middle Gates	E	Parting E	Mudstone	1.67	Agat	10V452067	15-Nov-10	9.07	0.05	0.02
MRC RX 113	MRC RX 113	P1R39	H16w	Middle Gates	E	E Parting	Mudstone	1.75	Maxxam		22-Jun-11	9.27	0.01	0.01
2212043	MRC RX 03	P2R14	H9	Middle Gates	E	Top E	Carbonaceous Mudstone	0.33	Agat	10T462552	23-Dec-10	8.26	1.79	0.06
HY1951	H14-E_SINK (134134-3)	P2C27	H14	Middle Gates	E	CCR	Coal	8.11	Maxxam	B399406	1-Nov-13	8.91	0.13	0.01
ID6668	H13-E_SINK (134164-3)	P1R38	H13	Middle Gates	E	CCR	Coal	2.17	Maxxam	B3A8298	1-Dec-13	9.20	0.13	0.01
ID6671	H15-E_SINK (134167-3)	P2R18	H15	Middle Gates	E	CCR	Coal	0.647	Maxxam	B3A8298	1-Dec-13	9.24	0.14	0.01
ID6675	H16-E_SINK (134172-3)	P1R39	H16	Middle Gates	E	CCR	Coal	1.611	Maxxam	B3A8298	1-Dec-13	9.28	0.16	0.01
ID6679	H18-E_SINK (134176-3)	P2C26	H18	Middle Gates	E	CCR	Coal	0.088	Maxxam	B3A8298	1-Dec-13	8.96	0.16	0.01
ID6684	H19-E_SINK (134181-3)	P2R16	H19	Middle Gates	E	CCR	Coal	0.272	Maxxam	B3A8298	1-Dec-13	9.25	0.13	0.01
ID6686	H20-E_SINK (134183-3)	P2R13	H20	Middle Gates	E	CCR	Coal	0.698	Maxxam	B3A8298	1-Dec-13	9.19	0.25	0.01

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported



Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Drillhole Govt ID	Drillhole Client ID	Formation	Coal Seam	Description	Lithology	Weight kg	Lab	Lab Certificate	Date	Paste pH pH Unit	Total S %	SO <sub>4</sub> _HCl %
HZ4747	P1C51-E_SINK (134144-3)	P1C51	P1C51	Middle Gates	E	CCR	Coal	1.355	Maxxam	B3A1258	1-Dec-13	8.46	0.47	0.01
HZ4751	H5-E_SINK (134148-3)	P2R5	H5	Middle Gates	E	CCR	Coal	1.483	Maxxam	B3A1258	1-Dec-13	9.37	0.11	0.01
HZ4756	H7-E_SINK (134153-3)	P2R9	H7	Middle Gates	E	CCR	Coal	0.18	Maxxam	B3A1258	1-Dec-13	9.28	0.25	0.01
HZ4760	H9-E_SINK (134157-3)	P2R14	H9	Middle Gates	E	CCR	Coal	0.884	Maxxam	B3A1258	1-Dec-13	9.38	0.15	0.01
IE7574	BLOCK 1_E_TAILINGS	Composite	Composite	Middle Gates	E	Tailings	Coal	0.452	Maxxam	B3B0101	1-Dec-13	8.33	0.30	0.01
IE7575	H13_E_TAILINGS	P1R38	H13	Middle Gates	E	Tailings	Coal	0.12	Maxxam	B3B0101	1-Dec-13	8.35	0.25	0.01
IE7583	BLOCK 2_E_TAILINGS	Composite	Composite	Middle Gates	E	Tailings	Coal	0.13	Maxxam	B3B0101	1-Dec-13	8.47	0.24	0.01
GF1060	RES 130799 A(1) FLT 1.50	Shaft	Shaft	Middle Gates	E	Clean Coal	Coal	1.823	Maxxam	B331219	1-May-13	9.24	0.38	0.01
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	Shaft	Shaft	Middle Gates	E	Clean Coal	Coal	0.30	Maxxam	B331219	1-May-13	8.89	0.31	0.03
HZ4735	H14-E_RAW (134134-HR)	P2C27	H14	Middle Gates	E	Raw Coal	Coal	0.22	Maxxam	B3A1258	1-Dec-13	8.84	0.18	0.01
2128232	P2R18-8	P2R18	H15	Middle Gates	F	Top F	Mudstone	2.08	Agat	10V452067	15-Nov-10	8.70	0.06	0.04
MRC RX 53	MRC RX 53	P1C45	H11	Middle Gates	F	Top F	Mudstone	1.93	Maxxam		23-Mar-11	9.34	0.01	0.01
MRC RX 37	MRC RX 37	P2R6	H3	Middle Gates	F	Top F	Mudstone	1.92	Maxxam		23-Mar-11	9.54	0.26	0.01
2128180	P2C20-12	P2C20	H1	Middle Gates	F	Top F	Mudstone	2.06	Agat	10V452067	15-Nov-10	9.68	0.10	0.01
2128221	P2C26-8	P2C26	H18	Middle Gates	F	Top F	Carbonaceous Mudstone	1.77	Agat	10V452067	15-Nov-10	9.07	0.05	0.05
MRC RX 24	MRC RX 24	P2R16	H19	Middle Gates	F	Top F1	Mudstone	1.94	Maxxam		23-Mar-11	9.59	0.04	0.01
2128192A	P2R12-7	P2R12	H10	Middle Gates	F	Top F2	Carbonaceous Mudstone	0.79	Maxxam		24-Feb-11	9.27	0.17	0.01
MRC RX 25	MRC RX 25	P2R16	H19	Middle Gates	F	F1 to F2	Sandstone	1.42	Maxxam		23-Mar-11	9.74	0.07	0.01
2128192	P2R12-7	P2R12	H10	Middle Gates	F	Top F2	Carbonaceous Mudstone	1.28	Agat	10V452067	15-Nov-10	9.30	0.18	0.02
MRC RX 71	MRC RX 71	P2C21	H2	Middle Gates	F	Bottom F	Carbonaceous Mudstone	1.40	Maxxam		26-May-11	9.67	0.04	0.01
MRC RX 54	MRC RX 54	P1C45	H11	Middle Gates	F	Bottom F	Siltstone	1.93	Maxxam		23-Mar-11	9.63	0.01	0.01
HY1945	H3-F_SINK (134128-3)	P2R6	H3	Middle Gates	F	CCR	Coal	5.11	Maxxam	B399406	1-Nov-13	9.01	0.14	0.01
HY1948	H13-F_SINK (134131-3)	P1R38	H13	Middle Gates	F	CCR	Coal	2.57	Maxxam	B399406	1-Nov-13	8.55	0.61	0.01
ID6672	H15-F_SINK (134168-3)	P2R18	H15	Middle Gates	F	CCR	Coal	0.484	Maxxam	B3A8298	1-Dec-13	8.07	1.33	0.01
ID6676	H16-F_SINK (134173-3)	P1R39	H16	Middle Gates	F	CCR	Coal	0.44	Maxxam	B3A8298	1-Dec-13	8.81	0.56	0.01
ID6680	H18-F_SINK (134177-3)	P2C26	H18	Middle Gates	F	CCR	Coal	1.11	Maxxam	B3A8298	1-Dec-13	9.27	0.11	0.01
ID6685	H19-F_SINK (134182-3)	P2R16	H19	Middle Gates	F	CCR	Coal	0.40	Maxxam	B3A8298	1-Dec-13	9.48	0.12	0.01
ID6687	H20-F_SINK (134184-3)	P2R13	H20	Middle Gates	F	CCR	Coal	1.73	Maxxam	B3A8298	1-Dec-13	8.30	0.49	0.01
HZ4743	P1C47-F_SINK (134140-3)	P1C47	P1C47	Middle Gates	F	CCR	Coal	0.06	Maxxam	B3A1258	1-Dec-13	5.42	0.63	0.05
HZ4744	P1C49-F_SINK (134141-3)	P1C49	P1C49	Middle Gates	F	CCR	Coal	0.10	Maxxam	B3A1258	1-Dec-13	8.82	0.12	0.01
HZ4748	P1C51-F_SINK (134145-3)	P1C51	P1C51	Middle Gates	F	CCR	Coal	0.877	Maxxam	B3A1258	1-Dec-13	9.12	0.31	0.01
HZ4750	H1-F_SINK (134147-3)	P2C20	H1	Middle Gates	F	CCR	Coal	1.476	Maxxam	B3A1258	1-Dec-13	9.03	0.13	0.01
HZ4752	H5-F_SINK (134149-3)	P2R5	H5	Middle Gates	F	CCR	Coal	1.273	Maxxam	B3A1258	1-Dec-13	9.12	0.17	0.01
HZ4753	H6-F_SINK (134150-3)	P2R11	H6	Middle Gates	F	CCR	Coal	1.08	Maxxam	B3A1258	1-Dec-13	9.27	0.08	0.01
HZ4757	H7-F_SINK (134154-3)	P2R9	H7	Middle Gates	F	CCR	Coal	0.354	Maxxam	B3A1258	1-Dec-13	8.75	0.30	0.01
HZ4761	H9-F_SINK (134158-3)	P2R14	H9	Middle Gates	F	CCR	Coal	1.06	Maxxam	B3A1258	1-Dec-13	9.26	0.05	0.01
HZ4764	H10-F_SINK (134161-3)	P2R12	H10	Middle Gates	F	CCR	Coal	0.07	Maxxam	B3A1258	1-Dec-13	8.47	0.46	0.01
IE7576	BLOCK 1_F_TAILINGS	Composite	Composite	Middle Gates	F	Tailings	Coal	0.15	Maxxam	B3B0101	1-Dec-13	8.45	0.49	0.01
IE7577	H13_F_TAILINGS	P1R38	H13	Middle Gates	F	Tailings	Coal	0.09	Maxxam	B3B0101	1-Dec-13	8.24	0.68	0.01
IE7584	BLOCK 2_F_TAILINGS	Composite	Composite	Middle Gates	F	Tailings	Coal	0.38	Maxxam	B3B0101	1-Dec-13	8.40	0.26	0.01
IE7587	BLOCK 3_F_TAILINGS	P2R6	H3	Middle Gates	F	Tailings	Coal	0.18	Maxxam	B3B0101	1-Dec-13	8.46	0.17	0.01
GF1063	RES 130800 A(1) FLT 1.50	Shaft	Shaft	Middle Gates	F	Clean Coal	Coal	1.60	Maxxam	B331219	1-May-13	9.33	0.33	0.01
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	Shaft	Shaft	Middle Gates	F	Clean Coal	Coal	0.17	Maxxam	B331219	1-May-13	9.19	0.13	0.01
GF1064	RES 130800 1.50-1.70	Shaft	Shaft	Middle Gates	F	Middling	Coal	0.22	Maxxam	B331219	1-May-13	10.10	0.21	0.01
MRPIR 34	MRPIR 34	P1R34	H17	Middle Gates	F	Raw Coal	Coal	1.94	Maxxam		29-Jun-11	9.95	0.11	0.01
HZ4729	H3-F_RAW (134128-HR)	P2R6	H3	Middle Gates	F	Raw Coal	Coal	0.23	Maxxam	B3A1258	1-Dec-13	9.01	0.17	0.01

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Drillhole Govt ID	Drillhole Client ID	Formation	Coal Seam	Description	Lithology	Weight kg	Lab	Lab Certificate	Date	Paste pH pH Unit	Total S %	SO <sub>4</sub> _HCl %
HZ4732	H13-F_RAW (134131-HR)	P1R38	H13	Middle Gates	F	Raw Coal	Coal	0.212	Maxxam	B3A1258	1-Dec-13	8.31	0.57	0.01
2128222	P2C26-9	P2C26	H18	Middle Gates	G/I	Top G/I	Fine Sandstone	1.78	Agat	10V452067	15-Nov-10	8.97	0.30	0.06
2128233A	P2R18-9	P2R18	H15	Middle Gates	G/I	Parting G	Mudstone	1.6	Maxxam		24-Feb-11	9.60	0.66	0.02
MRC RX 26	MRC RX 26	P2R16	H19	Middle Gates	G/I	Top G/I	Mudstone	1.37	Maxxam		23-Mar-11	9.51	0.47	0.01
2128233	P2R18-9	P2R18	H15	Middle Gates	G/I	Parting G/I	Mudstone	1.71	Agat	10V452067	15-Nov-10	8.67	0.68	0.03
2212053	MRC RX 12	P2C26	H18	Middle Gates	G/I	Parting G	Carbonaceous Mudstone	0.32	Agat	10T462552	23-Dec-10	8.81	0.03	0.08
2212044	MRC RX 04	P2R14	H9	Middle Gates	G/I	Parting G/I	Mudstone	0.48	Agat	10T462552	23-Dec-10	8.60	0.06	0.07
MRC RX 115	MRC RX 115	P1R39	H16w	Middle Gates	G/I	G/I Parting	Mudstone	1.83	Maxxam		22-Jun-11	9.66	0.71	0.01
MRC RX 88	MRC RX 88	P2C24	H12	Middle Gates	G/I	G/I Parting	Mudstone	1.63	Maxxam		22-Jun-11	9.72	0.67	0.01
MRC RX 72	MRC RX 72	P2C21	H2	Middle Gates	G/I	G/I Parting	Carbonaceous Mudstone	2.47	Maxxam		26-May-11	9.64	0.23	0.01
HY1949	H13-G/I_SINK (134132-3)	P1R38	H13	Middle Gates	G/I	CCR	Coal	5.50	Maxxam	B399406	1-Nov-13	9.26	0.57	0.01
HY1952	H16W-G/I_SINK (134135-3)	P1R39	H16W	Middle Gates	G/I	CCR	Coal	13.80	Maxxam	B399406	1-Nov-13	9.38	0.30	0.01
ID6666	H10-G/I_SINK (134162-3)	P2R12	H10	Middle Gates	G/I	CCR	Coal	1.02	Maxxam	B3A8298	1-Dec-13	8.68	0.34	0.01
ID6673	H15-G/I_SINK (134169-3)	P2R18	H15	Middle Gates	G/I	CCR	Coal	0.47	Maxxam	B3A8298	1-Dec-13	8.90	0.16	0.01
ID6677	H16-G/I_SINK (134174-3)	P1R39	H16W	Middle Gates	G/I	CCR	Coal	0.57	Maxxam	B3A8298	1-Dec-13	9.16	0.24	0.01
ID6681	H18-G/I_SINK (134178-3)	P2C26	H18	Middle Gates	G/I	CCR	Coal	0.43	Maxxam	B3A8298	1-Dec-13	9.41	0.45	0.01
HZ4745	P1C49-G/I_SINK (134142-3)	P1C49	P1C49	Middle Gates	G/I	CCR	Coal	0.27	Maxxam	B3A1258	1-Dec-13	9.33	0.19	0.01
HZ4749	P1C51-G/I_SINK (134146-3)	P1C51	P1C51	Middle Gates	G/I	CCR	Coal	0.28	Maxxam	B3A1258	1-Dec-13	9.61	0.13	0.01
HZ4762	H9-G/I_SINK (134159-3)	P2R14	H9	Middle Gates	G/I	CCR	Coal	0.72	Maxxam	B3A1258	1-Dec-13	9.26	0.17	0.01
IE7578	BLOCK 1_G/I_TAILINGS	Composite	Composite	Middle Gates	G/I	Tailings	Coal	0.45	Maxxam	B3B0101	1-Dec-13	8.37	0.40	0.01
IE7579	H13-G/I_TAILINGS	P1R38	H13	Middle Gates	G/I	Tailings	Coal	0.20	Maxxam	B3B0101	1-Dec-13	8.26	0.61	0.01
IE7585	BLOCK 2_G/I_TAILINGS	Composite	Composite	Middle Gates	G/I	Tailings	Coal	0.133	Maxxam	B3B0101	1-Dec-13	8.57	0.56	0.01
HZ4733	H13-G/I_RAW (134132-HR)	P1R38	H13	Middle Gates	G/I	Raw Coal	Coal	0.22	Maxxam	B3A1258	1-Dec-13	9.28	0.47	0.01
HZ4736	H16W-G/I_RAW (134135-HR)	P1R39	H16	Middle Gates	G/I	Raw Coal	Coal	0.23	Maxxam	B3A1258	1-Dec-13	9.64	0.42	0.01
2128234	P2R18-10	P2R18	H15	Middle Gates	J	Top J	Silty Mudstone	1.73	Agat	10V452067	15-Nov-10	8.29	0.51	0.07
MRC RX 73	MRC RX 73	P2C21	H2	Middle Gates	J	Top J	Mudstone	1.73	Maxxam		26-May-11	9.29	0.92	0.01
2128223	P2C26-10	P2C26	H18	Middle Gates	J	Top J	Mudstone	1.64	Agat	10V452067	15-Nov-10	8.00	0.22	0.04
2212045	MRC RX 05	P2R14	H9	Middle Gates	J	Top J	Mudstone	0.34	Agat	10T462552	23-Dec-10	8.56	0.56	0.03
MRC RX 116	MRC RX 116	P1R39	H16w	Middle Gates	J	Top J	Mudstone	1.58	Maxxam		22-Jun-11	9.32	0.01	0.01
MRC RX 89	MRC RX 89	P2C24	H12	Middle Gates	J	Top J	Mudstone	1.74	Maxxam		22-Jun-11	9.36	1.82	0.01
2128183	P2C20-15	P2C20	H1	Middle Gates	J	Top J1	Mudstone	1.72	Agat	10V452067	15-Nov-10	9.14	2.40	0.03
2128183A	P2C20-15	P2C20	H1	Middle Gates	J	Top J1	Mudstone	1.19	Maxxam		24-Feb-11	9.20	2.39	0.02
2128224	P2C26-11	P2C26	H18	Middle Gates	J	Bottom J	Mudstone	1.53	Agat	10V452067	15-Nov-10	8.70	0.08	0.03
2128195	P2R12-10	P2R12	H10	Middle Gates	J	Bottom J	Silty Mudstone	1.62	Agat	10V452067	15-Nov-10	8.99	0.07	0.02
MRC RX 117	MRC RX 117	P1R39	H16w	Middle Gates	J	Bottom J	Siltstone	1.79	Maxxam		22-Jun-11	9.27	0.05	0.01
MRC RX 90	MRC RX 90	P2C24	H12	Middle Gates	J	Bottom J	Sandstone	1.55	Maxxam		22-Jun-11	9.70	0.04	0.01
2128184	P2C20-16	P2C20	H1	Middle Gates	J	Bottom J2	Siltstone	1.93	Agat	10V452067	15-Nov-10	9.33	0.12	0.02
MRC RX 74	MRC RX 74	P2C21	H2	Middle Gates	J	Bottom J	Mudstone	2.14	Maxxam		26-May-11	9.49	0.07	0.01
2128184A	P2C20-16	P2C20	H1	Middle Gates	J	Bottom J2	Siltstone	1.42	Maxxam		24-Feb-11	9.09	0.10	0.01
MRC RX 28	MRC RX 28	P2R16	H19	Middle Gates	J	Bottom J	Sandstone	1.25	Maxxam		23-Mar-11	9.41	0.05	0.01
GF1068	RES 130801 1.70 SNK	Shaft	Shaft	Middle Gates	J	CCR	Coal	0.69	Maxxam	B331219	1-May-13	9.56	0.03	0.01
ID6667	H10-J_SINK (134163-3)	P2R12	H10	Middle Gates	J	CCR	Coal	0.95	Maxxam	B3A8298	1-Dec-13	9.19	0.25	0.01
ID6669	H13-J_SINK (134165-3)	P1R38	H13	Middle Gates	J	CCR	Coal	0.85	Maxxam	B3A8298	1-Dec-13	9.39	0.26	0.01
ID6682	H18-J_SINK (134179-3)	P2C26	H18	Middle Gates	J	CCR	Coal	0.69	Maxxam	B3A8298	1-Dec-13	9.35	0.29	0.01
ID6688	H20-J_SINK (134185-3)	Shaft	H20	Middle Gates	J	CCR	Coal	0.34	Maxxam	B3A8298	1-Dec-13	8.88	1.38	0.01
ID6689	NH8-J_SINK (134186-3)	P1R31	H8	Middle Gates	J	CCR	Coal	1.85	Maxxam	B3A8298	1-Dec-13	9.26	0.19	0.01
HZ4739	H16W-J_SINK (134136-3)	P1R39	H16W	Middle Gates	J	CCR	Coal	0.22	Maxxam	B3A1258	1-Dec-13	8.93	0.68	0.01
HZ4754	H6-J_SINK (134151-3)	P2R11	H6	Middle Gates	J	CCR	Coal	0.06	Maxxam	B3A1258	1-Dec-13	7.88	0.48	0.01

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Drillhole Govt ID	Drillhole Client ID	Formation	Coal Seam	Description	Lithology	Weight kg	Lab	Lab Certificate	Date	Paste pH pH Unit	Total S %	SO <sub>4</sub> _HCl %
HZ4758	H7-J_SINK (134155-3)	P2R9	H7	Middle Gates	J	CCR	Coal	1.34	Maxxam	B3A1258	1-Dec-13	9.46	0.08	0.01
IE7571	H14-J_SINK (134170-3)	P2C27	H14	Middle Gates	J	CCR	Coal	1.04	Maxxam	B3B0101	1-Dec-13	8.75	0.91	0.01
HZ4763	H9-J_SINK (134160-3)	P2R14	H9	Middle Gates	J	CCR	Coal	0.94	Maxxam	B3A1258	1-Dec-13	9.38	0.06	0.01
IE7586	BLOCK 2_J_TAILINGS	Composite	Composite	Middle Gates	J	Tailings	Coal	0.19	Maxxam	B3B0101	1-Dec-13	8.43	0.25	0.01
IF2168	BLOCK 5_J_TAILINGS: NH8-J	P1R31	H8	Middle Gates	J	Tailings	Coal	0.047	Maxxam	B3B0101	1-Dec-13	8.35	0.23	0.01
IE7580	BLOCK 1_J_TAILINGS	Composite	Composite	Middle Gates	J	Tailings	Coal	0.595	Maxxam	B3B0101	1-Dec-13	8.34	0.49	0.01
IE7581	H13_J_TAILINGS	P1R38	H13	Middle Gates	J	Tailings	Coal	0.108	Maxxam	B3B0101	1-Dec-13	8.75	0.27	0.01
GF1066	RES 130801 A(1) FLT 1.50	Shaft	Shaft	Middle Gates	J	Clean Coal	Coal	0.614	Maxxam	B331219	1-May-13	10.00	0.28	0.01
GF1069	composite of RES 130801 B 30 sec, 60 sec, 90 sec, 120 sec	Shaft	Shaft	Middle Gates	J	Clean Coal	Coal	0.06	Maxxam	B331219	1-May-13	8.50	0.39	0.03
GF1067	RES 130801 1.50-1.70	Shaft	Shaft	Middle Gates	J	Middling	Coal	0.09	Maxxam	B331219	1-May-13	9.85	0.20	0.01
HZ4737	H16W-J_RAW (134136-HR)	P1R39	H16W	Middle Gates	J	Raw Coal	Coal	0.22	Maxxam	B3A1258	1-Dec-13	8.99	0.43	0.01
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	Shaft	Shaft	Middle Gates	D,E	Middling	Coal	0.346	Maxxam	B331219	1-May-13	9.30	0.60	0.01
GF1059	composite of RES 130798 B Tails, RES 130799 B Tails; RES 130800 B Tails; RES 130801 Tails	Shaft	Shaft	Middle Gates	D,E,F,J	Tailings	Coal	0.467	Maxxam	B331219	1-May-13	8.17	0.69	0.03
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	Shaft	Shaft	Middle Gates	E,F	CCR	Coal	1.237	Maxxam	B331219	1-May-13	9.44	0.05	0.01

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Measured	Calculated	S_BaSO <sub>4</sub>	TAP	SAP	Modified NP	Standard Sobek NP	Total C	Inorganic C	Fe Carb				
		Sulphide %	Sulphide %								Total C NP	Inorg C NP	Corrected NP	Ca NP	CaMg NP
		kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	%	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	%	%	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t
MRC RX 22	MRC RX 22	0.93	1.07	0.00	34.4	33.3	27.4	n.a.	0.73	0.47	60.8	39.1	39.1	29.2	43.2
MRC RX 52	MRC RX 52	0.31	0.31	0.00	10.0	9.7	22.1	n.a.	0.71	0.43	59.2	35.9	21.6	19.2	29.8
MRC RX 68	MRC RX 68	0.01	0.02	0.01	0.9	0.5	98.4	n.a.	3.58	1.20	298.4	100.1	48.0	52.7	100.5
2128230	P2R18-6	0.00	0.03	0.00	1.3	1.1	14.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	13.7	23.5
2212051	MRC RX 11	0.00	0.17	0.01	6.3	5.2	8.5	n.a.	0.64	0.40	53.3	33.3	0.0	9.0	17.8
2128219	P2C26-6	0.00	0.73	0.01	23.7	22.7	34.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	22.5	38.7
2128219A	P2C26-6	0.60	0.69	0.01	22.5	21.6	33.4	n.a.	2.04	0.52	170.0	43.7	40.9	23.7	40.7
2212050	MRC RX 10	0.00	0.00	0.01	1.8	0.0	2.4	n.a.	6.14	0.31	511.7	25.8	0.0	3.2	21.5
MRC RX 119	MRC RX 119	0.52	0.71	0.01	22.5	22.1	4.8	n.a.	4.61	0.05	384.2	4.1	0.0	3.5	14.6
MRC RX 121	MRC RX 121	0.80	1.12	0.01	35.6	35.1	25.2	n.a.	1.03	0.59	85.8	49.4	39.2	19.0	30.6
MRC RX 36	MRC RX 36	0.05	0.03	0.02	1.9	1.6	10.1	n.a.	2.66	0.40	221.7	33.7	0.0	5.2	12.6
2128203	P2R11-8	0.00	0.04	0.01	2.6	1.3	119.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	115.1	182.4
MRC RX 44	MRC RX 44	0.65	0.68	0.00	21.6	21.1	15.7	n.a.	0.78	0.31	65.0	26.2	24.0	14.2	22.0
MRC RX 23	MRC RX 23	0.06	0.05	0.01	2.2	1.9	176.7	n.a.	3.20	2.57	266.7	214.2	192.5	116.1	194.1
GF1057	RES 130798 1.70 SNK	0.18	0.25	0.02	8.8	7.8	33.5	35	5.91	0.45	492.5	37.3	32.6	21.5	35.8
HY1946	H5-D_SINK (134129-3)	0.01	0.13	0.01	4.7	4.2	11.5	14	14.00	0.10	1166.7	8.4	1.6	7.5	15.7
HY1947	H13-D_SINK (134130-3)	0.16	0.24	0.01	8.1	7.6	42.0	42	4.25	0.44	354.2	36.8	22.6	26.5	50.7
HY1950	H14-D_SINK (134133-3)	0.37	0.50	0.01	16.3	15.5	12.5	31	2.89	0.56	240.8	46.4	4.0	6.7	15.5
ID6670	H15-D_SINK (134166-3)	1.07	1.48	0.00	46.6	46.2	22.8	23	17.61	0.38	1467.6	31.6	31.6	15.0	29.5
ID6674	H16-D_SINK (134171-3)	0.45	0.75	0.01	23.8	23.4	4.5	10	15.90	0.10	1325.1	8.4	8.4	2.7	11.2
ID6678	H18-D_SINK (134175-3)	4.34	6.11	0.00	193.4	190.9	35.3	34	7.14	0.50	595.0	41.8	41.8	26.0	42.4
ID6683	H19-D_SINK (134180-3)	0.36	0.61	0.01	19.4	18.9	8.5	12	11.40	0.17	950.1	13.9	13.9	7.2	17.2
HZ4740	NH8-D_SINK (134137-3)	0.52	0.79	0.01	25.0	24.7	11.5	13	4.58	0.11	381.7	9.1	9.1	7.2	15.2
HZ4741	P1C44-D_SINK (134138-3)	0.01	0.16	0.01	5.3	4.9	8.0	12	15.52	0.09	1293.4	7.7	1.3	6.0	14.3
HZ4746	P1C50-D_SINK (134143-3)	0.13	0.29	0.02	9.7	9.0	7.5	11	8.81	0.13	734.2	10.5	9.3	3.0	8.9
HZ4755	H7-D_SINK (134152-3)	0.05	0.19	0.01	6.6	6.1	23.3	26	10.77	0.27	897.6	22.7	20.0	14.0	25.5
HZ4759	H9-D_SINK (134156-3)	0.27	0.43	0.01	14.1	13.6	7.3	11	10.17	0.05	847.6	3.9	3.9	4.5	10.0
IE7572	BLOCK 1_D_TAILINGS	1.08	1.51	0.00	48.1	47.2	24.0	25	31.36	0.42	2613.5	35.0	35.0	22.0	32.9
IE7573	H13_D_TAILINGS	0.47	0.67	0.01	21.6	21.1	20.0	25	14.04	0.19	1170.1	16.1	13.5	16.5	32.9
IE7582	BLOCK 2_D_TAILINGS	0.33	0.64	0.01	20.6	20.0	14.5	15	35.34	0.21	2945.2	17.5	17.5	11.7	20.3
IE7588	BLOCK 5_D_TAILINGS	0.87	1.20	0.00	38.1	37.5	10.0	14	14.23	0.12	1185.9	10.2	10.2	9.5	20.0
GF1055	RES 130798 A(1) FLT 1.50	0.17	0.69	0.01	22.2	21.4	11.3	11	88.16	0.07	7347.2	6.1	6.1	10.7	13.7
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	0.17	1.02	0.03	34.7	31.8	16.3	16	73.54	0.12	6128.7	10.0	10.0	13.2	18.0
HZ4730	H5-D_RAW (134129-HR)	0.02	0.32	0.01	10.6	10.1	7.5	10	44.45	0.10	3704.4	8.0	8.0	5.5	10.0
HZ4731	H13-D_RAW (134130-HR)	0.15	0.28	0.01	9.4	8.8	30.0	35	6.76	0.42	563.4	35.3	22.6	20.2	40.1
HZ4734	H14-D_RAW (134133-HR)	0.43	0.58	0.01	18.8	18.3	10.8	31	6.71	0.53	559.2	44.1	15.2	6.0	12.6
HZ4738	NH8-D_RAW (134137-HR)	0.62	0.81	0.00	25.6	25.4	12.0	17	6.91	0.18	575.9	15.0	15.0	8.7	18.6
2128231	P2R18-7	0.00	0.01	0.01	1.5	0.5	4.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.7	4.9
MRC RX 113	MRC RX 113	0.01	0.00	0.03	0.3	0.3	4.8	n.a.	0.75	0.11	62.5	9.3	3.3	2.5	5.7
2212043	MRC RX 03	0.00	1.73	0.00	55.9	54.0	16.8	n.a.	1.36	0.37	113.3	30.8	30.8	15.5	29.8
HY1951	H14-E_SINK (134134-3)	0.03	0.11	0.01	4.1	3.6	10.0	14	7.46	0.11	621.7	8.9	2.4	6.2	12.9
ID6668	H13-E_SINK (134164-3)	0.01	0.11	0.02	4.1	3.4	20.3	21	11.10	0.24	925.1	20.2	17.5	16.5	23.5
ID6671	H15-E_SINK (134167-3)	0.03	0.12	0.01	4.4	3.8	10.8	12	13.20	0.20	1100.1	16.8	14.6	5.7	10.9
ID6675	H16-E_SINK (134172-3)	0.03	0.14	0.01	5.0	4.4	4.5	7	8.66	0.14	721.7	12.1	9.0	1.2	5.4
ID6679	H18-E_SINK (134176-3)	0.09	0.15	0.01	5.0	4.6	13.8	16	13.50	0.28	1125.1	23.2	19.4	8.0	16.9
ID6684	H19-E_SINK (134181-3)	0.01	0.11	0.01	4.1	3.5	3.5	6	15.50	0.09	1291.8	7.7	7.5	1.5	3.7
ID6686	H20-E_SINK (134183-3)	0.04	0.22	0.02	7.8	7.0	5.5	9	16.40	0.07	1366.8	6.1	6.1	7.7	10.6

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Measured	Calculated	S <sub>BaSO<sub>4</sub></sub>	TAP	SAP	Modified NP	Standard Sobek NP	Total C	Inorganic C	Fe Carb				
		Sulphide %	Sulphide %								Total C NP	Inorg C NP	Corrected NP	Ca NP	CaMg NP
				%	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	%	%	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t
HZ4747	P1C51-E_SINK (134144-3)	0.30	0.45	0.01	14.7	14.2	6.5	9	13.88	0.11	1156.7	9.3	9.3	4.2	8.0
HZ4751	H5-E_SINK (134148-3)	0.01	0.09	0.01	3.4	3.0	4.0	7	13.05	0.04	1087.6	3.2	3.2	0.5	1.7
HZ4756	H7-E_SINK (134153-3)	0.02	0.24	0.01	7.8	7.4	10.0	13	25.99	0.08	2166.0	6.6	6.6	8.0	12.3
HZ4760	H9-E_SINK (134157-3)	0.04	0.13	0.01	4.7	4.2	83.0	79	8.76	1.15	730.0	95.5	72.2	59.2	89.9
IE7574	BLOCK 1_E_TAILINGS	0.10	0.28	0.02	9.4	8.7	11.3	15	19.69	0.16	1640.9	13.6	11.7	9.0	16.3
IE7575	H13_E_TAILINGS	0.04	0.23	0.01	7.8	7.2	24.8	24	24.06	0.29	2005.1	24.6	22.3	21.5	30.9
IE7583	BLOCK 2_E_TAILINGS	0.04	0.22	0.02	7.5	6.9	8.3	10	20.15	0.12	1679.3	10.0	10.0	6.7	11.5
GF1060	RES 130799 A(1) FLT 1.50	0.01	0.37	0.01	11.9	11.5	6.5	9	85.27	0.07	7106.3	5.7	5.7	5.5	7.7
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	0.01	0.24	0.04	9.7	7.5	9.5	10	79.77	0.07	6647.9	6.1	6.1	7.0	10.0
HZ4735	H14-E_RAW (134134-HR)	0.03	0.16	0.01	5.6	5.1	7.3	11	14.66	0.20	1221.7	16.4	14.0	4.2	8.9
2128232	P2R18-8	0.00	0.00	0.02	1.8	0.0	85.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	54.2	84.5
MRC RX 53	MRC RX 53	0.01	0.00	0.01	0.3	0.3	175.0	n.a.	4.72	2.38	393.4	198.5	172.1	144.8	205.9
MRC RX 37	MRC RX 37	0.24	0.24	0.01	8.1	7.5	25.6	n.a.	1.48	0.45	123.3	37.8	21.7	18.5	33.8
2128180	P2C20-12	0.00	0.07	0.02	3.0	2.1	7.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.5	9.2
2128221	P2C26-8	0.00	0.00	0.01	1.7	0.0	70.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	57.2	93.9
MRC RX 24	MRC RX 24	0.03	0.02	0.01	1.3	0.9	222.5	n.a.	4.14	3.38	345.0	281.8	235.8	179.1	244.8
2128192A	P2R12-7	0.13	0.15	0.01	5.3	4.6	4.3	n.a.	5.83	0.05	485.9	3.9	3.8	2.7	5.4
MRC RX 25	MRC RX 25	0.06	0.05	0.01	2.2	1.9	224.4	n.a.	3.57	3.32	297.5	276.8	242.4	145.6	229.4
2128192	P2R12-7	0.00	0.14	0.01	5.6	4.5	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.7	5.7
MRC RX 71	MRC RX 71	0.02	0.02	0.01	1.3	0.7	106.5	n.a.	4.04	1.41	336.7	117.6	52.2	55.7	101.9
MRC RX 54	MRC RX 54	0.01	0.00	0.01	0.3	0.3	176.1	n.a.	3.51	3.38	292.5	281.8	195.4	104.1	175.8
HY1945	H3-F_SINK (134128-3)	0.06	0.12	0.01	4.4	3.8	10.5	20	5.78	0.31	481.7	25.7	0.0	5.5	14.9
HY1948	H13-F_SINK (134131-3)	0.41	0.59	0.01	19.1	18.6	3.8	6	5.62	0.03	468.4	2.3	2.3	2.0	4.9
ID6672	H15-F_SINK (134168-3)	0.86	1.32	0.00	41.6	41.2	30.5	33	13.90	0.49	1158.4	41.2	41.2	24.7	34.6
ID6676	H16-F_SINK (134173-3)	0.35	0.55	0.01	17.5	17.1	4.0	7	11.60	0.10	966.7	8.2	8.2	2.5	9.4
ID6680	H18-F_SINK (134177-3)	0.01	0.09	0.02	3.4	2.7	6.5	6	10.60	0.14	883.4	11.4	8.5	1.0	4.3
ID6685	H19-F_SINK (134182-3)	0.01	0.10	0.01	3.8	3.3	14.3	15	12.50	0.22	1041.7	18.6	13.5	9.7	16.0
ID6687	H20-F_SINK (134184-3)	0.25	0.47	0.01	15.3	14.8	32.3	64	8.14	1.98	678.4	165.3	48.9	26.0	45.5
HZ4743	P1C47-F_SINK (134140-3)	0.33	0.57	0.01	19.7	17.9	7.5	8	26.50	0.08	2208.5	6.4	6.4	3.5	6.9
HZ4744	P1C49-F_SINK (134141-3)	0.05	0.10	0.01	3.8	3.0	21.3	26	4.54	0.35	378.4	28.9	4.4	13.5	31.8
HZ4748	P1C51-F_SINK (134145-3)	0.15	0.29	0.01	9.7	9.1	27.3	30	10.19	0.36	849.2	30.2	30.0	18.5	29.8
HZ4750	H1-F_SINK (134147-3)	0.02	0.11	0.02	4.1	3.4	3.8	8	11.36	0.06	946.7	5.2	1.9	1.0	4.6
HZ4752	H5-F_SINK (134149-3)	0.04	0.15	0.02	5.3	4.6	14.5	20	7.64	0.29	636.7	23.9	18.0	8.7	17.8
HZ4753	H6-F_SINK (134150-3)	0.01	0.06	0.01	2.5	2.0	18.3	26	9.16	0.38	763.4	31.8	16.5	12.2	22.6
HZ4757	H7-F_SINK (134154-3)	0.11	0.29	0.01	9.4	8.9	24.0	32	21.35	1.30	1779.3	108.0	23.9	16.7	28.9
HZ4761	H9-F_SINK (134158-3)	0.01	0.03	0.01	1.6	1.0	44.3	50	4.06	0.77	338.4	64.1	27.5	29.2	50.1
HZ4764	H10-F_SINK (134161-3)	0.01	0.44	0.01	14.4	13.9	5.0	6	88.34	0.02	7362.2	2.0	2.0	6.2	7.7
IE7576	BLOCK 1_F_TAILINGS	0.25	0.47	0.02	15.3	14.6	22.5	21	29.10	0.25	2425.2	21.2	21.2	19.7	29.5
IE7577	H13_F_TAILINGS	0.45	0.67	0.00	21.3	20.9	13.8	17	19.94	0.16	1661.8	13.2	13.2	12.0	18.6
IE7584	BLOCK 2_F_TAILINGS	0.06	0.24	0.02	8.1	7.4	24.0	30	18.57	0.61	1547.6	50.5	22.8	20.2	35.5
IE7587	BLOCK 3_F_TAILINGS	0.03	0.15	0.02	5.3	4.7	12.0	19	9.40	0.32	783.4	26.8	0.7	10.2	21.2
GF1063	RES 130800 A(1) FLT 1.50	0.01	0.30	0.02	10.3	9.5	9.0	12	88.66	0.08	7388.8	6.6	6.6	8.0	11.2
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	0.01	0.07	0.06	4.1	2.2	37.5	38	83.66	0.38	6972.1	31.4	27.7	29.0	39.2
GF1064	RES 130800 1.50-1.70	0.01	0.12	0.09	6.6	3.7	113.3	110	66.15	1.43	5512.9	119.4	104.0	83.2	110.8
MRPIR 34	MRPIR 34	0.01	0.06	0.04	3.4	2.0	25.6	n.a.	69.28	0.41	5773.7	34.3	30.0	19.5	27.5
HZ4729	H3-F_RAW (134128-HR)	0.05	0.15	0.01	5.3	4.8	5.8	14	9.17	0.23	764.2	18.9	0.0	5.5	13.5

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Measured	Calculated	S_BaSO <sub>4</sub>	TAP	SAP	Modified NP	Standard Sobek NP	Total C	Inorganic		Fe Carb			
		Sulphide %	Sulphide %							C %	Total C NP	Inorg C NP	Corrected NP	Ca NP	CaMg NP
				%	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	%	%	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t
HZ4732	H13-F_RAW (134131-HR)	0.37	0.56	0.01	17.8	17.4	5.5	8	10.15	0.08	845.9	6.6	6.6	3.2	6.6
2128222	P2C26-9	0.00	0.24	0.00	9.5	7.5	38.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	29.2	45.5
2128233A	P2R18-9	0.57	0.63	0.01	20.6	19.7	176.3	n.a.	4.05	2.69	337.5	224.2	205.3	136.1	193.6
MRC RX 26	MRC RX 26	0.46	0.45	0.01	14.7	14.4	232.5	n.a.	4.90	3.60	408.4	300.2	247.1	219.0	270.6
2128233	P2R18-9	0.00	0.64	0.01	21.1	19.9	118.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	123.4	178.4
2212053	MRC RX 12	0.00	0.00	0.02	1.1	0.0	5.0	n.a.	11.80	0.05	983.4	4.2	0.0	7.2	19.5
2212044	MRC RX 04	0.00	0.00	0.01	1.8	0.0	91.3	n.a.	4.17	2.24	347.5	186.7	130.7	84.4	143.5
MRC RX 115	MRC RX 115	0.57	0.70	0.01	22.2	21.8	120.8	n.a.	3.38	1.87	281.7	156.0	126.8	67.2	116.0
MRC RX 88	MRC RX 88	0.51	0.66	0.01	20.9	20.5	34.6	n.a.	8.89	0.49	740.9	41.2	37.2	21.5	40.7
MRC RX 72	MRC RX 72	0.11	0.21	0.01	7.2	6.6	4.8	n.a.	7.32	0.05	610.0	4.3	0.0	2.7	10.6
HY1949	H13-G/I_SINK (134132-3)	0.40	0.55	0.01	17.8	17.3	81.3	98	4.26	1.20	355.0	100.3	74.4	52.7	82.5
HY1952	H16W-G/I_SINK (134135-3)	0.17	0.28	0.01	9.4	8.9	84.5	88	7.51	1.27	625.9	106.0	72.9	55.7	94.5
ID6666	H10-G/I_SINK (134162-3)	0.19	0.32	0.01	10.6	9.9	5.5	8	4.17	0.06	347.5	5.2	0.0	4.0	11.7
ID6673	H15-G/I_SINK (134169-3)	0.05	0.14	0.01	5.0	4.5	13.8	16	9.81	0.32	817.6	27.1	20.2	9.7	18.0
ID6677	H16-G/I_SINK (134174-3)	0.08	0.22	0.01	7.5	7.0	10.0	15	11.00	0.14	916.7	11.4	5.9	5.2	12.9
ID6681	H18-G/I_SINK (134178-3)	0.18	0.44	0.01	14.1	13.6	127.8	143	12.70	1.79	1058.4	149.4	140.5	114.1	143.5
HZ4745	P1C49-G/I_SINK (134142-3)	0.02	0.17	0.02	5.9	5.3	71.8	84	18.59	0.92	1549.3	76.9	67.8	62.4	82.2
HZ4749	P1C51-G/I_SINK (134146-3)	0.04	0.11	0.01	4.1	3.5	96.5	90	5.28	1.26	440.0	104.6	91.8	69.4	98.5
HZ4762	H9-G/I_SINK (134159-3)	0.02	0.16	0.01	5.3	4.9	61.5	65	11.62	0.80	968.4	66.4	51.3	38.5	68.7
IE7578	BLOCK 1_G/I_TAILINGS	0.24	0.38	0.01	12.5	12.0	75.5	81	12.00	1.23	1000.1	102.6	77.2	50.7	83.6
IE7579	H13-G/I_TAILINGS	0.41	0.59	0.01	19.1	18.5	60.3	70	7.98	1.06	665.0	88.2	68.3	42.5	67.6
IE7585	BLOCK 2_G/I_TAILINGS	0.25	0.54	0.01	17.5	17.0	42.3	34	32.34	0.58	2695.2	48.4	43.0	37.2	53.8
HZ4733	H13-G/I_RAW (134132-HR)	0.34	0.46	0.01	14.7	14.2	80.8	84	5.06	1.31	421.7	109.4	82.7	52.9	82.2
HZ4736	H16W-G/I_RAW (134135-HR)	0.17	0.41	0.01	13.1	12.7	62.8	65	28.99	0.98	2416.0	81.4	63.3	40.0	67.0
2128234	P2R18-10	0.00	0.43	0.01	15.9	13.3	41.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	30.2	59.8
MRC RX 73	MRC RX 73	0.69	0.91	0.01	28.8	28.4	9.0	n.a.	8.72	0.26	726.7	21.4	15.5	5.5	17.5
2128223	P2C26-10	0.00	0.16	0.02	6.8	5.0	20.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	15.0	34.9
2212045	MRC RX 05	0.00	0.53	0.00	17.6	16.6	13.7	n.a.	4.73	0.42	394.2	35.0	0.0	12.5	27.2
MRC RX 116	MRC RX 116	0.02	0.00	0.01	0.3	0.6	106.1	n.a.	2.67	2.05	222.5	171.0	94.4	53.7	98.8
MRC RX 89	MRC RX 89	1.27	1.81	0.00	56.9	56.6	6.4	n.a.	11.69	0.10	974.2	8.0	8.0	4.5	15.2
2128183	P2C20-15	0.00	2.37	0.00	75.0	74.0	18.7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	11.7	28.9
2128183A	P2C20-15	2.12	2.37	0.00	74.7	74.0	18.8	n.a.	9.37	0.50	780.9	41.4	41.4	12.2	29.8
2128224	P2C26-11	0.00	0.05	0.00	2.5	1.4	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.0	8.9
2128195	P2R12-10	0.00	0.05	0.01	2.2	1.4	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.2	11.7
MRC RX 117	MRC RX 117	0.04	0.04	0.01	1.6	1.3	4.5	n.a.	1.38	0.32	115.0	26.8	3.6	4.0	16.3
MRC RX 90	MRC RX 90	0.04	0.03	0.00	1.3	1.3	6.9	n.a.	0.73	0.20	60.8	16.4	5.8	4.0	9.2
2128184	P2C20-16	0.00	0.10	0.01	3.8	3.0	7.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3.7	14.3
MRC RX 74	MRC RX 74	0.04	0.06	0.01	2.2	1.9	3.4	n.a.	2.03	0.12	169.2	9.8	0.0	1.2	10.6
2128184A	P2C20-16	0.09	0.08	0.01	3.1	2.8	4.5	n.a.	0.57	0.13	47.5	10.9	0.0	4.2	16.0
MRC RX 28	MRC RX 28	0.04	0.03	0.01	1.6	1.3	4.4	n.a.	0.77	0.26	64.2	21.4	0.0	5.7	15.7
GF1068	RES 130801 1.70 SNK	0.01	0.00	0.04	0.9	0.3	124.0	126	17.40	1.88	1450.1	156.7	101.7	90.2	119.7
ID6667	H10-J_SINK (134163-3)	0.13	0.24	0.01	7.8	7.4	7.8	10	6.41	0.14	534.2	11.4	0.0	5.5	17.5
ID6669	H13-J_SINK (134165-3)	0.09	0.25	0.01	8.1	7.7	33.8	34	9.00	0.76	750.0	63.7	33.6	21.0	38.1
ID6682	H18-J_SINK (134179-3)	0.15	0.28	0.01	9.1	8.6	10.0	14	9.15	0.22	762.6	18.2	9.5	7.2	19.2
ID6688	H20-J_SINK (134185-3)	0.98	1.37	0.00	43.1	42.9	8.5	11	9.96	0.26	830.1	21.4	21.4	5.7	15.2
ID6689	NH8-J_SINK (134186-3)	0.07	0.17	0.01	5.9	5.5	23.0	56	11.40	1.42	950.1	118.3	21.3	16.7	34.1
HZ4739	H16W-J_SINK (134136-3)	0.48	0.67	0.01	21.3	20.9	28.0	36	6.07	1.51	505.9	125.8	36.0	21.5	45.0
HZ4754	H6-J_SINK (134151-3)	0.01	0.47	0.01	15.0	14.6	3.3	6	87.54	0.03	7295.5	2.5	2.5	2.5	3.1

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Measured	Calculated	S_BaSO <sub>4</sub>	TAP	SAP	Modified NP	Standard Sobek NP	Total C	Inorganic C	Fe Carb				
		Sulphide %	Sulphide %								Total C NP	Inorg C NP	Corrected NP	Ca NP	CaMg NP
				%	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	%	%	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t	kg CaCO <sub>3</sub> / t
HZ4758	H7-J_SINK (134155-3)	0.02	0.07	0.01	2.5	2.1	7.5	16	2.37	0.15	197.5	12.3	0.0	5.5	20.3
IE7571	H14-J_SINK (134170-3)	0.72	0.90	0.00	28.4	28.1	6.3	11	6.32	0.12	526.7	10.0	10.0	4.7	11.2
HZ4763	H9-J_SINK (134160-3)	0.01	0.05	0.01	1.9	1.5	63.3	62	3.51	1.17	292.5	97.6	45.3	35.5	66.4
IE7586	BLOCK 2_J_TAILINGS	0.12	0.23	0.01	7.8	7.3	45.0	54	8.68	0.79	723.4	65.5	34.1	34.0	58.7
IF2168	BLOCK 5_J_TAILINGS: NH8-J	0.09	0.21	0.02	7.2	6.5	18.3	26	12.47	0.73	1039.2	61.0	0.0	16.5	32.6
IE7580	BLOCK 1_J_TAILINGS	0.35	0.48	0.01	15.3	14.8	24.0	27	8.77	1.12	730.9	93.5	27.7	18.7	37.2
IE7581	H13_J_TAILINGS	0.03	0.20	0.06	8.4	6.3	41.5	36	51.18	0.59	4265.3	49.1	41.7	32.7	46.1
GF1066	RES 130801 A(1) FLT 1.50	0.01	0.24	0.03	8.8	7.6	19.0	21	81.60	0.21	6800.5	17.7	17.7	17.2	23.2
GF1069	composite of RES 130801 B 30 sec, 60 sec, 90 sec, 120 sec	0.02	0.32	0.04	12.2	9.9	28.0	30	77.89	0.26	6491.3	21.6	21.6	24.5	33.5
GF1067	RES 130801 1.50-1.70	0.01	0.10	0.09	6.3	3.3	176.3	194	63.33	2.21	5277.9	184.4	165.2	130.4	176.4
HZ4737	H16W-J_RAW (134136-HR)	0.31	0.42	0.01	13.4	13.0	29.3	32	6.19	1.35	515.9	112.8	24.3	20.5	42.4
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	0.37	0.58	0.02	18.8	18.1	67.3	70	69.44	0.77	5787.1	63.9	63.9	51.2	70.4
GF1059	composite of RES 130798 B Tails, RES 130799 B Tails; RES 130800 B Tails; RES 130801 Tails	0.11	0.59	0.07	21.6	18.3	28.0	34	13.72	0.42	1143.4	34.8	34.8	25.2	37.2
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	0.01	0.00	0.04	1.6	0.2	81.5	81	21.23	1.12	1769.3	93.5	66.9	63.4	83.9

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported



Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	TNPR unitless	SNPR unitless	Fizz Rating Unity	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm
MRC RX 22	MRC RX 22	0.8	0.8	1	0.30	0.33	29.0	0.0001	10	165	n.a.	0.08	1.17	0.11	n.a.	3.4	67	n.a.
MRC RX 52	MRC RX 52	2.2	2.3	1	0.25	0.26	10.3	0.0006	10	188	n.a.	0.04	0.77	0.11	n.a.	2.9	55	n.a.
MRC RX 68	MRC RX 68	104.9	190.5	3	0.39	0.86	1.2	0.0004	10	363	n.a.	0.25	2.11	1.50	n.a.	16.2	30	n.a.
2128230	P2R18-6	11.1	14.11	1	0.10	0.24	3.9	n.a.	3	180	0.29	0.04	0.55	0.06	9.1	3.4	245	0.27
2212051	MRC RX 11	1.3	1.6	2	0.19	0.57	5.5	0.005	6	238	0.49	0.04	0.36	0.07	14.8	2.7	348	0.42
2128219	P2C26-6	1.5	1.5	1	0.40	0.81	14.2	n.a.	6	431	0.71	0.18	0.90	0.24	11.2	7.4	170	1.65
2128219A	P2C26-6	1.5	1.5	2	0.40	0.61	15.1	0.0009	10	333	n.a.	0.20	0.95	0.26	n.a.	8.2	38	n.a.
2212050	MRC RX 10	1.3	768.0	2	0.38	1.61	3.4	0.005	15	559	1.11	0.35	0.13	1.32	11.3	20.0	24	1.31
MRC RX 119	MRC RX 119	0.2	0.2	1	0.47	1.19	14.7	0.0001	10	376	n.a.	0.31	0.14	1.97	n.a.	22.6	24	n.a.
MRC RX 121	MRC RX 121	0.7	0.7	2	0.25	0.49	8.9	0.0014	10	224	n.a.	0.05	0.76	0.11	n.a.	3.7	109	n.a.
MRC RX 36	MRC RX 36	5.4	6.5	1	0.35	0.78	6.6	0.0006	10	769	n.a.	0.24	0.21	1.33	n.a.	8.2	13	n.a.
2128203	P2R11-8	45.3	88.2	3	0.30	1.04	4.1	n.a.	8	463	0.72	0.18	4.61	1.43	16.0	20.5	55	1.46
MRC RX 44	MRC RX 44	0.7	0.7	1	0.26	0.39	8.6	0.0001	10	208	n.a.	0.05	0.57	0.12	n.a.	4.1	64	n.a.
MRC RX 23	MRC RX 23	80.8	94.3	3	0.27	0.43	3.6	0.0001	10	315	n.a.	0.09	4.65	0.87	n.a.	7.3	44	n.a.
GF1057	RES 130798 1.70 SNK	3.8	4.3	2	0.26	0.54	2.3	0.0011	10	887	n.a.	0.26	0.86	1.61	n.a.	6.0	9	n.a.
HY1946	H5-D_SINK (134129-3)	2.5	2.8	1	0.33	0.51	1.9	0.0003	10	505	n.a.	0.19	0.30	0.95	n.a.	6.2	12	n.a.
HY1947	H13-D_SINK (134130-3)	5.2	5.5	1	0.35	0.74	4.0	0.0001	10	535	n.a.	0.24	1.06	1.43	n.a.	12.1	17	n.a.
HY1950	H14-D_SINK (134133-3)	0.8	0.8	1	0.37	0.50	4.7	0.0003	10	546	n.a.	0.24	0.27	2.63	n.a.	10.0	10	n.a.
ID6670	H15-D_SINK (134166-3)	0.5	0.5	1	0.37	0.46	25.4	0.0001	10	66	n.a.	0.27	0.60	1.50	n.a.	8.4	10	n.a.
ID6674	H16-D_SINK (134171-3)	0.2	0.2	1	0.34	0.69	19.4	0.0008	10	280	n.a.	0.23	0.11	1.59	n.a.	10.6	14	n.a.
ID6678	H18-D_SINK (134175-3)	0.2	0.2	2	0.38	0.28	110.0	0.0002	10	10	n.a.	0.12	1.04	0.25	n.a.	4.6	55	n.a.
ID6683	H19-D_SINK (134180-3)	0.4	0.4	1	0.40	0.69	7.6	0.0001	10	385	n.a.	0.45	0.29	1.44	n.a.	10.8	15	n.a.
HZ4740	NH8-D_SINK (134137-3)	0.5	0.5	1	0.33	0.53	11.6	0.0012	10	241	n.a.	0.24	0.29	1.10	n.a.	7.9	34	n.a.
HZ4741	P1C44-D_SINK (134138-3)	1.5	1.6	1	0.40	0.55	1.6	0.0004	10	400	n.a.	0.21	0.24	1.85	n.a.	4.2	16	n.a.
HZ4746	P1C50-D_SINK (134143-3)	0.8	0.8	1	0.36	0.47	5.7	0.0001	10	720	n.a.	0.27	0.12	1.73	n.a.	10.2	7	n.a.
HZ4755	H7-D_SINK (134152-3)	3.6	3.8	1	0.37	0.35	4.3	0.0001	10	443	n.a.	0.23	0.56	1.35	n.a.	7.6	31	n.a.
HZ4759	H9-D_SINK (134156-3)	0.5	0.5	1	0.49	0.49	9.8	0.0001	10	456	n.a.	0.31	0.18	1.63	n.a.	12.2	11	n.a.
IE7572	BLOCK 1_D_TAILINGS	0.5	0.5	1	0.42	0.41	25.6	0.0001	10	33	n.a.	0.23	0.88	1.71	n.a.	7.3	10	n.a.
IE7573	H13_D_TAILINGS	0.9	0.9	1	0.51	0.77	12.3	0.0001	10	247	n.a.	0.30	0.66	1.83	n.a.	16.4	16	n.a.
IE7582	BLOCK 2_D_TAILINGS	0.7	0.7	1	0.45	0.39	9.4	0.0001	10	386	n.a.	0.23	0.47	1.02	n.a.	7.1	13	n.a.
IE7588	BLOCK 5_D_TAILINGS	0.3	0.3	1	0.54	0.56	18.3	0.0001	10	48	n.a.	0.33	0.38	1.56	n.a.	11.2	17	n.a.
GF1055	RES 130798 A(1) FLT 1.50	0.5	0.5	1	0.01	0.06	4.9	0.0012	10	628	n.a.	0.07	0.43	0.02	n.a.	0.6	1	n.a.
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	0.5	0.5	1	0.11	0.14	5.7	0.0004	10	1330	n.a.	0.10	0.53	0.34	n.a.	4.6	7	n.a.
HZ4730	H5-D_RAW (134129-HR)	0.7	0.7	1	0.22	0.29	1.6	0.0008	10	453	n.a.	0.17	0.22	0.70	n.a.	4.8	26	n.a.
HZ4731	H13-D_RAW (134130-HR)	3.2	3.4	1	0.34	0.71	5.5	0.0001	10	532	n.a.	0.27	0.81	1.58	n.a.	12.8	26	n.a.
HZ4734	H14-D_RAW (134133-HR)	0.6	0.6	1	0.32	0.49	3.9	0.0001	10	245	n.a.	0.22	0.24	2.37	n.a.	8.8	12	n.a.
HZ4738	NH8-D_RAW (134137-HR)	0.5	0.5	1	0.35	0.61	11.4	0.0001	10	145	n.a.	0.26	0.35	1.22	n.a.	8.7	39	n.a.
2128231	P2R18-7	3.2	10.6	1	0.30	0.61	1.0	n.a.	8	574	0.67	0.23	0.03	1.49	5.2	2.8	42	1.05
MRC RX 113	MRC RX 113	15.4	15.4	1	0.32	0.76	0.9	0.0007	10	1131	n.a.	0.25	0.10	0.29	n.a.	1.4	14	n.a.
2212043	MRC RX 03	0.3	0.3	1	0.45	1.04	22.3	0.005	15	112	0.99	0.14	0.62	0.18	16.1	4.7	278	1.61
HY1951	H14-E_SINK (134134-3)	2.5	2.8	1	0.44	0.35	9.8	0.0001	10	484	n.a.	0.22	0.25	1.37	n.a.	7.0	18	n.a.
ID6668	H13-E_SINK (134164-3)	5.0	6.0	1	0.35	0.44	3.9	0.0001	10	697	n.a.	0.32	0.66	1.29	n.a.	8.1	12	n.a.
ID6671	H15-E_SINK (134167-3)	2.5	2.9	1	0.58	0.36	4.2	0.0005	10	613	n.a.	0.28	0.23	1.89	n.a.	11.7	10	n.a.
ID6675	H16-E_SINK (134172-3)	0.9	1.0	1	0.42	0.34	4.4	0.0003	10	637	n.a.	0.24	0.05	1.85	n.a.	12.7	9	n.a.
ID6679	H18-E_SINK (134176-3)	2.8	3.0	1	0.31	0.39	2.3	0.0001	10	288	n.a.	0.14	0.32	2.06	n.a.	7.4	26	n.a.
ID6684	H19-E_SINK (134181-3)	0.9	1.0	1	0.36	0.30	0.1	0.0003	10	493	n.a.	0.27	0.06	1.79	n.a.	2.0	6	n.a.
ID6686	H20-E_SINK (134183-3)	0.7	0.8	1	0.41	0.58	1.5	0.0005	10	918	n.a.	0.30	0.31	1.27	n.a.	5.9	13	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported



Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	TNPR unitless	SNPR unitless	Fizz Rating Unity	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm
HZ4747	P1C51-E_SINK (134144-3)	0.4	0.5	1	0.38	0.30	6.5	0.0001	10	455	n.a.	0.26	0.17	1.63	n.a.	10.6	10	n.a.
HZ4751	H5-E_SINK (134148-3)	1.2	1.4	1	0.24	0.25	1.3	0.0001	10	449	n.a.	0.22	0.02	0.75	n.a.	2.5	6	n.a.
HZ4756	H7-E_SINK (134153-3)	1.3	1.4	1	0.35	0.30	1.7	0.0001	10	404	n.a.	0.22	0.32	1.07	n.a.	5.7	6	n.a.
HZ4760	H9-E_SINK (134157-3)	17.7	19.7	2	0.38	0.47	3.7	0.0001	10	447	n.a.	0.20	2.37	2.25	n.a.	13.3	14	n.a.
IE7574	BLOCK 1_E_TAILINGS	1.2	1.3	1	0.42	0.38	8.9	0.0001	10	735	n.a.	0.29	0.36	1.26	n.a.	9.7	11	n.a.
IE7575	H13_E_TAILINGS	3.2	3.5	1	0.44	0.37	6.6	0.0001	10	642	n.a.	0.41	0.86	1.23	n.a.	80.7	27	n.a.
IE7583	BLOCK 2_E_TAILINGS	1.1	1.2	1	0.39	0.39	1.7	0.0001	10	659	n.a.	0.27	0.27	0.76	n.a.	3.4	11	n.a.
GF1060	RES 130799 A(1) FLT 1.50	0.5	0.6	1	0.05	0.03	2.3	0.0004	10	292	n.a.	0.13	0.22	0.06	n.a.	0.7	6	n.a.
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	1.0	1.3	1	0.10	0.08	0.6	0.0007	10	1760	n.a.	0.14	0.28	0.25	n.a.	1.2	7	n.a.
HZ4735	H14-E_RAW (134134-HR)	1.3	1.4	1	0.36	0.28	10.7	0.0001	10	482	n.a.	0.22	0.17	1.28	n.a.	7.1	16	n.a.
2128232	P2R18-8	48.6	27200.0	2	0.30	3.11	1.4	n.a.	20	736	1.33	0.25	2.17	1.58	20.9	7.4	76	2.17
MRC RX 53	MRC RX 53	560.0	560.0	3	0.36	0.86	2.6	0.0001	10	480	n.a.	0.19	5.80	2.15	n.a.	14.1	22	n.a.
MRC RX 37	MRC RX 37	3.2	3.4	1	0.34	0.60	11.0	0.0006	10	421	n.a.	0.14	0.74	0.23	n.a.	5.3	34	n.a.
2128180	P2C20-12	2.5	3.5	1	0.20	0.65	1.3	n.a.	8	736	0.54	0.17	0.10	2.34	9.7	5.5	35	1.50
2128221	P2C26-8	42.6	22592.0	2	0.30	0.95	0.9	n.a.	10	639	0.86	0.23	2.29	1.38	16.8	8.4	18	1.53
MRC RX 24	MRC RX 24	178.0	237.3	4	0.34	0.67	1.8	0.0001	10	451	n.a.	0.17	7.17	1.28	n.a.	14.5	17	n.a.
2128192A	P2R12-7	0.8	0.9	1	0.38	0.45	6.0	0.0013	10	585	n.a.	0.23	0.11	2.71	n.a.	5.4	8	n.a.
MRC RX 25	MRC RX 25	102.6	119.7	3	0.20	0.35	2.4	0.0001	10	270	n.a.	0.10	5.83	0.48	n.a.	7.8	39	n.a.
2128192	P2R12-7	0.4	0.6	1	0.30	0.82	6.6	n.a.	10	598	0.88	0.23	0.11	2.22	6.1	5.0	38	4.05
MRC RX 71	MRC RX 71	85.2	156.6	3	0.41	0.63	1.0	0.0001	10	567	n.a.	0.23	2.23	2.05	n.a.	12.9	18	n.a.
MRC RX 54	MRC RX 54	563.6	563.6	2	0.19	0.63	1.9	0.0001	10	332	n.a.	0.19	4.17	0.80	n.a.	3.4	29	n.a.
HY1945	H3-F_SINK (134128-3)	2.4	2.7	1	0.37	0.61	2.2	0.0001	10	510	n.a.	0.21	0.22	1.53	n.a.	9.3	19	n.a.
HY1948	H13-F_SINK (134131-3)	0.2	0.2	1	0.38	0.30	5.7	0.0003	10	466	n.a.	0.21	0.08	0.87	n.a.	9.9	14	n.a.
ID6672	H15-F_SINK (134168-3)	0.7	0.7	2	0.41	0.32	29.6	0.0003	10	71	n.a.	0.20	0.99	1.78	n.a.	11.8	17	n.a.
ID6676	H16-F_SINK (134173-3)	0.2	0.2	1	0.35	0.55	6.4	0.0001	10	333	n.a.	0.22	0.10	1.55	n.a.	11.5	9	n.a.
ID6680	H18-F_SINK (134177-3)	1.9	2.4	1	0.33	0.31	0.1	0.0001	10	794	n.a.	0.15	0.04	1.15	n.a.	4.9	6	n.a.
ID6685	H19-F_SINK (134182-3)	3.8	4.4	1	0.27	0.49	0.4	0.0001	10	448	n.a.	0.91	0.39	0.49	n.a.	4.7	11	n.a.
ID6687	H20-F_SINK (134184-3)	2.1	2.2	2	0.27	0.40	45.9	0.0001	10	484	n.a.	0.22	1.04	1.12	n.a.	8.1	14	n.a.
HZ4743	P1C47-F_SINK (134140-3)	0.4	0.4	1	0.25	0.26	9.2	0.0001	10	375	n.a.	0.20	0.14	1.02	n.a.	3.5	5	n.a.
HZ4744	P1C49-F_SINK (134141-3)	5.7	7.0	1	0.36	0.73	6.0	0.0001	10	562	n.a.	0.35	0.54	1.27	n.a.	18.5	14	n.a.
HZ4748	P1C51-F_SINK (134145-3)	2.8	3.0	1	0.49	0.39	5.6	0.0001	10	603	n.a.	0.32	0.74	2.21	n.a.	10.7	7	n.a.
HZ4750	H1-F_SINK (134147-3)	0.9	1.1	1	0.27	0.41	1.0	0.0006	10	701	n.a.	0.64	0.04	0.84	n.a.	5.5	8	n.a.
HZ4752	H5-F_SINK (134149-3)	2.7	3.1	1	0.44	0.38	3.8	0.0001	10	712	n.a.	0.27	0.35	1.73	n.a.	8.1	6	n.a.
HZ4753	H6-F_SINK (134150-3)	7.3	9.3	1	0.40	0.46	2.9	0.0001	10	505	n.a.	0.25	0.49	1.67	n.a.	5.5	17	n.a.
HZ4757	H7-F_SINK (134154-3)	2.6	2.7	1	0.33	0.30	6.1	0.0001	10	413	n.a.	0.21	0.67	0.60	n.a.	7.6	18	n.a.
HZ4761	H9-F_SINK (134158-3)	28.4	46.5	2	0.36	0.55	0.7	0.0001	10	623	n.a.	0.29	1.17	1.17	n.a.	7.8	13	n.a.
HZ4764	H10-F_SINK (134161-3)	0.3	0.4	1	0.14	0.10	0.7	0.0001	10	485	n.a.	0.06	0.25	0.86	n.a.	2.2	3	n.a.
IE7576	BLOCK 1_F_TAILINGS	1.5	1.5	1	0.39	0.32	7.9	0.0001	10	769	n.a.	0.50	0.79	1.32	n.a.	9.4	12	n.a.
IE7577	H13_F_TAILINGS	0.6	0.7	1	4.80	0.39	8.4	0.0001	10	92	n.a.	0.25	0.48	0.78	n.a.	9.6	21	n.a.
IE7584	BLOCK 2_F_TAILINGS	3.0	3.2	1	0.64	0.48	10.2	0.0001	10	716	n.a.	0.29	0.81	1.29	n.a.	9.2	15	n.a.
IE7587	BLOCK 3_F_TAILINGS	2.3	2.6	1	0.35	0.57	2.3	0.0001	10	656	n.a.	0.34	0.41	1.19	n.a.	9.8	16	n.a.
GF1063	RES 130800 A(1) FLT 1.50	0.9	0.9	1	0.02	0.05	0.3	0.0009	10	885	n.a.	0.05	0.32	0.02	n.a.	0.2	2	n.a.
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	9.2	17.2	2	0.04	0.06	0.6	0.0004	10	2370	n.a.	0.05	1.16	0.05	n.a.	0.4	6	n.a.
GF1064	RES 130800 1.50-1.70	17.3	30.7	2	0.06	0.13	0.2	0.0001	10	3720	n.a.	0.10	3.33	0.11	n.a.	0.4	14	n.a.
MRPIR 34	MRPIR 34	7.4	12.7	1	0.11	0.14	0.8	0.0001	10	1737	n.a.	0.20	0.78	0.29	n.a.	0.4	6	n.a.
HZ4729	H3-F_RAW (134128-HR)	1.1	1.2	1	0.38	0.53	3.8	0.0008	10	538	n.a.	0.30	0.22	1.50	n.a.	10.0	18	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	TNPR unitless	SNPR unitless	Fizz Rating Unity	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm
HZ4732	H13-F_RAW (134131-HR)	0.3	0.3	1	0.36	0.30	6.3	0.0001	10	350	n.a.	0.23	0.13	1.13	n.a.	9.7	16	n.a.
2128222	P2C26-9	4.1	5.1	2	0.10	0.39	6.9	n.a.	3	200	0.44	0.05	1.17	0.12	16.4	4.0	253	0.59
2128233A	P2R18-9	8.5	8.9	4	0.16	0.33	15.5	0.0013	10	384	n.a.	0.15	5.45	1.01	n.a.	9.5	23	n.a.
MRC RX 26	MRC RX 26	15.8	16.2	4	0.14	0.38	7.9	0.0001	10	543	n.a.	0.13	8.77	0.80	n.a.	9.6	13	n.a.
2128233	P2R18-9	5.6	5.9	3	0.10	0.46	14.1	n.a.	5	382	0.31	0.14	4.94	0.90	7.9	7.6	98	1.46
2212053	MRC RX 12	4.7	1600.0	1	0.32	1.16	1.7	0.005	14	645	1.15	0.15	0.29	1.22	10.3	5.0	27	1.53
2212044	MRC RX 04	50.4	29216.0	2	0.39	1.39	3.6	0.005	15	468	1.23	0.28	3.38	1.43	19.6	21.4	50	3.49
MRC RX 115	MRC RX 115	5.4	5.5	3	0.18	0.57	10.6	0.0006	10	353	n.a.	0.15	2.69	1.01	n.a.	8.4	31	n.a.
MRC RX 88	MRC RX 88	1.7	1.7	2	0.29	0.68	12.4	0.0004	10	422	n.a.	0.29	0.86	3.21	n.a.	17.1	15	n.a.
MRC RX 72	MRC RX 72	0.7	0.7	1	0.28	0.59	7.1	0.0001	10	568	n.a.	0.30	0.11	3.45	n.a.	17.3	12	n.a.
HY1949	H13-G/I_SINK (134132-3)	4.6	4.7	3	0.22	0.41	8.1	0.0005	10	489	n.a.	0.23	2.11	1.30	n.a.	12.9	14	n.a.
HY1952	H16W-G/I_SINK (134135-3)	9.0	9.5	2	0.22	0.56	3.6	0.0003	10	460	n.a.	0.24	2.23	1.08	n.a.	9.7	33	n.a.
ID6666	H10-G/I_SINK (134162-3)	0.5	0.6	1	0.13	0.69	5.7	0.0001	10	634	n.a.	0.24	0.16	0.91	n.a.	9.1	19	n.a.
ID6673	H15-G/I_SINK (134169-3)	2.8	3.1	1	0.18	0.36	1.3	0.0001	10	482	n.a.	0.20	0.39	1.04	n.a.	7.9	7	n.a.
ID6677	H16-G/I_SINK (134174-3)	1.3	1.4	1	0.25	0.46	6.3	0.0001	10	507	n.a.	0.23	0.21	0.60	n.a.	11.2	11	n.a.
ID6681	H18-G/I_SINK (134178-3)	9.1	9.4	3	0.27	0.40	4.4	0.0001	10	411	n.a.	0.20	4.57	0.83	n.a.	23.0	11	n.a.
HZ4745	P1C49-G/I_SINK (134142-3)	12.1	13.6	3	0.27	0.43	3.0	0.0001	10	694	n.a.	0.15	2.50	1.54	n.a.	9.5	8	n.a.
HZ4749	P1C51-G/I_SINK (134146-3)	23.8	27.6	2	0.10	0.34	1.2	0.0008	10	570	n.a.	0.21	2.78	0.77	n.a.	3.8	21	n.a.
HZ4762	H9-G/I_SINK (134159-3)	11.6	12.7	1	0.47	0.55	5.0	0.0001	10	415	n.a.	0.27	1.54	2.37	n.a.	21.0	16	n.a.
IE7578	BLOCK 1_G/I_TAILINGS	6.0	6.3	2	0.28	0.53	5.5	0.0001	10	465	n.a.	0.23	2.03	0.97	n.a.	11.2	27	n.a.
IE7579	H13-G/I_TAILINGS	3.2	3.3	2	0.22	0.49	8.9	0.0001	10	368	n.a.	0.27	1.70	1.18	n.a.	12.7	13	n.a.
IE7585	BLOCK 2_G/I_TAILINGS	2.4	2.5	1	0.44	0.40	7.2	0.0001	10	458	n.a.	0.23	1.49	0.99	n.a.	15.6	13	n.a.
HZ4733	H13-G/I_RAW (134132-HR)	5.5	5.7	2	0.20	0.42	7.9	0.0001	10	424	n.a.	0.22	2.12	1.27	n.a.	12.7	19	n.a.
HZ4736	H16W-G/I_RAW (134135-HR)	4.8	4.9	1	0.16	0.32	3.2	0.0001	10	357	n.a.	0.19	1.60	0.78	n.a.	7.3	19	n.a.
2128234	P2R18-10	2.6	3.1	2	0.30	3.96	17.3	n.a.	23	594	1.56	0.34	1.21	1.01	18.8	10.8	88	4.69
MRC RX 73	MRC RX 73	0.3	0.3	1	0.30	0.65	11.5	0.0001	10	226	n.a.	0.28	0.22	1.13	n.a.	22.5	11	n.a.
2128223	P2C26-10	3.0	4.1	1	0.20	4.65	8.2	n.a.	30	741	1.68	0.33	0.60	0.93	22.0	11.7	164	7.52
2212045	MRC RX 05	0.8	0.8	1	0.37	1.10	26.7	0.005	9	73	1.31	0.37	0.50	1.01	14.7	9.0	27	2.23
MRC RX 116	MRC RX 116	339.5	169.8	3	0.22	0.69	1.1	0.0005	10	363	n.a.	0.32	2.15	1.01	n.a.	11.8	16	n.a.
MRC RX 89	MRC RX 89	0.1	0.1	2	0.28	0.77	11.9	0.0004	10	197	n.a.	0.24	0.18	0.93	n.a.	12.7	21	n.a.
2128183	P2C20-15	0.2	0.3	1	0.30	0.91	26.4	n.a.	6	52	0.75	0.31	0.47	0.73	13.7	14.7	55	3.11
2128183A	P2C20-15	0.3	0.3	1	0.33	0.71	28.8	0.0001	10	100	n.a.	0.33	0.49	0.92	n.a.	16.7	19	n.a.
2128224	P2C26-11	1.0	1.7	1	0.10	0.65	2.6	n.a.	6	210	0.49	0.12	0.04	0.75	13.8	14.9	209	2.18
2128195	P2R12-10	1.1	1.8	1	0.30	0.79	1.0	n.a.	5	244	0.54	0.20	0.09	1.12	12.4	12.6	120	2.35
MRC RX 117	MRC RX 117	2.9	3.6	1	0.26	0.62	1.8	0.0004	10	223	n.a.	0.11	0.16	0.84	n.a.	6.4	48	n.a.
MRC RX 90	MRC RX 90	5.5	5.5	2	0.27	0.17	3.2	0.0003	10	85	n.a.	0.05	0.16	0.23	n.a.	5.9	135	n.a.
2128184	P2C20-16	2.0	2.5	1	0.10	0.73	10.3	n.a.	3	215	0.37	0.08	0.15	0.41	11.6	6.9	204	1.51
MRC RX 74	MRC RX 74	1.6	1.8	1	0.36	0.54	2.6	0.0001	10	233	n.a.	0.16	0.05	1.18	n.a.	11.7	33	n.a.
2128184A	P2C20-16	1.4	1.6	1	0.23	0.64	11.8	0.0003	10	243	n.a.	0.08	0.17	0.52	n.a.	7.5	44	n.a.
MRC RX 28	MRC RX 28	2.8	3.5	1	0.21	0.46	1.5	0.0001	10	240	n.a.	0.07	0.23	0.50	n.a.	8.3	41	n.a.
GF1068	RES 130801 1.70 SNK	132.3	396.8	3	0.19	0.31	5.1	0.0006	10	1650	n.a.	0.19	3.61	0.61	n.a.	7.3	15	n.a.
ID6667	H10-J_SINK (134163-3)	1.0	1.1	1	0.34	0.67	2.8	0.0011	10	380	n.a.	0.27	0.22	1.47	n.a.	12.4	18	n.a.
ID6669	H13-J_SINK (134165-3)	4.2	4.4	2	0.27	0.41	6.1	0.0001	10	331	n.a.	0.34	0.84	1.06	n.a.	10.6	13	n.a.
ID6682	H18-J_SINK (134179-3)	1.1	1.2	1	0.28	0.64	5.8	0.0001	10	361	n.a.	0.29	0.29	1.24	n.a.	16.9	17	n.a.
ID6688	H20-J_SINK (134185-3)	0.2	0.2	1	0.38	0.54	10.8	0.0001	10	99	n.a.	0.25	0.23	0.94	n.a.	19.6	25	n.a.
ID6689	NH8-J_SINK (134186-3)	3.9	4.2	2	1.53	0.61	3.1	0.0003	10	446	n.a.	0.27	0.67	0.98	n.a.	11.3	14	n.a.
HZ4739	H16W-J_SINK (134136-3)	1.3	1.3	1	0.33	0.54	13.9	0.0016	10	281	n.a.	0.28	0.86	0.80	n.a.	15.3	17	n.a.
HZ4754	H6-J_SINK (134151-3)	0.2	0.2	1	0.15	0.06	1.9	0.0001	10	332	n.a.	0.08	0.10	1.85	n.a.	5.5	4	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	TNPR unitless	SNPR unitless	Fizz Rating Unity	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm
HZ4758	H7-J_SINK (134155-3)	3.0	3.6	1	0.27	0.66	1.1	0.0004	10	324	n.a.	0.23	0.22	1.25	n.a.	13.9	28	n.a.
IE7571	H14-J_SINK (134170-3)	0.2	0.2	1	0.27	0.48	7.9	0.0006	10	195	n.a.	0.17	0.19	0.81	n.a.	6.9	35	n.a.
HZ4763	H9-J_SINK (134160-3)	33.8	42.6	1	0.31	0.53	1.5	0.0001	10	321	n.a.	0.24	1.42	1.06	n.a.	15.6	27	n.a.
IE7586	BLOCK 2_J_TAILINGS	5.8	6.2	2	0.38	0.55	4.6	0.0001	10	530	n.a.	0.27	1.36	1.05	n.a.	14.7	21	n.a.
IF2168	BLOCK 5_J_TAILINGS: NH8-J	2.5	2.8	1	46.90	0.73	4.2	0.0001	10	786	n.a.	0.42	0.66	0.93	n.a.	16.3	25	n.a.
IE7580	BLOCK 1_J_TAILINGS	1.6	1.6	1	0.36	0.55	12.5	0.0001	10	427	n.a.	0.34	0.75	0.96	n.a.	13.7	15	n.a.
IE7581	H13_J_TAILINGS	4.9	6.6	1	0.14	0.22	2.5	0.0001	10	2720	n.a.	0.21	1.31	0.53	n.a.	5.3	9	n.a.
GF1066	RES 130801 A(1) FLT 1.50	2.2	2.5	1	0.04	0.07	1.8	0.001	10	1130	n.a.	0.05	0.69	0.10	n.a.	2.0	9	n.a.
GF1069	composite of RES 130801 B 30 sec, 60 sec, 90 sec, 120 sec	2.3	2.8	1	0.18	0.11	3.9	0.0002	10	1900	n.a.	0.08	0.98	0.27	n.a.	5.4	8	n.a.
GF1067	RES 130801 1.50-1.70	28.2	54.2	3	0.09	0.09	1.9	0.0009	10	3680	n.a.	0.05	5.22	0.20	n.a.	3.7	9	n.a.
HZ4737	H16W-J_RAW (134136-HR)	2.2	2.3	1	0.29	0.55	11.6	0.0001	10	369	n.a.	0.28	0.82	0.86	n.a.	13.4	17	n.a.
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	3.6	3.7	2	0.08	0.13	2.0	0.0014	10	669	n.a.	0.23	2.05	0.18	n.a.	0.6	6	n.a.
GF1059	composite of RES 130798 B Tails, RES 130799 B Tails; RES 130800 B Tails; RES 130801 Tails	1.3	1.5	2	0.34	0.53	4.0	0.0007	10	3190	n.a.	0.28	1.01	1.19	n.a.	4.9	15	n.a.
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	52.2	521.6	2	0.27	0.39	0.4	0.0001	10	1720	n.a.	0.46	2.54	0.48	n.a.	0.9	11	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm	Pb ppm
MRC RX 22	MRC RX 22	5.3	1.82	1.0	n.a.	n.a.	0.06	n.a.	0.11	9.8	n.a.	0.34	117	5.7	0.036	n.a.	11.8	2410	14.2
MRC RX 52	MRC RX 52	4.9	1.23	0.7	n.a.	n.a.	0.03	n.a.	0.09	3.3	n.a.	0.27	94	4.1	0.044	n.a.	10.2	860	7.6
MRC RX 68	MRC RX 68	39.4	2.54	2.4	n.a.	n.a.	0.05	n.a.	0.18	4.6	n.a.	1.40	350	2.8	0.091	n.a.	62.7	700	17.2
2128230	P2R18-6	4.5	1.47	2.5	n.a.	n.a.	0.02	0.033	0.08	4.0	1.0	0.27	171	1.0	0.030	n.a.	9.0	1190	10.5
2212051	MRC RX 11	8.1	1.94	2.2	0.06	0.15	0.05	0.023	0.16	7.1	4.1	0.26	216	1.4	0.040	0.060	15.5	854	6.9
2128219	P2C26-6	22.1	1.37	2.5	n.a.	n.a.	0.12	0.043	0.26	5.0	9.0	0.45	128	1.8	0.080	n.a.	38.8	1110	18.5
2128219A	P2C26-6	26.8	1.34	1.7	n.a.	n.a.	0.10	n.a.	0.21	4.0	n.a.	0.47	81	3.1	0.093	n.a.	37.2	880	19.8
2212050	MRC RX 10	43.0	1.35	5.6	0.03	0.12	0.11	0.064	0.34	4.9	38.6	0.62	110	2.6	0.110	0.025	63.5	201	30.9
MRC RX 119	MRC RX 119	44.8	1.52	3.4	n.a.	n.a.	0.25	n.a.	0.31	2.0	n.a.	0.37	40	5.9	0.115	n.a.	94.3	400	21.3
MRC RX 121	MRC RX 121	7.5	2.45	1.6	n.a.	n.a.	0.11	n.a.	0.16	3.6	n.a.	0.31	187	8.0	0.057	n.a.	16.4	960	8.0
MRC RX 36	MRC RX 36	36.9	1.77	2.0	n.a.	n.a.	0.06	n.a.	0.27	2.2	n.a.	0.23	195	1.1	0.119	n.a.	36.6	170	20.4
2128203	P2R11-8	32.5	1.84	2.5	n.a.	n.a.	0.06	0.042	0.29	7.0	10.0	1.76	672	6.1	0.080	n.a.	102.0	1010	15.3
MRC RX 44	MRC RX 44	6.2	1.28	1.1	n.a.	n.a.	0.11	n.a.	0.12	3.0	n.a.	0.20	104	4.4	0.051	n.a.	16.0	850	8.5
MRC RX 23	MRC RX 23	20.7	1.15	1.3	n.a.	n.a.	0.02	n.a.	0.13	3.7	n.a.	2.13	229	4.3	0.051	n.a.	26.5	710	8.9
GF1057	RES 130798 1.70 SNK	29.6	0.66	1.2	n.a.	n.a.	0.15	n.a.	0.16	0.7	n.a.	0.39	31	0.9	0.109	n.a.	17.4	70	15.8
HY1946	H5-D_SINK (134129-3)	29.4	0.56	1.3	n.a.	n.a.	0.10	n.a.	0.16	1.8	n.a.	0.25	42	1.2	0.111	n.a.	26.3	200	15.7
HY1947	H13-D_SINK (134130-3)	37.4	1.11	2.1	n.a.	n.a.	0.11	n.a.	0.17	2.6	n.a.	0.71	71	2.7	0.125	n.a.	47.9	510	18.1
HY1950	H14-D_SINK (134133-3)	28.9	2.91	1.3	n.a.	n.a.	0.38	n.a.	0.15	2.6	n.a.	0.27	599	2.2	0.144	n.a.	46.5	450	17.4
ID6670	H15-D_SINK (134166-3)	46.0	1.85	1.3	n.a.	n.a.	0.33	n.a.	0.15	1.1	n.a.	0.43	75	5.4	0.083	n.a.	43.9	100	18.0
ID6674	H16-D_SINK (134171-3)	40.1	0.99	1.7	n.a.	n.a.	0.74	n.a.	0.17	1.7	n.a.	0.28	25	3.4	0.122	n.a.	60.5	330	17.8
ID6678	H18-D_SINK (134175-3)	17.0	5.05	0.8	n.a.	n.a.	2.47	n.a.	0.12	1.9	n.a.	0.44	73	4.7	0.042	n.a.	28.8	510	15.7
ID6683	H19-D_SINK (134180-3)	46.0	1.05	1.9	n.a.	n.a.	0.30	n.a.	0.18	1.3	n.a.	0.31	49	3.6	0.125	n.a.	64.6	230	19.5
HZ4740	NH8-D_SINK (134137-3)	35.8	1.17	1.4	n.a.	n.a.	0.23	n.a.	0.17	1.7	n.a.	0.24	43	2.1	0.111	n.a.	35.9	400	13.6
HZ4741	P1C44-D_SINK (134138-3)	43.4	0.58	1.4	n.a.	n.a.	0.13	n.a.	0.17	2.3	n.a.	0.26	32	0.9	0.089	n.a.	20.3	270	19.2
HZ4746	P1C50-D_SINK (134143-3)	39.9	0.56	1.0	n.a.	n.a.	0.22	n.a.	0.15	0.7	n.a.	0.19	11	1.7	0.173	n.a.	37.7	40	18.0
HZ4755	H7-D_SINK (134152-3)	33.4	0.47	0.7	n.a.	n.a.	0.15	n.a.	0.13	1.3	n.a.	0.33	28	1.5	0.097	n.a.	30.3	160	14.9
HZ4759	H9-D_SINK (134156-3)	43.1	0.66	1.1	n.a.	n.a.	0.17	n.a.	0.19	1.5	n.a.	0.17	21	2.1	0.116	n.a.	45.7	140	19.4
IE7572	BLOCK 1_D_TAILINGS	45.2	2.49	1.2	n.a.	n.a.	0.92	n.a.	0.12	2.1	n.a.	0.27	204	4.7	0.014	n.a.	40.0	340	21.2
IE7573	H13_D_TAILINGS	51.3	1.30	2.2	n.a.	n.a.	0.32	n.a.	0.19	2.8	n.a.	0.49	66	4.7	0.018	n.a.	66.9	450	30.8
IE7582	BLOCK 2_D_TAILINGS	43.7	0.89	1.2	n.a.	n.a.	0.45	n.a.	0.13	2.0	n.a.	0.24	43	3.5	0.014	n.a.	29.0	190	19.6
IE7588	BLOCK 5_D_TAILINGS	50.6	1.61	1.6	n.a.	n.a.	0.50	n.a.	0.18	2.0	n.a.	0.32	92	4.3	0.019	n.a.	56.9	380	29.3
GF1055	RES 130798 A(1) FLT 1.50	7.2	0.16	0.1	n.a.	n.a.	0.09	n.a.	0.01	1.4	n.a.	0.05	8	0.8	0.004	n.a.	0.9	720	1.7
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	14.0	0.15	0.2	n.a.	n.a.	0.09	n.a.	0.03	1.4	n.a.	0.10	32	1.3	0.003	n.a.	11.3	460	11.7
HZ4730	H5-D_RAW (134129-HR)	24.8	0.30	0.7	n.a.	n.a.	0.10	n.a.	0.10	1.8	n.a.	0.13	27	2.4	0.070	n.a.	18.7	210	11.2
HZ4731	H13-D_RAW (134130-HR)	41.4	1.10	2.0	n.a.	n.a.	0.17	n.a.	0.19	2.6	n.a.	0.59	74	3.0	0.122	n.a.	51.0	460	15.9
HZ4734	H14-D_RAW (134133-HR)	27.7	2.41	1.2	n.a.	n.a.	0.43	n.a.	0.16	2.2	n.a.	0.20	427	1.9	0.137	n.a.	40.3	490	13.4
HZ4738	NH8-D_RAW (134137-HR)	40.6	1.36	1.5	n.a.	n.a.	0.30	n.a.	0.22	1.7	n.a.	0.30	64	2.6	0.118	n.a.	42.3	390	15.6
2128231	P2R18-7	32.4	0.32	2.5	n.a.	n.a.	0.07	0.053	0.24	3.0	6.0	0.14	18	0.3	0.150	n.a.	12.2	34	13.1
MRC RX 113	MRC RX 113	32.0	0.31	1.9	n.a.	n.a.	0.05	n.a.	0.21	10.1	n.a.	0.10	12	0.6	0.171	n.a.	5.9	590	16.3
2212043	MRC RX 03	18.6	2.66	4.1	0.06	0.11	0.22	0.038	0.32	7.2	12.7	0.42	193	2.1	0.070	0.090	31.6	924	16.3
HY1951	H14-E_SINK (134134-3)	31.0	0.51	0.7	n.a.	n.a.	0.24	n.a.	0.14	3.2	n.a.	0.20	24	1.4	0.115	n.a.	31.8	200	17.4
ID6668	H13-E_SINK (134164-3)	44.4	0.32	0.9	n.a.	n.a.	0.20	n.a.	0.18	1.2	n.a.	0.16	24	2.4	0.144	n.a.	42.4	20	19.5
ID6671	H15-E_SINK (134167-3)	40.5	0.32	0.7	n.a.	n.a.	0.20	n.a.	0.15	1.3	n.a.	0.15	17	1.3	0.163	n.a.	38.9	20	24.5
ID6675	H16-E_SINK (134172-3)	34.5	0.39	0.8	n.a.	n.a.	0.30	n.a.	0.14	1.3	n.a.	0.14	11	1.1	0.164	n.a.	35.7	20	17.8
ID6679	H18-E_SINK (134176-3)	27.4	0.44	0.8	n.a.	n.a.	0.13	n.a.	0.13	5.1	n.a.	0.27	42	1.0	0.067	n.a.	21.2	340	15.2
ID6684	H19-E_SINK (134181-3)	41.0	0.21	0.6	n.a.	n.a.	0.11	n.a.	0.15	0.9	n.a.	0.07	8	0.5	0.158	n.a.	4.7	30	21.3
ID6686	H20-E_SINK (134183-3)	43.0	0.24	1.2	n.a.	n.a.	0.26	n.a.	0.16	11.2	n.a.	0.06	8	1.6	0.139	n.a.	10.9	1620	24.5

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm	Pb ppm
HZ4747	P1C51-E_SINK (134144-3)	36.9	0.50	0.6	n.a.	n.a.	0.28	n.a.	0.14	1.4	n.a.	0.11	9	2.5	0.114	n.a.	45.6	110	18.0
HZ4751	H5-E_SINK (134148-3)	26.1	0.11	0.4	n.a.	n.a.	0.06	n.a.	0.12	1.4	n.a.	0.04	3	0.7	0.149	n.a.	5.0	10	15.1
HZ4756	H7-E_SINK (134153-3)	21.4	0.27	0.6	n.a.	n.a.	0.09	n.a.	0.12	1.1	n.a.	0.11	14	1.2	0.080	n.a.	12.4	100	17.1
HZ4760	H9-E_SINK (134157-3)	31.7	1.36	1.3	n.a.	n.a.	0.17	n.a.	0.16	3.2	n.a.	0.77	316	2.3	0.065	n.a.	42.8	560	16.9
IE7574	BLOCK 1_E_TAILINGS	43.2	0.58	0.9	n.a.	n.a.	0.25	n.a.	0.14	3.1	n.a.	0.21	35	2.1	0.016	n.a.	34.8	160	23.0
IE7575	H13_E_TAILINGS	481.0	0.51	1.0	n.a.	n.a.	0.26	n.a.	0.15	2.1	n.a.	0.22	178	5.9	0.017	n.a.	330.0	50	23.6
IE7583	BLOCK 2_E_TAILINGS	42.6	0.38	0.8	n.a.	n.a.	0.10	n.a.	0.15	3.7	n.a.	0.13	27	1.4	0.018	n.a.	8.0	230	17.6
GF1060	RES 130799 A(1) FLT 1.50	6.6	0.07	0.2	n.a.	n.a.	0.01	n.a.	0.01	3.5	n.a.	0.05	3	1.5	0.009	n.a.	0.7	70	11.5
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	17.8	0.08	0.2	n.a.	n.a.	0.03	n.a.	0.02	3.3	n.a.	0.07	7	1.8	0.005	n.a.	2.0	40	11.9
HZ4735	H14-E_RAW (134134-HR)	33.9	0.40	0.6	n.a.	n.a.	0.27	n.a.	0.13	3.4	n.a.	0.14	22	1.4	0.107	n.a.	31.0	150	17.5
2128232	P2R18-8	41.1	2.70	9.0	n.a.	n.a.	0.05	0.062	1.10	10.0	21.0	0.78	752	1.8	0.150	n.a.	26.1	832	18.9
MRC RX 53	MRC RX 53	37.0	1.29	2.2	n.a.	n.a.	0.07	n.a.	0.26	5.1	n.a.	1.39	359	3.5	0.074	n.a.	69.6	960	18.9
MRC RX 37	MRC RX 37	17.7	1.19	1.7	n.a.	n.a.	0.05	n.a.	0.18	4.1	n.a.	0.44	100	2.3	0.090	n.a.	19.1	970	8.9
2128180	P2C20-12	20.3	0.62	2.5	n.a.	n.a.	0.11	0.041	0.17	5.0	9.0	0.22	43	1.0	0.110	n.a.	22.4	373	14.2
2128221	P2C26-8	33.8	3.49	2.5	n.a.	n.a.	0.10	0.047	0.37	8.0	7.0	0.99	980	1.8	0.100	n.a.	34.6	1290	16.6
MRC RX 24	MRC RX 24	39.1	2.27	1.8	n.a.	n.a.	0.05	n.a.	0.19	5.7	n.a.	1.38	541	4.3	0.093	n.a.	71.3	750	15.2
2128192A	P2R12-7	35.9	0.26	1.2	n.a.	n.a.	0.08	n.a.	0.20	1.1	n.a.	0.08	11	2.2	0.143	n.a.	31.7	230	13.0
MRC RX 25	MRC RX 25	16.4	1.76	1.0	n.a.	n.a.	0.05	n.a.	0.12	4.6	n.a.	2.18	393	3.4	0.045	n.a.	33.6	570	8.9
2128192	P2R12-7	29.2	0.33	2.5	n.a.	n.a.	0.11	0.052	0.29	3.0	19.0	0.09	22	2.3	0.130	n.a.	35.4	325	12.8
MRC RX 71	MRC RX 71	37.6	3.19	1.7	n.a.	n.a.	0.05	n.a.	0.19	6.1	n.a.	1.33	935	1.8	0.121	n.a.	47.9	880	19.1
MRC RX 54	MRC RX 54	28.8	4.18	1.7	n.a.	n.a.	0.03	n.a.	0.17	5.4	n.a.	1.97	881	1.0	0.064	n.a.	11.1	920	12.6
HY1945	H3-F_SINK (134128-3)	36.9	1.79	1.6	n.a.	n.a.	0.13	n.a.	0.21	2.4	n.a.	0.30	176	1.6	0.091	n.a.	39.1	280	16.9
HY1948	H13-F_SINK (134131-3)	32.1	0.62	0.6	n.a.	n.a.	0.28	n.a.	0.17	1.5	n.a.	0.09	13	2.1	0.076	n.a.	35.8	160	13.7
ID6672	H15-F_SINK (134168-3)	35.7	1.40	0.8	n.a.	n.a.	1.08	n.a.	0.17	1.2	n.a.	0.22	43	5.9	0.081	n.a.	62.4	150	17.0
ID6676	H16-F_SINK (134173-3)	38.3	0.90	1.2	n.a.	n.a.	0.25	n.a.	0.18	1.8	n.a.	0.23	18	3.5	0.093	n.a.	42.3	350	15.1
ID6680	H18-F_SINK (134177-3)	26.1	0.29	0.7	n.a.	n.a.	0.05	n.a.	0.19	0.6	n.a.	0.11	10	1.0	0.100	n.a.	10.7	10	13.9
ID6685	H19-F_SINK (134182-3)	20.1	0.43	1.6	n.a.	n.a.	1.12	n.a.	0.13	9.4	n.a.	0.17	41	1.5	0.113	n.a.	23.4	350	23.1
ID6687	H20-F_SINK (134184-3)	25.8	6.44	1.2	n.a.	n.a.	0.20	n.a.	0.15	4.0	n.a.	0.55	1060	1.8	0.105	n.a.	38.6	650	16.7
HZ4743	P1C47-F_SINK (134140-3)	19.6	0.48	0.5	n.a.	n.a.	0.57	n.a.	0.14	1.0	n.a.	0.10	15	1.4	0.082	n.a.	11.5	60	17.2
HZ4744	P1C49-F_SINK (134141-3)	36.9	1.35	1.9	n.a.	n.a.	0.20	n.a.	0.15	5.0	n.a.	0.57	167	1.4	0.097	n.a.	56.5	710	24.4
HZ4748	P1C51-F_SINK (134145-3)	44.4	0.52	0.7	n.a.	n.a.	0.24	n.a.	0.18	2.3	n.a.	0.30	65	3.6	0.103	n.a.	43.7	540	19.3
HZ4750	H1-F_SINK (134147-3)	33.6	0.35	0.9	n.a.	n.a.	0.13	n.a.	0.14	5.1	n.a.	0.12	10	1.0	0.127	n.a.	22.5	20	22.4
HZ4752	H5-F_SINK (134149-3)	41.5	0.54	0.6	n.a.	n.a.	0.18	n.a.	0.17	1.7	n.a.	0.27	13	1.5	0.124	n.a.	34.5	260	21.5
HZ4753	H6-F_SINK (134150-3)	43.0	0.85	1.0	n.a.	n.a.	0.10	n.a.	0.16	3.4	n.a.	0.30	95	0.8	0.137	n.a.	18.1	370	19.8
HZ4757	H7-F_SINK (134154-3)	23.3	4.55	0.8	n.a.	n.a.	0.10	n.a.	0.10	2.0	n.a.	0.34	530	1.4	0.067	n.a.	23.5	360	12.6
HZ4761	H9-F_SINK (134158-3)	41.0	1.82	1.3	n.a.	n.a.	0.09	n.a.	0.18	3.4	n.a.	0.58	306	1.3	0.119	n.a.	31.7	690	20.8
HZ4764	H10-F_SINK (134161-3)	9.2	0.04	0.5	n.a.	n.a.	0.06	n.a.	0.01	4.4	n.a.	0.02	5	2.4	0.014	n.a.	6.8	910	4.7
IE7576	BLOCK 1_F_TAILINGS	36.1	0.76	0.9	n.a.	n.a.	0.46	n.a.	0.12	4.7	n.a.	0.24	47	5.3	0.013	n.a.	39.0	210	24.8
IE7577	H13_F_TAILINGS	58.9	0.86	0.9	n.a.	n.a.	0.53	n.a.	0.17	3.3	n.a.	0.17	46	2.9	0.016	n.a.	41.3	220	22.5
IE7584	BLOCK 2_F_TAILINGS	42.8	1.75	1.2	n.a.	n.a.	0.16	n.a.	0.17	4.0	n.a.	0.43	246	2.7	0.015	n.a.	30.1	360	21.6
IE7587	BLOCK 3_F_TAILINGS	43.6	1.52	1.6	n.a.	n.a.	0.16	n.a.	0.19	4.3	n.a.	0.33	173	1.4	0.015	n.a.	37.0	290	23.4
GF1063	RES 130800 A(1) FLT 1.50	6.5	0.08	0.1	n.a.	n.a.	0.01	n.a.	0.01	1.2	n.a.	0.07	6	0.8	0.030	n.a.	0.5	200	2.7
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	13.5	0.30	0.2	n.a.	n.a.	0.02	n.a.	0.01	1.6	n.a.	0.21	34	1.1	0.017	n.a.	1.4	190	5.1
GF1064	RES 130800 1.50-1.70	11.0	0.95	0.3	n.a.	n.a.	0.04	n.a.	0.02	3.6	n.a.	0.54	63	1.1	0.061	n.a.	0.8	200	10.6
MRPIR 34	MRPIR 34	14.7	0.32	0.3	n.a.	n.a.	0.00	n.a.	0.05	1.5	n.a.	0.18	18	2.0	0.062	n.a.	1.0	60	10.0
HZ4729	H3-F_RAW (134128-HR)	40.9	1.19	1.4	n.a.	n.a.	0.41	n.a.	0.19	2.7	n.a.	0.25	107	1.8	0.089	n.a.	39.3	270	17.7

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm	Pb ppm
HZ4732	H13-F_RAW (134131-HR)	35.1	0.67	0.8	n.a.	n.a.	0.37	n.a.	0.18	1.4	n.a.	0.10	18	2.3	0.077	n.a.	38.9	170	14.2
2128222	P2C26-9	4.0	0.90	2.5	n.a.	n.a.	0.12	0.041	0.11	8.0	3.0	0.42	158	1.1	0.020	n.a.	14.6	2540	8.1
2128233A	P2R18-9	24.5	2.01	0.8	n.a.	n.a.	0.09	n.a.	0.17	2.9	n.a.	1.31	288	5.7	0.067	n.a.	36.5	440	14.7
MRC RX 26	MRC RX 26	22.4	3.36	1.0	n.a.	n.a.	0.08	n.a.	0.20	3.4	n.a.	0.68	657	4.5	0.071	n.a.	32.4	570	9.8
2128233	P2R18-9	20.6	1.96	2.5	n.a.	n.a.	0.12	0.032	0.20	3.0	3.0	1.29	453	4.9	0.070	n.a.	35.0	533	13.2
2212053	MRC RX 12	23.1	0.72	3.0	0.03	0.07	0.06	0.040	0.36	4.6	24.8	0.39	45	0.5	0.100	0.025	20.9	565	12.7
2212044	MRC RX 04	41.4	2.70	5.2	0.03	0.06	0.09	0.049	0.39	8.1	22.0	1.63	1220	3.2	0.080	0.025	70.6	656	21.2
MRC RX 115	MRC RX 115	22.9	2.62	1.2	n.a.	n.a.	0.06	n.a.	0.21	2.7	n.a.	1.36	201	6.2	0.100	n.a.	33.2	490	14.0
MRC RX 88	MRC RX 88	35.0	1.33	1.8	n.a.	n.a.	0.35	n.a.	0.22	2.1	n.a.	0.56	111	4.2	0.092	n.a.	61.3	430	21.2
MRC RX 72	MRC RX 72	38.0	0.71	1.6	n.a.	n.a.	0.15	n.a.	0.18	1.8	n.a.	0.26	31	3.1	0.123	n.a.	62.0	240	18.2
HY1949	H13-G/I_SINK (134132-3)	32.0	2.21	1.1	n.a.	n.a.	0.14	n.a.	0.17	2.6	n.a.	0.77	449	3.8	0.100	n.a.	50.7	470	17.1
HY1952	H16W-G/I_SINK (134135-3)	33.8	2.09	1.3	n.a.	n.a.	0.06	n.a.	0.18	3.7	n.a.	1.07	358	2.3	0.095	n.a.	37.4	460	16.5
ID6666	H10-G/I_SINK (134162-3)	33.2	1.17	1.8	n.a.	n.a.	0.13	n.a.	0.21	1.6	n.a.	0.25	47	1.9	0.091	n.a.	35.1	460	14.7
ID6673	H15-G/I_SINK (134169-3)	29.6	0.58	0.8	n.a.	n.a.	0.06	n.a.	0.17	1.8	n.a.	0.24	32	1.4	0.108	n.a.	21.7	340	16.3
ID6677	H16-G/I_SINK (134174-3)	36.3	0.65	1.1	n.a.	n.a.	0.07	n.a.	0.14	1.2	n.a.	0.24	39	2.3	0.124	n.a.	55.9	190	15.9
ID6681	H18-G/I_SINK (134178-3)	28.8	1.19	1.0	n.a.	n.a.	0.17	n.a.	0.18	2.4	n.a.	0.44	151	5.9	0.085	n.a.	78.8	360	15.9
HZ4745	P1C49-G/I_SINK (134142-3)	23.3	0.73	1.0	n.a.	n.a.	0.21	n.a.	0.15	2.5	n.a.	0.37	79	1.0	0.095	n.a.	24.0	500	16.3
HZ4749	P1C51-G/I_SINK (134146-3)	32.6	0.81	0.7	n.a.	n.a.	0.07	n.a.	0.16	1.9	n.a.	0.66	97	0.9	0.099	n.a.	11.6	460	9.0
HZ4762	H9-G/I_SINK (134159-3)	38.2	1.00	1.3	n.a.	n.a.	0.16	n.a.	0.15	3.0	n.a.	0.86	237	2.6	0.086	n.a.	80.8	500	20.3
IE7578	BLOCK 1_G/I_TAILINGS	47.6	1.89	1.3	n.a.	n.a.	0.11	n.a.	0.18	3.6	n.a.	0.89	291	3.2	0.017	n.a.	43.1	410	20.3
IE7579	H13-G/I_TAILINGS	43.4	1.99	1.3	n.a.	n.a.	0.14	n.a.	0.17	2.7	n.a.	0.66	354	3.6	0.018	n.a.	54.6	400	25.0
IE7585	BLOCK 2_G/I_TAILINGS	49.2	1.21	1.2	n.a.	n.a.	0.23	n.a.	0.14	2.1	n.a.	0.39	134	4.0	0.015	n.a.	55.1	330	22.9
HZ4733	H13-G/I_RAW (134132-HR)	33.0	2.08	1.0	n.a.	n.a.	0.14	n.a.	0.19	2.4	n.a.	0.75	387	3.8	0.101	n.a.	47.9	460	14.9
HZ4736	H16W-G/I_RAW (134135-HR)	28.0	1.58	0.8	n.a.	n.a.	0.07	n.a.	0.11	2.7	n.a.	0.74	255	2.3	0.075	n.a.	28.8	310	12.1
2128234	P2R18-10	36.4	3.91	11.0	n.a.	n.a.	0.15	0.059	1.39	9.0	22.0	0.88	1270	3.7	0.140	n.a.	63.0	860	25.4
MRC RX 73	MRC RX 73	24.1	1.87	1.6	n.a.	n.a.	0.37	n.a.	0.12	3.2	n.a.	0.39	132	3.7	0.099	n.a.	50.4	460	22.9
2128223	P2C26-10	40.9	3.94	13.0	n.a.	n.a.	0.07	0.063	1.58	11.0	33.0	0.62	1890	2.6	0.120	n.a.	55.7	934	20.6
2212045	MRC RX 05	34.9	3.90	3.2	0.07	0.06	0.24	0.055	0.35	5.9	17.3	0.45	937	3.3	0.100	0.025	58.2	661	28.8
MRC RX 116	MRC RX 116	33.6	3.73	1.7	n.a.	n.a.	0.03	n.a.	0.22	3.9	n.a.	1.30	791	1.7	0.105	n.a.	45.1	720	16.3
MRC RX 89	MRC RX 89	24.0	2.31	1.9	n.a.	n.a.	0.63	n.a.	0.17	2.1	n.a.	0.35	106	2.5	0.058	n.a.	38.6	410	15.6
2128183	P2C20-15	25.5	3.33	2.5	n.a.	n.a.	0.37	0.050	0.20	6.0	17.0	0.54	567	2.6	0.070	n.a.	57.1	723	23.5
2128183A	P2C20-15	29.7	3.53	2.0	n.a.	n.a.	0.28	n.a.	0.15	4.1	n.a.	0.55	361	2.9	0.074	n.a.	55.0	560	25.5
2128224	P2C26-11	23.8	0.87	2.5	n.a.	n.a.	0.05	0.028	0.19	7.0	8.0	0.27	94	2.1	0.050	n.a.	65.3	138	12.2
2128195	P2R12-10	36.9	0.89	2.5	n.a.	n.a.	0.08	0.036	0.20	6.0	12.0	0.32	84	2.2	0.060	n.a.	51.0	328	15.7
MRC RX 117	MRC RX 117	22.0	1.19	1.6	n.a.	n.a.	0.02	n.a.	0.17	5.3	n.a.	0.41	73	3.0	0.073	n.a.	22.5	510	10.2
MRC RX 90	MRC RX 90	11.3	0.58	0.5	n.a.	n.a.	0.03	n.a.	0.08	0.9	n.a.	0.16	48	9.6	0.030	n.a.	23.3	220	6.2
2128184	P2C20-16	14.1	1.23	2.5	n.a.	n.a.	0.04	0.020	0.15	5.0	12.0	0.35	158	1.2	0.040	n.a.	36.8	625	8.1
MRC RX 74	MRC RX 74	36.2	0.75	1.4	n.a.	n.a.	0.07	n.a.	0.13	2.2	n.a.	0.32	39	3.7	0.072	n.a.	54.1	70	15.5
2128184A	P2C20-16	17.2	1.15	2.1	n.a.	n.a.	0.02	n.a.	0.12	4.8	n.a.	0.39	98	2.8	0.051	n.a.	34.3	500	8.8
MRC RX 28	MRC RX 28	16.6	1.13	1.3	n.a.	n.a.	0.02	n.a.	0.11	4.2	n.a.	0.32	128	2.8	0.055	n.a.	24.8	620	8.3
GF1068	RES 130801 1.70 SNK	27.9	2.67	0.7	n.a.	n.a.	0.06	n.a.	0.16	3.6	n.a.	0.57	602	2.2	0.088	n.a.	23.0	60	11.6
ID6667	H10-J_SINK (134163-3)	40.9	1.09	1.8	n.a.	n.a.	0.14	n.a.	0.17	2.6	n.a.	0.39	46	1.7	0.106	n.a.	46.6	450	21.0
ID6669	H13-J_SINK (134165-3)	37.7	1.88	1.0	n.a.	n.a.	0.09	n.a.	0.15	3.8	n.a.	0.49	368	2.0	0.097	n.a.	39.8	530	18.5
ID6682	H18-J_SINK (134179-3)	37.8	0.90	1.5	n.a.	n.a.	0.21	n.a.	0.15	2.8	n.a.	0.38	35	2.5	0.085	n.a.	46.3	490	16.4
ID6688	H20-J_SINK (134185-3)	26.8	1.84	1.4	n.a.	n.a.	0.28	n.a.	0.15	2.5	n.a.	0.30	77	3.5	0.079	n.a.	53.6	450	23.1
ID6689	NH8-J_SINK (134186-3)	37.6	4.98	1.6	n.a.	n.a.	0.07	n.a.	0.16	4.8	n.a.	0.52	1910	1.9	0.082	n.a.	37.2	570	18.9
HZ4739	H16W-J_SINK (134136-3)	44.4	5.49	1.5	n.a.	n.a.	0.14	n.a.	0.16	3.9	n.a.	0.71	966	1.7	0.109	n.a.	51.3	750	18.1
HZ4754	H6-J_SINK (134151-3)	11.3	0.04	0.3	n.a.	n.a.	0.07	n.a.	0.01	2.5	n.a.	0.01	5	3.2	0.009	n.a.	21.2	220	8.5

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm	Pb ppm
HZ4758	H7-J_SINK (134155-3)	38.2	1.35	1.7	n.a.	n.a.	0.09	n.a.	0.14	3.0	n.a.	0.49	77	2.0	0.075	n.a.	45.9	550	14.3
IE7571	H14-J_SINK (134170-3)	24.7	1.17	1.1	n.a.	n.a.	0.95	n.a.	0.14	2.1	n.a.	0.20	51	1.1	0.086	n.a.	24.9	240	14.7
HZ4763	H9-J_SINK (134160-3)	36.1	2.60	1.3	n.a.	n.a.	0.05	n.a.	0.15	3.6	n.a.	0.90	503	2.0	0.080	n.a.	49.1	400	16.5
IE7586	BLOCK 2_J_TAILINGS	47.6	1.92	1.6	n.a.	n.a.	0.15	n.a.	0.14	3.6	n.a.	0.69	254	2.8	0.021	n.a.	47.4	470	21.8
IF2168	BLOCK 5_J_TAILINGS: NH8-J	205.0	3.49	2.0	n.a.	n.a.	0.15	n.a.	0.22	7.5	n.a.	0.48	1210	6.4	0.018	n.a.	59.4	520	29.6
IE7580	BLOCK 1_J_TAILINGS	47.8	4.00	1.6	n.a.	n.a.	0.26	n.a.	0.17	4.2	n.a.	0.55	736	1.8	0.020	n.a.	45.1	670	23.1
IE7581	H13_J_TAILINGS	24.7	0.71	0.6	n.a.	n.a.	0.11	n.a.	0.06	3.5	n.a.	0.30	126	3.4	0.043	n.a.	17.5	280	11.0
GF1066	RES 130801 A(1) FLT 1.50	8.1	0.21	0.1	n.a.	n.a.	0.04	n.a.	0.02	2.0	n.a.	0.12	59	1.3	0.033	n.a.	8.9	30	3.8
GF1069	composite of RES 130801 B 30 sec, 60 sec, 90 sec, 120 sec	27.1	0.27	0.3	n.a.	n.a.	0.08	n.a.	0.03	2.1	n.a.	0.19	57	1.8	0.012	n.a.	19.6	30	9.0
GF1067	RES 130801 1.50-1.70	9.4	1.11	0.2	n.a.	n.a.	0.03	n.a.	0.04	2.5	n.a.	0.94	79	1.6	0.036	n.a.	13.8	30	6.1
HZ4737	H16W-J_RAW (134136-HR)	44.9	4.99	1.6	n.a.	n.a.	0.14	n.a.	0.17	4.0	n.a.	0.66	932	1.7	0.107	n.a.	45.5	820	15.0
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	10.8	0.73	0.3	n.a.	n.a.	0.24	n.a.	0.02	17.7	n.a.	0.41	27	0.8	0.021	n.a.	1.3	500	31.8
GF1059	composite of RES 130798 B Tails, RES 130799 B Tails; RES 130800 B Tails; RES 130801 Tails	43.2	0.63	1.2	n.a.	n.a.	0.18	n.a.	0.14	2.1	n.a.	0.29	71	0.9	0.021	n.a.	15.0	80	27.4
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	23.8	1.29	0.8	n.a.	n.a.	1.55	n.a.	0.09	6.4	n.a.	0.39	136	0.6	0.091	n.a.	3.5	70	31.1

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm
MRC RX 22	MRC RX 22	n.a.	n.a.	1.13	0.62	3.9	0.6	n.a.	119	n.a.	0.01	7.4	0.002	0.03	1.00	26.0	0.05	n.a.	57
MRC RX 52	MRC RX 52	n.a.	n.a.	0.52	0.21	2.3	0.4	n.a.	72	n.a.	0.04	4.3	0.001	0.03	0.50	17.0	0.05	n.a.	46
MRC RX 68	MRC RX 68	n.a.	n.a.	0.03	0.28	6.4	2.0	n.a.	65	n.a.	0.04	5.1	0.001	0.01	0.90	29.0	0.05	n.a.	157
2128230	P2R18-6	5.0	n.a.	0.03	0.19	1.8	0.4	0.1	63	0.005	0.02	5.4	0.005	0.02	0.68	23.3	0.03	10	56
2212051	MRC RX 11	8.0	0.0005	0.21	0.26	2.8	0.4	0.6	61	0.005	0.02	5.9	0.003	0.02	0.75	24.2	0.06	10.3	49
2128219	P2C26-6	20.0	n.a.	0.89	0.50	3.8	1.2	0.5	79	0.005	0.04	5.2	0.005	0.05	1.00	32.9	0.18	13	131
2128219A	P2C26-6	n.a.	n.a.	0.73	0.25	3.5	1.2	n.a.	77	n.a.	0.09	4.7	0.001	0.07	0.90	21.0	0.05	n.a.	123
2212050	MRC RX 10	22.2	0.001	0.06	1.12	6.4	3.4	0.6	81	0.005	0.05	4.1	0.003	0.01	1.62	29.7	0.03	9.44	185
MRC RX 119	MRC RX 119	n.a.	n.a.	0.65	0.51	3.2	5.5	n.a.	45	n.a.	0.07	2.9	0.001	0.04	1.20	27.0	0.05	n.a.	214
MRC RX 121	MRC RX 121	n.a.	n.a.	1.12	0.14	3.7	0.5	n.a.	58	n.a.	0.04	3.9	0.001	0.04	0.70	26.0	0.05	n.a.	64
MRC RX 36	MRC RX 36	n.a.	n.a.	0.05	0.26	5.9	2.5	n.a.	51	n.a.	0.04	1.7	0.001	0.05	0.80	25.0	0.05	n.a.	133
2128203	P2R11-8	19.0	n.a.	0.11	1.57	6.1	1.5	0.4	99	0.005	0.03	5.4	0.005	0.08	1.02	35.2	0.03	14	145
MRC RX 44	MRC RX 44	n.a.	n.a.	0.70	0.14	2.4	0.6	n.a.	61	n.a.	0.05	3.8	0.001	0.04	0.60	17.0	0.05	n.a.	67
MRC RX 23	MRC RX 23	n.a.	n.a.	0.06	0.34	2.9	0.9	n.a.	51	n.a.	0.01	3.2	0.001	0.04	0.60	15.0	0.05	n.a.	84
GF1057	RES 130798 1.70 SNK	n.a.	n.a.	0.31	0.22	2.5	2.1	n.a.	116	n.a.	0.03	0.7	0.001	0.03	0.70	18.0	0.05	n.a.	138
HY1946	H5-D_SINK (134129-3)	n.a.	n.a.	0.05	0.36	3.6	1.2	n.a.	49	n.a.	0.02	1.8	0.001	0.01	0.80	14.0	0.05	n.a.	133
HY1947	H13-D_SINK (134130-3)	n.a.	n.a.	0.24	0.31	3.6	3.8	n.a.	69	n.a.	0.06	3.4	0.001	0.03	1.20	15.0	0.05	n.a.	162
HY1950	H14-D_SINK (134133-3)	n.a.	n.a.	0.44	0.29	5.5	2.5	n.a.	60	n.a.	0.08	2.9	0.001	0.05	0.80	34.0	0.05	n.a.	249
ID6670	H15-D_SINK (134166-3)	n.a.	n.a.	1.30	1.05	3.8	6.4	n.a.	59	n.a.	0.08	1.3	0.001	0.06	1.58	15.0	0.03	n.a.	139
ID6674	H16-D_SINK (134171-3)	n.a.	n.a.	0.57	0.67	3.2	7.0	n.a.	47	n.a.	0.07	2.0	0.001	0.04	1.23	19.0	0.03	n.a.	158
ID6678	H18-D_SINK (134175-3)	n.a.	n.a.	5.68	0.65	2.0	2.2	n.a.	52	n.a.	0.03	2.5	0.001	0.15	0.53	19.0	0.03	n.a.	75
ID6683	H19-D_SINK (134180-3)	n.a.	n.a.	0.47	0.43	3.1	5.3	n.a.	101	n.a.	0.07	1.8	0.001	0.01	1.16	16.0	0.03	n.a.	127
HZ4740	NH8-D_SINK (134137-3)	n.a.	n.a.	0.69	0.34	2.7	2.6	n.a.	62	n.a.	0.07	2.3	0.001	0.03	0.80	14.0	0.05	n.a.	114
HZ4741	P1C44-D_SINK (134138-3)	n.a.	n.a.	0.04	0.48	3.2	1.4	n.a.	50	n.a.	0.01	2.0	0.001	0.01	0.60	17.0	0.20	n.a.	170
HZ4746	P1C50-D_SINK (134143-3)	n.a.	n.a.	0.22	0.62	2.6	3.0	n.a.	72	n.a.	0.05	1.0	0.001	0.01	1.00	21.0	0.05	n.a.	176
HZ4755	H7-D_SINK (134152-3)	n.a.	n.a.	0.14	0.44	2.5	1.8	n.a.	57	n.a.	0.10	1.1	0.001	0.01	0.60	9.0	0.05	n.a.	123
HZ4759	H9-D_SINK (134156-3)	n.a.	n.a.	0.38	0.39	2.9	4.0	n.a.	57	n.a.	0.04	1.3	0.001	0.01	0.80	15.0	0.05	n.a.	157
IE7572	BLOCK 1_D_TAILINGS	n.a.	n.a.	1.36	0.71	3.7	4.1	n.a.	225	n.a.	0.07	1.7	0.001	0.03	1.31	34.0	0.84	n.a.	177
IE7573	H13_D_TAILINGS	n.a.	n.a.	0.60	0.52	3.6	5.9	n.a.	74	n.a.	0.10	3.6	0.001	0.01	1.85	35.0	0.28	n.a.	231
IE7582	BLOCK 2_D_TAILINGS	n.a.	n.a.	0.47	0.54	3.0	2.0	n.a.	127	n.a.	0.04	1.5	0.001	0.01	1.00	30.0	0.36	n.a.	124
IE7588	BLOCK 5_D_TAILINGS	n.a.	n.a.	1.11	0.65	3.5	4.6	n.a.	105	n.a.	0.13	2.5	0.001	0.03	1.20	30.0	0.05	n.a.	180
GF1055	RES 130798 A(1) FLT 1.50	n.a.	n.a.	0.35	0.07	0.4	0.4	n.a.	165	n.a.	0.01	0.4	0.001	0.01	0.30	4.0	0.05	n.a.	3
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	n.a.	n.a.	0.28	0.23	0.9	1.1	n.a.	150	n.a.	0.01	0.3	0.001	0.01	0.30	8.0	0.05	n.a.	30
HZ4730	H5-D_RAW (134129-HR)	n.a.	n.a.	0.07	0.44	2.4	1.1	n.a.	59	n.a.	0.02	1.1	0.001	0.01	0.70	26.0	0.05	n.a.	83
HZ4731	H13-D_RAW (134130-HR)	n.a.	n.a.	0.26	0.46	3.2	3.2	n.a.	73	n.a.	0.05	3.1	0.001	0.01	1.20	19.0	0.05	n.a.	160
HZ4734	H14-D_RAW (134133-HR)	n.a.	n.a.	0.55	0.32	4.1	2.1	n.a.	89	n.a.	0.03	2.3	0.001	0.01	0.70	30.0	0.05	n.a.	219
HZ4738	NH8-D_RAW (134137-HR)	n.a.	n.a.	0.77	0.37	3.0	3.1	n.a.	68	n.a.	0.08	2.2	0.001	0.01	0.90	22.0	0.05	n.a.	137
2128231	P2R18-7	19.0	n.a.	0.02	0.25	3.4	1.5	0.4	30	0.005	0.02	1.6	0.005	0.03	0.65	20.3	0.03	4	191
MRC RX 113	MRC RX 113	n.a.	n.a.	0.01	0.09	2.9	1.4	n.a.	191	n.a.	0.06	3.4	0.001	0.06	0.80	18.0	0.05	n.a.	107
2212043	MRC RX 03	21.8	0.001	1.64	0.69	5.0	1.2	0.9	96	0.005	0.04	5.0	0.003	0.04	1.08	45.4	0.03	13.6	92
HY1951	H14-E_SINK (134134-3)	n.a.	n.a.	0.07	0.40	3.3	2.4	n.a.	34	n.a.	0.03	3.3	0.001	0.01	1.10	11.0	0.05	n.a.	109
ID6668	H13-E_SINK (134164-3)	n.a.	n.a.	0.06	0.31	3.4	3.9	n.a.	47	n.a.	0.05	0.9	0.001	0.01	0.80	13.0	1.06	n.a.	90
ID6671	H15-E_SINK (134167-3)	n.a.	n.a.	0.06	0.60	3.3	4.1	n.a.	37	n.a.	0.08	1.4	0.001	0.01	0.78	13.0	0.03	n.a.	171
ID6675	H16-E_SINK (134172-3)	n.a.	n.a.	0.08	0.35	3.6	2.1	n.a.	33	n.a.	0.04	0.7	0.001	0.01	0.67	12.0	0.03	n.a.	283
ID6679	H18-E_SINK (134176-3)	n.a.	n.a.	0.07	0.27	2.3	1.8	n.a.	19	n.a.	0.05	3.1	0.001	0.01	0.65	10.0	0.03	n.a.	173
ID6684	H19-E_SINK (134181-3)	n.a.	n.a.	0.04	0.31	2.5	3.1	n.a.	45	n.a.	0.10	0.6	0.001	0.01	0.52	9.0	0.03	n.a.	117
ID6686	H20-E_SINK (134183-3)	n.a.	n.a.	0.13	0.62	4.0	4.4	n.a.	249	n.a.	0.06	2.8	0.001	0.01	1.23	14.0	0.03	n.a.	80

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported



Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm
HZ4747	P1C51-E_SINK (134144-3)	n.a.	n.a.	0.38	0.71	3.1	4.3	n.a.	56	n.a.	0.01	1.5	0.001	0.01	1.00	12.0	0.05	n.a.	124
HZ4751	H5-E_SINK (134148-3)	n.a.	n.a.	0.05	0.36	2.5	1.3	n.a.	22	n.a.	0.05	1.5	0.001	0.01	0.80	9.0	0.05	n.a.	59
HZ4756	H7-E_SINK (134153-3)	n.a.	n.a.	0.09	0.76	2.5	2.2	n.a.	46	n.a.	0.02	0.8	0.001	0.01	0.50	11.0	0.05	n.a.	75
HZ4760	H9-E_SINK (134157-3)	n.a.	n.a.	0.10	0.66	5.4	1.9	n.a.	72	n.a.	0.04	3.7	0.001	0.01	0.80	18.0	0.05	n.a.	201
IE7574	BLOCK 1_E_TAILINGS	n.a.	n.a.	0.19	0.44	3.3	2.7	n.a.	75	n.a.	0.01	2.5	0.001	0.01	1.14	20.0	2.10	n.a.	129
IE7575	H13_E_TAILINGS	n.a.	n.a.	0.10	0.41	3.3	3.7	n.a.	57	n.a.	0.04	1.6	0.001	0.01	1.13	17.0	>100	n.a.	85
IE7583	BLOCK 2_E_TAILINGS	n.a.	n.a.	0.10	0.31	3.3	1.7	n.a.	77	n.a.	0.05	2.1	0.001	0.01	0.94	16.0	0.09	n.a.	58
GF1060	RES 130799 A(1) FLT 1.50	n.a.	n.a.	0.02	0.09	0.4	0.4	n.a.	35	n.a.	0.05	1.7	0.001	0.01	1.10	3.0	0.05	n.a.	4
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	n.a.	n.a.	0.06	0.19	0.8	0.7	n.a.	46	n.a.	0.05	2.7	0.001	0.01	1.30	14.0	0.05	n.a.	46
HZ4735	H14-E_RAW (134134-HR)	n.a.	n.a.	0.08	0.58	2.9	2.3	n.a.	33	n.a.	0.03	3.7	0.001	0.01	1.30	13.0	0.05	n.a.	101
2128232	P2R18-8	57.0	n.a.	0.06	0.52	8.0	1.4	1.1	93	0.005	0.03	5.9	0.005	0.01	1.32	86.4	0.03	14	203
MRC RX 53	MRC RX 53	n.a.	n.a.	0.05	0.31	6.9	1.9	n.a.	104	n.a.	0.05	4.5	0.001	0.04	0.80	31.0	0.05	n.a.	171
MRC RX 37	MRC RX 37	n.a.	n.a.	0.27	0.12	3.1	0.7	n.a.	72	n.a.	0.08	4.2	0.001	0.04	0.80	21.0	0.05	n.a.	96
2128180	P2C20-12	20.0	n.a.	0.03	0.35	3.1	1.5	0.4	47	0.005	0.04	3.0	0.005	0.07	0.75	27.4	0.03	7	237
2128221	P2C26-8	22.0	n.a.	0.06	0.75	6.9	2.0	0.5	92	0.005	0.04	5.6	0.005	0.08	1.22	44.0	0.03	15	163
MRC RX 24	MRC RX 24	n.a.	n.a.	0.03	0.40	6.2	1.3	n.a.	130	n.a.	0.08	4.4	0.001	0.04	0.70	27.0	0.05	n.a.	131
2128192A	P2R12-7	n.a.	n.a.	0.12	1.14	2.8	2.8	n.a.	65	n.a.	0.03	2.0	0.001	0.07	0.80	31.0	0.05	n.a.	313
MRC RX 25	MRC RX 25	n.a.	n.a.	0.06	0.29	3.4	1.6	n.a.	71	n.a.	0.01	3.3	0.001	0.05	0.50	17.0	0.05	n.a.	69
2128192	P2R12-7	30.0	n.a.	0.14	1.87	3.7	2.3	0.7	73	0.005	0.03	2.6	0.005	0.09	0.96	56.7	0.03	6	333
MRC RX 71	MRC RX 71	n.a.	n.a.	0.05	0.19	6.4	2.7	n.a.	80	n.a.	0.06	5.1	0.001	0.01	0.90	29.0	0.05	n.a.	187
MRC RX 54	MRC RX 54	n.a.	n.a.	0.01	0.04	7.4	0.5	n.a.	61	n.a.	0.01	4.5	0.001	0.03	0.60	34.0	0.05	n.a.	101
HY1945	H3-F_SINK (134128-3)	n.a.	n.a.	0.09	0.37	4.6	2.7	n.a.	39	n.a.	0.01	2.2	0.001	0.01	1.00	18.0	0.05	n.a.	145
HY1948	H13-F_SINK (134131-3)	n.a.	n.a.	0.44	0.29	3.0	2.2	n.a.	31	n.a.	0.07	1.4	0.001	0.03	0.90	9.0	0.05	n.a.	147
ID6672	H15-F_SINK (134168-3)	n.a.	n.a.	1.08	0.99	2.9	6.5	n.a.	57	n.a.	0.04	1.1	0.001	0.09	1.09	16.0	0.03	n.a.	98
ID6676	H16-F_SINK (134173-3)	n.a.	n.a.	0.45	0.61	2.5	4.6	n.a.	35	n.a.	0.01	2.4	0.001	0.02	1.20	13.0	0.03	n.a.	133
ID6680	H18-F_SINK (134177-3)	n.a.	n.a.	0.03	0.25	2.1	2.0	n.a.	33	n.a.	0.02	0.6	0.001	0.01	0.50	8.0	0.03	n.a.	100
ID6685	H19-F_SINK (134182-3)	n.a.	n.a.	0.03	0.30	2.8	2.4	n.a.	57	n.a.	0.06	11.1	0.002	0.01	4.17	10.0	0.03	n.a.	58
ID6687	H20-F_SINK (134184-3)	n.a.	n.a.	0.37	0.48	6.7	3.4	n.a.	55	n.a.	0.03	2.9	0.001	0.05	0.75	23.0	0.03	n.a.	143
HZ4743	P1C47-F_SINK (134140-3)	n.a.	n.a.	0.35	0.64	2.0	1.3	n.a.	36	n.a.	0.03	1.1	0.001	0.03	0.60	8.0	0.05	n.a.	91
HZ4744	P1C49-F_SINK (134141-3)	n.a.	n.a.	0.10	0.49	3.1	2.1	n.a.	42	n.a.	0.08	4.9	0.001	0.01	0.70	15.0	0.05	n.a.	189
HZ4748	P1C51-F_SINK (134145-3)	n.a.	n.a.	0.24	0.83	3.9	7.5	n.a.	57	n.a.	0.11	3.0	0.001	0.01	1.90	15.0	0.05	n.a.	140
HZ4750	H1-F_SINK (134147-3)	n.a.	n.a.	0.07	0.29	2.0	2.4	n.a.	39	n.a.	0.08	5.4	0.001	0.01	0.90	9.0	0.05	n.a.	72
HZ4752	H5-F_SINK (134149-3)	n.a.	n.a.	0.11	1.08	3.3	4.1	n.a.	61	n.a.	0.03	2.1	0.001	0.01	1.00	10.0	0.05	n.a.	173
HZ4753	H6-F_SINK (134150-3)	n.a.	n.a.	0.03	0.34	4.2	1.4	n.a.	35	n.a.	0.04	3.2	0.001	0.01	0.90	16.0	0.05	n.a.	160
HZ4757	H7-F_SINK (134154-3)	n.a.	n.a.	0.19	1.19	4.9	2.0	n.a.	47	n.a.	0.05	2.1	0.001	0.01	0.70	20.0	0.05	n.a.	77
HZ4761	H9-F_SINK (134158-3)	n.a.	n.a.	0.03	1.23	3.9	2.2	n.a.	82	n.a.	0.02	4.2	0.001	0.01	0.80	19.0	0.05	n.a.	133
HZ4764	H10-F_SINK (134161-3)	n.a.	n.a.	0.06	0.47	0.7	0.8	n.a.	202	n.a.	0.06	0.8	0.003	0.01	0.70	89.0	0.05	n.a.	78
IE7576	BLOCK 1_F_TAILINGS	n.a.	n.a.	0.33	0.64	2.6	3.9	n.a.	84	n.a.	0.05	5.0	0.001	0.01	1.83	20.0	2.23	n.a.	116
IE7577	H13_F_TAILINGS	n.a.	n.a.	0.56	0.31	3.0	2.5	n.a.	109	n.a.	0.03	1.8	0.001	0.01	0.99	15.0	8.46	n.a.	138
IE7584	BLOCK 2_F_TAILINGS	n.a.	n.a.	0.15	0.47	4.0	2.5	n.a.	87	n.a.	0.05	3.2	0.001	0.01	1.11	21.0	1.57	n.a.	146
IE7587	BLOCK 3_F_TAILINGS	n.a.	n.a.	0.11	0.35	4.2	3.0	n.a.	74	n.a.	0.04	3.3	0.001	0.01	1.23	18.0	0.03	n.a.	126
GF1063	RES 130800 A(1) FLT 1.50	n.a.	n.a.	0.01	0.06	0.3	0.3	n.a.	102	n.a.	0.01	0.2	0.001	0.01	0.40	2.0	0.05	n.a.	1
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	n.a.	n.a.	0.03	0.25	0.4	0.3	n.a.	180	n.a.	0.01	0.3	0.001	0.01	0.50	4.0	0.05	n.a.	17
GF1064	RES 130800 1.50-1.70	n.a.	n.a.	0.01	0.14	0.9	1.4	n.a.	369	n.a.	0.05	0.9	0.001	0.01	1.00	2.0	0.05	n.a.	8
MRPIR 34	MRPIR 34	n.a.	n.a.	0.01	0.23	1.3	2.2	n.a.	130	n.a.	0.01	0.5	0.001	0.01	0.70	4.0	0.05	n.a.	26
HZ4729	H3-F_RAW (134128-HR)	n.a.	n.a.	0.09	0.54	3.6	3.0	n.a.	50	n.a.	0.01	2.0	0.001	0.01	1.00	16.0	0.05	n.a.	139

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm
HZ4732	H13-F_RAW (134131-HR)	n.a.	n.a.	0.48	0.42	2.9	2.1	n.a.	39	n.a.	0.06	1.2	0.001	0.01	0.80	17.0	0.05	n.a.	175
2128222	P2C26-9	5.0	n.a.	0.36	0.28	3.4	0.4	0.1	41	0.005	0.02	7.7	0.005	0.08	1.35	23.3	0.03	17	82
2128233A	P2R18-9	n.a.	n.a.	0.66	0.39	4.7	1.7	n.a.	109	n.a.	0.03	4.0	0.001	0.16	1.00	22.0	0.05	n.a.	121
MRC RX 26	MRC RX 26	n.a.	n.a.	0.46	0.26	5.1	1.5	n.a.	167	n.a.	0.05	3.0	0.001	0.08	0.80	28.0	0.05	n.a.	106
2128233	P2R18-9	14.0	n.a.	0.82	0.81	4.6	1.3	0.3	105	0.005	0.03	3.8	0.005	0.12	1.01	25.8	0.03	10	122
2212053	MRC RX 12	20.3	0.001	0.05	0.26	4.6	1.6	0.5	53	0.005	0.04	3.9	0.003	0.01	0.85	26.1	0.03	7.28	210
2212044	MRC RX 04	23.7	0.001	0.10	0.92	8.3	1.7	0.7	87	0.005	0.03	6.2	0.003	0.01	0.98	38.0	0.03	14.3	142
MRC RX 115	MRC RX 115	n.a.	n.a.	0.75	0.25	4.1	1.9	n.a.	68	n.a.	0.04	3.2	0.001	0.10	0.80	26.0	0.05	n.a.	124
MRC RX 88	MRC RX 88	n.a.	n.a.	0.66	0.97	4.1	3.7	n.a.	58	n.a.	0.08	2.8	0.001	0.08	1.00	25.0	0.05	n.a.	232
MRC RX 72	MRC RX 72	n.a.	n.a.	0.18	0.42	2.7	3.5	n.a.	59	n.a.	0.07	1.8	0.001	0.01	0.80	20.0	0.05	n.a.	275
HY1949	H13-G/I_SINK (134132-3)	n.a.	n.a.	0.45	0.38	5.5	1.9	n.a.	65	n.a.	0.08	4.0	0.001	0.06	1.10	22.0	0.05	n.a.	152
HY1952	H16W-G/I_SINK (134135-3)	n.a.	n.a.	0.25	0.22	6.1	1.3	n.a.	56	n.a.	0.01	4.0	0.001	0.01	0.70	21.0	0.05	n.a.	166
ID6666	H10-G/I_SINK (134162-3)	n.a.	n.a.	0.31	0.21	2.2	1.7	n.a.	57	n.a.	0.04	3.1	0.001	0.03	0.64	22.0	0.03	n.a.	147
ID6673	H15-G/I_SINK (134169-3)	n.a.	n.a.	0.09	0.31	2.5	1.8	n.a.	48	n.a.	0.03	2.5	0.001	0.01	0.63	10.0	0.05	n.a.	132
ID6677	H16-G/I_SINK (134174-3)	n.a.	n.a.	0.15	0.59	1.7	1.7	n.a.	41	n.a.	0.05	2.0	0.001	0.01	0.47	11.0	0.03	n.a.	86
ID6681	H18-G/I_SINK (134178-3)	n.a.	n.a.	0.32	0.69	4.0	1.9	n.a.	105	n.a.	0.06	2.9	0.001	0.01	0.74	16.0	0.03	n.a.	115
HZ4745	P1C49-G/I_SINK (134142-3)	n.a.	n.a.	0.07	0.30	2.7	1.7	n.a.	127	n.a.	0.04	2.9	0.001	0.01	0.60	11.0	0.05	n.a.	214
HZ4749	P1C51-G/I_SINK (134146-3)	n.a.	n.a.	0.10	0.18	3.3	0.9	n.a.	108	n.a.	0.08	3.3	0.001	0.03	0.70	15.0	0.05	n.a.	77
HZ4762	H9-G/I_SINK (134159-3)	n.a.	n.a.	0.10	1.42	4.4	2.3	n.a.	56	n.a.	0.05	3.4	0.001	0.01	0.70	21.0	0.05	n.a.	218
IE7578	BLOCK 1_G/I_TAILINGS	n.a.	n.a.	0.34	0.29	4.9	1.5	n.a.	77	n.a.	0.05	3.6	0.001	0.01	0.78	22.0	0.24	n.a.	140
IE7579	H13-G/I_TAILINGS	n.a.	n.a.	0.56	0.36	4.6	2.1	n.a.	69	n.a.	0.07	3.6	0.001	0.02	1.00	21.0	0.07	n.a.	205
IE7585	BLOCK 2_G/I_TAILINGS	n.a.	n.a.	0.38	0.70	2.8	2.0	n.a.	84	n.a.	0.05	2.7	0.001	0.01	0.81	28.0	0.92	n.a.	146
HZ4733	H13-G/I_RAW (134132-HR)	n.a.	n.a.	0.42	0.41	5.1	2.0	n.a.	68	n.a.	0.05	3.3	0.001	0.02	0.90	24.0	0.05	n.a.	140
HZ4736	H16W-G/I_RAW (134135-HR)	n.a.	n.a.	0.28	0.38	4.4	0.9	n.a.	46	n.a.	0.06	2.6	0.001	0.01	0.60	17.0	0.05	n.a.	95
2128234	P2R18-10	72.0	n.a.	0.73	2.00	8.1	1.8	1.2	72	0.005	0.04	5.8	0.005	0.02	1.23	93.3	0.03	12	182
MRC RX 73	MRC RX 73	n.a.	n.a.	0.90	0.38	2.5	1.5	n.a.	53	n.a.	0.05	2.7	0.001	0.03	0.60	11.0	0.05	n.a.	228
2128223	P2C26-10	92.0	n.a.	0.22	0.81	9.4	2.6	1.5	63	0.005	0.04	5.9	0.005	0.01	1.15	120.0	0.03	11	190
2212045	MRC RX 05	18.3	0.002	1.02	1.80	6.9	3.4	0.6	47	0.005	0.07	5.0	0.003	0.01	0.82	33.8	0.03	11.8	157
MRC RX 116	MRC RX 116	n.a.	n.a.	0.03	0.10	7.3	1.2	n.a.	53	n.a.	0.03	4.5	0.001	0.03	0.70	32.0	0.05	n.a.	147
MRC RX 89	MRC RX 89	n.a.	n.a.	1.76	0.42	2.4	1.5	n.a.	39	n.a.	0.07	2.3	0.001	0.12	0.60	16.0	0.05	n.a.	150
2128183	P2C20-15	15.0	n.a.	2.84	0.93	4.0	1.8	0.4	49	0.005	0.04	4.1	0.005	0.06	0.88	23.6	0.03	9	164
2128183A	P2C20-15	n.a.	n.a.	2.39	0.71	4.0	2.1	n.a.	51	n.a.	0.09	3.6	0.001	0.08	0.80	16.0	0.05	n.a.	156
2128224	P2C26-11	12.0	n.a.	0.07	0.71	2.6	0.7	0.3	19	0.005	0.01	2.9	0.005	0.03	0.80	16.2	0.03	4	157
2128195	P2R12-10	12.0	n.a.	0.06	0.63	3.0	1.0	0.3	24	0.005	0.03	2.7	0.005	0.03	0.77	19.0	0.03	4	177
MRC RX 117	MRC RX 117	n.a.	n.a.	0.05	0.13	3.4	0.7	n.a.	15	n.a.	0.04	2.9	0.001	0.01	0.50	13.0	0.05	n.a.	112
MRC RX 90	MRC RX 90	n.a.	n.a.	0.05	0.26	1.5	0.2	n.a.	37	n.a.	0.02	0.7	0.001	0.05	0.20	10.0	0.05	n.a.	39
2128184	P2C20-16	5.0	n.a.	0.12	0.73	2.4	0.6	0.2	30	0.005	0.01	3.1	0.005	0.09	0.50	15.2	0.03	5	94
MRC RX 74	MRC RX 74	n.a.	n.a.	0.07	0.29	2.6	0.9	n.a.	28	n.a.	0.06	1.5	0.001	0.02	0.50	10.0	0.05	n.a.	151
2128184A	P2C20-16	n.a.	n.a.	0.11	0.60	2.3	0.5	n.a.	34	n.a.	0.01	2.9	0.001	0.11	0.50	10.0	0.05	n.a.	92
MRC RX 28	MRC RX 28	n.a.	n.a.	0.04	0.19	2.7	0.6	n.a.	32	n.a.	0.01	2.8	0.001	0.02	0.50	10.0	0.05	n.a.	86
GF1068	RES 130801 1.70 SNK	n.a.	n.a.	0.04	0.28	2.2	1.2	n.a.	252	n.a.	0.05	1.2	0.001	0.01	0.60	9.0	0.05	n.a.	94
ID6667	H10-J_SINK (134163-3)	n.a.	n.a.	0.22	0.27	3.8	2.1	n.a.	49	n.a.	0.09	2.9	0.001	0.01	0.65	14.0	0.03	n.a.	173
ID6669	H13-J_SINK (134165-3)	n.a.	n.a.	0.18	0.44	4.9	2.2	n.a.	44	n.a.	0.01	4.0	0.001	0.01	0.73	18.0	0.03	n.a.	185
ID6682	H18-J_SINK (134179-3)	n.a.	n.a.	0.24	0.18	2.6	2.4	n.a.	48	n.a.	0.03	2.3	0.001	0.01	0.95	10.0	0.03	n.a.	138
ID6688	H20-J_SINK (134185-3)	n.a.	n.a.	1.24	0.44	3.6	1.6	n.a.	48	n.a.	0.09	2.9	0.001	0.03	1.10	11.0	0.03	n.a.	148
ID6689	NH8-J_SINK (134186-3)	n.a.	n.a.	0.10	0.37	4.7	2.4	n.a.	57	n.a.	0.08	3.4	0.001	0.01	0.66	20.0	7.08	n.a.	140
HZ4739	H16W-J_SINK (134136-3)	n.a.	n.a.	0.58	0.52	5.9	1.9	n.a.	64	n.a.	0.03	3.3	0.001	0.01	0.60	21.0	0.05	n.a.	143
HZ4754	H6-J_SINK (134151-3)	n.a.	n.a.	0.06	1.26	0.6	0.8	n.a.	77	n.a.	0.01	0.4	0.002	0.01	0.40	64.0	0.05	n.a.	86

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm
HZ4758	H7-J_SINK (134155-3)	n.a.	n.a.	0.07	0.24	3.7	1.2	n.a.	55	n.a.	0.07	2.9	0.001	0.01	0.60	13.0	0.05	n.a.	161
IE7571	H14-J_SINK (134170-3)	n.a.	n.a.	0.89	0.14	1.9	1.1	n.a.	44	n.a.	0.04	1.9	0.001	0.07	0.60	9.0	0.03	n.a.	77
HZ4763	H9-J_SINK (134160-3)	n.a.	n.a.	0.05	0.25	5.0	0.9	n.a.	48	n.a.	0.04	3.6	0.001	0.01	0.60	21.0	0.05	n.a.	149
IE7586	BLOCK 2_J_TAILINGS	n.a.	n.a.	0.21	0.34	4.5	1.4	n.a.	159	n.a.	0.06	3.6	0.001	0.01	0.88	16.0	0.22	n.a.	152
IF2168	BLOCK 5_J_TAILINGS: NH8-J	n.a.	n.a.	0.16	0.25	4.4	2.2	n.a.	85	n.a.	0.05	4.9	0.001	0.01	0.97	18.0	>100	n.a.	148
IE7580	BLOCK 1_J_TAILINGS	n.a.	n.a.	0.43	0.35	5.2	2.2	n.a.	73	n.a.	0.04	3.3	0.001	0.01	0.70	20.0	0.03	n.a.	160
IE7581	H13_J_TAILINGS	n.a.	n.a.	0.10	0.41	2.4	0.8	n.a.	487	n.a.	0.02	1.8	0.001	0.01	0.73	10.0	0.68	n.a.	90
GF1066	RES 130801 A(1) FLT 1.50	n.a.	n.a.	0.05	0.10	0.4	0.5	n.a.	175	n.a.	0.01	0.6	0.001	0.01	0.40	3.0	0.70	n.a.	65
GF1069	composite of RES 130801 B 30 sec, 60 sec, 90 sec, 120 sec	n.a.	n.a.	0.08	0.31	0.7	1.0	n.a.	173	n.a.	0.01	0.9	0.001	0.01	0.50	6.0	0.70	n.a.	89
GF1067	RES 130801 1.50-1.70	n.a.	n.a.	0.04	0.25	1.0	0.6	n.a.	727	n.a.	0.06	0.7	0.001	0.01	0.50	5.0	0.70	n.a.	66
HZ4737	H16W-J_RAW (134136-HR)	n.a.	n.a.	0.41	0.38	5.7	1.7	n.a.	61	n.a.	0.07	3.0	0.001	0.01	0.60	22.0	0.05	n.a.	144
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	n.a.	n.a.	0.51	0.15	1.4	1.2	n.a.	271	n.a.	0.07	13.1	0.001	0.01	4.60	6.0	0.05	n.a.	23
GF1059	composite of RES 130798 B Tails, RES 130799 B Tails; RES 130800 B Tails; RES 130801 Tails	n.a.	n.a.	0.16	0.27	2.7	1.6	n.a.	137	n.a.	0.04	2.3	0.001	0.01	0.90	17.0	0.05	n.a.	163
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	n.a.	n.a.	0.02	0.31	3.1	1.8	n.a.	186	n.a.	0.01	12.0	0.001	0.01	2.60	12.0	0.05	n.a.	57

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Zr ppm	Al <sub>2</sub> O <sub>3</sub> %	BaO %	CaO %	Cr <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> O %	MgO %	MnO %	Na <sub>2</sub> O %	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	TiO <sub>2</sub> %	LOI %	SUM %
MRC RX 22	MRC RX 22	n.a.	3.9	0.04	1.61	0.021	2.7	0.61	0.63	0.02	0.07	0.58	85.2	0.36	3.55	99.2
MRC RX 52	MRC RX 52	n.a.	3.8	0.04	1.02	0.016	1.9	0.70	0.60	0.02	0.08	0.20	88.2	0.25	3.16	99.9
MRC RX 68	MRC RX 68	n.a.	13.2	0.11	3.03	0.02	4.4	2.53	3.03	0.05	0.25	0.19	59.4	0.68	12.1	98.9
2128230	P2R18-6	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212051	MRC RX 11	6.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128219	P2C26-6	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128219A	P2C26-6	n.a.	12.0	0.11	1.37	0.019	2.4	2.24	1.27	0.01	0.21	0.23	72.0	0.64	6.92	99.4
2212050	MRC RX 10	4.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 119	MRC RX 119	n.a.	16.8	0.14	0.20	0.016	2.9	3.72	1.50	0.01	0.27	0.13	62.2	0.71	10.35	99.0
MRC RX 121	MRC RX 121	n.a.	6.1	0.06	1.09	0.031	3.7	1.00	0.74	0.03	0.11	0.24	80.6	0.36	5.05	99.0
MRC RX 36	MRC RX 36	n.a.	18.7	0.15	0.32	0.016	3.4	4.18	1.35	0.03	0.27	0.09	62.2	0.70	8.66	100.1
2128203	P2R11-8	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 44	MRC RX 44	n.a.	5.6	0.05	0.80	0.018	2.0	0.86	0.52	0.02	0.11	0.20	85.0	0.35	3.72	99.2
MRC RX 23	MRC RX 23	n.a.	7.3	0.06	6.44	0.015	1.9	1.42	3.86	0.03	0.12	0.17	66.1	0.44	11.43	99.3
GF1057	RES 130798 1.70 SNK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HY1946	H5-D_SINK (134129-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HY1947	H13-D_SINK (134130-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HY1950	H14-D_SINK (134133-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6670	H15-D_SINK (134166-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6674	H16-D_SINK (134171-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6678	H18-D_SINK (134175-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6683	H19-D_SINK (134180-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4740	NH8-D_SINK (134137-3)	n.a.	14.2	0.11	0.45	0.022	2.5	2.84	1.17	0.01	0.20	0.13	67.9	0.61	9.62	99.7
HZ4741	P1C44-D_SINK (134138-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4746	P1C50-D_SINK (134143-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4755	H7-D_SINK (134152-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4759	H9-D_SINK (134156-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7572	BLOCK 1_D_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7573	H13_D_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7582	BLOCK 2_D_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7588	BLOCK 5_D_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1055	RES 130798 A(1) FLT 1.50	n.a.	10.1	0.81	8.26	0.007	4.8	0.24	1.25	0.01	0.07	1.83	18.5	0.40	95.2	95.1
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4730	H5-D_RAW (134129-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4731	H13-D_RAW (134130-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4734	H14-D_RAW (134133-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4738	NH8-D_RAW (134137-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128231	P2R18-7	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 113	MRC RX 113	n.a.	17.2	0.21	0.15	0.017	1.2	2.82	0.96	0.01	0.31	0.24	69.1	0.82	6.75	99.8
2212043	MRC RX 03	3.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HY1951	H14-E_SINK (134134-3)	n.a.	14.3	0.11	0.36	0.016	1.3	2.32	0.89	0.01	0.18	0.09	67.2	0.70	12.8	100.0
ID6668	H13-E_SINK (134164-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6671	H15-E_SINK (134167-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6675	H16-E_SINK (134172-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6679	H18-E_SINK (134176-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6684	H19-E_SINK (134181-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6686	H20-E_SINK (134183-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Zr ppm	Al <sub>2</sub> O <sub>3</sub> %	BaO %	CaO %	Cr <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> O %	MgO %	MnO %	Na <sub>2</sub> O %	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	TiO <sub>2</sub> %	LOI %	SUM %
HZ4747	P1C51-E_SINK (134144-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4751	H5-E_SINK (134148-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4756	H7-E_SINK (134153-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4760	H9-E_SINK (134157-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7574	BLOCK 1_E_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7575	H13_E_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7583	BLOCK 2_E_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1060	RES 130799 A(1) FLT 1.50	n.a.	26.3	0.48	3.10	0.012	2.3	0.55	0.87	0.01	0.22	0.30	51.7	0.97	85.7	98.8
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4735	H14-E_RAW (134134-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128232	P2R18-8	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 53	MRC RX 53	n.a.	13.2	0.10	7.49	0.014	2.5	2.76	2.97	0.05	0.17	0.23	55.0	0.69	14.63	99.8
MRC RX 37	MRC RX 37	n.a.	10.2	0.09	1.06	0.019	2.2	1.92	1.14	0.02	0.18	0.24	76.2	0.55	5.79	99.7
2128180	P2C20-12	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128221	P2C26-8	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 24	MRC RX 24	n.a.	12.6	0.10	9.99	0.012	3.9	2.58	2.98	0.07	0.23	0.22	50.3	0.65	15.83	99.4
2128192A	P2R12-7	n.a.	17.1	0.18	0.16	0.018	1.2	3.14	0.87	0.01	0.34	0.10	64.3	0.68	11.11	99.3
MRC RX 25	MRC RX 25	n.a.	8.1	0.07	8.18	0.016	2.9	1.57	4.06	0.05	0.14	0.16	60.5	0.42	13.25	99.4
2128192	P2R12-7	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 71	MRC RX 71	n.a.	13.8	0.12	3.24	0.016	5.4	2.98	2.99	0.13	0.28	0.24	56.4	0.71	13.52	99.9
MRC RX 54	MRC RX 54	n.a.	11.0	0.08	5.76	0.012	6.8	2.29	3.80	0.12	0.26	0.21	55.7	0.57	13.66	100.2
HY1945	H3-F_SINK (134128-3)	n.a.	15.9	0.12	0.33	0.017	3.3	3.39	1.27	0.02	0.17	0.10	64.5	0.66	11.2	101.0
HY1948	H13-F_SINK (134131-3)	n.a.	15.6	0.13	0.14	0.02	1.7	3.39	0.88	0.01	0.14	0.08	66.8	0.71	10.6	100.0
ID6672	H15-F_SINK (134168-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6676	H16-F_SINK (134173-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6680	H18-F_SINK (134177-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6685	H19-F_SINK (134182-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6687	H20-F_SINK (134184-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4743	P1C47-F_SINK (134140-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4744	P1C49-F_SINK (134141-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4748	P1C51-F_SINK (134145-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4750	H1-F_SINK (134147-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4752	H5-F_SINK (134149-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4753	H6-F_SINK (134150-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4757	H7-F_SINK (134154-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4761	H9-F_SINK (134158-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4764	H10-F_SINK (134161-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7576	BLOCK 1_F_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7577	H13_F_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7584	BLOCK 2_F_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7587	BLOCK 3_F_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1063	RES 130800 A(1) FLT 1.50	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1064	RES 130800 1.50-1.70	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRPIR 34	MRPIR 34	n.a.	6.5	0.26	1.26	0.006	0.9	0.86	0.56	0.01	0.22	0.04	19.0	0.27	68.76	98.6
HZ4729	H3-F_RAW (134128-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Zr ppm	Al <sub>2</sub> O <sub>3</sub> %	BaO %	CaO %	Cr <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> O %	MgO %	MnO %	Na <sub>2</sub> O %	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	TiO <sub>2</sub> %	LOI %	SUM %
HZ4732	H13-F_RAW (134131-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128222	P2C26-9	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128233A	P2R18-9	n.a.	9.1	0.11	7.60	0.012	3.4	2.14	2.66	0.04	0.16	0.12	59.5	0.47	12.14	97.5
MRC RX 26	MRC RX 26	n.a.	10.6	0.14	12.44	0.009	5.8	2.65	1.75	0.09	0.24	0.15	48.9	0.50	15.73	99.0
2128233	P2R18-9	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212053	MRC RX 12	2.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212044	MRC RX 04	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 115	MRC RX 115	n.a.	10.0	0.12	3.93	0.019	4.4	2.36	2.81	0.03	0.24	0.12	63.5	0.53	10.54	98.6
MRC RX 88	MRC RX 88	n.a.	16.3	0.15	1.25	0.017	2.7	3.57	1.77	0.02	0.24	0.13	57.7	0.64	15.88	100.3
MRC RX 72	MRC RX 72	n.a.	17.2	0.17	0.16	0.017	1.8	3.52	1.23	0.01	0.31	0.09	60.9	0.69	12.7	98.7
HY1949	H13-G/I_SINK (134132-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HY1952	H16W-G/I_SINK (134135-3)	n.a.	13.2	0.12	3.15	0.019	3.6	2.65	2.33	0.05	0.18	0.13	58.9	0.63	14.7	99.6
ID6666	H10-G/I_SINK (134162-3)	n.a.	15.2	0.17	0.25	0.013	2.4	3.25	1.11	0.01	0.19	0.14	67.9	0.73	8.91	100.0
ID6673	H15-G/I_SINK (134169-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6677	H16-G/I_SINK (134174-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6681	H18-G/I_SINK (134178-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4745	P1C49-G/I_SINK (134142-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4749	P1C51-G/I_SINK (134146-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4762	H9-G/I_SINK (134159-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7578	BLOCK 1_G/I_TAILINGS	n.a.	12.5	0.12	2.95	0.014	3.3	2.50	2.06	0.04	0.08	0.12	56.5	0.59	18.8	99.6
IE7579	H13-G/I_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7585	BLOCK 2_G/I_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4733	H13-G/I_RAW (134132-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4736	H16W-G/I_RAW (134135-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128234	P2R18-10	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 73	MRC RX 73	n.a.	20.1	0.12	0.34	0.014	3.3	2.62	1.26	0.02	0.25	0.17	53.7	0.80	16.69	99.4
2128223	P2C26-10	6.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2212045	MRC RX 05	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 116	MRC RX 116	n.a.	16.0	0.12	3.19	0.015	6.2	3.76	2.90	0.11	0.31	0.19	54.6	0.63	11.9	99.9
MRC RX 89	MRC RX 89	n.a.	15.3	0.10	0.29	0.013	4.0	2.75	1.21	0.02	0.18	0.14	56.7	0.67	18.67	100.1
2128183	P2C20-15	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128183A	P2C20-15	n.a.	15.0	0.11	0.71	0.018	5.9	2.71	1.58	0.05	0.22	0.17	54.5	0.69	16.73	98.5
2128224	P2C26-11	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2128195	P2R12-10	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 117	MRC RX 117	n.a.	10.8	0.08	0.24	0.02	2.0	2.15	1.16	0.01	0.17	0.14	77.1	0.54	5.34	99.7
MRC RX 90	MRC RX 90	n.a.	3.7	0.04	0.26	0.035	1.0	0.75	0.40	0.01	0.04	0.06	90.5	0.15	2.53	99.4
2128184	P2C20-16	2.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MRC RX 74	MRC RX 74	n.a.	12.0	0.09	0.08	0.018	1.5	2.39	1.02	0.01	0.20	0.04	75.5	0.66	5.74	99.2
2128184A	P2C20-16	n.a.	9.4	0.06	0.23	0.019	2.0	1.82	1.03	0.01	0.13	0.13	80.1	0.52	3.55	98.9
MRC RX 28	MRC RX 28	n.a.	9.6	0.07	0.36	0.02	1.9	1.79	0.89	0.02	0.14	0.16	80.3	0.51	4.01	99.8
GF1068	RES 130801 1.70 SNK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6667	H10-J_SINK (134163-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6669	H13-J_SINK (134165-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6682	H18-J_SINK (134179-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6688	H20-J_SINK (134185-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ID6689	NH8-J_SINK (134186-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4739	H16W-J_SINK (134136-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4754	H6-J_SINK (134151-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

Appendix 8. Coal ABA and Elemental Abundance Results

Sample ID	Station/Alternate ID	Zr ppm	Al <sub>2</sub> O <sub>3</sub> %	BaO %	CaO %	Cr <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> O %	MgO %	MnO %	Na <sub>2</sub> O %	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	TiO <sub>2</sub> %	LOI %	SUM %
HZ4758	H7-J_SINK (134155-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7571	H14-J_SINK (134170-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4763	H9-J_SINK (134160-3)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7586	BLOCK 2_J_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IF2168	BLOCK 5_J_TAILINGS: NH8-J	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE7580	BLOCK 1_J_TAILINGS	n.a.	15.4	0.12	1.10	0.015	6.8	3.06	1.58	0.10	0.18	0.19	54.7	0.65	16.1	99.9
IE7581	H13_J_TAILINGS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1066	RES 130801 A(1) FLT 1.50	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1069	composite of RES 130801 B 30 sec, 60 sec, 90 sec, 120 sec	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1067	RES 130801 1.50-1.70	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
HZ4737	H16W-J_RAW (134136-HR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1059	composite of RES 130798 B Tails, RES 130799 B Tails; RES 130800 B Tails; RES 130801 Tails	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

Blue values are calculated

n.a. = not analyzed

Where results were below detection limits, half the detection limit was reported

## Appendix 9

### Coal Rietveld X-ray Diffraction Results



Appendix 9. Coal Rietveld X-ray Diffraction Results

Sample ID, Station/Alternate ID, Formation, Coal Seam, Description, Humidity Cell (If Applicable)						Silicates, Oxides, Hydroxides, Phosphates, and Halides												
						Quartz	K-Feldspar	Plagioclase	Clinochlore	Kaolinite	Illite	Illite-muscovite 1M	Illite-muscovite 2M1	Anatase	Rutile	Hydroxylapatite	Halite?	
						SiO <sub>2</sub>	KAlSi <sub>3</sub> O <sub>8</sub>	NaAlSi <sub>3</sub> O <sub>8</sub> - CaAl <sub>2</sub> Si <sub>2</sub> O <sub>8</sub>	(Mg,Fe <sup>2+</sup> ) <sub>5</sub> Al(Si <sub>3</sub> Al)O <sub>10</sub> (OH) <sub>8</sub>	Al <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> (OH) <sub>4</sub>	K <sub>0.65</sub> Al <sub>2.0</sub> (Al <sub>0.65</sub> Si <sub>3.35</sub> O <sub>10</sub> )(OH) <sub>2</sub>	K <sub>0.65</sub> Al <sub>2.0</sub> (Al <sub>0.65</sub> Si <sub>3.35</sub> O <sub>10</sub> )(OH) <sub>2</sub>	K <sub>0.65</sub> Al <sub>2.0</sub> (Al <sub>0.65</sub> Si <sub>3.35</sub> O <sub>10</sub> )(OH) <sub>2</sub>	TiO <sub>2</sub>	TiO <sub>2</sub>	Ca <sub>5</sub> (PO <sub>4</sub> ) <sub>3</sub> (OH)	NaCl	
GF1055	RES 130798 A(1) FLT 1.50	Middle Gates	D	Clean Coal	25	1.2	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2212051	MRC RX 11	Middle Gates	D	CCR/Parting	5	77.2	0.0	0.0	0.7	4.5	0.0	0.0	11.3	0.0	0.0	0.0	0.0	0.5
GF1057	RES 130798 1.70 SNK	Middle Gates	D	CCR/Parting	14	29.6	0.0	0.0	0.0	42.2	0.0	0.0	21.9	0.6	0.0	0.0	0.0	0.0
2128219A	2128219A	Middle Gates	D	CCR/Parting	-	59.3	1.2	0.0	0.0	4.4	0.0	0.0	29.8	0.6	0.0	0.0	0.0	0.0
HY1946	H5-D_SINK (134129-3)	Middle Gates	D	CCR/Parting	-	44.5	0.0	0.0	2.8	8.5	0.0	0.0	41.0	0.8	0.0	0.0	0.0	0.0
ID6683	H19-D_SINK (134180-3)	Middle Gates	D	CCR/Parting	-	46.9	0.0	0.0	5.1	4.9	0.0	0.0	39.9	0.8	0.0	0.0	0.0	0.0
ID6678	H18-D_SINK (134175-3)	Middle Gates	D	CCR/Parting	-	65.6	1.4	1.3	0.0	3.9	0.0	0.0	10.8	0.4	0.0	0.0	0.0	0.0
HZ4740	NH8-D_SINK (134137-3)	Middle Gates	D	CCR/Parting	19	57.5	2.2	0.0	1.3	7.0	0.0	3.4	25.0	0.5	0.0	0.0	0.0	0.0
IE7572	BLOCK 1_D_TAILINGS	Middle Gates	D	Tailings	-	44.2	0.0	0.0	1.7	10.6	0.0	0.0	32.0	0.6	0.0	0.0	0.0	0.0
GF1060	RES 130799 A(1) FLT 1.50	Middle Gates	E	Clean Coal	26	1.4	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2212043	MRC RX 03	Middle Gates	E	CCR/Parting	2	83.4	0.0	0.0	0.0	3.4	0.0	0.0	8.0	0.3	0.0	0.0	0.0	0.0
HY1951	H14-E_SINK (134134-3)	Middle Gates	E	CCR/Parting	20	59.9	0.0	0.0	0.0	15.9	0.0	0.0	21.3	0.7	0.0	0.0	0.0	0.0
IE7574	BLOCK 1_E_TAILINGS	Middle Gates	E	Tailings	-	50.3	0.0	0.0	0.0	11.1	0.0	0.0	34.0	0.8	0.0	0.0	0.0	0.0
MRPIR 34	MRPIR 34	Middle Gates	F	Raw Coal	13	28.0	0.0	0.0	0.0	10.0	37.0	0.0	20.0	0.5	0.0	0.0	0.0	0.0
2128192A	2128192A	Middle Gates	F	CCR/Parting	-	43.1	0.0	0.0	0.0	6.1	0.0	0.0	49.7	0.7	0.0	0.0	0.0	0.0
HY1945	H3-F_SINK (134128-3)	Middle Gates	F	CCR/Parting	22	50.4	0.0	0.0	2.8	5.5	0.0	0.0	37.3	0.6	0.0	0.0	0.0	0.0
HY1948	H13-F_SINK (134131-3)	Middle Gates	F	CCR/Parting	21	54.6	0.0	0.0	0.0	6.6	0.0	0.0	36.9	0.6	0.0	0.0	0.0	0.0
HZ4743	P1C47-F_SINK (134140-3)	Middle Gates	F	CCR/Parting	-	37.8	2.0	2.6	0.0	20.0	0.0	0.0	34.7	0.5	0.0	0.0	0.0	0.0
IE7576	BLOCK 1_F_TAILINGS	Middle Gates	F	Tailings	-	44.9	0.0	0.0	0.0	15.5	0.0	0.0	33.2	0.8	0.0	0.0	0.0	0.0
2128233A	2128233A	Middle Gates	G/I	CCR/Parting	-	46.8	0.0	0.5	0.0	2.7	0.0	0.0	26.7	0.5	0.0	0.0	0.0	0.0
HY1952	H16W-G/I_SINK (134135-3)	Middle Gates	G/I	CCR/Parting	23	47.2	1.0	0.0	1.5	8.3	0.0	0.0	24.8	0.5	0.4	0.0	0.0	0.0
ID6666	H10-G/I_SINK (134162-3)	Middle Gates	G/I	CCR/Parting	24	54.1	1.1	0.0	1.9	1.9	0.0	0.0	38.5	0.5	0.0	0.0	0.0	0.0
IE7578	BLOCK 1_G/I_TAILINGS	Middle Gates	G/I	Tailings	27	47.1	0.0	0.0	1.4	6.7	0.0	0.0	29.2	0.0	0.0	0.0	0.0	0.0
2212045	MRC RX 05	Middle Gates	J	CCR/Parting	3	37.0	0.0	0.0	1.6	9.7	0.0	0.0	36.3	0.8	0.9	0.0	0.0	0.0
GF1068	RES 130801 1.70 SNK	Middle Gates	J	CCR/Parting	17	37.9	0.0	0.0	0.0	3.8	0.0	0.0	34.3	0.0	0.0	0.0	0.0	0.0
2128183A	2128183A	Middle Gates	J	CCR/Parting	-	40.0	2.9	0.0	3.9	10.8	0.0	0.0	32.9	0.7	0.0	1.5	0.0	0.0
ID6688	H20-J_SINK (134185-3)	Middle Gates	J	CCR/Parting	-	49.6	0.0	0.0	2.2	10.8	0.0	0.0	32.1	0.9	0.0	0.0	0.0	0.0
IE7580	BLOCK 1_J_TAILINGS	Middle Gates	J	Tailings	28	41.8	0.0	0.0	1.5	9.6	0.0	0.0	33.2	0.0	0.0	0.0	0.0	0.0
GF1061	Composite RES 130799-130800 1.70 SNK	Middle Gates	E,F	CCR/Parting	16	23.2	3.6	0.0	0.0	43.3	0.0	0.0	14.9	0.9	0.0	0.0	0.0	0.0
GF1059	Composite RES 130798-130801 Tails	Middle Gates	D,E,F,J	Tailings	15	26.8	0.0	0.0	0.0	38.5	0.0	0.0	21.3	0.6	0.0	0.0	0.0	0.0

Note: Values are percentages by weight, normalized to 100%

Appendix 9. Coal Rietveld X-ray Diffraction Results

Sample ID	Station/Alternate ID	Carbonates						Sulphates		Sulphides		Amorphous
		Calcite CaCO <sub>3</sub>	Ankerite-Dolomite Ca(Fe <sup>2+</sup> ,Mg,Mn) (CO <sub>3</sub> ) <sub>2</sub>	Dolomite CaMg(CO <sub>3</sub> ) <sub>2</sub>	Siderite, calcian (Fe <sup>2+</sup> ,Ca)CO <sub>3</sub>	Siderite, magnesian calcian (Fe <sup>2+</sup> ,Mg,Ca)CO <sub>3</sub>	Siderite Fe <sup>2+</sup> CO <sub>3</sub>	Barite BaSO <sub>4</sub>	Jarosite? K <sub>2</sub> Fe <sub>6</sub> <sup>3+</sup> (SO <sub>4</sub> ) <sub>4</sub> (OH) <sub>12</sub>	Pyrite FeS <sub>2</sub>	Marcasite? FeS <sub>2</sub>	Organic Carbon? C
GF1055	RES 130798 A(1) FLT 1.50	0.7	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.7	0.0	94.9
2212051	MRC RX 11	0.0	2.5	0.0	0.0	0.0	1.7	0.0	0.0	1.8	0.0	0.0
GF1057	RES 130798 1.70 SNK	0.5	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0
2128219A	2128219A	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0
HY1946	H5-D_SINK (134129-3)	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ID6683	H19-D_SINK (134180-3)	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
ID6678	H18-D_SINK (134175-3)	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	10.2	2.0	0.0
HZ4740	NH8-D_SINK (134137-3)	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
IE7572	BLOCK 1_D_TAILINGS	2.5	1.9	0.0	1.7	0.0	0.7	0.0	0.0	4.1	0.0	0.0
GF1060	RES 130799 A(1) FLT 1.50	0.1	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	94.9
2212043	MRC RX 03	0.0	1.3	0.0	0.0	0.0	1.9	0.0	0.0	1.7	0.0	0.0
HY1951	H14-E_SINK (134134-3)	0.0	0.0	1.3	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.0
IE7574	BLOCK 1_E_TAILINGS	0.5	2.3	0.0	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0
MRPIR 34	MRPIR 34	2.0	2.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
2128192A	2128192A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
HY1945	H3-F_SINK (134128-3)	0.0	0.7	0.0	0.0	0.0	2.4	0.0	0.0	0.4	0.0	0.0
HY1948	H13-F_SINK (134131-3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0
HZ4743	P1C47-F_SINK (134140-3)	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
IE7576	BLOCK 1_F_TAILINGS	1.7	2.8	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
2128233A	2128233A	6.3	14.3	0.0	0.0	0.0	0.9	0.0	0.0	1.4	0.0	0.0
HY1952	H16W-G/I_SINK (134135-3)	0.7	0.0	11.7	0.0	2.3	0.7	0.0	0.0	0.9	0.0	0.0
ID6666	H10-G/1_SINK (134162-3)	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.3	0.9	0.0	0.0
IE7578	BLOCK 1_G/I_TAILINGS	1.2	12.1	0.0	0.6	0.0	0.7	0.0	0.0	1.0	0.0	0.0
2212045	MRC RX 05	0.0	5.0	0.0	0.0	0.0	7.3	0.0	0.0	1.4	0.0	0.0
GF1068	RES 130801 1.70 SNK	8.8	8.5	0.0	0.0	0.0	6.8	0.0	0.0	0.0	0.0	0.0
2128183A	2128183A	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0
ID6688	H20-J_SINK (134185-3)	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0
IE7580	BLOCK 1_J_TAILINGS	0.0	3.0	0.0	5.9	0.0	3.7	0.0	0.0	1.2	0.0	0.0
GF1061	Composite RES 130799-130800 1.70 SNK	6.7	5.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0
GF1059	Composite RES 130798-130801 Tails	1.9	2.3	0.0	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0

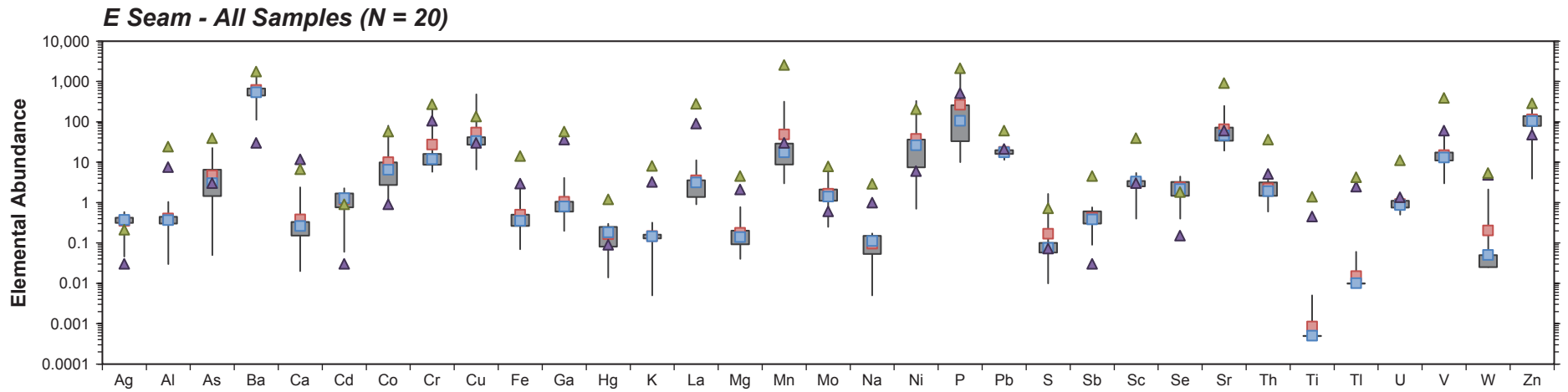
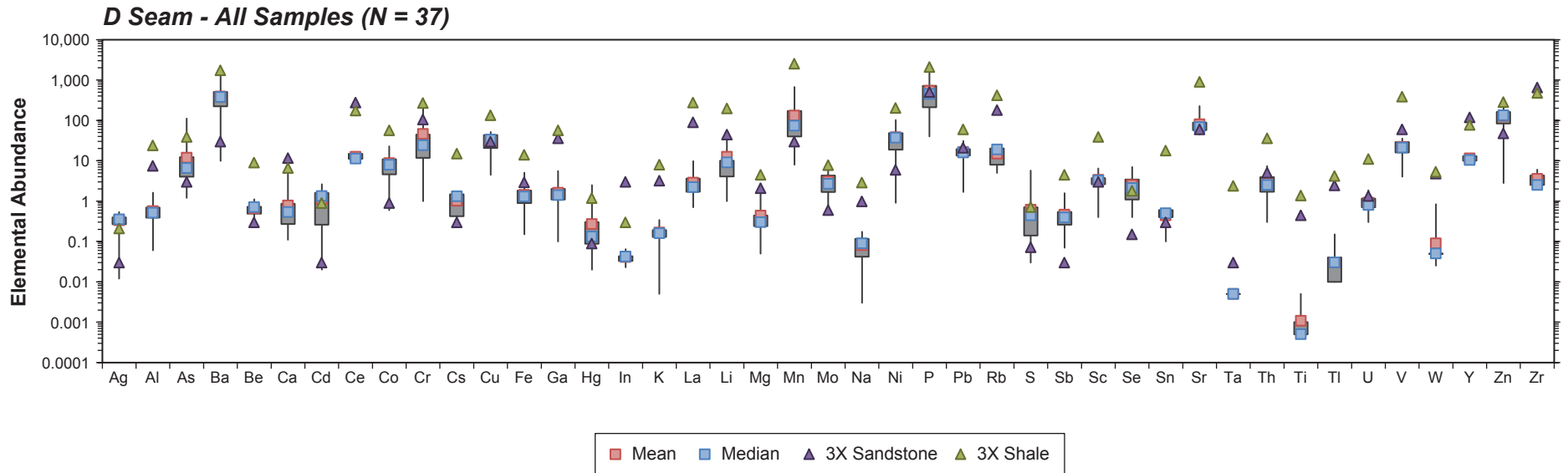
Note: Values are percentages by weight, normalized to 100%

## Appendix 10

### Coal Elemental Abundance Statistical Summary Figures

Figure A10-1

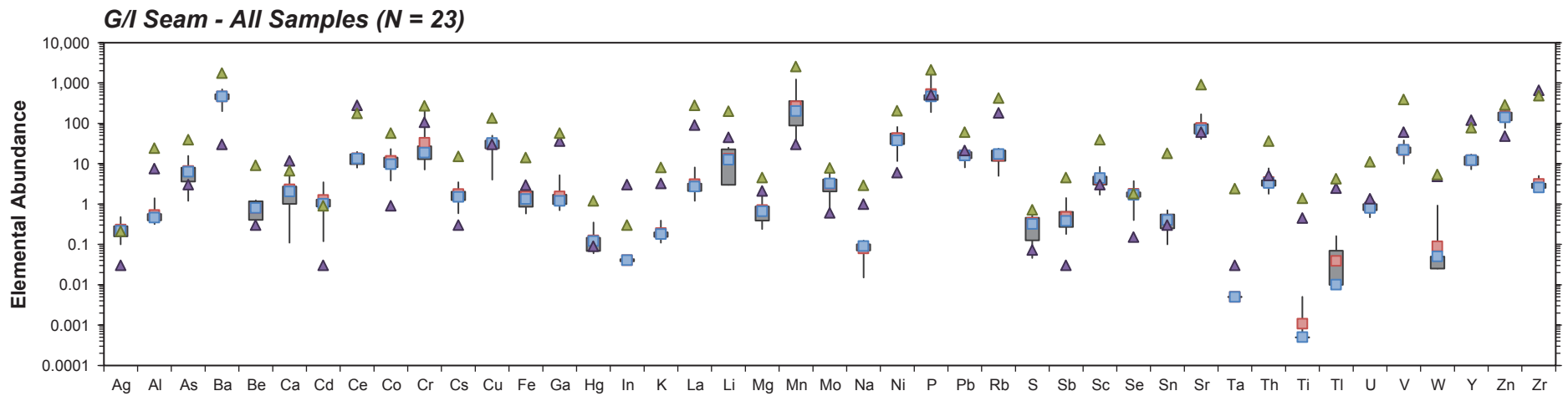
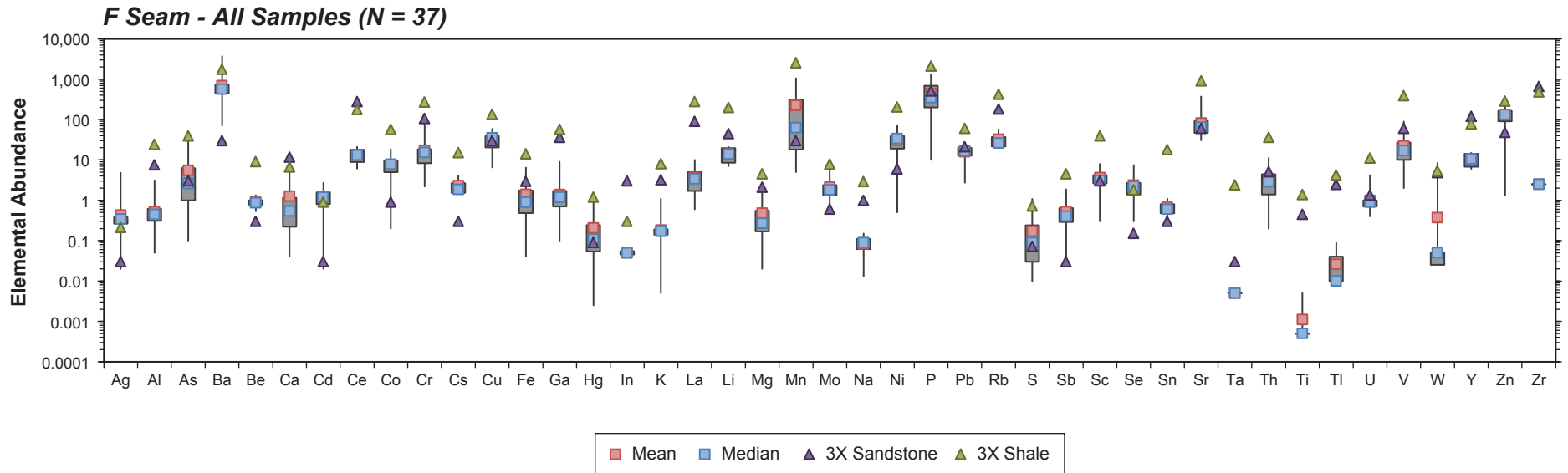
Statistical Summary of Elemental Abundance for Middle Gates Formation D and E Seam Coal Samples



Note: 25th to 75th percentile is represented by the shaded box.

Figure A10-2

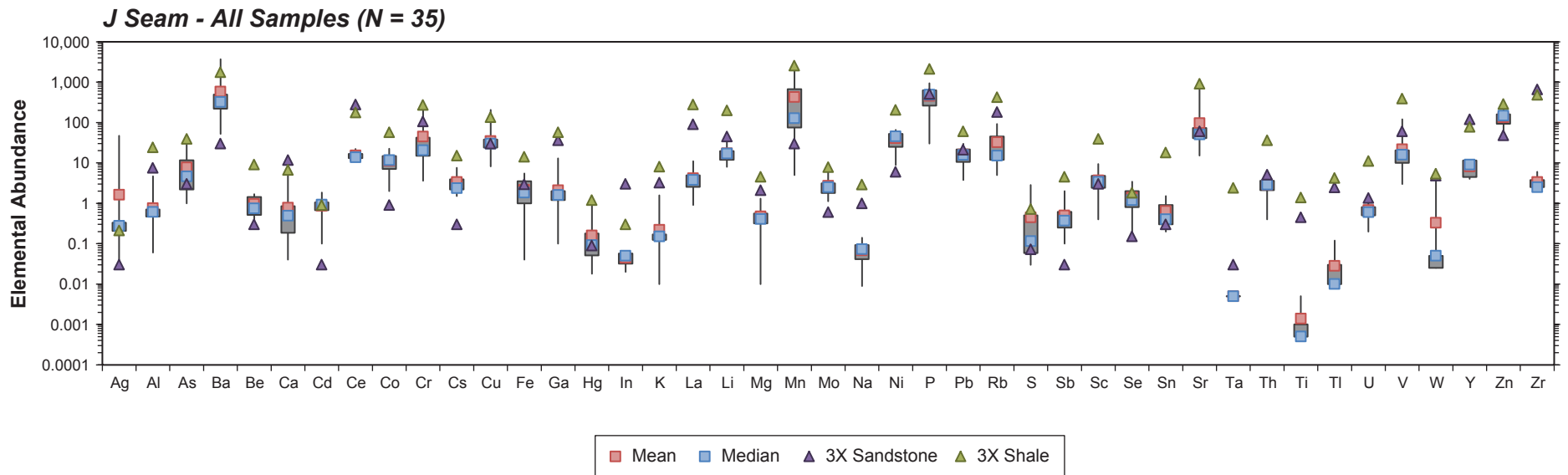
Statistical Summary of Elemental Abundance for Middle Gates Formation F and G/I Seam Coal Samples



Note: 25th to 75th percentile is represented by the shaded box.

Figure A10-3

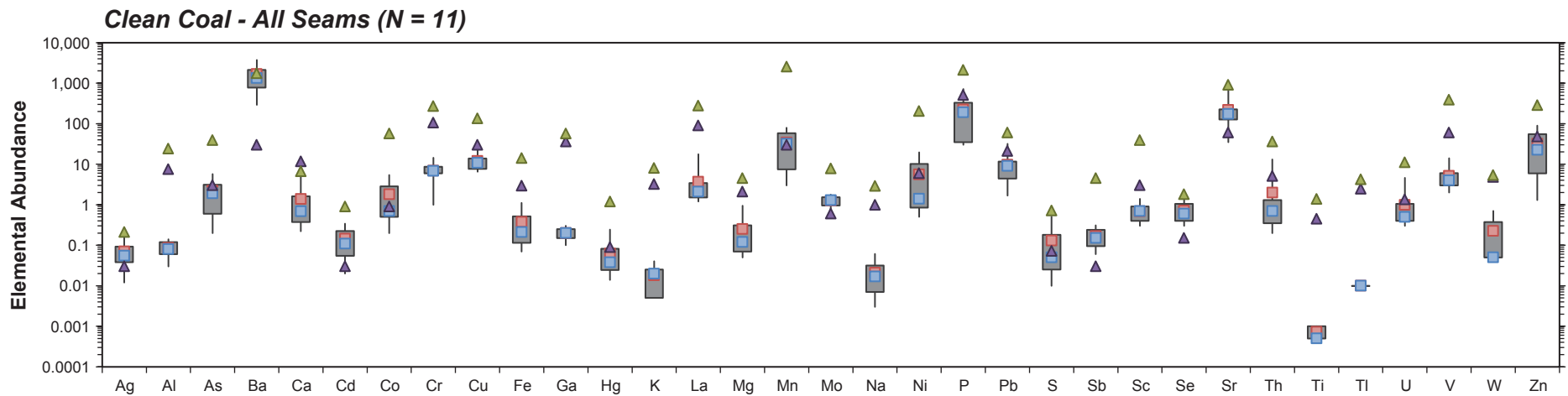
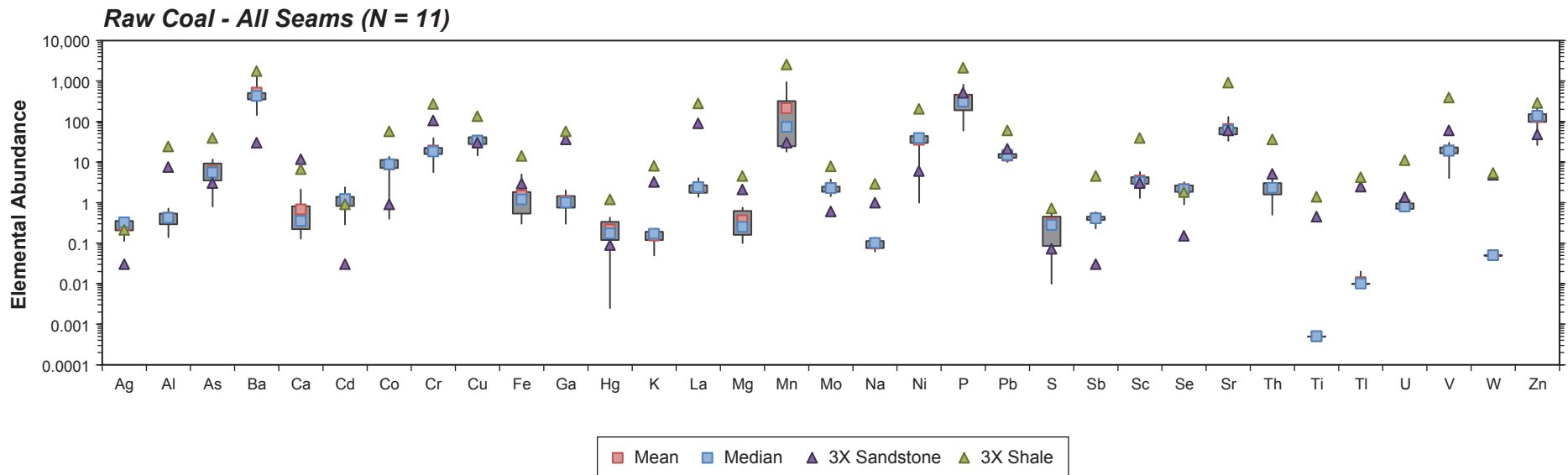
Statistical Summary of Elemental Abundance for Middle Gates Formation J Seam Coal Samples



Note: 25th to 75th percentile is represented by the shaded box.

Figure A10-4

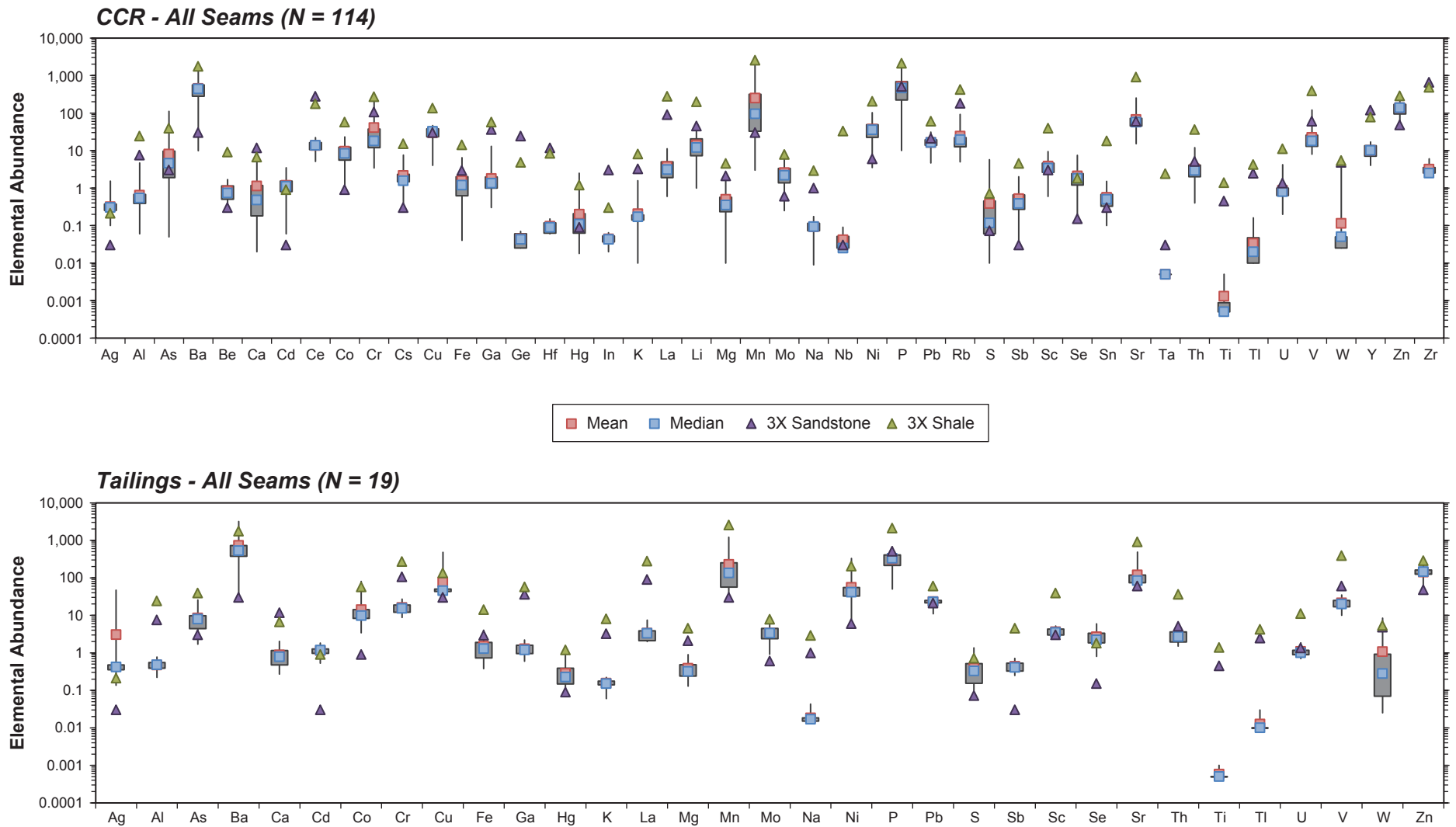
Statistical Summary of Elemental Abundance for Middle Gates Formation Raw and Clean Coal Samples



Note: 25th to 75th percentile is represented by the shaded box.

Figure A10-5

Statistical Summary of Elemental Abundance for Middle Gates Formation CCR and Tailings Samples



Note: 25th to 75th percentile is represented by the shaded box.



# Appendix 11

## Coal Leachate Results

Appendix 11. Coal Leachate Results

Sample ID	Sample Description	Formation	Coal Seam	Description	Lithology	Alkalinity CaCO <sub>3</sub>	pH pH Units	EC uS/cm	Hardness	Ag mg/L	Al <sup>1</sup> mg/L	As <sup>2</sup> mg/L	B <sup>2</sup> mg/L	Ba mg/L	Be mg/L
									CaCO <sub>3</sub> mg/L						
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	Middle Gates	D,E	Middling	Coal	n.a.	7.87	63	11.0	<0.000050	0.0341	0.000894	<0.050	0.314	<0.000010
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	Middle Gates	E,F	CCR	Coal	n.a.	9.62	214	0.9	0.000005	0.476	0.00405	0.052	0.0588	0.000012
GF1057	RES 130798 1.70 SNK	Middle Gates	D	CCR	Coal	n.a.	8.89	146	24.4	0.000008	0.204	0.00135	<0.050	0.57	<0.000010
2128203	P2R11-8	Middle Gates	D	Bottom D	Mudstone	217	8.54	397	11.7	<0.0002	3.58	0.024	0.14	0.131	<0.001
2128219	P2C26-6	Middle Gates	D	Top D	Siltstone	160	8.43	349	9.8	<0.0002	0.654	0.058	0.08	0.132	<0.001
2128230	P2R18-6	Middle Gates	D	Top D	Medium grained Sandstone	167	8.34	402	11.5	<0.0002	2.28	0.017	0.06	0.179	<0.001
GF1055	RES 130798 A(1) FLT 1.50	Middle Gates	D	Clean Coal	Coal	n.a.	7.69	36	9.8	<0.000050	0.0941	0.00346	<0.050	0.694	<0.000010
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	Middle Gates	D	Clean Coal	Coal	n.a.	7.75	69	0.7	<0.000050	0.129	0.00209	<0.050	0.153	<0.000010
2128231	P2R18-7	Middle Gates	E	Parting E	Mudstone	89	8.12	184	35.1	<0.0002	>10000	0.035	0.43	2.18	0.003
GF1060	RES 130799 A(1) FLT 1.50	Middle Gates	E	Clean Coal	Coal	n.a.	7.63	31	8.6	<0.000050	0.0507	0.000309	<0.050	0.395	<0.000010
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	Middle Gates	E	Clean Coal	Coal	n.a.	8.09	108	32.4	<0.000050	0.208	0.00165	<0.050	0.55	<0.000010
2128180	P2C20-12	Middle Gates	F	Top F	Mudstone	133	8.17	242	2.0	<0.0002	0.242	0.023	0.17	0.02	<0.001
2128192	P2R12-7	Middle Gates	F	Top F2	Carbonaceous Mudstone	72	8.01	183	0.2	<0.0002	0.262	0.064	0.16	0.007	<0.001
2128221	P2C26-8	Middle Gates	F	Top F	Carbonaceous Mudstone	212	8.63	430	13.0	<0.0002	0.175	0.014	0.16	0.178	<0.001
2128232	P2R18-8	Middle Gates	F	Top F	Mudstone	223	8.60	573	6.7	<0.0002	0.628	0.015	0.12	0.093	<0.001
GF1063	RES 130800 A(1) FLT 1.50	Middle Gates	F	Clean Coal	Coal	n.a.	8.44	35	4.0	<0.000050	0.0292	0.000392	<0.050	0.43	<0.000010
GF1064	RES 130800 1.50-1.70	Middle Gates	F	Middling	Coal	n.a.	9.52	110	6.1	<0.000050	0.117	0.00265	<0.050	0.393	<0.000010
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	Middle Gates	F	Clean Coal	Coal	n.a.	8.68	109	31.5	0.000006	0.194	0.000689	<0.050	0.845	<0.000010
2128222	P2C26-9	Middle Gates	G/I	Top G/I	Fine Sandstone	88	8.18	318	20.1	<0.0002	0.046	0.015	0.07	0.403	<0.001
2128233	P2R18-9	Middle Gates	G/I	Parting G/I	Mudstone	228	8.58	456	15.0	<0.0002	0.276	0.036	0.11	0.249	<0.001
GF1068	RES 130801 1.70 SNK	Middle Gates	J	CCR	Coal	n.a.	9.99	306	1.3	0.000029	0.524	0.0212	0.076	0.0472	0.000015
2128183	P2C20-15	Middle Gates	J	Top J1	Mudstone	134	8.29	298	3.6	<0.0002	0.43	0.058	0.12	0.03	<0.001
2128184	P2C20-16	Middle Gates	J	Bottom J2	Siltstone	102	8.06	226	1.7	<0.0002	4.1	0.034	0.15	0.087	<0.001
2128195	P2R12-10	Middle Gates	J	Bottom J	Silty Mudstone	90	8.13	203	0.7	<0.0002	0.113	0.03	0.1	0.006	<0.001
2128223	P2C26-10	Middle Gates	J	Top J	Mudstone	113	8.31	232	3.9	<0.0002	0.243	0.019	0.1	0.011	<0.001
2128224	P2C26-11	Middle Gates	J	Bottom J	Mudstone	45	7.87	148	0.2	<0.0002	0.278	0.034	0.13	0.005	<0.001
2128234	P2R18-10	Middle Gates	J	Top J	Silty Mudstone	186	8.50	375	9.5	<0.0002	0.279	0.024	0.11	0.059	<0.001
GF1066	RES 130801 A(1) FLT 1.50	Middle Gates	J	Clean Coal	Coal	n.a.	9.70	229	3.2	0.000011	0.169	0.00376	<0.050	0.152	0.000034

Notes:  
 Blue values are calculated.  
 Highlighted values exceed BC MOE water quality guidelines for total metals.  
 Where available, concentrations were compared to chronic (30-day mean) guidelines. Where only acute (maximum) guidelines existed, concentrations were compared to acute guidelines.  
 n.a. indicates parameter not analyzed for that sample  
 < indicates sample concentration was below detection limits  
<sup>1</sup> Values were compared to dissolved metal guidelines.  
<sup>2</sup> Values were compared to acute guidelines.

Appendix 11. Coal Leachate Results

Sample ID	Sample Description	Bi mg/L	Ca mg/L	Cd <sup>2</sup> mg/L	Ce mg/L	Co mg/L	Cr mg/L	Cs mg/L	Cu mg/L	Fe <sup>1</sup> mg/L	Hg mg/L	K mg/L	La mg/L	Li mg/L	Mg mg/L	Mn mg/L
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	0.000007	3.93	0.000009	n.a.	0.000181	<0.00010	0.000611	0.00244	0.398	<0.000050	0.172	<0.000050	0.00938	0.277	0.00184
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	0.000005	0.327	0.000005	n.a.	0.000029	0.00082	0.00008	0.00253	0.0376	<0.000050	0.338	0.000099	0.00676	<0.050	0.000209
GF1057	RES 130798 1.70 SNK	<0.000050	7.37	0.000005	n.a.	0.000062	0.00042	<0.000050	0.00171	0.0089	<0.000050	0.876	<0.000050	0.0495	1.45	0.000458
2128203	P2R11-8	<0.001	2.36	0.0003	<0.005	<0.001	0.005	n.a.	<0.001	0.52	n.a.	5.06	<0.005	0.012	1.41	0.005
2128219	P2C26-6	<0.001	1.64	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	4.12	<0.005	0.036	1.4	<0.001
2128230	P2R18-6	<0.001	1.89	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	0.2	n.a.	4.91	<0.005	0.082	1.65	0.001
GF1055	RES 130798 A(1) FLT 1.50	0.000021	3.62	0.000011	n.a.	0.000072	0.00018	0.000245	0.00176	0.0919	<0.000050	0.175	<0.000050	0.048	0.189	0.00194
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	<0.000050	0.248	0.000013	n.a.	0.000022	0.0002	0.000289	0.00169	0.0111	<0.000050	0.257	<0.000050	0.00756	<0.050	0.000153
2128231	P2R18-7	<0.001	0.33	<0.0002	0.028	0.004	0.141	n.a.	<0.001	6.8	n.a.	41.5	0.015	0.044	8.37	0.009
GF1060	RES 130799 A(1) FLT 1.50	<0.000050	2.95	0.00001	n.a.	0.000014	0.00015	0.000108	0.000361	0.0059	<0.000050	0.116	<0.000050	0.00509	0.306	0.000711
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	<0.000050	9.34	0.000006	n.a.	0.000018	0.00065	0.000071	0.00196	0.0113	<0.000050	1.23	<0.000050	0.0143	2.2	0.000283
2128180	P2C20-12	<0.001	0.26	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	0.8	<0.005	0.002	0.34	<0.001
2128192	P2R12-7	<0.001	<0.05	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	0.84	<0.005	0.003	<0.05	<0.001
2128221	P2C26-8	<0.001	2.65	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	4.04	<0.005	0.06	1.56	0.001
2128232	P2R18-8	<0.001	1.74	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	3.33	<0.005	0.116	0.57	<0.001
GF1063	RES 130800 A(1) FLT 1.50	<0.000050	1.46	<0.000050	n.a.	0.000008	0.00012	<0.000050	0.00101	0.0056	<0.000050	0.053	<0.000050	0.0157	0.097	0.000113
GF1064	RES 130800 1.50-1.70	<0.000050	2.00	<0.000050	n.a.	0.000012	0.00013	0.000063	0.00125	0.009	<0.000050	0.321	<0.000050	0.0091	0.276	0.000142
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	<0.000050	9.02	<0.000050	n.a.	0.000024	0.0006	<0.000050	0.00274	0.0092	<0.000050	0.352	<0.000050	0.0936	2.18	0.000205
2128222	P2C26-9	<0.001	3.83	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	4.92	<0.005	0.062	2.56	0.004
2128233	P2R18-9	<0.001	3.21	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	4.99	<0.005	0.09	1.69	<0.001
GF1068	RES 130801 1.70 SNK	0.000008	0.423	0.000031	n.a.	0.00166	0.00063	0.000098	0.0376	0.0752	<0.000050	0.432	0.000112	0.0179	0.067	0.00133
2128183	P2C20-15	<0.001	0.46	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	1.59	<0.005	0.006	0.6	<0.001
2128184	P2C20-16	<0.001	<0.05	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	0.41	n.a.	3.51	<0.005	0.005	0.39	0.001
2128195	P2R12-10	<0.001	0.07	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	2.26	<0.005	0.003	0.14	<0.001
2128223	P2C26-10	<0.001	0.60	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	2.54	<0.005	0.008	0.58	<0.001
2128224	P2C26-11	<0.001	<0.05	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	1.42	<0.005	0.001	<0.05	<0.001
2128234	P2R18-10	<0.001	1.57	<0.0002	<0.005	<0.001	<0.001	n.a.	<0.001	<0.05	n.a.	3.67	<0.005	0.035	1.35	0.001
GF1066	RES 130801 A(1) FLT 1.50	0.000007	1.05	0.000016	n.a.	0.000669	0.00088	0.000082	0.00408	0.125	<0.000050	0.551	0.000258	0.0219	0.133	0.00188

Notes:  
 Blue values are calculated.  
 Highlighted values exceed BC MOE water quality guidelines for total metals.  
 Where available, concentrations were compared to chronic (30-day mean) guidelines. Where only acute (maximum) guidelines existed, concentrations were compared to acute guidelines.  
 n.a. indicates parameter not analyzed for that sample  
 < indicates sample concentration was below detection limits  
<sup>1</sup> Values were compared to dissolved metal guidelines.  
<sup>2</sup> Values were compared to acute guidelines.

Appendix 11. Coal Leachate Results

Sample ID	Sample Description	Mo mg/L	Na mg/L	Ni <sup>2</sup> mg/L	P mg/L	Pb mg/L	Rb mg/L	S mg/L	Sb <sup>2</sup> mg/L	Se mg/L	Si mg/L	Sn mg/L	Sr mg/L	Te mg/L	Th mg/L	Ti mg/L
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	0.000816	6.98	0.000642	<0.0020	0.000835	0.000348	<10	0.000186	0.000501	<0.10	0.00033	0.063	<0.000020	<0.0000050	<0.00050
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	0.00638	42.4	0.000283	0.0043	0.000373	0.000717	<10	0.00275	0.00613	1.26	0.00042	0.00658	0.000025	0.000036	0.00384
GF1057	RES 130798 1.70 SNK	0.00647	2.45	0.000417	0.01	0.000118	0.00148	<10	0.00082	0.00207	0.72	<0.00020	0.147	0.000021	0.000011	0.00188
2128203	P2R11-8	0.193	>10000	0.002	<0.15	<0.001	n.a.	n.a.	0.055	0.109	9.5	<0.001	0.078	<0.001	<0.0005	0.054
2128219	P2C26-6	0.0292	>10000	<0.001	<0.15	<0.001	n.a.	n.a.	0.026	0.005	4.8	<0.001	0.099	<0.001	<0.0005	0.007
2128230	P2R18-6	0.0181	>10000	<0.001	<0.15	<0.001	n.a.	n.a.	0.006	0.016	7.9	<0.001	0.215	<0.001	<0.0005	0.012
GF1055	RES 130798 A(1) FLT 1.50	0.000941	2.63	0.0005	0.0034	0.000473	0.000422	<10	0.000111	0.000322	0.19	<0.00020	0.0646	<0.000020	0.000006	0.00087
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	0.0291	25.7	0.000396	<0.0020	0.000278	0.000549	<10	0.00208	0.0216	0.45	<0.00020	0.00986	<0.000020	<0.0000050	<0.00050
2128231	P2R18-7	0.046	66.8	0.019	0.19	0.009	n.a.	n.a.	0.017	0.049	204	0.002	0.064	<0.001	0.0061	0.836
GF1060	RES 130799 A(1) FLT 1.50	0.00186	2.74	0.000268	<0.0020	0.000047	0.000371	<10	0.000138	0.000348	0.13	<0.00020	0.0368	<0.000020	<0.0000050	<0.00050
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	0.0116	6.26	0.000294	0.0104	0.000072	0.00211	<10	0.00186	0.0048	1.22	<0.00020	0.156	<0.000020	<0.0000050	<0.00050
2128180	P2C20-12	0.0247	84.4	<0.001	<0.15	<0.001	n.a.	n.a.	0.01	0.015	4.7	<0.001	0.006	<0.001	<0.0005	<0.005
2128192	P2R12-7	0.0333	>10000	<0.001	<0.15	<0.001	n.a.	n.a.	0.097	0.045	5	<0.001	<0.005	<0.001	<0.0005	<0.005
2128221	P2C26-8	0.0885	>10000	<0.001	<0.15	<0.001	n.a.	n.a.	0.033	0.02	3.6	<0.001	0.128	<0.001	<0.0005	<0.005
2128232	P2R18-8	0.0476	>10000	<0.001	<0.15	<0.001	n.a.	n.a.	0.015	0.004	4.3	<0.001	0.052	<0.001	<0.0005	<0.005
GF1063	RES 130800 A(1) FLT 1.50	0.000665	5.36	0.000202	0.0023	0.000043	0.000099	<10	0.000089	0.000157	<0.10	<0.00020	0.0453	<0.000020	<0.0000050	<0.00050
GF1064	RES 130800 1.50-1.70	0.00142	19.9	0.000213	0.0027	0.000141	0.000194	<10	0.0004	0.00114	0.2	<0.00020	0.0681	<0.000020	<0.0000050	<0.00050
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	0.00642	6.06	0.000485	0.0061	0.000085	0.000248	<10	0.00143	0.00113	0.53	0.00026	0.201	<0.000020	<0.0000050	0.00079
2128222	P2C26-9	0.018	82.8	<0.001	<0.15	<0.001	n.a.	n.a.	0.007	<0.001	3.5	<0.001	0.119	<0.001	<0.0005	<0.005
2128233	P2R18-9	0.124	>10000	<0.001	<0.15	<0.001	n.a.	n.a.	0.043	0.046	3.3	<0.001	0.083	<0.001	<0.0005	<0.005
GF1068	RES 130801 1.70 SNK	0.0189	56.7	0.0801	0.0099	0.000949	0.000665	<10	0.00356	0.011	2.16	0.00049	0.0121	<0.000020	0.000013	0.00118
2128183	P2C20-15	0.0351	99.4	<0.001	<0.15	<0.001	n.a.	n.a.	0.04	0.022	3.5	<0.001	0.022	<0.001	<0.0005	0.006
2128184	P2C20-16	0.115	74.4	<0.001	<0.15	<0.001	n.a.	n.a.	0.046	<0.001	14.5	<0.001	0.006	<0.001	<0.0005	0.069
2128195	P2R12-10	0.125	62.8	<0.001	<0.15	<0.001	n.a.	n.a.	0.049	0.045	4.3	<0.001	0.005	<0.001	<0.0005	<0.005
2128223	P2C26-10	0.0219	74.4	<0.001	<0.15	<0.001	n.a.	n.a.	0.032	0.015	2.7	<0.001	0.012	<0.001	<0.0005	<0.005
2128224	P2C26-11	0.1	41.3	<0.001	<0.15	<0.001	n.a.	n.a.	0.056	0.014	5.6	<0.001	<0.005	<0.001	<0.0005	<0.005
2128234	P2R18-10	0.0845	>10000	<0.001	<0.15	<0.001	n.a.	n.a.	0.07	0.005	3.2	<0.001	0.051	<0.001	<0.0005	<0.005
GF1066	RES 130801 A(1) FLT 1.50	0.0158	39.3	0.0403	0.0087	0.000412	0.000594	<10	0.00116	0.00473	1.79	0.00022	0.0359	<0.000020	0.000008	0.00085

Notes:  
 Blue values are calculated.  
 Highlighted values exceed BC MOE water quality guidelines for total metals.  
 Where available, concentrations were compared to chronic (30-day mean) guidelines. Where only acute (maximum) guidelines existed, concentrations were compared to acute guidelines.  
 n.a. indicates parameter not analyzed for that sample  
 < indicates sample concentration was below detection limits  
<sup>1</sup> Values were compared to dissolved metal guidelines.  
<sup>4</sup> Values were compared to acute guidelines.

Appendix 11. Coal Leachate Results

Sample ID	Sample Description	Tl <sup>2</sup> mg/L	U <sup>2</sup> mg/L	V mg/L	W mg/L	Y mg/L	Zn mg/L	Zr mg/L
GF1056	composite of RES 130798 1.50-1.70 and RES 130799 1.50-1.70	0.000045	0.000275	<0.00020	0.000159	n.a.	0.00393	<0.00010
GF1061	composite of RES 130799 1.70 SNK and RES 130800 1.70 SNK	0.000004	0.00156	0.0128	0.00684	n.a.	0.00119	0.00046
GF1057	RES 130798 1.70 SNK	0.000017	0.000172	0.0033	0.00393	n.a.	0.00123	<0.00010
2128203	P2R11-8	<0.0001	<0.0005	0.039	n.a.	<0.005	<0.005	<0.01
2128219	P2C26-6	<0.0001	<0.0005	0.039	n.a.	<0.005	<0.005	<0.01
2128230	P2R18-6	<0.0001	0.001	0.028	n.a.	<0.005	<0.005	<0.01
GF1055	RES 130798 A(1) FLT 1.50	0.000015	0.000055	0.00036	0.000277	n.a.	0.00241	0.00011
GF1058	composite of RES 130798 B 30 sec, 60 sec, 90 sec, 120 sec	0.000007	0.000205	0.0068	0.00233	n.a.	0.00104	<0.00010
2128231	P2R18-7	0.0016	0.0023	0.292	n.a.	0.013	0.027	0.06
GF1060	RES 130799 A(1) FLT 1.50	0.000004	0.000048	0.00021	0.000178	n.a.	0.00123	<0.00010
GF1062	composite of RES 130799 B 30 sec, 60 sec, 90 sec, 120 sec	0.000013	0.000829	0.00779	0.00871	n.a.	0.00144	<0.00010
2128180	P2C20-12	<0.0001	<0.0005	0.062	n.a.	<0.005	<0.005	<0.01
2128192	P2R12-7	<0.0001	<0.0005	0.15	n.a.	<0.005	<0.005	<0.01
2128221	P2C26-8	<0.0001	<0.0005	0.027	n.a.	<0.005	<0.005	<0.01
2128232	P2R18-8	<0.0001	<0.0005	0.04	n.a.	<0.005	<0.005	<0.01
GF1063	RES 130800 A(1) FLT 1.50	0.000007	0.000188	<0.00020	0.000309	n.a.	0.00094	<0.00010
GF1064	RES 130800 1.50-1.70	0.000006	0.000878	0.00025	0.000561	n.a.	0.00099	<0.00010
GF1065	composite of RES 130800 B 30 sec, 60 sec, 90 sec, 120 sec	0.000013	0.000525	0.00063	0.00787	n.a.	0.00334	<0.00010
2128222	P2C26-9	<0.0001	<0.0005	0.019	n.a.	<0.005	<0.005	<0.01
2128233	P2R18-9	<0.0001	0.003	0.032	n.a.	<0.005	<0.005	<0.01
GF1068	RES 130801 1.70 SNK	0.000003	0.00262	0.00688	0.0279	n.a.	0.00504	0.00014
2128183	P2C20-15	<0.0001	<0.0005	0.024	n.a.	<0.005	<0.005	<0.01
2128184	P2C20-16	<0.0001	<0.0005	0.035	n.a.	<0.005	<0.005	<0.01
2128195	P2R12-10	<0.0001	<0.0005	0.036	n.a.	<0.005	<0.005	<0.01
2128223	P2C26-10	<0.0001	<0.0005	0.03	n.a.	<0.005	<0.005	<0.01
2128224	P2C26-11	<0.0001	<0.0005	0.034	n.a.	<0.005	<0.005	<0.01
2128234	P2R18-10	<0.0001	<0.0005	0.027	n.a.	<0.005	<0.005	<0.01
GF1066	RES 130801 A(1) FLT 1.50	0.000004	0.00192	0.00224	0.0323	n.a.	0.00602	0.00011

Notes:  
 Blue values are calculated.  
 Highlighted values exceed BC MOE water quality guidelines for total metals.  
 Where available, concentrations were compared to chronic (30-day mean) guidelines. Where only acute (maximum) guidelines existed, concentrations were compared to acute guidelines.  
 n.a. indicates parameter not analyzed for that sample  
 < indicates sample concentration was below detection limits  
<sup>1</sup> Values were compared to dissolved metal guidelines.  
<sup>4</sup> Values were compared to acute guidelines.

# Appendix 12

## Coal Humidity Cell Results

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity $\mu$ S/cm	ORP mV	Sulphate (SO <sub>4</sub> <sup>2-</sup> ) mg/L	Acidity to pH 4.5 mg CaCO <sub>3</sub> /L	Acidity to pH 8.3 mg CaCO <sub>3</sub> /L	Total Alkalinity mg CaCO <sub>3</sub> /L	Chloride (Cl <sup>-</sup> ) mg/L	Fluoride (F <sup>-</sup> ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC2 Middle Gates E - CCR																				
HC-2-0	15-Feb-11	0	750	670	9.38	199	75	31.0	0.5	0.5	44.0	8.4	0.81	0.5	0.296	0.00529	0.02060	0.025	0.00002	0.000005
HC-2-1	22-Feb-11	1	500	490	9.32	296	30	45.0	0.5	0.5	85.0	1.4	0.98	1.4	0.173	0.00604	0.01040	0.047	0.00004	0.000005
HC-2-2	01-Mar-11	2	500	460	9.34	272	40	33.0	0.5	0.5	88.0	0.5	0.74	0.9	0.169	0.00561	0.00836	0.034	0.00001	0.000005
HC-2-3	08-Mar-11	3	500	500	9.27	246	40	27.0	0.5	0.5	89.0	0.5	0.57	1.7	0.177	0.00452	0.00627	0.044	0.00001	0.000005
HC-2-4	15-Mar-11	4	500	490	9.46	235	25	23.0	0.5	0.5	92.0	0.8	0.51	1.2	0.155	0.00391	0.00577	0.033	0.00001	0.000005
HC-2-5	22-Mar-11	5	500	500	9.26	208	35	17.0	0.5	0.5	84.0	0.7	0.33	1.3	0.119	0.00293	0.00428	0.025	0.00001	0.000005
HC-2-6	29-Mar-11	6	500	495	9.25	192	45	7.6	0.5	0.5	79.0	1.6	0.25	1.1	0.093	0.00236	0.00359	0.024	0.00001	0.000005
HC-2-7	05-Apr-11	7	500	500	9.16	185	55	13.0	0.5	0.5	76.0	0.5	0.23	1.2	0.099	0.00214	0.00324	0.023	0.00001	0.000005
HC-2-8	12-Apr-11	8	500	490	9.15	177	35	11.0	0.5	0.5	73.0	0.5	0.20	1.2	0.121	0.00197	0.00259	0.025	0.00001	0.000006
HC-2-9	19-Apr-11	9	500	500	9.21	167	35	11.0	0.5	0.5	70.0	0.5	0.19	1.5	0.108	0.00167	0.00206	0.030	0.00001	0.000005
HC-2-10	26-Apr-11	10	500	490	9.09	165	65	11.0	0.5	0.5	68.0	8.3	0.17	1.6	0.093	0.00157	0.00203	0.027	0.00001	0.000005
HC-2-11	03-May-11	11	500	475	9.33	135	65	9.4	0.5	0.5	57.0	5.7	0.17	1.5	0.155	0.00127	0.00201	0.022	0.00001	0.000005
HC-2-12	10-May-11	12	500	490	9.15	157	90	9.0	0.5	0.5	62.0	0.6	0.12	1.8	0.112	0.00121	0.00163	0.028	0.00001	0.000005
HC-2-13	17-May-11	13	500	480	9.25	143	80	15.0	0.5	0.5	60.0	0.5	0.12	1.6	0.071	0.00121	0.00158	0.022	0.00001	0.000005
HC-2-14	24-May-11	14	500	485	9.10	138	80	8.1	0.5	0.5	59.0	0.5	0.11	1.9	0.080	0.00105	0.00131	0.027	0.00001	0.000005
HC-2-15	31-May-11	15	500	470	9.12	135	85	7.9	0.5	0.5	57.0	1.3	0.11	1.8	0.070	0.00092	0.00117	0.024	0.00001	0.000005
HC-2-16	07-Jun-11	16	500	470	9.02	125	80	7.7	0.5	0.5	51.0	0.5	0.09	2.0	0.062	0.00083	0.00101	0.026	0.00001	0.000005
HC-2-17	14-Jun-11	17	500	485	9.01	123	95	7.3	0.5	0.5	49.0	0.7	0.07	2.5	0.051	0.00079	0.00085	0.027	0.00001	0.000005
HC-2-18	21-Jun-11	18	500	465	8.31	117	100	8.1	0.5	0.5	49.0	1.4	0.08	2.4	0.051	0.00074	0.00072	0.028	0.00001	0.000005
HC-2-19	28-Jun-11	19	500	465	8.82	111	115	6.4	0.5	0.7	47.0	2.7	0.07	3.2	0.041	0.00060	0.00062	0.028	0.00001	0.000005
HC-2-20	05-Jul-11	20	500	480	8.77	113	150	7.8	0.5	0.7	44.0	11.8	0.07		0.039	0.00055	0.00055	0.032	0.00001	0.000005
HC-2-21	12-Jul-11	21	500	495	8.84	110	145	9.2	0.5	0.6	41.0	20.9	0.07		0.036	0.00051	0.00048	0.035	0.00001	0.000005
HC-2-22	19-Jul-11	22	500	490	8.85	101	145	10.6	0.5	0.6	38.0	29.9	0.06		0.033	0.00046	0.00040	0.038	0.00001	0.000005
HC-2-23	26-Jul-11	23	500	460	8.43	104	200	12.0	0.5	0.5	35.0	39.0	0.06	4.9	0.030	0.00041	0.00033	0.041	0.00001	0.000005
HC-2-24	02-Aug-11	24	500	475	8.50	106	155	10.6	0.5	0.5	33.0	31.6	0.06		0.026	0.00039	0.00031	0.048	0.00001	0.000005
HC-2-25	09-Aug-11	25	500	500	8.69	98	140	9.3	0.5	0.5	31.0	24.2	0.05		0.023	0.00037	0.00029	0.055	0.00001	0.000005
HC-2-26	16-Aug-11	26	500	470	8.39	102	155	7.9	0.5	0.5	29.0	16.8	0.05		0.019	0.00034	0.00026	0.062	0.00001	0.000005
HC-2-27	23-Aug-11	27	500	500	8.17	108	150	6.5	0.5	0.5	27.0	9.4	0.04	13.3	0.015	0.00032	0.00024	0.069	0.00001	0.000005
HC-2-28	30-Aug-11	28	500	465	8.48	108	140	6.7	0.5	0.5	26.0	10.3	0.04		0.014	0.00029	0.00023	0.067	0.00001	0.000005
HC-2-29	06-Sep-11	29	500	465	8.20	96	145	6.8	0.5	0.5	25.0	11.2	0.04		0.012	0.00027	0.00023	0.066	0.00001	0.000005
HC-2-30	13-Sep-11	30	500	460	7.68	110	160	7.0	0.5	0.5	24.0	12.1	0.03		0.011	0.00024	0.00022	0.065	0.00001	0.000005
HC-2-31	20-Sep-11	31	500	460	7.65	110	160	7.1	0.5	0.5	23.0	13.0	0.03	21.9	0.010	0.00021	0.00021	0.063	0.00001	0.000005
HC-2-32	27-Sep-11	32	500	450	7.46	97	110	8.4	0.5	0.5	22.5	12.5	0.03		0.010	0.00020	0.00019	0.063	0.00001	0.000005
HC-2-33	04-Oct-11	33	500	465	7.31	125	130	9.7	0.5	0.5	22.0	12.0	0.03		0.009	0.00019	0.00018	0.063	0.00001	0.000005
HC-2-34	11-Oct-11	34	500	460	7.64	116	190	10.9	0.5	0.5	21.5	11.5	0.03		0.009	0.00018	0.00016	0.063	0.00001	0.000005
HC-2-35	18-Oct-11	35	500	450	7.69	119	190	12.2	0.5	0.5	21.0	11.0	0.03	31.3	0.008	0.00017	0.00014	0.063	0.00001	0.000005
HC-2-36	25-Oct-11	36	500	460	7.74	144	195	12.4	0.5	0.5	20.8	10.2	0.03		0.008	0.00017	0.00014	0.061	0.00001	0.000005
HC-2-37	01-Nov-11	37	500	480	7.59	141	220	12.5	0.5	0.5	20.6	9.5	0.03		0.007	0.00016	0.00013	0.058	0.00001	0.000005
HC-2-38	08-Nov-11	38	500	480	7.60	116	200	12.7	0.5	0.5	20.3	8.7	0.03		0.007	0.00016	0.00013	0.056	0.00001	0.000005
HC-2-39	15-Nov-11	39	500	480	7.57	108	215	12.8	0.5	0.5	20.1	7.9	0.03	34.9	0.006	0.00015	0.00012	0.054	0.00001	0.000005
HC-2-40	22-Nov-11	40	500	495	7.48	94	195	14.2	0.5	0.5	19.3	7.0	0.03		0.007	0.00015	0.00013	0.049	0.00001	0.000005
HC-2-41	29-Nov-11	41	500	475	7.70	99	195	15.6	0.5	0.5	18.5	6.1	0.03		0.007	0.00016	0.00015	0.044	0.00001	0.000005
HC-2-42	06-Dec-11	42	500	470	7.53	112	130	17.0	0.5	0.5	17.6	5.1	0.04		0.007	0.00016	0.00016	0.040	0.00001	0.000005
HC-2-43	13-Dec-11	43	500	475	7.55	108	125	18.4	0.5	0.5	16.8	4.2	0.04	35.8	0.007	0.00016	0.00017	0.035	0.00001	0.000005
HC-2-44	20-Dec-11	44	500	470	7.83	111	135	19.1	0.5	0.5	17.6	3.9	0.04		0.007	0.00015	0.00015	0.035	0.00001	0.000005
HC-2-45	27-Dec-11	45	500	480	7.60	116	135	19.8	0.5	0.5	18.5	3.7	0.03		0.006	0.00015	0.00012	0.034	0.00001	0.000005
HC-2-46	03-Jan-12	46	500	485	7.54	98	130	20.4	0.5	0.5	19.3	3.4	0.03		0.006	0.00014	0.00010	0.034	0.00001	0.000005
HC-2-47	10-Jan-12	47	500	460	7.68	107	130	21.1	0.5	0.5	20.1	3.1	0.03	43.2	0.005	0.00013	0.00007	0.034	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-2-48	17-Jan-12	48	500	475	7.72	114	120	21.9	0.5	0.5	19.6	3.5	0.03		0.005	0.00013	0.00007	0.034	0.00001	0.000005
HC-2-49	24-Jan-12	49	500	465	7.79	123	125	22.6	0.5	0.5	19.1	4.0	0.04		0.005	0.00012	0.00007	0.034	0.00001	0.000005
HC-2-50	31-Jan-12	50	500	485	7.67	127	120	23.4	0.5	0.5	18.5	4.4	0.04		0.005	0.00012	0.00007	0.034	0.00001	0.000005
HC-2-51	07-Feb-12	51	500	470	7.62	130	115	24.1	0.5	0.5	18.0	4.8	0.04	47.1	0.005	0.00011	0.00007	0.034	0.00001	0.000005
HC-2-52	14-Feb-12	52	500	470	7.55	117	120	25.7	0.5	0.5	17.5	4.7	0.04		0.005	0.00011	0.00008	0.031	0.00001	0.000005
HC-2-53	21-Feb-12	53	500	470	7.66	125	125	27.3	0.5	0.6	17.0	4.5	0.03		0.005	0.00011	0.00008	0.029	0.00001	0.000005
HC-2-54	28-Feb-12	54	500	475	7.59	131	130	28.8	0.5	0.6	16.5	4.4	0.03		0.006	0.00011	0.00009	0.026	0.00001	0.000005
HC-2-55	06-Mar-12	55	500	450	7.68	135	135	30.4	0.5	0.6	16.0	4.2	0.03	47.6	0.006	0.00011	0.00009	0.024	0.00001	0.000005
HC-2-56	13-Mar-12	56	500	480	7.83	142	130	30.0	0.5	0.6	17.2	3.3	0.03		0.006	0.00011	0.00010	0.024	0.00001	0.000005
HC-2-57	20-Mar-12	57	500	465	7.64	133	130	29.6	0.5	0.6	18.4	2.5	0.03		0.005	0.00010	0.00012	0.025	0.00001	0.000005
HC-2-58	27-Mar-12	58	500	465	7.87	125	125	29.2	0.5	0.5	19.5	1.6	0.03		0.005	0.00010	0.00013	0.025	0.00001	0.000005
HC-2-59	03-Apr-12	59	500	495	7.89	130	125	28.8	0.5	0.5	20.7	0.7	0.03	47.3	0.005	0.00009	0.00014	0.026	0.00001	0.000005
HC-2-60	10-Apr-12	60	500	495	7.79	130	130	29.9	0.5	0.5	19.7	1.0	0.03		0.005	0.00009	0.00012	0.025	0.00001	0.000005
HC-2-61	17-Apr-12	61	500	470	7.79	123	135	31.0	0.5	0.5	18.8	1.2	0.03		0.006	0.00009	0.00010	0.023	0.00001	0.000005
HC-2-62	24-Apr-12	62	500	470	7.67	136	130	32.0	0.5	0.5	17.8	1.5	0.03		0.006	0.00009	0.00008	0.022	0.00001	0.000005
HC-2-63	01-May-12	63	500	475	7.57	133	130	33.1	0.5	0.5	16.8	1.7	0.03	55.2	0.006	0.00009	0.00007	0.021	0.00001	0.000005
HC-2-64	08-May-12	64	500	465	7.62	140	130	34.9	0.5	0.9	16.0	1.8	0.03		0.006	0.00009	0.00006	0.020	0.00001	0.000005
HC-2-65	15-May-12	65	500	460	7.68	154	140	36.7	0.5	1.4	15.3	1.8	0.03		0.006	0.00009	0.00006	0.019	0.00001	0.000005
HC-2-66	22-May-12	66	500	485	7.76	150	130	38.5	0.5	1.8	14.5	1.9	0.02		0.006	0.00009	0.00005	0.018	0.00001	0.000005
HC-2-67	29-May-12	67	500	475	7.67	158	130	40.3	0.5	2.3	13.7	1.9	0.02	56.5	0.005	0.00009	0.00005	0.017	0.00001	0.000005
HC-2-68	05-Jun-12	68	500	475	7.67	150	125	41.1	0.5	1.8	14.6	1.9	0.02		0.005	0.00008	0.00005	0.018	0.00001	0.000005
HC-2-69	12-Jun-12	69	500	465	7.71	144	130	41.8	0.5	1.4	15.6	2.0	0.02		0.005	0.00008	0.00006	0.018	0.00001	0.000005
HC-2-70	19-Jun-12	70	500	495	7.83	151	130	42.6	0.5	0.9	16.5	2.0	0.02		0.005	0.00007	0.00006	0.018	0.00001	0.000005
HC-2-71	26-Jun-12	71	500	480	7.66	156	135	43.3	0.5	0.5	17.4	2.0	0.02	59.9	0.005	0.00007	0.00006	0.019	0.00001	0.000005
HC-2-72	03-Jul-12	72	500	480	7.71	151	140	44.2	0.5	0.5	16.9	2.0	0.03		0.005	0.00007	0.00006	0.018	0.00001	0.000005
HC-2-73	10-Jul-12	73	500	470	7.74	145	135	45.2	0.5	0.5	16.4	2.1	0.03		0.006	0.00006	0.00006	0.017	0.00001	0.000005
HC-2-74	17-Jul-12	74	500	465	7.74	160	135	46.1	0.5	0.5	15.9	2.1	0.03		0.006	0.00006	0.00006	0.016	0.00001	0.000005
HC-2-75	24-Jul-12	75	500	470	7.69	164	130	47.0	0.5	0.5	15.4	2.1	0.04	70.5	0.007	0.00006	0.00006	0.016	0.00001	0.000005
HC-2-76	31-Jul-12	76	500	470	7.73	182	130	50.2	0.5	0.5	14.7	2.0	0.03		0.008	0.00006	0.00006	0.015	0.00001	0.000005
HC-2-77	07-Aug-12	77	500	445	7.58	153	140	53.5	0.5	0.6	13.9	1.9	0.03		0.010	0.00006	0.00007	0.015	0.00001	0.000005
HC-2-78	14-Aug-12	78	500	475	7.60	179	150	56.7	0.5	0.6	13.2	1.7	0.03		0.011	0.00006	0.00007	0.015	0.00001	0.000005
HC-2-79	21-Aug-12	79	500	450	7.59	192	135	59.9	0.5	0.7	12.4	1.6	0.02	78.3	0.013	0.00006	0.00007	0.015	0.00001	0.000005
HC-2-80	28-Aug-12	80	500	470	7.68	195	145	58.9	0.5	0.7	13.5	1.8	0.02		0.011	0.00006	0.00008	0.014	0.00001	0.000005
HC-2-81	04-Sep-12	81	500	470	7.54	203	150	57.9	0.5	0.7	14.6	2.0	0.02		0.009	0.00006	0.00009	0.014	0.00001	0.000005
HC-2-82	11-Sep-12	82	500	480	7.65	200	150	56.9	0.5	0.7	15.7	2.1	0.02		0.008	0.00006	0.00009	0.013	0.00001	0.000005
HC-2-83	18-Sep-12	83	500	490	7.63	198	135	55.9	0.5	0.7	16.8	2.3	0.02	81.0	0.006	0.00006	0.00010	0.013	0.00001	0.000005
HC-2-84	25-Sep-12	84	500	445	7.61	180	135	57.4	0.5	0.6	15.8	2.3	0.02		0.005	0.00005	0.00008	0.012	0.00001	0.000005
HC-2-85	02-Oct-12	85	500	465	7.72	188	145	58.9	0.5	0.6	14.8	2.2	0.02		0.005	0.00004	0.00007	0.012	0.00001	0.000005
HC-2-86	09-Oct-12	86	500	485	7.66	198	135	60.4	0.5	0.5	13.7	2.2	0.02		0.004	0.00004	0.00005	0.012	0.00001	0.000005
HC-2-87	16-Oct-12	87	500	465	7.63	181	130	61.9	0.5	0.5	12.7	2.1	0.02	73.3	0.003	0.00003	0.00004	0.011	0.00001	0.000005
HC-2-88	23-Oct-12	88	500	485	7.60	189	150	63.4	0.5	0.5	13.0	1.9	0.02		0.003	0.00004	0.00004	0.011	0.00001	0.000005
HC-2-89	30-Oct-12	89	500	460	7.54	201	135	64.8	0.5	0.5	13.2	1.7	0.02		0.004	0.00004	0.00004	0.012	0.00001	0.000005
HC-2-90	06-Nov-12	90	500	485	7.67	189	145	66.3	0.5	0.5	13.5	1.5	0.02		0.004	0.00005	0.00005	0.012	0.00001	0.000005
HC-2-91	13-Nov-12	91	500	460	7.52	189	145	67.7	0.5	0.5	13.7	1.3	0.02	78.0	0.004	0.00006	0.00005	0.012	0.00001	0.000005
HC-2-92	20-Nov-12	92	500	475	7.52	193	150	66.6	0.5	0.5	13.6	1.2	0.02		0.004	0.00005	0.00005	0.011	0.00001	0.000005
HC-2-93	27-Nov-12	93	500	485	7.57	197	130	65.4	0.5	0.5	13.4	1.0	0.02		0.004	0.00005	0.00006	0.010	0.00001	0.000005
HC-2-94	04-Dec-12	94	500	470	7.68	190	135	64.3	0.5	0.5	13.3	0.9	0.02		0.004	0.00005	0.00007	0.010	0.00001	0.000005
HC-2-95	11-Dec-12	95	500	475	7.70	193	130	63.1	0.5	0.5	13.1	0.7	0.02	77.5	0.004	0.00005	0.00007	0.009	0.00001	0.000005
HC-2-96	18-Dec-12	96	500	470	7.49	188	130	66.0	0.5	0.5	14.0	0.8	0.02		0.005	0.00004	0.00010	0.010	0.00001	0.000005



Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml In	ml Out																
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-2-97	25-Dec-12	97	500	485	7.62	177	130	69.0	0.5	0.5	14.8	0.8	0.02		0.005	0.00004	0.00013	0.010	0.00001	0.000005
HC-2-98	01-Jan-13	98	500	455	7.51	220	125	71.9	0.5	0.5	15.7	0.8	0.02		0.005	0.00003	0.00016	0.010	0.00001	0.000005
HC-2-99	08-Jan-13	99	500	475	7.58	209	125	74.8	0.5	0.5	16.5	0.9	0.02	87.8	0.005	0.00003	0.00020	0.011	0.00001	0.000005
HC-2-100	15-Jan-13	100	500	485	7.57	190	120	72.9	0.5	0.5	16.1	1.0	0.02		0.005	0.00003	0.00019	0.010	0.00001	0.000005
HC-2-101	22-Jan-13	101	500	440	7.43	184	120	71.1	0.5	0.5	15.7	1.1	0.02		0.005	0.00004	0.00018	0.010	0.00001	0.000005
HC-2-102	29-Jan-13	102	500	465	7.43	182	115	69.2	0.5	0.5	15.3	1.2	0.02		0.004	0.00004	0.00017	0.010	0.00001	0.000005
HC-2-103	05-Feb-13	103	500	475	7.43	165	130	67.3	0.5	0.5	14.9	1.3	0.02	81.9	0.004	0.00004	0.00016	0.009	0.00001	0.000005
HC-2-104	12-Feb-13	104	500	465	7.52	178	140	66.1	0.5	0.9	15.2	1.1	0.02		0.004	0.00004	0.00014	0.010	0.00001	0.000005
HC-2-105	19-Feb-13	105	500	460	7.60	190	120	64.9	0.5	1.3	15.4	0.9	0.02		0.004	0.00004	0.00012	0.010	0.00001	0.000005
HC-2-106	26-Feb-13	106	500	490	7.56	185	140	63.6	0.5	1.7	15.7	0.7	0.02		0.004	0.00004	0.00009	0.010	0.00001	0.000005
HC-2-107	05-Mar-13	107	500	485	7.57	186	140	62.4	0.5	2.1	15.9	0.5	0.02	81.6	0.004	0.00004	0.00007	0.011	0.00001	0.000005
HC-2-108	12-Mar-13	108	500	465	7.55	180	140	62.4	0.5	1.7	15.6	0.6	0.02		0.003	0.00004	0.00006	0.011	0.00001	0.000005
HC-2-109	19-Mar-13	109	500	480	7.59	184	140	62.5	0.5	1.3	15.3	0.7	0.02		0.003	0.00004	0.00005	0.010	0.00001	0.000005
HC-2-110	26-Mar-13	110	500	485	7.56	187	140	62.5	0.5	0.9	15.0	0.8	0.02		0.003	0.00003	0.00003	0.010	0.00001	0.000005
HC-2-111	02-Apr-13	111	500	490	7.50	180	140	62.5	0.5	0.5	14.7	1.0	0.02	79.9	0.002	0.00003	0.00002	0.010	0.00001	0.000005
HC-2-112	09-Apr-13	112	500	465	7.50	183	140	65.4	0.5	0.5	14.8	1.0	0.02		0.003	0.00004	0.00005	0.010	0.00001	0.000005
HC-2-113	16-Apr-13	113	500	470	7.60	184	130	68.4	0.5	0.5	14.8	1.0	0.02		0.003	0.00004	0.00008	0.011	0.00001	0.000005
HC-2-114	23-Apr-13	114	500	465	7.58	183	140	71.3	0.5	0.5	14.9	1.1	0.02		0.003	0.00004	0.00011	0.011	0.00001	0.000005
HC-2-115	30-Apr-13	115	500	470	7.54	187	135	74.2	0.5	0.5	14.9	1.1	0.02	85.9	0.003	0.00005	0.00014	0.011	0.00001	0.000005
HC-2-116	07-May-13	116	500	460	7.62	192	120	72.5	0.5	0.5	14.7	1.0	0.02		0.003	0.00004	0.00012	0.011	0.00001	0.000005
HC-2-117	14-May-13	117	500	480	7.45	193	135	70.9	0.5	0.5	14.4	0.9	0.02		0.002	0.00004	0.00010	0.010	0.00001	0.000005
HC-2-118	21-May-13	118	500	475	7.36	184	140	69.2	0.5	0.5	14.2	0.8	0.02		0.002	0.00004	0.00008	0.009	0.00001	0.000005
HC-2-119	28-May-13	119	500	480	7.54	188	140	67.5	0.5	0.5	13.9	0.6	0.02	80.6	0.002	0.00003	0.00006	0.009	0.00001	0.000005
HC-2-120	04-Jun-13	120	500	490	7.56	192	140	68.0	0.5	0.5	14.2	0.6	0.02		0.002	0.00003	0.00005	0.009	0.00001	0.000005
HC-2-121	11-Jun-13	121	500	480	7.65	195	140	68.6	0.5	0.5	14.5	0.6	0.02		0.002	0.00003	0.00004	0.009	0.00001	0.000005
HC-2-122	18-Jun-13	122	500	480	7.52	490	145	69.1	0.5	0.5	14.7	0.6	0.02		0.002	0.00003	0.00003	0.008	0.00001	0.000005
HC-2-123	25-Jun-13	123	500	465	7.60	485	150	69.6	0.5	0.5	15.0	0.5	0.02	82.4	0.002	0.00003	0.00002	0.008	0.00001	0.000005
HC-2-124	02-Jul-13	124	500	470	7.61	200	160	70.1	0.5	0.5	14.5	0.6	0.02		0.002	0.00003	0.00003	0.008	0.00001	0.000005
HC-2-125	09-Jul-13	125	500	465	7.57	190	155	70.6	0.5	0.5	14.1	0.7	0.02		0.002	0.00003	0.00003	0.008	0.00001	0.000005
HC-2-126	16-Jul-13	126	500	470	7.57	192	165	71.1	0.5	0.5	13.6	0.8	0.02		0.002	0.00003	0.00003	0.008	0.00001	0.000005
HC-2-127	23-Jul-13	127	500	470	7.54	192	160	71.6	0.5	0.5	13.1	0.9	0.02	83.6	0.002	0.00003	0.00004	0.008	0.00001	0.000005
HC-2-128	30-Jul-13	128	500	475	7.57	195	155	72.4	0.5	0.5	13.6	0.9	0.02		0.002	0.00003	0.00004	0.008	0.00001	0.000005
HC-2-129	06-Aug-13	129	500	480	7.67	192	160	73.2	0.5	0.5	14.2	1.0	0.02		0.002	0.00003	0.00004	0.008	0.00001	0.000005
HC-2-130	13-Aug-13	130	500	470	7.58	193	145	73.9	0.5	0.5	14.7	1.0	0.02		0.002	0.00003	0.00004	0.008	0.00001	0.000005
HC-2-131	20-Aug-13	131	500	460	7.56	193	150	74.7	0.5	0.5	15.2	1.0	0.02	92.0	0.002	0.00003	0.00004	0.008	0.00001	0.000005
HC-2-132	27-Aug-13	132	500	465	7.60	187	155	74.5	0.5	0.6	15.3	0.9	0.02		0.002	0.00003	0.00004	0.008	0.00001	0.000005
HC-2-133	03-Sep-13	133	500	480	7.51	196	160	74.2	0.5	0.6	15.4	0.9	0.02		0.001	0.00003	0.00004	0.009	0.00001	0.000005
HC-2-134	10-Sep-13	134	500	470	7.58	191	160	74.0	0.5	0.7	15.5	0.8	0.02		0.001	0.00003	0.00005	0.009	0.00001	0.000005
HC-2-135	17-Sep-13	135	500	480	7.49	197	160	73.7	0.5	0.7	15.6	0.8	0.02	88.1	0.001	0.00003	0.00005	0.009	0.00001	0.000005
HC-2-136	24-Sep-13	136	500	475	7.60	192	150	73.2	0.5	0.7	15.5	0.8	0.02		0.001	0.00003	0.00004	0.009	0.00001	0.000005
HC-2-137	01-Oct-13	137	500	470	7.52	183	140	72.7	0.5	0.6	15.5	0.9	0.02		0.001	0.00003	0.00003	0.009	0.00001	0.000005
HC-2-138	08-Oct-13	138	500	470	7.59	189	150	72.1	0.5	0.6	15.4	1.0	0.02		0.001	0.00003	0.00003	0.010	0.00001	0.000005
HC-2-139	15-Oct-13	139	500	470	7.44	196	1454	71.6	0.5	0.5	15.3	1.1	0.02	94.3	0.002	0.00003	0.00002	0.010	0.00001	0.000005
HC-2-140	22-Oct-13	140	500	470	7.46	193	150	72.5	0.5	0.5	15.4	1.0	0.02		0.002	0.00003	0.00002	0.010	0.00001	0.000005
HC-2-141	29-Oct-13	141	500	475	7.45	205	125	73.4	0.5	0.5	15.6	0.8	0.02		0.002	0.00002	0.00002	0.010	0.00001	0.000005
HC-2-142	05-Nov-13	142	500	485	7.33	188	130	74.3	0.5	0.5	15.7	0.7	0.02		0.002	0.00002	0.00003	0.010	0.00001	0.000005
HC-2-143	12-Nov-13	143	500	475	7.27	191	120	75.2	0.5	0.5	15.8	0.5	0.02	94.0	0.002	0.00002	0.00003	0.010	0.00001	0.000005
HC-2-144	19-Nov-13	144	500	475	7.31	187	130	75.3	0.5	0.5	15.7	0.6	0.02		0.001	0.00002	0.00003	0.010	0.00001	0.000005
HC-2-145	26-Nov-13	145	500	495	7.51	185	160	75.3	0.5	0.5	15.6	0.8	0.02		0.001	0.00002	0.00004	0.009	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-2-146	03-Dec-13	146	500	465	7.53	203	165	75.4	0.5	0.5	15.4	0.9	0.02		0.001	0.00002	0.00004	0.009	0.00001	0.000005
HC-2-147	10-Dec-13	147	500	480	7.53	200	165	75.4	0.5	0.5	15.3	1.0	0.02	85.9	0.001	0.00002	0.00004	0.009	0.00001	0.000005
HC-2-148	17-Dec-13	148	500	460	7.31	192	150	75.3	0.5	0.5	15.4	0.9	0.02		0.001	0.00002	0.00004	0.009	0.00001	0.000005
HC-2-149	24-Dec-13	149	500	470	7.45	191	155	75.2	0.5	0.5	15.5	0.8	0.02		0.001	0.00002	0.00004	0.009	0.00001	0.000005
HC-2-150	31-Dec-13	150	500	470	7.32	198	145	75.0	0.5	0.5	15.6	0.6	0.02		0.001	0.00003	0.00003	0.008	0.00001	0.000005
HC-2-151	07-Jan-14	151	500	475	7.61	193	165	74.9	0.5	0.5	15.7	0.5	0.02	84.9	0.001	0.00003	0.00003	0.008	0.00001	0.000005
HC-2-152	14-Jan-14	152	500	450	7.55	241	165	73.5	0.5	0.5	15.0	0.7	0.02		0.001	0.00003	0.00003	0.008	0.00001	0.000005
HC-2-153	21-Jan-14	153	500	465	7.46	181	140	72.0	0.5	0.5	14.4	0.9	0.02		0.001	0.00003	0.00003	0.007	0.00001	0.000005
HC-2-154	28-Jan-14	154	500	475	7.49	188	150	70.6	0.5	0.5	13.7	1.1	0.02		0.002	0.00003	0.00002	0.007	0.00001	0.000005
HC-2-155	04-Feb-14	155	500	475	7.35	181	165	69.1	0.5	0.5	13.0	1.3	0.02	83.9	0.002	0.00003	0.00002	0.006	0.00001	0.000005
HC-2-156	11-Feb-14	156	500	475	7.45	187	160	68.4	0.5	0.5	12.8	1.1	0.02		0.002	0.00002	0.00002	0.007	0.00001	0.000005
HC-2-157	18-Feb-14	157	500	465	7.51	187	165	67.7	0.5	0.5	12.6	0.9	0.02		0.002	0.00002	0.00002	0.007	0.00001	0.000005
HC-2-158	25-Feb-14	158	500	485	7.46	187	150	66.9	0.5	0.5	12.3	0.7	0.02		0.002	0.00002	0.00003	0.007	0.00001	0.000005
HC-2-159	04-Mar-14	159	500	465	7.42	180	145	66.2	0.5	0.5	12.1	0.5	0.02	76.8	0.002	0.00002	0.00003	0.007	0.00001	0.000005
HC-2-160	11-Mar-14	160	500	485	7.47	181	150	65.9	0.5	0.5	13.0	0.7	0.02		0.002	0.00002	0.00003	0.007	0.00001	0.000005
HC-2-161	18-Mar-14	161	500	470	7.54	181	160	65.6	0.5	0.5	13.8	1.0	0.03		0.001	0.00002	0.00002	0.007	0.00001	0.000005
HC-2-162	25-Mar-14	162	500	470	7.40	177	150	65.2	0.5	0.5	14.7	1.2	0.03		0.001	0.00002	0.00002	0.008	0.00001	0.000005
HC-2-163	01-Apr-14	163	500	485	7.46	182	175	64.9	0.5	0.5	15.5	1.4	0.03	82.6	0.001	0.00002	0.00002	0.008	0.00001	0.000005
HC-2-164	08-Apr-14	164	500	465	7.47	182	160	66.0	0.5	0.5	14.6	1.2	0.03		0.001	0.00002	0.00002	0.008	0.00001	0.000005
HC-2-165	15-Apr-14	165	500	485	7.51	186	160	67.0	0.5	0.5	13.8	1.0	0.03		0.001	0.00002	0.00003	0.008	0.00001	0.000005
HC-2-166	22-Apr-14	166	500	480	7.54	186	150	68.1	0.5	0.5	12.9	0.9	0.03		0.001	0.00002	0.00003	0.007	0.00001	0.000005
HC-2-167	29-Apr-14	167	500	460	7.43	179	160	69.1	0.5	0.5	12.0	0.7	0.03	83.4	0.001	0.00002	0.00004	0.007	0.00001	0.000005
<b>Mean all weeks</b>					<b>7.82</b>	<b>170</b>	<b>143</b>	<b>46.8</b>	<b>0.5</b>	<b>0.6</b>	<b>22.9</b>	<b>3.3</b>	<b>0.06</b>	<b>44.2</b>	<b>0.019</b>	<b>0.00035</b>	<b>0.00056</b>	<b>0.021</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC3 Middle Gates J - CCR</b>																				
HC-3-0	15-Feb-11	0	750	620	9.38	251	80	6.0	0.5	0.5	58.0	32.0	0.81	1.9	0.310	0.01470	0.00683	0.031	0.00001	0.000005
HC-3-1	22-Feb-11	1	500	500	9.01	541	55	35.0	0.5	0.5	130.0	45.0	0.92	3.7	0.139	0.02380	0.00265	0.123	0.00001	0.000005
HC-3-2	01-Mar-11	2	500	500	9.26	375	60	35.0	0.5	0.5	120.0	16.0	0.97	2.4	0.150	0.01870	0.00205	0.067	0.00001	0.000005
HC-3-3	08-Mar-11	3	500	485	9.32	299	50	23.0	0.5	0.5	120.0	3.6	0.83	1.6	0.110	0.01440	0.00117	0.046	0.00001	0.000005
HC-3-4	15-Mar-11	4	500	490	9.42	281	40	16.0	0.5	0.5	120.0	2.3	0.86	1.7	0.138	0.01270	0.00112	0.049	0.00001	0.000005
HC-3-5	22-Mar-11	5	500	485	9.33	250	35	14.0	0.5	0.5	110.0	1.7	0.66	2.2	0.117	0.00933	0.00094	0.037	0.00001	0.000005
HC-3-6	29-Mar-11	6	500	480	9.26	242	40	11.0	0.5	0.5	110.0	1.1	0.61	1.7	0.116	0.00818	0.00067	0.033	0.00001	0.000005
HC-3-7	05-Apr-11	7	500	500	9.12	248	50	11.0	0.5	0.5	100.0	1.1	0.52	2.2	0.098	0.00677	0.00060	0.041	0.00001	0.000005
HC-3-8	12-Apr-11	8	500	500	9.13	214	40	8.6	0.5	0.5	92.0	0.8	0.46	2.3	0.083	0.00548	0.00039	0.036	0.00001	0.000005
HC-3-9	19-Apr-11	9	500	490	9.21	208	30	8.4	0.5	0.5	93.0	1.0	0.45	3.2	0.072	0.00467	0.00040	0.049	0.00001	0.000005
HC-3-10	26-Apr-11	10	500	495	9.11	197	60	7.6	0.5	0.5	87.0	0.8	0.41	2.8	0.064	0.00435	0.00044	0.038	0.00001	0.000005
HC-3-11	03-May-11	11	500	485	9.17	185	70	7.0	0.5	0.5	83.0	0.9	0.36	2.6	0.064	0.00364	0.00031	0.035	0.00001	0.000005
HC-3-12	10-May-11	12	500	485	9.13	195	80	7.7	0.5	0.5	82.0	0.8	0.38	3.1	0.068	0.00339	0.00031	0.039	0.00001	0.000005
HC-3-13	17-May-11	13	500	485	9.09	175	85	8.2	0.5	0.5	77.0	2.0	0.34	3.3	0.055	0.00323	0.00046	0.037	0.00001	0.000005
HC-3-14	24-May-11	14	500	500	9.02	167	70	7.5	0.5	0.5	72.0	2.2	0.33	3.5	0.046	0.00271	0.00031	0.037	0.00001	0.000005
HC-3-15	31-May-11	15	500	485	9.08	131	80	5.4	0.5	0.5	55.0	1.5	0.25	2.6	0.064	0.00200	0.00035	0.022	0.00001	0.000005
HC-3-16	07-Jun-11	16	500	500	9.00	153	70	8.0	0.5	0.5	60.0	3.2	0.28	3.2	0.044	0.00215	0.00032	0.033	0.00001	0.000005
HC-3-17	14-Jun-11	17	500	490	9.00	153	130	7.6	0.5	0.5	54.0	3.8	0.25	4.5	0.035	0.00195	0.00025	0.039	0.00001	0.000005
HC-3-18	21-Jun-11	18	500	470	8.52	166	120	7.6	0.5	0.5	52.0	12.0	0.24	6.0	0.036	0.00168	0.00042	0.048	0.00001	0.000005
HC-3-19	28-Jun-11	19	500	470	8.85	160	125	7.4	0.5	0.5	44.0	12.0	0.21	7.4	0.028	0.00133	0.00017	0.047	0.00001	0.000005
HC-3-20	05-Jul-11	20	500	485	8.76	158	180	7.3	0.5	0.5	41.8	16.3	0.21		0.025	0.00121	0.00015	0.059	0.00001	0.000005
HC-3-21	12-Jul-11	21	500	495	8.82	144	155	7.2	0.5	0.5	39.5	20.5	0.20		0.023	0.00108	0.00013	0.070	0.00001	0.000005
HC-3-22	19-Jul-11	22	500	495	8.81	149	150	7.0	0.5	0.5	37.3	24.8	0.20		0.020	0.00096	0.00011	0.082	0.00001	0.000005
HC-3-23	26-Jul-11	23	500	465	8.30	198	155	6.9	0.5	0.5	35.0	29.0	0.19	15.7	0.017	0.00083	0.00009	0.094	0.00001	0.000005
HC-3-24	02-Aug-11	24	500	480	8.53	171	160	7.0	0.5	0.5	38.8	25.8	0.18		0.016	0.00082	0.00010	0.090	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-3-25	09-Aug-11	25	500	500	8.65	137	150	7.0	0.5	0.5	42.5	22.5	0.17		0.014	0.00082	0.00010	0.087	0.00001	0.000005
HC-3-26	16-Aug-11	26	500	470	8.35	178	160	7.1	0.5	0.5	46.3	19.3	0.16		0.012	0.00081	0.00011	0.084	0.00001	0.000005
HC-3-27	23-Aug-11	27	500	500	8.30	149	145	7.1	0.5	0.5	50.0	16.0	0.15	19.3	0.011	0.00080	0.00011	0.081	0.00001	0.000005
HC-3-28	30-Aug-11	28	500	455	8.53	202	155	7.2	0.5	0.5	44.5	20.8	0.15		0.011	0.00073	0.00011	0.088	0.00001	0.000005
HC-3-29	06-Sep-11	29	500	470	8.30	163	140	7.2	0.5	0.5	39.0	25.5	0.16		0.011	0.00066	0.00011	0.096	0.00001	0.000005
HC-3-30	13-Sep-11	30	500	470	7.93	241	170	7.3	0.5	0.5	33.5	30.3	0.16		0.010	0.00059	0.00010	0.103	0.00001	0.000005
HC-3-31	20-Sep-11	31	500	470	7.78	210	160	7.3	0.5	0.5	28.0	35.0	0.16	38.2	0.010	0.00052	0.00010	0.110	0.00001	0.000005
HC-3-32	27-Sep-11	32	500	465	7.89	200	190	8.2	0.5	0.5	28.5	35.5	0.16		0.010	0.00050	0.00009	0.116	0.00001	0.000005
HC-3-33	04-Oct-11	33	500	475	7.63	250	125	9.1	0.5	0.5	29.0	36.0	0.16		0.009	0.00047	0.00008	0.121	0.00001	0.000005
HC-3-34	11-Oct-11	34	500	465	7.81	247	180	10.0	0.5	0.5	29.5	36.5	0.15		0.009	0.00045	0.00007	0.127	0.00001	0.000005
HC-3-35	18-Oct-11	35	500	470	7.77	240	140	10.9	0.5	0.5	30.0	37.0	0.15	54.9	0.008	0.00042	0.00006	0.132	0.00001	0.000005
HC-3-36	25-Oct-11	36	500	465	7.74	282	180	11.2	0.5	0.5	31.7	33.8	0.15		0.007	0.00043	0.00006	0.127	0.00001	0.000005
HC-3-37	01-Nov-11	37	500	485	7.70	259	220	11.6	0.5	0.5	33.4	30.5	0.15		0.006	0.00045	0.00006	0.121	0.00001	0.000005
HC-3-38	08-Nov-11	38	500	470	7.82	227	190	11.9	0.5	0.5	35.0	27.3	0.14		0.005	0.00046	0.00005	0.116	0.00001	0.000005
HC-3-39	15-Nov-11	39	500	500	7.80	204	215	12.2	0.5	0.5	36.7	24.0	0.14	51.5	0.004	0.00047	0.00005	0.110	0.00001	0.000005
HC-3-40	22-Nov-11	40	500	480	7.48	222	195	12.6	0.5	0.5	34.2	24.5	0.14		0.004	0.00045	0.00005	0.102	0.00001	0.000005
HC-3-41	29-Nov-11	41	500	475	7.69	183	190	13.1	0.5	0.5	31.6	25.0	0.14		0.005	0.00043	0.00005	0.093	0.00001	0.000005
HC-3-42	06-Dec-11	42	500	460	7.70	277	130	13.5	0.5	0.5	29.1	25.5	0.14		0.005	0.00040	0.00004	0.085	0.00001	0.000005
HC-3-43	13-Dec-11	43	500	475	7.65	202	120	13.9	0.5	0.5	26.5	26.0	0.14	57.6	0.005	0.00038	0.00004	0.076	0.00001	0.000005
HC-3-44	20-Dec-11	44	500	465	7.84	197	130	14.2	0.5	0.7	23.7	23.0	0.14		0.006	0.00039	0.00004	0.071	0.00001	0.000005
HC-3-45	27-Dec-11	45	500	470	7.77	187	135	14.5	0.5	0.9	20.9	20.0	0.15		0.006	0.00041	0.00003	0.066	0.00001	0.000005
HC-3-46	03-Jan-12	46	500	475	7.62	148	130	14.7	0.5	1.1	18.1	17.0	0.15		0.007	0.00042	0.00003	0.061	0.00001	0.000005
HC-3-47	10-Jan-12	47	500	475	7.92	151	120	15.0	0.5	1.3	15.3	14.0	0.15	49.5	0.008	0.00043	0.00002	0.056	0.00001	0.000005
HC-3-48	17-Jan-12	48	500	460	7.78	151	115	15.7	0.5	1.1	17.8	15.0	0.15		0.008	0.00042	0.00003	0.056	0.00001	0.000005
HC-3-49	24-Jan-12	49	500	475	7.94	184	120	16.4	0.5	0.9	20.3	16.0	0.15		0.008	0.00041	0.00004	0.057	0.00001	0.000005
HC-3-50	31-Jan-12	50	500	475	7.77	189	115	17.1	0.5	0.7	22.7	17.0	0.14		0.008	0.00040	0.00004	0.057	0.00001	0.000005
HC-3-51	07-Feb-12	51	500	470	7.76	180	120	17.8	0.5	0.5	25.2	18.0	0.14	57.4	0.008	0.00039	0.00005	0.057	0.00001	0.000005
HC-3-52	14-Feb-12	52	500	460	7.82	169	125	18.7	0.5	0.6	25.5	17.0	0.14		0.008	0.00039	0.00005	0.054	0.00001	0.000005
HC-3-53	21-Feb-12	53	500	460	7.77	181	120	19.5	0.5	0.6	25.9	16.0	0.13		0.008	0.00040	0.00005	0.051	0.00001	0.000005
HC-3-54	28-Feb-12	54	500	475	7.85	186	125	20.4	0.5	0.7	26.2	15.0	0.13		0.008	0.00040	0.00004	0.047	0.00001	0.000005
HC-3-55	06-Mar-12	55	500	470	7.95	179	130	21.2	0.5	0.7	26.5	14.0	0.12	52.4	0.007	0.00040	0.00004	0.044	0.00001	0.000005
HC-3-56	13-Mar-12	56	500	450	7.92	180	130	20.8	0.5	0.7	27.0	11.8	0.12		0.007	0.00040	0.00005	0.043	0.00001	0.000005
HC-3-57	20-Mar-12	57	500	475	7.55	157	125	20.5	0.5	0.6	27.5	9.6	0.12		0.006	0.00040	0.00006	0.041	0.00001	0.000005
HC-3-58	27-Mar-12	58	500	485	7.96	127	125	20.1	0.5	0.6	27.9	7.3	0.12		0.006	0.00039	0.00006	0.040	0.00001	0.000005
HC-3-59	03-Apr-12	59	500	475	7.91	138	125	19.7	0.5	0.5	28.4	5.1	0.12	46.9	0.005	0.00039	0.00007	0.038	0.00001	0.000005
HC-3-60	10-Apr-12	60	500	470	7.91	135	130	20.0	0.5	0.5	28.4	5.0	0.12		0.005	0.00040	0.00006	0.038	0.00001	0.000005
HC-3-61	17-Apr-12	61	500	475	7.99	129	130	20.4	0.5	0.5	28.3	4.9	0.12		0.005	0.00041	0.00005	0.037	0.00001	0.000005
HC-3-62	24-Apr-12	62	500	475	7.85	136	130	20.7	0.5	0.5	28.3	4.7	0.12		0.005	0.00042	0.00003	0.036	0.00001	0.000005
HC-3-63	01-May-12	63	500	465	7.85	129	130	21.0	0.5	0.5	28.2	4.6	0.12	50.3	0.005	0.00043	0.00002	0.036	0.00001	0.000005
HC-3-64	08-May-12	64	500	485	7.80	147	125	21.5	0.5	0.5	28.5	4.9	0.12		0.005	0.00044	0.00003	0.035	0.00001	0.000005
HC-3-65	15-May-12	65	500	480	7.99	151	135	22.0	0.5	0.5	28.8	5.1	0.12		0.005	0.00044	0.00003	0.035	0.00001	0.000005
HC-3-66	22-May-12	66	500	470	7.89	141	130	22.5	0.5	0.5	29.0	5.4	0.11		0.005	0.00044	0.00004	0.034	0.00001	0.000005
HC-3-67	29-May-12	67	500	470	7.92	154	130	23.0	0.5	0.5	29.3	5.6	0.11	53.7	0.005	0.00045	0.00004	0.034	0.00001	0.000005
HC-3-68	05-Jun-12	68	500	480	7.88	143	135	22.9	0.5	0.5	30.5	5.2	0.11		0.004	0.00043	0.00004	0.034	0.00001	0.000005
HC-3-69	12-Jun-12	69	500	470	7.89	142	130	22.9	0.5	0.5	31.6	4.9	0.11		0.004	0.00042	0.00003	0.035	0.00001	0.000005
HC-3-70	19-Jun-12	70	500	480	7.94	130	130	22.8	0.5	0.5	32.8	4.5	0.11		0.004	0.00041	0.00003	0.035	0.00001	0.000005
HC-3-71	26-Jun-12	71	500	485	7.95	144	140	22.7	0.5	0.5	33.9	4.1	0.11	57.1	0.003	0.00039	0.00002	0.036	0.00001	0.000005
HC-3-72	03-Jul-12	72	500	490	7.91	145	135	23.0	0.5	0.5	31.7	6.6	0.11		0.004	0.00039	0.00002	0.036	0.00001	0.000005
HC-3-73	10-Jul-12	73	500	475	7.95	137	135	23.2	0.5	0.5	29.5	9.1	0.10		0.004	0.00039	0.00002	0.037	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
					pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-3-74	17-Jul-12	74	500	460	7.92	150	130	23.5	0.5	0.5	27.2	11.5	0.10		0.004	0.00039	0.00002	0.037	0.00001	0.000005
HC-3-75	24-Jul-12	75	500	470	7.84	161	130	23.7	0.5	0.5	25.0	14.0	0.10	67.7	0.005	0.00039	0.00002	0.037	0.00001	0.000005
HC-3-76	31-Jul-12	76	500	470	7.94	175	135	23.8	0.5	0.5	26.5	12.5	0.10		0.006	0.00040	0.00002	0.036	0.00001	0.000005
HC-3-77	07-Aug-12	77	500	490	7.84	162	145	23.8	0.5	0.5	28.0	10.9	0.10		0.007	0.00040	0.00002	0.035	0.00001	0.000005
HC-3-78	14-Aug-12	78	500	465	7.90	166	145	23.9	0.5	0.6	29.5	9.4	0.10		0.008	0.00040	0.00002	0.033	0.00001	0.000005
HC-3-79	21-Aug-12	79	500	475	7.91	153	135	23.9	0.5	0.6	31.0	7.8	0.10	63.0	0.008	0.00041	0.00002	0.032	0.00001	0.000005
HC-3-80	28-Aug-12	80	500	475	7.90	159	135	23.7	0.5	0.6	30.8	9.4	0.09		0.007	0.00041	0.00003	0.032	0.00001	0.000005
HC-3-81	04-Sep-12	81	500	470	7.83	162	145	23.4	0.5	0.7	30.7	10.9	0.09		0.006	0.00042	0.00004	0.033	0.00001	0.000005
HC-3-82	11-Sep-12	82	500	495	7.89	185	145	23.2	0.5	0.8	30.5	12.5	0.09		0.005	0.00043	0.00004	0.033	0.00001	0.000005
HC-3-83	18-Sep-12	83	500	490	7.86	179	140	22.9	0.5	0.9	30.3	14.0	0.09	73.6	0.004	0.00044	0.00005	0.034	0.00001	0.000005
HC-3-84	25-Sep-12	84	500	460	7.91	156	130	23.4	0.5	0.8	29.9	13.3	0.09		0.004	0.00042	0.00004	0.034	0.00001	0.000005
HC-3-85	02-Oct-12	85	500	475	7.95	159	140	23.9	0.5	0.7	29.5	12.5	0.09		0.003	0.00041	0.00004	0.033	0.00001	0.000005
HC-3-86	09-Oct-12	86	500	480	7.83	162	130	24.3	0.5	0.6	29.0	11.8	0.09		0.003	0.00040	0.00003	0.033	0.00001	0.000005
HC-3-87	16-Oct-12	87	500	475	7.83	159	130	24.8	0.5	0.5	28.6	11.0	0.09	65.4	0.003	0.00039	0.00002	0.032	0.00001	0.000005
HC-3-88	23-Oct-12	88	500	485	7.91	165	140	25.0	0.5	0.5	32.3	9.6	0.09		0.003	0.00040	0.00002	0.033	0.00001	0.000005
HC-3-89	30-Oct-12	89	500	460	7.97	176	145	25.2	0.5	0.5	35.9	8.2	0.09		0.003	0.00041	0.00002	0.034	0.00001	0.000005
HC-3-90	06-Nov-12	90	500	480	7.86	164	135	25.4	0.5	0.5	39.6	6.7	0.08		0.003	0.00041	0.00002	0.035	0.00001	0.000005
HC-3-91	13-Nov-12	91	500	480	7.85	168	135	25.6	0.5	0.5	43.2	5.3	0.08	73.9	0.003	0.00042	0.00002	0.036	0.00001	0.000005
HC-3-92	20-Nov-12	92	500	445	7.89	157	130	25.4	0.5	0.5	40.7	5.4	0.08		0.003	0.00043	0.00003	0.034	0.00001	0.000005
HC-3-93	27-Nov-12	93	500	490	7.82	157	125	25.3	0.5	0.5	38.2	5.4	0.08		0.003	0.00045	0.00003	0.032	0.00001	0.000005
HC-3-94	04-Dec-12	94	500	465	7.87	150	135	25.1	0.5	0.5	35.6	5.5	0.08		0.003	0.00046	0.00004	0.030	0.00001	0.000005
HC-3-95	11-Dec-12	95	500	475	7.94	156	145	24.9	0.5	0.5	33.1	5.5	0.08	64.7	0.004	0.00048	0.00004	0.028	0.00001	0.000005
HC-3-96	18-Dec-12	96	500	475	7.82	145	135	25.5	0.5	0.5	34.4	4.8	0.08		0.003	0.00047	0.00011	0.028	0.00001	0.000005
HC-3-97	25-Dec-12	97	500	495	7.86	152	125	26.1	0.5	0.5	35.7	4.1	0.08		0.003	0.00047	0.00018	0.029	0.00001	0.000005
HC-3-98	01-Jan-13	98	500	460	7.87	145	125	26.6	0.5	0.5	37.0	3.4	0.08		0.003	0.00046	0.00025	0.029	0.00001	0.000005
HC-3-99	08-Jan-13	99	500	470	7.84	148	120	27.2	0.5	0.5	38.3	2.7	0.08	67.3	0.003	0.00046	0.00032	0.030	0.00001	0.000005
HC-3-100	15-Jan-13	100	500	470	7.82	144	120	26.4	0.5	0.5	38.1	2.8	0.08		0.003	0.00045	0.00027	0.029	0.00001	0.000005
HC-3-101	22-Jan-13	101	500	470	7.84	145	125	25.6	0.5	0.5	37.9	3.0	0.08		0.004	0.00044	0.00023	0.028	0.00001	0.000005
HC-3-102	29-Jan-13	102	500	480	7.83	142	115	24.8	0.5	0.5	37.6	3.1	0.08		0.004	0.00043	0.00018	0.027	0.00001	0.000005
HC-3-103	05-Feb-13	103	500	475	7.81	122	130	24.0	0.5	0.5	37.4	3.2	0.08	63.2	0.005	0.00041	0.00013	0.026	0.00001	0.000005
HC-3-104	12-Feb-13	104	500	485	7.81	147	140	23.6	0.5	0.7	39.7	2.6	0.08		0.004	0.00045	0.00010	0.027	0.00001	0.000005
HC-3-105	19-Feb-13	105	500	470	7.91	143	120	23.3	0.5	0.9	42.0	2.0	0.08		0.004	0.00049	0.00007	0.029	0.00001	0.000005
HC-3-106	26-Feb-13	106	500	485	7.93	144	140	22.9	0.5	1.0	44.3	1.5	0.08		0.003	0.00053	0.00005	0.030	0.00001	0.000005
HC-3-107	05-Mar-13	107	500	500	7.91	149	150	22.5	0.5	1.2	46.6	0.9	0.08	70.3	0.003	0.00057	0.00002	0.032	0.00001	0.000005
HC-3-108	12-Mar-13	108	500	475	7.88	128	140	22.5	0.5	1.0	43.4	0.9	0.08		0.003	0.00056	0.00002	0.030	0.00001	0.000005
HC-3-109	19-Mar-13	109	500	485	7.88	142	130	22.4	0.5	0.9	40.1	0.9	0.08		0.003	0.00055	0.00002	0.029	0.00001	0.000005
HC-3-110	26-Mar-13	110	500	500	7.87	142	130	22.4	0.5	0.7	36.9	0.9	0.09		0.003	0.00054	0.00003	0.028	0.00001	0.000005
HC-3-111	02-Apr-13	111	500	480	7.89	121	140	22.3	0.5	0.5	33.6	0.8	0.09	57.2	0.003	0.00053	0.00003	0.026	0.00001	0.000005
HC-3-112	09-Apr-13	112	500	460	7.98	122	140	22.7	0.5	0.5	34.0	1.4	0.09		0.003	0.00052	0.00007	0.027	0.00001	0.000005
HC-3-113	16-Apr-13	113	500	475	7.94	143	135	23.0	0.5	0.5	34.4	1.9	0.08		0.002	0.00051	0.00010	0.027	0.00001	0.000005
HC-3-114	23-Apr-13	114	500	470	7.93	132	130	23.4	0.5	0.5	34.7	2.4	0.08		0.002	0.00051	0.00014	0.027	0.00001	0.000005
HC-3-115	30-Apr-13	115	500	465	7.89	131	130	23.7	0.5	0.5	35.1	2.9	0.08	60.2	0.002	0.00050	0.00018	0.027	0.00001	0.000005
HC-3-116	07-May-13	116	500	470	7.94	143	130	23.5	0.5	0.5	36.9	2.6	0.07		0.002	0.00050	0.00014	0.027	0.00001	0.000005
HC-3-117	14-May-13	117	500	475	7.84	141	125	23.3	0.5	0.5	38.7	2.4	0.07		0.002	0.00049	0.00011	0.027	0.00001	0.000005
HC-3-118	21-May-13	118	500	485	7.77	158	130	23.0	0.5	0.5	40.5	2.1	0.07		0.001	0.00048	0.00007	0.028	0.00001	0.000005
HC-3-119	28-May-13	119	500	485	7.84	145	130	22.8	0.5	0.5	42.3	1.8	0.07	67.3	0.001	0.00048	0.00003	0.028	0.00001	0.000005
HC-3-120	04-Jun-13	120	500	490	7.93	148	130	23.1	0.5	0.5	41.8	1.8	0.07		0.001	0.00049	0.00003	0.028	0.00001	0.000005
HC-3-121	11-Jun-13	121	500	490	7.92	149	130	23.3	0.5	0.5	41.3	1.8	0.07		0.001	0.00049	0.00003	0.028	0.00001	0.000005
HC-3-122	18-Jun-13	122	500	490	8.07	146	120	23.6	0.5	0.5	40.7	1.7	0.07		0.002	0.00050	0.00002	0.028	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-3-123	25-Jun-13	123	500	485	7.91	133	150	23.8	0.5	0.5	40.2	1.7	0.07	63.9	0.002	0.00051	0.00002	0.028	0.00001	0.000005
HC-3-124	02-Jul-13	124	500	465	7.94	134	160	24.1	0.5	0.6	38.9	2.0	0.07		0.002	0.00050	0.00002	0.027	0.00001	0.000005
HC-3-125	09-Jul-13	125	500	470	7.96	133	160	24.4	0.5	0.7	37.7	2.3	0.07		0.002	0.00049	0.00002	0.026	0.00001	0.000005
HC-3-126	16-Jul-13	126	500	470	7.92	141	145	24.7	0.5	0.8	36.4	2.5	0.07		0.002	0.00049	0.00002	0.025	0.00001	0.000005
HC-3-127	23-Jul-13	127	500	470	7.86	139	140	25.0	0.5	0.9	35.1	2.8	0.07	60.4	0.002	0.00048	0.00002	0.024	0.00001	0.000005
HC-3-128	30-Jul-13	128	500	485	7.91	144	150	25.6	0.5	0.8	35.0	2.6	0.07		0.002	0.00048	0.00002	0.024	0.00001	0.000005
HC-3-129	06-Aug-13	129	500	480	7.93	142	140	26.1	0.5	0.7	34.9	2.5	0.07		0.002	0.00048	0.00002	0.023	0.00001	0.000005
HC-3-130	13-Aug-13	130	500	480	7.97	144	140	26.7	0.5	0.6	34.8	2.3	0.07		0.002	0.00048	0.00002	0.023	0.00001	0.000005
HC-3-131	20-Aug-13	131	500	470	7.85	135	140	27.2	0.5	0.5	34.7	2.1	0.07	62.7	0.002	0.00048	0.00002	0.022	0.00001	0.000005
HC-3-132	27-Aug-13	132	500	485	7.94	140	130	27.5	0.5	0.5	36.7	2.0	0.07		0.001	0.00048	0.00003	0.023	0.00001	0.000005
HC-3-133	03-Sep-13	133	500	480	7.82	151	155	27.7	0.5	0.5	38.7	1.9	0.07		0.001	0.00048	0.00003	0.024	0.00001	0.000005
HC-3-134	10-Sep-13	134	500	490	7.88	150	150	28.0	0.5	0.5	40.7	1.7	0.07		0.001	0.00048	0.00003	0.025	0.00001	0.000005
HC-3-135	17-Sep-13	135	500	475	7.83	146	150	28.2	0.5	0.5	42.7	1.6	0.07	69.8	0.001	0.00049	0.00003	0.027	0.00001	0.000005
HC-3-136	24-Sep-13	136	500	480	7.81	146	135	27.9	0.5	0.5	43.0	1.8	0.07		0.001	0.00048	0.00003	0.027	0.00001	0.000005
HC-3-137	01-Oct-13	137	500	490	7.92	148	140	27.6	0.5	0.5	43.2	2.1	0.07		0.001	0.00048	0.00002	0.026	0.00001	0.000005
HC-3-138	08-Oct-13	138	500	480	7.84	144	145	27.2	0.5	0.5	43.5	2.3	0.06		0.001	0.00047	0.00002	0.026	0.00001	0.000005
HC-3-139	15-Oct-13	139	500	480	7.82	144	140	26.9	0.5	0.5	43.7	2.5	0.06	75.2	0.001	0.00047	0.00002	0.026	0.00001	0.000005
HC-3-140	22-Oct-13	140	500	480	7.83	157	145	27.1	0.5	0.5	43.6	2.1	0.06		0.001	0.00047	0.00002	0.026	0.00001	0.000005
HC-3-141	29-Oct-13	141	500	490	7.76	145	115	27.4	0.5	0.5	43.5	1.7	0.06		0.001	0.00046	0.00002	0.027	0.00001	0.000005
HC-3-142	05-Nov-13	142	500	475	7.89	148	135	27.6	0.5	0.5	43.4	1.3	0.06		0.002	0.00046	0.00002	0.027	0.00001	0.000005
HC-3-143	12-Nov-13	143	500	470	7.79	145	120	27.8	0.5	0.5	43.3	0.9	0.07	72.8	0.002	0.00046	0.00002	0.027	0.00001	0.000005
HC-3-144	19-Nov-13	144	500	475	7.67	143	135	27.9	0.5	0.5	43.2	1.0	0.06		0.002	0.00046	0.00002	0.027	0.00001	0.000005
HC-3-145	26-Nov-13	145	500	475	7.80	127	140	27.9	0.5	0.5	43.1	1.2	0.06		0.002	0.00047	0.00003	0.027	0.00001	0.000005
HC-3-146	03-Dec-13	146	500	485	7.88	167	135	28.0	0.5	0.5	42.9	1.3	0.06		0.002	0.00048	0.00003	0.027	0.00001	0.000005
HC-3-147	10-Dec-13	147	500	490	7.83	150	145	28.0	0.5	0.5	42.8	1.5	0.06	70.4	0.001	0.00049	0.00004	0.027	0.00001	0.000005
HC-3-148	17-Dec-13	148	500	480	7.94	145	140	29.0	0.5	0.5	43.7	1.3	0.06		0.001	0.00048	0.00003	0.026	0.00001	0.000005
HC-3-149	24-Dec-13	149	500	460	7.83	140	145	30.1	0.5	0.5	44.6	1.0	0.06		0.001	0.00047	0.00003	0.026	0.00001	0.000005
HC-3-150	31-Dec-13	150	500	485	7.83	157	130	31.1	0.5	0.5	45.4	0.8	0.06		0.001	0.00047	0.00003	0.026	0.00001	0.000005
HC-3-151	07-Jan-14	151	500	485	7.87	156	150	32.1	0.5	0.5	46.3	0.6	0.06	73.7	0.001	0.00046	0.00002	0.026	0.00001	0.000005
HC-3-152	14-Jan-14	152	500	485	7.92	154	140	32.2	0.5	0.5	47.0	0.7	0.06		0.001	0.00048	0.00002	0.026	0.00001	0.000005
HC-3-153	21-Jan-14	153	500	485	7.91	150	135	32.3	0.5	0.5	47.6	0.7	0.06		0.001	0.00049	0.00002	0.025	0.00001	0.000005
HC-3-154	28-Jan-14	154	500	490	7.82	150	130	32.4	0.5	0.5	48.3	0.8	0.07		0.001	0.00050	0.00002	0.025	0.00001	0.000005
HC-3-155	04-Feb-14	155	500	480	7.82	151	140	32.5	0.5	0.5	48.9	0.9	0.07	75.1	0.001	0.00052	0.00002	0.025	0.00001	0.000005
HC-3-156	11-Feb-14	156	500	495	7.86	154	140	31.3	0.5	0.6	48.5	0.9	0.07		0.001	0.00050	0.00002	0.025	0.00001	0.000005
HC-3-157	18-Feb-14	157	500	455	7.91	132	145	30.1	0.5	0.7	48.2	0.8	0.06		0.001	0.00049	0.00002	0.025	0.00001	0.000005
HC-3-158	25-Feb-14	158	500	485	7.84	138	140	28.8	0.5	0.8	47.8	0.7	0.06		0.001	0.00048	0.00002	0.025	0.00001	0.000005
HC-3-159	04-Mar-14	159	500	485	7.86	151	140	27.6	0.5	0.9	47.4	0.7	0.06	70.4	0.001	0.00046	0.00003	0.024	0.00001	0.000005
HC-3-160	11-Mar-14	160	500	485	7.91	143	145	27.0	0.5	0.8	45.3	0.7	0.06		0.003	0.00047	0.00002	0.024	0.00001	0.000005
HC-3-161	18-Mar-14	161	500	480	7.88	142	140	26.3	0.5	0.7	43.1	0.8	0.06		0.004	0.00048	0.00002	0.024	0.00001	0.000005
HC-3-162	25-Mar-14	162	500	495	7.82	136	140	25.7	0.5	0.6	41.0	0.8	0.05		0.006	0.00048	0.00002	0.024	0.00001	0.000005
HC-3-163	01-Apr-14	163	500	485	7.91	139	150	25.0	0.5	0.5	38.8	0.9	0.05	65.8	0.008	0.00049	0.00002	0.024	0.00001	0.000005
HC-3-164	08-Apr-14	164	500	495	7.89	149	145	25.3	0.5	0.5	40.6	0.9	0.06		0.006	0.00049	0.00002	0.024	0.00001	0.000005
HC-3-165	15-Apr-14	165	500	475	7.92	150	150	25.5	0.5	0.5	42.4	0.8	0.06		0.004	0.00049	0.00002	0.024	0.00001	0.000005
HC-3-166	22-Apr-14	166	500	480	7.89	150	150	25.8	0.5	0.5	44.2	0.8	0.06		0.003	0.00049	0.00003	0.024	0.00001	0.000005
HC-3-167	29-Apr-14	167	500	480	7.95	148	140	26.0	0.5	0.5	46.0	0.8	0.06	74.2	0.001	0.00049	0.00003	0.025	0.00001	0.000005
<b>Mean all weeks</b>					<b>8.05</b>	<b>167</b>	<b>131</b>	<b>20.7</b>	<b>0.5</b>	<b>0.6</b>	<b>41.8</b>	<b>8.6</b>	<b>0.15</b>	<b>40.3</b>	<b>0.015</b>	<b>0.00129</b>	<b>0.00017</b>	<b>0.043</b>	<b>0.00001</b>	<b>0.000005</b>

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity µS/cm	ORP mV	Sulphate (SO <sub>4</sub> <sup>2-</sup> ) mg/L	Acidity to pH 4.5 mg CaCO <sub>3</sub> /L	Acidity to pH 8.3 mg CaCO <sub>3</sub> /L	Total Alkalinity mg CaCO <sub>3</sub> /L	Chloride (Cl <sup>-</sup> ) mg/L	Fluoride (F <sup>-</sup> ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC5 Middle Gates D - CCR																				
HC-5-0	15-Feb-11	0	750	620	9.46	222	45	22.0	0.5	0.5	43.0	24.0	0.78	1.7	0.439	0.00886	0.02230	0.059	0.00003	0.000007
HC-5-1	22-Feb-11	1	500	495	9.12	341	50	54.0	0.5	0.5	77.0	13.0	0.88	2.0	0.200	0.00819	0.00943	0.068	0.00001	0.000005
HC-5-2	01-Mar-11	2	500	475	9.30	288	65	47.0	0.5	0.5	82.0	2.2	0.73	1.2	0.241	0.00698	0.00832	0.058	0.00001	0.000005
HC-5-3	08-Mar-11	3	500	475	9.33	249	45	34.0	0.5	0.5	79.0	0.5	0.58	1.1	0.219	0.00497	0.00664	0.049	0.00001	0.000005
HC-5-4	15-Mar-11	4	500	465	9.49	239	25	28.0	0.5	0.5	84.0	0.7	0.58	1.0	0.204	0.00453	0.00634	0.045	0.00001	0.000005
HC-5-5	22-Mar-11	5	500	485	9.20	212	40	21.0	0.5	0.5	78.0	0.6	0.44	1.4	0.153	0.00340	0.00414	0.049	0.00001	0.000005
HC-5-6	29-Mar-11	6	500	485	9.21	196	45	19.0	0.5	0.5	80.0	0.5	0.35	1.3	0.151	0.00306	0.00416	0.040	0.00001	0.000005
HC-5-7	05-Apr-11	7	500	500	9.15	185	65	16.0	0.5	0.5	72.0	0.5	0.30	1.4	0.134	0.00279	0.00322	0.037	0.00001	0.000005
HC-5-8	12-Apr-11	8	500	500	9.16	167	40	12.0	0.5	0.5	64.0	0.5	0.27	1.2	0.153	0.00231	0.00315	0.036	0.00001	0.000005
HC-5-9	19-Apr-11	9	500	500	9.23	160	20	12.0	0.5	0.5	63.0	0.6	0.25	1.6	0.136	0.00200	0.00264	0.044	0.00001	0.000005
HC-5-10	26-Apr-11	10	500	460	9.32	143	50	12.0	0.5	0.5	52.0	0.6	0.26	0.9	0.190	0.00167	0.00293	0.025	0.00001	0.000005
HC-5-11	03-May-11	11	500	485	9.20	143	75	13.0	0.5	0.5	55.0	0.0	0.20	1.4	0.156	0.00164	0.00210	0.034	0.00001	0.000005
HC-5-12	10-May-11	12	500	490	9.16	143	65	11.0	0.5	0.5	54.0	2.7	0.19	1.3	0.152	0.00150	0.00208	0.033	0.00001	0.000005
HC-5-13	17-May-11	13	500	460	9.23	144	85	8.3	0.5	0.5	51.0	7.2	0.17	1.4	0.108	0.00146	0.00197	0.030	0.00001	0.000005
HC-5-14	24-May-11	14	500	490	9.17	136	55	8.7	0.5	0.5	47.0	5.3	0.17	2.0	0.103	0.00119	0.00155	0.040	0.00001	0.000005
HC-5-15	31-May-11	15	500	475	9.27	131	70	8.2	0.5	0.5	46.0	4.3	0.16	1.6	0.096	0.00114	0.00162	0.029	0.00001	0.000005
HC-5-16	07-Jun-11	16	500	475	9.30	121	75	7.8	0.5	0.5	41.0	4.2	0.14	1.5	0.099	0.00098	0.00162	0.027	0.00001	0.000005
HC-5-17	14-Jun-11	17	500	470	9.25	124	100	7.3	0.5	0.5	39.0	6.8	0.11	1.8	0.080	0.00097	0.00130	0.028	0.00001	0.000005
HC-5-18	21-Jun-11	18	500	480	9.21	150	105	6.9	0.5	0.5	36.0	18.0	0.11	3.4	0.070	0.00087	0.00087	0.042	0.00001	0.000005
HC-5-19	28-Jun-11	19	500	450	9.03	145	115	6.2	0.5	0.5	39.0	17.0	0.11	3.9	0.057	0.00074	0.00072	0.036	0.00001	0.000005
HC-5-20	05-Jul-11	20	500	470	8.63	134	150	5.9	0.5	0.5	35.0	21.3	0.11		0.052	0.00067	0.00063	0.049	0.00001	0.000005
HC-5-21	12-Jul-11	21	500	475	9.04	120	125	5.7	0.5	0.5	31.0	25.5	0.11		0.046	0.00060	0.00055	0.063	0.00001	0.000005
HC-5-22	19-Jul-11	22	500	500	8.67	127	155	5.4	0.5	0.5	27.0	29.8	0.10		0.041	0.00053	0.00046	0.077	0.00001	0.000005
HC-5-23	26-Jul-11	23	500	480	8.50	178	165	5.1	0.5	0.5	23.0	34.0	0.10	13.3	0.035	0.00046	0.00037	0.091	0.00001	0.000005
HC-5-24	02-Aug-11	24	500	480	8.42	143	155	5.9	0.5	0.5	23.0	32.3	0.09		0.032	0.00044	0.00035	0.088	0.00001	0.000005
HC-5-25	09-Aug-11	25	500	500	8.46	119	160	6.6	0.5	0.5	23.0	30.5	0.09		0.029	0.00043	0.00033	0.085	0.00001	0.000005
HC-5-26	16-Aug-11	26	500	475	8.36	158	160	7.4	0.5	0.5	23.0	28.8	0.08		0.026	0.00041	0.00030	0.082	0.00001	0.000005
HC-5-27	23-Aug-11	27	500	490	8.20	163	160	8.1	0.5	0.5	23.0	27.0	0.07	22.5	0.023	0.00039	0.00028	0.079	0.00001	0.000005
HC-5-28	30-Aug-11	28	500	450	8.26	189	150	8.2	0.5	0.5	21.5	29.0	0.07		0.022	0.00036	0.00027	0.077	0.00001	0.000005
HC-5-29	06-Sep-11	29	500	465	8.11	137	140	8.3	0.5	0.5	20.0	31.0	0.07		0.020	0.00033	0.00027	0.076	0.00001	0.000005
HC-5-30	13-Sep-11	30	500	460	7.86	225	175	8.4	0.5	0.5	18.5	33.0	0.07		0.019	0.00029	0.00026	0.075	0.00001	0.000005
HC-5-31	20-Sep-11	31	500	455	7.66	190	150	8.5	0.5	0.5	17.0	35.0	0.07	38.9	0.017	0.00026	0.00025	0.074	0.00001	0.000005
HC-5-32	27-Sep-11	32	500	455	7.58	176	180	9.9	0.5	0.5	17.0	34.5	0.07		0.016	0.00025	0.00022	0.072	0.00001	0.000005
HC-5-33	04-Oct-11	33	500	470	7.45	222	140	11.3	0.5	0.5	17.0	34.0	0.07		0.015	0.00023	0.00019	0.070	0.00001	0.000005
HC-5-34	11-Oct-11	34	500	465	7.54	201	190	12.7	0.5	0.5	17.0	33.5	0.06		0.013	0.00022	0.00016	0.068	0.00001	0.000005
HC-5-35	18-Oct-11	35	500	450	7.61	208	160	14.1	0.5	0.5	17.0	33.0	0.06	52.6	0.012	0.00020	0.00013	0.066	0.00001	0.000005
HC-5-36	25-Oct-11	36	500	460	7.56	258	175	15.9	0.5	0.5	17.1	30.5	0.06		0.011	0.00020	0.00012	0.062	0.00001	0.000005
HC-5-37	01-Nov-11	37	500	460	7.49	260	220	17.7	0.5	0.5	17.3	28.0	0.06		0.010	0.00019	0.00011	0.059	0.00001	0.000005
HC-5-38	08-Nov-11	38	500	485	7.48	216	190	19.4	0.5	0.5	17.4	25.5	0.06		0.009	0.00019	0.00010	0.055	0.00001	0.000005
HC-5-39	15-Nov-11	39	500	480	7.61	184	200	21.2	0.5	0.5	17.5	23.0	0.06	54.1	0.008	0.00018	0.00009	0.051	0.00001	0.000005
HC-5-40	22-Nov-11	40	500	495	7.39	186	160	22.3	0.5	0.5	17.3	21.8	0.06		0.008	0.00018	0.00010	0.047	0.00001	0.000005
HC-5-41	29-Nov-11	41	500	485	7.53	164	140	23.4	0.5	0.5	17.1	20.5	0.06		0.009	0.00018	0.00011	0.044	0.00001	0.000005
HC-5-42	06-Dec-11	42	500	450	7.64	207	130	24.5	0.5	0.5	16.9	19.3	0.07		0.010	0.00017	0.00012	0.040	0.00001	0.000005
HC-5-43	13-Dec-11	43	500	465	7.53	176	120	25.6	0.5	0.5	16.7	18.0	0.07	52.1	0.010	0.00017	0.00013	0.036	0.00001	0.000005
HC-5-44	20-Dec-11	44	500	465	7.59	180	125	26.5	0.5	0.5	16.4	15.8	0.07		0.011	0.00017	0.00012	0.034	0.00001	0.000005
HC-5-45	27-Dec-11	45	500	475	7.51	172	130	27.4	0.5	0.5	16.0	13.6	0.07		0.011	0.00016	0.00011	0.033	0.00001	0.000005
HC-5-46	03-Jan-12	46	500	475	7.47	137	130	28.3	0.5	0.5	15.7	11.3	0.07		0.011	0.00016	0.00009	0.031	0.00001	0.000005
HC-5-47	10-Jan-12	47	500	445	7.70	143	125	29.2	0.5	0.5	15.3	9.1	0.07	50.9	0.011	0.00015	0.00008	0.030	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity $\mu\text{S/cm}$	ORP mV	Sulphate ( $\text{SO}_4^{2-}$ ) mg/L	Acidity to pH 4.5 mg $\text{CaCO}_3/\text{L}$	Acidity to pH 8.3 mg $\text{CaCO}_3/\text{L}$	Total Alkalinity mg $\text{CaCO}_3/\text{L}$	Chloride ( $\text{Cl}^-$ ) mg/L	Fluoride ( $\text{F}^-$ ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC-5-48	17-Jan-12	48	500	470	7.64	142	115	28.8	0.5	0.5	16.7	8.2	0.07		0.010	0.00015	0.00009	0.030	0.00001	0.000005
HC-5-49	24-Jan-12	49	500	465	7.74	153	130	28.4	0.5	0.5	18.0	7.2	0.07		0.009	0.00015	0.00009	0.030	0.00001	0.000005
HC-5-50	31-Jan-12	50	500	465	7.63	150	125	28.0	0.5	0.5	19.4	6.3	0.07		0.008	0.00014	0.00010	0.030	0.00001	0.000005
HC-5-51	07-Feb-12	51	500	475	7.65	154	120	27.6	0.5	0.5	20.7	5.3	0.07	53.5	0.008	0.00014	0.00010	0.030	0.00001	0.000005
HC-5-52	14-Feb-12	52	500	460	7.67	136	125	29.2	0.5	0.6	19.8	5.0	0.06		0.008	0.00014	0.00010	0.028	0.00001	0.000005
HC-5-53	21-Feb-12	53	500	460	7.66	139	120	30.7	0.5	0.6	18.9	4.6	0.06		0.008	0.00014	0.00011	0.026	0.00001	0.000005
HC-5-54	28-Feb-12	54	500	470	7.70	148	125	32.3	0.5	0.7	18.0	4.3	0.06		0.008	0.00014	0.00011	0.024	0.00001	0.000005
HC-5-55	06-Mar-12	55	500	455	7.72	148	125	33.8	0.5	0.7	17.1	3.9	0.06	48.9	0.008	0.00014	0.00011	0.022	0.00001	0.000005
HC-5-56	13-Mar-12	56	500	465	7.78	151	130	33.5	0.5	0.7	17.0	3.4	0.06		0.008	0.00013	0.00011	0.023	0.00001	0.000005
HC-5-57	20-Mar-12	57	500	465	7.60	138	120	33.2	0.5	0.7	16.9	2.9	0.05		0.007	0.00013	0.00012	0.024	0.00001	0.000005
HC-5-58	27-Mar-12	58	500	470	7.77	142	125	32.8	0.5	0.7	16.8	2.3	0.05		0.007	0.00012	0.00012	0.025	0.00001	0.000005
HC-5-59	03-Apr-12	59	500	470	7.78	140	125	32.5	0.5	0.7	16.7	1.8	0.05	50.4	0.006	0.00011	0.00012	0.026	0.00001	0.000005
HC-5-60	10-Apr-12	60	500	475	7.75	145	130	33.8	0.5	1.0	16.2	1.7	0.05		0.007	0.00011	0.00011	0.024	0.00001	0.000005
HC-5-61	17-Apr-12	61	500	450	7.68	133	135	35.2	0.5	1.3	15.6	1.6	0.05		0.007	0.00011	0.00010	0.022	0.00001	0.000005
HC-5-62	24-Apr-12	62	500	440	7.63	147	130	36.5	0.5	1.6	15.1	1.4	0.05		0.007	0.00011	0.00009	0.020	0.00001	0.000005
HC-5-63	01-May-12	63	500	445	7.53	138	125	37.8	0.5	1.9	14.5	1.3	0.05	56.6	0.008	0.00011	0.00007	0.018	0.00001	0.000005
HC-5-64	08-May-12	64	500	460	7.55	152	125	39.6	0.5	1.5	14.4	1.4	0.05		0.008	0.00010	0.00008	0.017	0.00001	0.000005
HC-5-65	15-May-12	65	500	440	7.78	163	125	41.4	0.5	1.2	14.2	1.6	0.05		0.008	0.00010	0.00009	0.017	0.00001	0.000005
HC-5-66	22-May-12	66	500	465	7.71	159	130	43.2	0.5	0.8	14.1	1.7	0.05		0.008	0.00009	0.00010	0.016	0.00001	0.000005
HC-5-67	29-May-12	67	500	460	7.64	169	125	45.0	0.5	0.5	13.9	1.8	0.05	61.1	0.008	0.00009	0.00011	0.016	0.00001	0.000005
HC-5-68	05-Jun-12	68	500	460	7.65	157	125	45.6	0.5	0.5	14.5	1.9	0.05		0.008	0.00009	0.00010	0.016	0.00001	0.000005
HC-5-69	12-Jun-12	69	500	460	7.72	160	130	46.2	0.5	0.5	15.0	1.9	0.05		0.007	0.00009	0.00010	0.017	0.00001	0.000005
HC-5-70	19-Jun-12	70	500	485	7.79	162	130	46.8	0.5	0.5	15.6	2.0	0.05		0.007	0.00009	0.00009	0.017	0.00001	0.000005
HC-5-71	26-Jun-12	71	500	470	7.76	164	135	47.4	0.5	0.5	16.1	2.0	0.05	64.4	0.006	0.00009	0.00009	0.017	0.00001	0.000005
HC-5-72	03-Jul-12	72	500	465	7.57	155	135	49.0	0.5	0.5	15.7	2.1	0.04		0.006	0.00009	0.00008	0.017	0.00001	0.000005
HC-5-73	10-Jul-12	73	500	465	7.71	154	135	50.6	0.5	0.5	15.4	2.3	0.04		0.007	0.00009	0.00008	0.017	0.00001	0.000005
HC-5-74	17-Jul-12	74	500	440	7.62	172	135	52.2	0.5	0.5	15.0	2.4	0.04		0.007	0.00009	0.00008	0.016	0.00001	0.000005
HC-5-75	24-Jul-12	75	500	445	7.58	179	140	53.8	0.5	0.5	14.6	2.5	0.04	75.8	0.007	0.00009	0.00008	0.016	0.00001	0.000005
HC-5-76	31-Jul-12	76	500	450	7.64	191	135	53.6	0.5	0.5	14.7	2.4	0.04		0.009	0.00009	0.00007	0.015	0.00001	0.000005
HC-5-77	07-Aug-12	77	500	465	7.63	184	150	53.4	0.5	0.5	14.9	2.4	0.04		0.011	0.00008	0.00007	0.015	0.00001	0.000005
HC-5-78	14-Aug-12	78	500	480	7.69	192	145	53.1	0.5	0.5	15.0	2.3	0.04		0.013	0.00008	0.00007	0.014	0.00001	0.000005
HC-5-79	21-Aug-12	79	500	460	7.64	178	135	52.9	0.5	0.5	15.1	2.2	0.04	72.6	0.015	0.00007	0.00006	0.013	0.00001	0.000005
HC-5-80	28-Aug-12	80	500	455	7.66	190	135	53.5	0.5	0.5	15.2	2.5	0.04		0.013	0.00007	0.00007	0.014	0.00001	0.000005
HC-5-81	04-Sep-12	81	500	475	7.61	198	140	54.2	0.5	0.5	15.3	2.7	0.04		0.011	0.00007	0.00009	0.014	0.00001	0.000005
HC-5-82	11-Sep-12	82	500	480	7.65	201	145	54.8	0.5	0.5	15.3	3.0	0.04		0.010	0.00007	0.00010	0.015	0.00001	0.000005
HC-5-83	18-Sep-12	83	500	490	7.61	202	145	55.4	0.5	0.5	15.4	3.2	0.04	80.1	0.008	0.00007	0.00011	0.015	0.00001	0.000005
HC-5-84	25-Sep-12	84	500	460	7.63	193	135	56.7	0.5	0.5	15.1	3.0	0.04		0.007	0.00007	0.00009	0.015	0.00001	0.000005
HC-5-85	02-Oct-12	85	500	465	7.75	196	135	58.0	0.5	0.5	14.8	2.9	0.03		0.006	0.00006	0.00008	0.015	0.00001	0.000005
HC-5-86	09-Oct-12	86	500	485	7.61	193	135	59.3	0.5	0.5	14.5	2.7	0.03		0.005	0.00005	0.00006	0.015	0.00001	0.000005
HC-5-87	16-Oct-12	87	500	470	7.63	193	125	60.6	0.5	0.5	14.2	2.5	0.03	76.3	0.004	0.00005	0.00005	0.015	0.00001	0.000005
HC-5-88	23-Oct-12	88	500	470	7.62	201	130	62.2	0.5	0.5	14.2	2.4	0.03		0.004	0.00005	0.00005	0.015	0.00001	0.000005
HC-5-89	30-Oct-12	89	500	460	7.66	210	140	63.7	0.5	0.5	14.1	2.3	0.04		0.004	0.00005	0.00005	0.014	0.00001	0.000005
HC-5-90	06-Nov-12	90	500	470	7.61	195	155	65.3	0.5	0.5	14.1	2.2	0.04		0.004	0.00005	0.00005	0.014	0.00001	0.000005
HC-5-91	13-Nov-12	91	500	455	7.49	201	125	66.8	0.5	0.5	14.0	2.1	0.04	84.7	0.004	0.00006	0.00005	0.014	0.00001	0.000005
HC-5-92	20-Nov-12	92	500	460	7.52	205	125	68.1	0.5	0.5	13.8	2.0	0.04		0.005	0.00006	0.00006	0.013	0.00001	0.000005
HC-5-93	27-Nov-12	93	500	475	7.50	205	125	69.3	0.5	0.5	13.6	2.0	0.04		0.005	0.00006	0.00007	0.012	0.00001	0.000005
HC-5-94	04-Dec-12	94	500	465	7.52	202	130	70.6	0.5	0.5	13.4	1.9	0.04		0.005	0.00006	0.00007	0.012	0.00001	0.000005
HC-5-95	11-Dec-12	95	500	470	7.57	210	135	71.8	0.5	0.5	13.2	1.8	0.04	84.9	0.005	0.00006	0.00008	0.011	0.00001	0.000005
HC-5-96	18-Dec-12	96	500	470	7.49	195	140	72.2	0.5	0.5	13.2	1.6	0.04		0.005	0.00005	0.00013	0.011	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-5-97	25-Dec-12	97	500	480	7.44	190	130	72.6	0.5	0.5	13.2	1.4	0.03		0.004	0.00005	0.00018	0.011	0.00001	0.000005
HC-5-98	01-Jan-13	98	500	460	7.37	209	115	73.0	0.5	0.5	13.1	1.2	0.03		0.004	0.00004	0.00022	0.012	0.00001	0.000005
HC-5-99	08-Jan-13	99	500	470	7.49	212	120	73.4	0.5	0.5	13.1	1.0	0.03	90.0	0.004	0.00004	0.00027	0.012	0.00001	0.000005
HC-5-100	15-Jan-13	100	500	470	7.48	207	115	72.4	0.5	0.5	13.6	1.1	0.03		0.004	0.00004	0.00024	0.011	0.00001	0.000005
HC-5-101	22-Jan-13	101	500	465	7.36	205	135	71.5	0.5	0.5	14.1	1.2	0.03		0.004	0.00005	0.00020	0.011	0.00001	0.000005
HC-5-102	29-Jan-13	102	500	465	7.42	202	120	70.5	0.5	0.5	14.6	1.3	0.03		0.004	0.00005	0.00017	0.010	0.00001	0.000005
HC-5-103	05-Feb-13	103	500	470	7.44	170	135	69.5	0.5	0.5	15.1	1.4	0.03	83.0	0.004	0.00006	0.00014	0.010	0.00001	0.000005
HC-5-104	12-Feb-13	104	500	475	7.46	189	140	69.4	0.5	0.8	15.5	1.2	0.03		0.004	0.00005	0.00012	0.010	0.00001	0.000005
HC-5-105	19-Feb-13	105	500	455	7.56	207	130	69.3	0.5	1.0	16.0	1.1	0.03		0.004	0.00005	0.00010	0.010	0.00001	0.000005
HC-5-106	26-Feb-13	106	500	485	7.54	201	150	69.2	0.5	1.3	16.4	0.9	0.03		0.004	0.00005	0.00008	0.011	0.00001	0.000005
HC-5-107	05-Mar-13	107	500	475	7.61	204	130	69.1	0.5	1.5	16.8	0.8	0.03	90.3	0.004	0.00005	0.00007	0.011	0.00001	0.000005
HC-5-108	12-Mar-13	108	500	475	7.51	199	140	68.8	0.5	1.3	16.9	1.0	0.03		0.004	0.00005	0.00006	0.011	0.00001	0.000005
HC-5-109	19-Mar-13	109	500	470	7.52	197	150	68.5	0.5	1.0	17.0	1.1	0.03		0.003	0.00005	0.00005	0.011	0.00001	0.000005
HC-5-110	26-Mar-13	110	500	475	7.59	212	130	68.2	0.5	0.8	17.1	1.3	0.03		0.003	0.00004	0.00004	0.011	0.00001	0.000005
HC-5-111	02-Apr-13	111	500	480	7.58	193	150	67.9	0.5	0.5	17.2	1.5	0.03	84.4	0.003	0.00004	0.00004	0.011	0.00001	0.000005
HC-5-112	09-Apr-13	112	500	460	7.50	199	150	71.0	0.5	0.5	16.3	1.4	0.03		0.003	0.00004	0.00004	0.010	0.00001	0.000005
HC-5-113	16-Apr-13	113	500	460	7.52	198	140	74.1	0.5	0.5	15.4	1.4	0.03		0.003	0.00004	0.00003	0.010	0.00001	0.000005
HC-5-114	23-Apr-13	114	500	460	7.47	201	135	77.1	0.5	0.5	14.5	1.3	0.03		0.003	0.00004	0.00003	0.010	0.00001	0.000005
HC-5-115	30-Apr-13	115	500	460	7.50	203	130	80.2	0.5	0.5	13.6	1.2	0.03	91.2	0.003	0.00004	0.00003	0.010	0.00001	0.000005
HC-5-116	07-May-13	116	500	465	7.49	207	130	79.5	0.5	0.5	13.9	1.3	0.03		0.003	0.00004	0.00004	0.009	0.00001	0.000005
HC-5-117	14-May-13	117	500	475	7.46	217	130	78.7	0.5	0.5	14.1	1.4	0.03		0.002	0.00004	0.00005	0.009	0.00001	0.000005
HC-5-118	21-May-13	118	500	470	7.36	196	130	78.0	0.5	0.5	14.4	1.5	0.03		0.002	0.00004	0.00006	0.009	0.00001	0.000005
HC-5-119	28-May-13	119	500	475	7.40	204	140	77.2	0.5	0.5	14.6	1.6	0.03	88.2	0.002	0.00004	0.00008	0.009	0.00001	0.000005
HC-5-120	04-Jun-13	120	500	480	7.47	213	145	77.7	0.5	0.5	14.0	1.6	0.03		0.002	0.00004	0.00006	0.009	0.00001	0.000005
HC-5-121	11-Jun-13	121	500	465	7.50	215	135	78.2	0.5	0.5	13.4	1.6	0.03		0.002	0.00004	0.00005	0.009	0.00001	0.000005
HC-5-122	18-Jun-13	122	500	465	7.61	209	140	78.6	0.5	0.5	12.8	1.5	0.03		0.002	0.00004	0.00003	0.009	0.00001	0.000005
HC-5-123	25-Jun-13	123	500	450	7.51	201	150	79.1	0.5	0.5	12.2	1.5	0.03	89.4	0.002	0.00004	0.00002	0.008	0.00001	0.000005
HC-5-124	02-Jul-13	124	500	470	7.57	222	140	79.8	0.5	0.5	12.3	1.5	0.03		0.003	0.00004	0.00002	0.008	0.00001	0.000005
HC-5-125	09-Jul-13	125	500	460	7.49	209	150	80.6	0.5	0.6	12.4	1.5	0.03		0.003	0.00004	0.00002	0.008	0.00001	0.000005
HC-5-126	16-Jul-13	126	500	465	7.49	213	155	81.3	0.5	0.6	12.5	1.4	0.02		0.003	0.00004	0.00003	0.008	0.00001	0.000005
HC-5-127	23-Jul-13	127	500	470	7.50	212	145	82.0	0.5	0.6	12.6	1.4	0.02	92.3	0.003	0.00004	0.00003	0.008	0.00001	0.000005
HC-5-128	30-Jul-13	128	500	475	7.62	219	155	82.8	0.5	0.6	13.3	1.4	0.03		0.003	0.00004	0.00003	0.008	0.00001	0.000005
HC-5-129	06-Aug-13	129	500	470	7.57	216	150	83.5	0.5	0.6	14.0	1.3	0.03		0.003	0.00004	0.00003	0.008	0.00001	0.000005
HC-5-130	13-Aug-13	130	500	455	7.48	214	145	84.3	0.5	0.5	14.6	1.3	0.03		0.003	0.00004	0.00004	0.009	0.00001	0.000005
HC-5-131	20-Aug-13	131	500	455	7.29	216	145	85.0	0.5	0.5	15.3	1.2	0.03	92.9	0.002	0.00005	0.00004	0.009	0.00001	0.000005
HC-5-132	27-Aug-13	132	500	460	7.43	204	135	84.7	0.5	0.5	15.5	1.1	0.03		0.002	0.00004	0.00004	0.009	0.00001	0.000005
HC-5-133	03-Sep-13	133	500	470	7.40	223	160	84.4	0.5	0.5	15.7	1.1	0.03		0.002	0.00004	0.00005	0.009	0.00001	0.000005
HC-5-134	10-Sep-13	134	500	460	7.58	217	155	84.1	0.5	0.5	15.8	1.0	0.03		0.002	0.00004	0.00005	0.009	0.00001	0.000005
HC-5-135	17-Sep-13	135	500	470	7.24	222	140	83.8	0.5	0.5	16.0	0.9	0.03	102.0	0.002	0.00004	0.00006	0.009	0.00001	0.000005
HC-5-136	24-Sep-13	136	500	460	7.21	217	140	83.7	0.5	0.5	15.5	1.1	0.03		0.002	0.00004	0.00005	0.009	0.00001	0.000005
HC-5-137	01-Oct-13	137	500	475	7.29	213	135	83.5	0.5	0.5	14.9	1.3	0.03		0.002	0.00004	0.00004	0.009	0.00001	0.000005
HC-5-138	08-Oct-13	138	500	470	7.51	210	150	83.4	0.5	0.5	14.4	1.5	0.02		0.002	0.00004	0.00003	0.009	0.00001	0.000005
HC-5-139	15-Oct-13	139	500	465	7.35	217	140	83.2	0.5	0.5	13.8	1.7	0.02	103.0	0.002	0.00004	0.00002	0.009	0.00001	0.000005
HC-5-140	22-Oct-13	140	500	470	7.43	216	150	84.8	0.5	0.5	14.2	1.4	0.02		0.002	0.00004	0.00002	0.009	0.00001	0.000005
HC-5-141	29-Oct-13	141	500	475	7.40	235	120	86.3	0.5	0.5	14.6	1.1	0.02		0.002	0.00003	0.00002	0.009	0.00001	0.000005
HC-5-142	05-Nov-13	142	500	465	7.55	216	130	87.9	0.5	0.5	14.9	0.9	0.03		0.002	0.00003	0.00002	0.009	0.00001	0.000005
HC-5-143	12-Nov-13	143	500	475	7.22	216	135	89.4	0.5	0.5	15.3	0.6	0.03	106.0	0.002	0.00003	0.00002	0.009	0.00001	0.000005
HC-5-144	19-Nov-13	144	500	465	7.24	218	140	89.5	0.5	0.5	15.2	0.7	0.03		0.002	0.00003	0.00003	0.009	0.00001	0.000005
HC-5-145	26-Nov-13	145	500	485	7.60	217	150	89.6	0.5	0.5	15.0	0.8	0.03		0.002	0.00003	0.00003	0.008	0.00001	0.000005



Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
					pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-5-146	03-Dec-13	146	500	460	7.40	232	150	89.7	0.5	0.5	14.9	0.9	0.02		0.002	0.00003	0.00004	0.008	0.00001	0.000005
HC-5-147	10-Dec-13	147	500	465	7.42	225	140	89.8	0.5	0.5	14.7	1.0	0.02	101.0	0.002	0.00003	0.00005	0.008	0.00001	0.000005
HC-5-148	17-Dec-13	148	500	470	7.56	219	140	89.9	0.5	0.5	14.4	0.9	0.02		0.002	0.00003	0.00004	0.008	0.00001	0.000005
HC-5-149	24-Dec-13	149	500	465	7.39	222	150	90.0	0.5	0.5	14.1	0.9	0.02		0.002	0.00004	0.00003	0.008	0.00001	0.000005
HC-5-150	31-Dec-13	150	500	475	7.33	222	150	90.1	0.5	0.5	13.8	0.8	0.02		0.002	0.00004	0.00003	0.008	0.00001	0.000005
HC-5-151	07-Jan-14	151	500	465	7.32	224	145	90.2	0.5	0.5	13.5	0.8	0.03	99.6	0.002	0.00004	0.00002	0.008	0.00001	0.000005
HC-5-152	14-Jan-14	152	500	470	7.53	222	145	89.4	0.5	0.5	13.2	1.1	0.03		0.002	0.00004	0.00002	0.007	0.00001	0.000005
HC-5-153	21-Jan-14	153	500	475	7.35	219	150	88.7	0.5	0.5	13.0	1.3	0.03		0.002	0.00004	0.00002	0.007	0.00001	0.000005
HC-5-154	28-Jan-14	154	500	470	7.44	213	140	87.9	0.5	0.5	12.7	1.6	0.03		0.002	0.00004	0.00002	0.007	0.00001	0.000005
HC-5-155	04-Feb-14	155	500	460	7.36	209	160	87.1	0.5	0.5	12.4	1.9	0.03	95.3	0.002	0.00004	0.00002	0.007	0.00001	0.000005
HC-5-156	11-Feb-14	156	500	475	7.39	223	135	84.9	0.5	0.5	12.7	1.6	0.03		0.002	0.00004	0.00002	0.007	0.00001	0.000005
HC-5-157	18-Feb-14	157	500	470	7.47	211	160	82.8	0.5	0.5	13.1	1.3	0.03		0.002	0.00003	0.00002	0.007	0.00001	0.000005
HC-5-158	25-Feb-14	158	500	480	7.32	213	145	80.6	0.5	0.5	13.4	1.0	0.03		0.002	0.00003	0.00003	0.007	0.00001	0.000005
HC-5-159	04-Mar-14	159	500	475	7.30	209	150	78.4	0.5	0.5	13.7	0.7	0.03	93.0	0.002	0.00003	0.00003	0.007	0.00001	0.000005
HC-5-160	11-Mar-14	160	500	470	7.43	209	155	78.9	0.5	0.5	13.7	0.9	0.02		0.002	0.00003	0.00003	0.007	0.00001	0.000005
HC-5-161	18-Mar-14	161	500	475	7.48	213	150	79.5	0.5	0.5	13.8	1.1	0.02		0.002	0.00003	0.00002	0.008	0.00001	0.000005
HC-5-162	25-Mar-14	162	500	475	7.40	208	155	80.0	0.5	0.5	13.8	1.3	0.02		0.002	0.00003	0.00002	0.008	0.00001	0.000005
HC-5-163	01-Apr-14	163	500	470	7.51	218	150	80.5	0.5	0.5	13.8	1.5	0.02	98.6	0.002	0.00003	0.00002	0.008	0.00001	0.000005
HC-5-164	08-Apr-14	164	500	475	7.40	219	155	82.2	0.5	0.5	13.0	1.5	0.02		0.002	0.00003	0.00002	0.008	0.00001	0.000005
HC-5-165	15-Apr-14	165	500	470	7.40	215	160	84.0	0.5	0.5	12.2	1.4	0.03		0.002	0.00003	0.00002	0.008	0.00001	0.000005
HC-5-166	22-Apr-14	166	500	480	7.40	217	160	85.7	0.5	0.5	11.3	1.4	0.03		0.002	0.00003	0.00003	0.007	0.00001	0.000005
HC-5-167	29-Apr-14	167	500	465	7.38	211	150	87.4	0.5	0.5	10.5	1.3	0.03	100.0	0.002	0.00003	0.00003	0.007	0.00001	0.000005
<b>Mean all weeks</b>					<b>7.79</b>	<b>190</b>	<b>132</b>	<b>52.6</b>	<b>0.5</b>	<b>0.6</b>	<b>20.8</b>	<b>6.3</b>	<b>0.08</b>	<b>49.6</b>	<b>0.025</b>	<b>0.00044</b>	<b>0.00060</b>	<b>0.024</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC13 Middle Gates F - Raw Coal</b>																				
HC-13-0	29-May-12	0	750	635	9.34	84	125	2.6	0.5	0.6	33.9	0.8	0.13	2.7	0.307	0.00051	0.00469	0.320	0.00001	0.000005
HC-13-1	05-Jun-12	1	500	475	9.12	190	100	5.6	0.5	0.5	80.8	2.2	0.52	2.6	0.166	0.00291	0.00640	0.347	0.00001	0.000005
HC-13-2	12-Jun-12	2	500	455	9.30	214	75	5.1	0.5	0.5	95.0	1.7	0.52	2.0	0.144	0.00291	0.00559	0.270	0.00001	0.000005
HC-13-3	19-Jun-12	3	500	465	9.18	206	75	3.9	0.5	0.5	97.5	1.6	0.49	2.0	0.137	0.00291	0.00411	0.228	0.00001	0.000005
HC-13-4	26-Jun-12	4	500	450	9.14	197	70	3.5	0.5	0.5	93.9	1.2	0.43	2.2	0.120	0.00256	0.00347	0.241	0.00001	0.000005
HC-13-5	03-Jul-12	5	500	485	8.99	165	70	2.4	0.5	0.5	80.9	1.5	0.35	3.0	0.084	0.00238	0.00244	0.304	0.00001	0.000005
HC-13-6	10-Jul-12	6	500	455	9.07	149	80	2.3	0.5	0.5	72.0	1.1	0.29	3.0	0.103	0.00197	0.00228	0.292	0.00001	0.000005
HC-13-7	17-Jul-12	7	500	470	9.04	167	100	2.5	0.5	0.5	76.1	1.0	0.29	3.1	0.089	0.00197	0.00215	0.342	0.00001	0.000005
HC-13-8	24-Jul-12	8	500	460	9.13	162	85	3.7	0.5	0.5	77.5	1.1	0.28	3.7	0.094	0.00204	0.00221	0.333	0.00001	0.000005
HC-13-9	31-Jul-12	9	500	455	9.03	162	115	1.3	0.5	0.5	74.2	0.8	0.27	4.1	0.084	0.00177	0.00190	0.359	0.00001	0.000005
HC-13-10	07-Aug-12	10	500	455	8.93	168	120	2.0	0.5	0.5	84.1	0.5	0.28	5.2	0.075	0.00188	0.00193	0.433	0.00001	0.000005
HC-13-11	14-Aug-12	11	500	455	8.87	198	105	1.8	0.5	0.5	93.6	0.9	0.32	5.6	0.074	0.00231	0.00213	0.492	0.00001	0.000005
HC-13-12	21-Aug-12	12	500	480	8.58	167	120	1.5	0.5	0.5	82.5	0.7	0.21	9.1	0.071	0.00150	0.00140	0.755	0.00005	0.000025
HC-13-13	28-Aug-12	13	500	500	8.58	160	105	1.5	0.5	0.5	78.8	0.8	0.22	10.2	0.075	0.00153	0.00117	0.808	0.00001	0.000005
HC-13-14	04-Sep-12	14	500	425	8.38	176	115	2.4	0.5	0.5	85.3	1.0	0.23	14.7	0.048	0.00177	0.00108	1.200	0.00005	0.000025
HC-13-15	11-Sep-12	15	500	500	8.55	161	120	1.6	0.5	0.5	74.8	0.8	0.18	16.8	0.037	0.00125	0.00089	1.180	0.00005	0.000025
HC-13-16	18-Sep-12	16	500	465	8.56	138	115	0.6	0.5	0.5	67.8	0.8	0.17	14.6	0.042	0.00125	0.00073	1.080	0.00005	0.000025
HC-13-17	25-Sep-12	17	500	470	8.70	144	115	1.7	0.5	0.5	68.9	0.5	0.19	15.2	0.052	0.00138	0.00123	1.230	0.00005	0.000025
HC-13-18	02-Oct-12	18	500	475	8.57	110	120	1.2	0.5	0.5	54.7	0.8	0.13	16.3	0.039	0.00139	0.00065	1.220	0.00005	0.000025
HC-13-19	09-Oct-12	19	500	445	8.18	149	120	1.6	0.5	0.5	73.1	0.6	0.18	23.7	0.087	0.00132	0.00090	1.750	0.00005	0.000025
HC-13-20	16-Oct-12	20	500	460	8.36	119	120	1.5	0.5	0.5	68.2	0.6	0.15		0.065	0.00116	0.00074	1.761	0.00005	0.000025
HC-13-21	23-Oct-12	21	500	475	8.48	125	115	1.5	0.5	0.5	66.6	0.6	0.15		0.058	0.00111	0.00069	1.765	0.00005	0.000025
HC-13-22	30-Oct-12	22	500	480	8.47	120	120	1.5	0.5	0.5	63.3	0.5	0.13		0.044	0.00101	0.00058	1.773	0.00005	0.000025
HC-13-23	06-Nov-12	23	500	470	8.44	120	120	1.4	0.5	0.5	60.0	0.5	0.11	28.7	0.029	0.00090	0.00047	1.780	0.00005	0.000025
HC-13-24	13-Nov-12	24	500	465	8.29	133	120	1.3	0.5	0.5	57.5	1.0	0.10		0.028	0.00084	0.00041	1.863	0.00005	0.000025

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH pH Units	Conductivity $\mu$ S/cm	ORP mV	Sulphate (SO <sub>4</sub> <sup>2-</sup> ) mg/L	Acidity to pH 4.5 mg CaCO <sub>3</sub> /L	Acidity to pH 8.3 mg CaCO <sub>3</sub> /L	Total Alkalinity mg CaCO <sub>3</sub> /L	Chloride (Cl <sup>-</sup> ) mg/L	Fluoride (F <sup>-</sup> ) mg/L	Hardness mg/L	Aluminum (Al) mg/L	Antimony (Sb) mg/L	Arsenic (As) mg/L	Barium (Ba) mg/L	Beryllium (Be) mg/L	Bismuth (Bi) mg/L
HC-13-25	20-Nov-12	25	500	475	8.24	127	120	1.2	0.5	0.5	56.7	1.1	0.10		0.028	0.00083	0.00040	1.890	0.00005	0.000025
HC-13-26	27-Nov-12	26	500	465	8.27	117	120	1.1	0.5	0.5	55.1	1.4	0.09		0.027	0.00079	0.00036	1.945	0.00005	0.000025
HC-13-27	04-Dec-12	27	500	455	8.32	108	125	1.0	0.5	0.5	53.4	1.7	0.09	30.6	0.026	0.00075	0.00032	2.000	0.00005	0.000025
HC-13-28	11-Dec-12	28	500	455	8.47	117	115	1.1	0.5	0.5	57.2	2.0	0.08		0.022	0.00072	0.00037	2.263	0.00005	0.000025
HC-13-29	18-Dec-12	29	500	495	8.26	123	120	1.1	0.5	0.5	58.5	2.1	0.08		0.020	0.00071	0.00039	2.350	0.00005	0.000025
HC-13-30	25-Dec-12	30	500	460	8.14	121	120	1.1	0.5	0.5	61.0	2.3	0.08		0.017	0.00068	0.00042	2.525	0.00005	0.000025
HC-13-31	01-Jan-13	31	500	460	8.15	133	115	1.1	0.5	0.5	63.5	2.5	0.08	41.1	0.015	0.00066	0.00045	2.700	0.00005	0.000025
HC-13-32	08-Jan-13	32	500	480	8.14	127	110	0.9	0.5	0.5	62.3	2.5	0.08		0.014	0.00156	0.00050	2.783	0.00005	0.000025
HC-13-33	15-Jan-13	33	500	480	8.25	106	105	0.8	0.5	0.5	61.9	2.5	0.08		0.014	0.00186	0.00051	2.810	0.00005	0.000025
HC-13-34	22-Jan-13	34	500	440	8.00	120	115	0.7	0.5	0.5	61.0	2.5	0.08		0.014	0.00245	0.00054	2.865	0.00005	0.000025
HC-13-35	29-Jan-13	35	500	495	8.20	125	115	0.5	0.5	0.5	60.2	2.5	0.08	41.9	0.014	0.00305	0.00057	2.920	0.00005	0.000025
HC-13-36	05-Feb-13	36	500	465	8.15	103	125	0.6	0.5	0.5	58.0	2.5	0.07		0.015	0.00209	0.00039	2.939	0.00005	0.000025
HC-13-37	12-Feb-13	37	500	470	8.11	108	120	0.7	0.5	0.5	57.3	2.6	0.07		0.016	0.00178	0.00034	2.945	0.00005	0.000025
HC-13-38	19-Feb-13	38	500	460	8.31	121	110	0.8	0.5	0.5	55.8	2.6	0.07		0.017	0.00114	0.00022	2.958	0.00005	0.000025
HC-13-39	26-Feb-13	39	500	485	8.07	115	130	0.8	0.5	0.5	54.3	2.6	0.06	43.5	0.018	0.00050	0.00010	2.970	0.00005	0.000025
HC-13-40	05-Mar-13	40	500	440	8.15	107	120	1.0	0.5	0.5	58.7	2.8	0.06		0.015	0.00052	0.00016	3.270	0.00005	0.000025
HC-13-41	12-Mar-13	41	500	480	8.09	114	140	1.1	0.5	0.5	60.2	2.9	0.07		0.014	0.00052	0.00019	3.370	0.00005	0.000025
HC-13-42	19-Mar-13	42	500	465	8.03	103	140	1.2	0.5	0.5	63.1	3.0	0.07		0.013	0.00053	0.00023	3.570	0.00005	0.000025
HC-13-43	26-Mar-13	43	500	455	8.07	146	120	1.3	0.5	0.5	66.0	3.1	0.07	52.5	0.011	0.00054	0.00027	3.770	0.00005	0.000025
HC-13-44	02-Apr-13	44	500	490	8.16	119	140	1.2	0.5	0.5	60.6	2.8	0.06		0.010	0.00048	0.00026	3.481	0.00005	0.000025
HC-13-45	09-Apr-13	45	500	455	8.17	121	140	1.1	0.5	0.5	58.8	2.8	0.06		0.010	0.00046	0.00026	3.385	0.00005	0.000025
HC-13-46	16-Apr-13	46	500	465	8.12	125	130	1.0	0.5	0.5	55.1	2.6	0.06		0.010	0.00042	0.00026	3.193	0.00005	0.000025
HC-13-47	23-Apr-13	47	500	465	8.18	108	120	0.9	0.5	0.5	51.5	2.4	0.05	42.8	0.009	0.00038	0.00025	3.000	0.00005	0.000025
HC-13-48	30-Apr-13	48	500	490	8.10	102	120	1.0	0.5	0.5	49.7	2.8	0.05		0.010	0.00034	0.00023	2.940	0.00004	0.000018
HC-13-49	07-May-13	49	500	460	8.23	102	120	1.0	0.5	0.5	49.1	2.9	0.05		0.010	0.00033	0.00022	2.920	0.00003	0.000015
HC-13-50	14-May-13	50	500	475	8.14	119	130	1.0	0.5	0.5	47.8	3.2	0.05		0.011	0.00031	0.00020	2.880	0.00002	0.000010
HC-13-51	21-May-13	51	500	465	8.01	102	130	1.1	0.5	0.5	46.6	3.4	0.05	40.8	0.012	0.00028	0.00019	2.840	0.00001	0.000005
HC-13-52	28-May-13	52	500	460	8.12	106	125	0.9	0.5	0.5	50.0	3.4	0.04		0.011	0.00030	0.00022	3.099	0.00003	0.000013
HC-13-53	04-Jun-13	53	500	445	8.17	122	125	0.9	0.5	0.5	51.2	3.4	0.04		0.010	0.00031	0.00022	3.185	0.00003	0.000015
HC-13-54	11-Jun-13	54	500	480	8.06	112	125	0.8	0.5	0.5	53.4	3.3	0.04		0.010	0.00032	0.00024	3.358	0.00004	0.000020
HC-13-55	18-Jun-13	55	500	475	8.13	119	130	0.7	0.5	0.5	55.7	3.3	0.04	49.9	0.009	0.00033	0.00026	3.530	0.00005	0.000025
HC-13-56	25-Jun-13	56	500	460	8.13	116	150	0.7	0.5	0.5	54.8	3.5	0.04		0.008	0.00033	0.00211	3.553	0.00005	0.000025
HC-13-57	02-Jul-13	57	500	435	8.13	123	130	0.8	0.5	0.5	54.5	3.5	0.04		0.008	0.00033	0.00273	3.560	0.00005	0.000025
HC-13-58	09-Jul-13	58	500	500	8.12	107	145	0.8	0.5	0.5	53.9	3.6	0.04		0.007	0.00033	0.00396	3.575	0.00005	0.000025
HC-13-59	16-Jul-13	59	500	465	8.10	113	140	0.9	0.5	0.5	53.3	3.7	0.04	48.4	0.006	0.00033	0.00519	3.590	0.00005	0.000025
HC-13-60	23-Jul-13	60	500	465	8.13	114	135	0.8	0.5	0.7	52.8	3.3	0.04		0.007	0.00031	0.00333	3.440	0.00005	0.000025
HC-13-61	30-Jul-13	61	500	470	8.14	113	140	0.8	0.5	0.8	52.6	3.1	0.04		0.007	0.00031	0.00272	3.390	0.00005	0.000025
HC-13-62	06-Aug-13	62	500	470	8.11	96	145	0.7	0.5	0.9	52.3	2.8	0.04		0.007	0.00029	0.00148	3.290	0.00005	0.000025
HC-13-63	13-Aug-13	63	500	460	8.16	108	150	0.7	0.5	1.0	51.9	2.5	0.04	46.4	0.008	0.00028	0.00024	3.190	0.00005	0.000025
HC-13-64	20-Aug-13	64	500	465	8.27	91	140	1.1	0.5	0.8	52.3	2.3	0.04		0.008	0.00027	0.00019	3.201	0.00005	0.000025
HC-13-65	27-Aug-13	65	500	455	8.14	113	130	1.3	0.5	0.8	52.4	2.3	0.04		0.008	0.00027	0.00017	3.205	0.00005	0.000025
HC-13-66	03-Sep-13	66	500	490	8.07	113	145	1.6	0.5	0.6	52.7	2.1	0.03		0.008	0.00026	0.00014	3.213	0.00005	0.000025
HC-13-67	10-Sep-13	67	500	485	8.08	107	155	1.9	0.5	0.5	52.9	2.0	0.03	47.7	0.008	0.00025	0.00010	3.220	0.00005	0.000025
HC-13-68	17-Sep-13	68	500	470	8.02	95	155	2.2	0.5	0.5	49.0	1.9	0.03		0.009	0.00025	0.00010	3.160	0.00005	0.000025
HC-13-69	24-Sep-13	69	500	465	7.99	105	140	2.3	0.5	0.5	47.7	1.8	0.04		0.010	0.00025	0.00010	3.140	0.00005	0.000025
HC-13-70	01-Oct-13	70	500	465	8.07	91	140	2.4	0.5	0.5	45.0	1.7	0.04		0.010	0.00025	0.00010	3.100	0.00005	0.000025
HC-13-71	08-Oct-13	71	500	475	8.03	91	140	2.6	0.5	0.5	42.4	1.6	0.04	46.4	0.011	0.00025	0.00010	3.060	0.00005	0.000025
HC-13-72	15-Oct-13	72	500	480	8.00	101	135	2.9	0.5	0.5	45.2	1.5	0.04		0.009	0.00025	0.00010	3.064	0.00005	0.000025
HC-13-73	22-Oct-13	73	500	475	8.07	98	140	3.1	0.5	0.5	46.1	1.5	0.04		0.008	0.00026	0.00010	3.065	0.00005	0.000025

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume In ml	Total Volume Out ml	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			ml	ml	pH Units	µS/cm	mV	mg/L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg CaCO <sub>3</sub> /L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-13-74	29-Oct-13	74	500	460	7.90	105	120	3.3	0.5	0.5	48.0	1.4	0.04		0.007	0.00026	0.00010	3.068	0.00005	0.00025
HC-13-75	05-Nov-13	75	500	495	8.11	103	130	3.5	0.5	0.5	49.8	1.3	0.03	54.9	0.006	0.00026	0.00010	3.070	0.00005	0.00025
HC-13-76	12-Nov-13	76	500	465	8.03	112	120	2.7	0.5	0.5	50.1	1.1	0.03		0.006	0.00024	0.00010	3.123	0.00005	0.00025
HC-13-77	19-Nov-13	77	500	485	7.97	102	135	2.4	0.5	0.5	50.2	1.1	0.03		0.006	0.00024	0.00010	3.140	0.00005	0.00025
HC-13-78	26-Nov-13	78	500	470	8.02	109	135	1.9	0.5	0.5	50.4	1.0	0.03		0.006	0.00022	0.00010	3.175	0.00005	0.00025
HC-13-79	03-Dec-13	79	500	490	7.95	102	145	1.3	0.5	0.5	50.6	0.8	0.03	45.8	0.006	0.00021	0.00010	3.210	0.00005	0.00025
HC-13-80	10-Dec-13	80	500	475	8.06	138	140	1.3	0.5	0.5	50.4	0.9	0.03		0.010	0.00020	0.00010	3.263	0.00005	0.00025
HC-13-81	17-Dec-13	81	500	460	8.10	129	130	1.3	0.5	0.5	50.4	0.9	0.03		0.011	0.00020	0.00010	3.280	0.00005	0.00025
HC-13-82	24-Dec-13	82	500	480	8.04	108	140	1.3	0.5	0.5	50.2	0.9	0.03		0.014	0.00020	0.00010	3.315	0.00005	0.00025
HC-13-83	31-Dec-13	83	500	490	8.01	104	130	1.3	0.5	0.5	50.1	0.9	0.03	48.8	0.016	0.00019	0.00010	3.350	0.00005	0.00025
HC-13-84	07-Jan-14	84	500	455	8.06	121	145	1.2	0.5	0.5	54.5	0.9	0.03		0.027	0.00022	0.00010	3.534	0.00005	0.00025
HC-13-85	14-Jan-14	85	500	455	8.13	124	140	1.1	0.5	0.5	55.9	0.9	0.03		0.030	0.00023	0.00010	3.595	0.00005	0.00025
HC-13-86	21-Jan-14	86	500	495	8.02	100	140	1.0	0.5	0.5	58.8	0.9	0.03		0.037	0.00025	0.00010	3.718	0.00005	0.00025
HC-13-87	28-Jan-14	87	500	450	8.03	121	150	0.9	0.5	0.5	61.7	0.9	0.04	55.4	0.044	0.00027	0.00010	3.840	0.00005	0.00025
HC-13-88	04-Feb-14	88	500	490	8.01	99	145	1.5	0.5	0.5	62.2	1.0	0.03		0.029	0.00027	0.00010	3.889	0.00005	0.00025
HC-13-89	11-Feb-14	89	500	450	8.00	135	135	1.8	0.5	0.5	62.4	1.0	0.03		0.025	0.00027	0.00010	3.905	0.00005	0.00025
HC-13-90	18-Feb-14	90	500	495	8.05	129	135	2.2	0.5	0.5	62.7	1.0	0.03		0.015	0.00027	0.00010	3.938	0.00005	0.00025
HC-13-91	25-Feb-14	91	500	470	8.05	127	140	2.6	0.5	0.5	63.0	1.0	0.03	58.2	0.006	0.00027	0.00010	3.970	0.00005	0.00025
HC-13-92	04-Mar-14	92	500	460	8.08	120	140	1.8	0.5	0.5	58.2	1.0	0.03		0.005	0.00025	0.00010	3.798	0.00005	0.00025
HC-13-93	11-Mar-14	93	500	495	8.16	113	135	1.6	0.5	0.5	56.7	1.1	0.03		0.005	0.00024	0.00010	3.740	0.00005	0.00025
HC-13-94	18-Mar-14	94	500	480	8.12	110	130	1.1	0.5	0.5	53.5	1.1	0.03		0.005	0.00023	0.00010	3.625	0.00005	0.00025
HC-13-95	25-Mar-14	95	500	465	8.06	102	130	0.5	0.5	0.5	50.3	1.1	0.03	47.8	0.004	0.00021	0.00010	3.510	0.00005	0.00025
HC-13-96	01-Apr-14	96	500	480	8.13	97	135	0.8	0.5	0.5	50.9	0.9	0.03		0.005	0.00021	0.00010	3.450	0.00005	0.00025
HC-13-97	08-Apr-14	97	500	480	8.09	101	140	0.9	0.5	0.5	51.1	0.9	0.03		0.005	0.00021	0.00010	3.430	0.00005	0.00025
HC-13-98	15-Apr-14	98	500	475	8.13	111	140	1.1	0.5	0.5	51.4	0.7	0.03		0.006	0.00020	0.00010	3.390	0.00005	0.00025
HC-13-99	22-Apr-14	99	500	475	8.09	105	145	1.3	0.5	0.5	51.8	0.6	0.03	47.9	0.007	0.00020	0.00010	3.350	0.00005	0.00025
<b>Mean all weeks</b>					<b>8.27</b>	<b>123</b>	<b>126</b>	<b>1.5</b>	<b>0.5</b>	<b>0.5</b>	<b>59.3</b>	<b>1.7</b>	<b>0.10</b>	<b>27.0</b>	<b>0.031</b>	<b>0.00080</b>	<b>0.00085</b>	<b>2.625</b>	<b>0.00004</b>	<b>0.00022</b>
<b>HC14 Middle Gates D - CCR</b>																				
HC-14-0	02-May-13	0	750	580	9.09	443	100	20.9	0.5	0.5	105.7	51.9	2.30	1.2	0.320	0.00847	0.00421	0.143	0.00001	0.000006
HC-14-1	09-May-13	1	500	470	8.83	508	100	32.7	0.5	0.5	130.6	43.1	3.20	1.4	0.410	0.00614	0.00428	0.179	0.00001	0.000005
HC-14-2	16-May-13	2	500	460	8.99	406	95	47.2	0.5	0.5	129.9	13.9	3.20	1.7	0.351	0.00562	0.00228	0.130	0.00001	0.000005
HC-14-3	23-May-13	3	500	465	8.91	384	95	37.9	0.5	0.5	126.6	5.8	3.00	1.2	0.229	0.00531	0.00101	0.118	0.00001	0.000005
HC-14-4	30-May-13	4	500	460	8.87	353	95	38.5	0.5	0.5	117.9	3.9	3.00	1.1	0.307	0.00548	0.00085	0.113	0.00001	0.000005
HC-14-5	06-Jun-13	5	500	465	9.02	331	90	35.6	0.5	0.5	119.3	3.2	2.60	1.3	0.249	0.00523	0.00068	0.114	0.00001	0.000005
HC-14-6	13-Jun-13	6	500	460	8.92	317	100	34.0	0.5	0.5	115.1	2.8	2.50	1.3	0.299	0.00543	0.00057	0.117	0.00001	0.000005
HC-14-7	20-Jun-13	7	500	465	9.02	319	100	31.7	0.5	0.5	118.8	2.3	2.40	1.7	0.232	0.00560	0.00052	0.131	0.00001	0.000005
HC-14-8	27-Jun-13	8	500	465	9.03	297	100	28.9	0.5	0.5	108.5	1.9	2.20	1.6	0.162	0.00509	0.00043	0.107	0.00001	0.000005
HC-14-9	04-Jul-13	9	500	470	8.98	283	90	29.2	0.5	0.5	106.3	1.7	2.00	1.6	0.208	0.00490	0.00036	0.095	0.00001	0.000005
HC-14-10	11-Jul-13	10	500	465	8.96	264	90	26.6	0.5	0.5	99.4	1.6	1.80	1.6	0.166	0.00449	0.00059	0.092	0.00001	0.000005
HC-14-11	18-Jul-13	11	500	480	8.98	266	100	26.4	0.5	0.5	105.1	2.0	1.70	1.8	0.183	0.00469	0.00031	0.101	0.00001	0.000005
HC-14-12	25-Jul-13	12	500	460	9.05	245	90	24.6	0.5	0.5	91.9	1.4	1.60	1.8	0.216	0.00431	0.00030	0.110	0.00001	0.000005
HC-14-13	01-Aug-13	13	500	455	8.63	276	90	28.2	0.5	0.5	101.7	1.2	1.90	2.1	0.182	0.00532	0.00029	0.102	0.00001	0.000005
HC-14-14	08-Aug-13	14	500	480	8.77	233	90	24.1	0.5	0.5	88.6	0.9	1.30	2.2	0.153	0.00403	0.00029	0.113	0.00001	0.000005
HC-14-15	15-Aug-13	15	500	485	8.84	220	100	21.1	0.5	0.5	83.6	0.8	1.20	2.5	0.133	0.00368	0.00026	0.107	0.00001	0.000005
HC-14-16	22-Aug-13	16	500	470	8.91	229	110	22.3	0.5	0.5	85.4	0.7	1.20	2.6	0.151	0.00390	0.00024	0.101	0.00001	0.000005
HC-14-17	29-Aug-13	17	500	475	8.84	220	100	21.1	0.5	0.5	84.9	0.7	1.20	2.8	0.112	0.00377	0.00022	0.108	0.00001	0.000005
HC-14-18	05-Sep-13	18	500	470	8.72	216	90	20.6	0.5	0.5	81.9	1.2	1.20	2.7	0.111	0.00390	0.00020	0.100	0.00001	0.000005
HC-14-19	12-Sep-13	19	500	460	8.70	202	95	19.9	0.5	0.5	79.0	1.6	1.00	2.7	0.124	0.00356	0.00018	0.096	0.00001	0.000005
HC-14-20	19-Sep-13	20	500	470	8.75	209	95	19.5	0.5	0.5	77.0	2.1	0.97		0.109	0.00343	0.00018	0.098	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-14-21	26-Sep-13	21	500	460	8.75	200	90	19.1	0.5	0.5	75.0	2.6	0.94		0.093	0.00330	0.00019	0.100	0.00001	0.000005
HC-14-22	03-Oct-13	22	500	485	8.45	193	90	18.6	0.5	0.5	72.9	3.0	0.91		0.078	0.00316	0.00019	0.102	0.00001	0.000005
HC-14-23	10-Oct-13	23	500	460	8.63	196	90	18.2	0.5	0.5	70.9	3.5	0.88	4.3	0.062	0.00303	0.00019	0.104	0.00001	0.000005
HC-14-24	17-Oct-13	24	500	475	8.62	188	105	18.2	0.5	0.5	68.6	4.5	0.84		0.079	0.00294	0.00019	0.106	0.00001	0.000005
HC-14-25	24-Oct-13	25	500	450	8.63	200	105	18.2	0.5	0.5	66.3	5.6	0.80		0.095	0.00284	0.00018	0.107	0.00001	0.000005
HC-14-26	31-Oct-13	26	500	450	8.49	200	105	18.2	0.5	0.5	64.0	6.6	0.76		0.111	0.00275	0.00018	0.109	0.00001	0.000005
HC-14-27	07-Nov-13	27	500	460	8.55	180	95	18.2	0.5	0.5	61.7	7.6	0.72	6.3	0.127	0.00265	0.00017	0.110	0.00001	0.000005
HC-14-28	14-Nov-13	28	500	465	8.38	185	105	19.4	0.5	0.5	61.4	7.0	0.70		0.112	0.00263	0.00017	0.118	0.00001	0.000005
HC-14-29	21-Nov-13	29	500	465	8.42	180	100	20.6	0.5	0.5	61.1	6.5	0.69		0.098	0.00260	0.00017	0.126	0.00001	0.000005
HC-14-30	28-Nov-13	30	500	460	8.23	179	115	21.8	0.5	0.5	60.8	5.9	0.67		0.083	0.00258	0.00017	0.134	0.00001	0.000005
HC-14-31	05-Dec-13	31	500	465	8.29	175	120	23.0	0.5	0.5	60.5	5.3	0.65	8.2	0.068	0.00255	0.00017	0.142	0.00001	0.000005
HC-14-32	12-Dec-13	32	500	455	8.45	164	105	21.2	0.5	0.5	58.2	4.8	0.62		0.066	0.00242	0.00016	0.137	0.00001	0.000005
HC-14-33	19-Dec-13	33	500	475	8.42	162	120	19.4	0.5	0.5	55.9	4.3	0.60		0.065	0.00229	0.00015	0.131	0.00001	0.000005
HC-14-34	26-Dec-13	34	500	450	8.10	156	120	17.6	0.5	0.5	53.5	3.7	0.57		0.063	0.00215	0.00013	0.126	0.00001	0.000005
HC-14-35	02-Jan-14	35	500	470	8.32	156	125	15.8	0.5	0.5	51.2	3.2	0.54	10.3	0.061	0.00202	0.00012	0.120	0.00001	0.000005
HC-14-36	09-Jan-14	36	500	465	8.31	150	125	15.6	0.5	0.5	50.2	3.0	0.51		0.060	0.00192	0.00011	0.121	0.00001	0.000005
HC-14-37	16-Jan-14	37	500	460	8.24	146	120	15.4	0.5	0.5	49.1	2.7	0.48		0.059	0.00183	0.00011	0.122	0.00001	0.000005
HC-14-38	23-Jan-14	38	500	465	8.14	146	125	15.2	0.5	0.5	48.1	2.5	0.44		0.058	0.00173	0.00010	0.122	0.00001	0.000005
HC-14-39	30-Jan-14	39	500	480	8.15	133	120	15.0	0.5	0.5	47.0	2.2	0.41	16.5	0.057	0.00163	0.00009	0.123	0.00001	0.000005
HC-14-40	06-Feb-14	40	500	470	7.99	143	140	15.1	0.5	0.5	45.8	2.4	0.41		0.053	0.00160	0.00009	0.122	0.00001	0.000005
HC-14-41	13-Feb-14	41	500	475	7.97	131	130	15.2	0.5	0.5	44.7	2.6	0.40		0.049	0.00157	0.00010	0.120	0.00001	0.000005
HC-14-42	20-Feb-14	42	500	445	8.03	128	130	15.2	0.5	0.5	43.5	2.8	0.40		0.045	0.00154	0.00010	0.119	0.00001	0.000005
HC-14-43	27-Feb-14	43	500	465	7.97	128	130	15.3	0.5	0.5	42.3	3.0	0.39	21.9	0.041	0.00151	0.00010	0.117	0.00001	0.000005
HC-14-44	06-Mar-14	44	500	460	8.12	128	145	14.9	0.5	0.5	40.5	3.3	0.38		0.036	0.00147	0.00010	0.116	0.00001	0.000005
HC-14-45	13-Mar-14	45	500	460	8.02	122	155	14.6	0.5	0.5	38.7	3.6	0.37		0.030	0.00143	0.00011	0.115	0.00001	0.000005
HC-14-46	20-Mar-14	46	500	470	8.05	124	145	14.2	0.5	0.5	36.9	3.9	0.35		0.025	0.00139	0.00011	0.114	0.00001	0.000005
HC-14-47	27-Mar-14	47	500	445	7.94	124	150	13.8	0.5	0.5	35.1	4.2	0.34	32.4	0.020	0.00135	0.00011	0.113	0.00001	0.000005
<b>Mean all weeks</b>					<b>8.55</b>	<b>220</b>	<b>109</b>	<b>22.0</b>	<b>0.5</b>	<b>0.5</b>	<b>75.4</b>	<b>5.3</b>	<b>1.19</b>	<b>5.1</b>	<b>0.129</b>	<b>0.00336</b>	<b>0.00046</b>	<b>0.116</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC15 Middle Gates D,E,F,J - Tailings</b>																				
HC-15-0	02-May-13	0	293	145	8.35	1010	105	242.0	0.5	0.5	140.8	58.3	2.00	213.0	0.016	0.01300	0.00289	0.118	0.00001	0.000005
HC-15-1	09-May-13	1	195	150	8.46	668	105	29.4	0.5	0.5	308.2	8.8	0.86	185.0	0.010	0.00845	0.00795	0.917	0.00001	0.000005
HC-15-2	16-May-13	2	195	140	8.16	550	95	7.4	0.5	0.5	290.6	3.0	0.68	205.0	0.030	0.00650	0.00610	2.760	0.00005	0.000030
HC-15-3	23-May-13	3	195	180	8.42	350	110	6.3	0.5	0.5	201.3	2.9	0.88	163.0	0.009	0.00640	0.00450	3.000	0.00005	0.000030
HC-15-4	30-May-13	4	195	165	8.45	363	110	7.5	0.5	0.5	161.6	9.1	1.00	139.0	0.021	0.00616	0.00352	2.890	0.00001	0.000008
HC-15-5	06-Jun-13	5	195	180	8.54	310	110	5.6	0.5	0.5	145.5	13.2	1.10	147.0	0.027	0.00680	0.00320	3.420	0.00005	0.000030
HC-15-6	13-Jun-13	6	195	180	8.30	211	130	3.4	0.5	0.5	89.0	10.4	0.80	104.0	0.025	0.00380	0.00180	2.430	0.00005	0.000030
HC-15-7	20-Jun-13	7	195	180	8.30	225	130	3.5	0.5	0.5	92.3	15.7	0.74	101.0	0.061	0.00400	0.00200	3.010	0.00005	0.000030
HC-15-8	27-Jun-13	8	195	180	8.33	255	140	3.0	0.5	0.5	101.8	15.6	0.68	114.0	0.028	0.00430	0.00180	3.530	0.00005	0.000030
HC-15-9	04-Jul-13	9	195	195	8.26	251	150	3.2	0.5	0.5	92.7	15.1	0.63	106.0	0.063	0.00390	0.00170	3.490	0.00005	0.000030
HC-15-10	11-Jul-13	10	195	175	8.22	83	145	1.9	0.5	1.7	30.4	2.7	0.29	31.5	0.042	0.00110	0.00100	1.160	0.00005	0.000030
HC-15-11	18-Jul-13	11	195	185	8.15	122	150	2.2	0.5	0.5	33.8	3.8	0.31	34.0	0.101	0.00120	0.00070	1.430	0.00005	0.000030
HC-15-12	25-Jul-13	12	195	185	8.63	127	120	1.5	0.5	0.5	30.2	3.9	0.25	33.5	0.083	0.00120	0.00070	1.530	0.00005	0.000030
HC-15-13	01-Aug-13	13	195	180	8.34	98	140	1.5	0.5	0.5	34.6	4.6	0.28	37.4	0.084	0.00140	0.00080	1.750	0.00005	0.000030
HC-15-14	08-Aug-13	14	195	195	8.31	79	135	3.5	0.5	0.5	32.7	4.3	0.21	34.2	0.033	0.00130	0.00060	1.800	0.00005	0.000030
HC-15-15	15-Aug-13	15	195	185	7.96	71	150	1.2	0.5	0.5	26.1	3.9	0.19	30.3	0.030	0.00110	0.00050	1.470	0.00005	0.000030
HC-15-16	22-Aug-13	16	195	195	8.14	87	145	1.3	0.5	0.5	31.3	3.8	0.26	34.5	0.074	0.00150	0.00070	1.790	0.00005	0.000030
HC-15-17	29-Aug-13	17	195	185	8.39	88	150	0.9	0.5	0.5	29.5	3.4	0.26	31.3	0.046	0.00120	0.00040	1.550	0.00005	0.000030
HC-15-18	05-Sep-13	18	195	180	8.06	81	120	1.4	0.5	0.8	30.3	3.7	0.26	34.5	0.037	0.00130	0.00040	1.690	0.00005	0.000030
HC-15-19	12-Sep-13	19	195	195	8.17	104	140	1.5	0.5	0.5	41.6	4.7	0.28	47.7	0.057	0.00180	0.00070	2.460	0.00005	0.000030

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-15-20	19-Sep-13	20	195	190	8.09	70	140	1.5	0.5	0.5	38.2	4.2	0.26		0.074	0.00160	0.00063	2.315	0.00005	0.000030
HC-15-21	26-Sep-13	21	195	180	8.21	54	135	1.4	0.5	0.5	34.8	3.7	0.25		0.091	0.00140	0.00055	2.170	0.00005	0.000030
HC-15-22	03-Oct-13	22	195	145	8.21	73	140	1.4	0.5	0.5	31.3	3.2	0.23		0.108	0.00120	0.00048	2.025	0.00005	0.000030
HC-15-23	10-Oct-13	23	195	155	8.15	74	150	1.3	0.5	0.5	27.9	2.7	0.21	31.8	0.125	0.00100	0.00040	1.880	0.00005	0.000030
HC-15-24	17-Oct-13	24	195	170	8.14	166	130	2.1	0.5	0.5	34.2	2.7	0.26		0.114	0.00133	0.00050	2.178	0.00005	0.000030
HC-15-25	24-Oct-13	25	195	190	8.28	164	135	3.0	0.5	1.2	40.5	2.6	0.32		0.102	0.00165	0.00060	2.475	0.00005	0.000030
HC-15-26	31-Oct-13	26	195	170	8.13	121	110	3.8	0.5	1.2	46.8	2.6	0.37		0.091	0.00198	0.00070	2.773	0.00005	0.000030
HC-15-27	07-Nov-13	27	195	195	8.27	122	130	4.6	0.5	1.8	53.1	2.5	0.42	61.9	0.079	0.00230	0.00080	3.070	0.00005	0.000030
HC-15-28	14-Nov-13	28	195	160	8.07	120	130	4.2	0.5	1.5	54.8	2.4	0.42		0.068	0.00238	0.00073	3.103	0.00005	0.000030
HC-15-29	21-Nov-13	29	195	170	8.04	119	125	3.8	0.5	1.2	56.5	2.4	0.43		0.057	0.00245	0.00065	3.135	0.00005	0.000030
HC-15-30	28-Nov-13	30	195	165	8.13	139	135	3.3	0.5	0.8	58.1	2.3	0.43		0.045	0.00253	0.00058	3.168	0.00005	0.000030
HC-15-31	05-Dec-13	31	195	190	8.15	133	130	2.9	0.5	0.5	59.8	2.2	0.43	63.6	0.034	0.00260	0.00050	3.200	0.00005	0.000030
HC-15-32	12-Dec-13	32	195	170	8.16	139	135	3.0	0.5	0.8	61.2	2.1	0.45		0.040	0.00268	0.00055	3.238	0.00005	0.000030
HC-15-33	19-Dec-13	33	195	185	8.33	175	135	3.2	0.5	1.0	62.7	1.9	0.46		0.045	0.00275	0.00060	3.275	0.00005	0.000030
HC-15-34	26-Dec-13	34	195	185	8.21	161	130	3.3	0.5	1.3	64.1	1.8	0.48		0.051	0.00283	0.00065	3.313	0.00005	0.000030
HC-15-35	02-Jan-14	35	195	180	8.10	161	130	3.4	0.5	1.5	65.5	1.6	0.49	68.4	0.056	0.00290	0.00070	3.350	0.00005	0.000030
HC-15-36	09-Jan-14	36	195	180	8.27	139	130	3.6	0.5	1.3	70.5	1.6	0.50		0.054	0.00303	0.00065	3.470	0.00005	0.000030
HC-15-37	16-Jan-14	37	195	170	8.25	139	135	3.8	0.5	1.0	75.5	1.6	0.51		0.052	0.00315	0.00060	3.590	0.00005	0.000030
HC-15-38	23-Jan-14	38	195	160	8.15	168	135	4.0	0.5	0.8	80.5	1.5	0.52		0.049	0.00328	0.00055	3.710	0.00005	0.000030
HC-15-39	30-Jan-14	39	195	180	8.37	179	125	4.2	0.5	0.5	85.5	1.5	0.53	84.0	0.047	0.00340	0.00050	3.830	0.00005	0.000030
HC-15-40	06-Feb-14	40	195	175	8.23	174	135	4.1	0.5	0.5	80.8	1.4	0.50		0.047	0.00318	0.00048	3.615	0.00005	0.000030
HC-15-41	13-Feb-14	41	195	175	8.19	146	130	4.1	0.5	0.5	76.1	1.4	0.46		0.046	0.00295	0.00045	3.400	0.00005	0.000030
HC-15-42	20-Feb-14	42	195	180	8.17	140	120	4.0	0.5	0.5	71.4	1.3	0.43		0.046	0.00273	0.00043	3.185	0.00005	0.000030
HC-15-43	27-Feb-14	43	195	160	8.11	144	140	3.9	0.5	0.5	66.7	1.2	0.39	67.6	0.045	0.00250	0.00040	2.970	0.00005	0.000030
HC-15-44	06-Mar-14	44	195	175	8.21	139	140	3.8	0.5	0.5	67.0	1.0	0.40		0.044	0.00258	0.00040	2.998	0.00005	0.000030
HC-15-45	13-Mar-14	45	195	175	8.20	148	150	3.7	0.5	0.5	67.2	0.9	0.42		0.044	0.00265	0.00040	3.025	0.00005	0.000030
HC-15-46	20-Mar-14	46	195	175	8.25	150	150	3.5	0.5	0.5	67.5	0.7	0.43		0.043	0.00273	0.00040	3.053	0.00005	0.000030
HC-15-47	27-Mar-14	47	195	165	8.21	141	140	3.4	0.5	0.5	67.7	0.5	0.44	72.0	0.042	0.00280	0.00040	3.080	0.00005	0.000030
<b>Mean all weeks</b>					<b>8.23</b>	<b>186</b>	<b>132</b>	<b>8.8</b>	<b>0.5</b>	<b>0.7</b>	<b>75.2</b>	<b>5.1</b>	<b>0.49</b>	<b>84.3</b>	<b>0.054</b>	<b>0.00302</b>	<b>0.00119</b>	<b>2.641</b>	<b>0.00005</b>	<b>0.000029</b>
<b>HC16 Middle Gates E,F - CCR</b>																				
HC-16-0	02-May-13	0	750	630	9.46	234	80	3.7	0.5	0.5	63.1	26.0	1.00	0.9	0.150	0.00329	0.00382	0.087	0.00001	0.000005
HC-16-1	09-May-13	1	500	465	9.22	353	90	7.1	0.5	0.5	140.5	18.8	1.80	1.3	0.204	0.00582	0.00323	0.128	0.00001	0.000005
HC-16-2	16-May-13	2	500	460	9.48	303	75	8.2	0.5	0.5	138.1	4.8	1.80	1.3	0.164	0.00483	0.00250	0.107	0.00001	0.000005
HC-16-3	23-May-13	3	500	455	9.36	299	80	6.5	0.5	0.5	139.9	2.4	1.70	1.2	0.145	0.00494	0.00203	0.108	0.00001	0.000005
HC-16-4	30-May-13	4	500	470	9.27	304	95	6.3	0.5	0.5	142.5	1.6	1.60	1.3	0.159	0.00499	0.00114	0.112	0.00001	0.000005
HC-16-5	06-Jun-13	5	500	460	9.39	267	80	6.4	0.5	0.5	132.7	1.1	1.40	1.3	0.149	0.00465	0.00093	0.109	0.00001	0.000005
HC-16-6	13-Jun-13	6	500	455	9.38	251	90	4.7	0.5	0.5	125.9	0.7	1.30	1.3	0.150	0.00423	0.00073	0.113	0.00001	0.000005
HC-16-7	20-Jun-13	7	500	460	9.46	252	90	4.3	0.5	0.5	128.3	0.7	1.20	1.5	0.133	0.00429	0.00066	0.124	0.00001	0.000005
HC-16-8	27-Jun-13	8	500	470	9.41	245	100	4.0	0.5	0.5	118.6	1.8	1.10	1.5	0.129	0.00417	0.00054	0.128	0.00001	0.000005
HC-16-9	04-Jul-13	9	500	465	9.41	249	80	5.1	0.5	0.5	116.4	6.2	1.10	1.6	0.131	0.00396	0.00050	0.127	0.00001	0.000005
HC-16-10	11-Jul-13	10	500	465	9.28	282	90	3.7	0.5	0.5	108.3	22.7	0.94	2.0	0.088	0.00337	0.00035	0.148	0.00001	0.000005
HC-16-11	18-Jul-13	11	500	460	9.16	314	105	3.0	0.5	0.5	90.6	39.2	0.83	2.6	0.100	0.00293	0.00025	0.205	0.00001	0.000005
HC-16-12	25-Jul-13	12	500	465	9.29	322	90	6.6	0.5	0.5	85.8	49.0	0.76	3.5	0.085	0.00255	0.00021	0.276	0.00001	0.000005
HC-16-13	01-Aug-13	13	500	470	8.80	302	95	2.7	0.5	0.5	82.0	41.0	0.75	3.7	0.081	0.00254	0.00020	0.269	0.00001	0.000005
HC-16-14	08-Aug-13	14	500	465	9.13	275	90	4.0	0.5	0.5	84.5	29.2	0.64	4.1	0.079	0.00247	0.00023	0.282	0.00001	0.000005
HC-16-15	15-Aug-13	15	500	470	9.07	253	95	2.5	0.5	0.5	80.8	32.5	0.60	4.9	0.065	0.00237	0.00018	0.337	0.00001	0.000005
HC-16-16	22-Aug-13	16	500	460	9.13	249	110	2.5	0.5	0.5	80.0	29.3	0.66	5.1	0.071	0.00240	0.00017	0.335	0.00001	0.000005
HC-16-17	29-Aug-13	17	500	470	9.01	229	105	3.2	0.5	0.5	79.8	26.1	0.60	5.9	0.078	0.00221	0.00015	0.359	0.00001	0.000005
HC-16-18	05-Sep-13	18	500	460	9.03	241	90	2.3	0.5	0.5	74.6	28.0	0.58	6.6	0.057	0.00233	0.00015	0.425	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-16-19	12-Sep-13	19	500	460	8.83	238	100	2.0	0.5	0.5	56.9	32.4	0.48	8.1	0.049	0.00189	0.00012	0.451	0.00001	0.000005
HC-16-20	19-Sep-13	20	500	455	8.88	215	100	2.1	0.5	0.5	58.4	29.5	0.48		0.054	0.00184	0.00012	0.463	0.00001	0.000005
HC-16-21	26-Sep-13	21	500	465	8.95	202	100	2.1	0.5	0.5	60.0	26.6	0.47		0.058	0.00179	0.00012	0.475	0.00001	0.000005
HC-16-22	03-Oct-13	22	500	465	8.82	187	90	2.2	0.5	0.5	61.5	23.7	0.47		0.063	0.00174	0.00012	0.487	0.00001	0.000005
HC-16-23	10-Oct-13	23	500	460	8.89	184	100	2.2	0.5	0.5	63.0	20.8	0.46	9.9	0.068	0.00169	0.00012	0.499	0.00001	0.000005
HC-16-24	17-Oct-13	24	500	460	8.87	182	110	2.0	0.5	0.5	60.7	19.7	0.44		0.060	0.00164	0.00012	0.532	0.00001	0.000005
HC-16-25	24-Oct-13	25	500	455	8.79	186	105	1.8	0.5	0.5	58.3	18.6	0.42		0.053	0.00158	0.00011	0.565	0.00001	0.000005
HC-16-26	31-Oct-13	26	500	460	8.60	178	100	1.6	0.5	0.5	56.0	17.4	0.40		0.046	0.00153	0.00011	0.597	0.00001	0.000005
HC-16-27	07-Nov-13	27	500	455	8.76	152	100	1.4	0.5	0.5	53.6	16.3	0.38	13.8	0.039	0.00147	0.00010	0.630	0.00001	0.000005
HC-16-28	14-Nov-13	28	500	450	8.41	158	115	1.4	0.5	0.5	52.6	16.4	0.36		0.036	0.00143	0.00010	0.709	0.00002	0.000011
HC-16-29	21-Nov-13	29	500	470	8.72	141	110	1.4	0.5	0.5	51.5	16.5	0.35		0.034	0.00139	0.00010	0.787	0.00003	0.000018
HC-16-30	28-Nov-13	30	500	460	8.61	137	105	1.4	0.5	0.5	50.5	16.6	0.33		0.031	0.00134	0.00010	0.866	0.00004	0.000024
HC-16-31	05-Dec-13	31	500	460	8.30	148	125	1.4	0.5	0.5	49.4	16.7	0.31	20.2	0.028	0.00130	0.00010	0.944	0.00005	0.000030
HC-16-32	12-Dec-13	32	500	445	8.44	141	120	1.2	0.5	0.5	48.0	15.3	0.31		0.027	0.00125	0.00010	1.006	0.00005	0.000030
HC-16-33	19-Dec-13	33	500	460	8.69	130	110	1.1	0.5	0.5	46.7	14.0	0.31		0.025	0.00120	0.00010	1.067	0.00005	0.000030
HC-16-34	26-Dec-13	34	500	445	8.55	136	125	0.9	0.5	0.5	45.3	12.6	0.31		0.024	0.00115	0.00010	1.129	0.00005	0.000030
HC-16-35	02-Jan-14	35	500	480	8.50	136	130	0.7	0.5	0.5	43.9	11.2	0.31	25.3	0.022	0.00110	0.00010	1.190	0.00005	0.000030
HC-16-36	09-Jan-14	36	500	465	8.38	123	125	0.8	0.5	0.5	43.8	10.8	0.29		0.021	0.00108	0.00010	1.255	0.00005	0.000030
HC-16-37	16-Jan-14	37	500	460	8.49	123	115	0.9	0.5	0.5	43.8	10.5	0.28		0.021	0.00105	0.00010	1.320	0.00005	0.000030
HC-16-38	23-Jan-14	38	500	455	8.47	125	125	1.0	0.5	0.5	43.7	10.1	0.26		0.020	0.00103	0.00010	1.385	0.00005	0.000030
HC-16-39	30-Jan-14	39	500	450	8.56	115	120	1.1	0.5	0.5	43.6	9.7	0.24	29.7	0.019	0.00100	0.00010	1.450	0.00005	0.000030
HC-16-40	06-Feb-14	40	500	460	8.21	136	130	1.1	0.5	0.5	43.5	9.7	0.24		0.019	0.00095	0.00010	1.548	0.00005	0.000030
HC-16-41	13-Feb-14	41	500	460	8.28	125	140	1.1	0.5	0.5	43.5	9.7	0.24		0.019	0.00090	0.00010	1.645	0.00005	0.000030
HC-16-42	20-Feb-14	42	500	450	8.24	117	130	1.1	0.5	0.5	43.4	9.7	0.23		0.019	0.00085	0.00010	1.743	0.00005	0.000030
HC-16-43	27-Feb-14	43	500	460	8.13	119	119	1.1	0.5	0.5	43.3	9.7	0.23	38.0	0.019	0.00080	0.00010	1.840	0.00005	0.000030
HC-16-44	06-Mar-14	44	500	460	8.50	110	140	1.0	0.5	0.5	43.0	9.7	0.23		0.019	0.00083	0.00010	1.898	0.00005	0.000030
HC-16-45	13-Mar-14	45	500	450	8.36	117	150	0.9	0.5	0.5	42.7	9.6	0.23		0.019	0.00085	0.00010	1.955	0.00005	0.000030
HC-16-46	20-Mar-14	46	500	460	8.40	112	140	0.7	0.5	0.5	42.3	9.6	0.22		0.018	0.00088	0.00010	2.013	0.00005	0.000030
HC-16-47	27-Mar-14	47	500	460	8.24	113	140	0.6	0.5	0.5	42.0	9.5	0.22	41.3	0.018	0.00090	0.00010	2.070	0.00005	0.000030
<b>Mean all weeks</b>					<b>8.83</b>	<b>198</b>	<b>107</b>	<b>2.6</b>	<b>0.5</b>	<b>0.5</b>	<b>71.8</b>	<b>16.7</b>	<b>0.62</b>	<b>8.8</b>	<b>0.066</b>	<b>0.00218</b>	<b>0.00044</b>	<b>0.756</b>	<b>0.00003</b>	<b>0.000015</b>
<b>HC17 Middle Gates J - CCR</b>																				
HC-17-0	02-May-13	0	375	295	9.84	219	80	13.1	0.5	0.5	67.7	11.6	0.54	2.4	0.511	0.00299	0.02560	0.114	0.00006	0.000023
HC-17-1	09-May-13	1	250	230	9.25	290	90	18.2	0.5	0.5	117.1	7.6	0.92	2.3	0.165	0.00590	0.01170	0.114	0.00004	0.000013
HC-17-2	16-May-13	2	250	225	9.54	220	90	14.2	0.5	0.5	99.8	2.7	0.79	1.7	0.270	0.00437	0.00997	0.053	0.00001	0.000006
HC-17-3	23-May-13	3	250	220	9.48	213	80	10.4	0.5	0.5	89.4	1.8	0.70	1.3	0.162	0.00393	0.00842	0.057	0.00001	0.000005
HC-17-4	30-May-13	4	250	215	9.43	192	100	10.9	0.5	0.5	82.5	1.4	0.66	1.9	2.300	0.00331	0.00705	0.087	0.00006	0.000010
HC-17-5	06-Jun-13	5	250	215	9.50	181	95	9.7	0.5	0.5	81.7	0.9	0.56	2.0	0.219	0.00309	0.00598	0.104	0.00005	0.000013
HC-17-6	13-Jun-13	6	250	210	9.42	168	95	7.7	0.5	0.5	77.4	0.6	0.51	1.9	1.540	0.00303	0.00421	0.080	0.00003	0.000007
HC-17-7	20-Jun-13	7	250	225	9.44	171	95	7.3	0.5	0.5	81.0	0.5	0.49	1.4	0.166	0.00316	0.00446	0.059	0.00001	0.000005
HC-17-8	27-Jun-13	8	250	250	9.31	164	100	6.8	0.5	0.5	74.5	0.7	0.42	1.4	0.455	0.00295	0.00426	0.063	0.00002	0.000005
HC-17-9	04-Jul-13	9	250	210	9.64	189	80	8.3	0.5	0.5	87.3	0.8	0.47	2.3	2.550	0.00290	0.00480	0.091	0.00006	0.000012
HC-17-10	11-Jul-13	10	250	220	9.56	187	85	7.9	0.5	0.5	88.3	1.0	0.43	1.6	0.147	0.00267	0.00409	0.069	0.00001	0.000005
HC-17-11	18-Jul-13	11	250	220	9.52	284	110	6.1	0.5	0.5	78.2	9.0	0.37	1.8	0.184	0.00241	0.00308	0.084	0.00002	0.000005
HC-17-12	25-Jul-13	12	250	225	9.62	204	95	6.1	0.5	0.5	70.0	18.8	0.32	2.3	0.254	0.00207	0.00256	0.103	0.00003	0.000005
HC-17-13	01-Aug-13	13	250	220	8.95	204	95	5.7	0.5	0.5	62.9	22.3	0.30	2.3	0.141	0.00176	0.00213	0.110	0.00002	0.000005
HC-17-14	08-Aug-13	14	250	220	9.24	165	90	5.3	0.5	0.5	54.1	16.6	0.24	2.7	0.391	0.00194	0.00124	0.117	0.00001	0.000005
HC-17-15	15-Aug-13	15	250	230	9.03	175	105	4.1	0.5	0.5	56.3	18.1	0.23	2.8	0.128	0.00202	0.00103	0.104	0.00001	0.000005
HC-17-16	22-Aug-13	16	250	220	9.17	154	110	3.5	0.5	0.5	48.6	15.2	0.26	2.4	0.439	0.00167	0.00099	0.091	0.00001	0.000005
HC-17-17	29-Aug-13	17	250	220	9.19	140	120	3.4	0.5	0.5	49.1	13.6	0.21	2.2	0.168	0.00156	0.00101	0.086	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-17-18	05-Sep-13	18	250	220	9.38	198	100	5.5	0.5	0.5	68.5	16.6	0.28	2.6	0.141	0.00201	0.00178	0.114	0.00002	0.000005
HC-17-19	12-Sep-13	19	250	210	9.35	178	90	5.7	0.5	0.5	57.4	19.3	0.21	2.8	0.174	0.00156	0.00158	0.120	0.00002	0.000005
HC-17-20	19-Sep-13	20	250	220	9.22	158	90	5.2	0.5	0.5	55.5	17.7	0.20		0.228	0.00149	0.00151	0.122	0.00002	0.000005
HC-17-21	26-Sep-13	21	250	210	9.43	157	80	4.7	0.5	0.5	53.6	16.1	0.20		0.283	0.00143	0.00145	0.124	0.00003	0.000005
HC-17-22	03-Oct-13	22	250	210	9.14	126	75	4.2	0.5	0.5	51.7	14.4	0.19		0.337	0.00136	0.00138	0.126	0.00003	0.000005
HC-17-23	10-Oct-13	23	250	210	9.43	148	80	3.7	0.5	0.5	49.8	12.8	0.18	3.4	0.391	0.00129	0.00131	0.128	0.00003	0.000005
HC-17-24	17-Oct-13	24	250	220	9.20	125	100	3.6	0.5	0.5	49.2	12.5	0.18		0.452	0.00130	0.00127	0.131	0.00003	0.000005
HC-17-25	24-Oct-13	25	250	210	9.42	153	100	3.5	0.5	0.5	48.6	12.1	0.17		0.514	0.00131	0.00123	0.133	0.00003	0.000006
HC-17-26	31-Oct-13	26	250	215	8.70	122	85	3.3	0.5	0.5	47.9	11.8	0.17		0.575	0.00132	0.00118	0.136	0.00002	0.000006
HC-17-27	07-Nov-13	27	250	210	9.32	130	90	3.2	0.5	0.5	47.3	11.4	0.16	4.2	0.636	0.00133	0.00114	0.138	0.00002	0.000006
HC-17-28	14-Nov-13	28	250	210	9.26	143	100	3.0	0.5	0.5	46.0	11.9	0.15		0.553	0.00129	0.00107	0.149	0.00002	0.000006
HC-17-29	21-Nov-13	29	250	215	8.98	106	90	2.7	0.5	0.5	44.8	12.5	0.15		0.469	0.00124	0.00099	0.160	0.00003	0.000007
HC-17-30	28-Nov-13	30	250	210	9.17	119	85	2.5	0.5	0.5	43.5	13.0	0.14		0.386	0.00120	0.00092	0.171	0.00003	0.000007
HC-17-31	05-Dec-13	31	250	210	8.78	122	120	2.2	0.5	0.5	42.2	13.5	0.13	5.2	0.302	0.00115	0.00084	0.182	0.00003	0.000007
HC-17-32	12-Dec-13	32	250	210	9.10	145	100	2.0	0.5	0.5	40.7	12.4	0.12		0.245	0.00110	0.00075	0.193	0.00003	0.000007
HC-17-33	19-Dec-13	33	250	210	9.07	117	90	1.9	0.5	0.5	39.2	11.2	0.11		0.187	0.00106	0.00066	0.204	0.00002	0.000006
HC-17-34	26-Dec-13	34	250	210	8.80	125	110	1.7	0.5	0.5	37.7	10.1	0.10		0.130	0.00101	0.00057	0.215	0.00002	0.000006
HC-17-35	02-Jan-14	35	250	220	8.80	125	120	1.5	0.5	0.5	36.2	8.9	0.09	6.6	0.072	0.00096	0.00048	0.226	0.00001	0.000005
HC-17-36	09-Jan-14	36	250	220	9.01	94	105	1.6	0.5	0.5	35.7	8.4	0.09		0.108	0.00093	0.00050	0.233	0.00001	0.000005
HC-17-37	16-Jan-14	37	250	215	8.95	94	95	1.6	0.5	0.5	35.3	8.0	0.09		0.144	0.00090	0.00052	0.239	0.00001	0.000005
HC-17-38	23-Jan-14	38	250	210	8.74	93	115	1.7	0.5	0.5	34.8	7.5	0.09		0.180	0.00087	0.00053	0.246	0.00001	0.000005
HC-17-39	30-Jan-14	39	250	210	8.85	93	110	1.7	0.5	0.5	34.3	7.0	0.09	7.0	0.216	0.00084	0.00055	0.252	0.00001	0.000005
HC-17-40	06-Feb-14	40	250	210	8.56	105	130	1.6	0.5	0.5	33.2	7.2	0.09		0.180	0.00081	0.00050	0.278	0.00001	0.000005
HC-17-41	13-Feb-14	41	250	220	8.64	93	135	1.5	0.5	0.5	32.1	7.4	0.08		0.144	0.00078	0.00045	0.304	0.00001	0.000005
HC-17-42	20-Feb-14	42	250	210	8.42	91	130	1.3	0.5	0.5	31.0	7.5	0.08		0.108	0.00075	0.00040	0.329	0.00001	0.000005
HC-17-43	27-Feb-14	43	250	210	8.32	90	130	1.2	0.5	0.5	29.9	7.7	0.07	10.5	0.072	0.00072	0.00035	0.355	0.00001	0.000005
HC-17-44	06-Mar-14	44	250	210	8.76	82	130	1.0	0.5	0.5	29.0	7.5	0.07		0.062	0.00069	0.00034	0.369	0.00001	0.000005
HC-17-45	13-Mar-14	45	250	210	8.50	82	150	0.9	0.5	0.5	28.2	7.4	0.07		0.051	0.00066	0.00033	0.383	0.00001	0.000005
HC-17-46	20-Mar-14	46	250	210	8.52	79	140	0.7	0.5	0.5	27.3	7.2	0.06		0.041	0.00063	0.00031	0.397	0.00001	0.000005
HC-17-47	27-Mar-14	47	250	215	8.10	79	140	0.5	0.5	0.5	26.4	7.0	0.06	12.6	0.030	0.00060	0.00030	0.411	0.00001	0.000005
<b>Mean all weeks</b>					<b>9.11</b>	<b>148</b>	<b>103</b>	<b>4.7</b>	<b>0.5</b>	<b>0.5</b>	<b>54.2</b>	<b>9.8</b>	<b>0.26</b>	<b>3.4</b>	<b>0.367</b>	<b>0.00176</b>	<b>0.00266</b>	<b>0.170</b>	<b>0.00002</b>	<b>0.000006</b>
<b>HC19 Middle Gates D - CCR</b>																				
HC-19-0	06-Feb-14	0	750	635	7.45	404	120	144.0	0.5	0.5	14.7	2.9	0.40	3.7	0.080	0.00249	0.00134	0.140	0.00001	0.000005
HC-19-1	13-Feb-14	1	500	440	7.91	505	110	178.0	0.5	0.5	22.3	3.0	0.83	2.1	0.090	0.00243	0.00127	0.103	0.00001	0.000005
HC-19-2	20-Feb-14	2	500	460	8.14	436	110	143.0	0.5	0.5	34.4	1.2	0.79	1.2	0.112	0.00254	0.00132	0.094	0.00001	0.000005
HC-19-3	27-Feb-14	3	500	460	8.09	358	110	113.0	0.5	0.5	36.2	0.8	0.69	0.9	0.104	0.00220	0.00116	0.082	0.00001	0.000005
HC-19-4	06-Mar-14	4	500	490	8.32	332	115	98.1	0.5	0.5	36.8	0.8	0.68	0.8	0.139	0.00259	0.00127	0.083	0.00001	0.000005
HC-19-5	13-Mar-14	5	500	460	8.13	291	110	90.3	0.5	0.5	34.7	2.0	0.62	0.7	0.135	0.00240	0.00129	0.065	0.00001	0.000005
HC-19-6	20-Mar-14	6	500	450	8.54	283	115	80.9	0.5	0.5	33.6	6.0	0.56	0.8	0.120	0.00215	0.00113	0.056	0.00001	0.000005
HC-19-7	27-Mar-14	7	500	460	8.48	253	110	66.3	0.5	0.5	29.8	6.3	0.49	0.7	0.103	0.00199	0.00102	0.058	0.00001	0.000005
HC-19-8	03-Apr-14	8	500	450	8.49	247	110	67.2	0.5	0.5	29.8	5.4	0.44	0.7	0.143	0.00195	0.00119	0.057	0.00001	0.000005
HC-19-9	10-Apr-14	9	500	455	8.40	243	115	63.4	0.5	0.5	31.6	4.9	0.43	0.7	0.122	0.00194	0.00111	0.051	0.00001	0.000005
HC-19-10	17-Apr-14	10	500	460	8.43	229	100	62.6	0.5	0.5	33.8	4.5	0.42	0.6	0.068	0.00190	0.00104	0.043	0.00001	0.000005
<b>Mean all weeks</b>					<b>8.22</b>	<b>326</b>	<b>111</b>	<b>100.6</b>	<b>0.5</b>	<b>0.5</b>	<b>30.7</b>	<b>3.4</b>	<b>0.58</b>	<b>1.2</b>	<b>0.110</b>	<b>0.00223</b>	<b>0.00119</b>	<b>0.076</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC20 Middle Gates E - CCR</b>																				
HC-20-0	06-Feb-14	0	750	630	9.08	174	110	35.0	0.5	0.6	31.7	6.7	0.75	0.5	0.527	0.00756	0.01310	0.053	0.00002	0.000010
HC-20-1	13-Feb-14	1	500	460	9.08	288	80	51.6	0.5	0.5	69.8	7.2	1.20	0.5	0.455	0.00890	0.01770	0.087	0.00002	0.000008
HC-20-2	20-Feb-14	2	500	450	9.06	250	85	42.0	0.5	0.5	72.9	1.7	1.20	0.5	0.399	0.00813	0.01570	0.060	0.00001	0.000006

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-20-3	27-Feb-14	3	500	450	9.00	226	95	31.6	0.5	0.5	72.5	0.8	0.92	0.5	0.271	0.00732	0.01200	0.067	0.00001	0.000005
HC-20-4	06-Mar-14	4	500	450	8.99	236	100	29.9	0.5	0.5	80.5	0.7	0.96	0.6	0.606	0.00917	0.01400	0.083	0.00002	0.000006
HC-20-5	13-Mar-14	5	500	460	9.01	203	90	25.7	0.5	0.5	72.5	0.5	0.80	0.5	0.186	0.00752	0.01010	0.054	0.00001	0.000005
HC-20-6	20-Mar-14	6	500	450	9.21	192	85	21.8	0.5	0.5	73.9	0.5	0.73	0.5	0.306	0.00715	0.00930	0.049	0.00001	0.000005
HC-20-7	27-Mar-14	7	500	445	9.17	169	85	16.8	0.5	0.5	65.4	0.5	0.62	0.5	0.205	0.00610	0.00790	0.043	0.00001	0.000005
HC-20-8	03-Apr-14	8	500	455	9.17	175	80	17.1	0.5	0.5	68.0	0.5	0.59	0.5	0.154	0.00656	0.00794	0.043	0.00001	0.000005
HC-20-9	10-Apr-14	9	500	450	9.12	172	90	15.2	0.5	0.5	68.3	0.6	0.61	0.5	0.157	0.00661	0.00835	0.045	0.00001	0.000005
HC-20-10	17-Apr-14	10	500	465	9.14	162	90	14.5	0.5	0.5	65.9	0.7	0.54	0.5	0.071	0.00591	0.00663	0.038	0.00001	0.000005
<b>Mean all weeks</b>					<b>9.09</b>	<b>204</b>	<b>90</b>	<b>27.4</b>	<b>0.5</b>	<b>0.5</b>	<b>67.4</b>	<b>1.9</b>	<b>0.81</b>	<b>0.5</b>	<b>0.303</b>	<b>0.00736</b>	<b>0.01116</b>	<b>0.056</b>	<b>0.00001</b>	<b>0.000006</b>
<b>HC21 Middle Gates F - CCR</b>																				
HC-21-0	06-Feb-14	0	750	655	6.83	287	125	112.0	0.5	0.8	4.7	2.3	0.09	1.6	0.002	0.00126	0.00018	0.068	0.00002	0.000005
HC-21-1	13-Feb-14	1	500	450	7.36	281	105	100.0	0.5	0.5	4.2	10.0	0.26	0.6	0.025	0.00166	0.00070	0.060	0.00001	0.000005
HC-21-2	20-Feb-14	2	500	460	7.15	257	110	97.9	0.5	0.5	5.4	1.7	0.25	0.5	0.047	0.00121	0.00040	0.051	0.00001	0.000005
HC-21-3	27-Feb-14	3	500	470	7.09	227	110	83.9	0.5	0.5	4.6	0.9	0.20	0.5	0.030	0.00098	0.00034	0.035	0.00001	0.000005
HC-21-4	06-Mar-14	4	500	475	7.02	228	115	84.0	0.5	0.5	4.1	0.8	0.18	0.5	0.034	0.00099	0.00028	0.034	0.00001	0.000005
HC-21-5	13-Mar-14	5	500	460	6.94	209	130	74.5	0.5	0.5	3.1	7.5	0.13	0.5	0.017	0.00068	0.00020	0.051	0.00001	0.000005
HC-21-6	20-Mar-14	6	500	450	6.88	211	130	70.3	0.5	0.5	1.8	9.1	0.12	0.5	0.018	0.00058	0.00015	0.046	0.00001	0.000005
HC-21-7	27-Mar-14	7	500	460	6.90	200	110	65.0	0.5	0.5	2.1	7.0	0.11	0.5	0.009	0.00052	0.00015	0.045	0.00001	0.000005
HC-21-8	03-Apr-14	8	500	460	6.63	195	110	67.5	0.5	0.5	1.1	5.6	0.10	0.6	0.010	0.00048	0.00016	0.042	0.00001	0.000005
HC-21-9	10-Apr-14	9	500	460	6.62	188	120	68.3	0.5	0.5	0.9	4.6	0.09	0.5	0.004	0.00045	0.00016	0.037	0.00001	0.000005
HC-21-10	17-Apr-14	10	500	470	6.64	180	120	65.5	0.5	0.5	1.5	4.2	0.10	0.6	0.005	0.00038	0.00014	0.046	0.00001	0.000005
<b>Mean all weeks</b>					<b>6.91</b>	<b>224</b>	<b>117</b>	<b>80.8</b>	<b>0.5</b>	<b>0.5</b>	<b>3.0</b>	<b>4.9</b>	<b>0.15</b>	<b>0.6</b>	<b>0.018</b>	<b>0.00084</b>	<b>0.00026</b>	<b>0.047</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC22 Middle Gates F - CCR</b>																				
HC-22-0	06-Feb-14	0	750	685	9.09	74	100	14.7	0.5	0.5	21.0	0.8	0.29	0.5	0.230	0.00441	0.00287	0.032	0.00001	0.000010
HC-22-1	13-Feb-14	1	500	465	9.10	158	75	24.0	0.5	0.5	44.6	3.8	0.67	0.5	0.238	0.00789	0.00367	0.048	0.00001	0.000005
HC-22-2	20-Feb-14	2	500	455	9.12	142	80	22.8	0.5	0.5	45.0	0.7	0.65	0.5	0.201	0.00582	0.00315	0.035	0.00001	0.000005
HC-22-3	27-Feb-14	3	500	460	9.04	137	95	18.0	0.5	0.5	47.5	0.5	0.56	0.5	0.193	0.00514	0.00264	0.030	0.00001	0.000005
HC-22-4	06-Mar-14	4	500	475	9.18	135	85	15.3	0.5	0.5	44.7	0.7	0.53	0.5	0.248	0.00510	0.00236	0.029	0.00001	0.000005
HC-22-5	13-Mar-14	5	500	470	9.08	125	90	16.9	0.5	0.5	45.9	0.5	0.50	0.5	0.177	0.00467	0.00209	0.023	0.00001	0.000005
HC-22-6	20-Mar-14	6	500	455	9.34	111	80	13.6	0.5	0.5	42.8	0.5	0.42	0.5	0.183	0.00390	0.00182	0.021	0.00001	0.000005
HC-22-7	27-Mar-14	7	500	465	9.20	114	90	10.9	0.5	0.5	42.5	0.5	0.42	0.5	0.166	0.00406	0.00189	0.021	0.00001	0.000005
HC-22-8	03-Apr-14	8	500	445	9.33	109	80	13.0	0.5	0.5	39.1	1.2	0.38	0.5	0.196	0.00366	0.00186	0.026	0.00001	0.000005
HC-22-9	10-Apr-14	9	500	455	9.16	124	85	11.2	0.5	0.5	45.4	2.7	0.39	0.5	0.138	0.00380	0.00173	0.021	0.00001	0.000005
HC-22-10	17-Apr-14	10	500	460	9.10	124	85	10.9	0.5	0.5	46.1	3.4	0.40	0.5	0.118	0.00373	0.00148	0.018	0.00001	0.000005
<b>Mean all weeks</b>					<b>9.16</b>	<b>123</b>	<b>86</b>	<b>15.6</b>	<b>0.5</b>	<b>0.5</b>	<b>42.2</b>	<b>1.4</b>	<b>0.47</b>	<b>0.5</b>	<b>0.190</b>	<b>0.00474</b>	<b>0.00232</b>	<b>0.028</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC23 Middle Gates G/I - CCR</b>																				
HC-23-0	06-Feb-14	0	750	675	9.54	168	105	16.8	0.5	0.5	55.5	5.5	0.33	1.0	0.254	0.00395	0.00266	0.022	0.00001	0.000005
HC-23-1	13-Feb-14	1	500	455	9.64	330	60	18.5	0.5	0.5	115.2	16.1	0.74	1.0	0.375	0.00765	0.00339	0.054	0.00001	0.000005
HC-23-2	20-Feb-14	2	500	465	9.67	283	70	22.8	0.5	0.5	111.1	3.0	0.69	0.9	0.283	0.00559	0.00251	0.047	0.00001	0.000005
HC-23-3	27-Feb-14	3	500	465	9.72	264	70	16.8	0.5	0.5	109.7	1.4	0.58	1.0	0.267	0.00460	0.00197	0.047	0.00001	0.000005
HC-23-4	06-Mar-14	4	500	490	9.64	255	80	13.7	0.5	0.5	103.8	1.4	0.54	1.2	0.273	0.00417	0.00162	0.045	0.00001	0.000005
HC-23-5	13-Mar-14	5	500	445	9.46	243	75	13.6	0.5	0.5	100.6	1.1	0.48	0.9	0.229	0.00357	0.00131	0.035	0.00001	0.000005
HC-23-6	20-Mar-14	6	500	455	9.72	221	70	16.1	0.5	0.5	100.6	0.8	0.43	1.1	0.177	0.00322	0.00107	0.035	0.00001	0.000005
HC-23-7	27-Mar-14	7	500	470	9.61	200	70	9.2	0.5	0.5	90.7	0.5	0.39	1.2	0.146	0.00289	0.00089	0.034	0.00001	0.000005
HC-23-8	03-Apr-14	8	500	460	9.66	192	70	10.2	0.5	0.5	87.9	0.9	0.37	1.1	0.166	0.00258	0.00082	0.031	0.00001	0.000005
HC-23-9	10-Apr-14	9	500	465	9.53	192	80	9.5	0.5	0.5	86.7	3.5	0.34	1.2	0.134	0.00244	0.00062	0.034	0.00001	0.000005
HC-23-10	17-Apr-14	10	500	470	9.55	192	80	9.4	0.5	0.5	77.9	7.8	0.32	1.4	0.107	0.00213	0.00049	0.034	0.00001	0.000005
<b>Mean all weeks</b>					<b>9.61</b>	<b>231</b>	<b>75</b>	<b>14.2</b>	<b>0.5</b>	<b>0.5</b>	<b>94.5</b>	<b>3.8</b>	<b>0.47</b>	<b>1.1</b>	<b>0.219</b>	<b>0.00389</b>	<b>0.00158</b>	<b>0.038</b>	<b>0.00001</b>	<b>0.000005</b>



Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume	pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	
			Total Volume In																	Total Volume Out
<b>HC24 Middle Gates G/I - CCR</b>																				
HC-24-0	06-Feb-14	0	375	340	6.75	434	130	167.0	0.5	1.0	4.2	1.5	0.14	2.5	0.027	0.00096	0.00087	0.076	0.00004	0.000005
HC-24-1	13-Feb-14	1	250	215	6.89	195	110	59.0	0.5	0.5	7.6	6.6	0.56	0.9	0.085	0.00150	0.00113	0.077	0.00001	0.000005
HC-24-2	20-Feb-14	2	250	215	7.24	190	110	65.8	0.5	0.5	7.2	0.8	0.55	0.6	0.155	0.00121	0.00109	0.048	0.00001	0.000005
HC-24-3	27-Feb-14	3	250	220	7.36	156	100	49.7	0.5	0.5	9.3	0.7	0.52	0.5	0.053	0.00116	0.00076	0.048	0.00001	0.000005
HC-24-4	06-Mar-14	4	250	235	7.66	167	100	49.8	0.5	0.5	12.9	0.8	0.53	0.5	0.066	0.00137	0.00069	0.050	0.00001	0.000005
HC-24-5	13-Mar-14	5	250	210	7.55	179	100	60.7	0.5	0.5	8.4	1.0	0.46	0.5	0.152	0.00107	0.00083	0.042	0.00001	0.000005
HC-24-6	20-Mar-14	6	250	205	7.19	174	110	59.7	0.5	0.5	6.9	1.0	0.40	0.5	0.216	0.00093	0.00072	0.043	0.00001	0.000005
HC-24-7	27-Mar-14	7	250	215	7.22	147	105	44.8	0.5	0.5	7.5	0.7	0.38	0.5	0.073	0.00090	0.00068	0.043	0.00001	0.000005
HC-24-8	03-Apr-14	8	250	205	7.10	167	115	58.1	0.5	0.5	5.5	1.0	0.33	0.5	0.148	0.00079	0.00063	0.047	0.00001	0.000005
HC-24-9	10-Apr-14	9	250	210	7.09	155	110	52.8	0.5	0.5	6.0	1.1	0.31	0.5	0.151	0.00079	0.00061	0.041	0.00001	0.000005
HC-24-10	17-Apr-14	10	250	215	7.13	131	110	43.3	0.5	0.5	7.8	1.3	0.32	0.5	0.044	0.00080	0.00058	0.029	0.00001	0.000005
<b>Mean all weeks</b>					<b>7.20</b>	<b>190</b>	<b>109</b>	<b>64.6</b>	<b>0.5</b>	<b>0.5</b>	<b>7.6</b>	<b>1.5</b>	<b>0.41</b>	<b>0.7</b>	<b>0.106</b>	<b>0.00104</b>	<b>0.00078</b>	<b>0.049</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC25 Middle Gates D - Clean Coal</b>																				
HC-25-0	06-Feb-14	0	375	325	6.92	50	130	11.8	0.5	0.5	9.2	2.3	0.05	11.4	0.027	0.00013	0.00120	0.286	0.00001	0.000007
HC-25-1	13-Feb-14	1	250	180	7.04	165	155	49.6	0.5	0.5	11.4	4.4	0.07	48.5	0.009	0.00026	0.00061	0.144	0.00001	0.000005
HC-25-2	20-Feb-14	2	250	205	7.49	185	140	60.7	0.5	0.7	17.1	3.5	0.09	70.8	0.007	0.00023	0.00055	0.099	0.00001	0.000005
HC-25-3	27-Feb-14	3	250	225	7.45	182	135	59.9	0.5	0.5	14.1	1.4	0.07	72.1	0.005	0.00016	0.00044	0.092	0.00001	0.000005
HC-25-4	06-Mar-14	4	250	230	7.44	187	150	65.0	0.5	0.5	15.6	0.5	0.05	75.1	0.005	0.00013	0.00041	0.089	0.00001	0.000005
HC-25-5	13-Mar-14	5	250	205	7.31	202	160	76.2	0.5	0.5	13.6	0.5	0.05	86.6	0.004	0.00012	0.00038	0.083	0.00001	0.000005
HC-25-6	20-Mar-14	6	250	205	7.39	205	155	76.6	0.5	0.5	14.5	0.5	0.05	90.5	0.005	0.00010	0.00040	0.075	0.00001	0.000005
HC-25-7	27-Mar-14	7	250	210	7.46	207	140	76.3	0.5	0.5	14.1	0.5	0.05	92.5	0.003	0.00010	0.00032	0.076	0.00001	0.000005
HC-25-8	03-Apr-14	8	250	205	7.45	217	140	82.6	0.5	0.5	14.3	0.5	0.05	98.6	0.003	0.00009	0.00032	0.075	0.00001	0.000005
HC-25-9	10-Apr-14	9	250	205	7.40	221	150	86.7	0.5	0.5	13.4	0.5	0.05	91.6	0.002	0.00008	0.00029	0.075	0.00001	0.000005
HC-25-10	17-Apr-14	10	250	215	7.43	210	140	84.7	0.0	0.0	14.5	0.7	0.05	97.9	0.002	0.00006	0.00024	0.068	0.00001	0.000005
<b>Mean all weeks</b>					<b>7.34</b>	<b>185</b>	<b>145</b>	<b>66.4</b>	<b>0.5</b>	<b>0.5</b>	<b>13.8</b>	<b>1.4</b>	<b>0.06</b>	<b>76.0</b>	<b>0.006</b>	<b>0.00013</b>	<b>0.00047</b>	<b>0.106</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC26 Middle Gates E - Clean Coal</b>																				
HC-26-0	06-Feb-14	0	375	345	7.09	29	130	0.7	0.5	0.5	8.1	3.5	0.05	5.9	0.007	0.00011	0.00079	0.214	0.00001	0.000005
HC-26-1	13-Feb-14	1	250	190	7.33	25	115	0.5	0.5	0.5	5.4	1.8	0.05	1.2	0.011	0.00025	0.00061	0.125	0.00001	0.000005
HC-26-2	20-Feb-14	2	250	235	7.60	43	130	1.2	0.5	0.5	17.1	1.8	0.05	6.4	0.008	0.00046	0.00101	0.258	0.00001	0.000005
HC-26-3	27-Feb-14	3	250	215	7.71	53	135	2.6	0.5	0.5	22.7	1.5	0.05	10.9	0.012	0.00048	0.00132	0.403	0.00001	0.000005
HC-26-4	06-Mar-14	4	250	240	7.74	53	140	0.8	0.5	0.5	22.4	0.7	0.05	12.3	0.011	0.00037	0.00086	0.431	0.00001	0.000005
HC-26-5	13-Mar-14	5	250	225	7.57	46	155	1.9	0.5	0.5	20.5	0.6	0.05	12.3	0.008	0.00032	0.00068	0.400	0.00001	0.000005
HC-26-6	20-Mar-14	6	250	220	7.53	43	155	1.8	0.5	0.5	21.0	0.5	0.05	11.7	0.011	0.00029	0.00051	0.374	0.00001	0.000005
HC-26-7	27-Mar-14	7	250	215	7.63	48	135	0.5	0.5	0.5	20.0	0.5	0.05	13.0	0.008	0.00028	0.00049	0.429	0.00001	0.000005
HC-26-8	03-Apr-14	8	250	210	7.66	47	140	0.8	0.5	0.5	20.5	0.6	0.05	13.8	0.008	0.00025	0.00044	0.430	0.00001	0.000005
HC-26-9	10-Apr-14	9	250	220	7.71	50	145	0.5	0.5	0.5	23.1	0.5	0.05	15.5	0.008	0.00026	0.00044	0.521	0.00001	0.000005
HC-26-10	17-Apr-14	10	250	220	7.69	47	140	1.1	0.5	0.5	22.8	0.5	0.05	15.4	0.007	0.00023	0.00034	0.474	0.00001	0.000005
<b>Mean all weeks</b>					<b>7.57</b>	<b>44</b>	<b>138</b>	<b>1.1</b>	<b>0.5</b>	<b>0.5</b>	<b>18.5</b>	<b>1.1</b>	<b>0.05</b>	<b>10.8</b>	<b>0.009</b>	<b>0.00030</b>	<b>0.00068</b>	<b>0.369</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC27 Middle Gates G/I - Tailings</b>																				
HC-27-0	06-Feb-14	0	188	95	8.11	435	125	109.0	n.a.	n.a.	n.a.	n.a.	n.a.	68.2	0.060	0.00636	0.00223	0.222	0.00001	0.000005
HC-27-1	13-Feb-14	1	125	120	8.21	310	140	56.2	n.a.	n.a.	n.a.	n.a.	n.a.	72.2	0.050	0.00630	0.00141	0.137	0.00001	0.000005
HC-27-2	20-Feb-14	2	125	100	8.42	379	110	37.4	n.a.	n.a.	n.a.	n.a.	n.a.	136.0	0.033	0.00606	0.00137	0.193	0.00001	0.000005
HC-27-3	27-Feb-14	3	125	105	8.49	368	110	33.9	n.a.	n.a.	n.a.	n.a.	n.a.	146.0	0.016	0.00544	0.00103	0.203	0.00001	0.000005
HC-27-4	06-Mar-14	4	125	105	8.18	342	120	30.2	n.a.	n.a.	n.a.	n.a.	n.a.	150.0	0.021	0.00505	0.00082	0.212	0.00001	0.000005
HC-27-5	13-Mar-14	5	125	100	8.09	339	130	30.9	n.a.	n.a.	n.a.	n.a.	n.a.	159.0	0.014	0.00460	0.00070	0.228	0.00001	0.000005
HC-27-6	20-Mar-14	6	125	95	8.45	362	115	31.6	n.a.	n.a.	n.a.	n.a.	n.a.	160.0	0.013	0.00424	0.00058	0.216	0.00001	0.000005
HC-27-7	27-Mar-14	7	125	100	8.50	328	110	28.2	n.a.	n.a.	n.a.	n.a.	n.a.	161.0	0.008	0.00367	0.00046	0.220	0.00001	0.000005

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Total Volume		pH	Conductivity	ORP	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	Acidity to pH 4.5	Acidity to pH 8.3	Total Alkalinity	Chloride (Cl <sup>-</sup> )	Fluoride (F <sup>-</sup> )	Hardness	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)
			Volume In ml	Volume Out ml																
HC-27-8	03-Apr-14	8	125	100	8.43	336	110	31.8	n.a.	n.a.	n.a.	n.a.	n.a.	161.0	0.011	0.00327	0.00041	0.213	0.00001	0.000005
HC-27-9	10-Apr-14	9	125	100	8.42	348	120	28.6	n.a.	n.a.	n.a.	n.a.	n.a.	161.0	0.008	0.00284	0.00038	0.218	0.00001	0.000005
HC-27-10	17-Apr-14	10	125	95	8.09	367	125	32.6	n.a.	n.a.	n.a.	n.a.	n.a.	180.0	0.005	0.00243	0.00032	0.207	0.00001	0.000005
<b>Mean all weeks</b>					<b>8.31</b>	<b>356</b>	<b>120</b>	<b>40.9</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>141.3</b>	<b>0.022</b>	<b>0.00457</b>	<b>0.00088</b>	<b>0.206</b>	<b>0.00001</b>	<b>0.000005</b>
<b>HC28 Middle Gates J - Tailings</b>																				
HC-28-0	06-Feb-14	0	188	90	8.21	693	110	221.0	n.a.	n.a.	n.a.	n.a.	n.a.	202.0	0.037	0.00997	0.00137	0.142	0.00001	0.000005
HC-28-1	13-Feb-14	1	125	90	8.39	350	130	53.0	n.a.	n.a.	n.a.	n.a.	n.a.	131.0	0.043	0.00749	0.00146	0.159	0.00001	0.000005
HC-28-2	20-Feb-14	2	125	105	8.44	349	110	52.3	n.a.	n.a.	n.a.	n.a.	n.a.	150.0	0.032	0.00875	0.00147	0.148	0.00001	0.000005
HC-28-3	27-Feb-14	3	125	90	8.42	326	120	47.2	n.a.	n.a.	n.a.	n.a.	n.a.	140.0	0.027	0.00808	0.00119	0.146	0.00001	0.000005
HC-28-4	06-Mar-14	4	125	115	8.20	374	120	40.9	n.a.	n.a.	n.a.	n.a.	n.a.	170.0	0.018	0.00854	0.00112	0.186	0.00001	0.000005
HC-28-5	13-Mar-14	5	125	100	8.08	340	130	34.9	n.a.	n.a.	n.a.	n.a.	n.a.	167.0	0.023	0.00797	0.00087	0.198	0.00001	0.000005
HC-28-6	20-Mar-14	6	125	95	8.39	351	115	30.6	n.a.	n.a.	n.a.	n.a.	n.a.	159.0	0.019	0.00706	0.00066	0.203	0.00001	0.000005
HC-28-7	27-Mar-14	7	125	105	8.40	335	110	26.8	n.a.	n.a.	n.a.	n.a.	n.a.	163.0	0.013	0.00653	0.00050	0.216	0.00001	0.000005
HC-28-8	03-Apr-14	8	125	95	8.43	337	120	30.4	n.a.	n.a.	n.a.	n.a.	n.a.	157.0	0.014	0.00612	0.00047	0.218	0.00001	0.000005
HC-28-9	10-Apr-14	9	125	100	8.36	365	125	27.8	n.a.	n.a.	n.a.	n.a.	n.a.	156.0	0.015	0.00520	0.00045	0.230	0.00001	0.000005
HC-28-10	17-Apr-14	10	125	100	8.26	360	120	27.3	n.a.	n.a.	n.a.	n.a.	n.a.	171.0	0.016	0.00464	0.00039	0.222	0.00001	0.000005
<b>Mean all weeks</b>					<b>8.33</b>	<b>380</b>	<b>119</b>	<b>53.8</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>160.5</b>	<b>0.023</b>	<b>0.00730</b>	<b>0.00090</b>	<b>0.188</b>	<b>0.00001</b>	<b>0.000005</b>

Note: Where concentrations were below detection limits, they were reported as the detection limit value

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L
HC2 Middle Gates E - CCR																				
HC-2-0	15-Feb-11	0	0.05	0.00006	0.000016	0.13	0.00040	0.00010	0.00079	0.00005	0.054	0.000416	0.0341	0.05	0.00114	0.079	0.000010	0.0122	0.00044	0.34
HC-2-1	22-Feb-11	1	0.05	0.00005	0.000021	0.33	0.00030	0.00013	0.00197	0.00005	0.023	0.000171	0.0499	0.13	0.00080	0.076	0.000010	0.0250	0.00053	0.41
HC-2-2	01-Mar-11	2	0.05	0.00005	0.000010	0.22	0.00010	0.00010	0.00045	0.00005	0.018	0.000108	0.0468	0.08	0.00042	0.037	0.000010	0.0124	0.00033	0.35
HC-2-3	08-Mar-11	3	0.05	0.00005	0.000005	0.43	0.00030	0.00008	0.00073	0.00005	0.019	0.000094	0.0393	0.15	0.00110	0.033	0.000002	0.0086	0.00025	0.35
HC-2-4	15-Mar-11	4	0.05	0.00005	0.000006	0.29	0.00020	0.00007	0.00024	0.00005	0.015	0.000069	0.0374	0.11	0.00032	0.033	0.000010	0.0048	0.00018	0.37
HC-2-5	22-Mar-11	5	0.05	0.00005	0.000005	0.35	0.00010	0.00006	0.00026	0.00005	0.012	0.000057	0.0294	0.10	0.00029	0.027	0.000010	0.0061	0.00016	0.30
HC-2-6	29-Mar-11	6	0.05	0.00005	0.000005	0.31	0.00010	0.00005	0.00031	0.00005	0.011	0.000062	0.0283	0.09	0.00029	0.015	0.000010	0.0050	0.00015	0.31
HC-2-7	05-Apr-11	7	0.05	0.00005	0.000005	0.31	0.00010	0.00005	0.00025	0.00005	0.011	0.000063	0.0260	0.11	0.00027	0.011	0.000002	0.0039	0.00014	0.31
HC-2-8	12-Apr-11	8	0.05	0.00001	0.000050	0.30	0.00010	0.00005	0.00020	0.00005	0.012	0.000064	0.0253	0.11	0.00023	0.012	0.000003	0.0019	0.00017	0.32
HC-2-9	19-Apr-11	9	0.05	0.00005	0.000007	0.34	0.00010	0.00005	0.00022	0.00005	0.013	0.000062	0.0246	0.16	0.00042	0.013	0.000002	0.0036	0.00013	0.33
HC-2-10	26-Apr-11	10	0.05	0.00005	0.000005	0.38	0.00010	0.00004	0.00020	0.00005	0.010	0.000052	0.0218	0.15	0.00025	0.015	0.000002	0.0031	0.00013	0.31
HC-2-11	03-May-11	11	0.05	0.00005	0.000005	0.37	0.00020	0.00007	0.00026	0.00005	0.021	0.000073	0.0184	0.14	0.00063	0.013	0.000002	0.0030	0.00020	0.29
HC-2-12	10-May-11	12	0.05	0.00005	0.000005	0.44	0.00010	0.00004	0.00028	0.00005	0.011	0.000049	0.0202	0.18	0.00022	0.011	0.000002	0.0029	0.00010	0.35
HC-2-13	17-May-11	13	0.05	0.00005	0.000005	0.40	0.00010	0.00002	0.00020	0.00005	0.005	0.000039	0.0217	0.15	0.00017	0.003	0.000002	0.0030	0.00006	0.36
HC-2-14	24-May-11	14	0.05	0.00005	0.000005	0.46	0.00010	0.00003	0.00020	0.00005	0.015	0.000034	0.0190	0.18	0.00020	0.007	0.000002	0.0028	0.00009	0.33
HC-2-15	31-May-11	15	0.05	0.00005	0.000005	0.43	0.00010	0.00003	0.00025	0.00005	0.008	0.000043	0.0187	0.18	0.00021	0.014	0.000002	0.0027	0.00009	0.34
HC-2-16	07-Jun-11	16	0.05	0.00005	0.000005	0.45	0.00010	0.00002	0.01620	0.00005	0.007	0.000167	0.0184	0.21	0.00027	0.004	0.000002	0.0021	0.00008	0.36
HC-2-17	14-Jun-11	17	0.05	0.00005	0.000005	0.58	0.00010	0.00002	0.00019	0.00005	0.004	0.000047	0.0177	0.25	0.00061	0.002	0.000002	0.0024	0.00007	0.40
HC-2-18	21-Jun-11	18	0.05	0.00005	0.000006	0.51	0.00010	0.00002	0.00013	0.00005	0.004	0.000021	0.0177	0.27	0.00028	0.020	0.000002	0.0021	0.00008	0.40
HC-2-19	28-Jun-11	19	0.05	0.00005	0.000005	0.67	0.00010	0.00003	0.00014	0.00005	0.006	0.000037	0.0165	0.36	0.00041	0.012	0.000002	0.0020	0.00006	0.43
HC-2-20	05-Jul-11	20	0.05	0.00005	0.000005	0.76	0.00010	0.00003	0.00018	0.00005	0.005	0.000032	0.0160	0.41	0.00043	0.010	0.000002	0.0019	0.00007	0.45
HC-2-21	12-Jul-11	21	0.05	0.00005	0.000005	0.84	0.00010	0.00003	0.00022	0.00005	0.004	0.000028	0.0154	0.47	0.00046	0.007	0.000002	0.0018	0.00008	0.46
HC-2-22	19-Jul-11	22	0.05	0.00005	0.000005	0.93	0.00010	0.00003	0.00026	0.00005	0.003	0.000023	0.0149	0.52	0.00048	0.005	0.000002	0.0017	0.00008	0.48
HC-2-23	26-Jul-11	23	0.05	0.00005	0.000005	1.01	0.00010	0.00003	0.00030	0.00005	0.002	0.000018	0.0143	0.57	0.00050	0.002	0.000002	0.0016	0.00009	0.49
HC-2-24	02-Aug-11	24	0.05	0.00005	0.000005	1.45	0.00010	0.00003	0.00029	0.00005	0.003	0.000035	0.0144	0.82	0.00071	0.010	0.000002	0.0015	0.00012	0.55
HC-2-25	09-Aug-11	25	0.05	0.00005	0.000005	1.89	0.00010	0.00004	0.00027	0.00005	0.003	0.000052	0.0144	1.07	0.00093	0.018	0.000002	0.0014	0.00015	0.61
HC-2-26	16-Aug-11	26	0.05	0.00005	0.000005	2.33	0.00010	0.00004	0.00026	0.00005	0.004	0.000068	0.0145	1.31	0.00114	0.025	0.000002	0.0013	0.00017	0.66
HC-2-27	23-Aug-11	27	0.05	0.00005	0.000005	2.77	0.00010	0.00005	0.00024	0.00005	0.004	0.000085	0.0145	1.56	0.00135	0.033	0.000002	0.0012	0.00020	0.72
HC-2-28	30-Aug-11	28	0.05	0.00005	0.000005	3.15	0.00010	0.00005	0.00024	0.00005	0.004	0.000067	0.0142	1.85	0.00142	0.026	0.000002	0.0012	0.00019	0.75
HC-2-29	06-Sep-11	29	0.05	0.00005	0.000006	3.52	0.00010	0.00005	0.00025	0.00005	0.003	0.000048	0.0139	2.14	0.00150	0.018	0.000002	0.0011	0.00017	0.79
HC-2-30	13-Sep-11	30	0.05	0.00005	0.000006	3.90	0.00010	0.00005	0.00025	0.00005	0.003	0.000030	0.0135	2.43	0.00157	0.011	0.000002	0.0010	0.00016	0.82
HC-2-31	20-Sep-11	31	0.05	0.00005	0.000006	4.27	0.00010	0.00005	0.00025	0.00005	0.002	0.000011	0.0132	2.72	0.00164	0.003	0.000002	0.0010	0.00014	0.85
HC-2-32	27-Sep-11	32	0.05	0.00005	0.000007	4.73	0.00010	0.00005	0.00034	0.00005	0.002	0.000028	0.0125	3.01	0.00165	0.004	0.000002	0.0009	0.00015	0.92
HC-2-33	04-Oct-11	33	0.05	0.00005	0.000008	5.20	0.00010	0.00005	0.00042	0.00005	0.002	0.000046	0.0118	3.31	0.00166	0.004	0.000002	0.0009	0.00016	0.98
HC-2-34	11-Oct-11	34	0.05	0.00005	0.000008	5.66	0.00010	0.00005	0.00051	0.00005	0.002	0.000063	0.0110	3.60	0.00167	0.005	0.000002	0.0008	0.00016	1.05
HC-2-35	18-Oct-11	35	0.05	0.00005	0.000009	6.12	0.00010	0.00005	0.00059	0.00005	0.002	0.000080	0.0103	3.89	0.00168	0.005	0.000002	0.0008	0.00017	1.11
HC-2-36	25-Oct-11	36	0.05	0.00005	0.000008	6.20	0.00010	0.00005	0.00051	0.00005	0.002	0.000085	0.0096	4.06	0.00153	0.006	0.000002	0.0007	0.00018	1.09
HC-2-37	01-Nov-11	37	0.05	0.00005	0.000008	6.28	0.00010	0.00004	0.00043	0.00005	0.002	0.000091	0.0089	4.23	0.00139	0.008	0.000002	0.0007	0.00020	1.07
HC-2-38	08-Nov-11	38	0.05	0.00005	0.000007	6.35	0.00010	0.00003	0.00035	0.00005	0.001	0.000096	0.0081	4.40	0.00124	0.009	0.000002	0.0007	0.00021	1.05
HC-2-39	15-Nov-11	39	0.05	0.00005	0.000006	6.43	0.00010	0.00003	0.00027	0.00005	0.001	0.000101	0.0074	4.57	0.00109	0.010	0.000002	0.0006	0.00022	1.03
HC-2-40	22-Nov-11	40	0.05	0.00005	0.000006	6.50	0.00010	0.00004	0.00031	0.00005	0.005	0.000097	0.0073	4.58	0.00148	0.008	0.000002	0.0006	0.00026	1.08
HC-2-41	29-Nov-11	41	0.05	0.00005	0.000007	6.57	0.00010	0.00005	0.00034	0.00005	0.009	0.000093	0.0071	4.60	0.00186	0.007	0.000002	0.0006	0.00030	1.13
HC-2-42	06-Dec-11	42	0.05	0.00005	0.000007	6.64	0.00010	0.00007	0.00038	0.00005	0.012	0.000089	0.0070	4.61	0.00225	0.005	0.000002	0.0006	0.00034	1.18
HC-2-43	13-Dec-11	43	0.05	0.00005	0.000007	6.71	0.00010	0.00008	0.00041	0.00005	0.016	0.000085	0.0068	4.62	0.00263	0.003	0.000002	0.0006	0.00038	1.23
HC-2-44	20-Dec-11	44	0.05	0.00005	0.000007	7.27	0.00010	0.00008	0.00036	0.00005	0.013	0.000099	0.0066	4.73	0.00251	0.003	0.000002	0.0006	0.00034	1.21
HC-2-45	27-Dec-11	45	0.05	0.00005	0.000007	7.84	0.00010	0.00008	0.00031	0.00005	0.009	0.000112	0.0064	4.84	0.00238	0.003	0.000002	0.0006	0.00031	1.19
HC-2-46	03-Jan-12	46	0.05	0.00005	0.000006	8.40	0.00010	0.00008	0.00025	0.00005	0.006	0.000126	0.0061	4.94	0.00226	0.003	0.000002	0.0006	0.00027	1.16
HC-2-47	10-Jan-12	47	0.05	0.00005	0.000006	8.96	0.00010	0.00008	0.00020	0.00005	0.002	0.000139	0.0059	5.05	0.00213	0.003	0.000002	0.0005	0.00023	1.14

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-2-48	17-Jan-12	48	0.05	0.00005	0.000006	8.98	0.00010	0.00007	0.00021	0.00005	0.002	0.000106	0.0056	5.28	0.00211	0.003	0.000002	0.0005	0.00024	1.13
HC-2-49	24-Jan-12	49	0.05	0.00005	0.000006	8.99	0.00010	0.00007	0.00021	0.00005	0.002	0.000072	0.0054	5.51	0.00209	0.003	0.000002	0.0005	0.00025	1.13
HC-2-50	31-Jan-12	50	0.05	0.00005	0.000005	9.01	0.00010	0.00007	0.00022	0.00005	0.001	0.000039	0.0051	5.74	0.00206	0.003	0.000002	0.0004	0.00026	1.12
HC-2-51	07-Feb-12	51	0.05	0.00005	0.000005	9.02	0.00010	0.00006	0.00022	0.00005	0.001	0.000005	0.0048	5.97	0.00204	0.003	0.000002	0.0004	0.00027	1.11
HC-2-52	14-Feb-12	52	0.05	0.00005	0.000005	9.05	0.00010	0.00006	0.00023	0.00005	0.001	0.000008	0.0047	5.99	0.00215	0.003	0.000002	0.0004	0.00025	1.10
HC-2-53	21-Feb-12	53	0.05	0.00005	0.000005	9.08	0.00010	0.00006	0.00025	0.00005	0.002	0.000011	0.0046	6.00	0.00227	0.003	0.000002	0.0004	0.00023	1.10
HC-2-54	28-Feb-12	54	0.05	0.00005	0.000005	9.11	0.00010	0.00006	0.00026	0.00005	0.002	0.000013	0.0045	6.02	0.00238	0.003	0.000002	0.0003	0.00021	1.09
HC-2-55	06-Mar-12	55	0.05	0.00005	0.000005	9.14	0.00010	0.00006	0.00027	0.00005	0.002	0.000016	0.0044	6.03	0.00249	0.003	0.000002	0.0003	0.00019	1.08
HC-2-56	13-Mar-12	56	0.05	0.00005	0.000005	9.11	0.00010	0.00006	0.00029	0.00005	0.002	0.000015	0.0043	6.03	0.00231	0.003	0.000002	0.0003	0.00085	1.06
HC-2-57	20-Mar-12	57	0.05	0.00005	0.000006	9.08	0.00010	0.00006	0.00030	0.00005	0.003	0.000014	0.0041	6.02	0.00212	0.004	0.000002	0.0003	0.00150	1.04
HC-2-58	27-Mar-12	58	0.05	0.00005	0.000006	9.04	0.00010	0.00006	0.00032	0.00005	0.003	0.000012	0.0040	6.02	0.00194	0.004	0.000002	0.0003	0.00216	1.02
HC-2-59	03-Apr-12	59	0.05	0.00005	0.000006	9.01	0.00010	0.00006	0.00033	0.00005	0.003	0.000011	0.0038	6.01	0.00175	0.004	0.000002	0.0004	0.00281	1.00
HC-2-60	10-Apr-12	60	0.05	0.00005	0.000006	9.38	0.00010	0.00006	0.00032	0.00005	0.003	0.000010	0.0037	6.27	0.00173	0.007	0.000002	0.0003	0.00218	1.01
HC-2-61	17-Apr-12	61	0.05	0.00005	0.000007	9.76	0.00010	0.00005	0.00031	0.00005	0.002	0.000009	0.0036	6.52	0.00170	0.009	0.000002	0.0003	0.00156	1.02
HC-2-62	24-Apr-12	62	0.05	0.00005	0.000007	10.13	0.00010	0.00005	0.00029	0.00005	0.002	0.000007	0.0036	6.78	0.00168	0.012	0.000002	0.0003	0.00093	1.03
HC-2-63	01-May-12	63	0.05	0.00005	0.000007	10.50	0.00010	0.00004	0.00028	0.00005	0.001	0.000006	0.0035	7.03	0.00165	0.014	0.000002	0.0003	0.00030	1.04
HC-2-64	08-May-12	64	0.05	0.00005	0.000007	10.55	0.00010	0.00005	0.00035	0.00005	0.002	0.000014	0.0035	7.08	0.00172	0.013	0.000002	0.0002	0.00028	1.01
HC-2-65	15-May-12	65	0.05	0.00005	0.000006	10.60	0.00010	0.00005	0.00042	0.00005	0.003	0.000022	0.0034	7.13	0.00180	0.011	0.000002	0.0002	0.00027	0.98
HC-2-66	22-May-12	66	0.05	0.00005	0.000006	10.65	0.00010	0.00006	0.00049	0.00005	0.003	0.000030	0.0034	7.17	0.00187	0.010	0.000002	0.0002	0.00025	0.95
HC-2-67	29-May-12	67	0.05	0.00005	0.000005	10.70	0.00010	0.00006	0.00055	0.00005	0.004	0.000038	0.0034	7.22	0.00194	0.008	0.000002	0.0002	0.00023	0.92
HC-2-68	05-Jun-12	68	0.05	0.00007	0.000005	10.93	0.00010	0.00006	0.00122	0.00005	0.004	0.000032	0.0034	7.29	0.00189	0.009	0.000002	0.0002	0.00025	0.94
HC-2-69	12-Jun-12	69	0.05	0.00008	0.000005	11.15	0.00010	0.00005	0.00188	0.00005	0.004	0.000027	0.0033	7.36	0.00184	0.009	0.000002	0.0002	0.00027	0.95
HC-2-70	19-Jun-12	70	0.05	0.00010	0.000005	11.38	0.00010	0.00005	0.00255	0.00005	0.004	0.000021	0.0033	7.43	0.00179	0.009	0.000002	0.0002	0.00029	0.96
HC-2-71	26-Jun-12	71	0.05	0.00011	0.000005	11.60	0.00010	0.00005	0.00321	0.00005	0.004	0.000016	0.0033	7.50	0.00174	0.009	0.000002	0.0002	0.00031	0.98
HC-2-72	03-Jul-12	72	0.05	0.00010	0.000006	12.18	0.00010	0.00004	0.00246	0.00005	0.004	0.000019	0.0032	7.80	0.00171	0.008	0.000002	0.0002	0.00030	0.98
HC-2-73	10-Jul-12	73	0.05	0.00008	0.000006	12.75	0.00010	0.00004	0.00172	0.00005	0.004	0.000022	0.0032	8.09	0.00168	0.007	0.000002	0.0002	0.00028	0.98
HC-2-74	17-Jul-12	74	0.05	0.00007	0.000006	13.33	0.00010	0.00004	0.00097	0.00005	0.004	0.000025	0.0032	8.39	0.00164	0.006	0.000002	0.0002	0.00026	0.99
HC-2-75	24-Jul-12	75	0.05	0.00005	0.000007	13.90	0.00010	0.00004	0.00023	0.00005	0.004	0.000028	0.0031	8.68	0.00161	0.005	0.000002	0.0002	0.00025	0.99
HC-2-76	31-Jul-12	76	0.05	0.00005	0.000007	14.10	0.00010	0.00005	0.00028	0.00005	0.004	0.000024	0.0031	9.04	0.00207	0.004	0.000002	0.0002	0.00026	1.02
HC-2-77	07-Aug-12	77	0.05	0.00005	0.000006	14.30	0.00010	0.00006	0.00034	0.00005	0.004	0.000020	0.0031	9.39	0.00253	0.003	0.000002	0.0002	0.00028	1.05
HC-2-78	14-Aug-12	78	0.05	0.00005	0.000006	14.50	0.00010	0.00007	0.00039	0.00005	0.004	0.000016	0.0031	9.75	0.00299	0.003	0.000002	0.0002	0.00030	1.08
HC-2-79	21-Aug-12	79	0.05	0.00005	0.000006	14.70	0.00010	0.00008	0.00045	0.00005	0.004	0.000012	0.0030	10.10	0.00345	0.002	0.000002	0.0002	0.00031	1.11
HC-2-80	28-Aug-12	80	0.05	0.00005	0.000007	14.88	0.00010	0.00008	0.00142	0.00005	0.005	0.000037	0.0030	10.15	0.00302	0.003	0.000002	0.0002	0.00032	1.07
HC-2-81	04-Sep-12	81	0.05	0.00005	0.000007	15.05	0.00010	0.00007	0.00239	0.00005	0.006	0.000062	0.0030	10.20	0.00260	0.004	0.000002	0.0002	0.00032	1.03
HC-2-82	11-Sep-12	82	0.05	0.00005	0.000008	15.23	0.00010	0.00006	0.00336	0.00005	0.007	0.000086	0.0029	10.25	0.00217	0.004	0.000002	0.0002	0.00032	1.00
HC-2-83	18-Sep-12	83	0.05	0.00005	0.000008	15.40	0.00010	0.00005	0.00433	0.00005	0.008	0.000111	0.0029	10.30	0.00174	0.005	0.000002	0.0002	0.00033	0.96
HC-2-84	25-Sep-12	84	0.05	0.00005	0.000007	15.05	0.00010	0.00004	0.00331	0.00005	0.006	0.000085	0.0028	10.06	0.00142	0.005	0.000002	0.0001	0.00031	0.93
HC-2-85	02-Oct-12	85	0.05	0.00005	0.000007	14.70	0.00010	0.00003	0.00229	0.00005	0.005	0.000060	0.0027	9.82	0.00110	0.006	0.000002	0.0001	0.00029	0.90
HC-2-86	09-Oct-12	86	0.05	0.00005	0.000006	14.35	0.00010	0.00002	0.00128	0.00005	0.003	0.000034	0.0026	9.57	0.00078	0.006	0.000002	0.0001	0.00027	0.87
HC-2-87	16-Oct-12	87	0.05	0.00005	0.000005	14.00	0.00010	0.00001	0.00026	0.00005	0.001	0.000008	0.0026	9.33	0.00046	0.007	0.000002	0.0001	0.00025	0.84
HC-2-88	23-Oct-12	88	0.05	0.00005	0.000005	14.28	0.00010	0.00002	0.00026	0.00005	0.002	0.000009	0.0025	9.45	0.00068	0.005	0.000002	0.0001	0.00025	0.85
HC-2-89	30-Oct-12	89	0.05	0.00005	0.000006	14.55	0.00010	0.00002	0.00025	0.00005	0.002	0.000010	0.0024	9.57	0.00089	0.004	0.000002	0.0001	0.00024	0.85
HC-2-90	06-Nov-12	90	0.05	0.00005	0.000006	14.83	0.00010	0.00003	0.00025	0.00005	0.002	0.000010	0.0024	9.69	0.00110	0.003	0.000002	0.0001	0.00024	0.86
HC-2-91	13-Nov-12	91	0.05	0.00005	0.000006	15.10	0.00010	0.00003	0.00025	0.00005	0.003	0.000011	0.0023	9.81	0.00131	0.002	0.000002	0.0001	0.00023	0.87
HC-2-92	20-Nov-12	92	0.05	0.00005	0.000006	15.00	0.00011	0.00004	0.00026	0.00005	0.003	0.000012	0.0023	9.83	0.00154	0.003	0.000002	0.0001	0.00034	0.86
HC-2-93	27-Nov-12	93	0.05	0.00005	0.000006	14.90	0.00011	0.00004	0.00027	0.00005	0.004	0.000012	0.0023	9.85	0.00177	0.004	0.000002	0.0001	0.00044	0.86
HC-2-94	04-Dec-12	94	0.05	0.00005	0.000005	14.80	0.00012	0.00004	0.00029	0.00005	0.005	0.000013	0.0023	9.87	0.00199	0.005	0.000002	0.0001	0.00054	0.85
HC-2-95	11-Dec-12	95	0.05	0.00005	0.000005	14.70	0.00012	0.00005	0.00030	0.00005	0.005	0.000013	0.0022	9.89	0.00222	0.005	0.000002	0.0001	0.00065	0.85
HC-2-96	18-Dec-12	96	0.05	0.00005	0.000005	15.15	0.00012	0.00004	0.00027	0.00005	0.005	0.000012	0.0022	10.24	0.00175	0.005	0.000002	0.0001	0.00055	0.84

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-2-97	25-Dec-12	97	0.05	0.00005	0.000005	15.60	0.00011	0.00003	0.00025	0.00005	0.004	0.000012	0.0022	10.60	0.00128	0.004	0.000002	0.0001	0.00045	0.83
HC-2-98	01-Jan-13	98	0.05	0.00005	0.000005	16.05	0.00011	0.00002	0.00022	0.00005	0.003	0.000011	0.0021	10.95	0.00081	0.003	0.000002	0.0001	0.00035	0.82
HC-2-99	08-Jan-13	99	0.05	0.00005	0.000005	16.50	0.00010	0.00001	0.00020	0.00005	0.002	0.000010	0.0021	11.30	0.00034	0.002	0.000002	0.0001	0.00026	0.82
HC-2-100	15-Jan-13	100	0.05	0.00005	0.000005	16.30	0.00010	0.00002	0.00020	0.00005	0.007	0.000014	0.0021	11.08	0.00069	0.003	0.000002	0.0001	0.00027	0.80
HC-2-101	22-Jan-13	101	0.05	0.00005	0.000005	16.10	0.00010	0.00003	0.00021	0.00005	0.012	0.000019	0.0020	10.85	0.00105	0.004	0.000002	0.0001	0.00028	0.79
HC-2-102	29-Jan-13	102	0.05	0.00005	0.000005	15.90	0.00010	0.00004	0.00021	0.00005	0.017	0.000023	0.0020	10.63	0.00140	0.005	0.000002	0.0001	0.00030	0.78
HC-2-103	05-Feb-13	103	0.05	0.00005	0.000005	15.70	0.00010	0.00005	0.00022	0.00005	0.022	0.000027	0.0019	10.40	0.00175	0.007	0.000002	0.0001	0.00031	0.77
HC-2-104	12-Feb-13	104	0.05	0.00005	0.000006	15.63	0.00010	0.00004	0.00023	0.00005	0.018	0.000034	0.0020	10.40	0.00173	0.008	0.000002	0.0001	0.00033	0.77
HC-2-105	19-Feb-13	105	0.05	0.00005	0.000006	15.55	0.00010	0.00004	0.00025	0.00005	0.014	0.000042	0.0020	10.40	0.00171	0.009	0.000002	0.0001	0.00035	0.77
HC-2-106	26-Feb-13	106	0.05	0.00005	0.000007	15.48	0.00010	0.00004	0.00026	0.00005	0.010	0.000049	0.0021	10.40	0.00169	0.010	0.000002	0.0001	0.00036	0.77
HC-2-107	05-Mar-13	107	0.05	0.00005	0.000007	15.40	0.00010	0.00004	0.00027	0.00005	0.006	0.000056	0.0021	10.40	0.00167	0.011	0.000002	0.0001	0.00038	0.78
HC-2-108	12-Mar-13	108	0.05	0.00005	0.000007	15.35	0.00010	0.00004	0.00025	0.00005	0.005	0.000044	0.0020	10.35	0.00157	0.009	0.000002	0.0001	0.00034	0.74
HC-2-109	19-Mar-13	109	0.05	0.00005	0.000007	15.30	0.00010	0.00003	0.00023	0.00005	0.005	0.000032	0.0019	10.30	0.00148	0.006	0.000002	0.0001	0.00030	0.71
HC-2-110	26-Mar-13	110	0.05	0.00005	0.000006	15.25	0.00010	0.00003	0.00022	0.00005	0.004	0.000020	0.0018	10.25	0.00138	0.004	0.000002	0.0001	0.00026	0.68
HC-2-111	02-Apr-13	111	0.05	0.00005	0.000006	15.20	0.00010	0.00003	0.00020	0.00005	0.004	0.000008	0.0017	10.20	0.00128	0.002	0.000002	0.0001	0.00022	0.65
HC-2-112	09-Apr-13	112	0.05	0.00005	0.000007	15.50	0.00010	0.00006	0.00031	0.00005	0.016	0.000066	0.0018	10.38	0.00143	0.002	0.000002	0.0001	0.00040	0.65
HC-2-113	16-Apr-13	113	0.05	0.00005	0.000007	15.80	0.00010	0.00010	0.00043	0.00005	0.029	0.000125	0.0018	10.55	0.00158	0.002	0.000002	0.0001	0.00058	0.65
HC-2-114	23-Apr-13	114	0.05	0.00005	0.000008	16.10	0.00010	0.00013	0.00055	0.00005	0.041	0.000183	0.0018	10.73	0.00173	0.002	0.000002	0.0001	0.00076	0.65
HC-2-115	30-Apr-13	115	0.05	0.00005	0.000008	16.40	0.00010	0.00017	0.00067	0.00005	0.053	0.000241	0.0018	10.90	0.00188	0.002	0.000002	0.0001	0.00094	0.65
HC-2-116	07-May-13	116	0.05	0.00005	0.000007	16.20	0.00010	0.00014	0.00054	0.00005	0.040	0.000183	0.0018	10.73	0.00183	0.002	0.000002	0.0001	0.00080	0.65
HC-2-117	14-May-13	117	0.05	0.00005	0.000007	16.00	0.00010	0.00010	0.00042	0.00005	0.027	0.000125	0.0018	10.55	0.00179	0.002	0.000002	0.0001	0.00066	0.65
HC-2-118	21-May-13	118	0.05	0.00005	0.000006	15.80	0.00010	0.00007	0.00029	0.00005	0.015	0.000067	0.0018	10.38	0.00174	0.002	0.000002	0.0001	0.00052	0.65
HC-2-119	28-May-13	119	0.05	0.00005	0.000005	15.60	0.00010	0.00004	0.00017	0.00005	0.002	0.000009	0.0018	10.20	0.00169	0.002	0.000002	0.0001	0.00038	0.65
HC-2-120	04-Jun-13	120	0.05	0.00005	0.000005	15.63	0.00012	0.00004	0.00015	0.00005	0.002	0.000008	0.0017	10.28	0.00165	0.006	0.000002	0.0001	0.00037	0.64
HC-2-121	11-Jun-13	121	0.05	0.00005	0.000005	15.65	0.00013	0.00003	0.00013	0.00005	0.002	0.000007	0.0017	10.35	0.00161	0.009	0.000002	0.0001	0.00036	0.63
HC-2-122	18-Jun-13	122	0.05	0.00005	0.000005	15.68	0.00015	0.00003	0.00011	0.00005	0.003	0.000006	0.0017	10.43	0.00157	0.013	0.000002	0.0001	0.00034	0.62
HC-2-123	25-Jun-13	123	0.05	0.00005	0.000005	15.70	0.00016	0.00003	0.00009	0.00005	0.003	0.000005	0.0017	10.50	0.00153	0.016	0.000002	0.0001	0.00033	0.61
HC-2-124	02-Jul-13	124	0.05	0.00005	0.000005	15.65	0.00016	0.00003	0.00013	0.00005	0.003	0.000007	0.0017	10.60	0.00166	0.013	0.000002	0.0001	0.00033	0.60
HC-2-125	09-Jul-13	125	0.05	0.00005	0.000005	15.60	0.00016	0.00003	0.00018	0.00005	0.004	0.000009	0.0017	10.70	0.00178	0.010	0.000002	0.0001	0.00033	0.60
HC-2-126	16-Jul-13	126	0.05	0.00005	0.000005	15.55	0.00016	0.00003	0.00023	0.00005	0.004	0.000011	0.0018	10.80	0.00191	0.007	0.000002	0.0001	0.00032	0.59
HC-2-127	23-Jul-13	127	0.05	0.00005	0.000005	15.50	0.00016	0.00003	0.00028	0.00005	0.005	0.000013	0.0018	10.90	0.00203	0.004	0.000002	0.0001	0.00032	0.59
HC-2-128	30-Jul-13	128	0.05	0.00005	0.000006	16.35	0.00015	0.00004	0.00027	0.00005	0.005	0.000012	0.0018	10.90	0.00199	0.003	0.000002	0.0001	0.00034	0.56
HC-2-129	06-Aug-13	129	0.05	0.00005	0.000007	17.20	0.00013	0.00004	0.00026	0.00005	0.005	0.000010	0.0017	10.90	0.00195	0.003	0.000002	0.0001	0.00037	0.54
HC-2-130	13-Aug-13	130	0.05	0.00005	0.000008	18.05	0.00012	0.00005	0.00025	0.00005	0.005	0.000009	0.0017	10.90	0.00190	0.002	0.000002	0.0001	0.00039	0.51
HC-2-131	20-Aug-13	131	0.05	0.00005	0.000009	18.90	0.00010	0.00005	0.00025	0.00005	0.005	0.000007	0.0017	10.90	0.00186	0.002	0.000002	0.0001	0.00041	0.49
HC-2-132	27-Aug-13	132	0.05	0.00005	0.000008	18.45	0.00010	0.00005	0.00023	0.00005	0.004	0.000007	0.0017	10.93	0.00193	0.003	0.000002	0.0001	0.00040	0.49
HC-2-133	03-Sep-13	133	0.05	0.00005	0.000008	18.00	0.00010	0.00004	0.00022	0.00005	0.003	0.000006	0.0017	10.95	0.00200	0.004	0.000002	0.0001	0.00039	0.50
HC-2-134	10-Sep-13	134	0.05	0.00005	0.000007	17.55	0.00010	0.00004	0.00020	0.00005	0.003	0.000006	0.0017	10.98	0.00206	0.005	0.000002	0.0001	0.00038	0.51
HC-2-135	17-Sep-13	135	0.05	0.00005	0.000006	17.10	0.00010	0.00004	0.00019	0.00005	0.002	0.000005	0.0017	11.00	0.00213	0.006	0.000002	0.0001	0.00037	0.51
HC-2-136	24-Sep-13	136	0.05	0.00005	0.000006	17.50	0.00010	0.00003	0.00018	0.00005	0.002	0.000006	0.0016	11.15	0.00184	0.005	0.000002	0.0001	0.00034	0.53
HC-2-137	01-Oct-13	137	0.05	0.00005	0.000006	17.90	0.00010	0.00002	0.00017	0.00005	0.001	0.000008	0.0016	11.30	0.00155	0.004	0.000002	0.0001	0.00032	0.54
HC-2-138	08-Oct-13	138	0.05	0.00005	0.000005	18.30	0.00010	0.00002	0.00016	0.00005	0.001	0.000009	0.0015	11.45	0.00126	0.003	0.000002	0.0001	0.00029	0.55
HC-2-139	15-Oct-13	139	0.05	0.00005	0.000005	18.70	0.00010	0.00001	0.00015	0.00005	0.001	0.000010	0.0015	11.60	0.00097	0.002	0.000002	0.0001	0.00027	0.56
HC-2-140	22-Oct-13	140	0.05	0.00005	0.000006	18.68	0.00010	0.00002	0.00029	0.00005	0.001	0.000011	0.0014	11.60	0.00118	0.003	0.000002	0.0001	0.00037	0.56
HC-2-141	29-Oct-13	141	0.05	0.00005	0.000007	18.65	0.00010	0.00002	0.00043	0.00005	0.001	0.000012	0.0014	11.60	0.00139	0.004	0.000002	0.0001	0.00048	0.55
HC-2-142	05-Nov-13	142	0.05	0.00005	0.000008	18.63	0.00010	0.00003	0.00057	0.00005	0.001	0.000012	0.0014	11.60	0.00161	0.004	0.000002	0.0001	0.00059	0.55
HC-2-143	12-Nov-13	143	0.05	0.00005	0.000009	18.60	0.00010	0.00004	0.00071	0.00005	0.001	0.000013	0.0013	11.60	0.00182	0.005	0.000002	0.0001	0.00070	0.54
HC-2-144	19-Nov-13	144	0.05	0.00005	0.000009	18.08	0.00010	0.00004	0.00065	0.00005	0.001	0.000011	0.0014	11.43	0.00190	0.006	0.000002	0.0001	0.00060	0.53
HC-2-145	26-Nov-13	145	0.05	0.00005	0.000009	17.55	0.00010	0.00004	0.00059	0.00005	0.001	0.000009	0.0014	11.25	0.00198	0.006	0.000002	0.0001	0.00050	0.52

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-2-146	03-Dec-13	146	0.05	0.00005	0.000008	17.03	0.00010	0.00004	0.00053	0.00005	0.001	0.000007	0.0014	11.08	0.00205	0.007	0.000002	0.0001	0.00040	0.52
HC-2-147	10-Dec-13	147	0.05	0.00005	0.000008	16.50	0.00010	0.00004	0.00047	0.00005	0.002	0.000005	0.0015	10.90	0.00213	0.008	0.000002	0.0001	0.00031	0.51
HC-2-148	17-Dec-13	148	0.05	0.00005	0.000009	16.43	0.00010	0.00004	0.00051	0.00005	0.002	0.000005	0.0015	10.88	0.00210	0.008	0.000002	0.0001	0.00044	0.50
HC-2-149	24-Dec-13	149	0.05	0.00005	0.000010	16.35	0.00010	0.00004	0.00056	0.00005	0.002	0.000005	0.0015	10.85	0.00207	0.008	0.000002	0.0001	0.00058	0.49
HC-2-150	31-Dec-13	150	0.05	0.00005	0.000011	16.28	0.00010	0.00004	0.00060	0.00005	0.002	0.000005	0.0016	10.83	0.00204	0.008	0.000002	0.0001	0.00071	0.48
HC-2-151	07-Jan-14	151	0.05	0.00005	0.000012	16.20	0.00010	0.00004	0.00065	0.00005	0.002	0.000005	0.0016	10.80	0.00201	0.008	0.000002	0.0001	0.00085	0.47
HC-2-152	14-Jan-14	152	0.05	0.00005	0.000011	16.15	0.00010	0.00004	0.00055	0.00005	0.002	0.000005	0.0016	10.78	0.00212	0.007	0.000002	0.0001	0.00072	0.46
HC-2-153	21-Jan-14	153	0.05	0.00005	0.000009	16.10	0.00010	0.00004	0.00045	0.00005	0.002	0.000005	0.0015	10.75	0.00223	0.006	0.000002	0.0001	0.00059	0.46
HC-2-154	28-Jan-14	154	0.05	0.00005	0.000008	16.05	0.00010	0.00004	0.00035	0.00005	0.003	0.000005	0.0015	10.73	0.00233	0.005	0.000002	0.0001	0.00046	0.45
HC-2-155	04-Feb-14	155	0.05	0.00005	0.000006	16.00	0.00010	0.00004	0.00025	0.00005	0.003	0.000005	0.0015	10.70	0.00244	0.005	0.000002	0.0001	0.00033	0.44
HC-2-156	11-Feb-14	156	0.05	0.00005	0.000007	15.58	0.00010	0.00004	0.00036	0.00005	0.003	0.000005	0.0014	10.52	0.00228	0.005	0.000002	0.0001	0.00032	0.44
HC-2-157	18-Feb-14	157	0.05	0.00005	0.000008	15.15	0.00010	0.00003	0.00047	0.00005	0.003	0.000005	0.0014	10.33	0.00212	0.005	0.000002	0.0001	0.00031	0.44
HC-2-158	25-Feb-14	158	0.05	0.00005	0.000008	14.73	0.00010	0.00003	0.00058	0.00005	0.003	0.000005	0.0013	10.15	0.00196	0.006	0.000002	0.0001	0.00029	0.43
HC-2-159	04-Mar-14	159	0.05	0.00005	0.000009	14.30	0.00010	0.00003	0.00070	0.00005	0.004	0.000005	0.0013	9.96	0.00180	0.006	0.000002	0.0001	0.00028	0.43
HC-2-160	11-Mar-14	160	0.05	0.00005	0.000009	14.70	0.00030	0.00003	0.00064	0.00005	0.005	0.000005	0.0013	10.07	0.00183	0.006	0.000002	0.0001	0.00028	0.43
HC-2-161	18-Mar-14	161	0.05	0.00005	0.000009	15.10	0.00050	0.00003	0.00059	0.00005	0.007	0.000005	0.0012	10.18	0.00186	0.005	0.000002	0.0001	0.00029	0.43
HC-2-162	25-Mar-14	162	0.05	0.00005	0.000009	15.50	0.00069	0.00003	0.00054	0.00005	0.008	0.000005	0.0012	10.29	0.00188	0.005	0.000002	0.0001	0.00029	0.43
HC-2-163	01-Apr-14	163	0.05	0.00005	0.000009	15.90	0.00089	0.00003	0.00049	0.00005	0.010	0.000005	0.0012	10.40	0.00191	0.005	0.000002	0.0001	0.00029	0.43
HC-2-164	08-Apr-14	164	0.05	0.00005	0.000010	15.83	0.00069	0.00003	0.00058	0.00005	0.008	0.000005	0.0012	10.50	0.00194	0.004	0.000002	0.0001	0.00030	0.43
HC-2-165	15-Apr-14	165	0.05	0.00005	0.000011	15.75	0.00050	0.00003	0.00067	0.00005	0.006	0.000005	0.0012	10.60	0.00198	0.004	0.000002	0.0001	0.00031	0.43
HC-2-166	22-Apr-14	166	0.05	0.00005	0.000012	15.68	0.00030	0.00003	0.00077	0.00005	0.005	0.000005	0.0012	10.70	0.00201	0.003	0.000002	0.0001	0.00032	0.44
HC-2-167	29-Apr-14	167	0.05	0.00005	0.000013	15.60	0.00010	0.00003	0.00086	0.00005	0.003	0.000005	0.0012	10.80	0.00204	0.002	0.000002	0.0001	0.00033	0.44
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00005</b>	<b>0.000007</b>	<b>11.29</b>	<b>0.00013</b>	<b>0.00005</b>	<b>0.00060</b>	<b>0.00005</b>	<b>0.006</b>	<b>0.000040</b>	<b>0.0067</b>	<b>7.41</b>	<b>0.00158</b>	<b>0.008</b>	<b>0.000002</b>	<b>0.0009</b>	<b>0.00037</b>	<b>0.72</b>
<b>HC3 Middle Gates J - CCR</b>																				
HC-3-0	15-Feb-11	0	0.05	0.00009	0.000017	0.48	0.00020	0.00004	0.00048	0.00005	0.023	0.000158	0.0284	0.17	0.00097	0.043	0.000010	0.0190	0.00021	0.32
HC-3-1	22-Feb-11	1	0.05	0.00018	0.000068	0.95	0.00020	0.00019	0.00071	0.00032	0.015	0.000837	0.0607	0.33	0.00189	0.045	0.000010	0.1260	0.00060	0.54
HC-3-2	01-Mar-11	2	0.05	0.00013	0.000034	0.61	0.00010	0.00015	0.00036	0.00005	0.018	0.000149	0.0419	0.21	0.00129	0.021	0.000010	0.0824	0.00055	0.35
HC-3-3	08-Mar-11	3	0.05	0.00009	0.000014	0.41	0.00010	0.00011	0.00074	0.00005	0.011	0.000097	0.0354	0.14	0.00080	0.017	0.000002	0.0526	0.00041	0.27
HC-3-4	15-Mar-11	4	0.05	0.00010	0.000005	0.42	0.00010	0.00010	0.00031	0.00005	0.010	0.000087	0.0352	0.15	0.00073	0.027	0.000010	0.0353	0.00033	0.31
HC-3-5	22-Mar-11	5	0.05	0.00009	0.000019	0.55	0.00020	0.00012	0.00089	0.00005	0.013	0.001220	0.0304	0.20	0.00123	0.025	0.000010	0.0321	0.00180	0.27
HC-3-6	29-Mar-11	6	0.05	0.00008	0.000005	0.44	0.00010	0.00010	0.00032	0.00005	0.011	0.000085	0.0299	0.15	0.00067	0.010	0.000010	0.0308	0.00034	0.29
HC-3-7	05-Apr-11	7	0.05	0.00010	0.000005	0.54	0.00010	0.00020	0.00047	0.00005	0.078	0.000368	0.0302	0.19	0.00253	0.015	0.000002	0.0302	0.00059	0.29
HC-3-8	12-Apr-11	8	0.05	0.00001	0.000090	0.54	0.00010	0.00008	0.00020	0.00005	0.006	0.000063	0.0276	0.22	0.00119	0.012	0.000004	0.0139	0.00115	0.29
HC-3-9	19-Apr-11	9	0.05	0.00012	0.000010	0.77	0.00010	0.00008	0.00013	0.00005	0.008	0.000050	0.0290	0.30	0.00153	0.010	0.000002	0.0253	0.00021	0.30
HC-3-10	26-Apr-11	10	0.05	0.00010	0.000017	0.69	0.00010	0.00007	0.00014	0.00005	0.005	0.000034	0.0244	0.27	0.00115	0.016	0.000002	0.0213	0.00018	0.26
HC-3-11	03-May-11	11	0.05	0.00010	0.000008	0.65	0.00010	0.00007	0.00023	0.00005	0.009	0.000077	0.0258	0.23	0.00117	0.009	0.000002	0.0230	0.00024	0.28
HC-3-12	10-May-11	12	0.05	0.00009	0.000005	0.76	0.00010	0.00006	0.00017	0.00005	0.004	0.000037	0.0271	0.29	0.00118	0.012	0.000002	0.0187	0.00019	0.31
HC-3-13	17-May-11	13	0.05	0.00009	0.000016	0.82	0.00010	0.00005	0.00020	0.00005	0.004	0.000046	0.0281	0.30	0.00099	0.002	0.000002	0.0189	0.00014	0.32
HC-3-14	24-May-11	14	0.05	0.00008	0.000009	0.84	0.00010	0.00005	0.00022	0.00005	0.002	0.000023	0.0246	0.33	0.00110	0.010	0.000002	0.0190	0.00013	0.30
HC-3-15	31-May-11	15	0.05	0.00007	0.000005	0.64	0.00010	0.00004	0.00021	0.00005	0.004	0.000030	0.0197	0.25	0.00064	0.012	0.000002	0.0147	0.00014	0.25
HC-3-16	07-Jun-11	16	0.05	0.00007	0.000014	0.76	0.00010	0.00006	0.00014	0.00005	0.005	0.000148	0.0249	0.33	0.00105	0.003	0.000002	0.0200	0.00016	0.28
HC-3-17	14-Jun-11	17	0.05	0.00008	0.000005	1.10	0.00010	0.00005	0.00019	0.00005	0.002	0.000042	0.0251	0.42	0.00103	0.002	0.000002	0.0171	0.00013	0.32
HC-3-18	21-Jun-11	18	0.05	0.00006	0.000006	1.45	0.00010	0.00005	0.00012	0.00005	0.002	0.000013	0.0257	0.59	0.00188	0.015	0.000002	0.0148	0.00017	0.34
HC-3-19	28-Jun-11	19	0.05	0.00005	0.000005	1.62	0.00010	0.00007	0.00010	0.00005	0.002	0.000037	0.0267	0.81	0.00285	0.008	0.000002	0.0129	0.00014	0.35
HC-3-20	05-Jul-11	20	0.05	0.00005	0.000006	2.10	0.00010	0.00008	0.00011	0.00005	0.002	0.000031	0.0280	1.03	0.00351	0.007	0.000002	0.0119	0.00016	0.38
HC-3-21	12-Jul-11	21	0.05	0.00005	0.000007	2.57	0.00010	0.00009	0.00012	0.00005	0.002	0.000025	0.0293	1.25	0.00416	0.005	0.000002	0.0108	0.00018	0.40
HC-3-22	19-Jul-11	22	0.05	0.00005	0.000008	3.05	0.00010	0.00009	0.00013	0.00005	0.001	0.000019	0.0306	1.47	0.00482	0.004	0.000002	0.0098	0.00020	0.43
HC-3-23	26-Jul-11	23	0.05	0.00005	0.000009	3.52	0.00010	0.00010	0.00014	0.00005	0.001	0.000013	0.0319	1.69	0.00547	0.002	0.000002	0.0087	0.00022	0.45
HC-3-24	02-Aug-11	24	0.05	0.00005	0.000009	3.75	0.00010	0.00011	0.00014	0.00005	0.001	0.000021	0.0311	1.77	0.00545	0.010	0.000002	0.0088	0.00027	0.46

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-3-25	09-Aug-11	25	0.05	0.00005	0.000009	3.97	0.00010	0.00012	0.00014	0.00005	0.002	0.000029	0.0302	1.85	0.00543	0.018	0.000002	0.0088	0.00032	0.46
HC-3-26	16-Aug-11	26	0.05	0.00005	0.000009	4.20	0.00010	0.00013	0.00014	0.00005	0.002	0.000037	0.0294	1.92	0.00540	0.025	0.000002	0.0088	0.00036	0.47
HC-3-27	23-Aug-11	27	0.05	0.00005	0.000009	4.42	0.00010	0.00013	0.00014	0.00005	0.002	0.000045	0.0285	2.00	0.00538	0.033	0.000002	0.0089	0.00041	0.47
HC-3-28	30-Aug-11	28	0.05	0.00005	0.000009	5.45	0.00010	0.00013	0.00015	0.00005	0.002	0.000038	0.0291	2.53	0.00603	0.025	0.000002	0.0082	0.00040	0.51
HC-3-29	06-Sep-11	29	0.05	0.00005	0.000009	6.47	0.00010	0.00013	0.00015	0.00005	0.002	0.000031	0.0297	3.05	0.00668	0.018	0.000002	0.0075	0.00040	0.54
HC-3-30	13-Sep-11	30	0.05	0.00005	0.000008	7.50	0.00010	0.00013	0.00016	0.00005	0.001	0.000023	0.0303	3.58	0.00732	0.010	0.000002	0.0068	0.00039	0.58
HC-3-31	20-Sep-11	31	0.05	0.00005	0.000008	8.52	0.00010	0.00012	0.00016	0.00005	0.001	0.000016	0.0309	4.10	0.00797	0.002	0.000002	0.0061	0.00038	0.61
HC-3-32	27-Sep-11	32	0.05	0.00006	0.000010	9.52	0.00013	0.00013	0.00026	0.00005	0.154	0.000016	0.0306	4.51	0.00938	0.003	0.000002	0.0057	0.00043	0.66
HC-3-33	04-Oct-11	33	0.05	0.00006	0.000012	10.51	0.00015	0.00014	0.00036	0.00005	0.306	0.000016	0.0302	4.91	0.01079	0.004	0.000002	0.0052	0.00047	0.70
HC-3-34	11-Oct-11	34	0.05	0.00007	0.000014	11.51	0.00018	0.00014	0.00045	0.00005	0.459	0.000015	0.0299	5.32	0.01219	0.005	0.000002	0.0048	0.00052	0.75
HC-3-35	18-Oct-11	35	0.05	0.00007	0.000016	12.50	0.00020	0.00015	0.00055	0.00005	0.611	0.000015	0.0295	5.72	0.01360	0.006	0.000002	0.0044	0.00056	0.79
HC-3-36	25-Oct-11	36	0.05	0.00007	0.000015	12.13	0.00018	0.00013	0.00046	0.00005	0.459	0.000019	0.0288	5.75	0.01109	0.007	0.000002	0.0043	0.00056	0.78
HC-3-37	01-Nov-11	37	0.05	0.00007	0.000015	11.75	0.00015	0.00011	0.00038	0.00005	0.306	0.000023	0.0281	5.77	0.00857	0.007	0.000002	0.0042	0.00055	0.77
HC-3-38	08-Nov-11	38	0.05	0.00006	0.000014	11.38	0.00013	0.00009	0.00029	0.00005	0.154	0.000027	0.0273	5.80	0.00606	0.008	0.000002	0.0041	0.00055	0.75
HC-3-39	15-Nov-11	39	0.05	0.00006	0.000013	11.00	0.00010	0.00007	0.00020	0.00005	0.001	0.000031	0.0266	5.82	0.00354	0.008	0.000002	0.0040	0.00054	0.74
HC-3-40	22-Nov-11	40	0.05	0.00006	0.000014	11.48	0.00010	0.00008	0.00021	0.00005	0.001	0.000029	0.0260	5.90	0.00362	0.007	0.000002	0.0038	0.00053	0.74
HC-3-41	29-Nov-11	41	0.05	0.00006	0.000014	11.95	0.00010	0.00010	0.00023	0.00005	0.002	0.000028	0.0254	5.99	0.00369	0.007	0.000002	0.0035	0.00051	0.73
HC-3-42	06-Dec-11	42	0.05	0.00005	0.000015	12.43	0.00010	0.00011	0.00024	0.00005	0.002	0.000026	0.0248	6.07	0.00377	0.006	0.000002	0.0033	0.00050	0.73
HC-3-43	13-Dec-11	43	0.05	0.00005	0.000015	12.90	0.00010	0.00013	0.00025	0.00005	0.002	0.000024	0.0242	6.15	0.00384	0.005	0.000002	0.0031	0.00048	0.72
HC-3-44	20-Dec-11	44	0.05	0.00005	0.000014	12.53	0.00010	0.00012	0.00029	0.00005	0.003	0.000032	0.0232	5.89	0.00346	0.005	0.000002	0.0031	0.00050	0.70
HC-3-45	27-Dec-11	45	0.05	0.00005	0.000012	12.15	0.00010	0.00012	0.00033	0.00005	0.004	0.000040	0.0221	5.64	0.00308	0.005	0.000002	0.0031	0.00052	0.68
HC-3-46	03-Jan-12	46	0.05	0.00005	0.000011	11.78	0.00010	0.00012	0.00037	0.00005	0.004	0.000047	0.0211	5.38	0.00270	0.005	0.000002	0.0031	0.00054	0.65
HC-3-47	10-Jan-12	47	0.05	0.00005	0.000009	11.40	0.00010	0.00011	0.00041	0.00005	0.005	0.000055	0.0200	5.12	0.00232	0.005	0.000002	0.0031	0.00056	0.63
HC-3-48	17-Jan-12	48	0.05	0.00005	0.000011	11.73	0.00010	0.00012	0.00037	0.00005	0.005	0.000050	0.0199	5.40	0.00229	0.005	0.000002	0.0030	0.00054	0.64
HC-3-49	24-Jan-12	49	0.05	0.00005	0.000012	12.05	0.00010	0.00012	0.00033	0.00005	0.005	0.000045	0.0198	5.69	0.00225	0.004	0.000002	0.0028	0.00052	0.65
HC-3-50	31-Jan-12	50	0.05	0.00005	0.000014	12.38	0.00010	0.00012	0.00029	0.00005	0.005	0.000039	0.0196	5.97	0.00222	0.004	0.000002	0.0026	0.00049	0.66
HC-3-51	07-Feb-12	51	0.05	0.00005	0.000015	12.70	0.00010	0.00013	0.00025	0.00005	0.005	0.000034	0.0195	6.25	0.00218	0.003	0.000002	0.0024	0.00047	0.67
HC-3-52	14-Feb-12	52	0.05	0.00005	0.000015	12.38	0.00010	0.00011	0.00024	0.00005	0.005	0.000035	0.0194	6.14	0.00201	0.003	0.000002	0.0024	0.00045	0.67
HC-3-53	21-Feb-12	53	0.05	0.00005	0.000014	12.05	0.00010	0.00010	0.00024	0.00005	0.005	0.000035	0.0193	6.02	0.00185	0.003	0.000002	0.0023	0.00043	0.68
HC-3-54	28-Feb-12	54	0.05	0.00005	0.000014	11.73	0.00010	0.00009	0.00023	0.00005	0.004	0.000036	0.0192	5.91	0.00168	0.002	0.000002	0.0023	0.00041	0.68
HC-3-55	06-Mar-12	55	0.05	0.00005	0.000013	11.40	0.00010	0.00008	0.00022	0.00005	0.004	0.000036	0.0191	5.79	0.00151	0.002	0.000002	0.0023	0.00039	0.68
HC-3-56	13-Mar-12	56	0.05	0.00005	0.000013	11.10	0.00010	0.00008	0.00028	0.00005	0.004	0.000033	0.0183	5.64	0.00143	0.002	0.000002	0.0024	0.00036	0.66
HC-3-57	20-Mar-12	57	0.05	0.00005	0.000013	10.80	0.00010	0.00008	0.00034	0.00005	0.004	0.000029	0.0175	5.48	0.00136	0.003	0.000002	0.0024	0.00034	0.65
HC-3-58	27-Mar-12	58	0.05	0.00005	0.000013	10.50	0.00010	0.00008	0.00039	0.00005	0.003	0.000026	0.0167	5.33	0.00128	0.003	0.000002	0.0025	0.00031	0.63
HC-3-59	03-Apr-12	59	0.05	0.00005	0.000013	10.20	0.00010	0.00007	0.00045	0.00005	0.003	0.000022	0.0159	5.17	0.00120	0.003	0.000002	0.0025	0.00028	0.61
HC-3-60	10-Apr-12	60	0.05	0.00005	0.000013	10.25	0.00010	0.00008	0.00043	0.00005	0.003	0.000024	0.0159	5.35	0.00123	0.004	0.000002	0.0024	0.00029	0.62
HC-3-61	17-Apr-12	61	0.05	0.00005	0.000012	10.30	0.00010	0.00009	0.00041	0.00005	0.003	0.000027	0.0159	5.54	0.00125	0.005	0.000002	0.0022	0.00031	0.63
HC-3-62	24-Apr-12	62	0.05	0.00005	0.000012	10.35	0.00010	0.00009	0.00038	0.00005	0.003	0.000029	0.0158	5.72	0.00128	0.006	0.000002	0.0021	0.00032	0.65
HC-3-63	01-May-12	63	0.05	0.00005	0.000011	10.40	0.00010	0.00010	0.00036	0.00005	0.003	0.000031	0.0158	5.90	0.00130	0.007	0.000002	0.0020	0.00033	0.66
HC-3-64	08-May-12	64	0.05	0.00005	0.000010	10.63	0.00010	0.00009	0.00038	0.00005	0.003	0.000029	0.0158	5.97	0.00124	0.008	0.000002	0.0020	0.00033	0.65
HC-3-65	15-May-12	65	0.05	0.00005	0.000009	10.85	0.00010	0.00008	0.00039	0.00005	0.003	0.000026	0.0159	6.04	0.00118	0.009	0.000002	0.0020	0.00032	0.65
HC-3-66	22-May-12	66	0.05	0.00005	0.000007	11.08	0.00010	0.00007	0.00041	0.00005	0.003	0.000024	0.0159	6.10	0.00112	0.010	0.000002	0.0020	0.00032	0.64
HC-3-67	29-May-12	67	0.05	0.00005	0.000006	11.30	0.00010	0.00006	0.00042	0.00005	0.003	0.000021	0.0159	6.17	0.00106	0.011	0.000002	0.0020	0.00031	0.63
HC-3-68	05-Jun-12	68	0.05	0.00006	0.000008	11.48	0.00010	0.00006	0.00040	0.00005	0.003	0.000018	0.0160	6.29	0.00103	0.010	0.000002	0.0019	0.00031	0.65
HC-3-69	12-Jun-12	69	0.05	0.00007	0.000010	11.65	0.00010	0.00006	0.00037	0.00005	0.002	0.000014	0.0160	6.40	0.00100	0.009	0.000002	0.0018	0.00031	0.66
HC-3-70	19-Jun-12	70	0.05	0.00007	0.000012	11.83	0.00010	0.00006	0.00035	0.00005	0.002	0.000011	0.0161	6.52	0.00098	0.008	0.000002	0.0017	0.00030	0.68
HC-3-71	26-Jun-12	71	0.05	0.00008	0.000014	12.00	0.00010	0.00006	0.00032	0.00005	0.002	0.000007	0.0161	6.63	0.00095	0.007	0.000002	0.0016	0.00030	0.69
HC-3-72	03-Jul-12	72	0.05	0.00007	0.000013	12.58	0.00010	0.00006	0.00030	0.00005	0.002	0.000007	0.0160	6.92	0.00102	0.006	0.000002	0.0015	0.00030	0.71
HC-3-73	10-Jul-12	73	0.05	0.00007	0.000011	13.15	0.00010	0.00007	0.00029	0.00005	0.002	0.000007	0.0160	7.21	0.00108	0.005	0.000002	0.0015	0.00030	0.72

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-3-74	17-Jul-12	74	0.05	0.00006	0.000010	13.73	0.00010	0.00007	0.00027	0.00005	0.002	0.000007	0.0159	7.49	0.00115	0.004	0.000002	0.0015	0.00030	0.74
HC-3-75	24-Jul-12	75	0.05	0.00005	0.000008	14.30	0.00010	0.00007	0.00025	0.00005	0.002	0.000007	0.0158	7.78	0.00122	0.003	0.000002	0.0015	0.00030	0.76
HC-3-76	31-Jul-12	76	0.05	0.00005	0.000021	13.95	0.00010	0.00008	0.00036	0.00005	0.002	0.000022	0.0155	7.71	0.00164	0.003	0.000002	0.0014	0.00032	0.74
HC-3-77	07-Aug-12	77	0.05	0.00005	0.000033	13.60	0.00010	0.00009	0.00047	0.00005	0.002	0.000038	0.0151	7.64	0.00207	0.003	0.000002	0.0014	0.00034	0.73
HC-3-78	14-Aug-12	78	0.05	0.00005	0.000045	13.25	0.00010	0.00009	0.00057	0.00005	0.002	0.000053	0.0148	7.56	0.00249	0.002	0.000002	0.0013	0.00036	0.72
HC-3-79	21-Aug-12	79	0.05	0.00005	0.000057	12.90	0.00010	0.00010	0.00068	0.00005	0.002	0.000068	0.0144	7.49	0.00291	0.002	0.000002	0.0013	0.00038	0.71
HC-3-80	28-Aug-12	80	0.05	0.00005	0.000083	13.35	0.00010	0.00010	0.00068	0.00005	0.003	0.000055	0.0143	7.85	0.00297	0.003	0.000002	0.0012	0.00055	0.71
HC-3-81	04-Sep-12	81	0.05	0.00005	0.000108	13.80	0.00010	0.00010	0.00067	0.00005	0.003	0.000043	0.0141	8.22	0.00302	0.005	0.000002	0.0012	0.00072	0.71
HC-3-82	11-Sep-12	82	0.05	0.00005	0.000134	14.25	0.00010	0.00010	0.00067	0.00005	0.003	0.000030	0.0140	8.58	0.00308	0.006	0.000003	0.0012	0.00089	0.71
HC-3-83	18-Sep-12	83	0.05	0.00005	0.000159	14.70	0.00010	0.00009	0.00066	0.00005	0.004	0.000017	0.0138	8.94	0.00313	0.007	0.000003	0.0012	0.00106	0.71
HC-3-84	25-Sep-12	84	0.05	0.00005	0.000149	14.20	0.00010	0.00008	0.00058	0.00005	0.003	0.000017	0.0137	8.76	0.00248	0.008	0.000003	0.0011	0.00089	0.70
HC-3-85	02-Oct-12	85	0.05	0.00005	0.000139	13.70	0.00010	0.00006	0.00051	0.00005	0.003	0.000016	0.0136	8.57	0.00184	0.009	0.000002	0.0011	0.00072	0.69
HC-3-86	09-Oct-12	86	0.05	0.00005	0.000128	13.20	0.00010	0.00005	0.00043	0.00005	0.002	0.000016	0.0134	8.39	0.00119	0.010	0.000002	0.0010	0.00055	0.69
HC-3-87	16-Oct-12	87	0.05	0.00005	0.000118	12.70	0.00010	0.00003	0.00035	0.00005	0.002	0.000015	0.0133	8.20	0.00054	0.011	0.000002	0.0010	0.00037	0.68
HC-3-88	23-Oct-12	88	0.05	0.00005	0.000122	13.18	0.00010	0.00005	0.00042	0.00005	0.002	0.000015	0.0132	8.43	0.00142	0.010	0.000002	0.0010	0.00039	0.69
HC-3-89	30-Oct-12	89	0.05	0.00005	0.000125	13.65	0.00010	0.00006	0.00049	0.00005	0.002	0.000015	0.0132	8.65	0.00229	0.008	0.000002	0.0010	0.00041	0.69
HC-3-90	06-Nov-12	90	0.05	0.00005	0.000129	14.13	0.00010	0.00007	0.00056	0.00005	0.001	0.000014	0.0131	8.88	0.00317	0.006	0.000002	0.0010	0.00043	0.70
HC-3-91	13-Nov-12	91	0.05	0.00005	0.000132	14.60	0.00010	0.00009	0.00063	0.00005	0.001	0.000014	0.0130	9.10	0.00404	0.004	0.000002	0.0009	0.00045	0.71
HC-3-92	20-Nov-12	92	0.05	0.00005	0.000116	14.13	0.00011	0.00008	0.00054	0.00005	0.001	0.000014	0.0126	8.83	0.00341	0.005	0.000002	0.0009	0.00044	0.70
HC-3-93	27-Nov-12	93	0.05	0.00005	0.000101	13.65	0.00012	0.00007	0.00045	0.00005	0.002	0.000013	0.0122	8.56	0.00279	0.005	0.000002	0.0009	0.00044	0.69
HC-3-94	04-Dec-12	94	0.05	0.00005	0.000085	13.18	0.00013	0.00007	0.00036	0.00005	0.002	0.000013	0.0118	8.28	0.00216	0.006	0.000002	0.0009	0.00044	0.68
HC-3-95	11-Dec-12	95	0.05	0.00005	0.000069	12.70	0.00014	0.00006	0.00027	0.00005	0.002	0.000012	0.0114	8.01	0.00153	0.007	0.000002	0.0009	0.00043	0.67
HC-3-96	18-Dec-12	96	0.05	0.00005	0.000075	12.75	0.00013	0.00005	0.00024	0.00005	0.002	0.000013	0.0114	8.14	0.00128	0.005	0.000002	0.0010	0.00040	0.66
HC-3-97	25-Dec-12	97	0.05	0.00005	0.000081	12.80	0.00012	0.00004	0.00022	0.00005	0.002	0.000015	0.0113	8.26	0.00103	0.004	0.000002	0.0010	0.00036	0.65
HC-3-98	01-Jan-13	98	0.05	0.00005	0.000086	12.85	0.00011	0.00003	0.00019	0.00005	0.002	0.000016	0.0113	8.39	0.00078	0.003	0.000002	0.0010	0.00033	0.64
HC-3-99	08-Jan-13	99	0.05	0.00005	0.000092	12.90	0.00010	0.00002	0.00017	0.00005	0.002	0.000017	0.0112	8.51	0.00052	0.002	0.000003	0.0010	0.00030	0.63
HC-3-100	15-Jan-13	100	0.05	0.00005	0.000086	12.70	0.00010	0.00003	0.00020	0.00005	0.003	0.000028	0.0109	8.39	0.00079	0.005	0.000002	0.0010	0.00030	0.63
HC-3-101	22-Jan-13	101	0.05	0.00005	0.000080	12.50	0.00010	0.00004	0.00023	0.00005	0.003	0.000039	0.0107	8.28	0.00106	0.007	0.000002	0.0010	0.00031	0.63
HC-3-102	29-Jan-13	102	0.05	0.00005	0.000073	12.30	0.00010	0.00005	0.00026	0.00005	0.004	0.000049	0.0104	8.16	0.00133	0.010	0.000002	0.0009	0.00032	0.63
HC-3-103	05-Feb-13	103	0.05	0.00005	0.000067	12.10	0.00010	0.00006	0.00029	0.00005	0.005	0.000060	0.0101	8.04	0.00160	0.013	0.000002	0.0009	0.00033	0.63
HC-3-104	12-Feb-13	104	0.05	0.00005	0.000069	12.53	0.00010	0.00006	0.00025	0.00005	0.004	0.000053	0.0105	8.21	0.00149	0.010	0.000002	0.0009	0.00033	0.64
HC-3-105	19-Feb-13	105	0.05	0.00005	0.000070	12.95	0.00010	0.00005	0.00021	0.00005	0.004	0.000046	0.0108	8.38	0.00139	0.007	0.000002	0.0008	0.00033	0.65
HC-3-106	26-Feb-13	106	0.05	0.00005	0.000072	13.38	0.00010	0.00005	0.00017	0.00005	0.003	0.000038	0.0112	8.54	0.00128	0.005	0.000002	0.0008	0.00033	0.66
HC-3-107	05-Mar-13	107	0.05	0.00005	0.000073	13.80	0.00010	0.00004	0.00014	0.00005	0.003	0.000031	0.0115	8.71	0.00117	0.002	0.000002	0.0008	0.00033	0.67
HC-3-108	12-Mar-13	108	0.05	0.00005	0.000062	13.15	0.00010	0.00004	0.00017	0.00005	0.003	0.000028	0.0109	8.31	0.00103	0.002	0.000002	0.0008	0.00031	0.65
HC-3-109	19-Mar-13	109	0.05	0.00005	0.000051	12.50	0.00010	0.00004	0.00020	0.00005	0.003	0.000024	0.0103	7.90	0.00088	0.002	0.000002	0.0008	0.00029	0.62
HC-3-110	26-Mar-13	110	0.05	0.00005	0.000040	11.85	0.00010	0.00004	0.00023	0.00005	0.004	0.000021	0.0096	7.50	0.00074	0.002	0.000002	0.0009	0.00028	0.60
HC-3-111	02-Apr-13	111	0.05	0.00005	0.000029	11.20	0.00010	0.00003	0.00026	0.00005	0.004	0.000017	0.0090	7.09	0.00060	0.002	0.000002	0.0009	0.00026	0.57
HC-3-112	09-Apr-13	112	0.05	0.00005	0.000033	11.28	0.00010	0.00004	0.00023	0.00005	0.004	0.000027	0.0091	7.23	0.00080	0.002	0.000002	0.0008	0.00028	0.57
HC-3-113	16-Apr-13	113	0.05	0.00005	0.000037	11.35	0.00010	0.00005	0.00021	0.00005	0.003	0.000038	0.0092	7.38	0.00100	0.003	0.000002	0.0008	0.00030	0.57
HC-3-114	23-Apr-13	114	0.05	0.00005	0.000041	11.43	0.00010	0.00006	0.00018	0.00005	0.002	0.000048	0.0093	7.52	0.00120	0.003	0.000002	0.0008	0.00033	0.57
HC-3-115	30-Apr-13	115	0.05	0.00005	0.000045	11.50	0.00010	0.00006	0.00016	0.00005	0.002	0.000058	0.0094	7.66	0.00140	0.004	0.000002	0.0007	0.00035	0.57
HC-3-116	07-May-13	116	0.05	0.00005	0.000045	11.85	0.00010	0.00006	0.00016	0.00005	0.001	0.000081	0.0095	7.88	0.00140	0.003	0.000002	0.0007	0.00036	0.58
HC-3-117	14-May-13	117	0.05	0.00005	0.000045	12.20	0.00010	0.00007	0.00016	0.00005	0.001	0.000104	0.0096	8.09	0.00140	0.003	0.000002	0.0007	0.00037	0.60
HC-3-118	21-May-13	118	0.05	0.00005	0.000044	12.55	0.00010	0.00007	0.00016	0.00005	0.001	0.000126	0.0098	8.31	0.00139	0.002	0.000002	0.0006	0.00038	0.62
HC-3-119	28-May-13	119	0.05	0.00005	0.000044	12.90	0.00010	0.00007	0.00016	0.00005	0.001	0.000149	0.0099	8.52	0.00139	0.002	0.000002	0.0006	0.00040	0.64
HC-3-120	04-Jun-13	120	0.05	0.00005	0.000038	12.78	0.00013	0.00006	0.00015	0.00005	0.001	0.000113	0.0097	8.39	0.00117	0.006	0.000002	0.0006	0.00039	0.63
HC-3-121	11-Jun-13	121	0.05	0.00005	0.000033	12.65	0.00015	0.00005	0.00013	0.00005	0.001	0.000077	0.0094	8.26	0.00096	0.010	0.000002	0.0006	0.00038	0.62
HC-3-122	18-Jun-13	122	0.05	0.00005	0.000027	12.53	0.00018	0.00005	0.00012	0.00005	0.001	0.000041	0.0092	8.12	0.00074	0.013	0.000002	0.0006	0.00037	0.61



Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-3-123	25-Jun-13	123	0.05	0.00005	0.000021	12.40	0.00020	0.00004	0.00010	0.00005	0.002	0.000005	0.0090	7.99	0.00053	0.017	0.000002	0.0007	0.00036	0.60
HC-3-124	02-Jul-13	124	0.05	0.00005	0.000022	12.20	0.00019	0.00004	0.00012	0.00005	0.002	0.000006	0.0090	7.90	0.00060	0.014	0.000002	0.0006	0.00035	0.58
HC-3-125	09-Jul-13	125	0.05	0.00005	0.000022	12.00	0.00018	0.00004	0.00015	0.00005	0.003	0.000007	0.0091	7.81	0.00068	0.010	0.000002	0.0006	0.00034	0.56
HC-3-126	16-Jul-13	126	0.05	0.00005	0.000023	11.80	0.00016	0.00004	0.00018	0.00005	0.003	0.000008	0.0091	7.72	0.00075	0.007	0.000002	0.0006	0.00033	0.54
HC-3-127	23-Jul-13	127	0.05	0.00005	0.000023	11.60	0.00015	0.00004	0.00020	0.00005	0.004	0.000009	0.0092	7.63	0.00083	0.004	0.000002	0.0006	0.00032	0.52
HC-3-128	30-Jul-13	128	0.05	0.00005	0.000029	11.53	0.00014	0.00005	0.00020	0.00005	0.003	0.000013	0.0091	7.82	0.00112	0.004	0.000002	0.0006	0.00031	0.52
HC-3-129	06-Aug-13	129	0.05	0.00005	0.000035	11.45	0.00013	0.00005	0.00020	0.00005	0.003	0.000017	0.0090	8.01	0.00140	0.004	0.000002	0.0007	0.00030	0.51
HC-3-130	13-Aug-13	130	0.05	0.00005	0.000041	11.38	0.00011	0.00005	0.00019	0.00005	0.002	0.000021	0.0089	8.20	0.00169	0.003	0.000002	0.0007	0.00028	0.51
HC-3-131	20-Aug-13	131	0.05	0.00005	0.000047	11.30	0.00010	0.00006	0.00019	0.00005	0.001	0.000025	0.0088	8.39	0.00197	0.003	0.000002	0.0007	0.00027	0.51
HC-3-132	27-Aug-13	132	0.05	0.00005	0.000046	11.80	0.00010	0.00005	0.00021	0.00005	0.001	0.000021	0.0089	8.51	0.00174	0.004	0.000002	0.0007	0.00029	0.52
HC-3-133	03-Sep-13	133	0.05	0.00005	0.000045	12.30	0.00010	0.00005	0.00023	0.00005	0.001	0.000016	0.0090	8.64	0.00150	0.004	0.000002	0.0007	0.00030	0.54
HC-3-134	10-Sep-13	134	0.05	0.00005	0.000044	12.80	0.00010	0.00005	0.00024	0.00005	0.001	0.000012	0.0091	8.76	0.00127	0.004	0.000002	0.0006	0.00032	0.56
HC-3-135	17-Sep-13	135	0.05	0.00005	0.000043	13.30	0.00010	0.00005	0.00026	0.00005	0.001	0.000007	0.0092	8.88	0.00103	0.004	0.000002	0.0006	0.00033	0.58
HC-3-136	24-Sep-13	136	0.05	0.00005	0.000047	13.73	0.00010	0.00004	0.00025	0.00005	0.001	0.000007	0.0092	8.95	0.00092	0.004	0.000002	0.0006	0.00033	0.58
HC-3-137	01-Oct-13	137	0.05	0.00005	0.000050	14.15	0.00010	0.00004	0.00023	0.00005	0.001	0.000006	0.0093	9.02	0.00082	0.003	0.000002	0.0005	0.00032	0.59
HC-3-138	08-Oct-13	138	0.05	0.00005	0.000054	14.58	0.00010	0.00003	0.00021	0.00005	0.001	0.000006	0.0094	9.09	0.00071	0.003	0.000002	0.0005	0.00032	0.60
HC-3-139	15-Oct-13	139	0.05	0.00005	0.000057	15.00	0.00010	0.00002	0.00020	0.00005	0.001	0.000005	0.0095	9.16	0.00061	0.002	0.000002	0.0005	0.00031	0.60
HC-3-140	22-Oct-13	140	0.05	0.00005	0.000050	15.08	0.00010	0.00003	0.00029	0.00005	0.001	0.000008	0.0094	8.97	0.00058	0.003	0.000002	0.0005	0.00038	0.59
HC-3-141	29-Oct-13	141	0.05	0.00005	0.000043	15.15	0.00010	0.00003	0.00037	0.00005	0.001	0.000011	0.0094	8.79	0.00055	0.003	0.000002	0.0005	0.00045	0.58
HC-3-142	05-Nov-13	142	0.05	0.00005	0.000036	15.23	0.00010	0.00003	0.00046	0.00005	0.001	0.000013	0.0093	8.60	0.00053	0.004	0.000002	0.0005	0.00051	0.57
HC-3-143	12-Nov-13	143	0.05	0.00005	0.000029	15.30	0.00010	0.00003	0.00054	0.00005	0.001	0.000016	0.0092	8.41	0.00050	0.005	0.000002	0.0005	0.00058	0.56
HC-3-144	19-Nov-13	144	0.05	0.00005	0.000032	14.85	0.00010	0.00003	0.00044	0.00005	0.001	0.000013	0.0094	8.53	0.00052	0.006	0.000002	0.0005	0.00050	0.56
HC-3-145	26-Nov-13	145	0.05	0.00005	0.000034	14.40	0.00010	0.00004	0.00034	0.00005	0.001	0.000011	0.0096	8.65	0.00054	0.006	0.000002	0.0005	0.00042	0.56
HC-3-146	03-Dec-13	146	0.05	0.00005	0.000037	13.95	0.00010	0.00004	0.00025	0.00005	0.001	0.000008	0.0098	8.76	0.00055	0.007	0.000002	0.0005	0.00034	0.57
HC-3-147	10-Dec-13	147	0.05	0.00005	0.000039	13.50	0.00010	0.00004	0.00015	0.00005	0.001	0.000005	0.0100	8.88	0.00057	0.008	0.000002	0.0005	0.00026	0.57
HC-3-148	17-Dec-13	148	0.05	0.00005	0.000037	13.68	0.00010	0.00004	0.00015	0.00005	0.001	0.000005	0.0099	8.98	0.00052	0.008	0.000002	0.0005	0.00032	0.56
HC-3-149	24-Dec-13	149	0.05	0.00005	0.000035	13.85	0.00010	0.00004	0.00016	0.00005	0.001	0.000005	0.0099	9.08	0.00046	0.008	0.000002	0.0005	0.00039	0.56
HC-3-150	31-Dec-13	150	0.05	0.00005	0.000033	14.03	0.00010	0.00004	0.00016	0.00005	0.001	0.000005	0.0098	9.17	0.00041	0.007	0.000002	0.0004	0.00046	0.56
HC-3-151	07-Jan-14	151	0.05	0.00005	0.000031	14.20	0.00010	0.00004	0.00017	0.00005	0.001	0.000005	0.0097	9.27	0.00035	0.007	0.000002	0.0004	0.00053	0.55
HC-3-152	14-Jan-14	152	0.05	0.00005	0.000029	14.30	0.00010	0.00003	0.00016	0.00005	0.001	0.000005	0.0095	9.30	0.00035	0.007	0.000002	0.0004	0.00046	0.55
HC-3-153	21-Jan-14	153	0.05	0.00005	0.000028	14.40	0.00010	0.00003	0.00014	0.00005	0.001	0.000005	0.0092	9.34	0.00035	0.006	0.000002	0.0004	0.00039	0.55
HC-3-154	28-Jan-14	154	0.05	0.00005	0.000026	14.50	0.00010	0.00003	0.00013	0.00005	0.001	0.000005	0.0089	9.37	0.00035	0.005	0.000002	0.0004	0.00032	0.54
HC-3-155	04-Feb-14	155	0.05	0.00005	0.000024	14.60	0.00010	0.00002	0.00012	0.00005	0.001	0.000005	0.0086	9.40	0.00035	0.005	0.000002	0.0004	0.00025	0.54
HC-3-156	11-Feb-14	156	0.05	0.00005	0.000025	14.25	0.00010	0.00002	0.00011	0.00005	0.001	0.000005	0.0084	9.32	0.00036	0.006	0.000002	0.0004	0.00027	0.52
HC-3-157	18-Feb-14	157	0.05	0.00005	0.000026	13.90	0.00010	0.00002	0.00010	0.00005	0.001	0.000005	0.0083	9.24	0.00037	0.007	0.000002	0.0004	0.00028	0.50
HC-3-158	25-Feb-14	158	0.05	0.00005	0.000026	13.55	0.00010	0.00002	0.00010	0.00005	0.001	0.000005	0.0081	9.15	0.00038	0.007	0.000002	0.0004	0.00030	0.48
HC-3-159	04-Mar-14	159	0.05	0.00005	0.000027	13.20	0.00010	0.00002	0.00009	0.00005	0.001	0.000005	0.0079	9.07	0.00039	0.008	0.000002	0.0003	0.00031	0.46
HC-3-160	11-Mar-14	160	0.05	0.00005	0.000029	13.15	0.00010	0.00002	0.00012	0.00005	0.001	0.000005	0.0078	8.82	0.00035	0.007	0.000002	0.0004	0.00030	0.47
HC-3-161	18-Mar-14	161	0.05	0.00005	0.000030	13.10	0.00010	0.00002	0.00014	0.00005	0.001	0.000005	0.0077	8.57	0.00031	0.006	0.000002	0.0004	0.00029	0.48
HC-3-162	25-Mar-14	162	0.05	0.00005	0.000032	13.05	0.00010	0.00002	0.00017	0.00005	0.001	0.000005	0.0075	8.32	0.00027	0.006	0.000002	0.0004	0.00029	0.49
HC-3-163	01-Apr-14	163	0.05	0.00005	0.000033	13.00	0.00010	0.00002	0.00020	0.00005	0.001	0.000005	0.0074	8.07	0.00024	0.005	0.000002	0.0004	0.00028	0.50
HC-3-164	08-Apr-14	164	0.05	0.00005	0.000039	13.43	0.00010	0.00002	0.00018	0.00005	0.001	0.000005	0.0077	8.33	0.00034	0.004	0.000002	0.0004	0.00032	0.50
HC-3-165	15-Apr-14	165	0.05	0.00005	0.000044	13.85	0.00010	0.00003	0.00016	0.00005	0.001	0.000005	0.0080	8.58	0.00044	0.003	0.000002	0.0004	0.00036	0.51
HC-3-166	22-Apr-14	166	0.05	0.00005	0.000050	14.28	0.00010	0.00003	0.00015	0.00005	0.001	0.000005	0.0083	8.84	0.00054	0.003	0.000002	0.0004	0.00040	0.52
HC-3-167	29-Apr-14	167	0.05	0.00005	0.000055	14.70	0.00010	0.00004	0.00013	0.00005	0.001	0.000005	0.0086	9.09	0.00063	0.002	0.000002	0.0004	0.00045	0.52
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00006</b>	<b>0.000037</b>	<b>10.70</b>	<b>0.00011</b>	<b>0.00007</b>	<b>0.00033</b>	<b>0.00005</b>	<b>0.018</b>	<b>0.000043</b>	<b>0.0167</b>	<b>6.36</b>	<b>0.00204</b>	<b>0.007</b>	<b>0.000002</b>	<b>0.0055</b>	<b>0.00039</b>	<b>0.58</b>

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L	
HC5 Middle Gates D - CCR																					
HC-5-0	15-Feb-11	0	0.05	0.00006	0.000011	0.39	0.00040	0.00014	0.00065	0.00007	0.205	0.000710	0.0375	0.17	0.00243	0.156	0.000010	0.0109	0.00056	0.60	
HC-5-1	22-Feb-11	1	0.05	0.00005	0.000021	0.51	0.00030	0.00011	0.00087	0.00005	0.026	0.000129	0.0570	0.18	0.00087	0.074	0.000010	0.0508	0.00045	0.58	
HC-5-2	01-Mar-11	2	0.05	0.00005	0.000018	0.30	0.00030	0.00010	0.00055	0.00005	0.020	0.000135	0.0457	0.10	0.00054	0.043	0.000010	0.0340	0.00031	0.49	
HC-5-3	08-Mar-11	3	0.05	0.00005	0.000005	0.28	0.00030	0.00009	0.00083	0.00005	0.018	0.000066	0.0351	0.09	0.00061	0.029	0.000002	0.0211	0.00022	0.42	
HC-5-4	15-Mar-11	4	0.05	0.00005	0.000011	0.24	0.00030	0.00009	0.00044	0.00005	0.017	0.000057	0.0321	0.08	0.00040	0.022	0.000010	0.0156	0.00017	0.42	
HC-5-5	22-Mar-11	5	0.05	0.00005	0.000005	0.37	0.00020	0.00004	0.00030	0.00005	0.012	0.000044	0.0267	0.10	0.00041	0.028	0.000010	0.0133	0.00014	0.38	
HC-5-6	29-Mar-11	6	0.05	0.00005	0.000005	0.34	0.00020	0.00005	0.00032	0.00005	0.010	0.000039	0.0264	0.10	0.00041	0.015	0.000010	0.0114	0.00023	0.42	
HC-5-7	05-Apr-11	7	0.05	0.00005	0.000005	0.38	0.00020	0.00004	0.00023	0.00005	0.011	0.000034	0.0232	0.11	0.00039	0.012	0.000002	0.0107	0.00014	0.37	
HC-5-8	12-Apr-11	8	0.05	0.00001	0.000050	0.30	0.00020	0.00006	0.00032	0.00005	0.012	0.000041	0.0208	0.12	0.00041	0.016	0.000002	0.0060	0.00015	0.40	
HC-5-9	19-Apr-11	9	0.05	0.00005	0.000008	0.38	0.00020	0.00007	0.00028	0.00005	0.013	0.000041	0.0206	0.15	0.00039	0.015	0.000002	0.0097	0.00022	0.38	
HC-5-10	26-Apr-11	10	0.05	0.00005	0.000005	0.24	0.00030	0.00007	0.00036	0.00005	0.021	0.000047	0.0168	0.08	0.00032	0.023	0.000002	0.0079	0.00022	0.32	
HC-5-11	03-May-11	11	0.05	0.00005	0.000005	0.36	0.00020	0.00006	0.00033	0.00005	0.016	0.000057	0.0176	0.12	0.00054	0.014	0.000002	0.0100	0.00019	0.36	
HC-5-12	10-May-11	12	0.05	0.00005	0.000005	0.33	0.00020	0.00006	0.00026	0.00005	0.014	0.000037	0.0174	0.12	0.00043	0.012	0.000002	0.0087	0.00022	0.38	
HC-5-13	17-May-11	13	0.05	0.00005	0.000005	0.38	0.00010	0.00004	0.00029	0.00005	0.008	0.000031	0.0201	0.12	0.00024	0.005	0.000002	0.0086	0.00009	0.40	
HC-5-14	24-May-11	14	0.05	0.00005	0.000007	0.52	0.00010	0.00004	0.00028	0.00005	0.010	0.000036	0.0171	0.17	0.00040	0.009	0.000002	0.0077	0.00012	0.38	
HC-5-15	31-May-11	15	0.05	0.00005	0.000008	0.42	0.00010	0.00006	0.00036	0.00005	0.010	0.000048	0.0166	0.14	0.00036	0.006	0.000002	0.0080	0.00013	0.38	
HC-5-16	07-Jun-11	16	0.05	0.00005	0.000005	0.37	0.00010	0.00005	0.000791	0.00005	0.015	0.000149	0.0168	0.14	0.00036	0.004	0.000002	0.0064	0.00012	0.37	
HC-5-17	14-Jun-11	17	0.05	0.00005	0.000005	0.46	0.00020	0.00004	0.00034	0.00005	0.006	0.000041	0.0165	0.16	0.00023	0.002	0.000002	0.0070	0.00017	0.40	
HC-5-18	21-Jun-11	18	0.05	0.00005	0.000008	0.85	0.00010	0.00003	0.00022	0.00005	0.006	0.000024	0.0191	0.32	0.00058	0.007	0.000002	0.0062	0.00012	0.54	
HC-5-19	28-Jun-11	19	0.05	0.00005	0.000005	0.88	0.00010	0.00004	0.00254	0.00005	0.007	0.000258	0.0188	0.41	0.00083	0.012	0.000002	0.0060	0.00011	0.56	
HC-5-20	05-Jul-11	20	0.05	0.00005	0.000005	1.40	0.00010	0.00005	0.00196	0.00005	0.006	0.000202	0.0193	0.67	0.00127	0.010	0.000002	0.0054	0.00012	0.63	
HC-5-21	12-Jul-11	21	0.05	0.00005	0.000005	1.93	0.00010	0.00005	0.00138	0.00005	0.005	0.000145	0.0199	0.92	0.00172	0.007	0.000002	0.0049	0.00012	0.71	
HC-5-22	19-Jul-11	22	0.05	0.00005	0.000005	2.45	0.00010	0.00005	0.00080	0.00005	0.003	0.000089	0.0204	1.18	0.00216	0.005	0.000002	0.0043	0.00013	0.78	
HC-5-23	26-Jul-11	23	0.05	0.00005	0.000005	2.97	0.00010	0.00006	0.00022	0.00005	0.002	0.000032	0.0209	1.43	0.00260	0.002	0.000002	0.0038	0.00013	0.85	
HC-5-24	02-Aug-11	24	0.05	0.00005	0.000005	3.50	0.00010	0.00006	0.00022	0.00005	0.002	0.000033	0.0203	1.67	0.00294	0.010	0.000002	0.0037	0.00017	0.89	
HC-5-25	09-Aug-11	25	0.05	0.00005	0.000005	4.02	0.00010	0.00007	0.00022	0.00005	0.003	0.000033	0.0196	1.91	0.00328	0.018	0.000002	0.0037	0.00022	0.93	
HC-5-26	16-Aug-11	26	0.05	0.00005	0.000005	4.55	0.00010	0.00007	0.00022	0.00005	0.003	0.000034	0.0190	2.14	0.00362	0.025	0.000002	0.0037	0.00026	0.97	
HC-5-27	23-Aug-11	27	0.05	0.00005	0.000005	5.07	0.00010	0.00008	0.00022	0.00005	0.003	0.000034	0.0183	2.38	0.00396	0.033	0.000002	0.0036	0.00030	1.01	
HC-5-28	30-Aug-11	28	0.05	0.00005	0.000005	5.92	0.00010	0.00008	0.00021	0.00005	0.003	0.000028	0.0183	2.86	0.00380	0.026	0.000002	0.0034	0.00028	1.08	
HC-5-29	06-Sep-11	29	0.05	0.00005	0.000005	6.77	0.00010	0.00009	0.00020	0.00005	0.002	0.000021	0.0182	3.35	0.00365	0.019	0.000002	0.0031	0.00025	1.15	
HC-5-30	13-Sep-11	30	0.05	0.00005	0.000005	7.62	0.00010	0.00009	0.00019	0.00005	0.002	0.000015	0.0182	3.83	0.00349	0.011	0.000002	0.0028	0.00023	1.22	
HC-5-31	20-Sep-11	31	0.05	0.00005	0.000005	8.47	0.00010	0.00009	0.00018	0.00005	0.001	0.000008	0.0181	4.31	0.00333	0.004	0.000002	0.0025	0.00020	1.29	
HC-5-32	27-Sep-11	32	0.05	0.00005	0.000006	9.28	0.00010	0.00009	0.00018	0.00005	0.001	0.000008	0.0172	4.65	0.00318	0.004	0.000002	0.0023	0.00021	1.36	
HC-5-33	04-Oct-11	33	0.05	0.00005	0.000007	10.09	0.00010	0.00008	0.00018	0.00005	0.002	0.000008	0.0162	4.99	0.00303	0.005	0.000002	0.0022	0.00022	1.43	
HC-5-34	11-Oct-11	34	0.05	0.00005	0.000007	10.89	0.00010	0.00008	0.00017	0.00005	0.002	0.000008	0.0153	5.32	0.00287	0.005	0.000002	0.0020	0.00022	1.50	
HC-5-35	18-Oct-11	35	0.05	0.00005	0.000008	11.70	0.00010	0.00007	0.00017	0.00005	0.002	0.000008	0.0143	5.66	0.00272	0.005	0.000002	0.0018	0.00023	1.57	
HC-5-36	25-Oct-11	36	0.05	0.00005	0.000008	11.65	0.00010	0.00006	0.00017	0.00005	0.002	0.000012	0.0136	5.79	0.00223	0.006	0.000002	0.0017	0.00025	1.55	
HC-5-37	01-Nov-11	37	0.05	0.00005	0.000009	11.60	0.00010	0.00005	0.00016	0.00005	0.002	0.000016	0.0128	5.91	0.00174	0.008	0.000002	0.0016	0.00027	1.53	
HC-5-38	08-Nov-11	38	0.05	0.00005	0.000009	11.55	0.00010	0.00004	0.00016	0.00005	0.001	0.000020	0.0121	6.04	0.00124	0.009	0.000002	0.0015	0.00028	1.50	
HC-5-39	15-Nov-11	39	0.05	0.00005	0.000009	11.50	0.00010	0.00003	0.00015	0.00005	0.001	0.000024	0.0113	6.16	0.00075	0.010	0.000002	0.0014	0.00030	1.48	
HC-5-40	22-Nov-11	40	0.05	0.00005	0.000009	11.45	0.00010	0.00005	0.00020	0.00005	0.001	0.000022	0.0110	6.08	0.00132	0.008	0.000002	0.0014	0.00030	1.55	
HC-5-41	29-Nov-11	41	0.05	0.00005	0.000008	11.40	0.00010	0.00007	0.00026	0.00005	0.002	0.000020	0.0108	6.00	0.00189	0.007	0.000002	0.0014	0.00030	1.63	
HC-5-42	06-Dec-11	42	0.05	0.00005	0.000008	11.35	0.00010	0.00008	0.00031	0.00005	0.002	0.000018	0.0105	5.91	0.00246	0.005	0.000002	0.0014	0.00030	1.70	
HC-5-43	13-Dec-11	43	0.05	0.00005	0.000007	11.30	0.00010	0.00010	0.00036	0.00005	0.002	0.000016	0.0102	5.83	0.00303	0.003	0.000002	0.0014	0.00030	1.77	
HC-5-44	20-Dec-11	44	0.05	0.00005	0.000008	11.35	0.00010	0.00009	0.00034	0.00005	0.002	0.000019	0.0097	5.72	0.00271	0.004	0.000002	0.0014	0.00029	1.71	
HC-5-45	27-Dec-11	45	0.05	0.00005	0.000010	11.40	0.00010	0.00009	0.00031	0.00005	0.002	0.000021	0.0092	5.61	0.00240	0.005	0.000002	0.0013	0.00028	1.65	
HC-5-46	03-Jan-12	46	0.05	0.00005	0.000011	11.45	0.00010	0.00008	0.00029	0.00005	0.002	0.000024	0.0087	5.49	0.00208	0.005	0.000002	0.0012	0.00026	1.59	
HC-5-47	10-Jan-12	47	0.05	0.00005	0.000012	11.50	0.00010	0.00007	0.00026	0.00005	0.002	0.000026	0.0082	5.38	0.00176	0.006	0.000002	0.0012	0.00025	1.53	

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-5-48	17-Jan-12	48	0.05	0.00005	0.000010	11.58	0.00010	0.00006	0.00027	0.00005	0.002	0.000021	0.0079	5.50	0.00167	0.005	0.000002	0.0011	0.00025	1.54
HC-5-49	24-Jan-12	49	0.05	0.00005	0.000009	11.65	0.00010	0.00006	0.00028	0.00005	0.002	0.000016	0.0076	5.61	0.00158	0.005	0.000002	0.0010	0.00026	1.55
HC-5-50	31-Jan-12	50	0.05	0.00005	0.000007	11.73	0.00010	0.00005	0.00028	0.00005	0.001	0.000010	0.0073	5.73	0.00148	0.004	0.000002	0.0010	0.00026	1.56
HC-5-51	07-Feb-12	51	0.05	0.00005	0.000005	11.80	0.00010	0.00005	0.00029	0.00005	0.001	0.000005	0.0070	5.84	0.00139	0.003	0.000002	0.0009	0.00026	1.57
HC-5-52	14-Feb-12	52	0.05	0.00005	0.000006	11.50	0.00010	0.00005	0.00028	0.00005	0.001	0.000007	0.0069	5.74	0.00131	0.003	0.000002	0.0009	0.00025	1.55
HC-5-53	21-Feb-12	53	0.05	0.00005	0.000006	11.20	0.00010	0.00005	0.00028	0.00005	0.001	0.000010	0.0067	5.64	0.00123	0.004	0.000002	0.0009	0.00024	1.53
HC-5-54	28-Feb-12	54	0.05	0.00005	0.000007	10.90	0.00010	0.00006	0.00027	0.00005	0.001	0.000012	0.0066	5.54	0.00115	0.004	0.000002	0.0009	0.00022	1.50
HC-5-55	06-Mar-12	55	0.05	0.00005	0.000007	10.60	0.00010	0.00006	0.00026	0.00005	0.001	0.000014	0.0064	5.44	0.00107	0.004	0.000002	0.0010	0.00021	1.48
HC-5-56	13-Mar-12	56	0.05	0.00005	0.000007	10.70	0.00010	0.00006	0.00032	0.00005	0.001	0.000013	0.0061	5.48	0.00108	0.004	0.000002	0.0009	0.00030	1.45
HC-5-57	20-Mar-12	57	0.05	0.00005	0.000007	10.80	0.00010	0.00005	0.00038	0.00005	0.001	0.000011	0.0059	5.51	0.00108	0.005	0.000002	0.0009	0.00039	1.42
HC-5-58	27-Mar-12	58	0.05	0.00005	0.000006	10.90	0.00010	0.00005	0.00043	0.00005	0.001	0.000010	0.0056	5.55	0.00109	0.005	0.000002	0.0009	0.00047	1.39
HC-5-59	03-Apr-12	59	0.05	0.00005	0.000006	11.00	0.00010	0.00005	0.00049	0.00005	0.001	0.000008	0.0053	5.58	0.00109	0.005	0.000002	0.0008	0.00056	1.36
HC-5-60	10-Apr-12	60	0.05	0.00005	0.000007	11.15	0.00010	0.00005	0.00044	0.00005	0.001	0.000008	0.0053	5.86	0.00108	0.007	0.000002	0.0008	0.00051	1.41
HC-5-61	17-Apr-12	61	0.05	0.00005	0.000007	11.30	0.00010	0.00005	0.00039	0.00005	0.001	0.000007	0.0053	6.14	0.00106	0.009	0.000002	0.0008	0.00045	1.46
HC-5-62	24-Apr-12	62	0.05	0.00005	0.000008	11.45	0.00010	0.00005	0.00034	0.00005	0.001	0.000007	0.0053	6.42	0.00105	0.011	0.000002	0.0008	0.00040	1.51
HC-5-63	01-May-12	63	0.05	0.00005	0.000008	11.60	0.00010	0.00005	0.00029	0.00005	0.001	0.000006	0.0053	6.70	0.00103	0.013	0.000002	0.0008	0.00035	1.56
HC-5-64	08-May-12	64	0.05	0.00005	0.000007	11.88	0.00010	0.00005	0.00034	0.00005	0.001	0.000009	0.0053	6.81	0.00101	0.012	0.000002	0.0008	0.00032	1.55
HC-5-65	15-May-12	65	0.05	0.00005	0.000007	12.15	0.00010	0.00005	0.00039	0.00005	0.001	0.000012	0.0052	6.91	0.00099	0.011	0.000002	0.0008	0.00029	1.54
HC-5-66	22-May-12	66	0.05	0.00005	0.000006	12.43	0.00010	0.00005	0.00044	0.00005	0.002	0.000015	0.0052	7.02	0.00097	0.010	0.000002	0.0008	0.00027	1.52
HC-5-67	29-May-12	67	0.05	0.00005	0.000005	12.70	0.00010	0.00005	0.00049	0.00005	0.002	0.000018	0.0052	7.12	0.00095	0.009	0.000002	0.0007	0.00024	1.51
HC-5-68	05-Jun-12	68	0.05	0.00005	0.000005	12.95	0.00010	0.00005	0.00049	0.00005	0.002	0.000015	0.0051	7.17	0.00094	0.010	0.000002	0.0007	0.00024	1.51
HC-5-69	12-Jun-12	69	0.05	0.00005	0.000006	13.20	0.00010	0.00004	0.00048	0.00005	0.002	0.000013	0.0050	7.22	0.00093	0.010	0.000002	0.0007	0.00025	1.51
HC-5-70	19-Jun-12	70	0.05	0.00005	0.000006	13.45	0.00010	0.00004	0.00047	0.00005	0.002	0.000010	0.0050	7.27	0.00092	0.011	0.000002	0.0007	0.00025	1.50
HC-5-71	26-Jun-12	71	0.05	0.00005	0.000006	13.70	0.00010	0.00004	0.00047	0.00005	0.002	0.000008	0.0049	7.32	0.00091	0.011	0.000002	0.0007	0.00026	1.50
HC-5-72	03-Jul-12	72	0.05	0.00005	0.000007	14.25	0.00010	0.00004	0.00046	0.00005	0.002	0.000008	0.0049	7.69	0.00096	0.010	0.000002	0.0006	0.00029	1.53
HC-5-73	10-Jul-12	73	0.05	0.00005	0.000007	14.80	0.00010	0.00004	0.00045	0.00005	0.002	0.000008	0.0050	8.05	0.00100	0.008	0.000002	0.0006	0.00032	1.57
HC-5-74	17-Jul-12	74	0.05	0.00005	0.000008	15.35	0.00010	0.00005	0.00045	0.00005	0.002	0.000008	0.0050	8.42	0.00105	0.006	0.000002	0.0006	0.00035	1.60
HC-5-75	24-Jul-12	75	0.05	0.00005	0.000008	15.90	0.00010	0.00005	0.00044	0.00005	0.002	0.000008	0.0051	8.78	0.00110	0.005	0.000002	0.0006	0.00038	1.63
HC-5-76	31-Jul-12	76	0.05	0.00005	0.000008	15.68	0.00010	0.00005	0.00042	0.00005	0.002	0.000010	0.0049	8.72	0.00113	0.004	0.000002	0.0006	0.00035	1.60
HC-5-77	07-Aug-12	77	0.05	0.00005	0.000008	15.45	0.00010	0.00005	0.00039	0.00005	0.002	0.000011	0.0047	8.66	0.00115	0.003	0.000002	0.0005	0.00032	1.58
HC-5-78	14-Aug-12	78	0.05	0.00005	0.000007	15.23	0.00010	0.00005	0.00036	0.00005	0.001	0.000013	0.0045	8.60	0.00118	0.003	0.000002	0.0005	0.00029	1.55
HC-5-79	21-Aug-12	79	0.05	0.00005	0.000007	15.00	0.00010	0.00005	0.00034	0.00005	0.001	0.000014	0.0043	8.54	0.00120	0.002	0.000002	0.0005	0.00026	1.52
HC-5-80	28-Aug-12	80	0.05	0.00005	0.000009	15.40	0.00012	0.00004	0.00182	0.00005	0.004	0.000059	0.0042	8.75	0.00150	0.003	0.000002	0.0005	0.00029	1.49
HC-5-81	04-Sep-12	81	0.05	0.00005	0.000012	15.80	0.00013	0.00004	0.00331	0.00005	0.006	0.000104	0.0041	8.96	0.00179	0.004	0.000002	0.0005	0.00032	1.47
HC-5-82	11-Sep-12	82	0.05	0.00005	0.000014	16.20	0.00015	0.00004	0.00480	0.00005	0.009	0.000149	0.0040	9.16	0.00209	0.005	0.000002	0.0005	0.00034	1.44
HC-5-83	18-Sep-12	83	0.05	0.00005	0.000016	16.60	0.00016	0.00004	0.00629	0.00005	0.011	0.000194	0.0040	9.37	0.00238	0.006	0.000002	0.0005	0.00037	1.41
HC-5-84	25-Sep-12	84	0.05	0.00005	0.000014	16.28	0.00015	0.00003	0.00478	0.00005	0.009	0.000147	0.0040	9.35	0.00189	0.007	0.000002	0.0004	0.00036	1.41
HC-5-85	02-Oct-12	85	0.05	0.00005	0.000012	15.95	0.00013	0.00003	0.00326	0.00005	0.006	0.000100	0.0040	9.33	0.00141	0.008	0.000002	0.0004	0.00035	1.40
HC-5-86	09-Oct-12	86	0.05	0.00005	0.000010	15.63	0.00012	0.00002	0.00175	0.00005	0.004	0.000053	0.0040	9.30	0.00092	0.008	0.000002	0.0003	0.00034	1.40
HC-5-87	16-Oct-12	87	0.05	0.00005	0.000008	15.30	0.00010	0.00002	0.00024	0.00005	0.001	0.000006	0.0040	9.28	0.00044	0.009	0.000002	0.0003	0.00033	1.39
HC-5-88	23-Oct-12	88	0.05	0.00005	0.000013	16.00	0.00010	0.00002	0.00029	0.00005	0.002	0.000006	0.0040	9.36	0.00094	0.007	0.000002	0.0003	0.00031	1.40
HC-5-89	30-Oct-12	89	0.05	0.00005	0.000017	16.70	0.00010	0.00003	0.00033	0.00005	0.002	0.000007	0.0039	9.44	0.00145	0.005	0.000002	0.0003	0.00030	1.40
HC-5-90	06-Nov-12	90	0.05	0.00005	0.000022	17.40	0.00010	0.00004	0.00038	0.00005	0.002	0.000007	0.0038	9.51	0.00196	0.004	0.000002	0.0003	0.00029	1.41
HC-5-91	13-Nov-12	91	0.05	0.00005	0.000026	18.10	0.00010	0.00005	0.00043	0.00005	0.003	0.000007	0.0037	9.59	0.00247	0.002	0.000002	0.0003	0.00028	1.41
HC-5-92	20-Nov-12	92	0.05	0.00005	0.000022	18.03	0.00010	0.00005	0.00044	0.00005	0.003	0.000009	0.0036	9.65	0.00225	0.003	0.000002	0.0003	0.00037	1.40
HC-5-93	27-Nov-12	93	0.05	0.00005	0.000018	17.95	0.00010	0.00004	0.00046	0.00005	0.002	0.000011	0.0036	9.71	0.00203	0.003	0.000002	0.0003	0.00046	1.40
HC-5-94	04-Dec-12	94	0.05	0.00005	0.000013	17.88	0.00010	0.00004	0.00047	0.00005	0.002	0.000012	0.0035	9.76	0.00181	0.004	0.000002	0.0003	0.00054	1.39
HC-5-95	11-Dec-12	95	0.05	0.00005	0.000009	17.80	0.00010	0.00004	0.00048	0.00005	0.002	0.000014	0.0035	9.82	0.00159	0.004	0.000002	0.0003	0.00063	1.38
HC-5-96	18-Dec-12	96	0.05	0.00005	0.000009	18.03	0.00010	0.00004	0.00041	0.00005	0.002	0.000016	0.0034	9.99	0.00134	0.004	0.000002	0.0003	0.00057	1.36

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-5-97	25-Dec-12	97	0.05	0.00005	0.000009	18.25	0.00010	0.00004	0.00035	0.00005	0.002	0.000017	0.0032	10.16	0.00109	0.003	0.000002	0.0003	0.00050	1.34
HC-5-98	01-Jan-13	98	0.05	0.00005	0.000009	18.48	0.00010	0.00003	0.00028	0.00005	0.002	0.000019	0.0031	10.33	0.00084	0.003	0.000002	0.0003	0.00044	1.31
HC-5-99	08-Jan-13	99	0.05	0.00005	0.000009	18.70	0.00010	0.00003	0.00021	0.00005	0.002	0.000020	0.0030	10.50	0.00059	0.003	0.000002	0.0003	0.00038	1.29
HC-5-100	15-Jan-13	100	0.05	0.00005	0.000009	18.30	0.00010	0.00003	0.00019	0.00005	0.002	0.000020	0.0030	10.32	0.00106	0.004	0.000002	0.0003	0.00036	1.28
HC-5-101	22-Jan-13	101	0.05	0.00005	0.000009	17.90	0.00010	0.00003	0.00018	0.00005	0.003	0.000020	0.0030	10.14	0.00152	0.005	0.000002	0.0003	0.00035	1.26
HC-5-102	29-Jan-13	102	0.05	0.00005	0.000009	17.50	0.00010	0.00003	0.00017	0.00005	0.003	0.000020	0.0029	9.96	0.00199	0.006	0.000002	0.0003	0.00034	1.25
HC-5-103	05-Feb-13	103	0.05	0.00005	0.000009	17.10	0.00010	0.00003	0.00015	0.00005	0.003	0.000020	0.0029	9.78	0.00245	0.007	0.000002	0.0003	0.00033	1.23
HC-5-104	12-Feb-13	104	0.05	0.00005	0.000009	17.50	0.00010	0.00004	0.00017	0.00005	0.003	0.000022	0.0030	9.99	0.00243	0.006	0.000002	0.0003	0.00032	1.27
HC-5-105	19-Feb-13	105	0.05	0.00005	0.000009	17.90	0.00010	0.00004	0.00019	0.00005	0.003	0.000024	0.0030	10.19	0.00242	0.005	0.000002	0.0003	0.00032	1.31
HC-5-106	26-Feb-13	106	0.05	0.00005	0.000008	18.30	0.00010	0.00004	0.00020	0.00005	0.002	0.000025	0.0031	10.40	0.00240	0.003	0.000002	0.0003	0.00031	1.34
HC-5-107	05-Mar-13	107	0.05	0.00005	0.000008	18.70	0.00010	0.00004	0.00022	0.00005	0.002	0.000027	0.0031	10.60	0.00238	0.002	0.000002	0.0002	0.00031	1.38
HC-5-108	12-Mar-13	108	0.05	0.00005	0.000008	18.40	0.00010	0.00004	0.00027	0.00005	0.002	0.000022	0.0030	10.43	0.00209	0.002	0.000002	0.0002	0.00030	1.33
HC-5-109	19-Mar-13	109	0.05	0.00005	0.000008	18.10	0.00010	0.00003	0.00032	0.00005	0.003	0.000018	0.0029	10.25	0.00180	0.002	0.000002	0.0002	0.00029	1.27
HC-5-110	26-Mar-13	110	0.05	0.00005	0.000008	17.80	0.00010	0.00003	0.00037	0.00005	0.003	0.000013	0.0028	10.08	0.00151	0.002	0.000002	0.0002	0.00028	1.22
HC-5-111	02-Apr-13	111	0.05	0.00005	0.000008	17.50	0.00010	0.00002	0.00043	0.00005	0.003	0.000008	0.0027	9.90	0.00122	0.002	0.000002	0.0002	0.00028	1.16
HC-5-112	09-Apr-13	112	0.05	0.00005	0.000009	17.75	0.00010	0.00003	0.00036	0.00005	0.003	0.000018	0.0027	10.15	0.00149	0.002	0.000002	0.0002	0.00029	1.16
HC-5-113	16-Apr-13	113	0.05	0.00005	0.000011	18.00	0.00010	0.00003	0.00030	0.00005	0.002	0.000028	0.0028	10.40	0.00175	0.002	0.000002	0.0002	0.00030	1.17
HC-5-114	23-Apr-13	114	0.05	0.00005	0.000012	18.25	0.00010	0.00003	0.00024	0.00005	0.002	0.000038	0.0028	10.65	0.00202	0.002	0.000002	0.0002	0.00031	1.17
HC-5-115	30-Apr-13	115	0.05	0.00005	0.000013	18.50	0.00010	0.00004	0.00018	0.00005	0.001	0.000048	0.0028	10.90	0.00228	0.002	0.000002	0.0002	0.00032	1.17
HC-5-116	07-May-13	116	0.05	0.00005	0.000012	18.43	0.00010	0.00004	0.00018	0.00005	0.001	0.000044	0.0027	10.78	0.00225	0.002	0.000002	0.0002	0.00032	1.17
HC-5-117	14-May-13	117	0.05	0.00005	0.000011	18.35	0.00010	0.00003	0.00019	0.00005	0.001	0.000040	0.0027	10.65	0.00221	0.002	0.000002	0.0002	0.00033	1.17
HC-5-118	21-May-13	118	0.05	0.00005	0.000010	18.28	0.00010	0.00003	0.00019	0.00005	0.001	0.000036	0.0026	10.53	0.00218	0.002	0.000002	0.0002	0.00033	1.17
HC-5-119	28-May-13	119	0.05	0.00005	0.000009	18.20	0.00010	0.00003	0.00019	0.00005	0.001	0.000032	0.0026	10.40	0.00214	0.002	0.000002	0.0002	0.00033	1.17
HC-5-120	04-Jun-13	120	0.05	0.00005	0.000009	18.30	0.00012	0.00003	0.00017	0.00005	0.001	0.000026	0.0025	10.40	0.00189	0.006	0.000002	0.0002	0.00034	1.16
HC-5-121	11-Jun-13	121	0.05	0.00005	0.000008	18.40	0.00013	0.00003	0.00015	0.00005	0.001	0.000020	0.0025	10.40	0.00164	0.009	0.000002	0.0002	0.00035	1.15
HC-5-122	18-Jun-13	122	0.05	0.00005	0.000008	18.50	0.00015	0.00003	0.00014	0.00005	0.001	0.000014	0.0024	10.40	0.00139	0.013	0.000002	0.0002	0.00035	1.14
HC-5-123	25-Jun-13	123	0.05	0.00005	0.000007	18.60	0.00016	0.00003	0.00012	0.00005	0.002	0.000008	0.0023	10.40	0.00114	0.016	0.000002	0.0002	0.00036	1.13
HC-5-124	02-Jul-13	124	0.05	0.00005	0.000007	18.58	0.00016	0.00003	0.00016	0.00005	0.002	0.000010	0.0024	10.60	0.00123	0.013	0.000002	0.0002	0.00037	1.12
HC-5-125	09-Jul-13	125	0.05	0.00005	0.000006	18.55	0.00015	0.00003	0.00019	0.00005	0.003	0.000013	0.0025	10.80	0.00133	0.009	0.000002	0.0002	0.00039	1.10
HC-5-126	16-Jul-13	126	0.05	0.00005	0.000006	18.53	0.00015	0.00003	0.00023	0.00005	0.004	0.000015	0.0025	11.00	0.00142	0.006	0.000002	0.0002	0.00040	1.09
HC-5-127	23-Jul-13	127	0.05	0.00005	0.000005	18.50	0.00014	0.00003	0.00027	0.00005	0.005	0.000017	0.0026	11.20	0.00151	0.002	0.000002	0.0002	0.00042	1.07
HC-5-128	30-Jul-13	128	0.05	0.00005	0.000015	18.40	0.00013	0.00003	0.00026	0.00005	0.004	0.000077	0.0025	11.30	0.00165	0.002	0.000002	0.0002	0.00040	1.05
HC-5-129	06-Aug-13	129	0.05	0.00005	0.000024	18.30	0.00012	0.00003	0.00025	0.00005	0.003	0.000137	0.0024	11.40	0.00180	0.002	0.000002	0.0002	0.00038	1.02
HC-5-130	13-Aug-13	130	0.05	0.00005	0.000034	18.20	0.00011	0.00003	0.00024	0.00005	0.002	0.000196	0.0023	11.50	0.00194	0.002	0.000002	0.0002	0.00036	1.00
HC-5-131	20-Aug-13	131	0.05	0.00005	0.000043	18.10	0.00010	0.00004	0.00023	0.00005	0.001	0.000256	0.0022	11.60	0.00208	0.002	0.000002	0.0002	0.00034	0.97
HC-5-132	27-Aug-13	132	0.05	0.00005	0.000034	18.83	0.00010	0.00004	0.00025	0.00005	0.001	0.000194	0.0023	11.68	0.00199	0.004	0.000002	0.0002	0.00035	0.99
HC-5-133	03-Sep-13	133	0.05	0.00005	0.000026	19.55	0.00010	0.00004	0.00028	0.00005	0.001	0.000132	0.0023	11.75	0.00190	0.005	0.000002	0.0002	0.00037	1.01
HC-5-134	10-Sep-13	134	0.05	0.00005	0.000017	20.28	0.00010	0.00004	0.00030	0.00005	0.001	0.000069	0.0024	11.83	0.00180	0.007	0.000002	0.0002	0.00039	1.03
HC-5-135	17-Sep-13	135	0.05	0.00005	0.000008	21.00	0.00010	0.00004	0.00033	0.00005	0.001	0.000007	0.0024	11.90	0.00171	0.009	0.000002	0.0002	0.00041	1.05
HC-5-136	24-Sep-13	136	0.05	0.00005	0.000014	21.15	0.00010	0.00004	0.00028	0.00005	0.001	0.000007	0.0025	11.88	0.00191	0.007	0.000002	0.0002	0.00044	1.05
HC-5-137	01-Oct-13	137	0.05	0.00005	0.000019	21.30	0.00010	0.00003	0.00023	0.00005	0.001	0.000006	0.0025	11.85	0.00212	0.005	0.000002	0.0002	0.00047	1.05
HC-5-138	08-Oct-13	138	0.05	0.00005	0.000025	21.45	0.00010	0.00002	0.00018	0.00005	0.001	0.000006	0.0025	11.83	0.00232	0.004	0.000002	0.0002	0.00050	1.05
HC-5-139	15-Oct-13	139	0.05	0.00005	0.000030	21.60	0.00010	0.00002	0.00013	0.00005	0.001	0.000005	0.0026	11.80	0.00252	0.002	0.000002	0.0002	0.00053	1.05
HC-5-140	22-Oct-13	140	0.05	0.00005	0.000025	21.85	0.00010	0.00003	0.00019	0.00005	0.001	0.000009	0.0026	11.85	0.00224	0.003	0.000002	0.0001	0.00061	1.05
HC-5-141	29-Oct-13	141	0.05	0.00005	0.000020	22.10	0.00010	0.00004	0.00026	0.00005	0.001	0.000012	0.0025	11.90	0.00196	0.004	0.000002	0.0001	0.00068	1.06
HC-5-142	05-Nov-13	142	0.05	0.00005	0.000015	22.35	0.00010	0.00005	0.00032	0.00005	0.001	0.000016	0.0025	11.95	0.00167	0.005	0.000002	0.0001	0.00076	1.06
HC-5-143	12-Nov-13	143	0.05	0.00005	0.000010	22.60	0.00010	0.00007	0.00039	0.00005	0.001	0.000019	0.0025	12.00	0.00139	0.006	0.000002	0.0001	0.00083	1.06
HC-5-144	19-Nov-13	144	0.05	0.00005	0.000010	22.10	0.00010	0.00005	0.00037	0.00005	0.001	0.000016	0.0024	12.03	0.00158	0.007	0.000002	0.0001	0.00068	1.06
HC-5-145	26-Nov-13	145	0.05	0.00005	0.000010	21.60	0.00010	0.00004	0.00036	0.00005	0.001	0.000012	0.0024	12.05	0.00177	0.008	0.000002	0.0001	0.00053	1.06

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-5-146	03-Dec-13	146	0.05	0.00005	0.000009	21.10	0.00010	0.00003	0.00035	0.00005	0.001	0.000009	0.0024	12.08	0.00196	0.010	0.000002	0.0001	0.00038	1.06
HC-5-147	10-Dec-13	147	0.05	0.00005	0.000009	20.60	0.00010	0.00002	0.00034	0.00005	0.001	0.000005	0.0023	12.10	0.00215	0.011	0.000002	0.0001	0.00023	1.06
HC-5-148	17-Dec-13	148	0.05	0.00005	0.000009	20.55	0.00010	0.00002	0.00030	0.00005	0.001	0.000005	0.0023	12.05	0.00198	0.010	0.000002	0.0001	0.00026	1.02
HC-5-149	24-Dec-13	149	0.05	0.00005	0.000009	20.50	0.00010	0.00002	0.00027	0.00005	0.001	0.000005	0.0023	12.00	0.00180	0.009	0.000002	0.0001	0.00030	0.99
HC-5-150	31-Dec-13	150	0.05	0.00005	0.000008	20.45	0.00010	0.00002	0.00023	0.00005	0.001	0.000005	0.0024	11.95	0.00163	0.008	0.000002	0.0001	0.00033	0.95
HC-5-151	07-Jan-14	151	0.05	0.00005	0.000008	20.40	0.00010	0.00003	0.00019	0.00005	0.001	0.000005	0.0024	11.90	0.00145	0.008	0.000002	0.0001	0.00036	0.92
HC-5-152	14-Jan-14	152	0.05	0.00005	0.000008	20.18	0.00010	0.00003	0.00016	0.00005	0.001	0.000005	0.0023	11.75	0.00150	0.007	0.000002	0.0001	0.00033	0.90
HC-5-153	21-Jan-14	153	0.05	0.00005	0.000008	19.95	0.00010	0.00003	0.00014	0.00005	0.001	0.000005	0.0022	11.60	0.00155	0.006	0.000002	0.0001	0.00031	0.88
HC-5-154	28-Jan-14	154	0.05	0.00005	0.000008	19.73	0.00010	0.00003	0.00012	0.00005	0.001	0.000005	0.0021	11.45	0.00159	0.005	0.000002	0.0001	0.00028	0.86
HC-5-155	04-Feb-14	155	0.05	0.00005	0.000008	19.50	0.00010	0.00003	0.00009	0.00005	0.001	0.000005	0.0020	11.30	0.00164	0.004	0.000002	0.0001	0.00026	0.85
HC-5-156	11-Feb-14	156	0.05	0.00005	0.000008	19.28	0.00010	0.00003	0.00013	0.00005	0.001	0.000005	0.0020	11.30	0.00159	0.005	0.000002	0.0001	0.00027	0.83
HC-5-157	18-Feb-14	157	0.05	0.00005	0.000009	19.05	0.00010	0.00003	0.00018	0.00005	0.001	0.000005	0.0020	11.30	0.00154	0.006	0.000002	0.0001	0.00029	0.82
HC-5-158	25-Feb-14	158	0.05	0.00005	0.000009	18.83	0.00010	0.00003	0.00022	0.00005	0.001	0.000005	0.0020	11.30	0.00149	0.007	0.000002	0.0001	0.00030	0.80
HC-5-159	04-Mar-14	159	0.05	0.00005	0.000009	18.60	0.00010	0.00003	0.00026	0.00005	0.001	0.000005	0.0020	11.30	0.00144	0.008	0.000002	0.0001	0.00032	0.78
HC-5-160	11-Mar-14	160	0.05	0.00005	0.000010	19.08	0.00010	0.00003	0.00022	0.00005	0.001	0.000005	0.0020	11.35	0.00139	0.007	0.000002	0.0001	0.00030	0.80
HC-5-161	18-Mar-14	161	0.05	0.00005	0.000010	19.55	0.00010	0.00003	0.00018	0.00005	0.001	0.000005	0.0020	11.40	0.00134	0.006	0.000002	0.0001	0.00029	0.82
HC-5-162	25-Mar-14	162	0.05	0.00005	0.000011	20.03	0.00010	0.00002	0.00014	0.00005	0.001	0.000005	0.0020	11.45	0.00129	0.005	0.000002	0.0001	0.00027	0.84
HC-5-163	01-Apr-14	163	0.05	0.00005	0.000011	20.50	0.00010	0.00002	0.00010	0.00005	0.001	0.000005	0.0020	11.50	0.00124	0.004	0.000002	0.0001	0.00026	0.86
HC-5-164	08-Apr-14	164	0.05	0.00005	0.000011	20.58	0.00010	0.00003	0.00010	0.00005	0.001	0.000005	0.0019	11.55	0.00143	0.004	0.000002	0.0001	0.00028	0.85
HC-5-165	15-Apr-14	165	0.05	0.00005	0.000012	20.65	0.00010	0.00003	0.00009	0.00005	0.001	0.000005	0.0019	11.60	0.00161	0.004	0.000002	0.0001	0.00030	0.85
HC-5-166	22-Apr-14	166	0.05	0.00005	0.000012	20.73	0.00010	0.00003	0.00008	0.00005	0.001	0.000005	0.0018	11.65	0.00180	0.004	0.000002	0.0001	0.00032	0.84
HC-5-167	29-Apr-14	167	0.05	0.00005	0.000012	20.80	0.00010	0.00003	0.00007	0.00005	0.001	0.000005	0.0018	11.70	0.00198	0.004	0.000002	0.0001	0.00034	0.83
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00005</b>	<b>0.000010</b>	<b>13.73</b>	<b>0.00012</b>	<b>0.00005</b>	<b>0.00051</b>	<b>0.00005</b>	<b>0.004</b>	<b>0.000037</b>	<b>0.0080</b>	<b>7.66</b>	<b>0.00161</b>	<b>0.008</b>	<b>0.000002</b>	<b>0.0022</b>	<b>0.00032</b>	<b>1.15</b>
<b>HC13 Middle Gates F - Raw Coal</b>																				
HC-13-0	29-May-12	0	0.05	0.00010	0.000011	0.98	0.00044	0.00005	0.00139	0.00015	0.021	0.000139	0.0065	0.07	0.00027	0.020	0.000002	0.0190	0.00055	0.26
HC-13-1	05-Jun-12	1	0.05	0.00008	0.000021	0.86	0.00033	0.00005	0.00182	0.00005	0.013	0.000097	0.0192	0.10	0.00021	0.003	0.000002	0.0786	0.00033	0.27
HC-13-2	12-Jun-12	2	0.06	0.00013	0.000020	0.70	0.00022	0.00005	0.00136	0.00005	0.082	0.000166	0.0208	0.07	0.00059	0.009	0.000002	0.0621	0.00032	0.25
HC-13-3	19-Jun-12	3	0.06	0.00007	0.000008	0.65	0.00017	0.00003	0.00073	0.00005	0.011	0.000087	0.0219	0.09	0.00013	0.005	0.000002	0.0492	0.00015	0.28
HC-13-4	26-Jun-12	4	0.06	0.00013	0.000007	0.70	0.00023	0.00002	0.00062	0.00005	0.011	0.000074	0.0202	0.10	0.00015	0.012	0.000002	0.0345	0.00017	0.29
HC-13-5	03-Jul-12	5	0.05	0.00006	0.000006	0.96	0.00010	0.00001	0.00061	0.00005	0.006	0.000043	0.0188	0.14	0.00005	0.002	0.000002	0.0279	0.00016	0.28
HC-13-6	10-Jul-12	6	0.05	0.00005	0.000005	0.96	0.00010	0.00002	0.00064	0.00005	0.009	0.000058	0.0157	0.15	0.00013	0.002	0.000002	0.0248	0.00014	0.26
HC-13-7	17-Jul-12	7	0.05	0.00005	0.000005	0.99	0.00010	0.00002	0.00045	0.00005	0.006	0.000030	0.0190	0.16	0.00009	0.002	0.000002	0.0251	0.00008	0.30
HC-13-8	24-Jul-12	8	0.06	0.00006	0.000005	1.15	0.00013	0.00003	0.00045	0.00005	0.008	0.000053	0.0188	0.21	0.00020	0.005	0.000002	0.0209	0.00015	0.35
HC-13-9	31-Jul-12	9	0.05	0.00006	0.000005	1.23	0.00015	0.00001	0.00056	0.00005	0.009	0.000048	0.0175	0.25	0.00032	0.002	0.000002	0.0211	0.00010	0.39
HC-13-10	07-Aug-12	10	0.06	0.00005	0.000005	1.52	0.00012	0.00002	0.00067	0.00005	0.007	0.000041	0.0207	0.34	0.00022	0.004	0.000002	0.0229	0.00020	0.44
HC-13-11	14-Aug-12	11	0.07	0.00007	0.000005	1.60	0.00012	0.00002	0.00071	0.00005	0.014	0.000085	0.0242	0.40	0.00015	0.004	0.000002	0.0282	0.00014	0.54
HC-13-12	21-Aug-12	12	0.25	0.00025	0.000025	2.60	0.00050	0.00005	0.00217	0.00025	0.018	0.000222	0.0196	0.63	0.00090	0.010	0.000002	0.0162	0.00025	0.65
HC-13-13	28-Aug-12	13	0.05	0.00009	0.000005	2.86	0.00010	0.00002	0.00108	0.00005	0.005	0.000033	0.0183	0.73	0.00014	0.004	0.000002	0.0161	0.00009	0.68
HC-13-14	04-Sep-12	14	0.25	0.00025	0.000025	4.14	0.00050	0.00003	0.00025	0.00025	0.005	0.000032	0.0213	1.06	0.00025	0.010	0.000002	0.0190	0.00021	0.97
HC-13-15	11-Sep-12	15	0.25	0.00025	0.000025	4.76	0.00050	0.00003	0.00158	0.00025	0.005	0.000133	0.0164	1.19	0.00026	0.010	0.000002	0.0140	0.00042	0.76
HC-13-16	18-Sep-12	16	0.25	0.00025	0.000025	4.06	0.00050	0.00003	0.00757	0.00025	0.006	0.000119	0.0157	1.09	0.00025	0.010	0.000002	0.0110	0.00036	0.66
HC-13-17	25-Sep-12	17	0.25	0.00025	0.000025	3.88	0.00050	0.00003	0.00056	0.00025	0.008	0.000058	0.0185	1.32	0.00025	0.010	0.000002	0.0151	0.00121	0.90
HC-13-18	02-Oct-12	18	0.25	0.00025	0.000025	4.58	0.00050	0.00003	0.00167	0.00025	0.006	0.000236	0.0119	1.18	0.00027	0.010	0.000002	0.0115	0.00054	0.75
HC-13-19	09-Oct-12	19	0.25	0.00025	0.000025	6.23	0.00050	0.00003	0.00226	0.00025	0.010	0.000186	0.0184	1.98	0.00028	0.010	0.000002	0.0146	0.00093	0.99
HC-13-20	16-Oct-12	20	0.25	0.00025	0.000033	6.70	0.00050	0.00009	0.00173	0.00025	0.008	0.000126	0.0165	2.15	0.01514	0.010	0.000002	0.0132	0.00306	0.97
HC-13-21	23-Oct-12	21	0.25	0.00025	0.000036	6.86	0.00050	0.00011	0.00156	0.00025	0.008	0.000106	0.0159	2.20	0.02009	0.010	0.000002	0.0127	0.00378	0.97
HC-13-22	30-Oct-12	22	0.25	0.00025	0.000041	7.18	0.00050	0.00015	0.00120	0.00025	0.007	0.000065	0.0147	2.31	0.03000	0.010	0.000002	0.0118	0.00520	0.95
HC-13-23	06-Nov-12	23	0.25	0.00025	0.000046	7.49	0.00050	0.00019	0.00085	0.00025	0.006	0.000025	0.0134	2.42	0.03990	0.010	0.000002	0.0108	0.00662	0.94
HC-13-24	13-Nov-12	24	0.25	0.00017	0.000123	7.70	0.00050	0.00013	0.00063	0.00025	0.006	0.000025	0.0127	2.47	0.02503	0.011	0.000002	0.0112	0.00424	0.93

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-13-25	20-Nov-12	25	0.25	0.00014	0.000148	7.77	0.00050	0.00011	0.00055	0.00025	0.007	0.000025	0.0125	2.49	0.02008	0.011	0.000002	0.0114	0.00345	0.93
HC-13-26	27-Nov-12	26	0.25	0.00008	0.000199	7.90	0.00050	0.00007	0.00040	0.00025	0.007	0.000025	0.0120	2.52	0.01016	0.012	0.000002	0.0116	0.00186	0.93
HC-13-27	04-Dec-12	27	0.25	0.00003	0.000250	8.04	0.00050	0.00003	0.00025	0.00025	0.007	0.000025	0.0115	2.55	0.00025	0.012	0.000002	0.0119	0.00027	0.92
HC-13-28	11-Dec-12	28	0.25	0.00011	0.000166	8.89	0.00050	0.00003	0.00025	0.00025	0.006	0.000027	0.0117	2.99	0.00025	0.011	0.000002	0.0105	0.00024	0.97
HC-13-29	18-Dec-12	29	0.25	0.00014	0.000138	9.17	0.00050	0.00003	0.00025	0.00025	0.006	0.000028	0.0118	3.14	0.00025	0.011	0.000002	0.0100	0.00023	0.99
HC-13-30	25-Dec-12	30	0.25	0.00019	0.000081	9.74	0.00050	0.00003	0.00025	0.00025	0.005	0.000029	0.0119	3.44	0.00025	0.011	0.000002	0.0091	0.00020	1.02
HC-13-31	01-Jan-13	31	0.25	0.00025	0.000025	10.30	0.00050	0.00003	0.00025	0.00025	0.005	0.000030	0.0120	3.73	0.00025	0.010	0.000002	0.0081	0.00018	1.05
HC-13-32	08-Jan-13	32	0.25	0.00025	0.000025	10.41	0.00050	0.00003	0.00025	0.00025	0.005	0.000028	0.0117	3.75	0.00025	0.013	0.000002	0.0078	0.00018	1.03
HC-13-33	15-Jan-13	33	0.25	0.00025	0.000025	10.45	0.00050	0.00003	0.00025	0.00025	0.005	0.000028	0.0117	3.75	0.00025	0.015	0.000002	0.0077	0.00018	1.03
HC-13-34	22-Jan-13	34	0.25	0.00025	0.000025	10.53	0.00050	0.00003	0.00025	0.00025	0.005	0.000026	0.0115	3.76	0.00025	0.017	0.000002	0.0075	0.00018	1.01
HC-13-35	29-Jan-13	35	0.25	0.00025	0.000025	10.60	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0113	3.77	0.00025	0.019	0.000002	0.0073	0.00018	1.00
HC-13-36	05-Feb-13	36	0.25	0.00025	0.000025	10.64	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0101	3.88	0.00025	0.016	0.000002	0.0067	0.00015	1.00
HC-13-37	12-Feb-13	37	0.25	0.00025	0.000025	10.65	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0097	3.92	0.00025	0.015	0.000002	0.0065	0.00014	1.00
HC-13-38	19-Feb-13	38	0.25	0.00025	0.000025	10.68	0.00050	0.00003	0.00025	0.00025	0.006	0.000025	0.0089	3.99	0.00025	0.012	0.000002	0.0061	0.00012	1.00
HC-13-39	26-Feb-13	39	0.25	0.00025	0.000025	10.70	0.00050	0.00003	0.00025	0.00025	0.006	0.000025	0.0081	4.06	0.00025	0.010	0.000002	0.0057	0.00010	1.00
HC-13-40	05-Mar-13	40	0.25	0.00025	0.000025	11.60	0.00050	0.00003	0.00044	0.00025	0.008	0.000025	0.0090	4.35	0.00077	0.010	0.000002	0.0056	0.00018	1.03
HC-13-41	12-Mar-13	41	0.25	0.00025	0.000025	11.90	0.00050	0.00003	0.00050	0.00025	0.008	0.000025	0.0093	4.45	0.00095	0.010	0.000002	0.0056	0.00020	1.04
HC-13-42	19-Mar-13	42	0.25	0.00025	0.000025	12.50	0.00050	0.00004	0.00063	0.00025	0.010	0.000025	0.0098	4.64	0.00129	0.010	0.000002	0.0055	0.00025	1.05
HC-13-43	26-Mar-13	43	0.25	0.00025	0.000025	13.10	0.00050	0.00004	0.00075	0.00025	0.011	0.000025	0.0104	4.83	0.00164	0.010	0.000002	0.0054	0.00030	1.07
HC-13-44	02-Apr-13	44	0.25	0.00025	0.000025	12.13	0.00050	0.00004	0.00070	0.00025	0.009	0.000025	0.0089	4.53	0.00112	0.010	0.000002	0.0049	0.00023	0.97
HC-13-45	09-Apr-13	45	0.25	0.00025	0.000025	11.80	0.00050	0.00003	0.00068	0.00025	0.008	0.000025	0.0084	4.43	0.00095	0.010	0.000002	0.0047	0.00020	0.94
HC-13-46	16-Apr-13	46	0.25	0.00025	0.000025	11.15	0.00050	0.00003	0.00065	0.00025	0.006	0.000025	0.0074	4.22	0.00060	0.010	0.000002	0.0044	0.00015	0.88
HC-13-47	23-Apr-13	47	0.25	0.00025	0.000025	10.50	0.00050	0.00003	0.00061	0.00025	0.005	0.000025	0.0064	4.02	0.00025	0.010	0.000002	0.0041	0.00010	0.81
HC-13-48	30-Apr-13	48	0.18	0.00019	0.000018	10.30	0.00035	0.00002	0.00040	0.00018	0.004	0.000022	0.0062	3.96	0.00020	0.007	0.000002	0.0034	0.00024	0.78
HC-13-49	07-May-13	49	0.15	0.00017	0.000016	10.23	0.00030	0.00002	0.00033	0.00015	0.003	0.000021	0.0061	3.94	0.00018	0.006	0.000002	0.0032	0.00029	0.78
HC-13-50	14-May-13	50	0.10	0.00013	0.000012	10.10	0.00020	0.00002	0.00019	0.00010	0.002	0.000019	0.0060	3.90	0.00015	0.004	0.000002	0.0027	0.00039	0.76
HC-13-51	21-May-13	51	0.05	0.00009	0.000007	9.96	0.00010	0.00002	0.00005	0.00005	0.001	0.000017	0.0059	3.86	0.00011	0.002	0.000002	0.0023	0.00048	0.74
HC-13-52	28-May-13	52	0.13	0.00015	0.000014	10.80	0.00025	0.00002	0.00013	0.00013	0.003	0.000020	0.0061	4.19	0.00016	0.007	0.000002	0.0029	0.00043	0.77
HC-13-53	04-Jun-13	53	0.15	0.00017	0.000016	11.08	0.00030	0.00002	0.00015	0.00015	0.003	0.000021	0.0061	4.30	0.00018	0.009	0.000002	0.0031	0.00041	0.78
HC-13-54	11-Jun-13	54	0.20	0.00021	0.000021	11.64	0.00040	0.00002	0.00020	0.00020	0.004	0.000023	0.0063	4.52	0.00022	0.013	0.000002	0.0035	0.00037	0.80
HC-13-55	18-Jun-13	55	0.25	0.00025	0.000025	12.20	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0064	4.74	0.00025	0.016	0.000002	0.0039	0.00033	0.82
HC-13-56	25-Jun-13	56	0.25	0.00025	0.000025	11.86	0.00050	0.00003	0.00095	0.00025	0.005	0.000038	0.0061	4.80	0.00025	0.014	0.000002	0.0036	0.00039	0.85
HC-13-57	02-Jul-13	57	0.25	0.00025	0.000025	11.75	0.00050	0.00003	0.00118	0.00025	0.005	0.000042	0.0060	4.83	0.00026	0.013	0.000002	0.0035	0.00041	0.87
HC-13-58	09-Jul-13	58	0.25	0.00025	0.000025	11.53	0.00050	0.00003	0.00165	0.00025	0.005	0.000051	0.0058	4.87	0.00026	0.012	0.000002	0.0033	0.00045	0.89
HC-13-59	16-Jul-13	59	0.25	0.00025	0.000025	11.30	0.00050	0.00003	0.00211	0.00025	0.005	0.000059	0.0056	4.91	0.00026	0.010	0.000002	0.0032	0.00049	0.91
HC-13-60	23-Jul-13	60	0.25	0.00025	0.000025	11.00	0.00050	0.00003	0.00215	0.00025	0.005	0.000046	0.0054	4.90	0.00035	0.010	0.000002	0.0031	0.00045	0.85
HC-13-61	30-Jul-13	61	0.25	0.00025	0.000025	10.90	0.00050	0.00003	0.00217	0.00025	0.005	0.000042	0.0054	4.90	0.00039	0.010	0.000002	0.0031	0.00044	0.83
HC-13-62	06-Aug-13	62	0.25	0.00025	0.000025	10.70	0.00050	0.00003	0.00219	0.00025	0.005	0.000034	0.0052	4.90	0.00045	0.010	0.000002	0.0030	0.00042	0.79
HC-13-63	13-Aug-13	63	0.25	0.00025	0.000025	10.50	0.00050	0.00003	0.00222	0.00025	0.005	0.000025	0.0051	4.89	0.00051	0.010	0.000002	0.0030	0.00039	0.75
HC-13-64	20-Aug-13	64	0.25	0.00025	0.000030	10.88	0.00050	0.00003	0.00152	0.00025	0.005	0.000199	0.0051	4.78	0.00053	0.010	0.000002	0.0030	0.00037	0.75
HC-13-65	27-Aug-13	65	0.25	0.00025	0.000032	11.00	0.00050	0.00003	0.00129	0.00025	0.005	0.000257	0.0052	4.75	0.00054	0.010	0.000002	0.0030	0.00037	0.75
HC-13-66	03-Sep-13	66	0.25	0.00025	0.000035	11.25	0.00050	0.00003	0.00083	0.00025	0.005	0.000372	0.0052	4.67	0.00056	0.010	0.000002	0.0030	0.00035	0.75
HC-13-67	10-Sep-13	67	0.25	0.00025	0.000038	11.50	0.00050	0.00003	0.00036	0.00025	0.005	0.000488	0.0052	4.60	0.00057	0.010	0.000002	0.0030	0.00034	0.75
HC-13-68	17-Sep-13	68	0.25	0.00025	0.000033	11.24	0.00050	0.00003	0.00034	0.00025	0.005	0.000390	0.0048	4.65	0.00045	0.010	0.000002	0.0028	0.00043	0.71
HC-13-69	24-Sep-13	69	0.25	0.00025	0.000032	11.15	0.00050	0.00003	0.00033	0.00025	0.005	0.000358	0.0047	4.66	0.00041	0.010	0.000002	0.0027	0.00047	0.69
HC-13-70	01-Oct-13	70	0.25	0.00025	0.000028	10.98	0.00050	0.00003	0.00032	0.00025	0.005	0.000292	0.0044	4.69	0.00033	0.010	0.000002	0.0026	0.00053	0.66
HC-13-71	08-Oct-13	71	0.25	0.00025	0.000025	10.80	0.00050	0.00003	0.00030	0.00025	0.005	0.000227	0.0041	4.72	0.00025	0.010	0.000002	0.0025	0.00059	0.63
HC-13-72	15-Oct-13	72	0.25	0.00025	0.000025	11.78	0.00050	0.00003	0.00028	0.00025	0.005	0.000151	0.0054	4.90	0.00025	0.010	0.000002	0.0024	0.00041	0.67
HC-13-73	22-Oct-13	73	0.25	0.00025	0.000025	12.10	0.00050	0.00003	0.00028	0.00025	0.005	0.000126	0.0058	4.96	0.00025	0.010	0.000002	0.0023	0.00035	0.69

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-13-74	29-Oct-13	74	0.25	0.00025	0.000025	12.75	0.00050	0.00003	0.00026	0.00025	0.005	0.000076	0.0067	5.08	0.00025	0.010	0.000002	0.0022	0.00022	0.71
HC-13-75	05-Nov-13	75	0.25	0.00025	0.000025	13.40	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0075	5.20	0.00025	0.010	0.000002	0.0022	0.00010	0.74
HC-13-76	12-Nov-13	76	0.25	0.00025	0.000025	12.46	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0066	4.93	0.00025	0.010	0.000002	0.0020	0.00015	0.68
HC-13-77	19-Nov-13	77	0.25	0.00025	0.000025	12.15	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0064	4.85	0.00025	0.010	0.000002	0.0020	0.00017	0.67
HC-13-78	26-Nov-13	78	0.25	0.00025	0.000025	11.53	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0058	4.67	0.00025	0.010	0.000002	0.0019	0.00021	0.63
HC-13-79	03-Dec-13	79	0.25	0.00025	0.000025	10.90	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0052	4.49	0.00025	0.010	0.000002	0.0018	0.00024	0.59
HC-13-80	10-Dec-13	80	0.25	0.00025	0.000025	11.16	0.00050	0.00003	0.00084	0.00025	0.005	0.000070	0.0052	4.61	0.00025	0.010	0.000002	0.0019	0.00029	0.62
HC-13-81	17-Dec-13	81	0.25	0.00025	0.000025	11.25	0.00050	0.00003	0.00104	0.00025	0.005	0.000086	0.0052	4.65	0.00025	0.010	0.000002	0.0019	0.00031	0.64
HC-13-82	24-Dec-13	82	0.25	0.00025	0.000025	11.43	0.00050	0.00003	0.00144	0.00025	0.005	0.000116	0.0052	4.72	0.00025	0.010	0.000002	0.0020	0.00034	0.66
HC-13-83	31-Dec-13	83	0.25	0.00025	0.000025	11.60	0.00050	0.00003	0.00183	0.00025	0.005	0.000146	0.0052	4.80	0.00025	0.010	0.000002	0.0021	0.00037	0.68
HC-13-84	07-Jan-14	84	0.25	0.00025	0.000025	12.35	0.00050	0.00006	0.00128	0.00027	0.029	0.000101	0.0049	4.96	0.00065	0.010	0.000002	0.0021	0.00032	0.68
HC-13-85	14-Jan-14	85	0.25	0.00025	0.000025	12.60	0.00050	0.00007	0.00109	0.00028	0.036	0.000086	0.0048	5.02	0.00078	0.010	0.000002	0.0021	0.00031	0.69
HC-13-86	21-Jan-14	86	0.25	0.00025	0.000025	13.10	0.00050	0.00010	0.00072	0.00029	0.052	0.000055	0.0046	5.12	0.00105	0.010	0.000002	0.0022	0.00027	0.69
HC-13-87	28-Jan-14	87	0.25	0.00025	0.000025	13.60	0.00050	0.00012	0.00035	0.00030	0.068	0.000025	0.0044	5.23	0.00131	0.010	0.000002	0.0022	0.00024	0.69
HC-13-88	04-Feb-14	88	0.25	0.00025	0.000025	13.79	0.00050	0.00009	0.00041	0.00028	0.044	0.000025	0.0049	5.35	0.00094	0.010	0.000002	0.0021	0.00022	0.71
HC-13-89	11-Feb-14	89	0.25	0.00025	0.000025	13.85	0.00050	0.00007	0.00043	0.00028	0.036	0.000025	0.0050	5.39	0.00081	0.010	0.000002	0.0021	0.00021	0.71
HC-13-90	18-Feb-14	90	0.25	0.00025	0.000025	13.98	0.00050	0.00005	0.00047	0.00026	0.021	0.000025	0.0053	5.47	0.00056	0.010	0.000002	0.0020	0.00020	0.72
HC-13-91	25-Feb-14	91	0.25	0.00025	0.000025	14.10	0.00050	0.00003	0.00051	0.00025	0.005	0.000025	0.0056	5.55	0.00031	0.010	0.000002	0.0020	0.00018	0.73
HC-13-92	04-Mar-14	92	0.25	0.00025	0.000025	13.20	0.00050	0.00003	0.00048	0.00025	0.005	0.000041	0.0047	5.16	0.00042	0.010	0.000004	0.0018	0.00020	0.69
HC-13-93	11-Mar-14	93	0.25	0.00025	0.000025	12.90	0.00050	0.00003	0.00047	0.00025	0.005	0.000046	0.0044	5.03	0.00046	0.010	0.000004	0.0018	0.00021	0.68
HC-13-94	18-Mar-14	94	0.25	0.00025	0.000025	12.30	0.00050	0.00003	0.00045	0.00025	0.005	0.000057	0.0038	4.77	0.00053	0.010	0.000005	0.0017	0.00022	0.66
HC-13-95	25-Mar-14	95	0.25	0.00025	0.000025	11.70	0.00050	0.00003	0.00043	0.00025	0.005	0.000067	0.0032	4.51	0.00060	0.010	0.000006	0.0016	0.00023	0.63
HC-13-96	01-Apr-14	96	0.25	0.00025	0.000025	11.74	0.00050	0.00003	0.00036	0.00025	0.005	0.000051	0.0032	4.50	0.00047	0.010	0.000005	0.0016	0.00023	0.59
HC-13-97	08-Apr-14	97	0.25	0.00025	0.000025	11.75	0.00050	0.00003	0.00034	0.00025	0.005	0.000046	0.0032	4.49	0.00043	0.010	0.000004	0.0015	0.00024	0.58
HC-13-98	15-Apr-14	98	0.25	0.00025	0.000025	11.78	0.00050	0.00003	0.00030	0.00025	0.005	0.000036	0.0032	4.48	0.00034	0.010	0.000003	0.0015	0.00024	0.56
HC-13-99	22-Apr-14	99	0.25	0.00025	0.000025	11.80	0.00050	0.00003	0.00025	0.00025	0.005	0.000025	0.0032	4.47	0.00025	0.010	0.000002	0.0015	0.00024	0.53
<b>Mean all weeks</b>			<b>0.22</b>	<b>0.00021</b>	<b>0.000032</b>	<b>9.34</b>	<b>0.00044</b>	<b>0.00004</b>	<b>0.00079</b>	<b>0.00022</b>	<b>0.009</b>	<b>0.000076</b>	<b>0.0094</b>	<b>3.57</b>	<b>0.00197</b>	<b>0.010</b>	<b>0.000002</b>	<b>0.0089</b>	<b>0.00055</b>	<b>0.75</b>
<b>HC14 Middle Gates D - CCR</b>																				
HC-14-0	02-May-13	0	0.06	0.00085	0.000041	0.35	0.00070	0.00008	0.00035	0.00005	0.047	0.000233	0.0173	0.09	0.00011	0.022	0.000002	0.1130	0.00077	0.64
HC-14-1	09-May-13	1	0.11	0.00026	0.000025	0.40	0.00050	0.00017	0.00079	0.00005	0.016	0.000167	0.0489	0.11	0.00049	0.008	0.000002	0.2850	0.00139	0.69
HC-14-2	16-May-13	2	0.11	0.00020	0.000005	0.54	0.00040	0.00018	0.00104	0.00007	0.018	0.000110	0.0519	0.09	0.00018	0.005	0.000002	0.1410	0.00098	0.65
HC-14-3	23-May-13	3	0.11	0.00010	0.000005	0.33	0.00030	0.00013	0.00051	0.00005	0.011	0.000072	0.0500	0.08	0.00016	0.006	0.000002	0.0809	0.00193	0.60
HC-14-4	30-May-13	4	0.11	0.00010	0.000006	0.32	0.00090	0.00017	0.00077	0.00005	0.025	0.000105	0.0494	0.08	0.00019	0.002	0.000002	0.0555	0.00086	0.54
HC-14-5	06-Jun-13	5	0.10	0.00007	0.000017	0.36	0.00030	0.00018	0.00209	0.00005	0.012	0.000099	0.0499	0.09	0.00011	0.002	0.000002	0.0457	0.00069	0.55
HC-14-6	13-Jun-13	6	0.11	0.00009	0.000013	0.38	0.00030	0.00018	0.00054	0.00005	0.014	0.000107	0.0528	0.10	0.00005	0.065	0.000002	0.0385	0.00077	0.54
HC-14-7	20-Jun-13	7	0.12	0.00007	0.000008	0.48	0.00050	0.00016	0.00049	0.00005	0.012	0.000086	0.0614	0.11	0.00011	0.004	0.000002	0.0361	0.00090	0.59
HC-14-8	27-Jun-13	8	0.10	0.00006	0.000019	0.46	0.00040	0.00017	0.00877	0.00005	0.010	0.000103	0.0498	0.11	0.00010	0.008	0.000002	0.0293	0.00101	0.54
HC-14-9	04-Jul-13	9	0.10	0.00006	0.000012	0.46	0.00030	0.00015	0.00052	0.00005	0.014	0.000209	0.0469	0.11	0.00013	0.008	0.000002	0.0256	0.00081	0.52
HC-14-10	11-Jul-13	10	0.09	0.00005	0.000016	0.47	0.00030	0.00015	0.00040	0.00005	0.011	0.000071	0.0476	0.12	0.00013	0.004	0.000002	0.0243	0.00078	0.53
HC-14-11	18-Jul-13	11	0.08	0.00006	0.000026	0.49	0.00030	0.00013	0.00051	0.00005	0.012	0.000093	0.0524	0.13	0.00009	0.004	0.000002	0.0230	0.00077	0.55
HC-14-12	25-Jul-13	12	0.08	0.00006	0.000021	0.52	0.00030	0.00015	0.00060	0.00005	0.014	0.000099	0.0469	0.12	0.00014	0.004	0.000002	0.0221	0.00089	0.57
HC-14-13	01-Aug-13	13	0.10	0.00007	0.000021	0.60	0.00030	0.00015	0.00050	0.00005	0.013	0.000054	0.0503	0.15	0.00015	0.007	0.000002	0.0197	0.00090	0.65
HC-14-14	08-Aug-13	14	0.07	0.00007	0.000012	0.62	0.00020	0.00014	0.00046	0.00005	0.007	0.000046	0.0433	0.16	0.00005	0.004	0.000002	0.0181	0.00080	0.53
HC-14-15	15-Aug-13	15	0.08	0.00006	0.000011	0.69	0.00010	0.00016	0.00045	0.00005	0.006	0.000102	0.0476	0.18	0.00010	0.003	0.000002	0.0184	0.00092	0.60
HC-14-16	22-Aug-13	16	0.08	0.00006	0.000036	0.77	0.00020	0.00017	0.00049	0.00005	0.007	0.000052	0.0489	0.18	0.00007	0.004	0.000002	0.0197	0.00081	0.54
HC-14-17	29-Aug-13	17	0.07	0.00006	0.000019	0.79	0.00010	0.00014	0.00062	0.00005	0.004	0.000044	0.0454	0.19	0.00015	0.007	0.000002	0.0195	0.00179	0.57
HC-14-18	05-Sep-13	18	0.07	0.00006	0.000021	0.79	0.00010	0.00019	0.00574	0.00005	0.006	0.000064	0.0481	0.19	0.00011	0.028	0.000002	0.0180	0.00101	0.53
HC-14-19	12-Sep-13	19	0.08	0.00006	0.000018	0.76	0.00010	0.00017	0.00075	0.00005	0.006	0.000060	0.0470	0.19	0.000094	0.029	0.000002	0.0160	0.00106	0.53
HC-14-20	19-Sep-13	20	0.08	0.00006	0.000020	0.87	0.00010	0.00018	0.00244	0.00005	0.006	0.000059	0.0472	0.22	0.00073	0.023	0.000002	0.0147	0.00105	0.58

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-14-21	26-Sep-13	21	0.08	0.00006	0.000022	0.97	0.00010	0.00018	0.00414	0.00005	0.005	0.000059	0.0474	0.26	0.00052	0.016	0.000002	0.0135	0.00104	0.63
HC-14-22	03-Oct-13	22	0.07	0.00005	0.000024	1.08	0.00010	0.00018	0.00583	0.00005	0.005	0.000058	0.0476	0.29	0.00031	0.010	0.000002	0.0122	0.00103	0.68
HC-14-23	10-Oct-13	23	0.07	0.00005	0.000026	1.18	0.00010	0.00019	0.00752	0.00005	0.004	0.000057	0.0478	0.32	0.00010	0.003	0.000002	0.0109	0.00102	0.73
HC-14-24	17-Oct-13	24	0.07	0.00005	0.000025	1.32	0.00010	0.00019	0.00602	0.00005	0.004	0.000049	0.0513	0.36	0.00011	0.003	0.000002	0.0113	0.00095	0.74
HC-14-25	24-Oct-13	25	0.07	0.00006	0.000024	1.47	0.00010	0.00019	0.00453	0.00005	0.004	0.000041	0.0549	0.40	0.00011	0.004	0.000002	0.0117	0.00089	0.74
HC-14-26	31-Oct-13	26	0.06	0.00006	0.000022	1.61	0.00010	0.00019	0.00303	0.00005	0.004	0.000033	0.0584	0.43	0.00012	0.004	0.000002	0.0121	0.00082	0.75
HC-14-27	07-Nov-13	27	0.06	0.00006	0.000021	1.75	0.00010	0.00020	0.00153	0.00005	0.004	0.000025	0.0619	0.47	0.00012	0.004	0.000002	0.0125	0.00075	0.75
HC-14-28	14-Nov-13	28	0.06	0.00006	0.000024	1.87	0.00010	0.00023	0.00127	0.00005	0.005	0.000038	0.0624	0.51	0.00015	0.013	0.000002	0.0123	0.00078	0.77
HC-14-29	21-Nov-13	29	0.07	0.00007	0.000028	1.98	0.00010	0.00026	0.00100	0.00005	0.006	0.000052	0.0629	0.56	0.00018	0.022	0.000002	0.0121	0.00080	0.79
HC-14-30	28-Nov-13	30	0.07	0.00007	0.000031	2.10	0.00010	0.00029	0.00074	0.00005	0.006	0.000065	0.0633	0.60	0.00020	0.031	0.000002	0.0118	0.00083	0.81
HC-14-31	05-Dec-13	31	0.07	0.00007	0.000034	2.21	0.00010	0.00032	0.00047	0.00005	0.007	0.000078	0.0638	0.64	0.00023	0.040	0.000002	0.0116	0.00085	0.83
HC-14-32	12-Dec-13	32	0.07	0.00007	0.000035	2.37	0.00010	0.00031	0.00076	0.00005	0.006	0.000065	0.0629	0.68	0.00019	0.032	0.000002	0.0109	0.00082	0.84
HC-14-33	19-Dec-13	33	0.06	0.00007	0.000037	2.52	0.00010	0.00030	0.00104	0.00005	0.006	0.000051	0.0620	0.72	0.00015	0.023	0.000002	0.0102	0.00079	0.84
HC-14-34	26-Dec-13	34	0.06	0.00007	0.000038	2.68	0.00010	0.00028	0.00133	0.00005	0.005	0.000038	0.0610	0.75	0.00011	0.015	0.000002	0.0095	0.00076	0.85
HC-14-35	02-Jan-14	35	0.05	0.00007	0.000039	2.83	0.00010	0.00027	0.00161	0.00005	0.004	0.000024	0.0601	0.79	0.00007	0.006	0.000002	0.0087	0.00073	0.85
HC-14-36	09-Jan-14	36	0.05	0.00007	0.000042	3.25	0.00010	0.00031	0.00130	0.00005	0.004	0.000022	0.0625	0.91	0.00014	0.006	0.000002	0.0084	0.00074	0.87
HC-14-37	16-Jan-14	37	0.05	0.00007	0.000045	3.67	0.00010	0.00034	0.00099	0.00005	0.003	0.000020	0.0649	1.03	0.00022	0.007	0.000002	0.0080	0.00075	0.90
HC-14-38	23-Jan-14	38	0.05	0.00007	0.000047	4.08	0.00010	0.00038	0.00067	0.00005	0.003	0.000017	0.0672	1.14	0.00029	0.007	0.000002	0.0076	0.00076	0.92
HC-14-39	30-Jan-14	39	0.05	0.00007	0.000050	4.50	0.00010	0.00042	0.00036	0.00005	0.002	0.000015	0.0696	1.26	0.00036	0.007	0.000002	0.0072	0.00077	0.94
HC-14-40	06-Feb-14	40	0.05	0.00007	0.000055	4.86	0.00010	0.00044	0.00038	0.00005	0.002	0.000015	0.0700	1.38	0.00033	0.006	0.000003	0.0071	0.00079	0.97
HC-14-41	13-Feb-14	41	0.05	0.00007	0.000061	5.21	0.00010	0.00047	0.00040	0.00005	0.002	0.000016	0.0705	1.50	0.00030	0.006	0.000004	0.0070	0.00081	1.00
HC-14-42	20-Feb-14	42	0.05	0.00006	0.000066	5.57	0.00010	0.00049	0.00041	0.00005	0.002	0.000016	0.0709	1.61	0.00026	0.005	0.000004	0.0069	0.00083	1.02
HC-14-43	27-Feb-14	43	0.05	0.00006	0.000071	5.92	0.00010	0.00052	0.00043	0.00005	0.002	0.000016	0.0713	1.73	0.00023	0.004	0.000005	0.0069	0.00085	1.05
HC-14-44	06-Mar-14	44	0.05	0.00006	0.000073	6.65	0.00010	0.00054	0.00041	0.00005	0.002	0.000027	0.0711	1.93	0.00027	0.004	0.000004	0.0066	0.00087	1.10
HC-14-45	13-Mar-14	45	0.05	0.00007	0.000076	7.39	0.00010	0.00056	0.00040	0.00005	0.002	0.000038	0.0708	2.12	0.00031	0.004	0.000004	0.0064	0.00088	1.14
HC-14-46	20-Mar-14	46	0.05	0.00007	0.000078	8.12	0.00010	0.00058	0.00038	0.00005	0.001	0.000049	0.0706	2.32	0.00034	0.004	0.000003	0.0061	0.00090	1.19
HC-14-47	27-Mar-14	47	0.05	0.00007	0.000080	8.85	0.00010	0.00060	0.00036	0.00005	0.001	0.000060	0.0703	2.51	0.00038	0.004	0.000002	0.0059	0.00091	1.23
<b>Mean all weeks</b>			<b>0.07</b>	<b>0.00009</b>	<b>0.000032</b>	<b>2.24</b>	<b>0.00020</b>	<b>0.00026</b>	<b>0.00159</b>	<b>0.00005</b>	<b>0.008</b>	<b>0.000064</b>	<b>0.0563</b>	<b>0.62</b>	<b>0.00022</b>	<b>0.011</b>	<b>0.000002</b>	<b>0.0275</b>	<b>0.00091</b>	<b>0.75</b>
<b>HC15 Middle Gates D,E,F,J - Tailings</b>																				
HC-15-0	02-May-13	0	0.09	0.00018	0.000173	56.30	0.00130	0.00268	0.01910	0.00005	0.007	0.000339	0.0794	17.50	0.00559	0.128	0.000002	0.1220	0.01260	5.06
HC-15-1	09-May-13	1	0.21	0.00009	0.000065	46.10	0.00020	0.00339	0.00769	0.00005	0.004	0.000234	0.1880	17.10	0.00865	0.005	0.000002	0.0829	0.01540	5.15
HC-15-2	16-May-13	2	0.30	0.00030	0.000150	50.80	0.00050	0.00557	0.00810	0.00030	0.005	0.000300	0.1970	18.90	0.01850	0.010	0.000002	0.0446	0.02250	4.90
HC-15-3	23-May-13	3	0.30	0.00030	0.000050	42.00	0.00050	0.00268	0.00600	0.00030	0.005	0.000140	0.1500	14.00	0.01020	0.010	0.000002	0.0297	0.01160	4.50
HC-15-4	30-May-13	4	0.13	0.00007	0.000041	35.70	0.00030	0.00161	0.00255	0.00005	0.005	0.000173	0.1150	12.20	0.00890	0.002	0.000002	0.0430	0.00504	3.84
HC-15-5	06-Jun-13	5	0.30	0.00030	0.000030	37.50	0.00050	0.00196	0.00470	0.00030	0.007	0.000190	0.1170	12.90	0.00860	0.010	0.000002	0.0320	0.00600	3.80
HC-15-6	13-Jun-13	6	0.30	0.00030	0.000060	28.50	0.00050	0.00112	0.00130	0.00030	0.005	0.000100	0.0690	8.10	0.00660	0.010	0.000002	0.0161	0.00230	2.70
HC-15-7	20-Jun-13	7	0.30	0.00030	0.000080	27.40	0.00050	0.00125	0.00200	0.00030	0.010	0.000130	0.0660	7.90	0.00760	0.010	0.000002	0.0174	0.00240	2.60
HC-15-8	27-Jun-13	8	0.30	0.00030	0.000110	29.70	0.00050	0.00127	0.00170	0.00030	0.016	0.000170	0.0760	9.70	0.00830	0.010	0.000002	0.0220	0.00260	3.00
HC-15-9	04-Jul-13	9	0.30	0.00030	0.000140	27.70	0.00050	0.00124	0.005470	0.00030	0.050	0.000280	0.0700	8.90	0.00910	0.010	0.000002	0.0191	0.00310	2.70
HC-15-10	11-Jul-13	10	0.30	0.00030	0.000040	8.80	0.00050	0.00030	0.00070	0.00030	0.010	0.000050	0.0160	2.30	0.00270	0.010	0.000002	0.0045	0.00070	1.20
HC-15-11	18-Jul-13	11	0.30	0.00030	0.000050	9.20	0.00050	0.00034	0.00200	0.00030	0.015	0.000120	0.0190	2.70	0.00250	0.010	0.000002	0.0059	0.00110	1.50
HC-15-12	25-Jul-13	12	0.30	0.00030	0.000060	9.50	0.00050	0.00030	0.00070	0.00030	0.012	0.000100	0.0170	2.40	0.00270	0.010	0.000002	0.0042	0.00090	1.30
HC-15-13	01-Aug-13	13	0.30	0.00030	0.000060	10.50	0.00050	0.00037	0.00090	0.00030	0.009	0.000080	0.0190	2.70	0.00300	0.020	0.000002	0.0057	0.00150	1.30
HC-15-14	08-Aug-13	14	0.30	0.00030	0.000050	9.50	0.00050	0.00035	0.01250	0.00030	0.005	0.000060	0.0200	2.60	0.00270	0.010	0.000002	0.0057	0.00070	1.00
HC-15-15	15-Aug-13	15	0.30	0.00030	0.000070	8.60	0.00050	0.00039	0.00060	0.00030	0.006	0.000100	0.0200	2.20	0.00240	0.010	0.000002	0.0055	0.00070	1.00
HC-15-16	22-Aug-13	16	0.30	0.00030	0.000090	9.90	0.00050	0.00041	0.00070	0.00030	0.005	0.000610	0.0220	2.40	0.00450	0.010	0.000002	0.0066	0.00260	1.10
HC-15-17	29-Aug-13	17	0.30	0.00030	0.000070	8.80	0.00050	0.00034	0.00070	0.00030	0.007	0.000050	0.0170	2.20	0.00340	0.010	0.000002	0.0055	0.00060	0.90
HC-15-18	05-Sep-13	18	0.30	0.00030	0.000070	9.90	0.00050	0.00038	0.02010	0.00030	0.005	0.000040	0.0210	2.40	0.00270	0.010	0.000002	0.0061	0.00070	1.00
HC-15-19	12-Sep-13	19	0.30	0.00030	0.000090	13.50	0.00050	0.00055	0.00100	0.00030	0.011	0.000190	0.0290	3.40	0.00360	0.030	0.000002	0.0092	0.00150	1.40



Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-15-20	19-Sep-13	20	0.30	0.00030	0.000085	12.35	0.00050	0.00050	0.00110	0.00030	0.011	0.000200	0.0263	3.13	0.00333	0.025	0.000002	0.0090	0.00143	1.30
HC-15-21	26-Sep-13	21	0.30	0.00030	0.000080	11.20	0.00050	0.00044	0.00120	0.00030	0.012	0.000210	0.0235	2.85	0.00305	0.020	0.000002	0.0089	0.00135	1.20
HC-15-22	03-Oct-13	22	0.30	0.00030	0.000075	10.05	0.00050	0.00039	0.00130	0.00030	0.012	0.000220	0.0208	2.58	0.00278	0.015	0.000002	0.0087	0.00128	1.10
HC-15-23	10-Oct-13	23	0.30	0.00030	0.000070	8.90	0.00050	0.00033	0.00140	0.00030	0.012	0.000230	0.0180	2.30	0.00250	0.010	0.000002	0.0085	0.00120	1.00
HC-15-24	17-Oct-13	24	0.30	0.00030	0.000085	11.00	0.00050	0.00043	0.00140	0.00030	0.010	0.000263	0.0250	2.88	0.00323	0.010	0.000002	0.0096	0.00128	1.15
HC-15-25	24-Oct-13	25	0.30	0.00030	0.000100	13.10	0.00050	0.00053	0.00140	0.00030	0.009	0.000295	0.0320	3.45	0.00395	0.010	0.000002	0.0106	0.00135	1.30
HC-15-26	31-Oct-13	26	0.30	0.00030	0.000115	15.20	0.00050	0.00062	0.00140	0.00030	0.007	0.000328	0.0390	4.03	0.00468	0.010	0.000002	0.0117	0.00143	1.45
HC-15-27	07-Nov-13	27	0.30	0.00030	0.000130	17.30	0.00050	0.00072	0.00140	0.00030	0.005	0.000360	0.0460	4.60	0.00540	0.010	0.000002	0.0127	0.00150	1.60
HC-15-28	14-Nov-13	28	0.30	0.00030	0.000125	17.35	0.00050	0.00073	0.00143	0.00030	0.005	0.000288	0.0468	4.65	0.00548	0.010	0.000002	0.0123	0.00140	1.58
HC-15-29	21-Nov-13	29	0.30	0.00030	0.000120	17.40	0.00050	0.00074	0.00145	0.00030	0.005	0.000215	0.0475	4.70	0.00555	0.010	0.000002	0.0118	0.00130	1.55
HC-15-30	28-Nov-13	30	0.30	0.00030	0.000115	17.45	0.00050	0.00074	0.00148	0.00030	0.005	0.000143	0.0483	4.75	0.00563	0.010	0.000002	0.0114	0.00120	1.53
HC-15-31	05-Dec-13	31	0.30	0.00030	0.000110	17.50	0.00050	0.00075	0.00150	0.00030	0.005	0.000070	0.0490	4.80	0.00570	0.010	0.000002	0.0109	0.00110	1.50
HC-15-32	12-Dec-13	32	0.30	0.00030	0.000123	17.78	0.00050	0.00075	0.00170	0.00030	0.005	0.000273	0.0480	4.93	0.00608	0.010	0.000002	0.0105	0.00113	1.55
HC-15-33	19-Dec-13	33	0.30	0.00030	0.000135	18.05	0.00050	0.00075	0.00190	0.00030	0.006	0.000475	0.0470	5.05	0.00645	0.010	0.000002	0.0101	0.00115	1.60
HC-15-34	26-Dec-13	34	0.30	0.00030	0.000148	18.33	0.00050	0.00074	0.00210	0.00030	0.006	0.000678	0.0460	5.18	0.00683	0.010	0.000002	0.0097	0.00118	1.65
HC-15-35	02-Jan-14	35	0.30	0.00030	0.000160	18.60	0.00050	0.00074	0.00230	0.00030	0.006	0.000880	0.0450	5.30	0.00720	0.010	0.000002	0.0093	0.00120	1.70
HC-15-36	09-Jan-14	36	0.30	0.00030	0.000158	19.65	0.00050	0.00081	0.00208	0.00030	0.006	0.000713	0.0478	5.63	0.00728	0.010	0.000002	0.0099	0.00125	1.70
HC-15-37	16-Jan-14	37	0.30	0.00030	0.000155	20.70	0.00050	0.00087	0.00185	0.00030	0.006	0.000545	0.0505	5.95	0.00735	0.010	0.000002	0.0104	0.00130	1.70
HC-15-38	23-Jan-14	38	0.30	0.00030	0.000153	21.75	0.00050	0.00094	0.00163	0.00030	0.005	0.000378	0.0533	6.28	0.00743	0.010	0.000002	0.0110	0.00135	1.70
HC-15-39	30-Jan-14	39	0.30	0.00030	0.000150	22.80	0.00050	0.00100	0.00140	0.00030	0.005	0.000210	0.0560	6.60	0.00750	0.010	0.000002	0.0115	0.00140	1.70
HC-15-40	06-Feb-14	40	0.30	0.00030	0.000145	21.80	0.00050	0.00091	0.00128	0.00030	0.005	0.000183	0.0510	6.20	0.00663	0.010	0.000003	0.0108	0.00130	1.63
HC-15-41	13-Feb-14	41	0.30	0.00030	0.000140	20.80	0.00050	0.00082	0.00115	0.00030	0.005	0.000155	0.0460	5.80	0.00575	0.010	0.000004	0.0101	0.00120	1.55
HC-15-42	20-Feb-14	42	0.30	0.00030	0.000135	19.80	0.00050	0.00073	0.00103	0.00030	0.005	0.000128	0.0410	5.40	0.00488	0.010	0.000004	0.0093	0.00110	1.48
HC-15-43	27-Feb-14	43	0.30	0.00030	0.000130	18.80	0.00050	0.00064	0.00090	0.00030	0.005	0.000100	0.0360	5.00	0.00400	0.010	0.000005	0.0086	0.00100	1.40
HC-15-44	06-Mar-14	44	0.30	0.00030	0.000128	19.08	0.00050	0.00062	0.00090	0.00030	0.005	0.000108	0.0365	5.10	0.00388	0.010	0.000004	0.0089	0.00098	1.40
HC-15-45	13-Mar-14	45	0.30	0.00030	0.000125	19.35	0.00050	0.00059	0.00090	0.00030	0.006	0.000115	0.0370	5.20	0.00375	0.010	0.000004	0.0091	0.00095	1.40
HC-15-46	20-Mar-14	46	0.30	0.00030	0.000123	19.63	0.00050	0.00057	0.00090	0.00030	0.006	0.000123	0.0375	5.30	0.00363	0.010	0.000003	0.0094	0.00093	1.40
HC-15-47	27-Mar-14	47	0.30	0.00030	0.000120	19.90	0.00050	0.00054	0.00090	0.00030	0.006	0.000130	0.0380	5.40	0.00350	0.010	0.000002	0.0096	0.00090	1.40
<b>Mean all weeks</b>			<b>0.29</b>	<b>0.00029</b>	<b>0.000104</b>	<b>20.11</b>	<b>0.00051</b>	<b>0.00095</b>	<b>0.00390</b>	<b>0.00028</b>	<b>0.008</b>	<b>0.000239</b>	<b>0.0514</b>	<b>5.95</b>	<b>0.00553</b>	<b>0.013</b>	<b>0.000002</b>	<b>0.0161</b>	<b>0.00268</b>	<b>1.90</b>
<b>HC16 Middle Gates E,F - CCR</b>																				
HC-16-0	02-May-13	0	0.05	0.00046	0.000005	0.35	0.00050	0.00004	0.00320	0.00005	0.024	0.000362	0.0049	0.05	0.00016	0.017	0.000002	0.0098	0.00052	0.40
HC-16-1	09-May-13	1	0.09	0.00009	0.000005	0.42	0.00070	0.00004	0.00302	0.00005	0.021	0.000233	0.0119	0.06	0.00020	0.005	0.000002	0.0399	0.00038	0.46
HC-16-2	16-May-13	2	0.09	0.00006	0.000005	0.43	0.00030	0.00004	0.00213	0.00005	0.018	0.000198	0.0116	0.06	0.00032	0.004	0.000002	0.0270	0.00307	0.42
HC-16-3	23-May-13	3	0.09	0.00005	0.000005	0.38	0.00030	0.00002	0.00106	0.00005	0.009	0.000097	0.0123	0.06	0.00010	0.003	0.000002	0.0254	0.00021	0.43
HC-16-4	30-May-13	4	0.08	0.00005	0.000005	0.42	0.00030	0.00002	0.00091	0.00005	0.012	0.000109	0.0128	0.07	0.00011	0.002	0.000002	0.0222	0.00026	0.44
HC-16-5	06-Jun-13	5	0.08	0.00005	0.000005	0.42	0.00010	0.00002	0.01900	0.00005	0.008	0.000088	0.0125	0.06	0.00008	0.002	0.000002	0.0199	0.00016	0.42
HC-16-6	13-Jun-13	6	0.08	0.00005	0.000007	0.42	0.00020	0.00001	0.00100	0.00005	0.009	0.000091	0.0129	0.07	0.00006	0.022	0.000002	0.0189	0.00024	0.40
HC-16-7	20-Jun-13	7	0.08	0.00005	0.000005	0.47	0.00030	0.00001	0.00077	0.00005	0.007	0.000067	0.0151	0.07	0.00009	0.003	0.000002	0.0200	0.00019	0.40
HC-16-8	27-Jun-13	8	0.06	0.00005	0.000007	0.47	0.00030	0.00002	0.00090	0.00005	0.006	0.000068	0.0134	0.08	0.00010	0.002	0.000002	0.0186	0.00024	0.44
HC-16-9	04-Jul-13	9	0.07	0.00005	0.000005	0.50	0.00020	0.00001	0.00063	0.00005	0.008	0.000066	0.0129	0.09	0.00009	0.002	0.000002	0.0182	0.00013	0.44
HC-16-10	11-Jul-13	10	0.06	0.00005	0.000008	0.60	0.00010	0.00001	0.00293	0.00005	0.005	0.000047	0.0157	0.12	0.00010	0.002	0.000002	0.0153	0.00012	0.47
HC-16-11	18-Jul-13	11	0.06	0.00005	0.000010	0.81	0.00010	0.00001	0.00057	0.00005	0.006	0.000038	0.0186	0.15	0.00011	0.002	0.000002	0.0149	0.00025	0.57
HC-16-12	25-Jul-13	12	0.05	0.00005	0.000014	1.05	0.00020	0.00001	0.00051	0.00005	0.007	0.000038	0.0207	0.22	0.00010	0.002	0.000002	0.0155	0.00016	0.67
HC-16-13	01-Aug-13	13	0.05	0.00005	0.000009	1.08	0.00010	0.00001	0.00047	0.00005	0.006	0.000034	0.0204	0.23	0.00009	0.005	0.000002	0.0127	0.00018	0.63
HC-16-14	08-Aug-13	14	0.05	0.00005	0.000005	1.19	0.00010	0.00001	0.00082	0.00005	0.003	0.000034	0.0216	0.27	0.00006	0.002	0.000002	0.0131	0.00011	0.60
HC-16-15	15-Aug-13	15	0.05	0.00005	0.000005	1.39	0.00010	0.00002	0.00059	0.00005	0.002	0.000036	0.0218	0.35	0.00013	0.002	0.000002	0.0122	0.00018	0.71
HC-16-16	22-Aug-13	16	0.05	0.00005	0.000017	1.50	0.00010	0.00001	0.00623	0.00005	0.002	0.000052	0.0213	0.33	0.00008	0.003	0.000002	0.0123	0.00005	0.67
HC-16-17	29-Aug-13	17	0.05	0.00005	0.000008	1.75	0.00010	0.00001	0.00051	0.00005	0.005	0.000042	0.0200	0.38	0.00015	0.007	0.000002	0.0114	0.00015	0.72
HC-16-18	05-Sep-13	18	0.05	0.00005	0.000006	1.89	0.00010	0.00001	0.00062	0.00005	0.002	0.000037	0.0236	0.46	0.00013	0.007	0.000002	0.0100	0.00012	0.76

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-16-19	12-Sep-13	19	0.05	0.00005	0.000005	2.31	0.00010	0.00001	0.00051	0.00005	0.001	0.000028	0.0242	0.58	0.00024	0.010	0.000002	0.0092	0.00014	0.88
HC-16-20	19-Sep-13	20	0.05	0.00005	0.000006	2.40	0.00010	0.00001	0.00050	0.00005	0.002	0.000032	0.0239	0.63	0.00024	0.008	0.000002	0.0089	0.00017	0.92
HC-16-21	26-Sep-13	21	0.05	0.00005	0.000006	2.50	0.00010	0.00001	0.00048	0.00005	0.003	0.000036	0.0236	0.68	0.00024	0.006	0.000002	0.0085	0.00020	0.96
HC-16-22	03-Oct-13	22	0.05	0.00005	0.000007	2.59	0.00010	0.00001	0.00047	0.00005	0.003	0.000039	0.0232	0.73	0.00024	0.004	0.000002	0.0082	0.00022	0.99
HC-16-23	10-Oct-13	23	0.05	0.00005	0.000007	2.68	0.00010	0.00001	0.00045	0.00005	0.004	0.000043	0.0229	0.78	0.00024	0.002	0.000002	0.0078	0.00025	1.03
HC-16-24	17-Oct-13	24	0.05	0.00005	0.000007	2.96	0.00010	0.00001	0.00043	0.00005	0.003	0.000038	0.0241	0.85	0.00024	0.002	0.000002	0.0076	0.00022	1.05
HC-16-25	24-Oct-13	25	0.05	0.00005	0.000006	3.24	0.00010	0.00001	0.00040	0.00005	0.003	0.000032	0.0253	0.92	0.00023	0.002	0.000002	0.0073	0.00020	1.07
HC-16-26	31-Oct-13	26	0.05	0.00005	0.000006	3.51	0.00010	0.00001	0.00038	0.00005	0.002	0.000027	0.0265	0.99	0.00023	0.002	0.000002	0.0070	0.00017	1.09
HC-16-27	07-Nov-13	27	0.05	0.00005	0.000005	3.79	0.00010	0.00001	0.00035	0.00005	0.001	0.000021	0.0277	1.06	0.00022	0.002	0.000002	0.0067	0.00014	1.11
HC-16-28	14-Nov-13	28	0.11	0.00011	0.000011	4.17	0.00020	0.00002	0.00036	0.00011	0.002	0.000023	0.0283	1.22	0.00027	0.009	0.000002	0.0065	0.00016	1.16
HC-16-29	21-Nov-13	29	0.18	0.00018	0.000018	4.55	0.00030	0.00002	0.00038	0.00018	0.003	0.000026	0.0289	1.38	0.00031	0.016	0.000002	0.0062	0.00017	1.21
HC-16-30	28-Nov-13	30	0.24	0.00024	0.000024	4.92	0.00040	0.00003	0.00039	0.00024	0.004	0.000028	0.0294	1.54	0.00036	0.023	0.000002	0.0059	0.00019	1.25
HC-16-31	05-Dec-13	31	0.30	0.00030	0.000030	5.30	0.00050	0.00003	0.00040	0.00030	0.005	0.000030	0.0300	1.70	0.00040	0.030	0.000002	0.0056	0.00020	1.30
HC-16-32	12-Dec-13	32	0.30	0.00030	0.000030	5.63	0.00050	0.00003	0.00043	0.00030	0.005	0.000030	0.0295	1.80	0.00038	0.025	0.000002	0.0057	0.00020	1.35
HC-16-33	19-Dec-13	33	0.30	0.00030	0.000030	5.95	0.00050	0.00003	0.00045	0.00030	0.005	0.000030	0.0290	1.90	0.00035	0.020	0.000002	0.0058	0.00020	1.40
HC-16-34	26-Dec-13	34	0.30	0.00030	0.000030	6.28	0.00050	0.00003	0.00048	0.00030	0.005	0.000030	0.0285	2.00	0.00033	0.015	0.000002	0.0058	0.00020	1.45
HC-16-35	02-Jan-14	35	0.30	0.00030	0.000030	6.60	0.00050	0.00003	0.00050	0.00030	0.005	0.000030	0.0280	2.10	0.00030	0.010	0.000002	0.0059	0.00020	1.50
HC-16-36	09-Jan-14	36	0.30	0.00030	0.000030	6.83	0.00050	0.00003	0.00045	0.00030	0.005	0.000045	0.0283	2.25	0.00038	0.010	0.000002	0.0055	0.00018	1.50
HC-16-37	16-Jan-14	37	0.30	0.00030	0.000030	7.05	0.00050	0.00003	0.00040	0.00030	0.005	0.000060	0.0285	2.40	0.00045	0.010	0.000002	0.0052	0.00015	1.50
HC-16-38	23-Jan-14	38	0.30	0.00030	0.000030	7.28	0.00050	0.00003	0.00035	0.00030	0.005	0.000075	0.0288	2.55	0.00053	0.010	0.000002	0.0048	0.00013	1.50
HC-16-39	30-Jan-14	39	0.30	0.00030	0.000030	7.50	0.00050	0.00003	0.00030	0.00030	0.005	0.000090	0.0290	2.70	0.00060	0.010	0.000002	0.0044	0.00010	1.50
HC-16-40	06-Feb-14	40	0.30	0.00030	0.000030	8.03	0.00050	0.00003	0.00030	0.00030	0.005	0.000075	0.0288	2.88	0.00058	0.010	0.000002	0.0043	0.00010	1.50
HC-16-41	13-Feb-14	41	0.30	0.00030	0.000030	8.55	0.00050	0.00003	0.00030	0.00030	0.005	0.000060	0.0285	3.05	0.00055	0.010	0.000002	0.0042	0.00010	1.50
HC-16-42	20-Feb-14	42	0.30	0.00030	0.000030	9.08	0.00050	0.00003	0.00030	0.00030	0.005	0.000045	0.0283	3.23	0.00053	0.010	0.000002	0.0040	0.00010	1.50
HC-16-43	27-Feb-14	43	0.30	0.00030	0.000030	9.60	0.00050	0.00003	0.00030	0.00030	0.005	0.000030	0.0280	3.40	0.00050	0.010	0.000002	0.0039	0.00010	1.50
HC-16-44	06-Mar-14	44	0.30	0.00030	0.000030	9.83	0.00050	0.00003	0.00035	0.00030	0.005	0.000045	0.0283	3.48	0.00050	0.010	0.000002	0.0039	0.00013	1.55
HC-16-45	13-Mar-14	45	0.30	0.00030	0.000030	10.05	0.00050	0.00003	0.00040	0.00030	0.005	0.000060	0.0285	3.55	0.00050	0.010	0.000002	0.0039	0.00015	1.60
HC-16-46	20-Mar-14	46	0.30	0.00030	0.000030	10.28	0.00050	0.00003	0.00045	0.00030	0.005	0.000075	0.0288	3.63	0.00050	0.010	0.000002	0.0038	0.00018	1.65
HC-16-47	27-Mar-14	47	0.30	0.00030	0.000030	10.50	0.00050	0.00003	0.00050	0.00030	0.005	0.000090	0.0290	3.70	0.00050	0.010	0.000002	0.0038	0.00020	1.70
Mean all weeks			0.15	0.00016	0.000016	3.95	0.00030	0.00002	0.00120	0.00015	0.006	0.000063	0.0229	1.27	0.00027	0.008	0.000002	0.0106	0.00024	1.01
HC17 Middle Gates J - CCR																				
HC-17-0	02-May-13	0	0.05	0.00026	0.000086	0.69	0.00070	0.00555	0.06460	0.00023	0.209	0.002150	0.0172	0.16	0.00336	0.058	0.000002	0.0343	0.25400	0.53
HC-17-1	09-May-13	1	0.08	0.00012	0.000089	0.73	0.00070	0.00575	0.04730	0.00012	0.084	0.000850	0.0247	0.12	0.00215	0.010	0.000002	0.0902	0.20800	0.42
HC-17-2	16-May-13	2	0.08	0.00008	0.000047	0.52	0.00030	0.00278	0.01700	0.00008	0.049	0.000477	0.0195	0.08	0.00089	0.004	0.000002	0.0651	0.09400	0.34
HC-17-3	23-May-13	3	0.07	0.00006	0.000038	0.40	0.00030	0.00159	0.00840	0.00006	0.051	0.000395	0.0177	0.07	0.00082	0.009	0.000002	0.0546	0.04800	0.30
HC-17-4	30-May-13	4	0.07	0.00011	0.000011	0.45	0.00070	0.00168	0.00706	0.00030	0.247	0.001110	0.0164	0.18	0.00226	0.005	0.000002	0.0447	0.02560	0.35
HC-17-5	06-Jun-13	5	0.07	0.00012	0.000037	0.56	0.00040	0.00148	0.02020	0.00036	0.166	0.001170	0.0150	0.13	0.00233	0.004	0.000002	0.0410	0.01500	0.31
HC-17-6	13-Jun-13	6	0.07	0.00010	0.000032	0.47	0.00040	0.00080	0.00356	0.00027	0.167	0.000556	0.0151	0.17	0.00140	0.016	0.000002	0.0413	0.00994	0.31
HC-17-7	20-Jun-13	7	0.08	0.00006	0.000007	0.42	0.00040	0.00046	0.00275	0.00005	0.033	0.000205	0.0169	0.08	0.00057	0.012	0.000002	0.0385	0.00734	0.28
HC-17-8	27-Jun-13	8	0.06	0.00006	0.000024	0.39	0.00020	0.00053	0.00271	0.00010	0.116	0.000386	0.0138	0.11	0.00103	0.011	0.000002	0.0351	0.00523	0.30
HC-17-9	04-Jul-13	9	0.09	0.00014	0.000033	0.50	0.00060	0.00094	0.00397	0.00029	0.356	0.000928	0.0162	0.25	0.00243	0.016	0.000004	0.0374	0.00535	0.40
HC-17-10	11-Jul-13	10	0.08	0.00006	0.000036	0.47	0.00020	0.00058	0.00286	0.00009	0.053	0.000429	0.0165	0.09	0.00089	0.010	0.000002	0.0348	0.00347	0.33
HC-17-11	18-Jul-13	11	0.07	0.00008	0.000044	0.57	0.00020	0.00067	0.00267	0.00013	0.091	0.000528	0.0162	0.10	0.00100	0.005	0.000002	0.0319	0.00306	0.36
HC-17-12	25-Jul-13	12	0.06	0.00008	0.000039	0.67	0.00010	0.00076	0.00275	0.00009	0.087	0.000448	0.0165	0.14	0.00113	0.006	0.000003	0.0294	0.00280	0.40
HC-17-13	01-Aug-13	13	0.06	0.00008	0.000032	0.69	0.00020	0.00077	0.00279	0.00013	0.077	0.000519	0.0160	0.13	0.00115	0.017	0.000002	0.0261	0.00269	0.40
HC-17-14	08-Aug-13	14	0.06	0.00010	0.000016	0.76	0.00020	0.00040	0.00162	0.00009	0.083	0.000269	0.0130	0.19	0.00100	0.004	0.000002	0.0293	0.00212	0.34
HC-17-15	15-Aug-13	15	0.05	0.00008	0.000011	0.80	0.00010	0.00033	0.00159	0.00005	0.046	0.000181	0.0149	0.18	0.00069	0.004	0.000002	0.0288	0.00203	0.39
HC-17-16	22-Aug-13	16	0.05	0.00009	0.000044	0.68	0.00020	0.00035	0.00222	0.00010	0.119	0.000232	0.0126	0.17	0.00075	0.006	0.000002	0.0262	0.00153	0.34
HC-17-17	29-Aug-13	17	0.05	0.00007	0.000027	0.64	0.00010	0.00039	0.00190	0.00008	0.043	0.000232	0.0114	0.15	0.00077	0.026	0.000002	0.0252	0.00180	0.35

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-17-18	05-Sep-13	18	0.07	0.00008	0.000036	0.76	0.00010	0.00064	0.00261	0.00012	0.067	0.000449	0.0169	0.17	0.00099	0.020	0.000002	0.0251	0.00205	0.45
HC-17-19	12-Sep-13	19	0.08	0.00009	0.000024	0.84	0.00010	0.00067	0.00263	0.00012	0.080	0.000457	0.0151	0.18	0.00099	0.024	0.000002	0.0212	0.00200	0.48
HC-17-20	19-Sep-13	20	0.08	0.00009	0.000029	0.87	0.00010	0.00076	0.00284	0.00014	0.093	0.000515	0.0143	0.20	0.00106	0.019	0.000002	0.0203	0.00209	0.48
HC-17-21	26-Sep-13	21	0.07	0.00009	0.000033	0.90	0.00010	0.00084	0.00306	0.00015	0.106	0.000573	0.0135	0.21	0.00113	0.014	0.000002	0.0194	0.00219	0.49
HC-17-22	03-Oct-13	22	0.07	0.00009	0.000038	0.92	0.00010	0.00093	0.00327	0.00017	0.118	0.000631	0.0126	0.23	0.00119	0.009	0.000002	0.0184	0.00228	0.49
HC-17-23	10-Oct-13	23	0.06	0.00009	0.000042	0.95	0.00010	0.00101	0.00348	0.00018	0.131	0.000689	0.0118	0.24	0.00126	0.004	0.000002	0.0175	0.00237	0.49
HC-17-24	17-Oct-13	24	0.06	0.00010	0.000038	1.00	0.00013	0.00095	0.00329	0.00018	0.150	0.000651	0.0120	0.26	0.00127	0.004	0.000002	0.0182	0.00228	0.52
HC-17-25	24-Oct-13	25	0.06	0.00011	0.000034	1.05	0.00015	0.00088	0.00310	0.00019	0.168	0.000614	0.0122	0.28	0.00128	0.004	0.000003	0.0188	0.00220	0.55
HC-17-26	31-Oct-13	26	0.06	0.00011	0.000029	1.10	0.00018	0.00082	0.00291	0.00019	0.187	0.000576	0.0124	0.30	0.00128	0.004	0.000003	0.0195	0.00211	0.58
HC-17-27	07-Nov-13	27	0.06	0.00012	0.000025	1.15	0.00020	0.00075	0.00272	0.00019	0.205	0.000538	0.0126	0.32	0.00129	0.004	0.000003	0.0201	0.00202	0.61
HC-17-28	14-Nov-13	28	0.06	0.00012	0.000025	1.22	0.00018	0.00078	0.00271	0.00020	0.181	0.000562	0.0126	0.34	0.00122	0.013	0.000003	0.0193	0.00204	0.62
HC-17-29	21-Nov-13	29	0.06	0.00012	0.000025	1.29	0.00015	0.00081	0.00270	0.00021	0.157	0.000587	0.0126	0.36	0.00115	0.022	0.000003	0.0186	0.00207	0.64
HC-17-30	28-Nov-13	30	0.06	0.00012	0.000025	1.35	0.00013	0.00084	0.00269	0.00022	0.133	0.000611	0.0126	0.37	0.00108	0.031	0.000003	0.0178	0.00209	0.65
HC-17-31	05-Dec-13	31	0.06	0.00012	0.000025	1.42	0.00010	0.00087	0.00268	0.00023	0.109	0.000635	0.0126	0.39	0.00101	0.040	0.000003	0.0170	0.00211	0.66
HC-17-32	12-Dec-13	32	0.06	0.00012	0.000021	1.53	0.00010	0.00070	0.00228	0.00019	0.089	0.000503	0.0120	0.41	0.00086	0.031	0.000003	0.0169	0.00183	0.68
HC-17-33	19-Dec-13	33	0.06	0.00011	0.000017	1.63	0.00010	0.00053	0.00188	0.00014	0.069	0.000371	0.0114	0.44	0.00071	0.023	0.000003	0.0168	0.00154	0.70
HC-17-34	26-Dec-13	34	0.05	0.00011	0.000013	1.74	0.00010	0.00035	0.00148	0.00010	0.049	0.000238	0.0108	0.46	0.00055	0.014	0.000002	0.0167	0.00126	0.72
HC-17-35	02-Jan-14	35	0.05	0.00010	0.000009	1.84	0.00010	0.00018	0.00108	0.00005	0.029	0.000106	0.0102	0.48	0.00040	0.005	0.000002	0.0166	0.00097	0.74
HC-17-36	09-Jan-14	36	0.05	0.00011	0.000010	1.85	0.00010	0.00021	0.00112	0.00006	0.036	0.000130	0.0102	0.51	0.00047	0.007	0.000002	0.0158	0.00095	0.76
HC-17-37	16-Jan-14	37	0.05	0.00011	0.000011	1.85	0.00010	0.00025	0.00116	0.00007	0.044	0.000155	0.0101	0.53	0.00054	0.008	0.000003	0.0149	0.00094	0.78
HC-17-38	23-Jan-14	38	0.05	0.00012	0.000011	1.86	0.00010	0.00028	0.00120	0.00008	0.051	0.000179	0.0101	0.56	0.00061	0.010	0.000003	0.0141	0.00092	0.80
HC-17-39	30-Jan-14	39	0.05	0.00012	0.000012	1.86	0.00010	0.00032	0.00124	0.00009	0.058	0.000203	0.0100	0.58	0.00068	0.011	0.000003	0.0132	0.00090	0.82
HC-17-40	06-Feb-14	40	0.05	0.00012	0.000016	2.10	0.00010	0.00029	0.00113	0.00008	0.049	0.000173	0.0099	0.65	0.00073	0.010	0.000003	0.0131	0.00088	0.84
HC-17-41	13-Feb-14	41	0.05	0.00013	0.000020	2.33	0.00010	0.00027	0.00102	0.00007	0.040	0.000142	0.0098	0.72	0.00077	0.008	0.000004	0.0130	0.00087	0.87
HC-17-42	20-Feb-14	42	0.05	0.00013	0.000024	2.57	0.00010	0.00025	0.00090	0.00006	0.031	0.000112	0.0097	0.78	0.00082	0.007	0.000004	0.0128	0.00085	0.89
HC-17-43	27-Feb-14	43	0.05	0.00013	0.000028	2.80	0.00010	0.00023	0.00079	0.00005	0.022	0.000081	0.0096	0.85	0.00086	0.005	0.000004	0.0127	0.00083	0.91
HC-17-44	06-Mar-14	44	0.05	0.00013	0.000024	2.94	0.00010	0.00023	0.00073	0.00005	0.019	0.000071	0.0091	0.90	0.00088	0.005	0.000004	0.0123	0.00080	0.93
HC-17-45	13-Mar-14	45	0.05	0.00013	0.000020	3.08	0.00010	0.00023	0.00067	0.00005	0.016	0.000061	0.0087	0.95	0.00090	0.005	0.000003	0.0118	0.00076	0.96
HC-17-46	20-Mar-14	46	0.05	0.00013	0.000016	3.21	0.00010	0.00023	0.00060	0.00005	0.012	0.000051	0.0082	0.99	0.00091	0.005	0.000003	0.0114	0.00073	0.98
HC-17-47	27-Mar-14	47	0.05	0.00013	0.000012	3.35	0.00010	0.00023	0.00054	0.00005	0.009	0.000041	0.0077	1.04	0.00093	0.005	0.000002	0.0109	0.00069	1.00
<b>Mean all weeks</b>			<b>0.06</b>	<b>0.00011</b>	<b>0.000028</b>	<b>1.29</b>	<b>0.00020</b>	<b>0.00088</b>	<b>0.00530</b>	<b>0.00013</b>	<b>0.095</b>	<b>0.000453</b>	<b>0.0131</b>	<b>0.36</b>	<b>0.00109</b>	<b>0.012</b>	<b>0.000002</b>	<b>0.0252</b>	<b>0.01537</b>	<b>0.57</b>
<b>HC19 Middle Gates D - CCR</b>																				
HC-19-0	06-Feb-14	0	0.05	0.00007	0.000063	1.11	0.00020	0.00144	0.00477	0.00005	0.374	0.001000	0.0224	0.21	0.00357	0.012	0.000033	0.0072	0.00887	0.84
HC-19-1	13-Feb-14	1	0.05	0.00008	0.000037	0.52	0.00010	0.00066	0.00304	0.00005	0.033	0.000245	0.0402	0.19	0.00129	0.009	0.000010	0.0247	0.00924	1.01
HC-19-2	20-Feb-14	2	0.05	0.00008	0.000017	0.31	0.00010	0.00036	0.00336	0.00005	0.046	0.000216	0.0353	0.10	0.00050	0.006	0.000007	0.0260	0.00719	0.85
HC-19-3	27-Feb-14	3	0.05	0.00006	0.000028	0.23	0.00010	0.00029	0.00230	0.00005	0.031	0.000162	0.0333	0.09	0.00036	0.005	0.000004	0.0216	0.00616	0.69
HC-19-4	06-Mar-14	4	0.05	0.00008	0.000026	0.20	0.00020	0.00025	0.00217	0.00005	0.037	0.000161	0.0292	0.08	0.00031	0.007	0.000005	0.0189	0.00487	0.70
HC-19-5	13-Mar-14	5	0.05	0.00007	0.000017	0.18	0.00020	0.00019	0.00173	0.00005	0.038	0.000212	0.0277	0.07	0.00029	0.006	0.000006	0.0176	0.00314	0.68
HC-19-6	20-Mar-14	6	0.05	0.00006	0.000008	0.20	0.00020	0.00016	0.00178	0.00005	0.037	0.000149	0.0255	0.06	0.00052	0.005	0.000007	0.0160	0.00245	0.60
HC-19-7	27-Mar-14	7	0.05	0.00006	0.000005	0.18	0.00010	0.00016	0.00144	0.00005	0.030	0.000139	0.0251	0.06	0.00024	0.004	0.000002	0.0149	0.00201	0.55
HC-19-8	03-Apr-14	8	0.05	0.00006	0.000010	0.18	0.00020	0.00015	0.00190	0.00005	0.032	0.000141	0.0228	0.06	0.00024	0.005	0.000006	0.0142	0.00172	0.58
HC-19-9	10-Apr-14	9	0.05	0.00006	0.000007	0.17	0.00020	0.00013	0.00446	0.00005	0.036	0.000149	0.0202	0.06	0.00017	0.005	0.000003	0.0136	0.00174	0.57
HC-19-10	17-Apr-14	10	0.05	0.00005	0.000007	0.16	0.00010	0.00014	0.00138	0.00005	0.031	0.000142	0.0229	0.06	0.00026	0.008	0.000007	0.0136	0.00173	0.54
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00007</b>	<b>0.000020</b>	<b>0.31</b>	<b>0.00015</b>	<b>0.00035</b>	<b>0.00258</b>	<b>0.00005</b>	<b>0.066</b>	<b>0.000247</b>	<b>0.0277</b>	<b>0.09</b>	<b>0.00070</b>	<b>0.007</b>	<b>0.000008</b>	<b>0.0171</b>	<b>0.00447</b>	<b>0.69</b>
<b>HC20 Middle Gates E - CCR</b>																				
HC-20-0	06-Feb-14	0	0.05	0.00007	0.000031	0.09	0.00070	0.00050	0.00640	0.00012	0.096	0.000879	0.0119	0.05	0.00033	0.027	0.000012	0.0400	0.00529	0.31
HC-20-1	13-Feb-14	1	0.06	0.00012	0.000041	0.08	0.00060	0.00037	0.00304	0.00011	0.050	0.000459	0.0305	0.06	0.00015	0.011	0.000014	0.1700	0.00314	0.38
HC-20-2	20-Feb-14	2	0.08	0.00011	0.000019	0.09	0.00050	0.00039	0.00708	0.00006	0.054	0.000508	0.0328	0.05	0.00016	0.012	0.000009	0.0983	0.00274	0.37

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)
			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
HC-20-3	27-Feb-14	3	0.07	0.00009	0.000054	0.09	0.00040	0.00036	0.00186	0.00005	0.042	0.000339	0.0319	0.05	0.00011	0.008	0.000002	0.0555	0.00258	0.31
HC-20-4	06-Mar-14	4	0.08	0.00017	0.000050	0.12	0.00080	0.00051	0.00214	0.00012	0.065	0.000443	0.0310	0.08	0.00021	0.008	0.000002	0.0453	0.00325	0.46
HC-20-5	13-Mar-14	5	0.06	0.00008	0.000020	0.08	0.00020	0.00034	0.00148	0.00005	0.031	0.000262	0.0290	0.05	0.00011	0.007	0.000003	0.0353	0.00233	0.31
HC-20-6	20-Mar-14	6	0.06	0.00010	0.000006	0.08	0.00050	0.00033	0.00156	0.00005	0.038	0.000234	0.0269	0.05	0.00015	0.004	0.000004	0.0304	0.00229	0.30
HC-20-7	27-Mar-14	7	0.07	0.00008	0.000005	0.09	0.00030	0.00034	0.00163	0.00005	0.030	0.000241	0.0252	0.05	0.00014	0.007	0.000007	0.0287	0.00223	0.25
HC-20-8	03-Apr-14	8	0.06	0.00006	0.000007	0.09	0.00020	0.00022	0.00156	0.00005	0.021	0.000149	0.0258	0.05	0.00012	0.005	0.000002	0.0253	0.00157	0.25
HC-20-9	10-Apr-14	9	0.06	0.00007	0.000005	0.10	0.00030	0.00025	0.00187	0.00005	0.024	0.000169	0.0242	0.05	0.00010	0.004	0.000004	0.0244	0.00152	0.26
HC-20-10	17-Apr-14	10	0.05	0.00005	0.000005	0.10	0.00010	0.00024	0.00116	0.00005	0.018	0.000167	0.0256	0.05	0.00014	0.005	0.000002	0.0221	0.00123	0.22
<b>Mean all weeks</b>			<b>0.06</b>	<b>0.00009</b>	<b>0.000022</b>	<b>0.09</b>	<b>0.00042</b>	<b>0.00035</b>	<b>0.00271</b>	<b>0.00007</b>	<b>0.043</b>	<b>0.000350</b>	<b>0.0268</b>	<b>0.05</b>	<b>0.00016</b>	<b>0.009</b>	<b>0.000006</b>	<b>0.0523</b>	<b>0.00256</b>	<b>0.31</b>
<b>HC21 Middle Gates F - CCR</b>																				
HC-21-0	06-Feb-14	0	0.05	0.00017	0.000221	0.44	0.00010	0.01060	0.00048	0.00005	0.216	0.000005	0.0393	0.13	0.00323	0.006	0.000002	0.0011	0.03620	0.68
HC-21-1	13-Feb-14	1	0.05	0.00014	0.000023	0.17	0.00010	0.00095	0.00083	0.00005	0.016	0.000068	0.0550	0.05	0.00045	0.009	0.000004	0.0164	0.00369	0.54
HC-21-2	20-Feb-14	2	0.05	0.00014	0.000009	0.13	0.00010	0.00059	0.00060	0.00005	0.023	0.000075	0.0590	0.05	0.00029	0.005	0.000002	0.0109	0.00250	0.50
HC-21-3	27-Feb-14	3	0.05	0.00012	0.000022	0.13	0.00010	0.00086	0.00090	0.00005	0.074	0.000070	0.0517	0.05	0.00050	0.005	0.000002	0.0075	0.00326	0.42
HC-21-4	06-Mar-14	4	0.05	0.00014	0.000022	0.12	0.00010	0.00083	0.00055	0.00005	0.065	0.000049	0.0474	0.05	0.00049	0.007	0.000002	0.0059	0.00304	0.45
HC-21-5	13-Mar-14	5	0.05	0.00012	0.000017	0.13	0.00010	0.00075	0.00037	0.00005	0.044	0.000040	0.0465	0.05	0.00043	0.004	0.000002	0.0034	0.00264	0.42
HC-21-6	20-Mar-14	6	0.05	0.00011	0.000015	0.12	0.00010	0.00074	0.00046	0.00005	0.029	0.000033	0.0471	0.05	0.00048	0.003	0.000002	0.0028	0.00259	0.41
HC-21-7	27-Mar-14	7	0.05	0.00012	0.000023	0.13	0.00010	0.00096	0.00044	0.00005	0.057	0.000027	0.0466	0.05	0.00054	0.003	0.000008	0.0025	0.00330	0.41
HC-21-8	03-Apr-14	8	0.05	0.00012	0.000022	0.13	0.00010	0.00100	0.00172	0.00005	0.053	0.000021	0.0401	0.05	0.00053	0.003	0.000002	0.0021	0.00337	0.44
HC-21-9	10-Apr-14	9	0.05	0.00012	0.000025	0.13	0.00010	0.00106	0.00145	0.00005	0.068	0.000017	0.0431	0.05	0.00053	0.003	0.000002	0.0019	0.00368	0.42
HC-21-10	17-Apr-14	10	0.05	0.00011	0.000024	0.13	0.00010	0.00102	0.00046	0.00005	0.061	0.000023	0.0442	0.06	0.00065	0.007	0.000002	0.0016	0.00376	0.40
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00013</b>	<b>0.000038</b>	<b>0.16</b>	<b>0.00010</b>	<b>0.00176</b>	<b>0.00075</b>	<b>0.00005</b>	<b>0.064</b>	<b>0.000039</b>	<b>0.0473</b>	<b>0.06</b>	<b>0.00074</b>	<b>0.005</b>	<b>0.000003</b>	<b>0.0051</b>	<b>0.00618</b>	<b>0.46</b>
<b>HC22 Middle Gates F - CCR</b>																				
HC-22-0	06-Feb-14	0	0.05	0.00005	0.000010	0.07	0.00020	0.00058	0.00458	0.00005	0.059	0.001170	0.0050	0.05	0.00034	0.019	0.000010	0.0110	0.00455	0.17
HC-22-1	13-Feb-14	1	0.05	0.00005	0.000035	0.06	0.00010	0.00022	0.00232	0.00005	0.030	0.000454	0.0138	0.05	0.00014	0.006	0.000010	0.1160	0.00196	0.28
HC-22-2	20-Feb-14	2	0.05	0.00005	0.000013	0.05	0.00010	0.00022	0.00157	0.00005	0.031	0.000380	0.0154	0.05	0.00010	0.007	0.000004	0.0696	0.00184	0.23
HC-22-3	27-Feb-14	3	0.05	0.00005	0.000042	0.05	0.00010	0.00018	0.00105	0.00005	0.023	0.000220	0.0139	0.05	0.00007	0.004	0.000002	0.0463	0.00126	0.24
HC-22-4	06-Mar-14	4	0.05	0.00006	0.000034	0.05	0.00020	0.00019	0.00084	0.00005	0.028	0.000202	0.0126	0.05	0.00009	0.005	0.000002	0.0364	0.00115	0.26
HC-22-5	13-Mar-14	5	0.05	0.00005	0.000010	0.05	0.00010	0.00015	0.00074	0.00005	0.021	0.000167	0.0139	0.05	0.00008	0.002	0.000003	0.0320	0.00087	0.24
HC-22-6	20-Mar-14	6	0.05	0.00005	0.000005	0.05	0.00020	0.00017	0.00089	0.00005	0.021	0.000151	0.0115	0.05	0.00008	0.004	0.000003	0.0269	0.00089	0.21
HC-22-7	27-Mar-14	7	0.05	0.00005	0.000005	0.05	0.00010	0.00017	0.00067	0.00005	0.019	0.000146	0.0131	0.05	0.00015	0.003	0.000013	0.0255	0.00087	0.22
HC-22-8	03-Apr-14	8	0.05	0.00005	0.000005	0.05	0.00020	0.00016	0.00148	0.00005	0.022	0.000134	0.0107	0.05	0.00009	0.004	0.000003	0.0232	0.00084	0.23
HC-22-9	10-Apr-14	9	0.05	0.00005	0.000008	0.05	0.00020	0.00012	0.00090	0.00005	0.015	0.000095	0.0133	0.05	0.00006	0.003	0.000003	0.0223	0.00075	0.24
HC-22-10	17-Apr-14	10	0.05	0.00005	0.000005	0.05	0.00010	0.00012	0.00063	0.00005	0.014	0.000084	0.0139	0.05	0.00010	0.008	0.000002	0.0204	0.00081	0.23
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00005</b>	<b>0.000016</b>	<b>0.05</b>	<b>0.00015</b>	<b>0.00021</b>	<b>0.00142</b>	<b>0.00005</b>	<b>0.026</b>	<b>0.000291</b>	<b>0.0125</b>	<b>0.05</b>	<b>0.00012</b>	<b>0.006</b>	<b>0.000005</b>	<b>0.0391</b>	<b>0.00144</b>	<b>0.23</b>
<b>HC23 Middle Gates G/I - CCR</b>																				
HC-23-0	06-Feb-14	0	0.05	0.00005	0.000007	0.31	0.00020	0.00064	0.00065	0.00005	0.118	0.000594	0.0207	0.06	0.00068	0.016	0.000002	0.0244	0.00284	0.19
HC-23-1	13-Feb-14	1	0.05	0.00008	0.000053	0.28	0.00020	0.00016	0.00077	0.00005	0.033	0.000264	0.0520	0.07	0.00041	0.005	0.000002	0.2190	0.00106	0.30
HC-23-2	20-Feb-14	2	0.05	0.00007	0.000008	0.25	0.00020	0.00016	0.00087	0.00005	0.031	0.000235	0.0489	0.06	0.00039	0.005	0.000002	0.1320	0.00077	0.24
HC-23-3	27-Feb-14	3	0.05	0.00008	0.000066	0.28	0.00020	0.00018	0.00046	0.00005	0.033	0.000228	0.0468	0.07	0.00044	0.006	0.000002	0.0791	0.00074	0.23
HC-23-4	06-Mar-14	4	0.05	0.00009	0.000055	0.33	0.00020	0.00016	0.00039	0.00005	0.034	0.000186	0.0421	0.09	0.00050	0.007	0.000002	0.0609	0.00077	0.24
HC-23-5	13-Mar-14	5	0.05	0.00007	0.000014	0.24	0.00010	0.00016	0.00038	0.00005	0.032	0.000178	0.0431	0.07	0.00042	0.004	0.000002	0.0533	0.00063	0.24
HC-23-6	20-Mar-14	6	0.05	0.00006	0.000005	0.29	0.00010	0.00012	0.00042	0.00005	0.022	0.000138	0.0380	0.08	0.00042	0.002	0.000002	0.0471	0.00059	0.22
HC-23-7	27-Mar-14	7	0.05	0.00006	0.000005	0.33	0.00010	0.00013	0.00026	0.00005	0.019	0.000123	0.0350	0.09	0.00042	0.004	0.000013	0.0423	0.00049	0.20
HC-23-8	03-Apr-14	8	0.05	0.00006	0.000005	0.29	0.00010	0.00011	0.00094	0.00005	0.020	0.000109	0.0330	0.08	0.00037	0.004	0.000002	0.0379	0.00048	0.22
HC-23-9	10-Apr-14	9	0.05	0.00005	0.000012	0.31	0.00010	0.00010	0.00059	0.00005	0.016	0.000087	0.0338	0.10	0.00032	0.004	0.000002	0.0366	0.00054	0.23
HC-23-10	17-Apr-14	10	0.05	0.00006	0.000005	0.38	0.00010	0.00009	0.00044	0.00005	0.013	0.000065	0.0356	0.12	0.00039	0.006	0.000002	0.0331	0.00061	0.21
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00007</b>	<b>0.000021</b>	<b>0.30</b>	<b>0.00015</b>	<b>0.00018</b>	<b>0.00056</b>	<b>0.00005</b>	<b>0.034</b>	<b>0.000201</b>	<b>0.0390</b>	<b>0.08</b>	<b>0.00043</b>	<b>0.006</b>	<b>0.000003</b>	<b>0.0696</b>	<b>0.00087</b>	<b>0.23</b>

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B) mg/L	Cesium (Cs) mg/L	Cadmium (Cd) mg/L	Calcium (Ca) mg/L	Chromium (Cr) mg/L	Cobalt (Co) mg/L	Copper (Cu) mg/L	Lanthanum (La) mg/L	Iron (Fe) mg/L	Lead (Pb) mg/L	Lithium (Li) mg/L	Magnesium (Mg) mg/L	Manganese (Mn) mg/L	Phosphorus (P) mg/L	Mercury (Hg) mg/L	Molybdenum (Mo) mg/L	Nickel (Ni) mg/L	Potassium (K) mg/L	
<b>HC24 Middle Gates G/I - CCR</b>																					
HC-24-0	06-Feb-14	0	0.09	0.00015	0.000105	0.64	0.00010	0.00812	0.00670	0.00005	1.220	0.000343	0.0424	0.21	0.01660	0.010	0.000006	0.0017	0.02490	0.96	
HC-24-1	13-Feb-14	1	0.06	0.00009	0.000031	0.22	0.00010	0.00097	0.00334	0.00005	0.110	0.000589	0.0245	0.07	0.00140	0.006	0.000007	0.0374	0.00412	0.45	
HC-24-2	20-Feb-14	2	0.07	0.00011	0.000013	0.13	0.00020	0.00064	0.00257	0.00005	0.121	0.000389	0.0254	0.05	0.00084	0.009	0.000004	0.0273	0.00291	0.43	
HC-24-3	27-Feb-14	3	0.06	0.00006	0.000024	0.11	0.00010	0.00032	0.00174	0.00005	0.069	0.000259	0.0193	0.05	0.00042	0.005	0.000002	0.0251	0.00166	0.33	
HC-24-4	06-Mar-14	4	0.06	0.00007	0.000023	0.07	0.00010	0.00027	0.00199	0.00005	0.060	0.000216	0.0209	0.05	0.00038	0.009	0.000002	0.0230	0.00255	0.37	
HC-24-5	13-Mar-14	5	0.07	0.00011	0.000010	0.08	0.00010	0.00039	0.00199	0.00005	0.084	0.000244	0.0232	0.05	0.00046	0.006	0.000002	0.0152	0.00269	0.44	
HC-24-6	20-Mar-14	6	0.06	0.00014	0.000008	0.09	0.00030	0.00044	0.00240	0.00005	0.123	0.000240	0.0219	0.05	0.00060	0.007	0.000003	0.0121	0.00268	0.42	
HC-24-7	27-Mar-14	7	0.07	0.00008	0.000005	0.09	0.00010	0.00031	0.00166	0.00005	0.060	0.000150	0.0205	0.05	0.00054	0.004	0.000012	0.0118	0.00190	0.34	
HC-24-8	03-Apr-14	8	0.05	0.00017	0.000013	0.11	0.00020	0.00062	0.00392	0.00005	0.178	0.000280	0.0207	0.05	0.00089	0.008	0.000007	0.0089	0.00333	0.44	
HC-24-9	10-Apr-14	9	0.07	0.00014	0.000009	0.11	0.00020	0.00048	0.00202	0.00005	0.099	0.000182	0.0192	0.05	0.00075	0.006	0.000003	0.0083	0.00275	0.44	
HC-24-10	17-Apr-14	10	0.05	0.00006	0.000005	0.06	0.00010	0.00022	0.00143	0.00005	0.064	0.000102	0.0182	0.05	0.00039	0.010	0.000002	0.0089	0.00170	0.32	
<b>Mean all weeks</b>			<b>0.06</b>	<b>0.00011</b>	<b>0.000022</b>	<b>0.16</b>	<b>0.00015</b>	<b>0.00116</b>	<b>0.00271</b>	<b>0.00005</b>	<b>0.199</b>	<b>0.000272</b>	<b>0.0233</b>	<b>0.07</b>	<b>0.00212</b>	<b>0.007</b>	<b>0.000005</b>	<b>0.0163</b>	<b>0.00465</b>	<b>0.45</b>	
<b>HC25 Middle Gates D - Clean Coal</b>																					
HC-25-0	06-Feb-14	0	0.05	0.00202	0.000029	4.07	0.00010	0.00141	0.00201	0.00005	1.090	0.000795	0.0591	0.29	0.01370	0.016	0.000002	0.0022	0.00404	0.23	
HC-25-1	13-Feb-14	1	0.05	0.00014	0.000025	16.90	0.00010	0.00264	0.00107	0.00005	0.179	0.000299	0.1590	1.55	0.02390	0.013	0.000002	0.0034	0.00559	0.36	
HC-25-2	20-Feb-14	2	0.05	0.00006	0.000021	24.70	0.00010	0.00314	0.00124	0.00005	0.080	0.000131	0.0984	2.18	0.02770	0.007	0.000002	0.0020	0.00547	0.31	
HC-25-3	27-Feb-14	3	0.05	0.00005	0.000025	25.40	0.00010	0.00315	0.00038	0.00005	0.059	0.000078	0.0430	2.13	0.02810	0.006	0.000002	0.0012	0.00500	0.22	
HC-25-4	06-Mar-14	4	0.05	0.00005	0.000024	26.50	0.00010	0.00254	0.00022	0.00005	0.062	0.000059	0.0261	2.19	0.02670	0.006	0.000002	0.0008	0.00418	0.18	
HC-25-5	13-Mar-14	5	0.05	0.00005	0.000024	30.20	0.00010	0.00271	0.00023	0.00005	0.048	0.000051	0.0251	2.76	0.02980	0.004	0.000002	0.0007	0.00473	0.18	
HC-25-6	20-Mar-14	6	0.05	0.00005	0.000023	31.70	0.00010	0.00244	0.00043	0.00005	0.066	0.000068	0.0219	2.78	0.02780	0.004	0.000002	0.0007	0.00465	0.17	
HC-25-7	27-Mar-14	7	0.05	0.00005	0.000024	32.10	0.00010	0.00207	0.00047	0.00005	0.036	0.000027	0.0189	3.01	0.02510	0.004	0.000010	0.0006	0.00424	0.14	
HC-25-8	03-Apr-14	8	0.05	0.00005	0.000025	34.00	0.00010	0.00202	0.00054	0.00005	0.043	0.000017	0.0166	3.30	0.02560	0.006	0.000002	0.0006	0.00426	0.15	
HC-25-9	10-Apr-14	9	0.05	0.00005	0.000024	31.20	0.00010	0.00179	0.00053	0.00005	0.024	0.000012	0.0130	3.32	0.02350	0.005	0.000002	0.0005	0.00423	0.13	
HC-25-10	17-Apr-14	10	0.05	0.00005	0.000025	33.40	0.00010	0.00155	0.00043	0.00005	0.030	0.000012	0.0117	3.51	0.02130	0.010	0.000002	0.0004	0.00393	0.10	
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00024</b>	<b>0.000024</b>	<b>26.38</b>	<b>0.00010</b>	<b>0.00231</b>	<b>0.00069</b>	<b>0.00005</b>	<b>0.156</b>	<b>0.000141</b>	<b>0.0448</b>	<b>2.46</b>	<b>0.02484</b>	<b>0.007</b>	<b>0.000003</b>	<b>0.0012</b>	<b>0.00457</b>	<b>0.20</b>	
<b>HC26 Middle Gates E - Clean Coal</b>																					
HC-26-0	06-Feb-14	0	0.05	0.00012	0.000028	2.06	0.00010	0.00005	0.00389	0.00005	0.004	0.000049	0.0054	0.19	0.00182	0.013	0.000002	0.0030	0.00069	0.17	
HC-26-1	13-Feb-14	1	0.05	0.00005	0.000005	0.36	0.00010	0.00004	0.00077	0.00005	0.002	0.000033	0.0027	0.06	0.00030	0.010	0.000002	0.0068	0.00025	0.05	
HC-26-2	20-Feb-14	2	0.05	0.00005	0.000006	2.04	0.00010	0.00004	0.00073	0.00005	0.001	0.000019	0.0049	0.32	0.00071	0.006	0.000002	0.0097	0.00031	0.07	
HC-26-3	27-Feb-14	3	0.05	0.00005	0.000014	3.49	0.00010	0.00004	0.00032	0.00005	0.001	0.000014	0.0047	0.52	0.00120	0.008	0.000007	0.0113	0.00022	0.09	
HC-26-4	06-Mar-14	4	0.05	0.00005	0.000011	3.92	0.00010	0.00003	0.00028	0.00005	0.001	0.000012	0.0032	0.60	0.00101	0.005	0.000002	0.0079	0.00035	0.08	
HC-26-5	13-Mar-14	5	0.05	0.00005	0.000006	3.85	0.00010	0.00003	0.00027	0.00005	0.001	0.000018	0.0033	0.65	0.00081	0.004	0.000002	0.0077	0.00015	0.08	
HC-26-6	20-Mar-14	6	0.05	0.00005	0.000005	3.56	0.00010	0.00002	0.00063	0.00005	0.001	0.000015	0.0027	0.68	0.00064	0.010	0.000002	0.0079	0.00023	0.08	
HC-26-7	27-Mar-14	7	0.05	0.00005	0.000005	3.93	0.00010	0.00003	0.00018	0.00005	0.001	0.000019	0.0028	0.79	0.00059	0.004	0.000003	0.0080	0.00017	0.08	
HC-26-8	03-Apr-14	8	0.05	0.00005	0.000005	4.13	0.00010	0.00002	0.00026	0.00005	0.001	0.000010	0.0022	0.84	0.00053	0.004	0.000002	0.0070	0.00026	0.08	
HC-26-9	10-Apr-14	9	0.05	0.00005	0.000005	4.58	0.00010	0.00002	0.00048	0.00005	0.001	0.000017	0.0026	0.98	0.00041	0.003	0.000002	0.0082	0.00015	0.08	
HC-26-10	17-Apr-14	10	0.05	0.00005	0.000005	4.53	0.00010	0.00002	0.00040	0.00005	0.001	0.000017	0.0024	0.98	0.00041	0.008	0.000002	0.0068	0.00026	0.06	
<b>Mean all weeks</b>			<b>0.05</b>	<b>0.00006</b>	<b>0.000009</b>	<b>3.31</b>	<b>0.00010</b>	<b>0.00003</b>	<b>0.00075</b>	<b>0.00005</b>	<b>0.001</b>	<b>0.000020</b>	<b>0.0034</b>	<b>0.60</b>	<b>0.00077</b>	<b>0.007</b>	<b>0.000003</b>	<b>0.0077</b>	<b>0.00028</b>	<b>0.08</b>	
<b>HC27 Middle Gates G/I - Tailings</b>																					
HC-27-0	06-Feb-14	0	0.06	0.00026	0.000045	17.80	0.00040	0.00122	0.00442	0.00005	0.009	0.000058	0.0609	5.78	0.01630	0.031	0.000002	0.1050	0.00380	4.36	
HC-27-1	13-Feb-14	1	0.12	0.00026	0.000044	18.50	0.00010	0.00165	0.00142	0.00005	0.010	0.000065	0.0588	6.31	0.02700	0.015	0.000002	0.0581	0.00374	4.66	
HC-27-2	20-Feb-14	2	0.15	0.00026	0.000047	34.10	0.00010	0.00216	0.00133	0.00005	0.003	0.000024	0.0760	12.30	0.04640	0.014	0.000003	0.0811	0.00477	5.87	
HC-27-3	27-Feb-14	3	0.14	0.00024	0.000092	36.30	0.00010	0.00449	0.00127	0.00005	0.002	0.000026	0.0663	13.40	0.06870	0.012	0.000002	0.0685	0.00956	5.41	
HC-27-4	06-Mar-14	4	0.13	0.00024	0.000090	38.00	0.00010	0.00417	0.00121	0.00005	0.004	0.000023	0.0614	13.50	0.07840	0.011	0.000002	0.0534	0.00789	5.51	
HC-27-5	13-Mar-14	5	0.12	0.00022	0.000100	40.40	0.00010	0.00631	0.00355	0.00005	0.003	0.000021	0.0567	14.20	0.10400	0.016	0.000002	0.0493	0.01190	5.70	
HC-27-6	20-Mar-14	6	0.10	0.00020	0.000071	40.90	0.00010	0.00447	0.00112	0.00005	0.006	0.000168	0.0536	14.20	0.08180	0.017	0.000002	0.0455	0.00875	5.30	
HC-27-7	27-Mar-14	7	0.10	0.00020	0.000033	41.10	0.00010	0.00541	0.00093	0.00005	0.001	0.000065	0.0526	14.20	0.09460	0.010	0.000011	0.0401	0.00990	4.99	

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Boron (B)	Cesium (Cs)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lanthanum (La)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Phosphorus (P)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	
			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	mg/L
HC-27-8	03-Apr-14	8	0.08	0.00020	0.000038	40.40	0.00010	0.00542	0.00102	0.00005	0.002	0.000081	0.0481	14.50	0.09930	0.002	0.000002	0.0364	0.00997	5.35	
HC-27-9	10-Apr-14	9	0.08	0.00019	0.000038	40.50	0.00010	0.00539	0.00138	0.00005	0.002	0.000027	0.0430	14.70	0.09140	0.009	0.000002	0.0296	0.01080	5.05	
HC-27-10	17-Apr-14	10	0.08	0.00018	0.000115	45.60	0.00010	0.00799	0.00137	0.00005	0.003	0.000011	0.0493	16.00	0.15400	0.024	0.000002	0.0270	0.01500	5.07	
<b>Mean all weeks</b>			<b>0.11</b>	<b>0.00022</b>	<b>0.000065</b>	<b>35.78</b>	<b>0.00013</b>	<b>0.00443</b>	<b>0.00173</b>	<b>0.00005</b>	<b>0.004</b>	<b>0.000052</b>	<b>0.0570</b>	<b>12.64</b>	<b>0.07835</b>	<b>0.015</b>	<b>0.000003</b>	<b>0.0540</b>	<b>0.00873</b>	<b>5.21</b>	
<b>HC28 Middle Gates J - Tailings</b>																					
HC-28-0	06-Feb-14	0	0.12	0.00030	0.000059	54.80	0.00020	0.00240	0.01300	0.00005	0.004	0.000057	0.0686	15.90	0.03110	0.044	0.000003	0.1930	0.00938	6.30	
HC-28-1	13-Feb-14	1	0.14	0.00021	0.000054	34.00	0.00010	0.00386	0.00300	0.00005	0.005	0.000036	0.0441	11.20	0.04470	0.023	0.000002	0.1260	0.01030	4.80	
HC-28-2	20-Feb-14	2	0.14	0.00020	0.000011	39.40	0.00010	0.00307	0.00259	0.00005	0.003	0.000026	0.0496	12.50	0.03710	0.011	0.000002	0.1620	0.00787	4.90	
HC-28-3	27-Feb-14	3	0.12	0.00017	0.000126	36.50	0.00010	0.00271	0.00247	0.00005	0.002	0.000018	0.0375	11.90	0.03570	0.015	0.000002	0.1510	0.00627	4.20	
HC-28-4	06-Mar-14	4	0.15	0.00019	0.000104	43.90	0.00010	0.00419	0.00223	0.00005	0.002	0.000017	0.0423	14.70	0.05270	0.016	0.000002	0.1090	0.00969	5.17	
HC-28-5	13-Mar-14	5	0.13	0.00019	0.000054	43.60	0.00010	0.00521	0.00813	0.00005	0.008	0.000043	0.0403	14.00	0.07000	0.019	0.000002	0.0831	0.01100	4.59	
HC-28-6	20-Mar-14	6	0.10	0.00017	0.000022	41.90	0.00010	0.00439	0.00207	0.00005	0.006	0.000471	0.0336	13.30	0.06140	0.012	0.000002	0.0749	0.01050	4.46	
HC-28-7	27-Mar-14	7	0.10	0.00017	0.000005	42.00	0.00010	0.00506	0.00201	0.00005	0.020	0.000067	0.0322	14.00	0.06840	0.012	0.000021	0.0691	0.01080	4.43	
HC-28-8	03-Apr-14	8	0.08	0.00016	0.000019	41.70	0.00010	0.00310	0.00172	0.00005	0.002	0.000061	0.0278	12.90	0.05130	0.002	0.000002	0.0727	0.00641	4.36	
HC-28-9	10-Apr-14	9	0.07	0.00016	0.000041	41.80	0.00010	0.00279	0.00129	0.00005	0.001	0.000012	0.0247	12.50	0.05230	0.006	0.000002	0.0673	0.00554	4.18	
HC-28-10	17-Apr-14	10	0.06	0.00014	0.000028	46.00	0.00010	0.00287	0.00159	0.00005	0.002	0.000014	0.0259	13.60	0.05420	0.019	0.000002	0.0645	0.00552	3.93	
<b>Mean all weeks</b>			<b>0.11</b>	<b>0.00019</b>	<b>0.000048</b>	<b>42.33</b>	<b>0.00011</b>	<b>0.00360</b>	<b>0.00365</b>	<b>0.00005</b>	<b>0.005</b>	<b>0.000075</b>	<b>0.0388</b>	<b>13.32</b>	<b>0.05081</b>	<b>0.016</b>	<b>0.000004</b>	<b>0.1066</b>	<b>0.00848</b>	<b>4.67</b>	

Note: Where concentrations were below detection limits, they were reported as the detection limit value

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC2 Middle Gates E - CCR																		
HC-2-0	15-Feb-11	0	0.00065	0.0094	1.20	0.000019	35.2	0.007	0.00002	0.000006	0.000010	0.0001	0.0018	0.00108	0.00091	0.0078	0.0017	0.0002
HC-2-1	22-Feb-11	1	0.00065	0.0125	0.90	0.000005	56.0	0.022	0.00002	0.000011	0.000005	0.0000	0.0005	0.00141	0.00197	0.0047	0.0063	0.0001
HC-2-2	01-Mar-11	2	0.00054	0.0084	0.80	0.000005	55.9	0.016	0.00002	0.000010	0.000005	0.0000	0.0005	0.00098	0.00222	0.0053	0.0009	0.0001
HC-2-3	08-Mar-11	3	0.00058	0.0061	0.90	0.000005	49.0	0.027	0.00002	0.000007	0.000005	0.0000	0.0005	0.00059	0.00221	0.0038	0.0006	0.0001
HC-2-4	15-Mar-11	4	0.00069	0.0046	0.80	0.000005	46.8	0.023	0.00002	0.000005	0.000005	0.0000	0.0005	0.00038	0.00154	0.0040	0.0007	0.0001
HC-2-5	22-Mar-11	5	0.00061	0.0035	0.70	0.000010	40.7	0.019	0.00002	0.000003	0.000005	0.0000	0.0005	0.00034	0.00134	0.0031	0.0005	0.0001
HC-2-6	29-Mar-11	6	0.00049	0.0030	0.60	0.000005	38.0	0.018	0.00002	0.000004	0.000005	0.0000	0.0005	0.00025	0.00119	0.0025	0.0008	0.0001
HC-2-7	05-Apr-11	7	0.00049	0.0028	0.60	0.000005	39.1	0.018	0.00002	0.000004	0.000005	0.0000	0.0005	0.00017	0.00097	0.0026	0.0005	0.0001
HC-2-8	12-Apr-11	8	0.00055	0.0025	0.70	0.000005	34.9	0.025	0.00002	0.000025	0.000005	0.0000	0.0005	0.00008	0.00054	0.0022	0.0007	0.0001
HC-2-9	19-Apr-11	9	0.00064	0.0019	0.50	0.000005	34.7	0.026	0.00002	0.000008	0.000005	0.0000	0.0005	0.00016	0.00087	0.0019	0.0013	0.0001
HC-2-10	26-Apr-11	10	0.00049	0.0018	0.60	0.000005	30.2	0.024	0.00002	0.000007	0.000005	0.0000	0.0005	0.00014	0.00068	0.0017	0.0009	0.0001
HC-2-11	03-May-11	11	0.00055	0.0019	0.70	0.000005	25.6	0.022	0.00002	0.000011	0.000005	0.0000	0.0005	0.00010	0.00062	0.0020	0.0014	0.0001
HC-2-12	10-May-11	12	0.00066	0.0016	0.60	0.000005	29.0	0.029	0.00002	0.000009	0.000005	0.0000	0.0005	0.00009	0.00060	0.0015	0.0010	0.0001
HC-2-13	17-May-11	13	0.00055	0.0016	0.50	0.000005	27.7	0.026	0.00002	0.000006	0.000005	0.0000	0.0005	0.00009	0.00050	0.0014	0.0013	0.0001
HC-2-14	24-May-11	14	0.00049	0.0013	0.60	0.000005	27.1	0.029	0.00002	0.000005	0.000005	0.0001	0.0005	0.00008	0.00052	0.0013	0.0004	0.0001
HC-2-15	31-May-11	15	0.00043	0.0013	0.50	0.000005	26.2	0.029	0.00002	0.000006	0.000005	0.0000	0.0005	0.00008	0.00053	0.0013	0.0004	0.0001
HC-2-16	07-Jun-11	16	0.00048	0.0012	0.50	0.000005	24.9	0.033	0.00002	0.000005	0.000005	0.0000	0.0005	0.00006	0.00044	0.0010	0.0005	0.0001
HC-2-17	14-Jun-11	17	0.00051	0.0011	0.50	0.000005	23.4	0.039	0.00002	0.000007	0.000005	0.0001	0.0005	0.00007	0.00039	0.0008	0.0009	0.0001
HC-2-18	21-Jun-11	18	0.00056	0.0010	0.40	0.000005	24.4	0.040	0.00002	0.000003	0.000005	0.0000	0.0005	0.00006	0.00034	0.0006	0.0009	0.0001
HC-2-19	28-Jun-11	19	0.00059	0.0009	0.40	0.000005	24.3	0.048	0.00002	0.000003	0.000005	0.0000	0.0005	0.00001	0.00034	0.0006	0.0014	0.0001
HC-2-20	05-Jul-11	20	0.00059	0.0009	0.40	0.000005	22.5	0.057	0.00002	0.000004	0.000005	0.0000	0.0005	0.00002	0.00030	0.0006	0.0013	0.0001
HC-2-21	12-Jul-11	21	0.00059	0.0009	0.40	0.000005	20.8	0.067	0.00002	0.000005	0.000005	0.0000	0.0005	0.00002	0.00026	0.0005	0.0012	0.0001
HC-2-22	19-Jul-11	22	0.00059	0.0008	0.40	0.000005	19.0	0.076	0.00002	0.000006	0.000005	0.0000	0.0005	0.00003	0.00021	0.0005	0.0010	0.0001
HC-2-23	26-Jul-11	23	0.00059	0.0008	0.40	0.000005	17.2	0.086	0.00002	0.000007	0.000005	0.0001	0.0005	0.00003	0.00017	0.0004	0.0009	0.0001
HC-2-24	02-Aug-11	24	0.00067	0.0008	0.40	0.000005	16.6	0.116	0.00002	0.000007	0.000005	0.0000	0.0005	0.00003	0.00016	0.0004	0.0010	0.0001
HC-2-25	09-Aug-11	25	0.00074	0.0007	0.40	0.000005	16.0	0.147	0.00002	0.000007	0.000005	0.0000	0.0005	0.00003	0.00014	0.0003	0.0010	0.0001
HC-2-26	16-Aug-11	26	0.00082	0.0007	0.40	0.000005	15.4	0.177	0.00002	0.000007	0.000005	0.0000	0.0005	0.00002	0.00013	0.0003	0.0011	0.0001
HC-2-27	23-Aug-11	27	0.00089	0.0007	0.40	0.000005	14.8	0.208	0.00002	0.000007	0.000005	0.0000	0.0005	0.00002	0.00011	0.0002	0.0011	0.0001
HC-2-28	30-Aug-11	28	0.00090	0.0007	0.38	0.000005	13.7	0.244	0.00002	0.000007	0.000005	0.0001	0.0005	0.00002	0.00011	0.0002	0.0009	0.0001
HC-2-29	06-Sep-11	29	0.00091	0.0007	0.35	0.000005	12.6	0.280	0.00002	0.000007	0.000005	0.0001	0.0005	0.00002	0.00010	0.0002	0.0007	0.0001
HC-2-30	13-Sep-11	30	0.00092	0.0007	0.33	0.000005	11.4	0.315	0.00002	0.000007	0.000005	0.0002	0.0005	0.00002	0.00009	0.0002	0.0005	0.0001
HC-2-31	20-Sep-11	31	0.00093	0.0007	0.30	0.000005	10.3	0.351	0.00002	0.000007	0.000005	0.0002	0.0005	0.00002	0.00009	0.0002	0.0003	0.0001
HC-2-32	27-Sep-11	32	0.00100	0.0007	0.30	0.000005	9.4	0.377	0.00002	0.000008	0.000005	0.0002	0.0005	0.00002	0.00008	0.0002	0.0005	0.0001
HC-2-33	04-Oct-11	33	0.00106	0.0007	0.30	0.000005	8.5	0.403	0.00002	0.000009	0.000005	0.0002	0.0005	0.00002	0.00008	0.0002	0.0006	0.0001
HC-2-34	11-Oct-11	34	0.00113	0.0007	0.30	0.000005	7.5	0.428	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0008	0.0001
HC-2-35	18-Oct-11	35	0.00119	0.0007	0.30	0.000005	6.6	0.454	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0009	0.0001
HC-2-36	25-Oct-11	36	0.00119	0.0007	0.30	0.000005	5.9	0.465	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0009	0.0001
HC-2-37	01-Nov-11	37	0.00120	0.0007	0.30	0.000005	5.1	0.475	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0010	0.0001
HC-2-38	08-Nov-11	38	0.00120	0.0007	0.30	0.000005	4.4	0.486	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0010	0.0001
HC-2-39	15-Nov-11	39	0.00120	0.0007	0.30	0.000005	3.7	0.496	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0010	0.0001
HC-2-40	22-Nov-11	40	0.00122	0.0008	0.30	0.000005	3.4	0.484	0.00002	0.000010	0.000005	0.0004	0.0005	0.00001	0.00006	0.0002	0.0014	0.0001
HC-2-41	29-Nov-11	41	0.00124	0.0008	0.30	0.000005	3.2	0.471	0.00002	0.000010	0.000005	0.0006	0.0005	0.00002	0.00006	0.0002	0.0018	0.0001
HC-2-42	06-Dec-11	42	0.00125	0.0009	0.30	0.000005	2.9	0.459	0.00002	0.000011	0.000005	0.0008	0.0005	0.00002	0.00006	0.0002	0.0022	0.0001
HC-2-43	13-Dec-11	43	0.00127	0.0009	0.30	0.000005	2.7	0.446	0.00002	0.000011	0.000005	0.0009	0.0005	0.00002	0.00006	0.0002	0.0026	0.0001
HC-2-44	20-Dec-11	44	0.00125	0.0009	0.30	0.000005	2.4	0.452	0.00002	0.000012	0.000005	0.0007	0.0005	0.00002	0.00006	0.0002	0.0021	0.0001
HC-2-45	27-Dec-11	45	0.00123	0.0009	0.30	0.000005	2.2	0.457	0.00002	0.000013	0.000005	0.0006	0.0005	0.00002	0.00007	0.0002	0.0016	0.0001
HC-2-46	03-Jan-12	46	0.00121	0.0008	0.30	0.000005	1.9	0.463	0.00002	0.000013	0.000005	0.0004	0.0005	0.00001	0.00007	0.0002	0.0011	0.0001
HC-2-47	10-Jan-12	47	0.00119	0.0008	0.30	0.000005	1.7	0.468	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0006	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-2-48	17-Jan-12	48	0.00117	0.0008	0.30	0.000005	1.5	0.480	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0007	0.0001
HC-2-49	24-Jan-12	49	0.00115	0.0007	0.30	0.000005	1.3	0.491	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-2-50	31-Jan-12	50	0.00113	0.0007	0.30	0.000005	1.2	0.503	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-2-51	07-Feb-12	51	0.00111	0.0007	0.30	0.000005	1.0	0.514	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0009	0.0001
HC-2-52	14-Feb-12	52	0.00113	0.0007	0.30	0.000005	0.9	0.511	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0009	0.0001
HC-2-53	21-Feb-12	53	0.00115	0.0007	0.30	0.000005	0.9	0.509	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00005	0.0002	0.0009	0.0001
HC-2-54	28-Feb-12	54	0.00116	0.0007	0.30	0.000005	0.8	0.506	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00004	0.0002	0.0008	0.0001
HC-2-55	06-Mar-12	55	0.00118	0.0007	0.30	0.000005	0.7	0.503	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00004	0.0002	0.0008	0.0001
HC-2-56	13-Mar-12	56	0.00119	0.0007	0.30	0.000005	0.6	0.498	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00004	0.0002	0.0008	0.0001
HC-2-57	20-Mar-12	57	0.00119	0.0007	0.30	0.000005	0.6	0.493	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00004	0.0002	0.0008	0.0001
HC-2-58	27-Mar-12	58	0.00120	0.0006	0.30	0.000005	0.5	0.488	0.00002	0.000010	0.000005	0.0005	0.0005	0.00001	0.00005	0.0002	0.0008	0.0001
HC-2-59	03-Apr-12	59	0.00120	0.0006	0.30	0.000005	0.5	0.483	0.00002	0.000010	0.000005	0.0005	0.0005	0.00001	0.00005	0.0002	0.0008	0.0001
HC-2-60	10-Apr-12	60	0.00119	0.0006	0.30	0.000005	0.4	0.481	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00005	0.0002	0.0008	0.0001
HC-2-61	17-Apr-12	61	0.00119	0.0006	0.30	0.000005	0.4	0.480	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00004	0.0002	0.0007	0.0001
HC-2-62	24-Apr-12	62	0.00118	0.0006	0.29	0.000005	0.4	0.478	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00004	0.0002	0.0007	0.0001
HC-2-63	01-May-12	63	0.00117	0.0005	0.29	0.000005	0.4	0.476	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0006	0.0001
HC-2-64	08-May-12	64	0.00119	0.0005	0.28	0.000005	0.4	0.479	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0008	0.0001
HC-2-65	15-May-12	65	0.00121	0.0005	0.28	0.000005	0.4	0.482	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0010	0.0001
HC-2-66	22-May-12	66	0.00122	0.0005	0.27	0.000005	0.4	0.485	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0012	0.0001
HC-2-67	29-May-12	67	0.00124	0.0005	0.26	0.000005	0.3	0.488	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0014	0.0001
HC-2-68	05-Jun-12	68	0.00127	0.0005	0.27	0.000005	0.3	0.497	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0012	0.0001
HC-2-69	12-Jun-12	69	0.00130	0.0005	0.27	0.000005	0.3	0.506	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0011	0.0001
HC-2-70	19-Jun-12	70	0.00133	0.0005	0.28	0.000005	0.3	0.514	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0009	0.0001
HC-2-71	26-Jun-12	71	0.00136	0.0006	0.28	0.000005	0.3	0.523	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0008	0.0001
HC-2-72	03-Jul-12	72	0.00135	0.0005	0.29	0.000005	0.3	0.524	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-2-73	10-Jul-12	73	0.00133	0.0005	0.29	0.000005	0.3	0.526	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-2-74	17-Jul-12	74	0.00132	0.0005	0.30	0.000005	0.3	0.527	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-2-75	24-Jul-12	75	0.00130	0.0005	0.30	0.000005	0.3	0.528	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-2-76	31-Jul-12	76	0.00134	0.0007	0.30	0.000005	0.3	0.525	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-2-77	07-Aug-12	77	0.00138	0.0008	0.30	0.000005	0.3	0.522	0.00002	0.000013	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0007	0.0001
HC-2-78	14-Aug-12	78	0.00142	0.0009	0.29	0.000005	0.3	0.519	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0007	0.0001
HC-2-79	21-Aug-12	79	0.00146	0.0011	0.29	0.000005	0.3	0.516	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0008	0.0001
HC-2-80	28-Aug-12	80	0.00139	0.0009	0.29	0.000005	0.2	0.510	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0009	0.0001
HC-2-81	04-Sep-12	81	0.00133	0.0008	0.30	0.000005	0.2	0.504	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0010	0.0001
HC-2-82	11-Sep-12	82	0.00126	0.0007	0.30	0.000005	0.2	0.497	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0011	0.0001
HC-2-83	18-Sep-12	83	0.00119	0.0006	0.30	0.000005	0.2	0.491	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0012	0.0001
HC-2-84	25-Sep-12	84	0.00118	0.0006	0.29	0.000005	0.2	0.475	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0013	0.0001
HC-2-85	02-Oct-12	85	0.00117	0.0006	0.28	0.000005	0.2	0.459	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0015	0.0001
HC-2-86	09-Oct-12	86	0.00116	0.0007	0.27	0.000005	0.2	0.442	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0017	0.0001
HC-2-87	16-Oct-12	87	0.00115	0.0007	0.26	0.000005	0.2	0.426	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0019	0.0001
HC-2-88	23-Oct-12	88	0.00118	0.0007	0.26	0.000005	0.2	0.431	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0016	0.0001
HC-2-89	30-Oct-12	89	0.00122	0.0007	0.26	0.000005	0.2	0.435	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0014	0.0001
HC-2-90	06-Nov-12	90	0.00125	0.0007	0.26	0.000005	0.2	0.440	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0011	0.0001
HC-2-91	13-Nov-12	91	0.00128	0.0006	0.26	0.000005	0.2	0.444	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-2-92	20-Nov-12	92	0.00130	0.0006	0.26	0.000005	0.2	0.431	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-2-93	27-Nov-12	93	0.00131	0.0005	0.25	0.000005	0.2	0.418	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-2-94	04-Dec-12	94	0.00133	0.0005	0.25	0.000005	0.2	0.404	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-2-95	11-Dec-12	95	0.00134	0.0004	0.24	0.000005	0.2	0.391	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-2-96	18-Dec-12	96	0.00131	0.0005	0.25	0.000005	0.2	0.398	0.00002	0.000015	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001



Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-2-97	25-Dec-12	97	0.00129	0.0005	0.25	0.000005	0.2	0.406	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-2-98	01-Jan-13	98	0.00126	0.0005	0.26	0.000005	0.2	0.413	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0008	0.0001
HC-2-99	08-Jan-13	99	0.00123	0.0006	0.26	0.000005	0.2	0.420	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0008	0.0001
HC-2-100	15-Jan-13	100	0.00125	0.0005	0.25	0.000005	0.2	0.412	0.00002	0.000013	0.000005	0.0004	0.0005	0.00001	0.00002	0.0002	0.0023	0.0001
HC-2-101	22-Jan-13	101	0.00126	0.0005	0.25	0.000005	0.2	0.403	0.00002	0.000013	0.000005	0.0006	0.0005	0.00001	0.00002	0.0002	0.0038	0.0001
HC-2-102	29-Jan-13	102	0.00128	0.0005	0.24	0.000005	0.2	0.395	0.00002	0.000014	0.000005	0.0007	0.0005	0.00001	0.00002	0.0002	0.0053	0.0001
HC-2-103	05-Feb-13	103	0.00129	0.0005	0.23	0.000005	0.2	0.386	0.00002	0.000014	0.000005	0.0009	0.0005	0.00001	0.00002	0.0002	0.0068	0.0001
HC-2-104	12-Feb-13	104	0.00124	0.0004	0.24	0.000005	0.2	0.380	0.00002	0.000014	0.000005	0.0007	0.0005	0.00001	0.00002	0.0002	0.0060	0.0001
HC-2-105	19-Feb-13	105	0.00120	0.0004	0.25	0.000005	0.2	0.373	0.00002	0.000014	0.000005	0.0006	0.0005	0.00001	0.00002	0.0002	0.0052	0.0001
HC-2-106	26-Feb-13	106	0.00115	0.0004	0.25	0.000005	0.2	0.367	0.00002	0.000014	0.000005	0.0004	0.0005	0.00001	0.00002	0.0003	0.0044	0.0001
HC-2-107	05-Mar-13	107	0.00110	0.0004	0.26	0.000005	0.2	0.360	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0036	0.0001
HC-2-108	12-Mar-13	108	0.00108	0.0004	0.25	0.000005	0.1	0.351	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0031	0.0001
HC-2-109	19-Mar-13	109	0.00107	0.0004	0.25	0.000005	0.1	0.341	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0025	0.0001
HC-2-110	26-Mar-13	110	0.00105	0.0004	0.24	0.000005	0.1	0.332	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0019	0.0001
HC-2-111	02-Apr-13	111	0.00103	0.0004	0.23	0.000005	0.1	0.322	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0013	0.0001
HC-2-112	09-Apr-13	112	0.00100	0.0004	0.23	0.000005	0.1	0.323	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0016	0.0001
HC-2-113	16-Apr-13	113	0.00098	0.0004	0.24	0.000005	0.1	0.325	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0019	0.0001
HC-2-114	23-Apr-13	114	0.00095	0.0004	0.24	0.000005	0.1	0.326	0.00002	0.000024	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0021	0.0001
HC-2-115	30-Apr-13	115	0.00093	0.0004	0.24	0.000005	0.1	0.327	0.00002	0.000029	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0024	0.0001
HC-2-116	07-May-13	116	0.00092	0.0004	0.24	0.000005	0.1	0.321	0.00002	0.000025	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0020	0.0001
HC-2-117	14-May-13	117	0.00092	0.0004	0.23	0.000005	0.1	0.315	0.00002	0.000021	0.000005	0.0002	0.0005	0.00001	0.00001	0.0004	0.0016	0.0001
HC-2-118	21-May-13	118	0.00092	0.0005	0.23	0.000005	0.1	0.308	0.00002	0.000016	0.000005	0.0002	0.0005	0.00001	0.00001	0.0004	0.0011	0.0001
HC-2-119	28-May-13	119	0.00091	0.0005	0.22	0.000005	0.1	0.302	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00001	0.0005	0.0007	0.0001
HC-2-120	04-Jun-13	120	0.00088	0.0005	0.22	0.000005	0.1	0.299	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00001	0.0004	0.0007	0.0001
HC-2-121	11-Jun-13	121	0.00085	0.0005	0.22	0.000005	0.1	0.296	0.00002	0.000010	0.000005	0.0006	0.0005	0.00001	0.00001	0.0004	0.0007	0.0001
HC-2-122	18-Jun-13	122	0.00082	0.0004	0.22	0.000005	0.1	0.293	0.00002	0.000009	0.000005	0.0008	0.0005	0.00001	0.00001	0.0003	0.0007	0.0001
HC-2-123	25-Jun-13	123	0.00079	0.0004	0.22	0.000005	0.1	0.290	0.00002	0.000008	0.000005	0.0010	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-124	02-Jul-13	124	0.00079	0.0004	0.22	0.000005	0.1	0.287	0.00002	0.000008	0.000005	0.0008	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-125	09-Jul-13	125	0.00078	0.0004	0.22	0.000005	0.1	0.283	0.00002	0.000009	0.000005	0.0006	0.0005	0.00001	0.00001	0.0002	0.0006	0.0001
HC-2-126	16-Jul-13	126	0.00078	0.0004	0.22	0.000005	0.1	0.280	0.00002	0.000009	0.000005	0.0005	0.0005	0.00001	0.00001	0.0002	0.0006	0.0001
HC-2-127	23-Jul-13	127	0.00077	0.0004	0.22	0.000005	0.1	0.276	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0005	0.0001
HC-2-128	30-Jul-13	128	0.00075	0.0004	0.23	0.000005	0.1	0.274	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00001	0.0002	0.0006	0.0001
HC-2-129	06-Aug-13	129	0.00073	0.0004	0.24	0.000005	0.1	0.273	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0006	0.0001
HC-2-130	13-Aug-13	130	0.00070	0.0004	0.25	0.000005	0.1	0.271	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0006	0.0001
HC-2-131	20-Aug-13	131	0.00068	0.0005	0.26	0.000005	0.1	0.269	0.00002	0.000004	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0006	0.0001
HC-2-132	27-Aug-13	132	0.00071	0.0004	0.25	0.000005	0.1	0.269	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0006	0.0001
HC-2-133	03-Sep-13	133	0.00074	0.0004	0.24	0.000005	0.1	0.270	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-134	10-Sep-13	134	0.00076	0.0004	0.23	0.000005	0.1	0.270	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-135	17-Sep-13	135	0.00079	0.0004	0.22	0.000005	0.1	0.270	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0008	0.0001
HC-2-136	24-Sep-13	136	0.00078	0.0004	0.23	0.000005	0.1	0.262	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0008	0.0001
HC-2-137	01-Oct-13	137	0.00076	0.0004	0.24	0.000005	0.1	0.254	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-138	08-Oct-13	138	0.00075	0.0004	0.25	0.000005	0.1	0.245	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-139	15-Oct-13	139	0.00074	0.0004	0.26	0.000005	0.1	0.237	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-140	22-Oct-13	140	0.00076	0.0004	0.26	0.000005	0.1	0.241	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0011	0.0001
HC-2-141	29-Oct-13	141	0.00077	0.0004	0.27	0.000005	0.1	0.245	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0014	0.0001
HC-2-142	05-Nov-13	142	0.00079	0.0004	0.27	0.000005	0.1	0.248	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0018	0.0001
HC-2-143	12-Nov-13	143	0.00080	0.0004	0.27	0.000005	0.1	0.252	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0022	0.0001
HC-2-144	19-Nov-13	144	0.00079	0.0004	0.26	0.000005	0.1	0.248	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0018	0.0001
HC-2-145	26-Nov-13	145	0.00077	0.0004	0.25	0.000005	0.1	0.244	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0014	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-2-146	03-Dec-13	146	0.00075	0.0004	0.23	0.000005	0.1	0.240	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0010	0.0001
HC-2-147	10-Dec-13	147	0.00073	0.0004	0.22	0.000005	0.1	0.236	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0006	0.0001
HC-2-148	17-Dec-13	148	0.00074	0.0004	0.22	0.000005	0.1	0.233	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-149	24-Dec-13	149	0.00074	0.0004	0.22	0.000005	0.1	0.231	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0008	0.0001
HC-2-150	31-Dec-13	150	0.00075	0.0004	0.22	0.000005	0.1	0.228	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0009	0.0001
HC-2-151	07-Jan-14	151	0.00075	0.0004	0.22	0.000005	0.1	0.225	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0010	0.0001
HC-2-152	14-Jan-14	152	0.00072	0.0004	0.22	0.000005	0.1	0.218	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0010	0.0001
HC-2-153	21-Jan-14	153	0.00070	0.0004	0.22	0.000005	0.1	0.210	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0009	0.0001
HC-2-154	28-Jan-14	154	0.00067	0.0003	0.21	0.000005	0.1	0.203	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0008	0.0001
HC-2-155	04-Feb-14	155	0.00065	0.0003	0.21	0.000005	0.1	0.195	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-156	11-Feb-14	156	0.00065	0.0003	0.20	0.000005	0.1	0.193	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0007	0.0001
HC-2-157	18-Feb-14	157	0.00065	0.0003	0.20	0.000005	0.1	0.192	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0008	0.0001
HC-2-158	25-Feb-14	158	0.00065	0.0003	0.19	0.000005	0.1	0.190	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0009	0.0001
HC-2-159	04-Mar-14	159	0.00065	0.0004	0.18	0.000005	0.1	0.188	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0009	0.0001
HC-2-160	11-Mar-14	160	0.00067	0.0004	0.19	0.000005	0.1	0.187	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0009	0.0001
HC-2-161	18-Mar-14	161	0.00069	0.0003	0.20	0.000005	0.1	0.186	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0009	0.0001
HC-2-162	25-Mar-14	162	0.00070	0.0003	0.21	0.000005	0.1	0.185	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0009	0.0001
HC-2-163	01-Apr-14	163	0.00072	0.0003	0.22	0.000005	0.1	0.184	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00000	0.0002	0.0009	0.0001
HC-2-164	08-Apr-14	164	0.00072	0.0003	0.22	0.000005	0.1	0.185	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0009	0.0001
HC-2-165	15-Apr-14	165	0.00071	0.0003	0.22	0.000005	0.1	0.186	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0010	0.0001
HC-2-166	22-Apr-14	166	0.00071	0.0004	0.21	0.000005	0.1	0.187	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0010	0.0001
HC-2-167	29-Apr-14	167	0.00071	0.0004	0.21	0.000005	0.1	0.188	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00001	0.0002	0.0010	0.0001
<b>Mean all weeks</b>			<b>0.00096</b>	<b>0.0009</b>	<b>0.31</b>	<b>0.000005</b>	<b>5.9</b>	<b>0.317</b>	<b>0.00002</b>	<b>0.000010</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0005</b>	<b>0.00005</b>	<b>0.00014</b>	<b>0.0005</b>	<b>0.0012</b>	<b>0.0001</b>
<b>HC3 Middle Gates J - CCR</b>																		
HC-3-0	15-Feb-11	0	0.00066	0.0058	0.70	0.000005	46.8	0.012	0.00002	0.000007	0.000005	0.0000	0.0005	0.00017	0.00003	0.0045	0.0007	0.0001
HC-3-1	22-Feb-11	1	0.00118	0.0154	0.80	0.000005	103.0	0.039	0.00002	0.000013	0.000005	0.0001	0.0005	0.00022	0.00080	0.0015	0.0039	0.0001
HC-3-2	01-Mar-11	2	0.00080	0.0164	0.50	0.000005	72.8	0.021	0.00002	0.000010	0.000005	0.0000	0.0005	0.00014	0.00093	0.0021	0.0011	0.0001
HC-3-3	08-Mar-11	3	0.00064	0.0129	0.40	0.000005	62.6	0.016	0.00002	0.000009	0.000005	0.0000	0.0005	0.00006	0.00082	0.0012	0.0003	0.0001
HC-3-4	15-Mar-11	4	0.00064	0.0111	0.50	0.000005	58.6	0.016	0.00002	0.000009	0.000005	0.0000	0.0005	0.00006	0.00066	0.0016	0.0003	0.0001
HC-3-5	22-Mar-11	5	0.00052	0.0083	0.40	0.000005	51.2	0.015	0.00002	0.000006	0.000005	0.0000	0.0005	0.00003	0.00058	0.0013	0.0030	0.0001
HC-3-6	29-Mar-11	6	0.00054	0.0088	0.40	0.000005	50.2	0.014	0.00002	0.000009	0.000005	0.0000	0.0005	0.00003	0.00057	0.0013	0.0005	0.0001
HC-3-7	05-Apr-11	7	0.00070	0.0074	0.40	0.000005	51.7	0.018	0.00002	0.000007	0.000005	0.0000	0.0005	0.00003	0.00055	0.0011	0.0011	0.0001
HC-3-8	12-Apr-11	8	0.00066	0.0070	0.40	0.000005	46.3	0.017	0.00002	0.000007	0.000005	0.0000	0.0005	0.00002	0.00030	0.0008	0.0006	0.0001
HC-3-9	19-Apr-11	9	0.00063	0.0053	0.30	0.000005	44.3	0.021	0.00002	0.000010	0.000005	0.0000	0.0005	0.00003	0.00048	0.0007	0.0010	0.0001
HC-3-10	26-Apr-11	10	0.00065	0.0052	0.30	0.000005	37.1	0.018	0.00002	0.000008	0.000005	0.0000	0.0005	0.00003	0.00040	0.0006	0.0007	0.0001
HC-3-11	03-May-11	11	0.00055	0.0051	0.30	0.000005	36.0	0.019	0.00002	0.000021	0.000005	0.0001	0.0005	0.00001	0.00049	0.0006	0.0009	0.0001
HC-3-12	10-May-11	12	0.00067	0.0050	0.40	0.000005	37.3	0.021	0.00003	0.000010	0.000005	0.0000	0.0005	0.00001	0.00042	0.0005	0.0007	0.0001
HC-3-13	17-May-11	13	0.00069	0.0051	0.30	0.000005	33.4	0.023	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00037	0.0005	0.0010	0.0001
HC-3-14	24-May-11	14	0.00064	0.0044	0.30	0.000005	32.2	0.023	0.00002	0.000009	0.000005	0.0000	0.0005	0.00001	0.00038	0.0005	0.0002	0.0001
HC-3-15	31-May-11	15	0.00056	0.0040	0.30	0.000005	25.1	0.016	0.00002	0.000008	0.000005	0.0001	0.0005	0.00001	0.00026	0.0005	0.0004	0.0001
HC-3-16	07-Jun-11	16	0.00051	0.0043	0.30	0.000005	30.3	0.023	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00041	0.0005	0.0005	0.0001
HC-3-17	14-Jun-11	17	0.00066	0.0040	0.30	0.000005	27.6	0.029	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00036	0.0002	0.0009	0.0001
HC-3-18	21-Jun-11	18	0.00065	0.0039	0.30	0.000005	30.7	0.038	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00030	0.0002	0.0012	0.0001
HC-3-19	28-Jun-11	19	0.00056	0.0035	0.30	0.000005	31.4	0.046	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00030	0.0002	0.0013	0.0001
HC-3-20	05-Jul-11	20	0.00055	0.0034	0.28	0.000005	30.6	0.061	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00028	0.0002	0.0011	0.0001
HC-3-21	12-Jul-11	21	0.00053	0.0032	0.25	0.000005	29.8	0.075	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00025	0.0002	0.0010	0.0001
HC-3-22	19-Jul-11	22	0.00052	0.0031	0.23	0.000005	29.0	0.090	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00023	0.0002	0.0008	0.0001
HC-3-23	26-Jul-11	23	0.00050	0.0030	0.20	0.000005	28.2	0.104	0.00002	0.000009	0.000005	0.0000	0.0005	0.00001	0.00021	0.0002	0.0006	0.0001
HC-3-24	02-Aug-11	24	0.00052	0.0030	0.23	0.000005	26.7	0.106	0.00002	0.000009	0.000005	0.0000	0.0005	0.00001	0.00025	0.0002	0.0007	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-3-25	09-Aug-11	25	0.00055	0.0030	0.25	0.000005	25.1	0.108	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00029	0.0002	0.0009	0.0001
HC-3-26	16-Aug-11	26	0.00057	0.0030	0.28	0.000005	23.6	0.109	0.00002	0.000008	0.000005	0.0000	0.0005	0.00001	0.00033	0.0002	0.0010	0.0001
HC-3-27	23-Aug-11	27	0.00059	0.0030	0.30	0.000005	22.0	0.111	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00037	0.0002	0.0011	0.0001
HC-3-28	30-Aug-11	28	0.00060	0.0029	0.28	0.000005	21.6	0.135	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00032	0.0002	0.0010	0.0001
HC-3-29	06-Sep-11	29	0.00060	0.0029	0.25	0.000005	21.1	0.159	0.00002	0.000008	0.000005	0.0001	0.0005	0.00001	0.00028	0.0002	0.0008	0.0001
HC-3-30	13-Sep-11	30	0.00061	0.0028	0.23	0.000005	20.7	0.182	0.00002	0.000008	0.000005	0.0001	0.0005	0.00001	0.00023	0.0002	0.0007	0.0001
HC-3-31	20-Sep-11	31	0.00061	0.0027	0.20	0.000005	20.2	0.206	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00019	0.0002	0.0005	0.0001
HC-3-32	27-Sep-11	32	0.00066	0.0027	0.20	0.000005	19.5	0.221	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00019	0.0002	0.0080	0.0001
HC-3-33	04-Oct-11	33	0.00071	0.0027	0.20	0.000005	18.8	0.236	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00020	0.0002	0.0154	0.0001
HC-3-34	11-Oct-11	34	0.00075	0.0027	0.20	0.000005	18.1	0.250	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00020	0.0002	0.0229	0.0001
HC-3-35	18-Oct-11	35	0.00080	0.0028	0.20	0.000005	17.4	0.265	0.00002	0.000008	0.000005	0.0004	0.0005	0.00001	0.00020	0.0002	0.0303	0.0001
HC-3-36	25-Oct-11	36	0.00077	0.0028	0.20	0.000005	16.6	0.262	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00022	0.0002	0.0230	0.0001
HC-3-37	01-Nov-11	37	0.00073	0.0029	0.20	0.000005	15.8	0.259	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00023	0.0002	0.0156	0.0001
HC-3-38	08-Nov-11	38	0.00070	0.0030	0.20	0.000005	14.9	0.255	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00025	0.0002	0.0083	0.0001
HC-3-39	15-Nov-11	39	0.00066	0.0031	0.20	0.000005	14.1	0.252	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00027	0.0002	0.0009	0.0001
HC-3-40	22-Nov-11	40	0.00066	0.0031	0.20	0.000006	13.4	0.247	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00024	0.0002	0.0009	0.0001
HC-3-41	29-Nov-11	41	0.00066	0.0032	0.20	0.000007	12.7	0.242	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00022	0.0002	0.0008	0.0001
HC-3-42	06-Dec-11	42	0.00065	0.0032	0.20	0.000007	11.9	0.237	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00020	0.0002	0.0008	0.0001
HC-3-43	13-Dec-11	43	0.00065	0.0032	0.20	0.000008	11.2	0.232	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00018	0.0002	0.0007	0.0001
HC-3-44	20-Dec-11	44	0.00063	0.0032	0.20	0.000008	10.4	0.217	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00017	0.0002	0.0009	0.0001
HC-3-45	27-Dec-11	45	0.00061	0.0031	0.20	0.000008	9.6	0.202	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00017	0.0002	0.0011	0.0001
HC-3-46	03-Jan-12	46	0.00059	0.0031	0.20	0.000007	8.8	0.186	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0012	0.0001
HC-3-47	10-Jan-12	47	0.00057	0.0030	0.20	0.000007	7.9	0.171	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00017	0.0002	0.0014	0.0001
HC-3-48	17-Jan-12	48	0.00061	0.0029	0.20	0.000007	7.6	0.176	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00016	0.0002	0.0013	0.0001
HC-3-49	24-Jan-12	49	0.00065	0.0028	0.20	0.000006	7.2	0.181	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0012	0.0001
HC-3-50	31-Jan-12	50	0.00068	0.0027	0.20	0.000006	6.9	0.186	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0010	0.0001
HC-3-51	07-Feb-12	51	0.00072	0.0027	0.20	0.000005	6.5	0.191	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0009	0.0001
HC-3-52	14-Feb-12	52	0.00074	0.0026	0.20	0.000005	6.1	0.188	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0010	0.0001
HC-3-53	21-Feb-12	53	0.00076	0.0026	0.20	0.000005	5.7	0.184	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0011	0.0001
HC-3-54	28-Feb-12	54	0.00077	0.0025	0.20	0.000005	5.3	0.181	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0011	0.0001
HC-3-55	06-Mar-12	55	0.00079	0.0025	0.20	0.000005	4.9	0.177	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0012	0.0001
HC-3-56	13-Mar-12	56	0.00075	0.0024	0.20	0.000005	4.5	0.170	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00014	0.0002	0.0011	0.0001
HC-3-57	20-Mar-12	57	0.00071	0.0023	0.20	0.000005	4.2	0.162	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00014	0.0002	0.0010	0.0001
HC-3-58	27-Mar-12	58	0.00066	0.0022	0.20	0.000005	3.8	0.155	0.00002	0.000008	0.000005	0.0004	0.0005	0.00001	0.00014	0.0002	0.0008	0.0001
HC-3-59	03-Apr-12	59	0.00062	0.0022	0.20	0.000005	3.4	0.147	0.00002	0.000007	0.000005	0.0004	0.0005	0.00001	0.00014	0.0002	0.0007	0.0001
HC-3-60	10-Apr-12	60	0.00065	0.0022	0.20	0.000005	3.4	0.147	0.00002	0.000009	0.000005	0.0004	0.0005	0.00001	0.00014	0.0002	0.0008	0.0001
HC-3-61	17-Apr-12	61	0.00067	0.0023	0.20	0.000005	3.3	0.146	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00014	0.0002	0.0008	0.0001
HC-3-62	24-Apr-12	62	0.00070	0.0024	0.20	0.000005	3.2	0.146	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00014	0.0002	0.0009	0.0001
HC-3-63	01-May-12	63	0.00073	0.0025	0.20	0.000005	3.1	0.145	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0010	0.0001
HC-3-64	08-May-12	64	0.00070	0.0023	0.20	0.000005	3.0	0.147	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0009	0.0001
HC-3-65	15-May-12	65	0.00067	0.0022	0.19	0.000005	2.8	0.149	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0009	0.0001
HC-3-66	22-May-12	66	0.00064	0.0021	0.19	0.000005	2.6	0.151	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0009	0.0001
HC-3-67	29-May-12	67	0.00061	0.0020	0.18	0.000005	2.4	0.153	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0008	0.0001
HC-3-68	05-Jun-12	68	0.00063	0.0021	0.18	0.000005	2.3	0.154	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0008	0.0001
HC-3-69	12-Jun-12	69	0.00066	0.0022	0.19	0.000005	2.1	0.155	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-3-70	19-Jun-12	70	0.00068	0.0023	0.19	0.000005	1.9	0.155	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-3-71	26-Jun-12	71	0.00071	0.0024	0.19	0.000005	1.8	0.156	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0007	0.0001
HC-3-72	03-Jul-12	72	0.00078	0.0023	0.19	0.000005	1.7	0.161	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0007	0.0001
HC-3-73	10-Jul-12	73	0.00084	0.0023	0.19	0.000005	1.6	0.166	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0007	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-3-74	17-Jul-12	74	0.00091	0.0022	0.19	0.000005	1.5	0.171	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00009	0.0002	0.0006	0.0001
HC-3-75	24-Jul-12	75	0.00098	0.0021	0.19	0.000005	1.5	0.176	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00009	0.0002	0.0006	0.0001
HC-3-76	31-Jul-12	76	0.00094	0.0021	0.19	0.000005	1.4	0.172	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00009	0.0002	0.0008	0.0001
HC-3-77	07-Aug-12	77	0.00090	0.0021	0.20	0.000005	1.3	0.169	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-3-78	14-Aug-12	78	0.00087	0.0021	0.20	0.000005	1.2	0.165	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00010	0.0002	0.0010	0.0001
HC-3-79	21-Aug-12	79	0.00083	0.0021	0.20	0.000005	1.1	0.161	0.00002	0.000011	0.000005	0.0005	0.0005	0.00001	0.00011	0.0002	0.0011	0.0001
HC-3-80	28-Aug-12	80	0.00081	0.0021	0.21	0.000005	1.0	0.162	0.00002	0.000011	0.000005	0.0005	0.0005	0.00001	0.00010	0.0002	0.0012	0.0001
HC-3-81	04-Sep-12	81	0.00080	0.0021	0.21	0.000005	1.0	0.164	0.00002	0.000010	0.000005	0.0005	0.0005	0.00001	0.00010	0.0002	0.0013	0.0001
HC-3-82	11-Sep-12	82	0.00078	0.0021	0.22	0.000005	0.9	0.165	0.00002	0.000010	0.000005	0.0005	0.0005	0.00001	0.00010	0.0002	0.0014	0.0001
HC-3-83	18-Sep-12	83	0.00076	0.0021	0.22	0.000005	0.9	0.166	0.00002	0.000009	0.000005	0.0005	0.0005	0.00001	0.00009	0.0003	0.0015	0.0001
HC-3-84	25-Sep-12	84	0.00077	0.0021	0.21	0.000005	0.8	0.162	0.00002	0.000010	0.000005	0.0004	0.0005	0.00001	0.00009	0.0002	0.0014	0.0001
HC-3-85	02-Oct-12	85	0.00078	0.0022	0.20	0.000005	0.8	0.159	0.00002	0.000010	0.000005	0.0004	0.0005	0.00001	0.00009	0.0002	0.0012	0.0001
HC-3-86	09-Oct-12	86	0.00078	0.0022	0.19	0.000005	0.7	0.155	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00008	0.0002	0.0010	0.0001
HC-3-87	16-Oct-12	87	0.00079	0.0023	0.18	0.000005	0.7	0.151	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0008	0.0001
HC-3-88	23-Oct-12	88	0.00078	0.0022	0.19	0.000005	0.6	0.153	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0009	0.0001
HC-3-89	30-Oct-12	89	0.00078	0.0021	0.21	0.000005	0.6	0.156	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-3-90	06-Nov-12	90	0.00077	0.0021	0.22	0.000005	0.6	0.158	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0010	0.0001
HC-3-91	13-Nov-12	91	0.00077	0.0020	0.23	0.000005	0.6	0.160	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0011	0.0001
HC-3-92	20-Nov-12	92	0.00075	0.0020	0.22	0.000005	0.5	0.153	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0010	0.0001
HC-3-93	27-Nov-12	93	0.00074	0.0020	0.22	0.000005	0.5	0.147	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0009	0.0001
HC-3-94	04-Dec-12	94	0.00073	0.0020	0.21	0.000005	0.5	0.140	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0008	0.0001
HC-3-95	11-Dec-12	95	0.00072	0.0020	0.20	0.000005	0.4	0.133	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0007	0.0001
HC-3-96	18-Dec-12	96	0.00068	0.0020	0.20	0.000005	0.4	0.134	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0007	0.0001
HC-3-97	25-Dec-12	97	0.00065	0.0021	0.20	0.000005	0.4	0.135	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0008	0.0001
HC-3-98	01-Jan-13	98	0.00061	0.0021	0.20	0.000005	0.4	0.135	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0008	0.0001
HC-3-99	08-Jan-13	99	0.00058	0.0021	0.20	0.000005	0.4	0.136	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0008	0.0001
HC-3-100	15-Jan-13	100	0.00060	0.0021	0.20	0.000005	0.4	0.133	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0008	0.0001
HC-3-101	22-Jan-13	101	0.00062	0.0021	0.19	0.000005	0.4	0.130	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-3-102	29-Jan-13	102	0.00065	0.0021	0.19	0.000005	0.4	0.127	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00009	0.0002	0.0009	0.0001
HC-3-103	05-Feb-13	103	0.00067	0.0021	0.18	0.000005	0.4	0.124	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00009	0.0002	0.0009	0.0001
HC-3-104	12-Feb-13	104	0.00066	0.0022	0.19	0.000005	0.3	0.127	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0010	0.0001
HC-3-105	19-Feb-13	105	0.00064	0.0024	0.20	0.000005	0.3	0.129	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00010	0.0002	0.0010	0.0001
HC-3-106	26-Feb-13	106	0.00063	0.0025	0.21	0.000005	0.3	0.132	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00011	0.0002	0.0010	0.0001
HC-3-107	05-Mar-13	107	0.00062	0.0026	0.22	0.000005	0.3	0.134	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0010	0.0001
HC-3-108	12-Mar-13	108	0.00060	0.0026	0.21	0.000005	0.3	0.128	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0009	0.0001
HC-3-109	19-Mar-13	109	0.00058	0.0025	0.20	0.000006	0.3	0.121	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00009	0.0002	0.0009	0.0001
HC-3-110	26-Mar-13	110	0.00056	0.0025	0.18	0.000006	0.3	0.115	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00008	0.0002	0.0008	0.0001
HC-3-111	02-Apr-13	111	0.00054	0.0025	0.17	0.000006	0.2	0.108	0.00002	0.000007	0.000005	0.0004	0.0005	0.00001	0.00007	0.0002	0.0008	0.0001
HC-3-112	09-Apr-13	112	0.00054	0.0023	0.17	0.000006	0.3	0.108	0.00002	0.000007	0.000005	0.0003	0.0005	0.00001	0.00007	0.0002	0.0007	0.0001
HC-3-113	16-Apr-13	113	0.00053	0.0021	0.18	0.000006	0.3	0.108	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00008	0.0003	0.0007	0.0001
HC-3-114	23-Apr-13	114	0.00053	0.0020	0.18	0.000005	0.3	0.108	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0003	0.0007	0.0001
HC-3-115	30-Apr-13	115	0.00053	0.0018	0.18	0.000005	0.3	0.108	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0003	0.0007	0.0001
HC-3-116	07-May-13	116	0.00054	0.0020	0.19	0.000005	0.3	0.111	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00009	0.0003	0.0007	0.0001
HC-3-117	14-May-13	117	0.00054	0.0021	0.19	0.000005	0.3	0.114	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00009	0.0004	0.0006	0.0001
HC-3-118	21-May-13	118	0.00055	0.0023	0.20	0.000005	0.3	0.116	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00009	0.0005	0.0006	0.0001
HC-3-119	28-May-13	119	0.00056	0.0025	0.20	0.000005	0.2	0.119	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00009	0.0005	0.0005	0.0001
HC-3-120	04-Jun-13	120	0.00055	0.0024	0.20	0.000005	0.2	0.117	0.00002	0.000009	0.000005	0.0004	0.0005	0.00001	0.00009	0.0005	0.0005	0.0001
HC-3-121	11-Jun-13	121	0.00055	0.0023	0.20	0.000005	0.2	0.116	0.00002	0.000009	0.000005	0.0006	0.0005	0.00001	0.00009	0.0004	0.0005	0.0001
HC-3-122	18-Jun-13	122	0.00055	0.0023	0.20	0.000005	0.2	0.114	0.00002	0.000008	0.000005	0.0009	0.0005	0.00001	0.00008	0.0003	0.0006	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-3-123	25-Jun-13	123	0.00054	0.0022	0.20	0.000005	0.2	0.112	0.00002	0.000007	0.000005	0.0011	0.0005	0.00001	0.00008	0.0002	0.0006	0.0001
HC-3-124	02-Jul-13	124	0.00054	0.0021	0.20	0.000005	0.2	0.111	0.00002	0.000008	0.000005	0.0009	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-125	09-Jul-13	125	0.00054	0.0021	0.19	0.000005	0.2	0.109	0.00002	0.000008	0.000005	0.0007	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-126	16-Jul-13	126	0.00053	0.0020	0.19	0.000005	0.2	0.108	0.00002	0.000009	0.000005	0.0005	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-127	23-Jul-13	127	0.00053	0.0019	0.18	0.000005	0.2	0.106	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00007	0.0002	0.0005	0.0001
HC-3-128	30-Jul-13	128	0.00052	0.0020	0.18	0.000005	0.2	0.105	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-3-129	06-Aug-13	129	0.00051	0.0020	0.19	0.000005	0.2	0.103	0.00002	0.000007	0.000005	0.0003	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-3-130	13-Aug-13	130	0.00051	0.0020	0.19	0.000005	0.2	0.102	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-3-131	20-Aug-13	131	0.00050	0.0020	0.19	0.000005	0.2	0.100	0.00002	0.000005	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-3-132	27-Aug-13	132	0.00052	0.0022	0.19	0.000005	0.2	0.103	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0005	0.0001
HC-3-133	03-Sep-13	133	0.00055	0.0024	0.20	0.000005	0.2	0.106	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-134	10-Sep-13	134	0.00057	0.0026	0.20	0.000005	0.2	0.108	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0006	0.0001
HC-3-135	17-Sep-13	135	0.00060	0.0028	0.20	0.000005	0.2	0.111	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0007	0.0001
HC-3-136	24-Sep-13	136	0.00058	0.0028	0.21	0.000005	0.2	0.109	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0006	0.0001
HC-3-137	01-Oct-13	137	0.00057	0.0029	0.23	0.000005	0.2	0.107	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0006	0.0001
HC-3-138	08-Oct-13	138	0.00055	0.0029	0.24	0.000005	0.2	0.105	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-139	15-Oct-13	139	0.00053	0.0030	0.25	0.000005	0.2	0.103	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-140	22-Oct-13	140	0.00054	0.0029	0.25	0.000005	0.2	0.104	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0007	0.0001
HC-3-141	29-Oct-13	141	0.00055	0.0028	0.25	0.000005	0.2	0.105	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0010	0.0001
HC-3-142	05-Nov-13	142	0.00056	0.0027	0.25	0.000005	0.2	0.105	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0012	0.0001
HC-3-143	12-Nov-13	143	0.00057	0.0026	0.25	0.000005	0.2	0.106	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0015	0.0001
HC-3-144	19-Nov-13	144	0.00057	0.0025	0.24	0.000005	0.2	0.107	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0012	0.0001
HC-3-145	26-Nov-13	145	0.00056	0.0024	0.23	0.000005	0.2	0.107	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0010	0.0001
HC-3-146	03-Dec-13	146	0.00056	0.0023	0.22	0.000005	0.2	0.108	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0007	0.0001
HC-3-147	10-Dec-13	147	0.00055	0.0023	0.21	0.000005	0.2	0.108	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0003	0.0004	0.0001
HC-3-148	17-Dec-13	148	0.00055	0.0023	0.22	0.000005	0.2	0.108	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-3-149	24-Dec-13	149	0.00055	0.0024	0.22	0.000005	0.2	0.107	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-3-150	31-Dec-13	150	0.00055	0.0024	0.23	0.000005	0.2	0.107	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-3-151	07-Jan-14	151	0.00055	0.0025	0.23	0.000005	0.2	0.106	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-3-152	14-Jan-14	152	0.00053	0.0024	0.23	0.000005	0.2	0.105	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0004	0.0001
HC-3-153	21-Jan-14	153	0.00051	0.0024	0.23	0.000005	0.2	0.104	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-154	28-Jan-14	154	0.00050	0.0023	0.23	0.000005	0.2	0.102	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-155	04-Feb-14	155	0.00048	0.0023	0.23	0.000005	0.2	0.101	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-156	11-Feb-14	156	0.00048	0.0023	0.22	0.000005	0.2	0.099	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-157	18-Feb-14	157	0.00048	0.0022	0.22	0.000005	0.2	0.098	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0005	0.0001
HC-3-158	25-Feb-14	158	0.00049	0.0022	0.21	0.000005	0.2	0.096	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0006	0.0001
HC-3-159	04-Mar-14	159	0.00049	0.0021	0.20	0.000005	0.2	0.095	0.00002	0.000009	0.000005	0.0002	0.0006	0.00001	0.00008	0.0002	0.0006	0.0001
HC-3-160	11-Mar-14	160	0.00049	0.0022	0.21	0.000005	0.2	0.093	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0005	0.0001
HC-3-161	18-Mar-14	161	0.00049	0.0022	0.21	0.000005	0.1	0.092	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0005	0.0001
HC-3-162	25-Mar-14	162	0.00049	0.0022	0.22	0.000005	0.1	0.090	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-3-163	01-Apr-14	163	0.00050	0.0022	0.22	0.000005	0.1	0.089	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0004	0.0001
HC-3-164	08-Apr-14	164	0.00050	0.0022	0.23	0.000005	0.1	0.091	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0004	0.0001
HC-3-165	15-Apr-14	165	0.00051	0.0022	0.24	0.000005	0.1	0.093	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0005	0.0001
HC-3-166	22-Apr-14	166	0.00051	0.0022	0.24	0.000005	0.1	0.095	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0005	0.0001
HC-3-167	29-Apr-14	167	0.00051	0.0023	0.25	0.000005	0.2	0.097	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0006	0.0001
<b>Mean all weeks</b>			<b>0.00063</b>	<b>0.0030</b>	<b>0.23</b>	<b>0.000005</b>	<b>9.3</b>	<b>0.126</b>	<b>0.00002</b>	<b>0.000009</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0005</b>	<b>0.00001</b>	<b>0.00016</b>	<b>0.0003</b>	<b>0.0015</b>	<b>0.0001</b>

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC5 Middle Gates D - CCR																		
HC-5-0	15-Feb-11	0	0.00102	0.0070	1.40	0.000022	40.2	0.018	0.00002	0.000005	0.000014	0.0001	0.0009	0.00090	0.00019	0.0132	0.0017	0.0002
HC-5-1	22-Feb-11	1	0.00091	0.0146	1.00	0.000005	64.8	0.027	0.00002	0.000003	0.000005	0.0000	0.0005	0.00095	0.00144	0.0048	0.0024	0.0001
HC-5-2	01-Mar-11	2	0.00062	0.0102	0.70	0.000005	60.3	0.018	0.00002	0.000007	0.000005	0.0000	0.0005	0.00065	0.00185	0.0062	0.0007	0.0001
HC-5-3	08-Mar-11	3	0.00062	0.0065	0.80	0.000005	50.2	0.017	0.00002	0.000004	0.000007	0.0000	0.0006	0.00038	0.00156	0.0050	0.0003	0.0001
HC-5-4	15-Mar-11	4	0.00067	0.0051	0.80	0.000011	45.8	0.017	0.00002	0.000004	0.000005	0.0000	0.0005	0.00026	0.00145	0.0053	0.0004	0.0001
HC-5-5	22-Mar-11	5	0.00062	0.0036	0.80	0.000007	39.8	0.018	0.00002	0.000002	0.000005	0.0000	0.0005	0.00019	0.00122	0.0036	0.0004	0.0001
HC-5-6	29-Mar-11	6	0.00062	0.0034	0.70	0.000005	40.8	0.018	0.00002	0.000003	0.000005	0.0000	0.0005	0.00017	0.00120	0.0038	0.0004	0.0001
HC-5-7	05-Apr-11	7	0.00052	0.0032	0.70	0.000005	35.8	0.020	0.00002	0.000002	0.000005	0.0000	0.0005	0.00012	0.00099	0.0030	0.0005	0.0001
HC-5-8	12-Apr-11	8	0.00059	0.0029	0.70	0.000005	34.6	0.018	0.00002	0.000003	0.000005	0.0000	0.0005	0.00006	0.00055	0.0031	0.0007	0.0001
HC-5-9	19-Apr-11	9	0.00052	0.0022	0.60	0.000005	32.5	0.020	0.00002	0.000003	0.000005	0.0000	0.0005	0.00009	0.00086	0.0027	0.0012	0.0001
HC-5-10	26-Apr-11	10	0.00052	0.0022	0.70	0.000005	25.4	0.012	0.00002	0.000003	0.000005	0.0000	0.0005	0.00008	0.00070	0.0030	0.0009	0.0001
HC-5-11	03-May-11	11	0.00055	0.0022	0.70	0.000005	27.2	0.017	0.00002	0.000007	0.000005	0.0000	0.0005	0.00008	0.00073	0.0025	0.0012	0.0001
HC-5-12	10-May-11	12	0.00051	0.0020	0.70	0.000006	27.0	0.017	0.00002	0.000004	0.000005	0.0000	0.0005	0.00006	0.00058	0.0022	0.0006	0.0001
HC-5-13	17-May-11	13	0.00053	0.0020	0.60	0.000005	25.9	0.019	0.00002	0.000002	0.000005	0.0000	0.0005	0.00004	0.00048	0.0021	0.0007	0.0001
HC-5-14	24-May-11	14	0.00057	0.0016	0.60	0.000005	25.1	0.023	0.00002	0.000003	0.000005	0.0000	0.0005	0.00005	0.00050	0.0017	0.0004	0.0001
HC-5-15	31-May-11	15	0.00042	0.0018	0.50	0.000007	24.5	0.021	0.00002	0.000003	0.000005	0.0000	0.0006	0.00004	0.00052	0.0019	0.0011	0.0001
HC-5-16	07-Jun-11	16	0.00054	0.0016	0.60	0.000005	22.5	0.021	0.00002	0.000002	0.000005	0.0000	0.0005	0.00004	0.00050	0.0018	0.0005	0.0001
HC-5-17	14-Jun-11	17	0.00054	0.0015	0.50	0.000005	22.4	0.023	0.00002	0.000002	0.000005	0.0000	0.0005	0.00004	0.00041	0.0014	0.0015	0.0002
HC-5-18	21-Jun-11	18	0.00066	0.0014	0.50	0.000005	27.8	0.044	0.00002	0.000003	0.000005	0.0000	0.0005	0.00003	0.00027	0.0009	0.0013	0.0001
HC-5-19	28-Jun-11	19	0.00061	0.0014	0.50	0.000005	28.3	0.047	0.00002	0.000003	0.000005	0.0001	0.0005	0.00001	0.00029	0.0012	0.0015	0.0001
HC-5-20	05-Jul-11	20	0.00075	0.0013	0.50	0.000005	27.5	0.074	0.00002	0.000004	0.000005	0.0001	0.0005	0.00001	0.00026	0.0010	0.0014	0.0001
HC-5-21	12-Jul-11	21	0.00088	0.0013	0.50	0.000005	26.8	0.101	0.00002	0.000004	0.000005	0.0000	0.0005	0.00001	0.00023	0.0008	0.0012	0.0001
HC-5-22	19-Jul-11	22	0.00102	0.0012	0.50	0.000005	26.0	0.127	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00020	0.0006	0.0011	0.0001
HC-5-23	26-Jul-11	23	0.00115	0.0012	0.50	0.000005	25.2	0.154	0.00002	0.000005	0.000005	0.0000	0.0005	0.00001	0.00017	0.0004	0.0009	0.0001
HC-5-24	02-Aug-11	24	0.00114	0.0011	0.48	0.000005	23.9	0.171	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00019	0.0004	0.0009	0.0001
HC-5-25	09-Aug-11	25	0.00114	0.0011	0.45	0.000005	22.7	0.187	0.00002	0.000006	0.000005	0.0000	0.0005	0.00001	0.00022	0.0004	0.0010	0.0001
HC-5-26	16-Aug-11	26	0.00113	0.0011	0.43	0.000005	21.4	0.204	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00025	0.0003	0.0010	0.0001
HC-5-27	23-Aug-11	27	0.00112	0.0011	0.40	0.000005	20.1	0.220	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00027	0.0003	0.0010	0.0001
HC-5-28	30-Aug-11	28	0.00119	0.0011	0.40	0.000005	19.2	0.248	0.00002	0.000007	0.000005	0.0000	0.0005	0.00001	0.00025	0.0003	0.0009	0.0001
HC-5-29	06-Sep-11	29	0.00125	0.0011	0.40	0.000005	18.3	0.276	0.00002	0.000007	0.000005	0.0001	0.0005	0.00001	0.00022	0.0003	0.0007	0.0001
HC-5-30	13-Sep-11	30	0.00132	0.0011	0.40	0.000005	17.4	0.304	0.00002	0.000006	0.000005	0.0001	0.0005	0.00001	0.00020	0.0002	0.0006	0.0001
HC-5-31	20-Sep-11	31	0.00138	0.0011	0.40	0.000005	16.5	0.332	0.00002	0.000006	0.000005	0.0001	0.0005	0.00001	0.00017	0.0002	0.0004	0.0001
HC-5-32	27-Sep-11	32	0.00142	0.0011	0.40	0.000005	15.4	0.341	0.00002	0.000006	0.000005	0.0001	0.0005	0.00001	0.00016	0.0002	0.0005	0.0001
HC-5-33	04-Oct-11	33	0.00145	0.0011	0.40	0.000005	14.2	0.350	0.00002	0.000007	0.000005	0.0001	0.0005	0.00001	0.00016	0.0002	0.0006	0.0001
HC-5-34	11-Oct-11	34	0.00149	0.0012	0.40	0.000005	13.1	0.359	0.00002	0.000007	0.000005	0.0001	0.0005	0.00001	0.00015	0.0002	0.0006	0.0001
HC-5-35	18-Oct-11	35	0.00152	0.0012	0.40	0.000005	11.9	0.368	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0007	0.0001
HC-5-36	25-Oct-11	36	0.00152	0.0012	0.38	0.000005	10.9	0.364	0.00002	0.000008	0.000005	0.0001	0.0005	0.00001	0.00015	0.0002	0.0008	0.0001
HC-5-37	01-Nov-11	37	0.00152	0.0012	0.35	0.000005	9.9	0.359	0.00002	0.000008	0.000005	0.0001	0.0005	0.00001	0.00016	0.0002	0.0009	0.0001
HC-5-38	08-Nov-11	38	0.00151	0.0012	0.33	0.000005	8.8	0.355	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00017	0.0002	0.0010	0.0001
HC-5-39	15-Nov-11	39	0.00151	0.0013	0.30	0.000005	7.8	0.350	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00018	0.0002	0.0011	0.0001
HC-5-40	22-Nov-11	40	0.00155	0.0013	0.30	0.000005	7.4	0.336	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00017	0.0002	0.0011	0.0001
HC-5-41	29-Nov-11	41	0.00158	0.0013	0.30	0.000006	6.9	0.322	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00017	0.0002	0.0011	0.0001
HC-5-42	06-Dec-11	42	0.00162	0.0014	0.30	0.000006	6.5	0.307	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00016	0.0002	0.0011	0.0001
HC-5-43	13-Dec-11	43	0.00165	0.0014	0.30	0.000006	6.1	0.293	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00016	0.0002	0.0011	0.0001
HC-5-44	20-Dec-11	44	0.00163	0.0014	0.30	0.000006	5.5	0.280	0.00002	0.000009	0.000005	0.0001	0.0005	0.00001	0.00015	0.0002	0.0011	0.0001
HC-5-45	27-Dec-11	45	0.00161	0.0014	0.30	0.000006	5.0	0.267	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0010	0.0001
HC-5-46	03-Jan-12	46	0.00158	0.0013	0.30	0.000005	4.5	0.253	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0010	0.0001
HC-5-47	10-Jan-12	47	0.00156	0.0013	0.30	0.000005	3.9	0.240	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00012	0.0002	0.0009	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-5-48	17-Jan-12	48	0.00151	0.0013	0.30	0.000005	3.6	0.239	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0008	0.0001
HC-5-49	24-Jan-12	49	0.00147	0.0013	0.30	0.000005	3.2	0.238	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00013	0.0002	0.0008	0.0001
HC-5-50	31-Jan-12	50	0.00142	0.0012	0.30	0.000005	2.8	0.236	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0007	0.0001
HC-5-51	07-Feb-12	51	0.00137	0.0012	0.30	0.000005	2.4	0.235	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00015	0.0002	0.0006	0.0001
HC-5-52	14-Feb-12	52	0.00144	0.0011	0.30	0.000005	2.2	0.231	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00014	0.0002	0.0010	0.0001
HC-5-53	21-Feb-12	53	0.00150	0.0011	0.30	0.000005	2.1	0.226	0.00002	0.000007	0.000005	0.0003	0.0005	0.00001	0.00013	0.0002	0.0014	0.0001
HC-5-54	28-Feb-12	54	0.00157	0.0010	0.30	0.000005	1.9	0.222	0.00002	0.000007	0.000005	0.0003	0.0005	0.00001	0.00012	0.0002	0.0017	0.0001
HC-5-55	06-Mar-12	55	0.00163	0.0010	0.30	0.000005	1.7	0.217	0.00002	0.000007	0.000005	0.0003	0.0005	0.00001	0.00012	0.0002	0.0021	0.0001
HC-5-56	13-Mar-12	56	0.00163	0.0010	0.30	0.000005	1.5	0.215	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00011	0.0002	0.0019	0.0001
HC-5-57	20-Mar-12	57	0.00163	0.0009	0.30	0.000005	1.4	0.213	0.00002	0.000008	0.000005	0.0003	0.0005	0.00001	0.00011	0.0002	0.0016	0.0001
HC-5-58	27-Mar-12	58	0.00163	0.0009	0.30	0.000005	1.2	0.211	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0014	0.0001
HC-5-59	03-Apr-12	59	0.00163	0.0009	0.30	0.000005	1.1	0.209	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00010	0.0002	0.0011	0.0001
HC-5-60	10-Apr-12	60	0.00159	0.0009	0.30	0.000005	1.1	0.207	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00009	0.0002	0.0010	0.0001
HC-5-61	17-Apr-12	61	0.00156	0.0008	0.30	0.000005	1.1	0.205	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00008	0.0002	0.0009	0.0001
HC-5-62	24-Apr-12	62	0.00152	0.0008	0.29	0.000005	1.0	0.203	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00007	0.0002	0.0009	0.0001
HC-5-63	01-May-12	63	0.00148	0.0008	0.29	0.000005	1.0	0.201	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-64	08-May-12	64	0.00156	0.0008	0.29	0.000005	1.0	0.203	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-65	15-May-12	65	0.00164	0.0008	0.28	0.000005	0.9	0.206	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-66	22-May-12	66	0.00172	0.0008	0.28	0.000005	0.8	0.208	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-67	29-May-12	67	0.00180	0.0008	0.27	0.000005	0.7	0.210	0.00002	0.000007	0.000005	0.0003	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-68	05-Jun-12	68	0.00172	0.0008	0.27	0.000005	0.7	0.212	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-69	12-Jun-12	69	0.00164	0.0008	0.28	0.000005	0.6	0.215	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-70	19-Jun-12	70	0.00156	0.0008	0.28	0.000005	0.6	0.217	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-71	26-Jun-12	71	0.00148	0.0008	0.28	0.000005	0.5	0.219	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-72	03-Jul-12	72	0.00153	0.0008	0.28	0.000005	0.5	0.221	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0009	0.0001
HC-5-73	10-Jul-12	73	0.00158	0.0008	0.29	0.000005	0.5	0.224	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0009	0.0001
HC-5-74	17-Jul-12	74	0.00163	0.0007	0.29	0.000005	0.5	0.226	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0009	0.0001
HC-5-75	24-Jul-12	75	0.00168	0.0007	0.29	0.000005	0.5	0.228	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00005	0.0002	0.0010	0.0001
HC-5-76	31-Jul-12	76	0.00172	0.0007	0.28	0.000005	0.5	0.226	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0009	0.0001
HC-5-77	07-Aug-12	77	0.00176	0.0007	0.28	0.000005	0.4	0.225	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0009	0.0001
HC-5-78	14-Aug-12	78	0.00179	0.0007	0.27	0.000005	0.4	0.223	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0008	0.0001
HC-5-79	21-Aug-12	79	0.00183	0.0007	0.26	0.000005	0.4	0.221	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0008	0.0001
HC-5-80	28-Aug-12	80	0.00173	0.0007	0.27	0.000005	0.4	0.223	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00006	0.0002	0.0011	0.0001
HC-5-81	04-Sep-12	81	0.00163	0.0007	0.27	0.000005	0.4	0.224	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00006	0.0003	0.0015	0.0001
HC-5-82	11-Sep-12	82	0.00152	0.0007	0.28	0.000005	0.3	0.226	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00006	0.0003	0.0018	0.0001
HC-5-83	18-Sep-12	83	0.00142	0.0007	0.28	0.000005	0.3	0.227	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00006	0.0003	0.0021	0.0001
HC-5-84	25-Sep-12	84	0.00152	0.0007	0.27	0.000005	0.3	0.224	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00005	0.0003	0.0019	0.0001
HC-5-85	02-Oct-12	85	0.00161	0.0007	0.26	0.000005	0.3	0.221	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00004	0.0003	0.0017	0.0001
HC-5-86	09-Oct-12	86	0.00171	0.0007	0.24	0.000005	0.3	0.217	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0015	0.0001
HC-5-87	16-Oct-12	87	0.00180	0.0007	0.23	0.000005	0.3	0.214	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0013	0.0001
HC-5-88	23-Oct-12	88	0.00178	0.0006	0.24	0.000005	0.3	0.216	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0012	0.0001
HC-5-89	30-Oct-12	89	0.00177	0.0006	0.25	0.000005	0.3	0.217	0.00002	0.000010	0.000005	0.0003	0.0005	0.00001	0.00004	0.0002	0.0011	0.0001
HC-5-90	06-Nov-12	90	0.00175	0.0005	0.25	0.000005	0.3	0.219	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00004	0.0002	0.0010	0.0001
HC-5-91	13-Nov-12	91	0.00173	0.0005	0.26	0.000005	0.3	0.220	0.00003	0.000013	0.000005	0.0004	0.0005	0.00001	0.00004	0.0002	0.0009	0.0001
HC-5-92	20-Nov-12	92	0.00176	0.0005	0.26	0.000005	0.2	0.213	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00004	0.0002	0.0009	0.0001
HC-5-93	27-Nov-12	93	0.00179	0.0006	0.26	0.000005	0.2	0.207	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00004	0.0002	0.0009	0.0001
HC-5-94	04-Dec-12	94	0.00181	0.0006	0.25	0.000005	0.2	0.200	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0009	0.0001
HC-5-95	11-Dec-12	95	0.00184	0.0006	0.25	0.000005	0.2	0.193	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00004	0.0002	0.0008	0.0001
HC-5-96	18-Dec-12	96	0.00178	0.0007	0.25	0.000005	0.2	0.196	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0009	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-5-97	25-Dec-12	97	0.00171	0.0007	0.24	0.000005	0.2	0.199	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0010	0.0001
HC-5-98	01-Jan-13	98	0.00165	0.0008	0.24	0.000005	0.2	0.201	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0011	0.0001
HC-5-99	08-Jan-13	99	0.00158	0.0008	0.23	0.000005	0.2	0.204	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0012	0.0001
HC-5-100	15-Jan-13	100	0.00158	0.0007	0.22	0.000005	0.2	0.201	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0012	0.0001
HC-5-101	22-Jan-13	101	0.00158	0.0007	0.22	0.000005	0.2	0.197	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00003	0.0003	0.0013	0.0001
HC-5-102	29-Jan-13	102	0.00157	0.0006	0.21	0.000005	0.2	0.194	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00003	0.0003	0.0013	0.0001
HC-5-103	05-Feb-13	103	0.00157	0.0005	0.20	0.000005	0.2	0.190	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00004	0.0004	0.0014	0.0001
HC-5-104	12-Feb-13	104	0.00159	0.0005	0.22	0.000005	0.2	0.192	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00004	0.0003	0.0015	0.0001
HC-5-105	19-Feb-13	105	0.00161	0.0006	0.23	0.000005	0.2	0.194	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00004	0.0003	0.0016	0.0001
HC-5-106	26-Feb-13	106	0.00163	0.0006	0.25	0.000005	0.2	0.195	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00004	0.0003	0.0017	0.0001
HC-5-107	05-Mar-13	107	0.00165	0.0006	0.26	0.000005	0.2	0.197	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00005	0.0003	0.0018	0.0001
HC-5-108	12-Mar-13	108	0.00156	0.0006	0.25	0.000005	0.2	0.192	0.00002	0.000009	0.000005	0.0003	0.0005	0.00001	0.00004	0.0002	0.0015	0.0001
HC-5-109	19-Mar-13	109	0.00147	0.0005	0.24	0.000005	0.2	0.187	0.00002	0.000009	0.000005	0.0004	0.0005	0.00001	0.00004	0.0002	0.0013	0.0001
HC-5-110	26-Mar-13	110	0.00137	0.0005	0.23	0.000005	0.2	0.181	0.00002	0.000009	0.000005	0.0004	0.0005	0.00001	0.00004	0.0002	0.0010	0.0001
HC-5-111	02-Apr-13	111	0.00128	0.0005	0.22	0.000005	0.2	0.176	0.00002	0.000009	0.000005	0.0005	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-5-112	09-Apr-13	112	0.00131	0.0005	0.22	0.000005	0.2	0.177	0.00002	0.000010	0.000005	0.0004	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-5-113	16-Apr-13	113	0.00133	0.0005	0.22	0.000005	0.2	0.179	0.00002	0.000011	0.000005	0.0004	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-5-114	23-Apr-13	114	0.00136	0.0005	0.21	0.000005	0.2	0.180	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-5-115	30-Apr-13	115	0.00138	0.0005	0.21	0.000005	0.2	0.181	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0007	0.0001
HC-5-116	07-May-13	116	0.00133	0.0005	0.21	0.000005	0.2	0.178	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00003	0.0004	0.0007	0.0001
HC-5-117	14-May-13	117	0.00129	0.0005	0.21	0.000005	0.2	0.175	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0005	0.0007	0.0001
HC-5-118	21-May-13	118	0.00124	0.0006	0.21	0.000005	0.1	0.171	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00003	0.0006	0.0006	0.0001
HC-5-119	28-May-13	119	0.00119	0.0006	0.21	0.000005	0.1	0.168	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00003	0.0007	0.0006	0.0001
HC-5-120	04-Jun-13	120	0.00122	0.0005	0.21	0.000005	0.1	0.167	0.00002	0.000010	0.000005	0.0004	0.0005	0.00001	0.00003	0.0006	0.0006	0.0001
HC-5-121	11-Jun-13	121	0.00124	0.0005	0.21	0.000005	0.2	0.167	0.00002	0.000011	0.000005	0.0006	0.0005	0.00001	0.00002	0.0005	0.0006	0.0001
HC-5-122	18-Jun-13	122	0.00127	0.0005	0.21	0.000005	0.2	0.166	0.00002	0.000011	0.000005	0.0008	0.0005	0.00001	0.00002	0.0003	0.0006	0.0001
HC-5-123	25-Jun-13	123	0.00129	0.0004	0.21	0.000005	0.2	0.165	0.00002	0.000011	0.000005	0.0010	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-124	02-Jul-13	124	0.00128	0.0004	0.21	0.000005	0.2	0.163	0.00002	0.000011	0.000005	0.0008	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-125	09-Jul-13	125	0.00126	0.0004	0.21	0.000005	0.2	0.162	0.00002	0.000012	0.000005	0.0007	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-126	16-Jul-13	126	0.00125	0.0004	0.21	0.000005	0.2	0.160	0.00002	0.000012	0.000005	0.0005	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-127	23-Jul-13	127	0.00123	0.0004	0.21	0.000005	0.2	0.158	0.00002	0.000012	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-128	30-Jul-13	128	0.00121	0.0004	0.21	0.000005	0.1	0.158	0.00002	0.000011	0.000005	0.0003	0.0005	0.00001	0.00002	0.0002	0.0017	0.0001
HC-5-129	06-Aug-13	129	0.00118	0.0004	0.21	0.000005	0.1	0.157	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0028	0.0001
HC-5-130	13-Aug-13	130	0.00116	0.0004	0.21	0.000005	0.1	0.157	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0038	0.0001
HC-5-131	20-Aug-13	131	0.00113	0.0004	0.21	0.000005	0.1	0.156	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0049	0.0001
HC-5-132	27-Aug-13	132	0.00119	0.0004	0.21	0.000005	0.1	0.158	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0039	0.0001
HC-5-133	03-Sep-13	133	0.00125	0.0004	0.22	0.000005	0.1	0.161	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0030	0.0001
HC-5-134	10-Sep-13	134	0.00130	0.0004	0.22	0.000005	0.1	0.163	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0020	0.0001
HC-5-135	17-Sep-13	135	0.00136	0.0005	0.22	0.000005	0.2	0.165	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0011	0.0001
HC-5-136	24-Sep-13	136	0.00131	0.0005	0.23	0.000005	0.2	0.161	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0010	0.0001
HC-5-137	01-Oct-13	137	0.00125	0.0005	0.23	0.000005	0.1	0.156	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-5-138	08-Oct-13	138	0.00120	0.0005	0.24	0.000005	0.1	0.152	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0008	0.0001
HC-5-139	15-Oct-13	139	0.00114	0.0005	0.24	0.000005	0.1	0.147	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0007	0.0001
HC-5-140	22-Oct-13	140	0.00119	0.0005	0.24	0.000005	0.1	0.150	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
HC-5-141	29-Oct-13	141	0.00124	0.0005	0.24	0.000005	0.1	0.152	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0011	0.0001
HC-5-142	05-Nov-13	142	0.00129	0.0005	0.24	0.000005	0.1	0.155	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0012	0.0001
HC-5-143	12-Nov-13	143	0.00134	0.0005	0.24	0.000005	0.1	0.157	0.00002	0.000006	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0014	0.0001
HC-5-144	19-Nov-13	144	0.00133	0.0005	0.23	0.000005	0.1	0.154	0.00002	0.000007	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0012	0.0001
HC-5-145	26-Nov-13	145	0.00131	0.0005	0.23	0.000005	0.1	0.151	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0010	0.0001



Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-5-146	03-Dec-13	146	0.00130	0.0004	0.22	0.000005	0.1	0.148	0.00002	0.000008	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0007	0.0001
HC-5-147	10-Dec-13	147	0.00128	0.0004	0.21	0.000005	0.1	0.145	0.00002	0.000009	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0005	0.0001
HC-5-148	17-Dec-13	148	0.00125	0.0004	0.21	0.000005	0.1	0.144	0.00002	0.000010	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0005	0.0001
HC-5-149	24-Dec-13	149	0.00122	0.0004	0.22	0.000005	0.1	0.143	0.00002	0.000011	0.000005	0.0002	0.0005	0.00001	0.00002	0.0003	0.0005	0.0001
HC-5-150	31-Dec-13	150	0.00119	0.0004	0.22	0.000005	0.1	0.142	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-151	07-Jan-14	151	0.00116	0.0005	0.22	0.000005	0.1	0.141	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-152	14-Jan-14	152	0.00112	0.0004	0.22	0.000005	0.1	0.138	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-153	21-Jan-14	153	0.00109	0.0004	0.21	0.000005	0.1	0.134	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0007	0.0001
HC-5-154	28-Jan-14	154	0.00105	0.0004	0.21	0.000005	0.1	0.131	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0007	0.0001
HC-5-155	04-Feb-14	155	0.00101	0.0004	0.20	0.000005	0.1	0.127	0.00002	0.000014	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0008	0.0001
HC-5-156	11-Feb-14	156	0.00102	0.0004	0.20	0.000005	0.1	0.126	0.00002	0.000013	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0007	0.0001
HC-5-157	18-Feb-14	157	0.00102	0.0004	0.19	0.000005	0.1	0.125	0.00002	0.000012	0.000005	0.0002	0.0006	0.00001	0.00002	0.0002	0.0007	0.0001
HC-5-158	25-Feb-14	158	0.00103	0.0004	0.19	0.000005	0.1	0.123	0.00002	0.000011	0.000005	0.0002	0.0006	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-159	04-Mar-14	159	0.00103	0.0004	0.18	0.000005	0.1	0.122	0.00002	0.000010	0.000005	0.0002	0.0006	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-160	11-Mar-14	160	0.00106	0.0004	0.19	0.000005	0.1	0.123	0.00002	0.000011	0.000005	0.0002	0.0006	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-161	18-Mar-14	161	0.00110	0.0004	0.20	0.000005	0.1	0.124	0.00002	0.000011	0.000005	0.0002	0.0006	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-162	25-Mar-14	162	0.00113	0.0004	0.21	0.000005	0.1	0.125	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0007	0.0001
HC-5-163	01-Apr-14	163	0.00116	0.0004	0.22	0.000005	0.1	0.126	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0007	0.0001
HC-5-164	08-Apr-14	164	0.00116	0.0004	0.22	0.000005	0.1	0.127	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0006	0.0001
HC-5-165	15-Apr-14	165	0.00116	0.0004	0.21	0.000005	0.1	0.129	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0005	0.0001
HC-5-166	22-Apr-14	166	0.00115	0.0004	0.21	0.000005	0.1	0.130	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0005	0.0001
HC-5-167	29-Apr-14	167	0.00115	0.0004	0.20	0.000005	0.1	0.131	0.00002	0.000012	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0004	0.0001
<b>Mean all weeks</b>			<b>0.00132</b>	<b>0.0011</b>	<b>0.32</b>	<b>0.000005</b>	<b>6.9</b>	<b>0.178</b>	<b>0.00002</b>	<b>0.000008</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0005</b>	<b>0.00003</b>	<b>0.00016</b>	<b>0.0006</b>	<b>0.0010</b>	<b>0.0001</b>
<b>HC13 Middle Gates F - Raw Coal</b>																		
HC-13-0	29-May-12	0	0.00083	0.0264	0.83	0.000005	14.4	0.033	0.00002	0.000014	0.000029	0.0004	0.0042	0.00115	0.00144	0.0015	0.0010	0.0002
HC-13-1	05-Jun-12	1	0.00061	0.0842	0.72	0.000005	42.1	0.039	0.00002	0.000013	0.000012	0.0004	0.0016	0.00963	0.00541	0.0014	0.0018	0.0001
HC-13-2	12-Jun-12	2	0.00047	0.0671	0.66	0.000005	44.9	0.030	0.00002	0.000011	0.000013	0.0004	0.0017	0.00794	0.00542	0.0011	0.0007	0.0002
HC-13-3	19-Jun-12	3	0.00043	0.0501	0.65	0.000005	45.5	0.029	0.00002	0.000010	0.000005	0.0002	0.0011	0.00537	0.00479	0.0008	0.0007	0.0001
HC-13-4	26-Jun-12	4	0.00048	0.0364	0.61	0.000005	40.6	0.029	0.00002	0.000008	0.000005	0.0003	0.0011	0.00348	0.00393	0.0008	0.0007	0.0001
HC-13-5	03-Jul-12	5	0.00044	0.0334	0.51	0.000005	37.0	0.038	0.00003	0.000013	0.000005	0.0002	0.0008	0.00228	0.00330	0.0003	0.0004	0.0001
HC-13-6	10-Jul-12	6	0.00046	0.0288	0.49	0.000005	32.8	0.041	0.00002	0.000010	0.000005	0.0002	0.0008	0.00197	0.00290	0.0007	0.0006	0.0001
HC-13-7	17-Jul-12	7	0.00052	0.0248	0.47	0.000005	36.8	0.046	0.00002	0.000010	0.000005	0.0002	0.0005	0.00192	0.00273	0.0003	0.0010	0.0001
HC-13-8	24-Jul-12	8	0.00050	0.0250	0.50	0.000005	34.7	0.052	0.00002	0.000011	0.000007	0.0002	0.0005	0.00149	0.00255	0.0002	0.0006	0.0001
HC-13-9	31-Jul-12	9	0.00062	0.0243	0.47	0.000005	33.4	0.059	0.00002	0.000010	0.000005	0.0002	0.0005	0.00138	0.00243	0.0004	0.0006	0.0001
HC-13-10	07-Aug-12	10	0.00064	0.0238	0.50	0.000005	37.3	0.078	0.00002	0.000012	0.000005	0.0002	0.0005	0.00132	0.00266	0.0004	0.0011	0.0001
HC-13-11	14-Aug-12	11	0.00090	0.0312	0.55	0.000005	41.7	0.101	0.00002	0.000013	0.000005	0.0012	0.0007	0.00152	0.00366	0.0002	0.0010	0.0001
HC-13-12	21-Aug-12	12	0.00083	0.0193	0.50	0.000025	32.5	0.134	0.00010	0.000019	0.000025	0.0010	0.0050	0.00078	0.00209	0.0015	0.0016	0.0003
HC-13-13	28-Aug-12	13	0.00105	0.0202	0.53	0.000005	31.6	0.142	0.00002	0.000020	0.000005	0.0002	0.0005	0.00069	0.00194	0.0002	0.0009	0.0001
HC-13-14	04-Sep-12	14	0.00166	0.0217	0.53	0.000025	31.4	0.213	0.00010	0.000020	0.000025	0.0010	0.0025	0.00081	0.00219	0.0010	0.0018	0.0003
HC-13-15	11-Sep-12	15	0.00129	0.0163	0.50	0.000025	25.7	0.212	0.00010	0.000022	0.000025	0.0010	0.0025	0.00057	0.00164	0.0014	0.0022	0.0003
HC-13-16	18-Sep-12	16	0.00099	0.0177	0.50	0.000025	22.8	0.198	0.00010	0.000018	0.000025	0.0010	0.0025	0.00046	0.00147	0.0010	0.0010	0.0003
HC-13-17	25-Sep-12	17	0.00122	0.0193	0.59	0.000025	26.5	0.222	0.00010	0.000030	0.000025	0.0057	0.0025	0.00061	0.00186	0.0010	0.0027	0.0003
HC-13-18	02-Oct-12	18	0.00111	0.0142	0.50	0.000025	15.3	0.214	0.00010	0.000014	0.000025	0.0010	0.0025	0.00190	0.00114	0.0010	0.0049	0.0003
HC-13-19	09-Oct-12	19	0.00123	0.0191	0.57	0.000025	24.4	0.327	0.00010	0.000021	0.000025	0.0010	0.0025	0.00047	0.00169	0.0010	0.0025	0.0003
HC-13-20	16-Oct-12	20	0.00132	0.0165	0.54	0.000025	21.6	0.326	0.00010	0.000024	0.000025	0.0010	0.0025	0.00039	0.00151	0.0010	0.0209	0.0003
HC-13-21	23-Oct-12	21	0.00135	0.0157	0.54	0.000025	20.6	0.326	0.00010	0.000026	0.000025	0.0010	0.0025	0.00037	0.00145	0.0010	0.0271	0.0003
HC-13-22	30-Oct-12	22	0.00141	0.0139	0.52	0.000025	18.7	0.326	0.00010	0.000028	0.000025	0.0010	0.0025	0.00031	0.00133	0.0010	0.0393	0.0003
HC-13-23	06-Nov-12	23	0.00147	0.0122	0.50	0.000025	16.8	0.325	0.00010	0.000030	0.000025	0.0010	0.0025	0.00026	0.00121	0.0010	0.0516	0.0003
HC-13-24	13-Nov-12	24	0.00145	0.0110	0.50	0.000025	14.4	0.351	0.00010	0.000028	0.000025	0.0010	0.0025	0.00024	0.00110	0.0013	0.0332	0.0003

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-13-25	20-Nov-12	25	0.00144	0.0106	0.50	0.000025	13.6	0.360	0.00010	0.000028	0.000025	0.0010	0.0025	0.00023	0.00106	0.0014	0.0270	0.0003
HC-13-26	27-Nov-12	26	0.00143	0.0098	0.50	0.000025	11.9	0.378	0.00010	0.000026	0.000025	0.0010	0.0025	0.00021	0.00098	0.0016	0.0147	0.0003
HC-13-27	04-Dec-12	27	0.00141	0.0089	0.50	0.000025	10.3	0.395	0.00010	0.000025	0.000025	0.0010	0.0025	0.00019	0.00091	0.0018	0.0024	0.0003
HC-13-28	11-Dec-12	28	0.00146	0.0095	0.50	0.000025	10.2	0.431	0.00010	0.000028	0.000025	0.0010	0.0025	0.00020	0.00092	0.0015	0.0027	0.0003
HC-13-29	18-Dec-12	29	0.00148	0.0097	0.50	0.000025	10.1	0.443	0.00010	0.000029	0.000025	0.0010	0.0025	0.00021	0.00093	0.0014	0.0027	0.0003
HC-13-30	25-Dec-12	30	0.00151	0.0101	0.50	0.000025	10.0	0.466	0.00010	0.000031	0.000025	0.0010	0.0025	0.00022	0.00094	0.0012	0.0029	0.0003
HC-13-31	01-Jan-13	31	0.00154	0.0105	0.50	0.000025	9.9	0.490	0.00010	0.000033	0.000025	0.0010	0.0025	0.00022	0.00095	0.0010	0.0031	0.0003
HC-13-32	08-Jan-13	32	0.00149	0.0101	0.50	0.000025	9.0	0.492	0.00010	0.000033	0.000025	0.0010	0.0025	0.00019	0.00092	0.0013	0.0030	0.0003
HC-13-33	15-Jan-13	33	0.00147	0.0099	0.50	0.000025	8.6	0.492	0.00010	0.000033	0.000025	0.0010	0.0025	0.00018	0.00091	0.0014	0.0030	0.0003
HC-13-34	22-Jan-13	34	0.00144	0.0096	0.50	0.000025	8.0	0.493	0.00010	0.000033	0.000025	0.0010	0.0025	0.00016	0.00089	0.0016	0.0030	0.0003
HC-13-35	29-Jan-13	35	0.00140	0.0093	0.50	0.000025	7.4	0.494	0.00010	0.000033	0.000025	0.0010	0.0025	0.00013	0.00087	0.0018	0.0030	0.0003
HC-13-36	05-Feb-13	36	0.00149	0.0085	0.50	0.000025	6.5	0.486	0.00010	0.000031	0.000025	0.0010	0.0025	0.00011	0.00081	0.0015	0.0028	0.0003
HC-13-37	12-Feb-13	37	0.00152	0.0082	0.50	0.000025	6.3	0.484	0.00010	0.000030	0.000025	0.0010	0.0025	0.00010	0.00079	0.0014	0.0027	0.0003
HC-13-38	19-Feb-13	38	0.00157	0.0077	0.50	0.000025	5.7	0.478	0.00010	0.000029	0.000025	0.0010	0.0025	0.00009	0.00074	0.0012	0.0026	0.0003
HC-13-39	26-Feb-13	39	0.00163	0.0072	0.50	0.000025	5.2	0.473	0.00010	0.000027	0.000025	0.0010	0.0025	0.00007	0.00070	0.0010	0.0025	0.0003
HC-13-40	05-Mar-13	40	0.00171	0.0070	0.50	0.000025	5.1	0.514	0.00010	0.000024	0.000025	0.0010	0.0028	0.00010	0.00073	0.0010	0.0030	0.0003
HC-13-41	12-Mar-13	41	0.00173	0.0070	0.50	0.000025	5.0	0.528	0.00010	0.000023	0.000025	0.0010	0.0030	0.00011	0.00073	0.0010	0.0031	0.0003
HC-13-42	19-Mar-13	42	0.00178	0.0069	0.50	0.000025	5.0	0.556	0.00010	0.000020	0.000025	0.0010	0.0032	0.00012	0.00075	0.0010	0.0035	0.0003
HC-13-43	26-Mar-13	43	0.00183	0.0069	0.50	0.000025	4.9	0.583	0.00010	0.000018	0.000025	0.0010	0.0034	0.00014	0.00077	0.0010	0.0038	0.0003
HC-13-44	02-Apr-13	44	0.00170	0.0066	0.50	0.000025	4.1	0.529	0.00010	0.000019	0.000025	0.0010	0.0031	0.00012	0.00068	0.0010	0.0030	0.0003
HC-13-45	09-Apr-13	45	0.00166	0.0065	0.50	0.000025	3.8	0.511	0.00010	0.000019	0.000025	0.0010	0.0030	0.00011	0.00066	0.0010	0.0028	0.0003
HC-13-46	16-Apr-13	46	0.00157	0.0063	0.50	0.000025	3.3	0.474	0.00010	0.000020	0.000025	0.0010	0.0027	0.00009	0.00060	0.0010	0.0023	0.0003
HC-13-47	23-Apr-13	47	0.00148	0.0061	0.50	0.000025	2.7	0.438	0.00010	0.000020	0.000025	0.0010	0.0025	0.00008	0.00055	0.0010	0.0018	0.0003
HC-13-48	30-Apr-13	48	0.00141	0.0056	0.44	0.000018	2.5	0.418	0.00008	0.000020	0.000018	0.0007	0.0018	0.00006	0.00046	0.0007	0.0025	0.0002
HC-13-49	07-May-13	49	0.00139	0.0054	0.42	0.000015	2.4	0.411	0.00007	0.000020	0.000015	0.0006	0.0015	0.00005	0.00043	0.0006	0.0028	0.0002
HC-13-50	14-May-13	50	0.00134	0.0051	0.37	0.000010	2.2	0.398	0.00005	0.000019	0.000010	0.0004	0.0010	0.00004	0.00037	0.0004	0.0033	0.0001
HC-13-51	21-May-13	51	0.00129	0.0048	0.33	0.000005	2.1	0.384	0.00004	0.000019	0.000005	0.0002	0.0005	0.00003	0.00031	0.0002	0.0038	0.0001
HC-13-52	28-May-13	52	0.00144	0.0050	0.39	0.000013	2.1	0.417	0.00006	0.000019	0.000013	0.0005	0.0013	0.00004	0.00039	0.0005	0.0037	0.0001
HC-13-53	04-Jun-13	53	0.00149	0.0051	0.42	0.000015	2.1	0.428	0.00007	0.000019	0.000015	0.0006	0.0015	0.00004	0.00041	0.0006	0.0037	0.0002
HC-13-54	11-Jun-13	54	0.00159	0.0053	0.46	0.000020	2.1	0.450	0.00008	0.000019	0.000020	0.0008	0.0020	0.00005	0.00046	0.0008	0.0036	0.0002
HC-13-55	18-Jun-13	55	0.00169	0.0055	0.50	0.000025	2.1	0.472	0.00010	0.000019	0.000025	0.0010	0.0025	0.00006	0.00051	0.0010	0.0036	0.0003
HC-13-56	25-Jun-13	56	0.00167	0.0054	0.50	0.000025	2.1	0.469	0.00010	0.000020	0.000025	0.0010	0.0025	0.00006	0.00057	0.0011	0.0049	0.0003
HC-13-57	02-Jul-13	57	0.00167	0.0053	0.50	0.000025	2.0	0.468	0.00010	0.000021	0.000025	0.0010	0.0025	0.00006	0.00059	0.0012	0.0054	0.0003
HC-13-58	09-Jul-13	58	0.00165	0.0052	0.50	0.000025	2.0	0.465	0.00010	0.000021	0.000025	0.0010	0.0025	0.00005	0.00064	0.0012	0.0063	0.0003
HC-13-59	16-Jul-13	59	0.00164	0.0052	0.50	0.000025	1.9	0.463	0.00010	0.000022	0.000025	0.0010	0.0025	0.00005	0.00068	0.0013	0.0072	0.0003
HC-13-60	23-Jul-13	60	0.00157	0.0069	0.50	0.000035	1.8	0.447	0.00010	0.000024	0.000034	0.0010	0.0037	0.00005	0.00060	0.0013	0.0062	0.0003
HC-13-61	30-Jul-13	61	0.00155	0.0075	0.50	0.000039	1.8	0.442	0.00010	0.000025	0.000038	0.0010	0.0042	0.00005	0.00058	0.0013	0.0058	0.0003
HC-13-62	06-Aug-13	62	0.00151	0.0086	0.50	0.000045	1.7	0.431	0.00010	0.000026	0.000044	0.0010	0.0050	0.00005	0.00053	0.0012	0.0051	0.0003
HC-13-63	13-Aug-13	63	0.00146	0.0098	0.50	0.000052	1.6	0.420	0.00010	0.000027	0.000050	0.0010	0.0058	0.00005	0.00048	0.0012	0.0044	0.0003
HC-13-64	20-Aug-13	64	0.00149	0.0077	0.50	0.000049	1.5	0.402	0.00010	0.000027	0.000041	0.0010	0.0046	0.00005	0.00043	0.0011	0.0056	0.0003
HC-13-65	27-Aug-13	65	0.00150	0.0071	0.50	0.000049	1.4	0.396	0.00010	0.000027	0.000038	0.0010	0.0042	0.00005	0.00041	0.0011	0.0061	0.0003
HC-13-66	03-Sep-13	66	0.00151	0.0057	0.50	0.000047	1.3	0.384	0.00010	0.000026	0.000031	0.0010	0.0033	0.00005	0.00038	0.0011	0.0069	0.0003
HC-13-67	10-Sep-13	67	0.00153	0.0043	0.50	0.000045	1.2	0.372	0.00010	0.000026	0.000025	0.0010	0.0025	0.00005	0.00035	0.0010	0.0078	0.0003
HC-13-68	17-Sep-13	68	0.00147	0.0044	0.50	0.000038	1.2	0.355	0.00010	0.000020	0.000025	0.0010	0.0025	0.00005	0.00034	0.0010	0.0064	0.0003
HC-13-69	24-Sep-13	69	0.00146	0.0044	0.50	0.000035	1.2	0.349	0.00010	0.000019	0.000025	0.0010	0.0025	0.00005	0.00034	0.0010	0.0059	0.0003
HC-13-70	01-Oct-13	70	0.00142	0.0044	0.50	0.000030	1.2	0.338	0.00010	0.000015	0.000025	0.0010	0.0025	0.00005	0.00033	0.0010	0.0050	0.0003
HC-13-71	08-Oct-13	71	0.00138	0.0045	0.50	0.000025	1.2	0.326	0.00010	0.000011	0.000025	0.0010	0.0025	0.00005	0.00033	0.0010	0.0041	0.0003
HC-13-72	15-Oct-13	72	0.00143	0.0045	0.50	0.000025	1.2	0.341	0.00010	0.000014	0.000025	0.0010	0.0025	0.00005	0.00032	0.0010	0.0035	0.0003
HC-13-73	22-Oct-13	73	0.00144	0.0045	0.50	0.000025	1.3	0.347	0.00010	0.000015	0.000025	0.0010	0.0025	0.00005	0.00031	0.0010	0.0033	0.0003

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-13-74	29-Oct-13	74	0.00147	0.0045	0.50	0.000025	1.3	0.357	0.00010	0.000017	0.000025	0.0010	0.0025	0.00005	0.00031	0.0010	0.0029	0.0003
HC-13-75	05-Nov-13	75	0.00150	0.0045	0.50	0.000025	1.4	0.367	0.00010	0.000019	0.000025	0.0010	0.0025	0.00005	0.00030	0.0010	0.0026	0.0003
HC-13-76	12-Nov-13	76	0.00143	0.0044	0.50	0.000025	1.2	0.347	0.00010	0.000016	0.000025	0.0010	0.0025	0.00005	0.00032	0.0010	0.0026	0.0003
HC-13-77	19-Nov-13	77	0.00141	0.0043	0.50	0.000025	1.1	0.341	0.00010	0.000015	0.000025	0.0010	0.0025	0.00005	0.00033	0.0010	0.0026	0.0003
HC-13-78	26-Nov-13	78	0.00136	0.0043	0.50	0.000025	1.0	0.327	0.00010	0.000013	0.000025	0.0010	0.0025	0.00005	0.00035	0.0010	0.0026	0.0003
HC-13-79	03-Dec-13	79	0.00131	0.0042	0.50	0.000025	0.9	0.314	0.00010	0.000011	0.000025	0.0010	0.0025	0.00005	0.00036	0.0010	0.0026	0.0003
HC-13-80	10-Dec-13	80	0.00136	0.0041	0.50	0.000025	0.9	0.326	0.00010	0.000017	0.000025	0.0010	0.0025	0.00005	0.00035	0.0010	0.0027	0.0003
HC-13-81	17-Dec-13	81	0.00137	0.0041	0.50	0.000025	0.8	0.331	0.00010	0.000020	0.000025	0.0010	0.0025	0.00005	0.00035	0.0010	0.0027	0.0003
HC-13-82	24-Dec-13	82	0.00140	0.0040	0.50	0.000025	0.8	0.339	0.00010	0.000024	0.000025	0.0010	0.0025	0.00005	0.00034	0.0010	0.0028	0.0003
HC-13-83	31-Dec-13	83	0.00143	0.0039	0.50	0.000025	0.8	0.347	0.00010	0.000028	0.000025	0.0010	0.0025	0.00005	0.00034	0.0010	0.0029	0.0003
HC-13-84	07-Jan-14	84	0.00151	0.0039	0.50	0.000025	0.8	0.367	0.00010	0.000021	0.000026	0.0010	0.0025	0.00005	0.00036	0.0010	0.0027	0.0003
HC-13-85	14-Jan-14	85	0.00154	0.0038	0.50	0.000025	0.8	0.374	0.00010	0.000019	0.000026	0.0010	0.0025	0.00005	0.00036	0.0010	0.0027	0.0003
HC-13-86	21-Jan-14	86	0.00159	0.0038	0.50	0.000025	0.8	0.388	0.00010	0.000015	0.000027	0.0010	0.0025	0.00005	0.00038	0.0010	0.0026	0.0003
HC-13-87	28-Jan-14	87	0.00164	0.0038	0.50	0.000025	0.9	0.401	0.00010	0.000010	0.000027	0.0010	0.0025	0.00005	0.00039	0.0010	0.0025	0.0003
HC-13-88	04-Feb-14	88	0.00163	0.0037	0.50	0.000025	0.8	0.404	0.00010	0.000017	0.000026	0.0010	0.0025	0.00005	0.00040	0.0010	0.0029	0.0003
HC-13-89	11-Feb-14	89	0.00163	0.0037	0.50	0.000025	0.8	0.405	0.00010	0.000020	0.000026	0.0010	0.0025	0.00005	0.00040	0.0010	0.0030	0.0003
HC-13-90	18-Feb-14	90	0.00163	0.0037	0.50	0.000025	0.7	0.406	0.00010	0.000024	0.000026	0.0010	0.0025	0.00006	0.00041	0.0010	0.0033	0.0003
HC-13-91	25-Feb-14	91	0.00162	0.0037	0.50	0.000025	0.7	0.408	0.00010	0.000029	0.000025	0.0010	0.0025	0.00006	0.00042	0.0010	0.0036	0.0003
HC-13-92	04-Mar-14	92	0.00155	0.0035	0.50	0.000025	0.6	0.371	0.00010	0.000022	0.000025	0.0010	0.0025	0.00005	0.00037	0.0010	0.0034	0.0003
HC-13-93	11-Mar-14	93	0.00152	0.0034	0.50	0.000025	0.6	0.359	0.00010	0.000020	0.000025	0.0010	0.0025	0.00005	0.00036	0.0010	0.0034	0.0003
HC-13-94	18-Mar-14	94	0.00147	0.0033	0.50	0.000025	0.5	0.335	0.00010	0.000015	0.000025	0.0010	0.0025	0.00005	0.00033	0.0010	0.0033	0.0003
HC-13-95	25-Mar-14	95	0.00142	0.0031	0.50	0.000025	0.5	0.310	0.00010	0.000010	0.000025	0.0010	0.0025	0.00005	0.00030	0.0010	0.0032	0.0003
HC-13-96	01-Apr-14	96	0.00134	0.0032	0.50	0.000025	0.5	0.315	0.00010	0.000013	0.000025	0.0010	0.0025	0.00005	0.00029	0.0010	0.0030	0.0003
HC-13-97	08-Apr-14	97	0.00131	0.0032	0.50	0.000025	0.5	0.317	0.00010	0.000015	0.000025	0.0010	0.0025	0.00005	0.00028	0.0010	0.0029	0.0003
HC-13-98	15-Apr-14	98	0.00126	0.0032	0.50	0.000025	0.5	0.320	0.00010	0.000017	0.000025	0.0010	0.0025	0.00005	0.00028	0.0010	0.0028	0.0003
HC-13-99	22-Apr-14	99	0.00120	0.0033	0.50	0.000025	0.5	0.323	0.00010	0.000019	0.000025	0.0010	0.0025	0.00005	0.00027	0.0010	0.0027	0.0003
<b>Mean all weeks</b>			<b>0.00136</b>	<b>0.0111</b>	<b>0.51</b>	<b>0.000023</b>	<b>9.8</b>	<b>0.347</b>	<b>0.00009</b>	<b>0.000020</b>	<b>0.000023</b>	<b>0.0009</b>	<b>0.0024</b>	<b>0.00053</b>	<b>0.00101</b>	<b>0.0010</b>	<b>0.0050</b>	<b>0.0002</b>
<b>HC14 Middle Gates D - CCR</b>																		
HC-14-0	02-May-13	0	0.00127	0.0802	0.90	0.000005	85.0	0.031	0.00002	0.000007	0.000040	0.0002	0.0039	0.00769	0.00311	0.0134	0.0006	0.0003
HC-14-1	09-May-13	1	0.00141	0.1740	1.40	0.000064	101.0	0.033	0.00002	0.000011	0.000045	0.0001	0.0049	0.00749	0.00599	0.0179	0.0006	0.0006
HC-14-2	16-May-13	2	0.00120	0.1560	1.30	0.000007	91.4	0.027	0.00002	0.000011	0.000033	0.0002	0.0042	0.00396	0.00405	0.0163	0.0021	0.0004
HC-14-3	23-May-13	3	0.00108	0.1460	1.20	0.000005	82.9	0.023	0.00002	0.000009	0.000021	0.0002	0.0019	0.00242	0.00339	0.0144	0.0006	0.0003
HC-14-4	30-May-13	4	0.00109	0.1260	1.30	0.000005	72.8	0.021	0.00002	0.000011	0.000023	0.0002	0.0030	0.00211	0.00297	0.0140	0.0027	0.0003
HC-14-5	06-Jun-13	5	0.00108	0.1190	1.20	0.000009	74.5	0.023	0.00002	0.000010	0.000028	0.0002	0.0031	0.00169	0.00276	0.0130	0.0038	0.0004
HC-14-6	13-Jun-13	6	0.00118	0.1170	1.20	0.000005	72.0	0.026	0.00002	0.000007	0.000019	0.0002	0.0034	0.00125	0.00254	0.0130	0.0017	0.0004
HC-14-7	20-Jun-13	7	0.00104	0.1120	1.20	0.000008	75.0	0.029	0.00002	0.000009	0.000010	0.0014	0.0022	0.00107	0.00256	0.0120	0.0010	0.0002
HC-14-8	27-Jun-13	8	0.00101	0.0989	1.10	0.000005	63.8	0.028	0.00002	0.000014	0.000014	0.0015	0.0013	0.00096	0.00223	0.0108	0.0011	0.0002
HC-14-9	04-Jul-13	9	0.00095	0.0956	1.10	0.000005	60.0	0.028	0.00002	0.000006	0.000020	0.0002	0.0040	0.00070	0.00208	0.0092	0.0016	0.0002
HC-14-10	11-Jul-13	10	0.00100	0.0857	1.00	0.000005	59.1	0.027	0.00002	0.000009	0.000010	0.0002	0.0018	0.00062	0.00193	0.0087	0.0008	0.0002
HC-14-11	18-Jul-13	11	0.00097	0.0843	0.90	0.000005	59.9	0.029	0.00002	0.000008	0.000024	0.0003	0.0023	0.00058	0.00191	0.0083	0.0007	0.0001
HC-14-12	25-Jul-13	12	0.00097	0.0743	1.10	0.000005	55.2	0.030	0.00002	0.000011	0.000024	0.0002	0.0029	0.00055	0.00178	0.0082	0.0016	0.0008
HC-14-13	01-Aug-13	13	0.00108	0.0751	1.10	0.000005	55.5	0.036	0.00002	0.000009	0.000027	0.0002	0.0026	0.00061	0.00165	0.0081	0.0007	0.0002
HC-14-14	08-Aug-13	14	0.00104	0.0576	0.90	0.000009	51.0	0.038	0.00002	0.000019	0.000014	0.0002	0.0025	0.00054	0.00153	0.0064	0.0007	0.0002
HC-14-15	15-Aug-13	15	0.00100	0.0555	0.90	0.000005	50.1	0.039	0.00002	0.000006	0.000014	0.0002	0.0019	0.00061	0.00146	0.0066	0.0008	0.0001
HC-14-16	22-Aug-13	16	0.00105	0.0581	1.00	0.000005	47.5	0.041	0.00002	0.000008	0.000014	0.0002	0.0020	0.00066	0.00142	0.0061	0.0010	0.0001
HC-14-17	29-Aug-13	17	0.00100	0.0533	0.90	0.000007	50.3	0.042	0.00002	0.000013	0.000008	0.0002	0.0011	0.00070	0.00145	0.0064	0.0010	0.0001
HC-14-18	05-Sep-13	18	0.00097	0.0522	0.80	0.000005	44.4	0.041	0.00002	0.000015	0.000008	0.0002	0.0013	0.00067	0.00137	0.0053	0.0011	0.0001
HC-14-19	12-Sep-13	19	0.00094	0.0497	1.00	0.000005	41.2	0.038	0.00002	0.000011	0.000008	0.0002	0.0012	0.00056	0.00123	0.0051	0.0012	0.0001
HC-14-20	19-Sep-13	20	0.00097	0.0468	0.98	0.000007	42.1	0.043	0.00002	0.000010	0.000007	0.0002	0.0010	0.00054	0.00115	0.0048	0.0012	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-14-21	26-Sep-13	21	0.00101	0.0438	0.95	0.000009	42.9	0.048	0.00002	0.000010	0.000007	0.0002	0.0009	0.00052	0.00107	0.0046	0.0013	0.0001
HC-14-22	03-Oct-13	22	0.00104	0.0409	0.93	0.000011	43.8	0.054	0.00002	0.000009	0.000006	0.0002	0.0007	0.00050	0.00100	0.0043	0.0013	0.0001
HC-14-23	10-Oct-13	23	0.00107	0.0379	0.90	0.000013	44.6	0.059	0.00002	0.000008	0.000005	0.0002	0.0005	0.00048	0.00092	0.0040	0.0013	0.0001
HC-14-24	17-Oct-13	24	0.00109	0.0374	0.93	0.000011	43.8	0.063	0.00002	0.000010	0.000006	0.0002	0.0008	0.00045	0.00090	0.0038	0.0012	0.0001
HC-14-25	24-Oct-13	25	0.00112	0.0369	0.95	0.000009	43.0	0.067	0.00002	0.000012	0.000008	0.0002	0.0011	0.00042	0.00087	0.0036	0.0011	0.0002
HC-14-26	31-Oct-13	26	0.00114	0.0363	0.98	0.000007	42.1	0.071	0.00002	0.000013	0.000009	0.0002	0.0013	0.00039	0.00085	0.0034	0.0009	0.0002
HC-14-27	07-Nov-13	27	0.00116	0.0358	1.00	0.000005	41.3	0.074	0.00002	0.000015	0.000010	0.0002	0.0016	0.00036	0.00083	0.0032	0.0008	0.0003
HC-14-28	14-Nov-13	28	0.00123	0.0343	0.98	0.000006	39.8	0.081	0.00002	0.000015	0.000009	0.0002	0.0015	0.00035	0.00082	0.0031	0.0010	0.0002
HC-14-29	21-Nov-13	29	0.00130	0.0327	0.95	0.000006	38.2	0.088	0.00002	0.000015	0.000008	0.0002	0.0015	0.00035	0.00081	0.0029	0.0012	0.0002
HC-14-30	28-Nov-13	30	0.00137	0.0312	0.93	0.000007	36.7	0.095	0.00002	0.000014	0.000006	0.0002	0.0014	0.00034	0.00080	0.0028	0.0013	0.0001
HC-14-31	05-Dec-13	31	0.00144	0.0296	0.90	0.000007	35.1	0.102	0.00002	0.000014	0.000005	0.0002	0.0013	0.00033	0.00080	0.0026	0.0015	0.0001
HC-14-32	12-Dec-13	32	0.00143	0.0278	0.90	0.000007	33.3	0.109	0.00002	0.000014	0.000005	0.0002	0.0013	0.00030	0.00074	0.0024	0.0015	0.0001
HC-14-33	19-Dec-13	33	0.00143	0.0260	0.90	0.000006	31.5	0.116	0.00002	0.000014	0.000005	0.0002	0.0012	0.00026	0.00068	0.0022	0.0014	0.0001
HC-14-34	26-Dec-13	34	0.00142	0.0242	0.90	0.000006	29.7	0.122	0.00002	0.000013	0.000005	0.0002	0.0012	0.00023	0.00062	0.0020	0.0014	0.0001
HC-14-35	02-Jan-14	35	0.00141	0.0224	0.90	0.000005	27.9	0.129	0.00002	0.000013	0.000005	0.0002	0.0011	0.00019	0.00056	0.0018	0.0013	0.0001
HC-14-36	09-Jan-14	36	0.00147	0.0213	0.88	0.000005	26.3	0.146	0.00002	0.000013	0.000005	0.0002	0.0010	0.00018	0.00056	0.0017	0.0014	0.0001
HC-14-37	16-Jan-14	37	0.00153	0.0202	0.85	0.000005	24.7	0.163	0.00002	0.000014	0.000005	0.0002	0.0009	0.00016	0.00056	0.0017	0.0015	0.0001
HC-14-38	23-Jan-14	38	0.00158	0.0191	0.83	0.000005	23.1	0.179	0.00002	0.000014	0.000005	0.0002	0.0008	0.00015	0.00056	0.0016	0.0015	0.0001
HC-14-39	30-Jan-14	39	0.00164	0.0180	0.80	0.000005	21.5	0.196	0.00002	0.000014	0.000005	0.0002	0.0007	0.00013	0.00056	0.0015	0.0016	0.0001
HC-14-40	06-Feb-14	40	0.00167	0.0176	0.80	0.000006	20.3	0.210	0.00002	0.000015	0.000005	0.0002	0.0007	0.00012	0.00054	0.0014	0.0035	0.0001
HC-14-41	13-Feb-14	41	0.00170	0.0173	0.80	0.000008	19.1	0.224	0.00002	0.000017	0.000005	0.0002	0.0007	0.00011	0.00051	0.0014	0.0053	0.0001
HC-14-42	20-Feb-14	42	0.00172	0.0169	0.80	0.000009	17.8	0.238	0.00002	0.000018	0.000005	0.0002	0.0007	0.00010	0.00048	0.0013	0.0072	0.0001
HC-14-43	27-Feb-14	43	0.00175	0.0165	0.80	0.000010	16.6	0.252	0.00002	0.000019	0.000005	0.0002	0.0007	0.00009	0.00045	0.0012	0.0090	0.0001
HC-14-44	06-Mar-14	44	0.00182	0.0163	0.83	0.000010	15.1	0.279	0.00002	0.000019	0.000005	0.0002	0.0008	0.00009	0.00044	0.0012	0.0072	0.0001
HC-14-45	13-Mar-14	45	0.00190	0.0162	0.85	0.000010	13.7	0.306	0.00002	0.000020	0.000005	0.0002	0.0009	0.00009	0.00042	0.0012	0.0054	0.0001
HC-14-46	20-Mar-14	46	0.00197	0.0160	0.88	0.000010	12.2	0.333	0.00002	0.000020	0.000005	0.0002	0.0009	0.00008	0.00041	0.0012	0.0036	0.0001
HC-14-47	27-Mar-14	47	0.00204	0.0158	0.90	0.000010	10.7	0.360	0.00002	0.000020	0.000005	0.0002	0.0010	0.00008	0.00040	0.0012	0.0018	0.0001
<b>Mean all weeks</b>			<b>0.00129</b>	<b>0.0547</b>	<b>0.97</b>	<b>0.000008</b>	<b>44.4</b>	<b>0.101</b>	<b>0.00002</b>	<b>0.000013</b>	<b>0.000012</b>	<b>0.0003</b>	<b>0.0017</b>	<b>0.00089</b>	<b>0.00139</b>	<b>0.0056</b>	<b>0.0020</b>	<b>0.0002</b>
<b>HC15 Middle Gates D,E,F,J - Tailings</b>																		
HC-15-0	02-May-13	0	0.00724	0.0752	2.10	0.000005	107.0	1.070	0.00002	0.000045	0.000010	0.0017	0.0008	0.11900	0.01570	0.0068	0.0106	0.0001
HC-15-1	09-May-13	1	0.00526	0.0372	4.40	0.000005	74.7	1.170	0.00002	0.000034	0.000008	0.0052	0.0005	0.02500	0.02140	0.0053	0.0077	0.0001
HC-15-2	16-May-13	2	0.00280	0.0148	4.50	0.000030	46.1	1.300	0.00010	0.000020	0.000030	0.0050	0.0030	0.01030	0.01310	0.0040	0.0148	0.0003
HC-15-3	23-May-13	3	0.00230	0.0166	4.50	0.000030	24.1	1.060	0.00010	0.000010	0.000030	0.0090	0.0030	0.01290	0.00790	0.0030	0.0047	0.0003
HC-15-4	30-May-13	4	0.00206	0.0216	4.10	0.000033	14.6	0.943	0.00002	0.000020	0.000051	0.0144	0.0005	0.02400	0.00844	0.0104	0.0058	0.0001
HC-15-5	06-Jun-13	5	0.00240	0.0230	4.50	0.000030	10.4	0.981	0.00010	0.000020	0.000030	0.0190	0.0030	0.02010	0.00695	0.0040	0.0092	0.0003
HC-15-6	13-Jun-13	6	0.00150	0.0163	3.80	0.000030	4.4	0.659	0.00010	0.000010	0.000030	0.0160	0.0030	0.00840	0.00349	0.0050	0.0036	0.0003
HC-15-7	20-Jun-13	7	0.00160	0.0170	3.70	0.000030	3.4	0.740	0.00010	0.000010	0.000030	0.0230	0.0030	0.00857	0.00347	0.0030	0.0069	0.0003
HC-15-8	27-Jun-13	8	0.00190	0.0169	2.60	0.000030	3.3	0.821	0.00010	0.000030	0.000030	0.0130	0.0030	0.00821	0.00365	0.0030	0.0046	0.0003
HC-15-9	04-Jul-13	9	0.00180	0.0156	3.80	0.000030	2.6	0.760	0.00010	0.000010	0.000030	0.0260	0.0030	0.00644	0.00319	0.0050	0.0213	0.0003
HC-15-10	11-Jul-13	10	0.00070	0.0066	1.40	0.000070	0.6	0.218	0.00010	0.000010	0.000030	0.0140	0.0030	0.00187	0.00057	0.0020	0.0027	0.0003
HC-15-11	18-Jul-13	11	0.00100	0.0099	1.40	0.000030	0.7	0.252	0.00010	0.000010	0.000030	0.0170	0.0030	0.00214	0.00078	0.0020	0.0060	0.0003
HC-15-12	25-Jul-13	12	0.00080	0.0080	1.40	0.000030	0.5	0.240	0.00010	0.000010	0.000030	0.0120	0.0030	0.00144	0.00051	0.0010	0.0044	0.0003
HC-15-13	01-Aug-13	13	0.00090	0.0101	1.80	0.000030	0.5	0.285	0.00010	0.000010	0.000030	0.0180	0.0030	0.00176	0.00063	0.0020	0.0040	0.0003
HC-15-14	08-Aug-13	14	0.00100	0.0069	1.40	0.000040	0.5	0.262	0.00010	0.000030	0.000030	0.0150	0.0030	0.00156	0.00052	0.0030	0.0056	0.0003
HC-15-15	15-Aug-13	15	0.00080	0.0062	1.40	0.000030	0.5	0.222	0.00010	0.000010	0.000030	0.0130	0.0030	0.00121	0.00046	0.0020	0.0027	0.0003
HC-15-16	22-Aug-13	16	0.00080	0.0089	1.90	0.000030	0.5	0.257	0.00010	0.000010	0.000030	0.0210	0.0030	0.00142	0.00064	0.0020	0.0043	0.0003
HC-15-17	29-Aug-13	17	0.00080	0.0081	1.40	0.000030	0.4	0.229	0.00010	0.000010	0.000030	0.0160	0.0030	0.00117	0.00048	0.0010	0.0033	0.0003
HC-15-18	05-Sep-13	18	0.00080	0.0096	1.70	0.000030	0.5	0.245	0.00010	0.000010	0.000030	0.0170	0.0030	0.00113	0.00053	0.0020	0.0046	0.0003
HC-15-19	12-Sep-13	19	0.00100	0.0112	2.50	0.000030	0.7	0.321	0.00010	0.000010	0.000030	0.0220	0.0030	0.00175	0.00079	0.0030	0.0069	0.0003

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-15-20	19-Sep-13	20	0.00098	0.0107	2.25	0.000033	0.7	0.297	0.00010	0.000010	0.000030	0.0198	0.0030	0.00156	0.00071	0.0028	0.0062	0.0003
HC-15-21	26-Sep-13	21	0.00095	0.0101	2.00	0.000035	0.6	0.273	0.00010	0.000010	0.000030	0.0175	0.0030	0.00137	0.00064	0.0025	0.0055	0.0003
HC-15-22	03-Oct-13	22	0.00093	0.0096	1.75	0.000038	0.6	0.248	0.00010	0.000010	0.000030	0.0153	0.0030	0.00118	0.00056	0.0023	0.0048	0.0003
HC-15-23	10-Oct-13	23	0.00090	0.0090	1.50	0.000040	0.5	0.224	0.00010	0.000010	0.000030	0.0130	0.0030	0.00099	0.00048	0.0020	0.0041	0.0003
HC-15-24	17-Oct-13	24	0.00095	0.0110	1.75	0.000038	0.6	0.267	0.00010	0.000010	0.000030	0.0143	0.0030	0.00130	0.00069	0.0023	0.0050	0.0003
HC-15-25	24-Oct-13	25	0.00100	0.0130	2.00	0.000035	0.7	0.310	0.00010	0.000010	0.000030	0.0155	0.0030	0.00161	0.00091	0.0025	0.0059	0.0003
HC-15-26	31-Oct-13	26	0.00105	0.0150	2.25	0.000033	0.7	0.353	0.00010	0.000010	0.000030	0.0168	0.0030	0.00192	0.00112	0.0028	0.0067	0.0003
HC-15-27	07-Nov-13	27	0.00110	0.0170	2.50	0.000030	0.8	0.396	0.00010	0.000010	0.000030	0.0180	0.0030	0.00223	0.00133	0.0030	0.0076	0.0003
HC-15-28	14-Nov-13	28	0.00110	0.0176	2.55	0.000030	0.8	0.407	0.00010	0.000010	0.000030	0.0180	0.0030	0.00220	0.00136	0.0025	0.0072	0.0003
HC-15-29	21-Nov-13	29	0.00110	0.0182	2.60	0.000030	0.8	0.417	0.00010	0.000010	0.000030	0.0180	0.0030	0.00217	0.00140	0.0020	0.0068	0.0004
HC-15-30	28-Nov-13	30	0.00110	0.0187	2.65	0.000030	0.7	0.428	0.00010	0.000010	0.000030	0.0180	0.0030	0.00213	0.00143	0.0015	0.0064	0.0004
HC-15-31	05-Dec-13	31	0.00110	0.0193	2.70	0.000030	0.7	0.438	0.00010	0.000010	0.000030	0.0180	0.0030	0.00210	0.00146	0.0010	0.0060	0.0005
HC-15-32	12-Dec-13	32	0.00110	0.0193	2.65	0.000030	0.7	0.453	0.00010	0.000010	0.000030	0.0173	0.0030	0.00209	0.00148	0.0010	0.0063	0.0004
HC-15-33	19-Dec-13	33	0.00110	0.0192	2.60	0.000030	0.7	0.469	0.00010	0.000010	0.000030	0.0165	0.0030	0.00208	0.00151	0.0010	0.0066	0.0004
HC-15-34	26-Dec-13	34	0.00110	0.0192	2.55	0.000030	0.6	0.484	0.00010	0.000010	0.000030	0.0158	0.0030	0.00207	0.00153	0.0010	0.0069	0.0003
HC-15-35	02-Jan-14	35	0.00110	0.0191	2.50	0.000030	0.6	0.499	0.00010	0.000010	0.000030	0.0150	0.0030	0.00206	0.00155	0.0010	0.0072	0.0003
HC-15-36	09-Jan-14	36	0.00113	0.0197	2.60	0.000030	0.6	0.527	0.00010	0.000010	0.000030	0.0153	0.0030	0.00213	0.00169	0.0013	0.0073	0.0003
HC-15-37	16-Jan-14	37	0.00115	0.0202	2.70	0.000030	0.6	0.556	0.00010	0.000010	0.000030	0.0155	0.0030	0.00219	0.00183	0.0015	0.0074	0.0003
HC-15-38	23-Jan-14	38	0.00118	0.0208	2.80	0.000030	0.6	0.584	0.00010	0.000010	0.000030	0.0158	0.0030	0.00226	0.00197	0.0018	0.0074	0.0003
HC-15-39	30-Jan-14	39	0.00120	0.0213	2.90	0.000030	0.6	0.612	0.00010	0.000010	0.000030	0.0160	0.0030	0.00232	0.00211	0.0020	0.0075	0.0003
HC-15-40	06-Feb-14	40	0.00118	0.0204	2.73	0.000030	0.6	0.581	0.00010	0.000010	0.000030	0.0155	0.0030	0.00214	0.00195	0.0020	0.0072	0.0003
HC-15-41	13-Feb-14	41	0.00115	0.0195	2.55	0.000030	0.5	0.550	0.00010	0.000010	0.000030	0.0150	0.0030	0.00196	0.00178	0.0020	0.0069	0.0003
HC-15-42	20-Feb-14	42	0.00113	0.0185	2.38	0.000030	0.5	0.519	0.00010	0.000010	0.000030	0.0145	0.0030	0.00178	0.00162	0.0020	0.0065	0.0003
HC-15-43	27-Feb-14	43	0.00110	0.0176	2.20	0.000030	0.4	0.488	0.00010	0.000010	0.000030	0.0140	0.0030	0.00160	0.00145	0.0020	0.0062	0.0003
HC-15-44	06-Mar-14	44	0.00108	0.0183	2.25	0.000030	0.4	0.493	0.00010	0.000015	0.000030	0.0140	0.0030	0.00159	0.00145	0.0018	0.0061	0.0003
HC-15-45	13-Mar-14	45	0.00105	0.0190	2.30	0.000030	0.4	0.499	0.00010	0.000020	0.000030	0.0140	0.0030	0.00158	0.00146	0.0015	0.0060	0.0003
HC-15-46	20-Mar-14	46	0.00103	0.0196	2.35	0.000030	0.3	0.504	0.00010	0.000025	0.000030	0.0140	0.0030	0.00157	0.00146	0.0013	0.0059	0.0003
HC-15-47	27-Mar-14	47	0.00100	0.0203	2.40	0.000030	0.3	0.509	0.00010	0.000030	0.000030	0.0140	0.0030	0.00156	0.00146	0.0010	0.0058	0.0003
<b>Mean all weeks</b>			<b>0.00141</b>	<b>0.0171</b>	<b>2.53</b>	<b>0.000031</b>	<b>6.5</b>	<b>0.509</b>	<b>0.00010</b>	<b>0.000014</b>	<b>0.000030</b>	<b>0.0154</b>	<b>0.0029</b>	<b>0.00646</b>	<b>0.00274</b>	<b>0.0025</b>	<b>0.0065</b>	<b>0.0003</b>
<b>HC16 Middle Gates E,F - CCR</b>																		
HC-16-0	02-May-13	0	0.00066	0.0100	0.70	0.000005	45.8	0.011	0.00002	0.000002	0.000019	0.0003	0.0018	0.01030	0.00179	0.0139	0.0010	0.0002
HC-16-1	09-May-13	1	0.00099	0.0247	1.20	0.000005	74.4	0.017	0.00002	0.000007	0.000028	0.0002	0.0016	0.01800	0.00972	0.0174	0.0006	0.0002
HC-16-2	16-May-13	2	0.00084	0.0282	1.00	0.000005	66.8	0.014	0.00002	0.000005	0.000016	0.0002	0.0008	0.00779	0.00915	0.0141	0.0008	0.0002
HC-16-3	23-May-13	3	0.00078	0.0311	1.00	0.000005	67.4	0.015	0.00002	0.000003	0.000012	0.0002	0.0005	0.00462	0.00889	0.0117	0.0003	0.0001
HC-16-4	30-May-13	4	0.00078	0.0311	1.10	0.000005	65.8	0.016	0.00002	0.000005	0.000013	0.0002	0.0009	0.00320	0.00848	0.0096	0.0017	0.0002
HC-16-5	06-Jun-13	5	0.00077	0.0317	1.00	0.000005	63.0	0.015	0.00002	0.000006	0.000010	0.0002	0.0006	0.00227	0.00708	0.0086	0.0021	0.0001
HC-16-6	13-Jun-13	6	0.00068	0.0299	0.90	0.000005	58.6	0.016	0.00002	0.000004	0.000010	0.0002	0.0013	0.00171	0.00651	0.0084	0.0004	0.0001
HC-16-7	20-Jun-13	7	0.00069	0.0304	1.00	0.000005	59.7	0.017	0.00002	0.000005	0.000008	0.0013	0.0006	0.00149	0.00622	0.0068	0.0004	0.0001
HC-16-8	27-Jun-13	8	0.00079	0.0304	0.80	0.000005	55.2	0.019	0.00002	0.000005	0.000007	0.0010	0.0005	0.00114	0.00563	0.0058	0.0003	0.0001
HC-16-9	04-Jul-13	9	0.00079	0.0302	0.90	0.000005	56.3	0.020	0.00002	0.000004	0.000009	0.0002	0.0010	0.00093	0.00501	0.0051	0.0002	0.0002
HC-16-10	11-Jul-13	10	0.00083	0.0280	0.80	0.000005	58.2	0.023	0.00002	0.000004	0.000005	0.0002	0.0005	0.00066	0.00390	0.0038	0.0002	0.0001
HC-16-11	18-Jul-13	11	0.00089	0.0269	0.70	0.000005	63.5	0.032	0.00002	0.000003	0.000007	0.0003	0.0005	0.00050	0.00315	0.0028	0.0003	0.0001
HC-16-12	25-Jul-13	12	0.00102	0.0233	0.80	0.000005	67.1	0.046	0.00002	0.000007	0.000006	0.0002	0.0005	0.00036	0.00288	0.0027	0.0004	0.0001
HC-16-13	01-Aug-13	13	0.00100	0.0240	0.70	0.000005	55.2	0.049	0.00002	0.000004	0.000010	0.0002	0.0005	0.00029	0.00244	0.0022	0.0006	0.0001
HC-16-14	08-Aug-13	14	0.00110	0.0218	0.70	0.000011	58.2	0.050	0.00002	0.000012	0.000010	0.0002	0.0006	0.00028	0.00261	0.0021	0.0004	0.0001
HC-16-15	15-Aug-13	15	0.00110	0.0191	0.60	0.000005	51.7	0.060	0.00002	0.000005	0.000005	0.0002	0.0005	0.00025	0.00238	0.0018	0.0005	0.0001
HC-16-16	22-Aug-13	16	0.00108	0.0210	0.70	0.000005	47.6	0.063	0.00002	0.000005	0.000005	0.0002	0.0005	0.00022	0.00224	0.0018	0.0006	0.0001
HC-16-17	29-Aug-13	17	0.00114	0.0216	0.70	0.000005	46.7	0.069	0.00002	0.000008	0.000011	0.0003	0.0005	0.00021	0.00223	0.0016	0.0009	0.0001
HC-16-18	05-Sep-13	18	0.00125	0.0208	0.60	0.000005	46.0	0.079	0.00002	0.000007	0.000005	0.0019	0.0005	0.00019	0.00212	0.0013	0.0011	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-16-19	12-Sep-13	19	0.00133	0.0192	0.80	0.000005	46.5	0.088	0.00002	0.000008	0.000005	0.0002	0.0005	0.00015	0.00191	0.0011	0.0007	0.0001
HC-16-20	19-Sep-13	20	0.00138	0.0187	0.78	0.000005	43.9	0.094	0.00002	0.000008	0.000005	0.0002	0.0006	0.00014	0.00175	0.0011	0.0007	0.0001
HC-16-21	26-Sep-13	21	0.00144	0.0182	0.75	0.000005	41.3	0.099	0.00002	0.000007	0.000005	0.0002	0.0007	0.00013	0.00158	0.0010	0.0008	0.0001
HC-16-22	03-Oct-13	22	0.00149	0.0177	0.73	0.000005	38.6	0.105	0.00002	0.000007	0.000005	0.0002	0.0007	0.00012	0.00142	0.0010	0.0008	0.0001
HC-16-23	10-Oct-13	23	0.00154	0.0172	0.70	0.000005	36.0	0.110	0.00002	0.000006	0.000005	0.0002	0.0008	0.00011	0.00125	0.0009	0.0008	0.0001
HC-16-24	17-Oct-13	24	0.00154	0.0167	0.68	0.000005	34.1	0.117	0.00002	0.000007	0.000005	0.0002	0.0007	0.00011	0.00124	0.0009	0.0008	0.0001
HC-16-25	24-Oct-13	25	0.00155	0.0162	0.65	0.000005	32.2	0.125	0.00002	0.000008	0.000005	0.0002	0.0007	0.00010	0.00123	0.0008	0.0007	0.0001
HC-16-26	31-Oct-13	26	0.00155	0.0156	0.63	0.000005	30.3	0.132	0.00002	0.000008	0.000005	0.0002	0.0006	0.00010	0.00121	0.0008	0.0007	0.0001
HC-16-27	07-Nov-13	27	0.00155	0.0151	0.60	0.000005	28.4	0.139	0.00002	0.000009	0.000005	0.0002	0.0005	0.00009	0.00120	0.0007	0.0006	0.0001
HC-16-28	14-Nov-13	28	0.00166	0.0150	0.60	0.000011	26.8	0.156	0.00004	0.000009	0.000011	0.0004	0.0011	0.00011	0.00114	0.0008	0.0008	0.0001
HC-16-29	21-Nov-13	29	0.00178	0.0149	0.60	0.000018	25.2	0.173	0.00006	0.000010	0.000018	0.0006	0.0018	0.00013	0.00108	0.0009	0.0010	0.0002
HC-16-30	28-Nov-13	30	0.00189	0.0148	0.60	0.000024	23.6	0.189	0.00008	0.000010	0.000024	0.0008	0.0024	0.00014	0.00101	0.0009	0.0012	0.0002
HC-16-31	05-Dec-13	31	0.00200	0.0147	0.60	0.000030	22.0	0.206	0.00010	0.000010	0.000030	0.0010	0.0030	0.00016	0.00095	0.0010	0.0014	0.0003
HC-16-32	12-Dec-13	32	0.00205	0.0142	0.60	0.000030	20.3	0.221	0.00010	0.000013	0.000030	0.0010	0.0030	0.00014	0.00093	0.0010	0.0013	0.0003
HC-16-33	19-Dec-13	33	0.00210	0.0138	0.60	0.000030	18.5	0.235	0.00010	0.000015	0.000030	0.0010	0.0030	0.00011	0.00091	0.0010	0.0011	0.0003
HC-16-34	26-Dec-13	34	0.00215	0.0133	0.60	0.000030	16.8	0.250	0.00010	0.000018	0.000030	0.0010	0.0030	0.00009	0.00088	0.0010	0.0010	0.0003
HC-16-35	02-Jan-14	35	0.00220	0.0128	0.60	0.000030	15.0	0.264	0.00010	0.000020	0.000030	0.0010	0.0030	0.00006	0.00086	0.0010	0.0008	0.0003
HC-16-36	09-Jan-14	36	0.00223	0.0121	0.58	0.000030	13.7	0.279	0.00010	0.000018	0.000030	0.0010	0.0030	0.00006	0.00084	0.0010	0.0010	0.0003
HC-16-37	16-Jan-14	37	0.00225	0.0115	0.55	0.000030	12.5	0.293	0.00010	0.000015	0.000030	0.0010	0.0030	0.00006	0.00082	0.0010	0.0013	0.0003
HC-16-38	23-Jan-14	38	0.00228	0.0108	0.53	0.000030	11.2	0.308	0.00010	0.000013	0.000030	0.0010	0.0030	0.00005	0.00080	0.0010	0.0015	0.0003
HC-16-39	30-Jan-14	39	0.00230	0.0101	0.50	0.000030	9.9	0.322	0.00010	0.000010	0.000030	0.0010	0.0030	0.00005	0.00078	0.0010	0.0017	0.0003
HC-16-40	06-Feb-14	40	0.00235	0.0099	0.50	0.000030	9.0	0.340	0.00010	0.000010	0.000030	0.0010	0.0030	0.00005	0.00078	0.0010	0.0016	0.0003
HC-16-41	13-Feb-14	41	0.00240	0.0098	0.50	0.000030	8.2	0.359	0.00010	0.000010	0.000030	0.0010	0.0030	0.00005	0.00079	0.0010	0.0016	0.0003
HC-16-42	20-Feb-14	42	0.00245	0.0096	0.50	0.000030	7.3	0.377	0.00010	0.000010	0.000030	0.0010	0.0030	0.00005	0.00079	0.0010	0.0015	0.0003
HC-16-43	27-Feb-14	43	0.00250	0.0094	0.50	0.000030	6.4	0.395	0.00010	0.000010	0.000030	0.0010	0.0030	0.00005	0.00079	0.0010	0.0014	0.0003
HC-16-44	06-Mar-14	44	0.00255	0.0095	0.50	0.000030	5.8	0.406	0.00010	0.000015	0.000030	0.0010	0.0030	0.00005	0.00078	0.0010	0.0015	0.0003
HC-16-45	13-Mar-14	45	0.00260	0.0096	0.50	0.000030	5.1	0.417	0.00010	0.000020	0.000030	0.0010	0.0030	0.00005	0.00077	0.0010	0.0017	0.0003
HC-16-46	20-Mar-14	46	0.00265	0.0097	0.50	0.000030	4.5	0.427	0.00010	0.000025	0.000030	0.0010	0.0030	0.00005	0.00076	0.0010	0.0018	0.0003
HC-16-47	27-Mar-14	47	0.00270	0.0098	0.50	0.000030	3.8	0.438	0.00010	0.000030	0.000030	0.0010	0.0030	0.00005	0.00075	0.0010	0.0019	0.0003
<b>Mean all weeks</b>			<b>0.00158</b>	<b>0.0182</b>	<b>0.69</b>	<b>0.000015</b>	<b>35.5</b>	<b>0.160</b>	<b>0.00005</b>	<b>0.000010</b>	<b>0.000017</b>	<b>0.0006</b>	<b>0.0016</b>	<b>0.00119</b>	<b>0.00255</b>	<b>0.0031</b>	<b>0.0010</b>	<b>0.0001</b>
<b>HC17 Middle Gates J - CCR</b>																		
HC-17-0	02-May-13	0	0.00068	0.0152	1.80	0.000006	41.7	0.024	0.00002	0.000003	0.000053	0.0040	0.0038	0.03930	0.00283	0.0060	0.0124	0.0007
HC-17-1	09-May-13	1	0.00072	0.0243	1.20	0.000005	63.1	0.028	0.00002	0.000004	0.000029	0.0009	0.0005	0.05600	0.00568	0.0045	0.0113	0.0003
HC-17-2	16-May-13	2	0.00048	0.0243	1.00	0.000013	51.0	0.015	0.00002	0.000002	0.000025	0.0004	0.0009	0.02870	0.00559	0.0040	0.0130	0.0002
HC-17-3	23-May-13	3	0.00040	0.0249	1.00	0.000005	45.4	0.015	0.00002	0.000002	0.000014	0.0004	0.0005	0.01810	0.00344	0.0038	0.0029	0.0001
HC-17-4	30-May-13	4	0.00077	0.0233	2.60	0.000017	42.6	0.018	0.00002	0.000006	0.000260	0.0008	0.0083	0.01190	0.00320	0.0043	0.0070	0.0024
HC-17-5	06-Jun-13	5	0.00055	0.0216	1.00	0.000017	41.1	0.019	0.00002	0.000003	0.000120	0.0006	0.0019	0.00924	0.00252	0.0037	0.0068	0.0002
HC-17-6	13-Jun-13	6	0.00068	0.0211	2.10	0.000012	37.9	0.019	0.00002	0.000004	0.000218	0.0006	0.0084	0.00847	0.00220	0.0040	0.0031	0.0016
HC-17-7	20-Jun-13	7	0.00042	0.0205	0.90	0.000010	42.6	0.016	0.00002	0.000004	0.000015	0.0019	0.0011	0.00807	0.00198	0.0027	0.0015	0.0001
HC-17-8	27-Jun-13	8	0.00050	0.0211	1.50	0.000005	35.3	0.016	0.00002	0.000012	0.000052	0.0007	0.0031	0.00613	0.00171	0.0026	0.0026	0.0004
HC-17-9	04-Jul-13	9	0.00092	0.0241	3.90	0.000014	42.8	0.021	0.00002	0.000006	0.000305	0.0013	0.0151	0.00632	0.00201	0.0040	0.0052	0.0028
HC-17-10	11-Jul-13	10	0.00046	0.0238	0.90	0.000005	42.2	0.018	0.00002	0.000002	0.000011	0.0008	0.0007	0.00528	0.00170	0.0030	0.0029	0.0001
HC-17-11	18-Jul-13	11	0.00055	0.0253	0.90	0.000005	42.0	0.021	0.00002	0.000002	0.000024	0.0008	0.0007	0.00400	0.00138	0.0025	0.0032	0.0001
HC-17-12	25-Jul-13	12	0.00058	0.0203	1.20	0.000008	44.4	0.026	0.00002	0.000004	0.000031	0.0004	0.0009	0.00297	0.00114	0.0021	0.0041	0.0002
HC-17-13	01-Aug-13	13	0.00058	0.0182	0.90	0.000005	37.2	0.029	0.00002	0.000002	0.000029	0.0006	0.0007	0.00245	0.00096	0.0016	0.0035	0.0001
HC-17-14	08-Aug-13	14	0.00069	0.0153	1.20	0.000018	34.1	0.029	0.00002	0.000009	0.000067	0.0004	0.0040	0.00265	0.00077	0.0013	0.0020	0.0004
HC-17-15	15-Aug-13	15	0.00060	0.0148	0.90	0.000005	34.5	0.030	0.00002	0.000002	0.000012	0.0004	0.0006	0.00266	0.00073	0.0009	0.0015	0.0001
HC-17-16	22-Aug-13	16	0.00065	0.0159	1.70	0.000005	30.1	0.025	0.00002	0.000002	0.000071	0.0004	0.0042	0.00195	0.00065	0.0013	0.0018	0.0003
HC-17-17	29-Aug-13	17	0.00054	0.0152	0.70	0.000007	31.8	0.024	0.00002	0.000004	0.000023	0.0004	0.0011	0.00168	0.00064	0.0013	0.0026	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-17-18	05-Sep-13	18	0.00066	0.0205	0.90	0.000006	40.1	0.032	0.00002	0.000003	0.000010	0.0004	0.0005	0.00164	0.00078	0.0015	0.0037	0.0001
HC-17-19	12-Sep-13	19	0.00065	0.0173	1.10	0.000011	35.1	0.031	0.00002	0.000003	0.000026	0.0005	0.0009	0.00136	0.00070	0.0014	0.0036	0.0002
HC-17-20	19-Sep-13	20	0.00067	0.0168	1.15	0.000010	34.1	0.034	0.00002	0.000003	0.000027	0.0005	0.0012	0.00125	0.00065	0.0013	0.0039	0.0003
HC-17-21	26-Sep-13	21	0.00070	0.0162	1.20	0.000008	33.2	0.036	0.00002	0.000003	0.000028	0.0005	0.0014	0.00114	0.00059	0.0013	0.0043	0.0003
HC-17-22	03-Oct-13	22	0.00072	0.0157	1.25	0.000007	32.2	0.039	0.00002	0.000002	0.000029	0.0005	0.0017	0.00102	0.00054	0.0012	0.0046	0.0004
HC-17-23	10-Oct-13	23	0.00074	0.0151	1.30	0.000005	31.2	0.041	0.00002	0.000002	0.000030	0.0005	0.0019	0.00091	0.00049	0.0011	0.0049	0.0004
HC-17-24	17-Oct-13	24	0.00079	0.0156	1.60	0.000005	30.4	0.042	0.00002	0.000003	0.000043	0.0005	0.0028	0.00091	0.00049	0.0011	0.0047	0.0005
HC-17-25	24-Oct-13	25	0.00084	0.0160	1.90	0.000005	29.6	0.043	0.00002	0.000004	0.000056	0.0005	0.0038	0.00092	0.00049	0.0012	0.0045	0.0005
HC-17-26	31-Oct-13	26	0.00089	0.0165	2.20	0.000005	28.8	0.044	0.00002	0.000005	0.000068	0.0005	0.0047	0.00092	0.00049	0.0012	0.0042	0.0006
HC-17-27	07-Nov-13	27	0.00094	0.0169	2.50	0.000005	28.0	0.045	0.00002	0.000006	0.000081	0.0005	0.0056	0.00092	0.00050	0.0012	0.0040	0.0006
HC-17-28	14-Nov-13	28	0.00097	0.0158	2.15	0.000006	27.2	0.049	0.00002	0.000006	0.000079	0.0005	0.0048	0.00088	0.00047	0.0011	0.0042	0.0005
HC-17-29	21-Nov-13	29	0.00100	0.0148	1.80	0.000007	26.4	0.053	0.00002	0.000006	0.000078	0.0005	0.0040	0.00085	0.00045	0.0010	0.0044	0.0005
HC-17-30	28-Nov-13	30	0.00103	0.0137	1.45	0.000007	25.5	0.058	0.00002	0.000006	0.000076	0.0004	0.0031	0.00081	0.00042	0.0009	0.0045	0.0004
HC-17-31	05-Dec-13	31	0.00106	0.0126	1.10	0.000008	24.7	0.062	0.00002	0.000006	0.000074	0.0004	0.0023	0.00077	0.00040	0.0008	0.0047	0.0003
HC-17-32	12-Dec-13	32	0.00106	0.0121	1.03	0.000007	23.3	0.067	0.00002	0.000006	0.000060	0.0004	0.0019	0.00072	0.00036	0.0007	0.0038	0.0002
HC-17-33	19-Dec-13	33	0.00106	0.0117	0.95	0.000007	21.9	0.071	0.00002	0.000006	0.000047	0.0003	0.0015	0.00068	0.00032	0.0006	0.0029	0.0002
HC-17-34	26-Dec-13	34	0.00105	0.0112	0.88	0.000006	20.4	0.076	0.00002	0.000006	0.000033	0.0003	0.0010	0.00063	0.00028	0.0005	0.0020	0.0001
HC-17-35	02-Jan-14	35	0.00105	0.0107	0.80	0.000005	19.0	0.081	0.00002	0.000006	0.000019	0.0002	0.0006	0.00058	0.00025	0.0004	0.0011	0.0001
HC-17-36	09-Jan-14	36	0.00110	0.0100	0.90	0.000006	18.5	0.084	0.00002	0.000006	0.000029	0.0002	0.0014	0.00057	0.00025	0.0005	0.0013	0.0001
HC-17-37	16-Jan-14	37	0.00115	0.0094	1.00	0.000006	18.1	0.086	0.00002	0.000006	0.000040	0.0002	0.0021	0.00055	0.00025	0.0005	0.0014	0.0002
HC-17-38	23-Jan-14	38	0.00119	0.0087	1.10	0.000007	17.6	0.089	0.00002	0.000005	0.000050	0.0002	0.0029	0.00054	0.00025	0.0006	0.0016	0.0003
HC-17-39	30-Jan-14	39	0.00124	0.0081	1.20	0.000007	17.1	0.091	0.00002	0.000005	0.000060	0.0002	0.0036	0.00052	0.00025	0.0006	0.0017	0.0004
HC-17-40	06-Feb-14	40	0.00130	0.0079	1.08	0.000007	16.1	0.102	0.00002	0.000006	0.000050	0.0002	0.0030	0.00049	0.00023	0.0005	0.0016	0.0003
HC-17-41	13-Feb-14	41	0.00135	0.0078	0.95	0.000008	15.0	0.113	0.00002	0.000007	0.000041	0.0002	0.0024	0.00047	0.00021	0.0005	0.0014	0.0003
HC-17-42	20-Feb-14	42	0.00141	0.0077	0.83	0.000008	14.0	0.124	0.00002	0.000007	0.000031	0.0002	0.0018	0.00044	0.00019	0.0004	0.0013	0.0002
HC-17-43	27-Feb-14	43	0.00146	0.0075	0.70	0.000008	12.9	0.135	0.00002	0.000008	0.000021	0.0002	0.0012	0.00041	0.00018	0.0003	0.0011	0.0001
HC-17-44	06-Mar-14	44	0.00146	0.0073	0.68	0.000009	12.0	0.140	0.00002	0.000008	0.000018	0.0002	0.0012	0.00038	0.00017	0.0003	0.0010	0.0001
HC-17-45	13-Mar-14	45	0.00146	0.0071	0.65	0.000009	11.1	0.145	0.00002	0.000008	0.000016	0.0002	0.0012	0.00035	0.00016	0.0004	0.0009	0.0001
HC-17-46	20-Mar-14	46	0.00146	0.0069	0.63	0.000010	10.3	0.150	0.00002	0.000007	0.000013	0.0002	0.0011	0.00032	0.00015	0.0004	0.0008	0.0001
HC-17-47	27-Mar-14	47	0.00146	0.0067	0.60	0.000010	9.4	0.155	0.00002	0.000007	0.000010	0.0002	0.0011	0.00029	0.00014	0.0004	0.0007	0.0001
<b>Mean all weeks</b>			<b>0.00089</b>	<b>0.0153</b>	<b>1.27</b>	<b>0.000008</b>	<b>29.6</b>	<b>0.056</b>	<b>0.00002</b>	<b>0.000005</b>	<b>0.000054</b>	<b>0.0005</b>	<b>0.0026</b>	<b>0.00496</b>	<b>0.00105</b>	<b>0.0016</b>	<b>0.0036</b>	<b>0.0004</b>
<b>HC19 Middle Gates D - CCR</b>																		
HC-19-0	06-Feb-14	0	0.00139	0.0502	0.80	0.000056	71.5	0.040	0.00002	0.000047	0.000036	0.0002	0.0017	0.00007	0.00023	0.0008	0.0078	0.0005
HC-19-1	13-Feb-14	1	0.00159	0.0930	1.00	0.000023	87.4	0.034	0.00002	0.000031	0.000017	0.0002	0.0012	0.00023	0.00019	0.0011	0.0022	0.0001
HC-19-2	20-Feb-14	2	0.00133	0.0544	1.00	0.000011	82.4	0.025	0.00002	0.000021	0.000016	0.0002	0.0013	0.00020	0.00044	0.0016	0.0014	0.0001
HC-19-3	27-Feb-14	3	0.00110	0.0347	0.80	0.000018	71.9	0.018	0.00002	0.000017	0.000011	0.0002	0.0007	0.00012	0.00046	0.0014	0.0012	0.0001
HC-19-4	06-Mar-14	4	0.00113	0.0283	1.00	0.000026	63.7	0.015	0.00002	0.000017	0.000013	0.0002	0.0013	0.00009	0.00044	0.0017	0.0011	0.0001
HC-19-5	13-Mar-14	5	0.00103	0.0264	0.90	0.000020	61.9	0.012	0.00002	0.000017	0.000014	0.0002	0.0007	0.00011	0.00047	0.0018	0.0014	0.0001
HC-19-6	20-Mar-14	6	0.00095	0.0231	0.90	0.000026	54.6	0.012	0.00002	0.000013	0.000014	0.0002	0.0011	0.00008	0.00041	0.0015	0.0010	0.0001
HC-19-7	27-Mar-14	7	0.00087	0.0218	0.80	0.000026	49.4	0.012	0.00002	0.000011	0.000009	0.0002	0.0014	0.00012	0.00034	0.0015	0.0010	0.0001
HC-19-8	03-Apr-14	8	0.00094	0.0218	0.90	0.000025	45.7	0.011	0.00002	0.000012	0.000010	0.0002	0.0012	0.00016	0.00032	0.0016	0.0010	0.0001
HC-19-9	10-Apr-14	9	0.00092	0.0216	0.80	0.000025	44.2	0.011	0.00002	0.000010	0.000010	0.0002	0.0016	0.00005	0.00032	0.0017	0.0014	0.0001
HC-19-10	17-Apr-14	10	0.00083	0.0208	0.80	0.000041	46.9	0.010	0.00002	0.000013	0.000013	0.0002	0.0012	0.00006	0.00029	0.0016	0.0010	0.0001
<b>Mean all weeks</b>			<b>0.00110</b>	<b>0.0360</b>	<b>0.88</b>	<b>0.000027</b>	<b>61.8</b>	<b>0.018</b>	<b>0.00002</b>	<b>0.000019</b>	<b>0.000015</b>	<b>0.0002</b>	<b>0.0012</b>	<b>0.00012</b>	<b>0.00035</b>	<b>0.0015</b>	<b>0.0019</b>	<b>0.0001</b>
<b>HC20 Middle Gates E - CCR</b>																		
HC-20-0	06-Feb-14	0	0.00099	0.0604	1.40	0.000072	33.9	0.004	0.00002	0.000020	0.000078	0.0002	0.0071	0.00050	0.00233	0.0066	0.0020	0.0009
HC-20-1	13-Feb-14	1	0.00126	0.1080	1.10	0.000118	55.4	0.006	0.00002	0.000022	0.000056	0.0002	0.0054	0.00096	0.00509	0.0073	0.0017	0.0004
HC-20-2	20-Feb-14	2	0.00104	0.0668	1.50	0.000021	51.8	0.004	0.00002	0.000023	0.000040	0.0002	0.0035	0.00070	0.00416	0.0064	0.0016	0.0003

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-20-3	27-Feb-14	3	0.00089	0.0505	1.20	0.000020	51.8	0.004	0.00002	0.000019	0.000026	0.0002	0.0023	0.00053	0.00346	0.0052	0.0015	0.0001
HC-20-4	06-Mar-14	4	0.00149	0.0468	1.90	0.000029	51.5	0.005	0.00002	0.000033	0.000053	0.0002	0.0050	0.00047	0.00309	0.0060	0.0023	0.0004
HC-20-5	13-Mar-14	5	0.00071	0.0386	1.10	0.000011	46.8	0.004	0.00002	0.000017	0.000016	0.0002	0.0013	0.00032	0.00283	0.0040	0.0015	0.0001
HC-20-6	20-Mar-14	6	0.00089	0.0345	1.20	0.000020	42.2	0.004	0.00002	0.000021	0.000031	0.0002	0.0028	0.00030	0.00250	0.0042	0.0014	0.0009
HC-20-7	27-Mar-14	7	0.00070	0.0333	1.00	0.000017	37.4	0.003	0.00002	0.000015	0.000019	0.0002	0.0018	0.00027	0.00207	0.0037	0.0013	0.0002
HC-20-8	03-Apr-14	8	0.00063	0.0326	0.90	0.000008	37.7	0.004	0.00002	0.000016	0.000016	0.0002	0.0020	0.00025	0.00201	0.0033	0.0009	0.0002
HC-20-9	10-Apr-14	9	0.00067	0.0323	0.90	0.000030	35.6	0.004	0.00002	0.000016	0.000014	0.0002	0.0016	0.00021	0.00186	0.0038	0.0012	0.0002
HC-20-10	17-Apr-14	10	0.00050	0.0294	0.70	0.000026	36.6	0.004	0.00002	0.000015	0.000005	0.0002	0.0009	0.00020	0.00166	0.0026	0.0010	0.0001
<b>Mean all weeks</b>			<b>0.00089</b>	<b>0.0485</b>	<b>1.17</b>	<b>0.000034</b>	<b>43.7</b>	<b>0.004</b>	<b>0.00002</b>	<b>0.000020</b>	<b>0.000032</b>	<b>0.0002</b>	<b>0.0031</b>	<b>0.00043</b>	<b>0.00282</b>	<b>0.0048</b>	<b>0.0015</b>	<b>0.0003</b>
<b>HC21 Middle Gates F - CCR</b>																		
HC-21-0	06-Feb-14	0	0.00155	0.0137	0.60	0.000022	49.6	0.013	0.00002	0.000080	0.000005	0.0002	0.0009	0.00001	0.00003	0.0002	0.0174	0.0001
HC-21-1	13-Feb-14	1	0.00115	0.0491	0.90	0.000013	48.0	0.008	0.00002	0.000025	0.000005	0.0002	0.0005	0.00004	0.00004	0.0002	0.0015	0.0001
HC-21-2	20-Feb-14	2	0.00103	0.0376	1.00	0.000005	46.3	0.006	0.00002	0.000018	0.000005	0.0002	0.0011	0.00003	0.00003	0.0003	0.0007	0.0001
HC-21-3	27-Feb-14	3	0.00091	0.0271	0.90	0.000005	43.0	0.006	0.00002	0.000024	0.000006	0.0002	0.0005	0.00002	0.00002	0.0002	0.0024	0.0001
HC-21-4	06-Mar-14	4	0.00093	0.0223	1.10	0.000005	40.8	0.005	0.00002	0.000024	0.000010	0.0002	0.0006	0.00001	0.00002	0.0002	0.0017	0.0001
HC-21-5	13-Mar-14	5	0.00084	0.0197	1.00	0.000005	39.8	0.006	0.00002	0.000020	0.000005	0.0002	0.0005	0.00001	0.00002	0.0002	0.0013	0.0001
HC-21-6	20-Mar-14	6	0.00087	0.0185	1.00	0.000005	36.8	0.006	0.00002	0.000018	0.000005	0.0002	0.0006	0.00001	0.00001	0.0002	0.0013	0.0001
HC-21-7	27-Mar-14	7	0.00083	0.0184	1.00	0.000006	36.4	0.006	0.00002	0.000017	0.000005	0.0002	0.0006	0.00001	0.00001	0.0002	0.0021	0.0001
HC-21-8	03-Apr-14	8	0.00089	0.0171	1.00	0.000005	34.5	0.006	0.00002	0.000018	0.000005	0.0002	0.0007	0.00002	0.00001	0.0002	0.0020	0.0001
HC-21-9	10-Apr-14	9	0.00089	0.0177	0.90	0.000008	32.2	0.006	0.00002	0.000019	0.000005	0.0002	0.0005	0.00001	0.00001	0.0004	0.0023	0.0001
HC-21-10	17-Apr-14	10	0.00087	0.0173	0.90	0.000005	32.2	0.006	0.00002	0.000020	0.000005	0.0002	0.0006	0.00001	0.00001	0.0002	0.0025	0.0001
<b>Mean all weeks</b>			<b>0.00098</b>	<b>0.0235</b>	<b>0.94</b>	<b>0.000008</b>	<b>40.0</b>	<b>0.007</b>	<b>0.00002</b>	<b>0.000026</b>	<b>0.000006</b>	<b>0.0002</b>	<b>0.0006</b>	<b>0.00002</b>	<b>0.00002</b>	<b>0.0002</b>	<b>0.0032</b>	<b>0.0001</b>
<b>HC22 Middle Gates F - CCR</b>																		
HC-22-0	06-Feb-14	0	0.00038	0.0199	0.60	0.000043	16.3	0.003	0.00002	0.000003	0.000034	0.0002	0.0023	0.00051	0.00035	0.0039	0.0009	0.0001
HC-22-1	13-Feb-14	1	0.00060	0.0587	0.90	0.000037	31.2	0.004	0.00002	0.000006	0.000023	0.0002	0.0014	0.00117	0.00131	0.0038	0.0005	0.0001
HC-22-2	20-Feb-14	2	0.00053	0.0386	0.90	0.000013	29.3	0.003	0.00002	0.000004	0.000010	0.0002	0.0010	0.00074	0.00085	0.0033	0.0006	0.0001
HC-22-3	27-Feb-14	3	0.00053	0.0328	0.80	0.000014	29.8	0.003	0.00002	0.000003	0.000007	0.0002	0.0011	0.00052	0.00064	0.0028	0.0004	0.0001
HC-22-4	06-Mar-14	4	0.00064	0.0294	1.00	0.000018	28.4	0.003	0.00002	0.000006	0.000010	0.0002	0.0024	0.00040	0.00051	0.0029	0.0008	0.0001
HC-22-5	13-Mar-14	5	0.00049	0.0275	0.90	0.000009	28.9	0.002	0.00002	0.000005	0.000009	0.0002	0.0008	0.00030	0.00049	0.0026	0.0006	0.0001
HC-22-6	20-Mar-14	6	0.00050	0.0240	0.80	0.000015	23.6	0.002	0.00002	0.000004	0.000010	0.0002	0.0012	0.00028	0.00040	0.0023	0.0007	0.0001
HC-22-7	27-Mar-14	7	0.00047	0.0251	0.80	0.000012	24.8	0.002	0.00002	0.000004	0.000007	0.0002	0.0012	0.00026	0.00038	0.0023	0.0007	0.0001
HC-22-8	03-Apr-14	8	0.00052	0.0240	0.80	0.000010	23.6	0.003	0.00002	0.000004	0.000010	0.0002	0.0012	0.00024	0.00035	0.0022	0.0006	0.0001
HC-22-9	10-Apr-14	9	0.00048	0.0234	0.70	0.000012	25.3	0.003	0.00002	0.000004	0.000005	0.0002	0.0011	0.00022	0.00034	0.0022	0.0006	0.0001
HC-22-10	17-Apr-14	10	0.00047	0.0221	0.70	0.000015	27.1	0.003	0.00002	0.000004	0.000007	0.0002	0.0013	0.00020	0.00031	0.0018	0.0007	0.0001
<b>Mean all weeks</b>			<b>0.00051</b>	<b>0.0296</b>	<b>0.81</b>	<b>0.000018</b>	<b>26.2</b>	<b>0.003</b>	<b>0.00002</b>	<b>0.000004</b>	<b>0.000012</b>	<b>0.0002</b>	<b>0.0014</b>	<b>0.00044</b>	<b>0.00054</b>	<b>0.0027</b>	<b>0.0006</b>	<b>0.0001</b>
<b>HC23 Middle Gates G/I - CCR</b>																		
HC-23-0	06-Feb-14	0	0.00046	0.0118	0.60	0.000014	33.0	0.005	0.00002	0.000006	0.000011	0.0002	0.0016	0.00006	0.00033	0.0030	0.0014	0.0001
HC-23-1	13-Feb-14	1	0.00072	0.0409	0.90	0.000029	63.4	0.009	0.00002	0.000009	0.000018	0.0002	0.0018	0.00017	0.00157	0.0050	0.0005	0.0001
HC-23-2	20-Feb-14	2	0.00058	0.0271	0.80	0.000005	60.2	0.009	0.00002	0.000007	0.000014	0.0002	0.0015	0.00004	0.00136	0.0040	0.0005	0.0002
HC-23-3	27-Feb-14	3	0.00061	0.0216	0.70	0.000008	62.8	0.009	0.00002	0.000006	0.000009	0.0002	0.0014	0.00003	0.00105	0.0036	0.0004	0.0001
HC-23-4	06-Mar-14	4	0.00063	0.0177	0.80	0.000006	52.7	0.009	0.00002	0.000008	0.000015	0.0002	0.0014	0.00004	0.00088	0.0031	0.0004	0.0001
HC-23-5	13-Mar-14	5	0.00050	0.0168	0.70	0.000005	54.6	0.008	0.00002	0.000006	0.000010	0.0002	0.0007	0.00001	0.00084	0.0028	0.0004	0.0001
HC-23-6	20-Mar-14	6	0.00050	0.0145	0.60	0.000005	49.0	0.009	0.00002	0.000006	0.000006	0.0002	0.0007	0.00002	0.00072	0.0022	0.0004	0.0001
HC-23-7	27-Mar-14	7	0.00048	0.0142	0.50	0.000005	46.1	0.009	0.00002	0.000007	0.000005	0.0002	0.0005	0.00002	0.00066	0.0022	0.0007	0.0001
HC-23-8	03-Apr-14	8	0.00050	0.0135	0.60	0.000005	42.2	0.007	0.00002	0.000005	0.000009	0.0002	0.0010	0.00002	0.00060	0.0021	0.0004	0.0001
HC-23-9	10-Apr-14	9	0.00051	0.0124	0.50	0.000005	41.2	0.009	0.00002	0.000006	0.000005	0.0002	0.0006	0.00001	0.00056	0.0018	0.0003	0.0001
HC-23-10	17-Apr-14	10	0.00046	0.0111	0.40	0.000005	43.0	0.010	0.00002	0.000005	0.000005	0.0002	0.0009	0.00001	0.00048	0.0014	0.0003	0.0001
<b>Mean all weeks</b>			<b>0.00054</b>	<b>0.0183</b>	<b>0.65</b>	<b>0.000008</b>	<b>49.8</b>	<b>0.008</b>	<b>0.00002</b>	<b>0.000006</b>	<b>0.000010</b>	<b>0.0002</b>	<b>0.0011</b>	<b>0.00004</b>	<b>0.00082</b>	<b>0.0028</b>	<b>0.0005</b>	<b>0.0001</b>



Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
<b>HC24 Middle Gates G/I - CCR</b>																		
HC-24-0	06-Feb-14	0	0.00239	0.0168	1.40	0.000012	78.4	0.036	0.00002	0.000099	0.000010	0.0002	0.0009	0.00002	0.00012	0.0004	0.0180	0.0001
HC-24-1	13-Feb-14	1	0.00111	0.0399	1.00	0.000012	33.6	0.010	0.00002	0.000023	0.000018	0.0002	0.0011	0.00183	0.00009	0.0004	0.0019	0.0001
HC-24-2	20-Feb-14	2	0.00112	0.0257	1.10	0.000005	34.2	0.007	0.00002	0.000017	0.000013	0.0002	0.0014	0.00136	0.00007	0.0012	0.0011	0.0001
HC-24-3	27-Feb-14	3	0.00081	0.0207	0.90	0.000005	29.1	0.004	0.00002	0.000011	0.000005	0.0002	0.0006	0.00110	0.00004	0.0007	0.0032	0.0001
HC-24-4	06-Mar-14	4	0.00089	0.0161	1.00	0.000006	30.3	0.004	0.00002	0.000014	0.000007	0.0002	0.0005	0.00099	0.00004	0.0009	0.0007	0.0001
HC-24-5	13-Mar-14	5	0.00109	0.0128	1.10	0.000005	34.0	0.005	0.00002	0.000015	0.000008	0.0002	0.0007	0.00069	0.00004	0.0013	0.0010	0.0001
HC-24-6	20-Mar-14	6	0.00119	0.0124	1.20	0.000007	31.0	0.005	0.00002	0.000015	0.000011	0.0002	0.0013	0.00046	0.00004	0.0013	0.0015	0.0001
HC-24-7	27-Mar-14	7	0.00084	0.0123	1.00	0.000008	26.8	0.005	0.00002	0.000014	0.000005	0.0002	0.0011	0.00041	0.00002	0.0008	0.0009	0.0001
HC-24-8	03-Apr-14	8	0.00124	0.0110	1.10	0.000006	30.2	0.006	0.00002	0.000015	0.000005	0.0002	0.0009	0.00033	0.00003	0.0010	0.0021	0.0001
HC-24-9	10-Apr-14	9	0.00120	0.0115	1.00	0.000013	27.0	0.005	0.00002	0.000014	0.000008	0.0002	0.0017	0.00032	0.00002	0.0014	0.0015	0.0004
HC-24-10	17-Apr-14	10	0.00079	0.0117	0.90	0.000005	24.3	0.003	0.00002	0.000011	0.000005	0.0002	0.0013	0.00037	0.00002	0.0010	0.0009	0.0001
<b>Mean all weeks</b>			<b>0.00115</b>	<b>0.0174</b>	<b>1.06</b>	<b>0.000008</b>	<b>34.4</b>	<b>0.008</b>	<b>0.00002</b>	<b>0.000023</b>	<b>0.000009</b>	<b>0.0002</b>	<b>0.0010</b>	<b>0.00072</b>	<b>0.00005</b>	<b>0.0009</b>	<b>0.0030</b>	<b>0.0001</b>
<b>HC25 Middle Gates D - Clean Coal</b>																		
HC-25-0	06-Feb-14	0	0.00044	0.0006	0.10	0.000009	5.5	0.070	0.00002	0.000083	0.000005	0.0002	0.0011	0.00030	0.00004	0.0005	0.0050	0.0001
HC-25-1	13-Feb-14	1	0.00041	0.0030	0.40	0.000005	9.3	0.237	0.00002	0.000099	0.000005	0.0002	0.0005	0.00018	0.00009	0.0002	0.0020	0.0001
HC-25-2	20-Feb-14	2	0.00030	0.0034	0.40	0.000005	5.0	0.329	0.00002	0.000075	0.000005	0.0002	0.0005	0.00009	0.00013	0.0002	0.0012	0.0001
HC-25-3	27-Feb-14	3	0.00024	0.0029	0.20	0.000005	2.4	0.323	0.00002	0.000069	0.000005	0.0002	0.0005	0.00003	0.00009	0.0002	0.0013	0.0001
HC-25-4	06-Mar-14	4	0.00021	0.0027	0.20	0.000005	1.5	0.309	0.00002	0.000062	0.000005	0.0002	0.0005	0.00002	0.00006	0.0002	0.0011	0.0001
HC-25-5	13-Mar-14	5	0.00021	0.0033	0.20	0.000005	1.4	0.341	0.00002	0.000063	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0011	0.0001
HC-25-6	20-Mar-14	6	0.00027	0.0031	0.20	0.000005	1.2	0.348	0.00002	0.000091	0.000005	0.0002	0.0005	0.00001	0.00005	0.0002	0.0012	0.0001
HC-25-7	27-Mar-14	7	0.00030	0.0029	0.20	0.000005	1.0	0.349	0.00002	0.000113	0.000005	0.0002	0.0007	0.00001	0.00004	0.0002	0.0013	0.0001
HC-25-8	03-Apr-14	8	0.00034	0.0029	0.20	0.000005	0.9	0.344	0.00002	0.000127	0.000005	0.0002	0.0005	0.00001	0.00003	0.0002	0.0011	0.0001
HC-25-9	10-Apr-14	9	0.00035	0.0030	0.10	0.000005	0.9	0.355	0.00002	0.000125	0.000005	0.0002	0.0008	0.00001	0.00003	0.0003	0.0011	0.0001
HC-25-10	17-Apr-14	10	0.00026	0.0027	0.10	0.000005	0.7	0.334	0.00002	0.000114	0.000005	0.0002	0.0008	0.00001	0.00003	0.0002	0.0012	0.0001
<b>Mean all weeks</b>			<b>0.00030</b>	<b>0.0028</b>	<b>0.21</b>	<b>0.000005</b>	<b>2.7</b>	<b>0.304</b>	<b>0.00002</b>	<b>0.000093</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0006</b>	<b>0.00006</b>	<b>0.00006</b>	<b>0.0002</b>	<b>0.0016</b>	<b>0.0001</b>
<b>HC26 Middle Gates E - Clean Coal</b>																		
HC-26-0	06-Feb-14	0	0.00025	0.0004	0.10	0.000006	3.9	0.029	0.00002	0.000013	0.000005	0.0002	0.0007	0.00018	0.00004	0.0004	0.0077	0.0001
HC-26-1	13-Feb-14	1	0.00006	0.0006	0.10	0.000005	3.6	0.009	0.00002	0.000002	0.000005	0.0002	0.0005	0.00020	0.00015	0.0002	0.0009	0.0001
HC-26-2	20-Feb-14	2	0.00012	0.0010	0.20	0.000005	6.4	0.045	0.00002	0.000008	0.000005	0.0002	0.0005	0.00016	0.00044	0.0002	0.0008	0.0001
HC-26-3	27-Feb-14	3	0.00017	0.0012	0.10	0.000005	6.7	0.075	0.00002	0.000011	0.000005	0.0002	0.0005	0.00012	0.00042	0.0002	0.0009	0.0001
HC-26-4	06-Mar-14	4	0.00017	0.0008	0.10	0.000005	4.9	0.076	0.00002	0.000010	0.000005	0.0002	0.0005	0.00006	0.00030	0.0002	0.0008	0.0001
HC-26-5	13-Mar-14	5	0.00016	0.0007	0.10	0.000005	4.1	0.078	0.00002	0.000010	0.000005	0.0002	0.0005	0.00002	0.00031	0.0002	0.0009	0.0001
HC-26-6	20-Mar-14	6	0.00015	0.0007	0.10	0.000005	3.6	0.072	0.00002	0.000007	0.000005	0.0002	0.0007	0.00003	0.00024	0.0002	0.0007	0.0001
HC-26-7	27-Mar-14	7	0.00014	0.0007	0.10	0.000005	3.3	0.079	0.00002	0.000011	0.000005	0.0002	0.0010	0.00003	0.00022	0.0002	0.0008	0.0001
HC-26-8	03-Apr-14	8	0.00015	0.0007	0.10	0.000005	2.8	0.076	0.00002	0.000014	0.000005	0.0002	0.0005	0.00003	0.00024	0.0002	0.0006	0.0001
HC-26-9	10-Apr-14	9	0.00016	0.0009	0.10	0.000006	2.7	0.093	0.00002	0.000006	0.000005	0.0002	0.0006	0.00001	0.00030	0.0005	0.0007	0.0001
HC-26-10	17-Apr-14	10	0.00015	0.0007	0.10	0.000005	2.5	0.086	0.00002	0.000010	0.000005	0.0002	0.0009	0.00001	0.00024	0.0002	0.0008	0.0001
<b>Mean all weeks</b>			<b>0.00015</b>	<b>0.0008</b>	<b>0.11</b>	<b>0.000005</b>	<b>4.0</b>	<b>0.065</b>	<b>0.00002</b>	<b>0.000009</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0006</b>	<b>0.00008</b>	<b>0.00026</b>	<b>0.0002</b>	<b>0.0014</b>	<b>0.0001</b>
<b>HC27 Middle Gates G/I - Tailings</b>																		
HC-27-0	06-Feb-14	0	0.00460	0.0381	2.20	0.000013	54.5	0.479	0.00002	0.000048	0.000005	0.0002	0.0014	0.00673	0.00195	0.0012	0.0015	0.0001
HC-27-1	13-Feb-14	1	0.00452	0.0118	3.40	0.000005	31.9	0.468	0.00002	0.000044	0.000005	0.0002	0.0006	0.01720	0.00134	0.0006	0.0021	0.0001
HC-27-2	20-Feb-14	2	0.00541	0.0127	4.10	0.000005	23.3	0.921	0.00002	0.000048	0.000005	0.0002	0.0005	0.01310	0.00208	0.0008	0.0017	0.0001
HC-27-3	27-Feb-14	3	0.00519	0.0105	3.90	0.000005	16.2	0.997	0.00002	0.000055	0.000005	0.0002	0.0005	0.00707	0.00186	0.0006	0.0026	0.0001
HC-27-4	06-Mar-14	4	0.00500	0.0076	4.10	0.000005	11.2	0.954	0.00002	0.000049	0.000005	0.0002	0.0005	0.00398	0.00154	0.0006	0.0032	0.0001
HC-27-5	13-Mar-14	5	0.00500	0.0102	3.80	0.000005	8.2	1.080	0.00002	0.000051	0.000005	0.0002	0.0005	0.00386	0.00168	0.0004	0.0071	0.0001
HC-27-6	20-Mar-14	6	0.00496	0.0157	3.30	0.000005	5.4	1.100	0.00002	0.000044	0.000005	0.0002	0.0005	0.00401	0.00163	0.0002	0.0042	0.0001
HC-27-7	27-Mar-14	7	0.00456	0.0152	3.10	0.000007	4.1	1.070	0.00002	0.000044	0.000005	0.0002	0.0006	0.00259	0.00145	0.0004	0.0035	0.0001

Appendix 12. Coal Humidity Cell Results

Sample ID	Date Sampled	Week No.	Rubidium (Rb) mg/L	Selenium (Se) mg/L	Silicon (Si) mg/L	Silver (Ag) mg/L	Sodium (Na) mg/L	Strontium (Sr) mg/L	Tellurium (Te) mg/L	Thallium (Tl) mg/L	Thorium (Th) mg/L	Tin (Sn) mg/L	Titanium (Ti) mg/L	Tungsten (W) mg/L	Uranium (U) mg/L	Vanadium (V) mg/L	Zinc (Zn) mg/L	Zirconium (Zr) mg/L
HC-27-8	03-Apr-14	8	0.00469	0.0153	2.80	0.000005	3.3	1.040	0.00002	0.000044	0.000005	0.0002	0.0006	0.00193	0.00141	0.0003	0.0051	0.0001
HC-27-9	10-Apr-14	9	0.00473	0.0147	2.60	0.000007	2.4	1.140	0.00002	0.000039	0.000005	0.0002	0.0005	0.00071	0.00135	0.0006	0.0040	0.0001
HC-27-10	17-Apr-14	10	0.00478	0.0151	2.60	0.000005	2.3	1.150	0.00002	0.000048	0.000005	0.0002	0.0010	0.00054	0.00144	0.0004	0.0114	0.0001
<b>Mean all weeks</b>			<b>0.00486</b>	<b>0.0152</b>	<b>3.26</b>	<b>0.000006</b>	<b>14.8</b>	<b>0.945</b>	<b>0.00002</b>	<b>0.000047</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0007</b>	<b>0.00561</b>	<b>0.00161</b>	<b>0.0006</b>	<b>0.0042</b>	<b>0.0001</b>
<b>HC28 Middle Gates J - Tailings</b>																		
HC-28-0	06-Feb-14	0	0.00815	0.0324	2.40	0.000008	56.4	0.474	0.00002	0.000125	0.000005	0.0002	0.0009	0.01200	0.00314	0.0010	0.0022	0.0001
HC-28-1	13-Feb-14	1	0.00558	0.0114	3.20	0.000006	17.3	0.389	0.00002	0.000079	0.000005	0.0002	0.0008	0.01840	0.00178	0.0007	0.0023	0.0001
HC-28-2	20-Feb-14	2	0.00571	0.0119	3.60	0.000005	12.5	0.477	0.00002	0.000080	0.000005	0.0002	0.0005	0.02740	0.00239	0.0009	0.0017	0.0001
HC-28-3	27-Feb-14	3	0.00506	0.0144	2.90	0.000005	8.9	0.470	0.00002	0.000074	0.000005	0.0002	0.0005	0.02770	0.00229	0.0008	0.0017	0.0001
HC-28-4	06-Mar-14	4	0.00554	0.0104	3.90	0.000005	7.6	0.535	0.00002	0.000083	0.000005	0.0002	0.0005	0.01580	0.00201	0.0009	0.0022	0.0001
HC-28-5	13-Mar-14	5	0.00547	0.0082	3.60	0.000005	5.5	0.575	0.00002	0.000082	0.000005	0.0002	0.0005	0.01210	0.00188	0.0007	0.0040	0.0001
HC-28-6	20-Mar-14	6	0.00535	0.0089	3.10	0.000005	3.9	0.560	0.00002	0.000073	0.000005	0.0002	0.0005	0.00980	0.00172	0.0005	0.0031	0.0001
HC-28-7	27-Mar-14	7	0.00505	0.0078	3.00	0.000006	3.3	0.589	0.00002	0.000073	0.000005	0.0002	0.0006	0.00770	0.00159	0.0007	0.0029	0.0001
HC-28-8	03-Apr-14	8	0.00517	0.0112	2.50	0.000005	2.4	0.544	0.00002	0.000069	0.000005	0.0002	0.0005	0.00886	0.00173	0.0007	0.0030	0.0001
HC-28-9	10-Apr-14	9	0.00503	0.0127	2.10	0.000005	1.9	0.577	0.00002	0.000064	0.000005	0.0002	0.0005	0.00633	0.00150	0.0007	0.0020	0.0001
HC-28-10	17-Apr-14	10	0.00477	0.0135	2.10	0.000005	1.8	0.580	0.00002	0.000065	0.000005	0.0002	0.0011	0.00505	0.00147	0.0006	0.0030	0.0001
<b>Mean all weeks</b>			<b>0.00553</b>	<b>0.0130</b>	<b>2.95</b>	<b>0.000005</b>	<b>11.1</b>	<b>0.525</b>	<b>0.00002</b>	<b>0.000079</b>	<b>0.000005</b>	<b>0.0002</b>	<b>0.0006</b>	<b>0.01374</b>	<b>0.00195</b>	<b>0.0007</b>	<b>0.0026</b>	<b>0.0001</b>

Note: Where concentrations were below detection limits, they were reported as the detection limit value

## Appendix 13

### Coal Humidity Cell Summary Figures

Figure A13-1  
 Acidity, Chloride, and Fluoride  
 Production Rates for Coal Humidity Cells

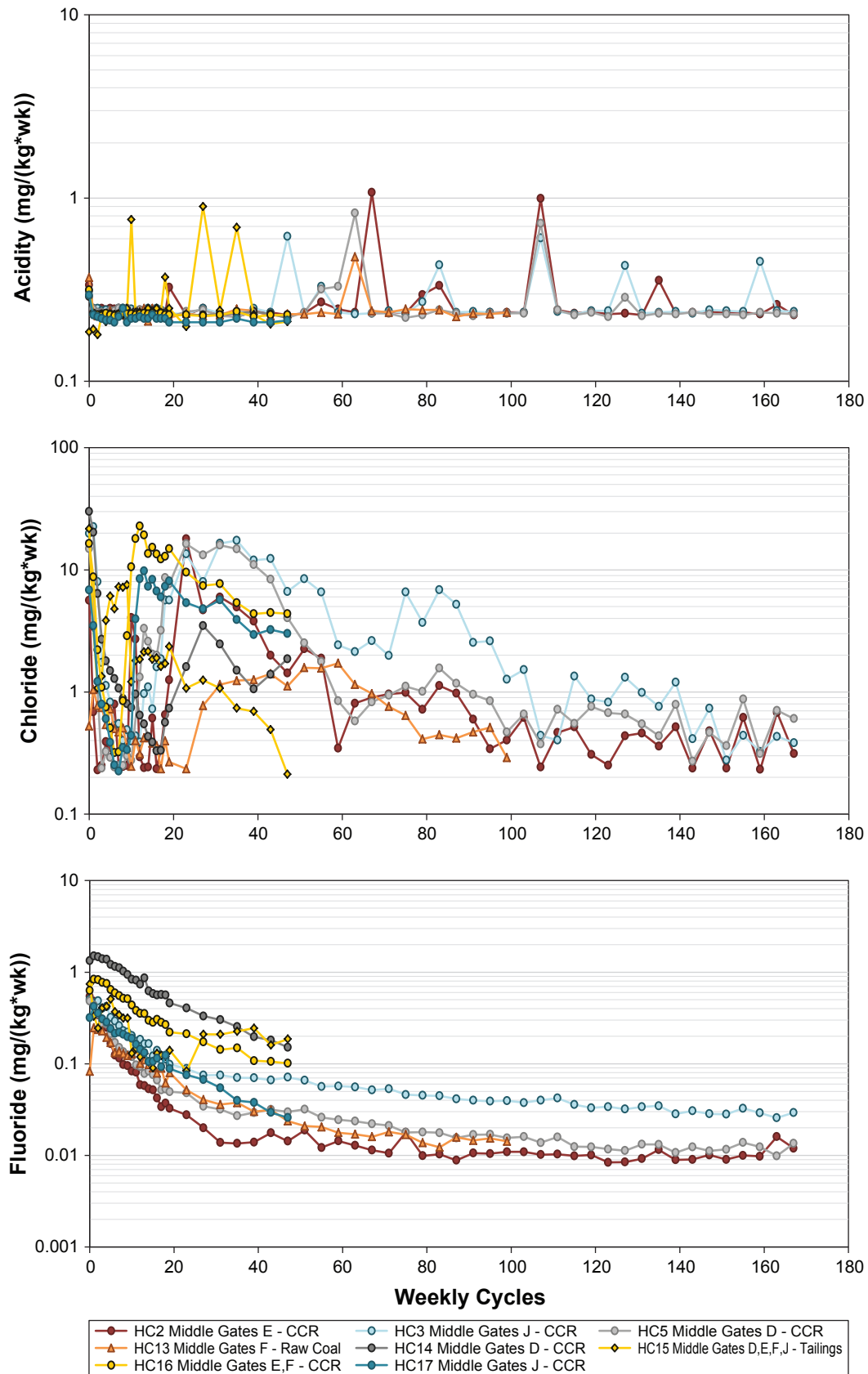


Figure A13-2  
 Antimony, Barium, and Beryllium  
 Production Rates for Coal Humidity Cells

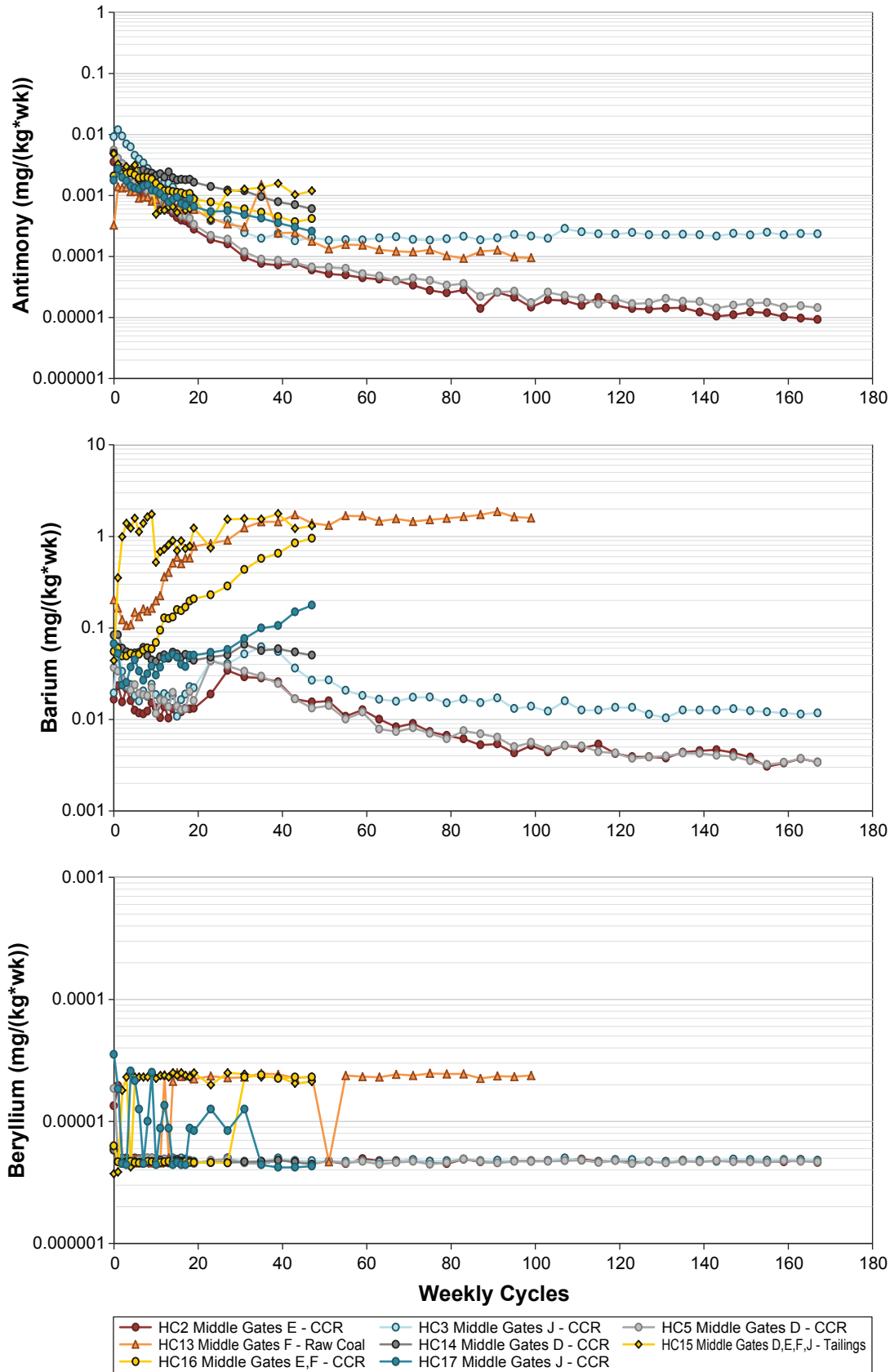


Figure A13-3  
 Bismuth, Boron, and Cesium  
 Production Rates for Coal Humidity Cells

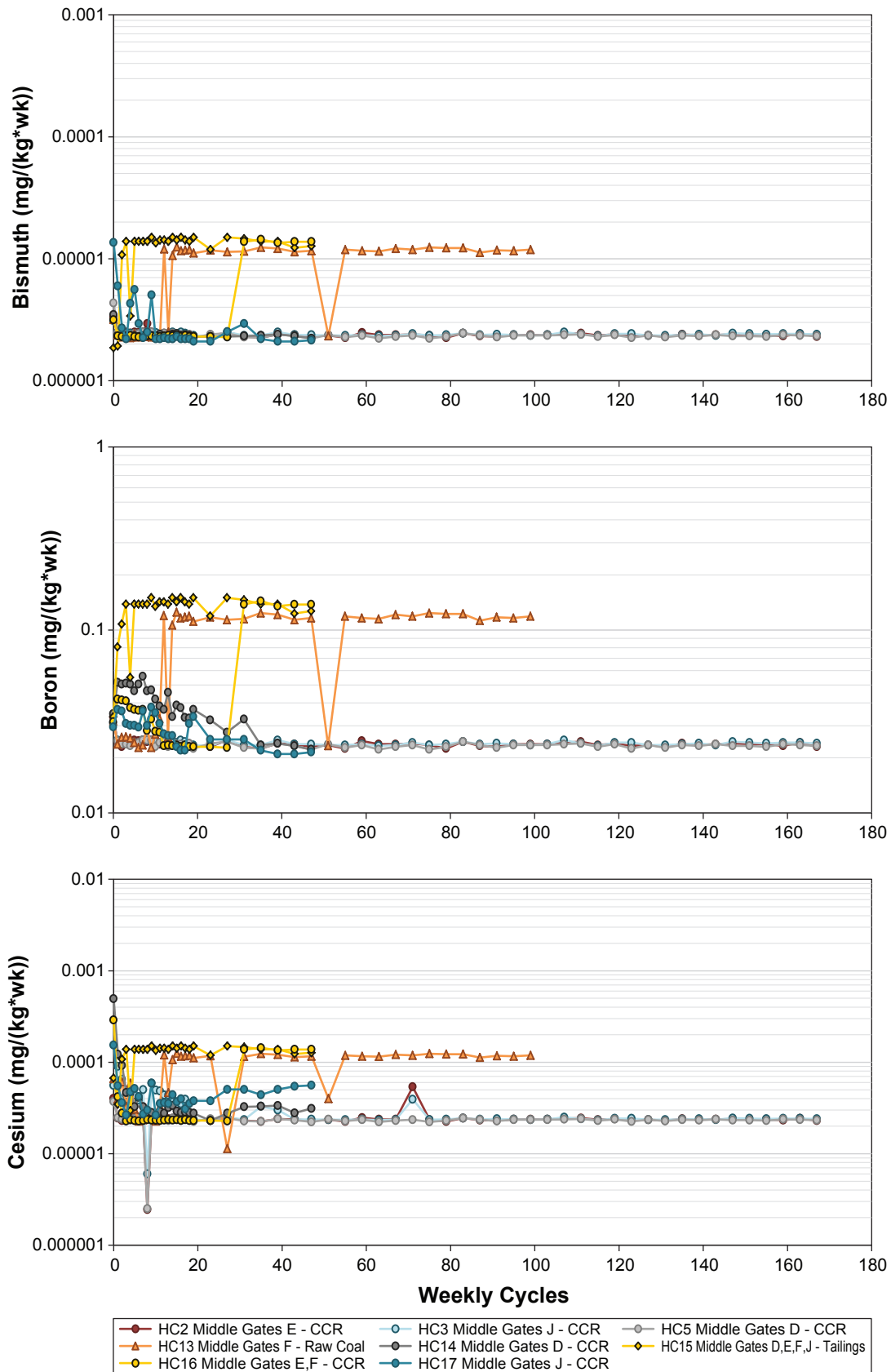


Figure A13-4  
 Chromium, Cobalt, and Copper  
 Production Rates for Coal Humidity Cells

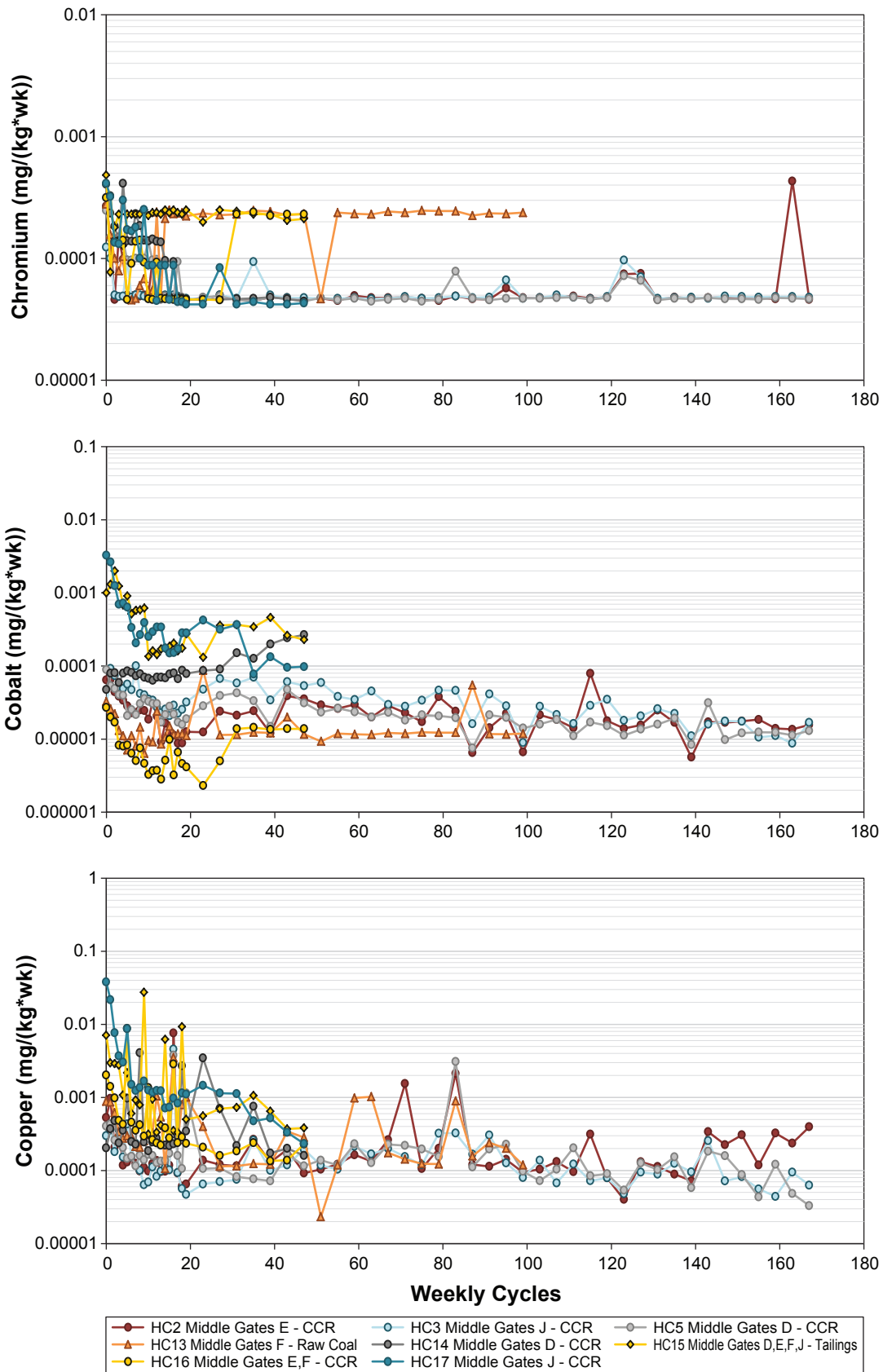


Figure A13-5

Lead, Lithium, and Mercury  
Production Rates for Coal Humidity Cells

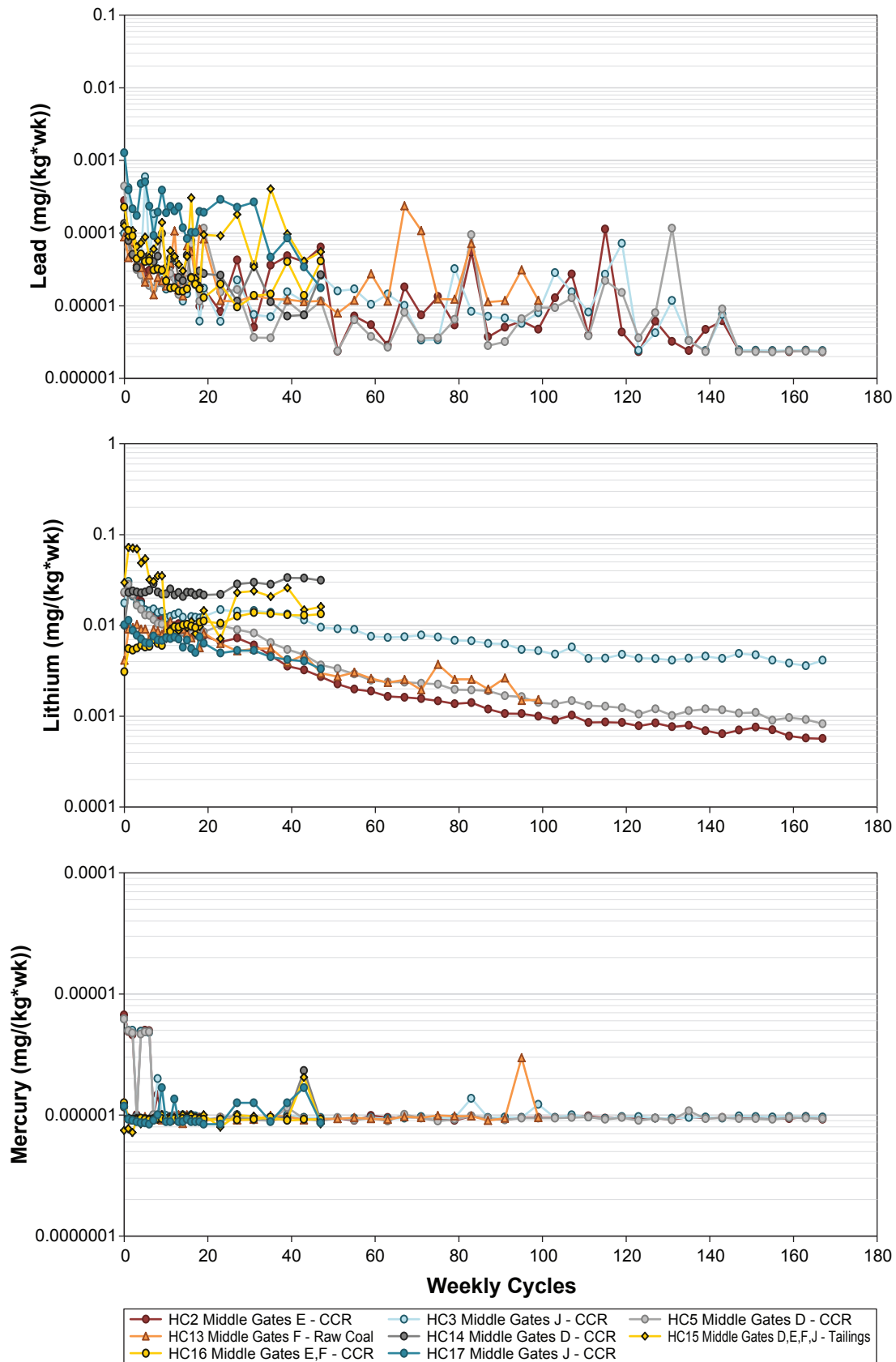




Figure A13-6

Molybdenum, Nickel, and Phosphorus  
Production Rates for Coal Humidity Cells

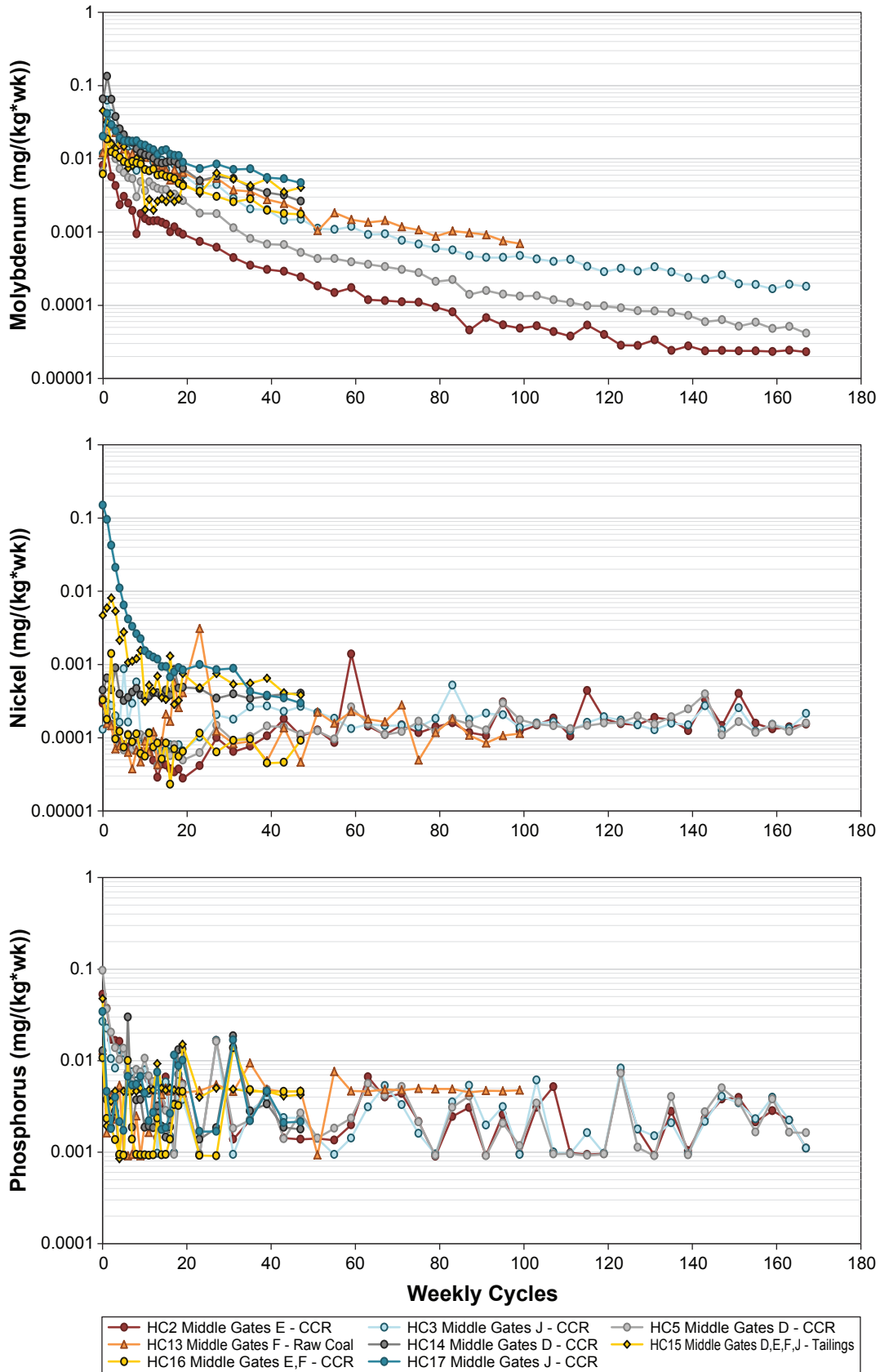


Figure A13-7  
 Potassium, Rubidium, and Silicon  
 Production Rates for Coal Humidity Cells

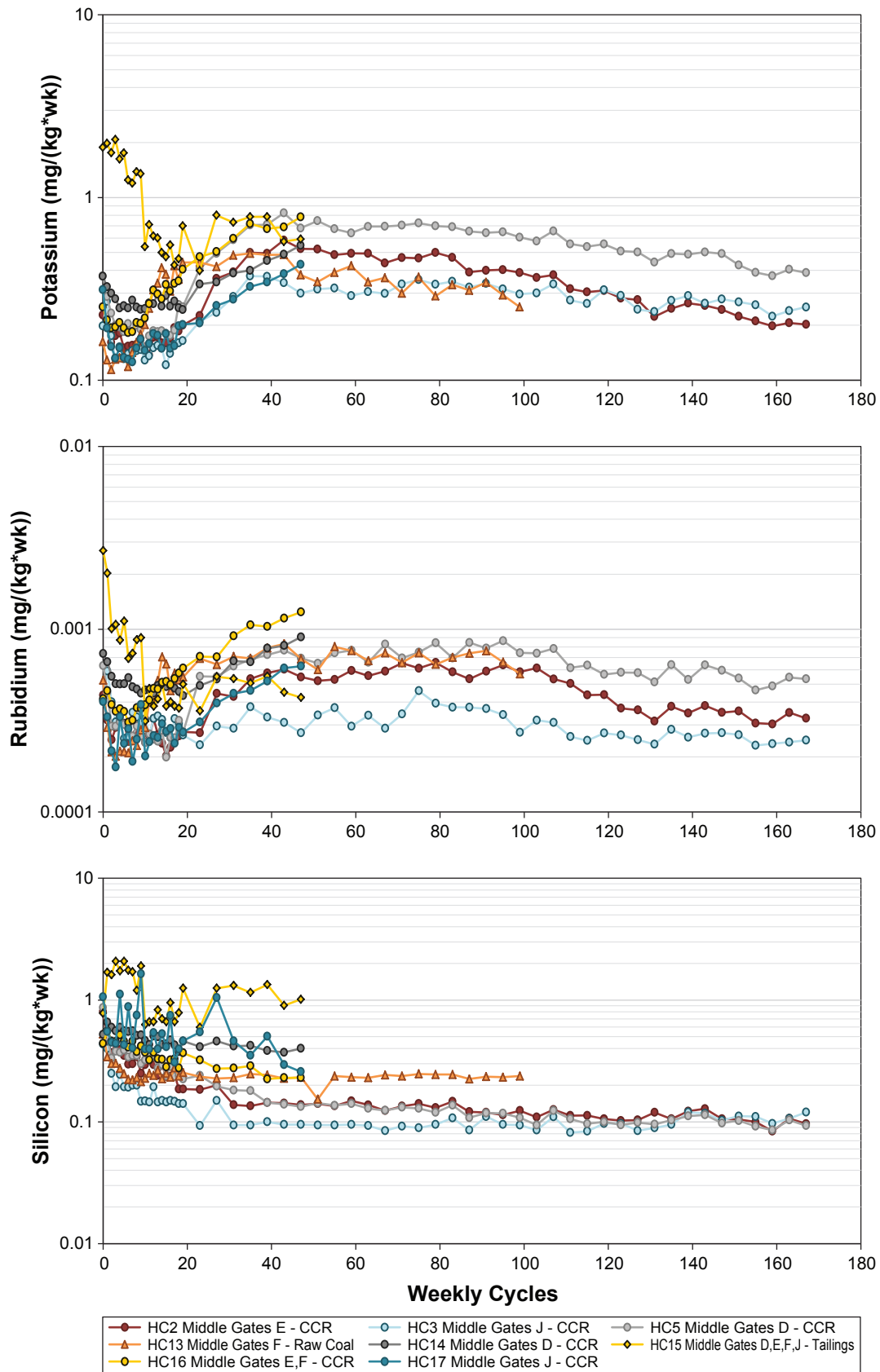


Figure A13-8

Silver, Sodium, and Strontium  
Production Rates for Coal Humidity Cells

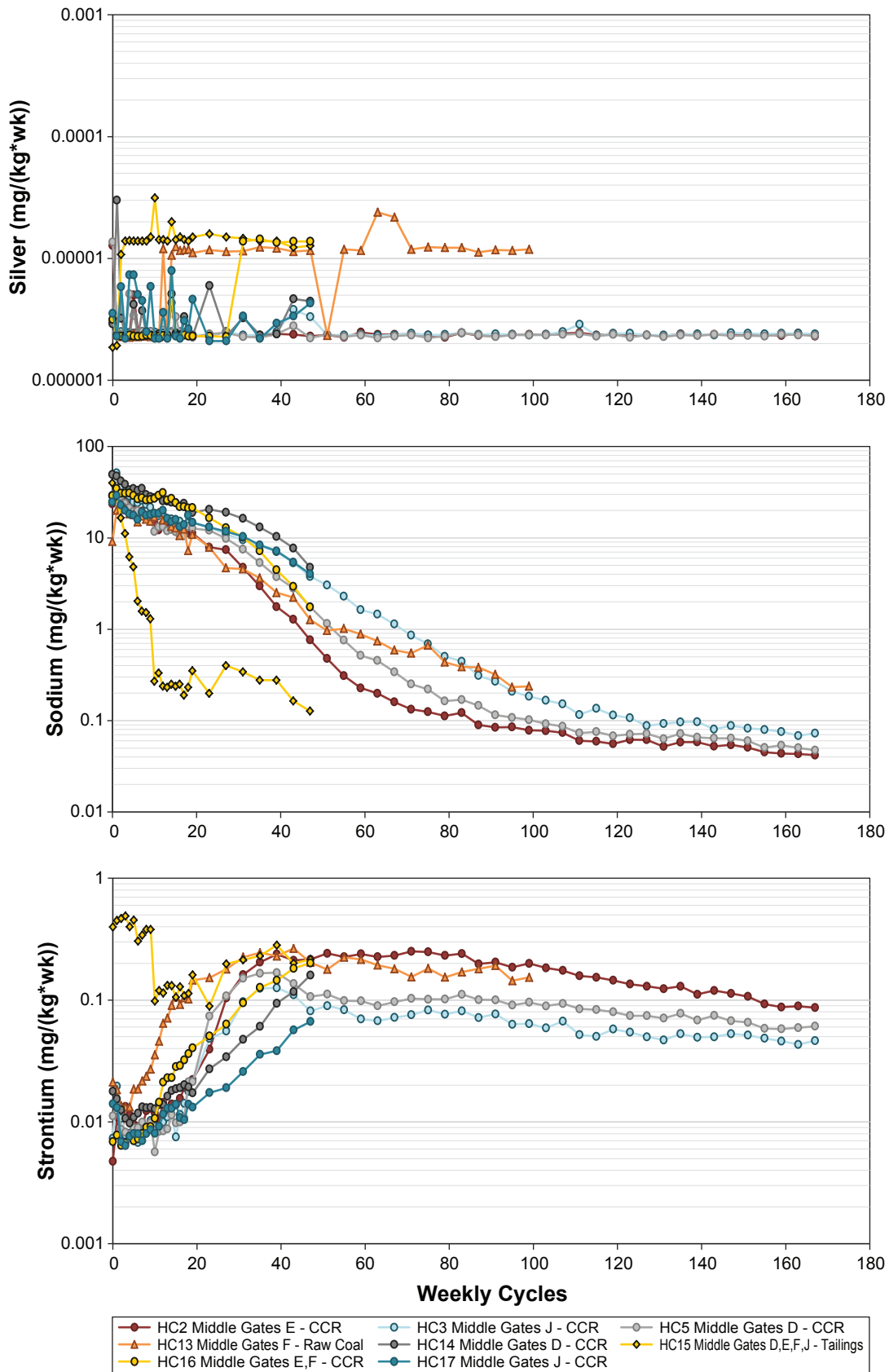


Figure A13-9

Thallium, Thorium, and Tin  
Production Rates for Coal Humidity Cells

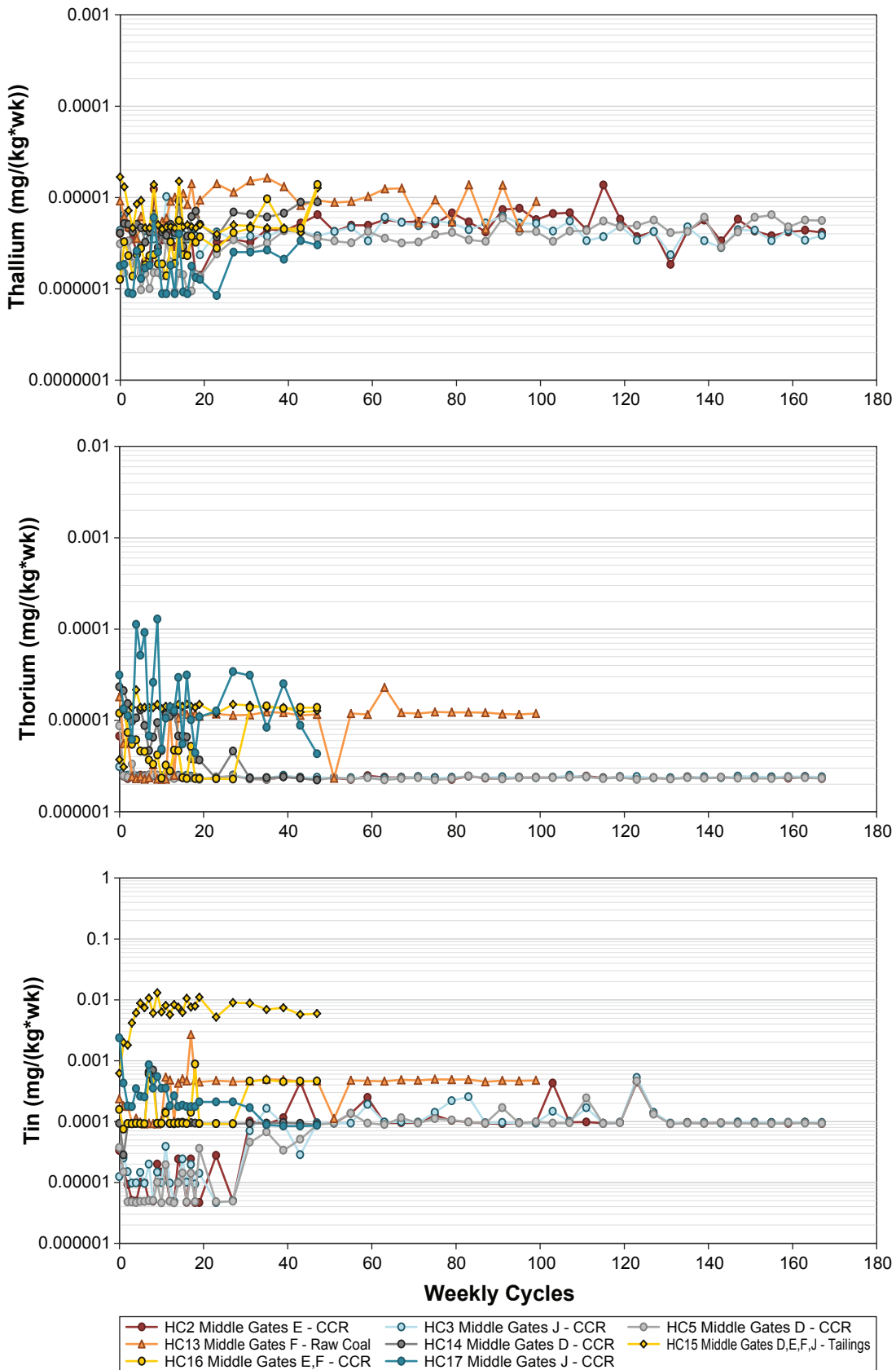


Figure A13-10

Titanium, Tungsten, and Uranium  
Production Rates for Coal Humidity Cells

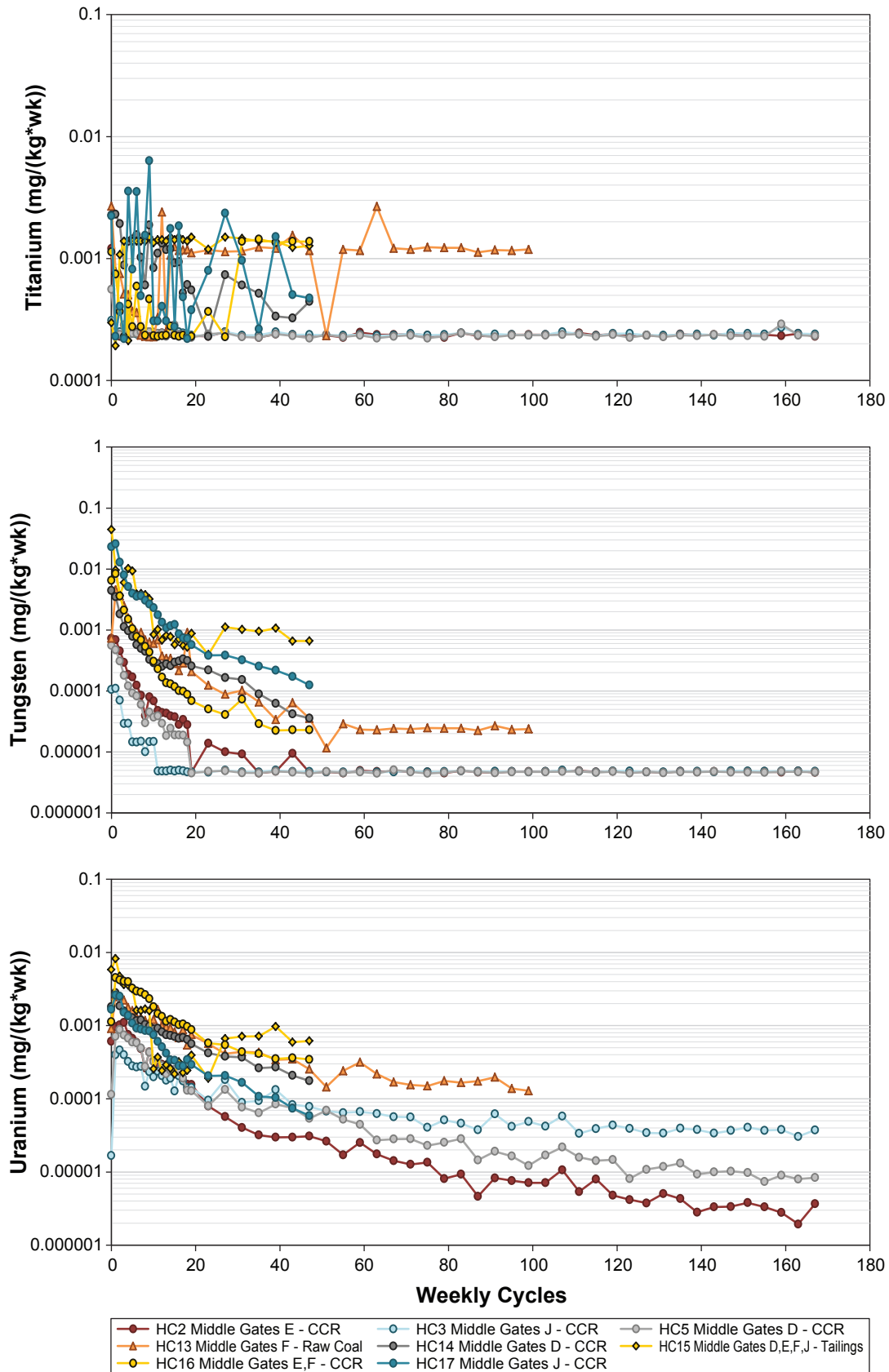


Figure A13-11  
 Vanadium, Zinc, Zirconium  
 Production Rates for Coal Humidity Cells

