Winu Waste Characterisation

– Secondary Sulfide (Enriched) Zone

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Cover image: Winu drill pads.

Revision History

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Winu Study

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Version	Date	Author	Reviewer	Changes
6	20/06/2024	RG	PM	Updated results for column test work, final editing
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4	20/09/2020	MHA	RG	Updated samples from 2020 drill holes
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2		MHA	PB	Updated tailings based on new assays
1		MHA	PB	Report created

EXECUTIVE SUMMARY

The Winu project is located in the Western Australian Great Sandy Desert, approximately 130 km north west of the Telfer copper-gold project. The deposit is characterised by a weathering profile with an upper leached cap followed by a copper oxide zone, a secondary sulfide enrichment zone and a primary sulfide hypogene zone. An Acid and Metalliferous Drainage (AMD) study was completed for these three zones as part of project development to assist with understanding AMD risk and thereby enable the development of management strategies. This report focuses on the secondary sulfide enriched zone.

Static AMD characterisation work was completed on 28 samples of waste rock and seven potential mineral resource samples. In addition, there were three waste rock and three mineral resource grade, free draining kinetic leach columns that operated for up to 92 weeks.

The major acid producing mineral in the secondary sulfide zone is pyrite. In general, samples with sulfur content above 0.2% have been classified as Potentially Acid Forming (PAF). Acid Neutralisation Capacity (ANC) in the enriched zone is mostly absent (due to lack of carbonates) or unavailable for net acid neutralisation (slow reacting silicates like biotite). Acid generation is expected to be relatively rapid from this zone however some PAF classified samples had an acidification lag observed during kinetic tests. All ANC is predicted to deplete in less than eight years, under laboratory conditions. The pre-mineral mafic lithologies in the secondary sulfide zone are likely to generate the greatest acidity and constituent release.

PAF samples would be more likely to release potential constituents of concern (Cd, Cu, Co, Mn, Ni, Zn) into solution due to a correlation between lower leach pH and heavy metal release. High K bearing pre-mineral mafic samples (n = 2) resulted in elevated F concentrations. However, these samples also have high sulfur concentrations and would be classified and managed as PAF material. Overall, most samples with the secondary sulfide enriched zone would be classified as PAF (83% of samples in this study).

Incorporation of sulfur deportment into the Winu geological and mining model has already occurred and block model designations for NAF/PAF have been incorporated. A simple classification of NAF/PAF could be linked with secondary sulfide zone waste rock in the mine schedule using a sulfur cut-off of 0.2%.

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1. INTRODUCTION AND BACKGROUND

1.1. PROJECT BACKGROUND

Rio Tinto has discovered copper-gold mineralisation at the Winu project in the Yeneena Basin of the Paterson Province in Western Australia. The Winu project is located approximately 130 km north of the Telfer mine and 350 km southeast of Port Hedland.

As part of the project development, an Acid and Metalliferous Drainage (AMD) study has been carried out to assess the potential for future operations to generate AMD. The study has characterised the waste rock and tailings expected from the deposit exploitation and develop mitigation plans for waste storage. This report documents the characterisation (AMIRA 2002; INAP 2018; DFAT 2016) of the waste rock expected from mining of the enriched secondary sulfide zone of the deposit.

The 2023 mine plan indicated that most of the feed mineral resource will be primary sulfides (85%), followed by secondary sulfides (12%), primary mafics (1.4%), oxides (1.3%), mixed oxides including oxide mafics (0.4%), and secondary mafics (0.01%).

In regard to waste rock, 22% is expected to be classified as Potentially Acid Forming (PAF), with the proportions of PAF predicted to come from the primary sulfides (86%), secondary sulfides (6.8%), leached cap and leached cap mafics (5.2%), primary mafics (1.1%), oxides/overburden (0.8%) and secondary mafics (0.1%). The remaining 78% of the waste rock is classified as Non Acid Forming (NAF) and will primarily consist of oxide and overburden (94%), primary sulfides (4.6%), secondary sulfides and mixed oxides (1.4%). These proportions may change with future iterations of the mine plan.

1.2. GEOLOGICAL CONTEXT

The regional geology at Winu is characterised by low-grade metasedimentary rock with granitoid intrusions. The tenement is covered by an overburden composed of sand and a sequence of Permian mudstones, sandstones and diamictites. The deposit itself is hosted in low-grade metasedimentary rock dominated by siltstones and sandstones, with some igneous intrusions. Based on the supergene profile, the deposit is divided into a leached cap, a copper oxide zone, enrichment zone and hypogene zone (Figure 1). This sequence is, however, not uniform and the zones may have highly localised expressions.

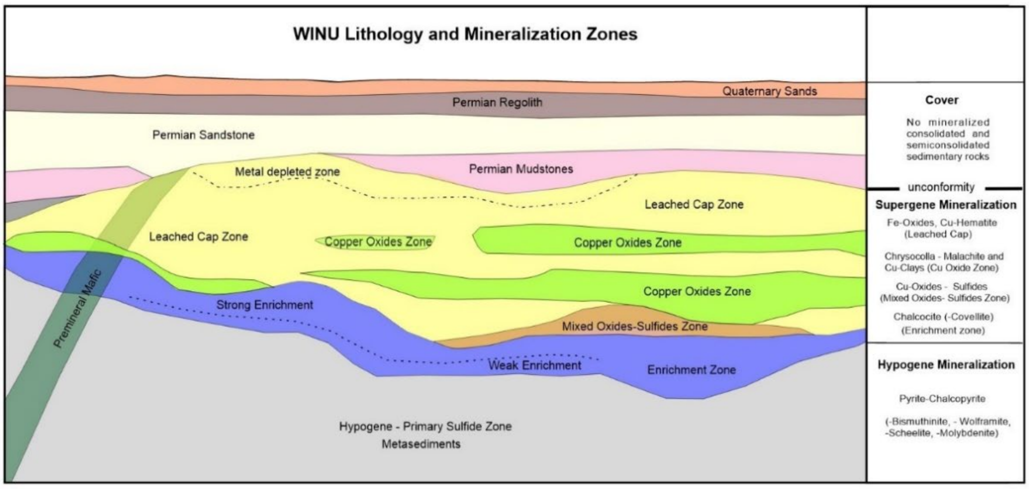

Figure 1: Lithological zones of the Winu deposit.

2. SAMPLE SELECTION AND LABORATORY METHODS

2.1. SAMPLE SELECTION

Samples for characterisation of the secondary sulfide zone were selected from available drill core assay data as of 1 March 2019 and as of 1 March 2020. Samples were manually selected from the available logging data to cover the range of lithologies, alteration types, ranges of sulfur and Cu, and locations within the drilled area. Waste samples in this report are defined as those with a Cu concentration below 0.2 wt.% and gold concentration below 0.2 ppm; these values are not necessarily aligned with mining cut-off grades and are used as indicators only. Some higher grade Cu, Au and Ag samples were selected to produce a wider range of samples and an understanding of the geochemistry of mineral resource grade samples that may be stockpiled for prolonged timeframes.

All selected samples were held either in storage at ALS or at the RTX warehouse in Perth and were collated and shipped to ALS in Perth for analysis. The selected samples have been classified into the following lithologies (September 2020 version of the Solve Winu Model Predictor[1]):

- Arkose 1 (waste rock samples referred to as metasediment 1 throughout this report)
- Arkose 2 (waste rock samples referred to as metasediment 2 throughout this report)
- High Nb permian mudstone
- Mottled and siliceous zone
- Oxidised permian mudstone
- Permian sandstone
- Post-mineral mafic
- Quartz sandstone
- Quartz vein
- Quaternary aeolian sands
- Reduced permian mudstone

The Solve Predictor classifies samples based on the concentration of immobile trace elements. Although the classifications are not necessarily stratigraphic, the patterns they generate on a deposit scale are used to generate stratigraphic units. Locations of selected samples for the secondary sulfide are shown in Figure 2.

[1] Solve lithology predictor is based on assay values for immobile trace elements. Accessed 09-09-2020: https://rstudio-connect.riotinto.org/content/102/

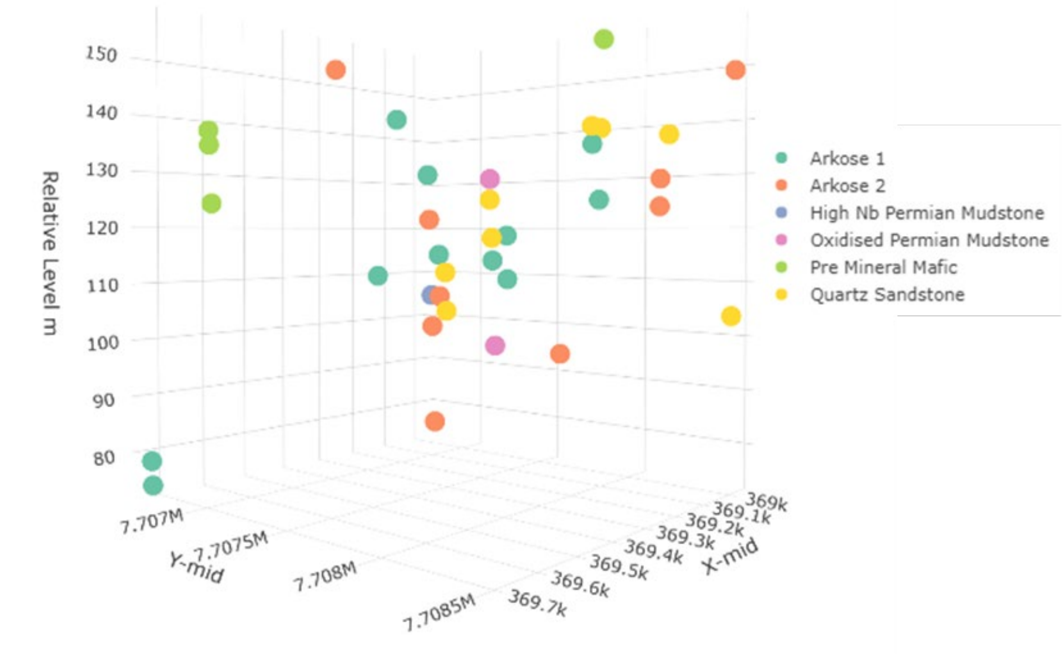

Figure 2: Location of secondary sulfide zone samples within this report.

A graph showing the distribution of sulfur concentration in selected waste rock samples (points) compared with the underlying Winu geochemical database (box and whiskers) is shown in Figure 3 and zoomed in (S < 3 wt.%) to waste grade samples in Figure 4. Some samples were taken from above the 75th percentile of the Winu database to ensure a conservative selection for Acid Base Accounting (ABA) characterisation and understanding of potential variability.

The difference between the box and whiskers in Figure 3 and Figure 4 demonstrates that the waste grade samples contain substantially less sulfur than mineral resource grade samples. The pre-mineral mafic median sulfur content falls from 2.8 wt.% in the overall database to only 1.6% for low-grade samples. A similar large difference is observed for the low abundance quartz vein lithology (1.6% to 0.1%). Notably 80% of the quartz vein samples in the Winu database would be considered mineral resource grade from these graphs and hence the low number of tested samples in this lithology is not considered a concern at this stage. Similarly, the low representation of granite samples in this characterisation program is a result of low abundance of this lithological unit in the Winu database.

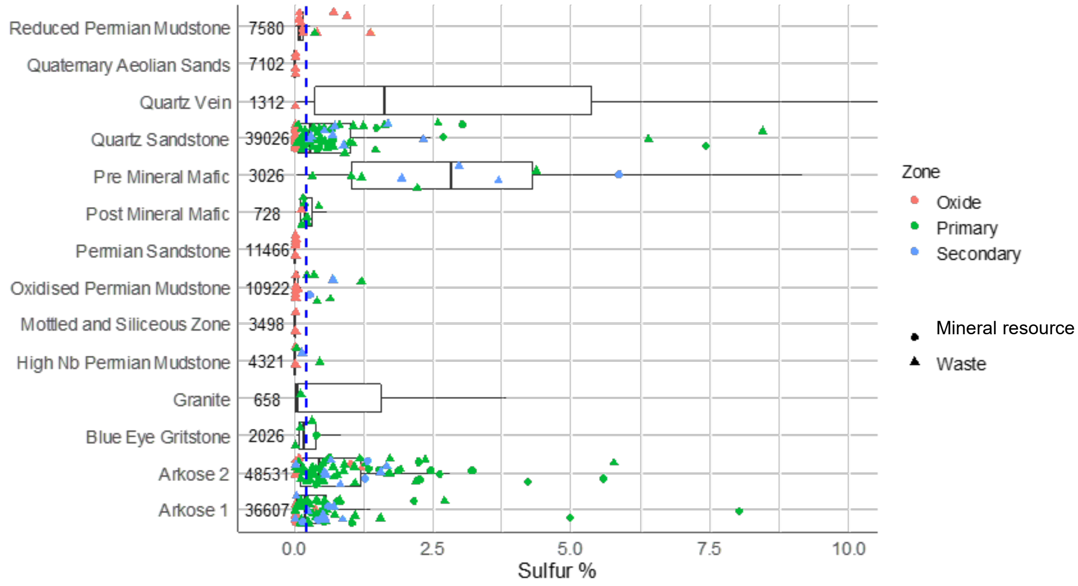

Figure 3: Box plot of all Winu drill hole samples with scatter plot for waste rock and mineral resource grade samples overlaid. Secondary sulfide samples coloured blue.[2]

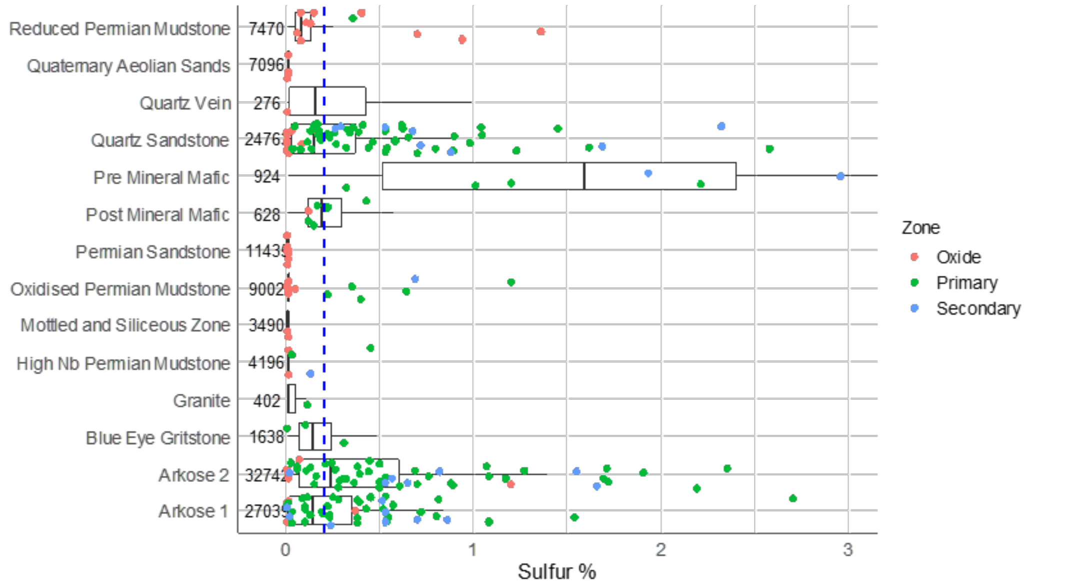

Figure 4: Box plot of Winu drill hole samples with low Cu (< 0.2%) and Au (< 0.2 ppm) with scatter plot for waste rock samples overlaid (zoomed in to 0 – 3% S). Secondary sulfide samples coloured blue.[3]

[2] Bars show -1.5 × inter quartile range (IQR), 25th percentile, median, 75th percentile, 1.5 × IQR. Blue dotted line at 0.2 % S designated cut-off between low and high sulfur samples. Numbers indicate the number of samples of that type in the Winu database.

[3] Data collected 2020-10-02.

2.2. LABORATORY METHODS

Whole rock assay information for selected samples was taken from results produced by ALS Geochemistry on behalf of RTX. Mineralogical analysis was conducted by Rio Tinto Growth & Innovation (G&I) through the Bundoora Technical Development Centre (Bundoora). Mineralogical analysis was completed with a focus on mineral resource and to inform mineral processing flowsheet development. Gangue and waste rock mineralogy was, however, completed as a part of this investigation and the results of these studies have been used to inform the interpretation of results of the waste rock characterisation.

Five column leach tests were completed at Bundoora and one column leach test at ALS (Brisbane). All other test work was managed by ALS Geochemistry (Perth) and conducted at ALS laboratories globally.

2.2.1. *MINERALOGY*

Four of the secondary sulfide samples analysed by automated Scanning Electron Microscopy (SEM) using Mineral Liberation Analysis (MLA) have a low Cu concentration and could be considered waste. Three additional samples of waste rock from the secondary sulfide zone analysed for this study have been further characterised by quantitative mineralogy.

2.2.2. *WHOLE ROCK DIGESTS*

Assay results were reported for: Ag, Al, As, Au, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Pd, Pt, Rb, Re, Sb, Sc, Si, Sn, S, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn, Zr. Selected samples were further assessed for trace element concentrations and calculation of the Geochemical Abundance Index (GAI). The GAI was calculated using the average crustal abundance (Lide 2005) as the background concentration. The GAI is calculated from:

$$\mathrm{GAI} = \log_2\left(\frac{Measured\ Concentration}{1.5 \times Average\ Abundance}\right)$$

The results of the GAI correspond to the relative concentration of an element compared to background concentrations (Table 1). A GAI of three or above indicates where an element is considered ‘enriched’. Although enriched elements may require further investigation, it does not imply that they will be mobile or of environmental concern.

Table 1: Corresponding GAI values relative to global crustal abundance.

GAI	Relative Concentration
0	1–3 times global crustal abundance
1	3–6 times global crustal abundance
2	6–12 times global crustal abundance
3	12–24 times global crustal abundance

2.2.3. *ACID BASE ACCOUNTING*

ABA test work was carried out according to the AMIRA (2002). Test work included the methods described in Table 2.

Table 2: ABA test methods.

Test Analyte	Method
Total sulfur wt.%	LECO furnace.
Sulfide sulfur wt.%	HCl leach of sulfate minerals and LECO furnace of residual sulfur.

Total carbon wt.%	LECO furnace.
Organic carbon wt.%	HCl leach of carbonate minerals and LECO furnace for residual carbon.
Acid Neutralisation Capacity by Modified Sobek (ANC), kg H_2SO_4/t	Reaction of sample with HCl and subsequent back-titration with NaOH to determine the amount of acid consumed.
Net Acid Generation (NAG), pH and kg H_2SO_4/t	Addition of hydrogen peroxide (H_2O_2) for oxidation of sulfide minerals and subsequent acid generation. Generated acid is consumed by ANC present in the sample during the test. Residual acid is determined via back-titration.
Sequential NAG	A sequential NAG repeats the NAG test procedure on the same sample, sequentially, up to 5 times or until there is no acid generated from the sample.
Kinetic NAG	Similar to a standard NAG with continuous monitoring of pH and temperature to obtain qualitative estimate of the lag time for acid generation.

The tests in Table 2 were used to calculate the Maximum Potential Acidity (MPA), ANC by inorganic carbon (ANC_{TIC}), Net Acid Producing Potential (NAPP) and Neutralisation Potential Ratio (NPR) via the following equations:

- MPA (kg H_2SO_4/t) = Sulfide S% × 30.6.
- ANC_{TIC} (kg H_2SO_4/t) = Inorganic C% × 81.7.
- NAPP (kg H_2SO_4/t) = MPA – ANC.
- NPR = ANC/MPA.

On the basis of the above tests, samples are classified as either NAF, Uncertain (UNC) or PAF. The following rules were used for sample classification (AMIRA 2002):

- Barren: Total S < 0.1%, ANC ≤ 5 kg H_2SO_4/t.
- NAF: NAPP < 0, NAG pH ≥ 4.5.
- PAF: NAPP > 0, NAG pH < 4.5, NAG_pH4.5 > 5 kg H_2SO_4/t.
- PAF-LC (low capacity): NAPP > 0, NAG pH < 4.5, NAG_pH4.5 ≤ 5 kg H_2SO_4/t.
- UNC: Samples not assigned as Barren, NAF or PAF.

2.2.4. *STATIC LEACH TESTS*

Static leach tests were undertaken to determine the potential for metal release from the secondary sulfide waste rock through contact with meteoric water. The tests were conducted on pulverised samples at a L:S ratio of 2:1 using deionised water over 12 hours. The leachate was filtered and analysed for a multi-element suite using ICP-AES (Na, Mg, K, Ca, Si) and ICP-MS (Ag, Al, As, Ba, Bi, B, Cd, Co, Cr, Cs, Cu, Fe, Mn, Mo, Ni, Pb, Re, Sb, Se, Sn, Te, Tl, Ti, V, W, U, Zn). Mercury was analysed separately via a Hg analyser. Anions (Cl, NO_3, SO_4, P, F) and ammonia (NH_3) were analysed using a discrete analyser and alkalinity was determined by titration.

2.2.5. *KINETIC COLUMN LEACH TESTS*

Samples were loaded into buchner funnels as −4 mm chips, or as received if already smaller. The column operation is designed to mimic a wet and dry cycle to simulate rainfall and evaporation. Drying was achieved by heating the samples to 35 °C using heat lamps (Figure 5). The samples were 'wetted' every week with deionised water at a L/S of 0.1 kg/kg. Every four weeks the samples were 'leached' at a L/S of 0.4 kg/kg. The total leachate over each four week period was collected and analysed for pH, Electrical Conductivity (EC), metals and anions.

Figure 5: Image of kinetic leach set-up at Bundoora.

2.2.6. *OXYGEN CONSUMPTION RATES*

The Oxygen Consumption Rate (OCR) provides an indication of the rate at which sulfide minerals oxidise (under conditions where supply of oxygen is not a limiting factor). Tests were undertaken by Graeme Campbell & Associates. The dried samples (-2 mm nominal) were moistened using high purity deionised water which was added incrementally via a spray bottle. Following moistening, the samples were stored in a plastic bag at 20-22 ^{o}C for two to three days to equilibrate. The equilibrated moist crushing's were then placed in the oxygen consumption cell and an incubator at 30 ^{o}C.

3. RESULTS AND DISCUSSION

3.1. MINERALOGY

Quartz, feldspar and muscovite occur in all samples in variable concentrations through both the secondary and primary sulfide zones. The variability reflects the heterogeneous vein density, with quartz and feldspar most common in veins, and muscovite most common in the metasediment host.

The weathered supergene and fresh primary sulfide shows very distinct and reproducible differences in accessory mineralogy: kaolinite and iron oxide dominate in the weathered leach cap and oxide zone, whereas biotite and chlorite dominate in the fresh sulfide mineralisation. Between these two end-members, the strong- and weak- enrichment have mixed accessory gangue. This difference is so reproducible across the deposit that the first occurrence of biotite is used as a marker for the start of weak enrichment, and the first siderite (a non-neutralising carbonate), although low abundance, is used as a marker for the start of the primary sulfide mineralisation. The implications of this are that the secondary sulfide zone may exhibit some limited neutralisation from biotite and chlorite, although these minerals react slowly and at low pH and therefore will not be significant in the short to medium term.

The major sulfide mineral in the Winu deposit is pyrite. Pyrite was observed as the dominant sulfide in the majority of the waste rock from the secondary sulfide zone (Figure 6).

Although pyrrhotite was qualitatively noted as being abundant in the mafic units, it was not detected at appreciable concentrations in the two secondary pre-mineral mafic samples analysed by MLA (10450192, 10413315). When considering all samples (including mineral resource), pyrite is still the most abundant sulfide in the secondary sulfide zone of the deposit (Figure 7).

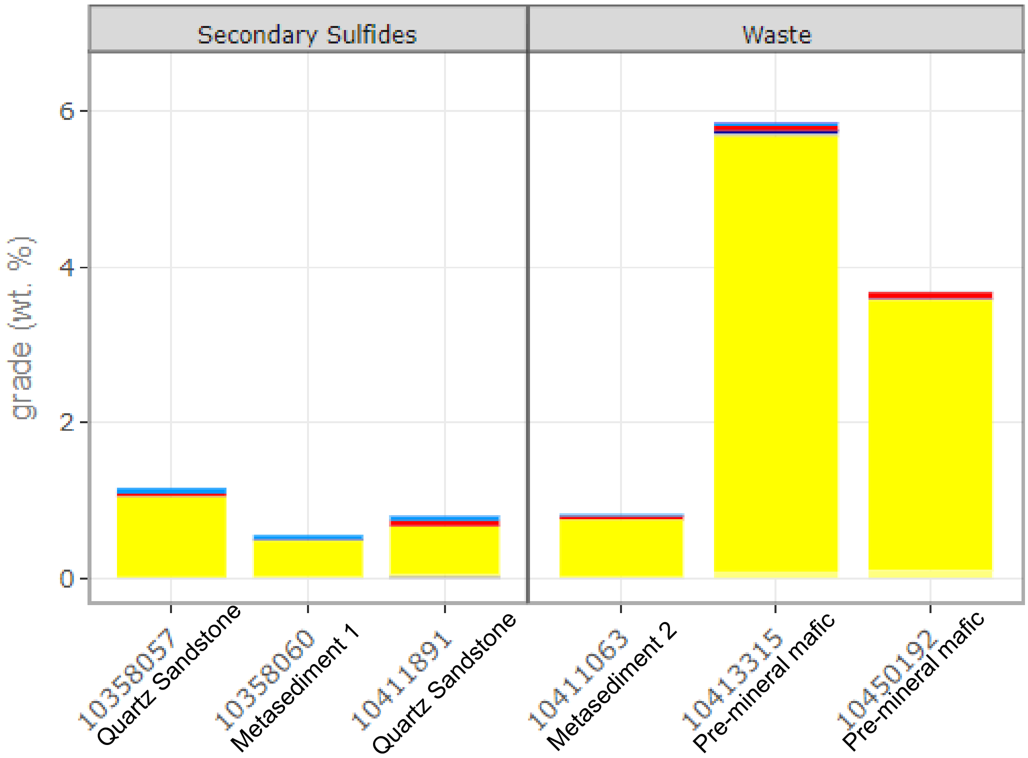

Figure 6: Sulfide concentration by mineral in samples analysed from the mineral resource study (secondary sulfides) and the mineral waste program reported here (Waste). Yellow is sulfur as pyrite, red is chalcopyrite and blue is chalcocite.

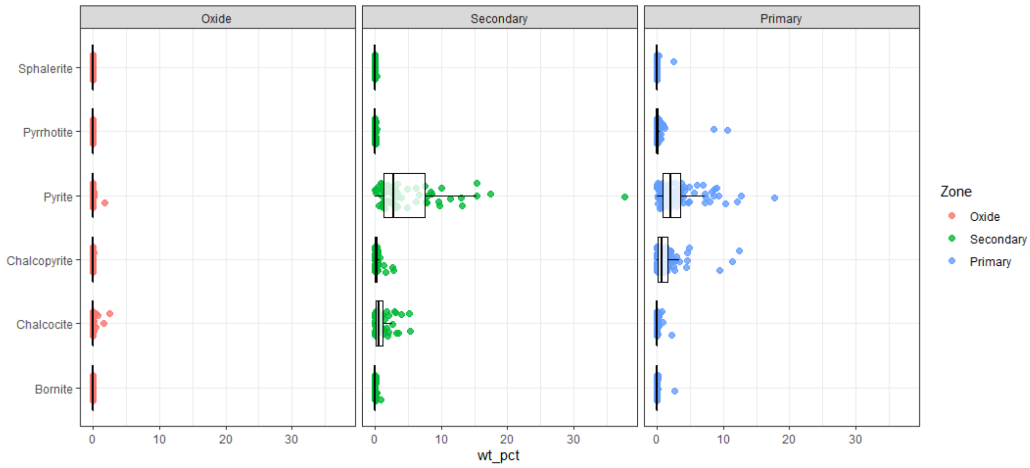

Figure 7: Range of sulfide modal abundance measured in 260 MLA samples. Includes predominantly mineral resource grade samples.

Gangue mineralogy is summarised as a ternary plot in Figure 8, the vein assemblage of quartz and feldspar grouped at the top, the mica minerals and chlorite grouped at the left corner and the weathered assemblage clays and oxides grouped at the right corner. Symbol size represents Cu grade. Absolute abundance is variable, but in general, sulfide samples in black plot along the quartz/feldspar – mica/chlorite axis, oxide-zone samples in green have higher clay/iron oxide and enriched samples in pink and orange have variably mixed mineralogy. In the enriched zones, acid neutralising micas and chlorite tend to be relatively constant regardless of Cu grade. In contrast, quartz and feldspar tend to be reduced in the enriched zone waste rock samples in favour of clays and oxides.

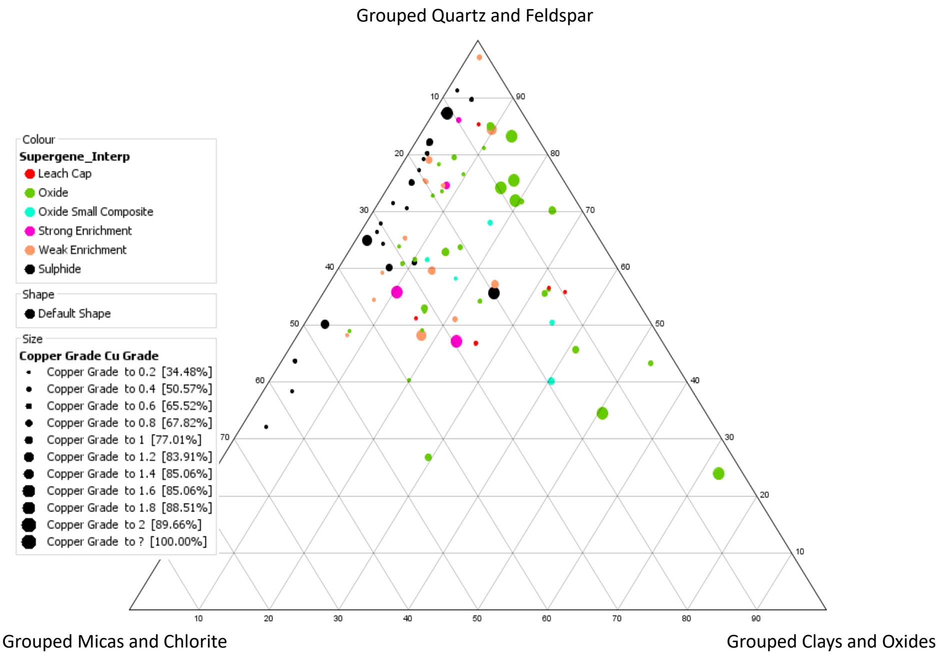

Figure 8: Grouped gangue mineralogy by geo-domain; Cu grade correlates with symbol size.

Carbonate minerals have been detected in some secondary sulfide samples, but due to the pyrite and pyrrhotite oxidation and subsequent acid leaching that shaped this domain, the majority of carbonate has already been consumed. Small, empty vugs described in the drill core of the secondary sulfide zone are inferred to represent leached carbonates. A distinct interval of elevated siderite in the hyperspectral mineralogy data marks the first occurrence of carbonates and is used as a marker for the start of the primary sulfide hypogene mineralisation.

Due to the very low abundance of carbonates, confident speciation between different carbonate minerals was not practical. Qualitatively, however approximately 50% of the carbon is present as siderite. The remainder is likely present as calcite, dolomite, ankerite and malachite.

3.2. ACID BASE ACCOUNTING

3.2.1. *NET ACID PRODUCTION POTENTIAL AND NEUTRALISATION POTENTIAL RATIO*

Many of the samples reported a calculated inorganic carbon content near to, or below, 0%. The ANC by HCl leach was also repeatedly low (< 10 kg H_2SO_4/t). The low ANC values and a lack of correlation between ANC by HCl leach and ANC_{TIC} support the indication from mineralogical analysis that acid neutralisation in the secondary sulfide zone will predominately be achieved via dissolution of biotite and chlorite.

The only sample containing ANC above 20 kg H_2SO_4/t was a pre-mineral mafic sample with ANC of 36 kg H_2SO_4/t and MPA of 43 kg H_2SO_4/t. For this sample, the TIC was below laboratory reporting limits and hence the ANC available is likely only attributable to biotite and therefore unavailable in the short term. As a result, there is little potential for waste rock in the secondary sulfide zone of the deposit to completely neutralise acid that may be generated from sulfide oxidation.

In contrast to the low ANC values, calculated MPA was generally high; the majority of samples contained sulfide above 0.2 wt.%. Average MPA values by sulfide sulfur (Table 3) were particularly high for the metasediment 2 samples (22 kg H_2SO_4/t) and pre-mineral mafics (73 kg H_2SO_4/t) and quartz sandstone (22 kg H_2SO_4/t). As such, the NPR for these rock types was generally less than one (Figure 9), with only four samples reporting higher NPR values. Similarly, the NAPP was greater than 0 kg H_2SO_4/t for the majority of samples (Figure 10). Due to the relatively high MPA values and ANC values close to, or at, laboratory reporting limits, the majority of samples were classified as PAF. A summary of results for each sample is given in Appendix 1.

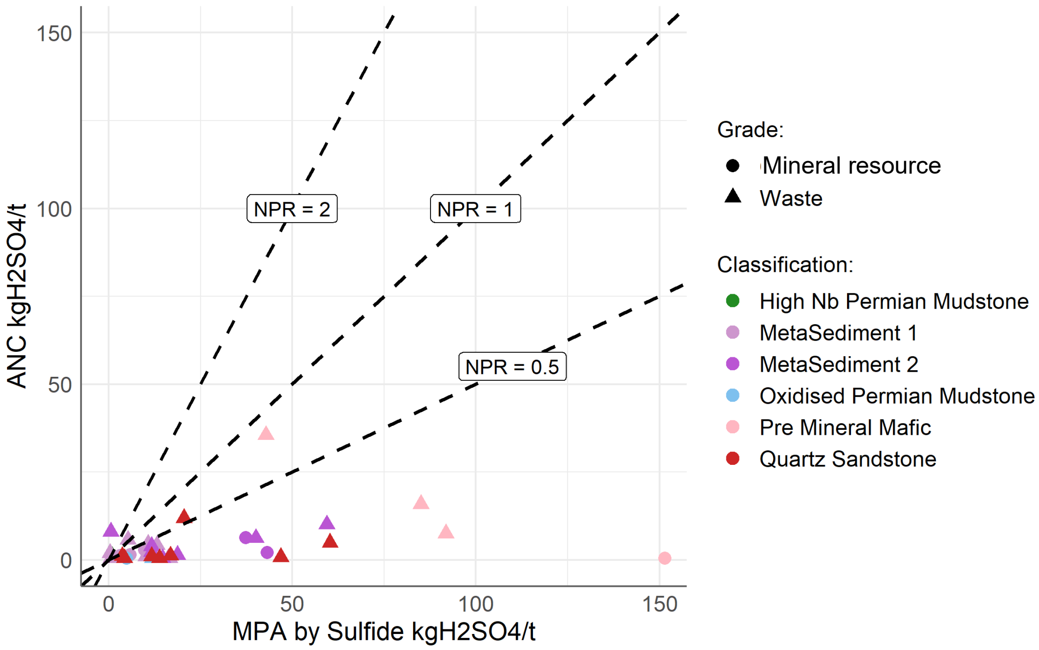

Figure 9: Plot of the NPR.

Table 3: Summary of acid generation capacity for secondary sulfide zone samples. Mean values shown for each sample type. Where sample classification does not sum to 100% remaining samples are uncertain.

Lithology	n	MPA by Sulfide kg H_2SO_4/t	ANC kg H_2SO_4/t	NAG pH	NAPP kg H_2SO_4/t	% PAF	% PAF-LC	% NAF / Barren
Metasediment Type 1	8	9.1	2.4	3.2	6.7	50%	13%	25%
Metasediment Type 2	7	22.4	4.6	2.9	17.8	71%	14%	14%
High Nb permian Mudstone	1	0.9	1.1	4.1	-0.2	0%	0%	0%
Mineral resource Grade Samples	7	36.5	2.1	3.0	34.4	57%	43%	0%
Oxidised permian mudstone	1	11.9	0.5	3.2	11.4	100%	0%	0%
Pre-mineral mafic	3	73.2	19.6	2.6	53.6	100%	0%	0%
Quartz sandstone	8	22.2	2.7	3.0	19.5	75%	25%	0%

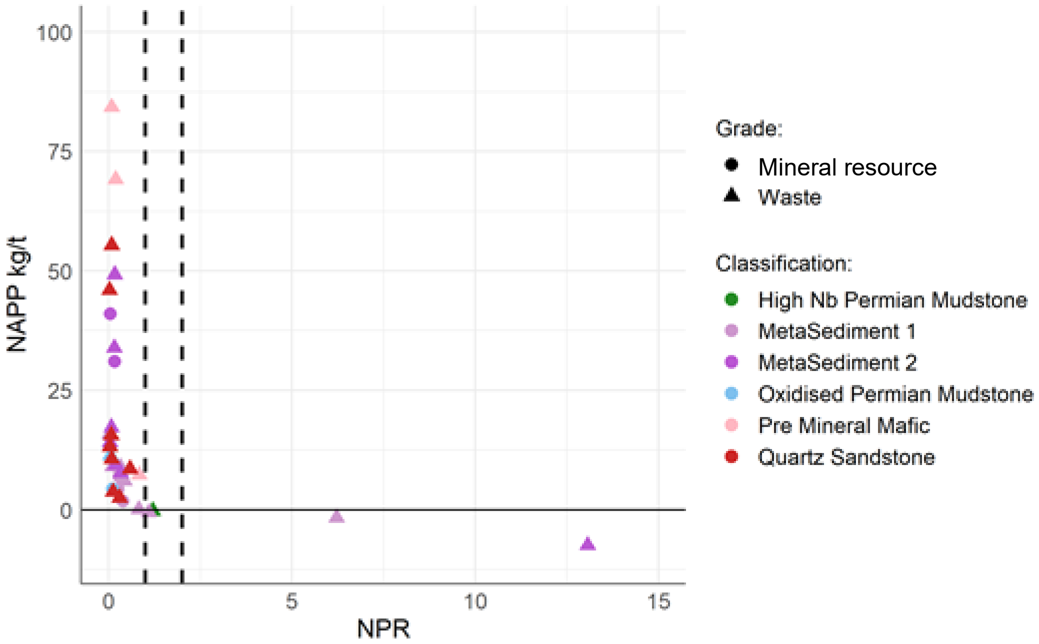

Figure 10: NPR versus NAPP.

3.2.2. *NET ACID GENERATION*

In general, samples with higher NAPP values generated lower NAG pH values (Figure 11), corroborating the validity of the results despite the discrepancy between ANC_{TIC} and Modified Sobek ANC. On the basis of the NAG pH plot, the majority of samples were classified as PAF due to the lack of ANC and low pH values obtained.

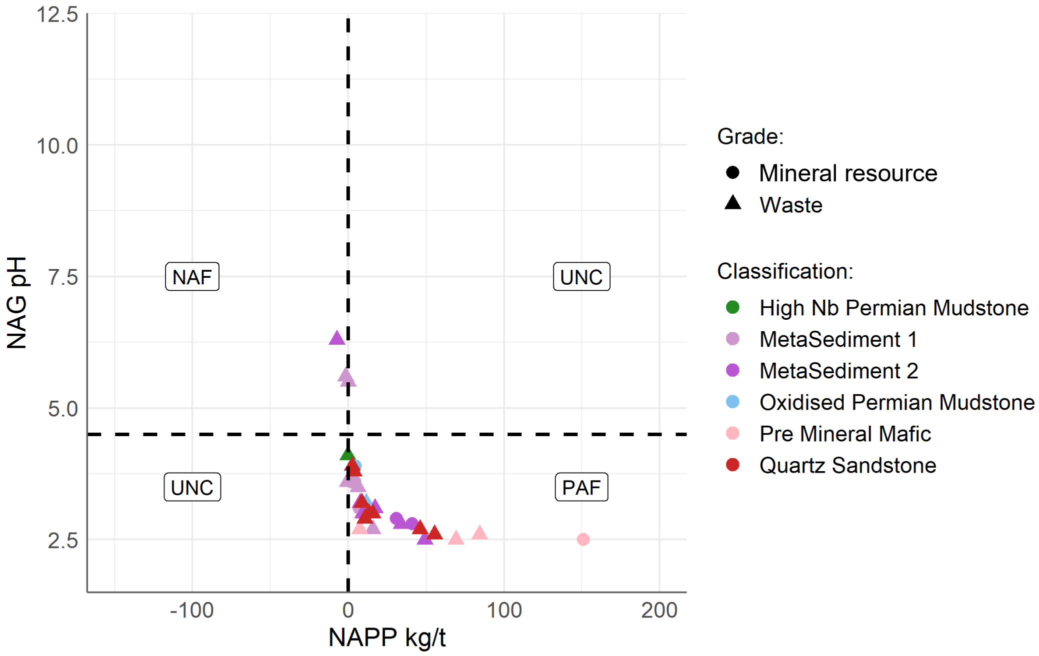

Figure 11: NAPP versus NAG pH value.

Three metasediment samples with NAPP values below 0 kg H_2SO_4/t resulted in high NAG pH values, allowing these samples to be classified as NAF. The remaining samples resulted in NAG pH values below 4.5 and had NAPP values close to or above 0 kg H_2SO_4/t.

Of all the samples analysed, only five (14%) of the samples were classified as NAF, Barren or Uncertain using the AMIRA (2002) sample classification scheme (Table 3). Seven samples (20%) were classified as PAF-LC. The remaining 23 samples in the secondary sulfide zone were classified as PAF via the AMIRA (2002) classification.

The location of the various samples for which location information was available is shown in Figure 12. Interestingly, shallower samples (above 100 m relative level) were more likely to be classified as PAF. The few low capacity samples (PAF-LC) tended to be deeper (below 100 m relative level). This is consistent with a low carbonate high sulfide enriched sulfide zone bounded by the barren upper oxidised zone of the Winu deposit above and the higher carbonate primary sulfide zone below.

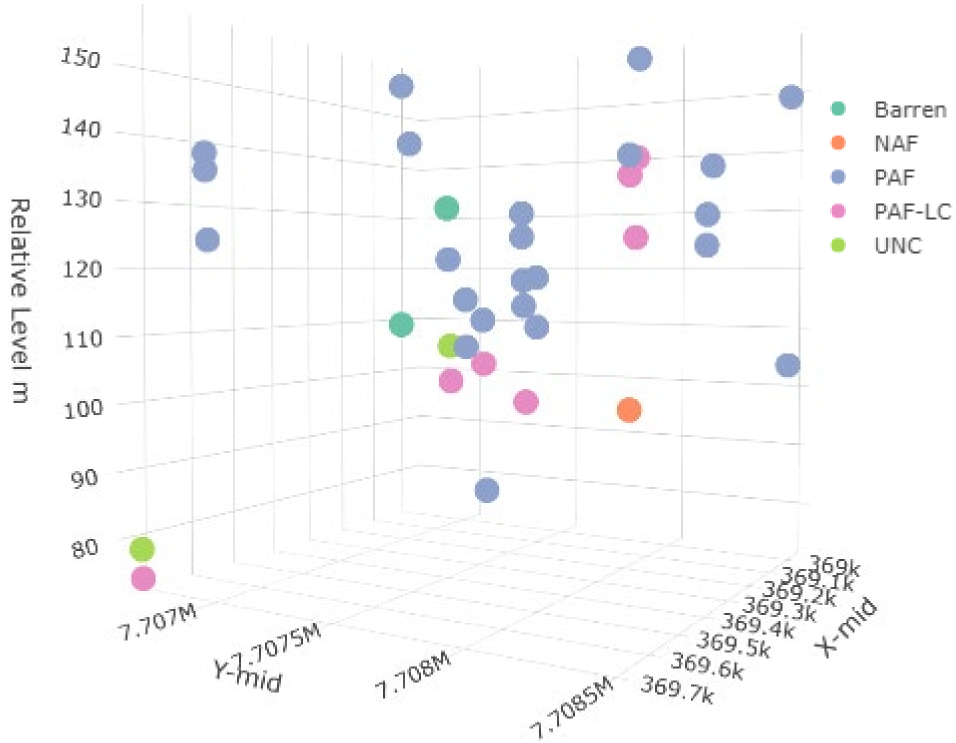

Figure 12: Secondary sulfide zone samples by sample location classified by NAF/PAF (AMIRA 2002). Some samples not shown due to missing location information.

3.3. CORRELATION BETWEEN SULFUR AND SAMPLE CLASSIFICATION

A strong correlation exists between the sulfur and sulfide concentrations for those samples classified as PAF (Figure 13). The prediction of sulfide sulfur content of: $S^{2-} = 0.889 \times S_{TOT} - 0.09$ was found to be statistically significant ($p \leq 0.01$). Only one PAF sample contained a total sulfur content of less than 0.2 wt.%, and in this case the NAG (pH 4.5) of the sample was only 1 kg/t (PAF-LC). Only one UNC samples had a total sulfur content above 0.2 wt.%. Hence, a simple classification in the secondary sulfide zone of Winu is proposed:

- A sample is NAF when total sulfur < 0.2%.
- A sample is PAF when total sulfur is > 0.2%.

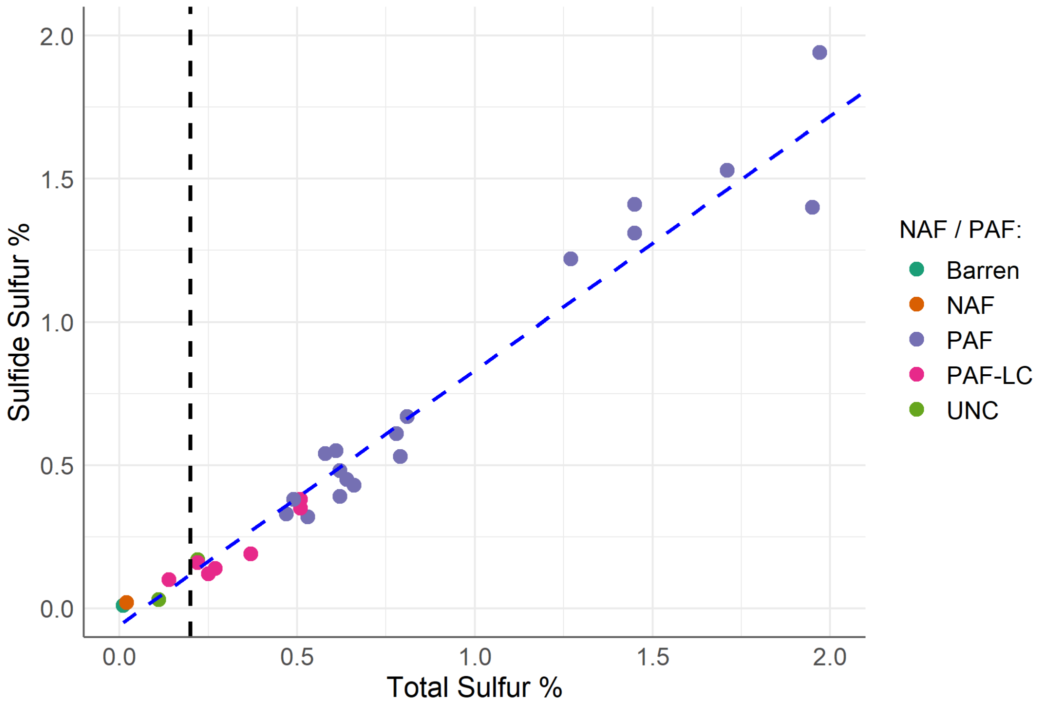

Figure 13: Correlation between total sulfur and sulfide sulfur for samples grouped by acid generation classification.

3.4. WHOLE ROCK DIGEST

The majority of the samples evaluated were enriched in Bi, Te and W, with GAI values often exceeding three (Table 4). GAI values for Bi ranged from one to as high as 13. Cadmium was often elevated throughout the secondary sulfide zone. The full assay suite with GAI values indicated by highlighted colour (yellow > 3, red >= 6) are given in Appendix 1.

Environmentally sensitive elements typically encountered in sulfide deposits (such as As, Co, Cr, Hg, Mn, Ni, Pb, Se, Sn, Zn) were rarely highlighted as enriched. Copper, Au and Ag were, however, occasionally present at elevated concentrations, as would be expected for a copper-gold deposit.

As discussed in the mineralogy section, Bi and Te are also present in the secondary sulfide zone, as they were present and elevated in the oxide zone. Tellurium is often associated with Bi as tellurobismuthinite, explaining a weak trend observed between increasing Bi content and increasing Te content.

Table 4: Whole rock digest assays coloured by GAI. Yellow represents a GAI of 3-5, red a GAI ≥ 6. Elements with consistent GAI < 3 for all samples have been excluded from the list.

Sample_ID	Zone	Lithology	Hole	From	To	Ag_ppm	Au_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cs_ppm	Cu_pct	Mo_ppm	Pb_pct	Re_ppm	Sn_ppm	S_pct	Te_ppm	W_ppm	Zn_pct	F_ppm
			Average crustal abundance			0.08	0.00	0.01	0.15	25.0	3.0	0.01	1.2	0.001	0.001	2	0.04	0.001	1.3	0.01	59
10529859	Secondary	MetaSediment 2	WINU0561	106	107	0.82	1.70	116.5	0.11	65.0	7.4	0.10	2.1	0.002	0.004	7	1.26	4.040	50.9	0.01	280
10721817	Secondary	MetaSediment 2	WINU0344	163	164	0.43	0.12	28.9	0.16	59.9	14.1	0.08	0.5	0.001	0.004	13	1.66	1.030	82.7	0.01	630
10722153	Secondary	MetaSediment 2	WINU0349	151	152	4.01	0.22	28.6	2.12	578.0	5.9	0.70	1.6	0.004	0.047	14	1.31	1.265	178.5	0.02	320
10722145	Secondary	MetaSediment 1	WINU0349	142.64	143.7	0.22	0.01	25.9	2.05	365.0	3.0	0.17	3.2	0.015	0.064	10	0.53	4.410	230.0	0.00	120
10384821	Secondary	MetaSediment 2	RC18WIN0002	104	105	1.14	0.13	21.8	0.02	86.9	8.3	0.14	0.7	0.001	0.002	12	1.55	0.300	137.5	0.01	
10384873	Secondary	Quartz Sandstone	RC18WIN0002	151	152	0.60	0.05	9.6	0.05	35.3	4.5	0.05	3.9	0.001	0.001	4	0.88	0.210	29.7	0.00	
10413355	Secondary	MetaSediment 1	WINU0017	137	138	1.38	0.04	1.7	2.90	71.0	7.0	0.25	0.8	0.001	0.003	5	0.43	0.100	33.7	0.01	
10413315	Secondary	Pre Mineral Mafic	WINU0017	101	102	1.48	0.72	130.0	0.83	414.0	56.6	0.31	8.2	0.001	0.012	54	5.86	4.970	350.0	0.02	2308
10413601	Secondary	Quartz Sandstone	WINU0004	120	121	0.56	0.09	4.0	0.07	70.9	2.7	0.08	2.4	0.001	0.005	5	0.53	0.440	191.0	0.00	
10450175	Secondary	Pre Mineral Mafic	WINU0036	129	130.1	0.14	0.03	9.9	0.96	210.0	55.8	0.09	3.0	0.000	0.012	30	1.93	0.250	179.5	0.09	
10450179	Secondary	Pre Mineral Mafic	WINU0036	132	133	0.25	0.06	25.9	0.20	77.3	33.4	0.14	5.4	0.000	0.011	42	2.96	0.490	124.5	0.06	
10450192	Secondary	Pre Mineral Mafic	WINU0036	144	145	0.45	0.10	35.0	0.00	80.3	73.5	0.18	1.8	0.008	0.005	43	3.68	0.960	135.0	0.03	4100
10373702	Secondary	Quartz Sandstone	RC17PAW0002	123	124	1.17	0.16	23.8	1.07	173.5	13.7	0.14	1.5	0.004	0.006	12	2.32	1.010	277.0	0.03	
10413605	Secondary	MetaSediment 1	WINU0004	124	125	0.19	0.28	9.2	0.16	39.7	6.8	0.02	0.6	0.001	0.005	5	0.15	0.020	192.0	0.00	
10411056	Secondary	MetaSediment 2	WINU0006	132	133	0.30	0.05	4.8	3.17	50.7	14.1	0.04	1.0	0.001	0.001	6	0.65	0.250	194.0	0.01	
10411063	Secondary	MetaSediment 2	WINU0006	138	139	1.17	0.03	7.6	2.66	54.5	13.8	0.10	1.0	0.002	0.001	10	0.82	0.290	124.5	0.02	342
10412525	Secondary	MetaSediment 2	WINU0011	156	157	0.46	0.03	7.4	0.01	12.3	14.1	0.06	1.1	0.003	0.001	15	0.02	0.130	31.3	0.01	
10415451	Secondary	MetaSediment 1	WINU0012	135	136	0.56	0.04	4.7	0.43	31.7	7.3	0.08	5.1	0.002	0.006	12	0.51	0.440	400.0	0.00	
10415461	Secondary	MetaSediment 1	WINU0012	144	145	0.95	1.19	292.0	5.22	48.0	21.4	0.10	337.0	0.002	0.008	9	0.60	17.550	270.0	0.05	
10415948	Secondary	MetaSediment 1	WINU0015	136	137	0.18	0.00	2.2	0.21	48.3	4.1	0.03	0.7	0.002	0.002	5	0.01	3.570	250.0	0.00	
10415959	Secondary	MetaSediment 2	WINU0015	146	147	0.07	0.05	9.1	0.85	23.9	6.0	0.02	0.6	0.001	0.005	8	0.53	0.310	209.0	0.00	
10415978	Secondary	High Nb Permian Mudstone	WINU0015	163	164	0.68	0.04	11.7	0.18	3.2	0.6	0.11	0.3	0.000	0.001	2	0.13	1.260	2.3	0.01	
10415986	Secondary	MetaSediment 2	WINU0015	170	171	0.34	0.05	10.0	0.47	52.1	19.7	0.02	3.9	0.001	0.002	10	0.56	0.540	194.5	0.02	
10413337	Secondary	Quartz Sandstone	WINU0017	121	122	0.97	0.07	14.7	3.91	31.5	3.5	0.19	0.8	0.000	0.001	4	0.29	1.090	39.9	0.00	
10416534	Secondary	MetaSediment 1	WINU0018	155	156	0.08	0.11	19.1	0.00	5.1	2.3	0.04	0.8	0.005	0.001	5	0.02	2.960	143.5	0.00	
10445114	Secondary	Quartz Sandstone	WINU0019	139	140	0.64	0.09	14.8	0.17	35.3	2.5	0.09	1.5	0.001	0.013	9	0.68	1.210	211.0	0.00	
10446138	Secondary	Quartz Sandstone	WINU0020	153	154	0.56	0.07	20.5	2.06	103.5	1.3	0.08	1.0	0.001	0.004	5	1.69	1.480	115.5	0.00	
10446147	Secondary	Quartz Sandstone	WINU0020	161	162	0.39	0.11	9.5	2.22	28.1	3.5	0.06	2.5	0.001	0.003	5	0.26	0.450	87.9	0.00	
10443671	Secondary	Oxidised Permian Mudstone	WINU0024	135	136	0.46	0.12	10.1	98.40	198.0	2.3	0.08	7.3	0.043	0.117	5	0.69	0.770	350.0	0.03	
10443699	Secondary	Quartz Sandstone	WINU0024	148	149	0.49	0.14	34.9	1.13	65.2	4.6	0.11	3.1	0.006	0.012	9	0.72	3.640	197.5	0.00	
10443710	Secondary	MetaSediment 1	WINU0024	153	154	0.70	0.09	15.2	3.02	240.0	3.9	0.05	10.2	0.005	0.031	8	0.86	0.920	230.0	0.02	
10443750	Secondary	Oxidised Permian Mudstone	WINU0024	172	173	0.38	0.23	35.4	0.07	31.4	4.8	0.09	17.4	0.002	0.002	10	0.27	2.350	158.5	0.01	
10452517	Secondary	MetaSediment 1	WINU0026	122	123	0.22	0.04	4.0	0.96	69.0	20.1	0.05	0.7	0.002	0.003	7	0.70	0.110	22.3	0.03	
10450655	Secondary	MetaSediment 1	WINU0038	198	199	0.16	0.00	0.4	0.02	27.7	9.0	0.01	0.5	0.001	0.002	7	0.24	0.020	5.5	0.01	
10450661	Secondary	MetaSediment 1	WINU0038	203	204	0.40	0.00	1.2	0.00	41.9	15.8	0.08	1.3	0.002	0.002	10	0.53	0.020	7.1	0.01	535

3.5. ADVANCED ACID BASE ACCOUNTING

Kinetic NAG tests and sequential NAGs were completed for a selection of samples from the secondary sulfide zone to give an indication of the rate of acid generation over time from this portion of the Winu deposit.

3.5.1. *KINETIC NET ACID GENERATION*

The two pre-mineral mafic samples (mineral resource and waste rock) generated acid relatively quickly and measured a pH of less than four in under 90 minutes. This indicates that acid generation from pre-mineral mafic rocks is likely to be rapid and that these units will be of particular concern for short term storage.

The two metasediment 1 samples exhibited very different rates of acid generation (10443710 and 10413355). Sample 10443710 generated acid quickly. This sample had a total sulfur content of 0.79 wt.% and hence is firmly classified as PAF. In contract, sample 10413355 was slow to generate acid. The oxidised permian mudstone was similarly slow to react and did not heat up above ambient during the NAG reaction (10443750) (Table 5). Sample 10443750 (blue) had a total sulfur content of 0.22 wt.%, and so would only just be classified as PAF based on the 0.2% sulfur cut-off proposed.

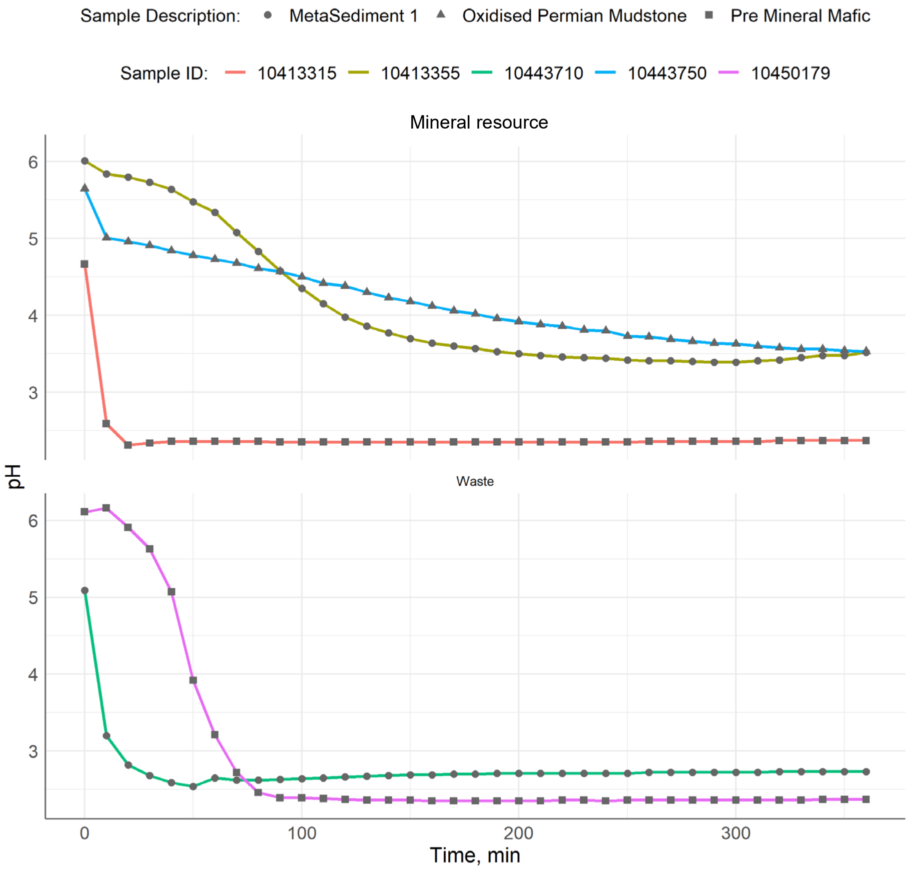

Figure 14: Kinetic NAG curves for selected secondary sulfide zone samples.

Table 5: Summary comparison data for kinetic NAG tests. Mineral resource grade samples in purple italics.

Sample	Lithology	NAF/PAF	MPA kg H_2SO_4/t	ANC kg H_2SO_4/t	Max Temp °C	Time @ Max T min	Initial pH	Final pH
10413315	*Pre-mineral mafic*	*PAF*	*151.5*	*0.5*	*91.9*	*20*	*4.67*	*2.37*
10413355	*Metasediment 1*	*PAF-LC*	*5.8*	*1.5*	*57.1*	*350*	*6.01*	*3.52*
10443710	Metasediment 1	PAF	16.2	0.5	84.6	60	5.09	2.73
10443750	*Oxidised permian mudstone*	*PAF-LC*	*4.9*	*0.5*	*24.0*	*NA*	*5.65*	*3.53*
10450179	Pre-mineral mafic	PAF	85.1	11.9	82.7	90	6.11	2.37

3.5.2. *SEQUENTIAL NET ACID GENERATION*

When testing samples with high sulfide contents it is common for oxidation to be incomplete in the single addition NAG test. Sequential NAG testing overcomes this limitation to an extent through successive additions of H_2O_2 to the same sample. It is particularly important in cases where the presence of primary sulfate or other non-acid forming sulfur species is suspected (e.g., where the NAPP value is significantly greater than the single addition NAG acidity).

All samples acidified in the first stage and the majority of acidity was produced by stage two or three. Three metasediment 2 samples were subjected to sequential NAG tests to investigate the ultimate extent of acid generation potential from these samples. The samples were similar, with high sulfide concentrations (1.2 – 1.9 wt.%) and low ANC (2 – 12 kg H_2SO_4/t). The sample with the lowest ANC (10722153) also has the lowest sulfide content and required the most number of contacts to exhaust the acid generation capacity, suggesting slightly lower reactivity (Figure 15).

The ultimate acid generation from the higher sulfide secondary sulfide samples was greater than that achieved in a single addition NAG for two of the three tested samples (Table 6). The ultimate achieved NAG (pH 4.5) was 50% of the calculated NAPP for each sample whereas the NAG (pH 7) was approximately equal to the NAPP (within 20%). This supports the use of NAPP in the enriched zone for determining ultimate net acid generation of a sample.

Table 6: Summary comparison data for sequential NAG tests. Mineral resource grade samples in purple italics.

Sample	Lithology	MPA kg H_2SO_4/t	ANC kg H_2SO_4/t	NAG (pH 7) kg H_2SO_4/t	NAPP kg H_2SO_4/t	Seq. NAG (pH 7 total) kg H_2SO_4/t
10529859	*Metasediment 2*	*37.3*	*11.5*	*18.5*	*25.8*	*21.8*
10721817	Metasediment 2	59.4	10.1	42.9	49.3	42.5
10722153	*Metasediment 2*	*43.1*	*2.1*	*22.1*	*41.0*	*36.4*

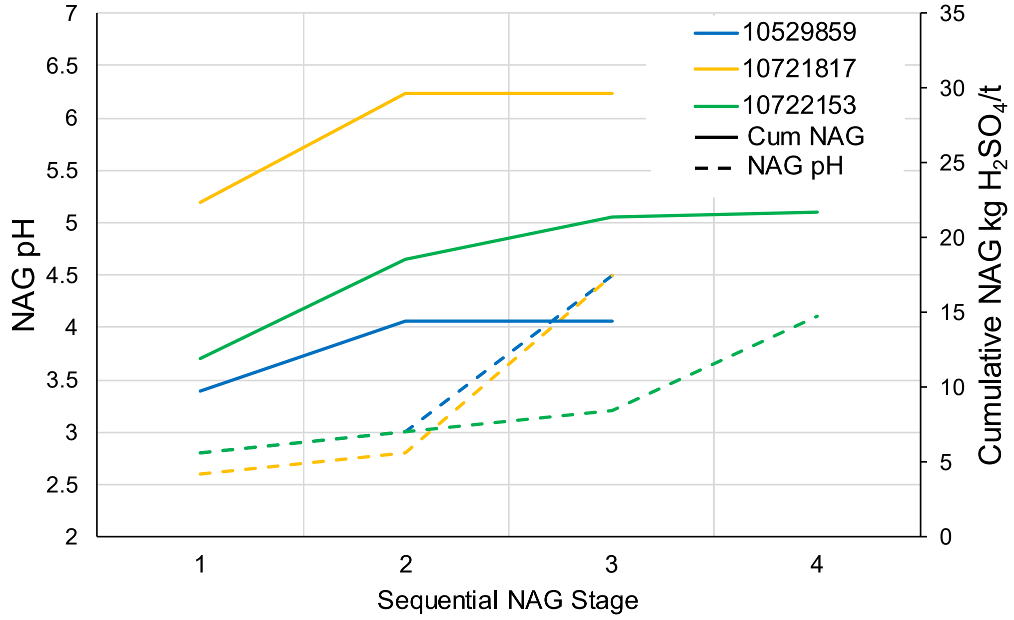

Figure 15: Sequential NAG test results including the cumulative NAG (pH 4.5) as solid lines and resulting NAG pH as dotted lines at each stage.

3.6. METAL LEACHING

Seven samples of secondary sulfide zone waste rock were selected for a water leach test to evaluate the potential for neutral or acidic drainage and leaching of elements from the rocks. Samples were chosen based on their elevated levels of Ag, Cd, Bi, Cu, Pb, S and W relative to crustal abundance. The physical and chemical conditions of the leach test are not the same as those that will exist in the field (e.g., solubility constraints, liquid to solid ratios, contact time, liquor compositions) therefore the results cannot be directly extrapolated to leachate quality in the field. However, the results are useful to provide a first order indication of the readily leachable elements from the sample material.

More elevated metal concentrations correlated with lower pH values as illustrated by the leachate with pH 5.1 associated with the metasediment 2 sample (10722153) (Figure 16). Full leach results are given in Appendix 1.

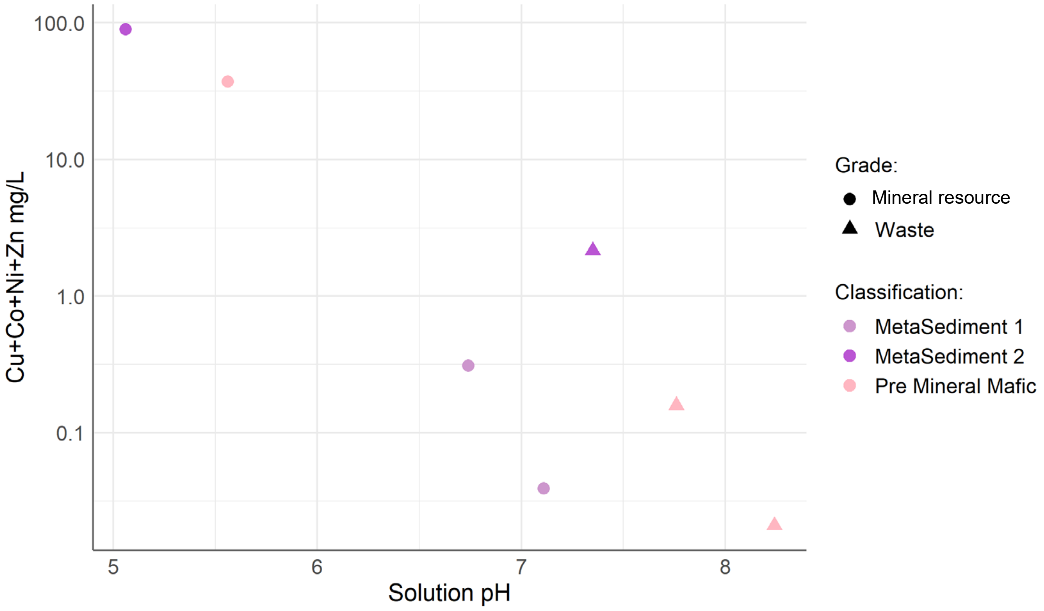

Figure 16: Correlation between pH and summed leachate concentrations of Cu, Co, Ni and Zn.

Fluoride release roughly correlated with increased K concentrations in the solid for the pre-mineral mafic samples (Figure 17). It appears that higher K bearing mafic samples are more prone to release F compared to the metasediment samples.

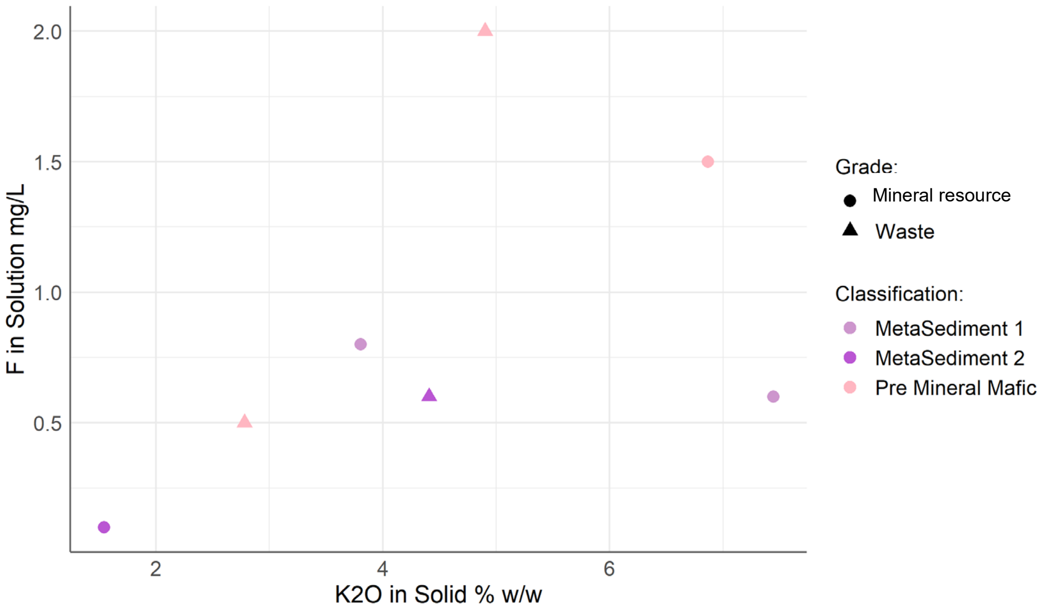

Figure 17: Correlation between pH and leached F concentration.

Salinity values from the 1:2 leachate was assessed against the guidelines for suitability as a soil growth medium (Hunt 1992) based on a 1:5 leachate:

- 0 – 400 µS/cm: suitable for a soil growth medium
- 400 – 1600 µS/cm: suitable for some salt tolerant species
- >1600 µS/cm: may not be a suitable growth medium.

It should be noted that these guidelines are based on crops used in agriculture and for a 1:5 leach rather than a more concentrated 1:2 leach. The comparison is therefore expected to be more conservative and should be used as a guide only.

Two samples reported EC values over 1600 µS/cm: a PAF pre-mineral mafic mineral resource grade sample and a PAF metasediment 2 sample. In both cases sulfate was elevated in the leachate (> 500 mg/L), suggesting some surface oxidation of sulfide minerals and flushing of the sulfate salts into the leach. No correlation between sulfide or sulfate level in the samples and leach EC is evident, making drawing any conclusions difficult.

Table 7: Results for leachate concentrations from DI water leach tests (L:S = 2:1 for 12 hours) for analytes consistently reporting above detection limits. Australian drinking water guidelines provided for reference only – actual trigger values will be site specific and depend on conditions of liquid extract test.

Sample ID	Lithology	EC µS/cm	pH	Total Alkalinity mg $CaCO_3$/L	SO_4 mg/L	Cl mg/L	NO_3 mg N/L	F mg/L	Al mg/L	As mg/L	Ba mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	W mg/L	Se mg/L	Zn mg/L
Australian Drinking Water Guidelines			*6.5 – 8.5*		*500*	*250*	*50*	*1.5*		*0.01*	*2*	*0.002*		*2*	*0.5*	*0.05*	*0.02*	*0.01*	*0.01*	*3*
10415461	Metasediment 1	536	6.74	5	152	39	0.04	0.6	0.02	*0.001*	0.023	0.0063	0.06	0.078	0.395	0.008	0.078	*0.001*	*0.01*	0.093
10413355	Metasediment 1	422	7.11	10	101	45	0.07	0.8	0.02	*0.001*	*0.01*	0.0024	0.017	0.014	0.378	0.003	0.003	0.01	*0.01*	0.005
10411063	Metasediment 2	1610	7.35	30	795	27	0.07	0.6	0.1	*0.001*	0.037	0.0018	0.716	0.702	2.8	*0.001*	0.428	*0.001*	*0.01*	0.308
10722153	Metasediment 2	900	5.06	*1*	378	46	*0.01*	*0.1*	0.11	*0.001*	0.069	0.128	27.4	42.2	1.23	*0.001*	8.45	*0.001*	*0.01*	11.3
10413315	Pre-mineral mafic	1800	5.56	*1*	981	14	0.2	1.5	0.78	0.002	0.054	0.0723	11	21.7	5.1	*0.001*	2.5	*0.001*	*0.01*	1.93
10450179	Pre-mineral mafic	625	7.76	58	217	28	0.14	0.5	*0.01*	*0.001*	0.065	0.0006	0.008	0.077	0.02	0.01	0.063	0.003	*0.01*	0.011
10450192	Pre-mineral mafic	968	8.24	114	125	198	0.29	2	0.05	*0.001*	0.013	*0.0001*	*0.001*	0.012	0.013	0.007	0.003	0.004	*0.01*	*0.005*

3.7. FREE DRAINING LEACH COLUMNS

Free draining leach columns have been run to assess the mobility of constituents from the secondary sulfide material under field-relevant conditions that could occur when exposed to atmosphere including successive dry-wet cycles.

Three samples (10689912, 10529859 and W93SS) met the criteria to be classified as mineral resource grade (> 0.2% Cu and/or > 0.2 ppm Au) (Table 8). The remaining three samples are classified as waste.

Table 8: Free draining column sample information. Mineral resource grade samples highlighted in red bold.

Sample ID	Lithology	Cu (%)	Au (ppm)	Total S (%)	ANC (kg H_2SO_4/t)	NAG pH	NAF/ PAF
10689916	Pre-mineral mafic	0.09	0.034	1.95	35.5	2.7	PAF
10689912	Pre-mineral mafic	**0.25**	**0.722**	5.47	0.5	2.5	PAF
10689913	Quartz sandstone	0.06	0.106	0.25	1.1	3.9	PAF-LC
10689924	Metasediment 2	0.12	0.03	0.59	7.4	3.1	PAF
10529859	Metasediment 2	0.01	**1.70**	1.27	11.5	2.9	PAF
W93 SS	Secondary sulfide mineral resource composite	0.17	**1.05**	1.11	3.9	5.8	UNC

Sample 1689912 and 10689913 had acidified significantly before being commissioned, with the pre-mineral mafic sample 10689912 producing the lowest NAG pH leachate (pH 2.5), likely due to the significant amount of sulfide present (4.7%) and low ANC (0.5 kg H_2SO_4/t). Sample 10689913 had a total sulfur concentration of 0.25% and about half the sulfur was present as sulfates. Hence, the initial low pH and continued lowering of pH is likely due to a combination of acidic sulfate salts formed during sample storage and sulfide oxidation during the test, together with a low buffering ANC in the sample. Samples 10529859, 10689916 and 10689924 progressively acidified over time, which confirmed the PAF classification but with some acidification lag. Mineral resource composite W93 SS, despite having an uncertain classification, produced acidic leachate (reaching a stable pH of 4.7) after week 32 (Figure 18).

LCG (2024) calculated acidification lag times in June 2024. This was undertaken using methods described by Morin and Hutt (2002) and MEND (2009). The depletion rates under test conditions are extrapolated forward to evaluate whether the ANC will be depleted first (resulting in PAF conditions) or whether the sulfur will be depleted first (NAF conditions). However, the depletion rates may, and frequently do, vary throughout the testing duration, and also represent laboratory conditions, not field depletion rates. As such, they are not considered representative alone, but provide another method for overall evaluation of PAF/NAF when used in combination with other methods.

The ANC was predicted to deplete in zero to eight years in the pre-mineral mafic samples, with sample 10689916 having high initial ANC of 36 kg H_2SO_4 and hence the longer time to depletion. The total sulfur was predicted to deplete in 12 years in these samples. Mineral resource sample W93 SS was predicted to have ANC depletion in three years, with total sulfur taking 38 years to deplete. The ANC was predicted to deplete in one, two and six years respectively in samples 10689913, 10529859 and 10689924. Total sulfur was predicted to deplete in six, nine and fifteen years respectively in these samples. Overall, the median depletion rate based of measured ANC is 2.5 years, however it is possible for these samples to acidify straight away.

Hence, since ANC is depleted before sulfur in all sample, this confirms the PAF classification. Some samples acidified rapidly, whilst others had an acidification lag.

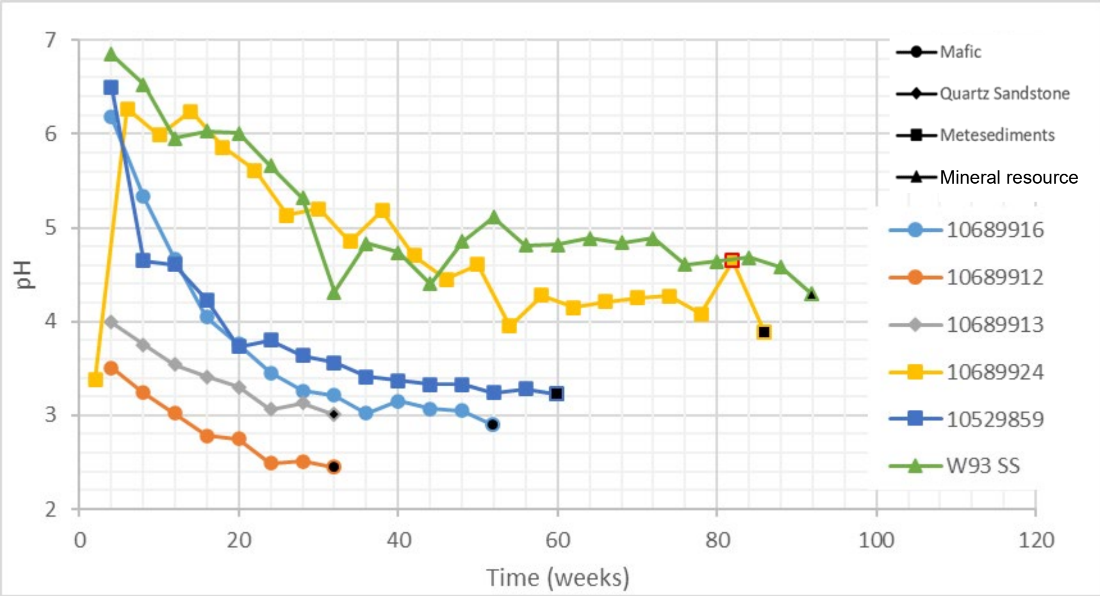

Figure 18: Free draining column pH vs. time. Final samples are highlighted in black fill and potential laboratory errors are highlighted with a red square.

EC for two pre-mineral mafic samples (10689916 and 10689912) and one of the metasediment samples (10529859) is significantly higher (between 1000 and 6000 µS/cm) when compared with the other four samples (< 1000 µS/cm, Figure 19). This correlated with higher sulfate releases (2000 to 10000 mg/L, Figure 20).

Remaining samples (10689913, 10689924 and W93 SS) have significantly lower EC in the leachates, correlating with the minimal acidity or sulfate release (generally < 500 mg/L: Figure 20). Although sample 10689913 did acidify significantly, the sample had low sulfide sulfur concentration (0.12%) and low buffering capacity from ANC (1.1 kg H_2SO_4/t), and hence sulfate and salinity release were relatively low.

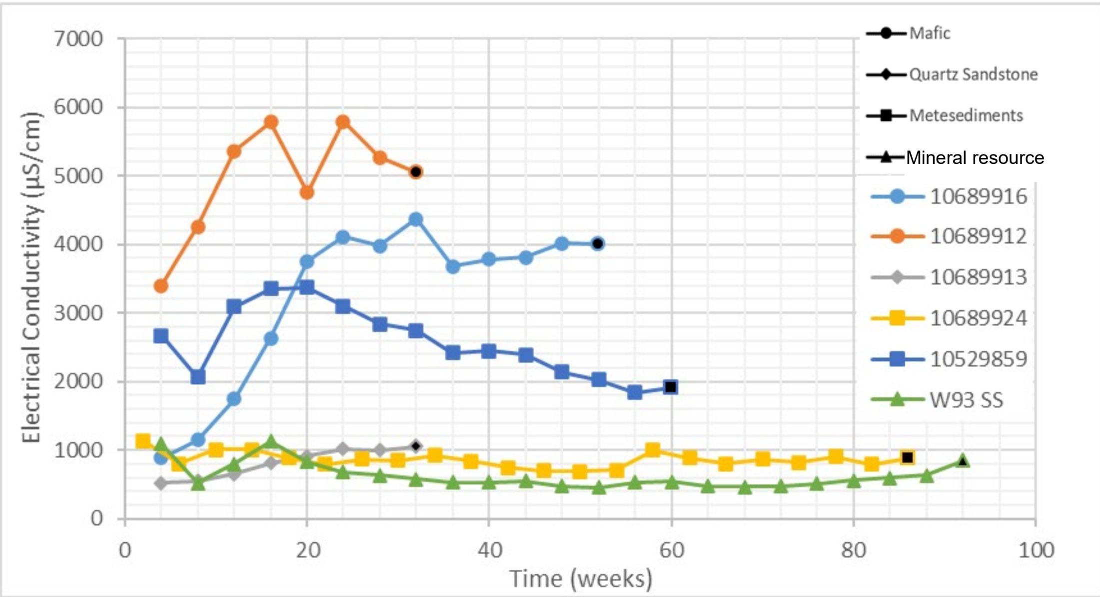

Figure 19: Free draining columns EC concentration vs. time.

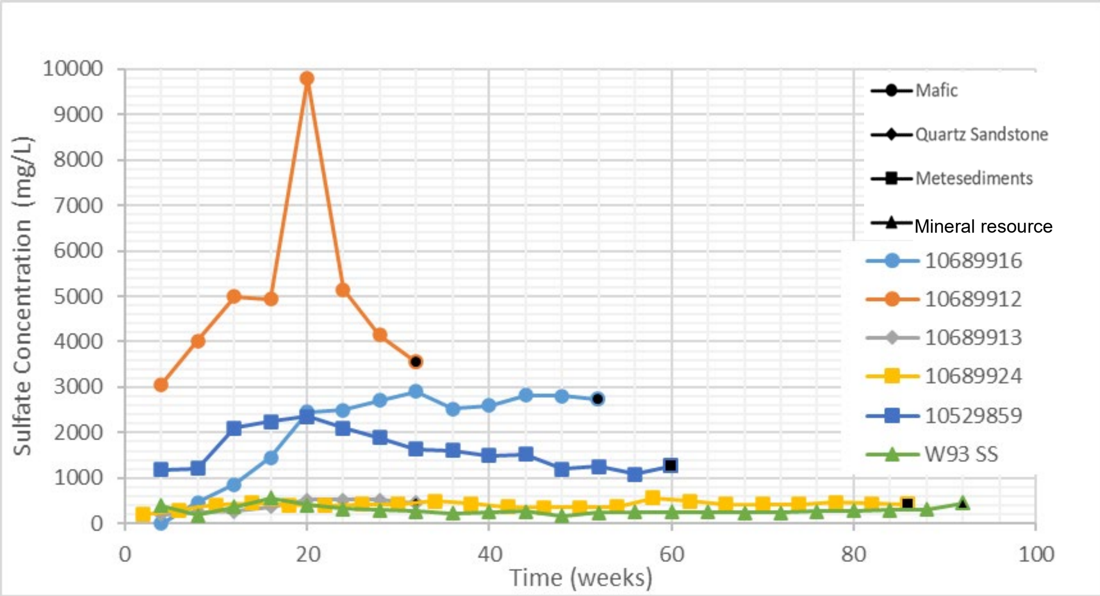

Figure 20: Free draining columns sulfate concentration vs. time.

Metasediment sample 10529859 had an initially high release of Ca (400 mg/L) and Mg (300 mg/L) suggesting early ANC (11.5 kg H_2SO_4/t) consumption (Figure 21 and Figure 22). A reduction in Ca and Mg release (from week 20) and continued acidification suggest ANC is rapidly being depleted.

Pre-mineral mafic sample 10689916 has a comparatively lower Ca release (150 mg/L) and higher Mg release (350 to 400 mg/L) suggesting similar ANC (35.5 kg H_2SO_4/t) consumption. The proportions of Mg to Ca release for these two samples suggest predominantly dolomite in 10529859 and the potential presence of magnesite in 10689916.

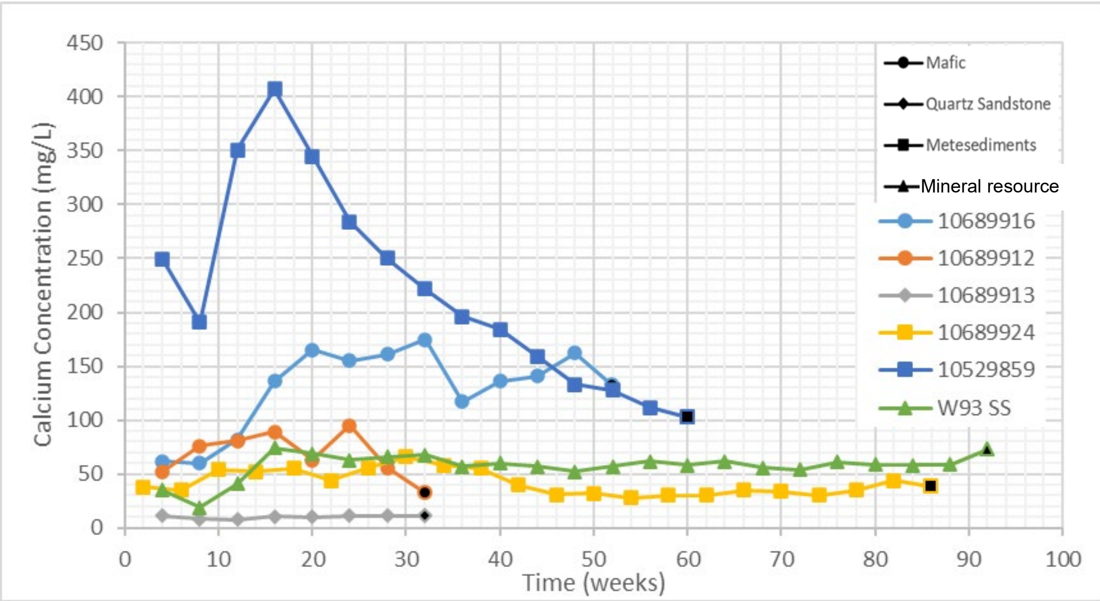

Figure 21: Free draining columns Ca concentration vs. time.

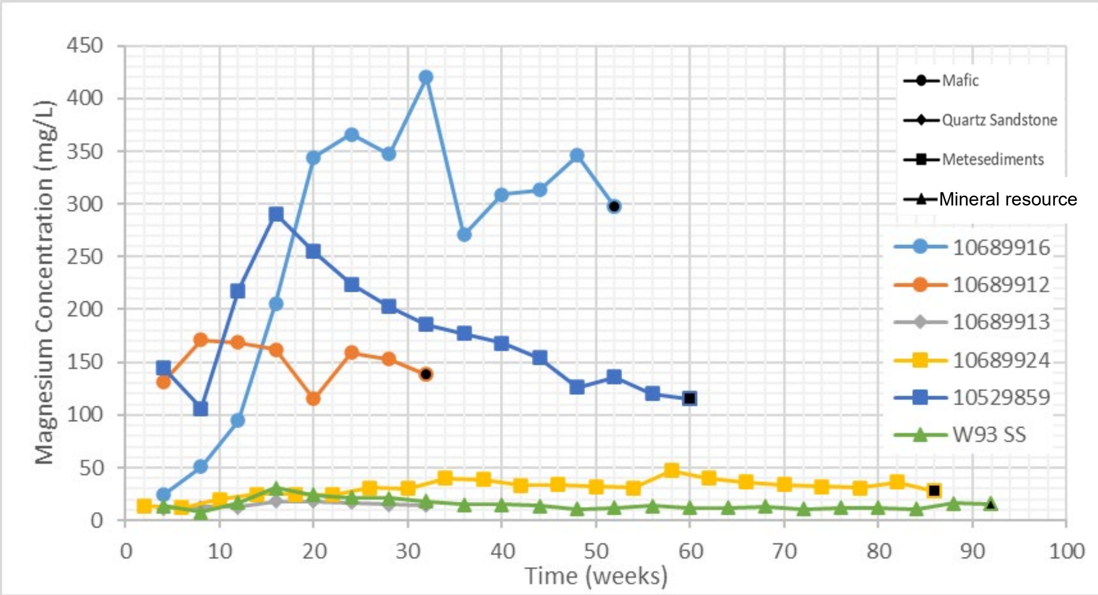

Figure 22: Free draining columns Mg concentration vs. time.

Pre-mineral mafic sample 10689912 had high initial F (6 mg/L) and Co (up to 100 mg/L) release. Fluoride was rapidly flushed from the sample after a few contacts to low concentrations, whereas Co release was sustained at relatively high concentrations until the sample was decommissioned, suggesting sustained Co release from oxidised sulfide minerals, potentially as inclusions within pyrite (Figure 23 and Figure 24).

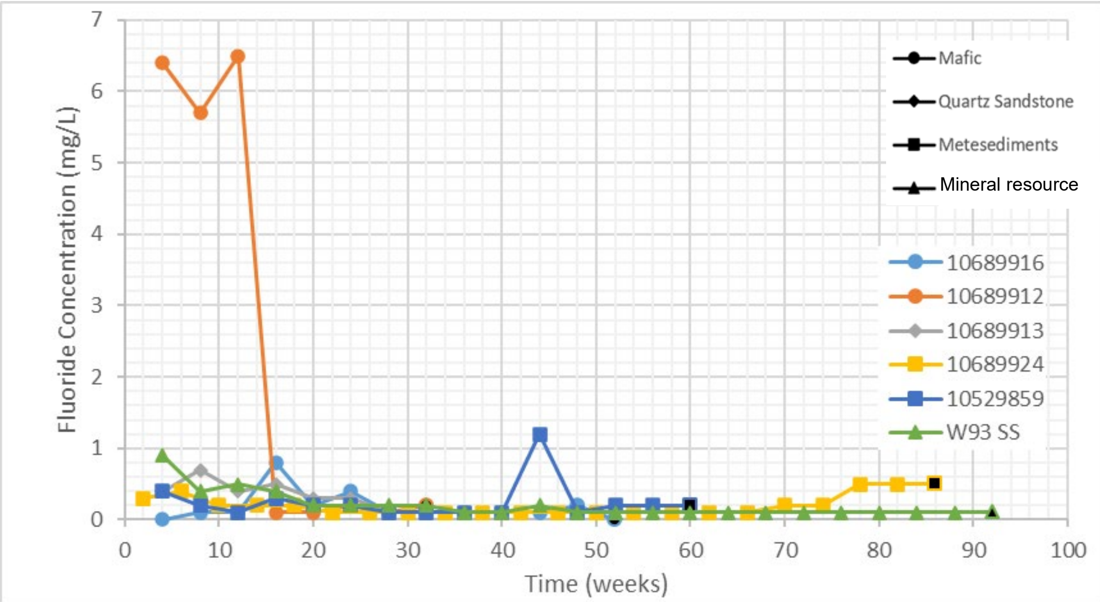

Figure 23: Free draining column F concentration vs. time.

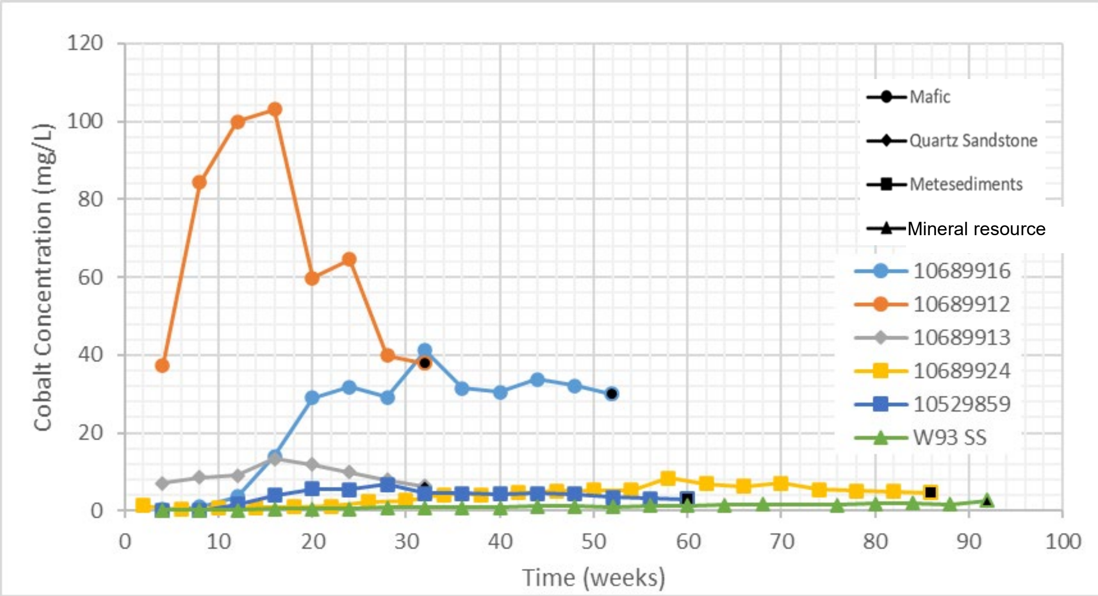

Figure 24: Free draining column Co concentration vs. time.

Pre-mineral mafic sample 10689912 also produced leachate with significantly higher Cu (1000 mg/L), Al (140 mg/L) and Fe (400 mg/L) when compared to other samples (Figure 25, Figure 26 and Figure 27). Pre-mineral mafic sample 10689912 had an initial Cu content, two to three times higher than other samples in this category (0.25%), of which 60% was leached during the 32 week column test. This suggests the potential for significant acidification and loss of Cu from pre-mineral mafic mineral resource stockpiles left exposed to weather for long periods. Al in week 16 was reported as 3.2 mg/L despite a rising trend in Al release over time for this sample. It was noted that there was poor ionic balance for this sample with low cations, suggesting analytical error.

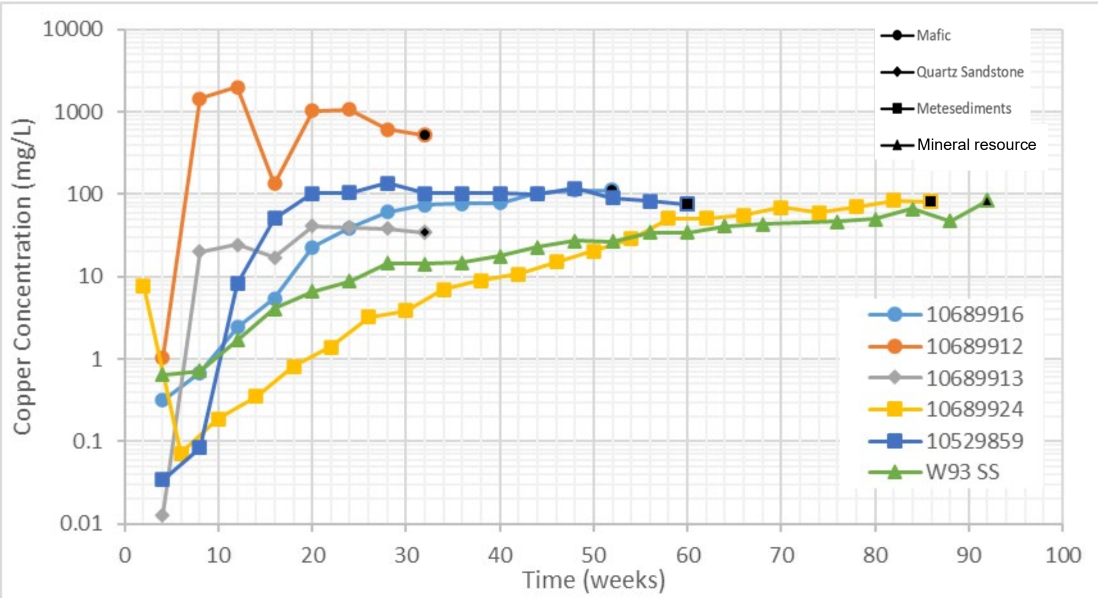

Figure 25: Free draining columns Cu concentration vs. time.

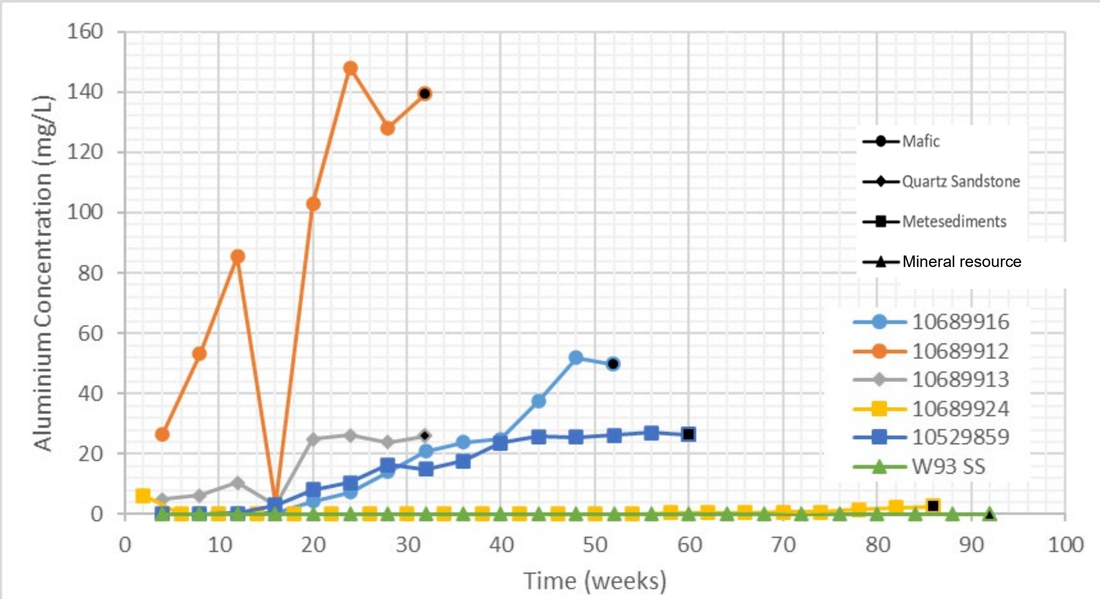

Figure 26: Free draining columns Al concentration vs. time.

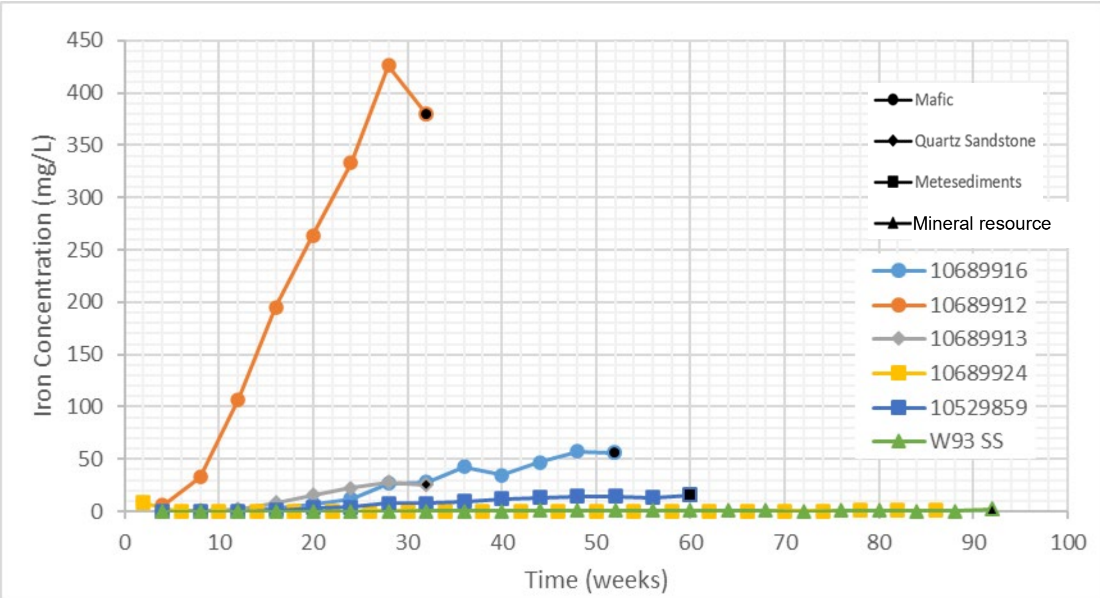

Figure 27: Free draining columns Fe concentration vs. time.

Another pre-mineral mafic sample 10689916 produced leachate with high Ni (40 – 50 mg/L) and Zn (150 – 200 mg/L) concentrations from week 20, consistent with acidic conditions (pH < 4) present from week 20 onwards are mobilising Ni and Zn (Figure 28 and Figure 29). This sample had an initial Ni (240 ppm) and Zn (880 ppm) content, two to ten times higher than other samples in this category, of which 23% Ni and 21% Zn has been leached.

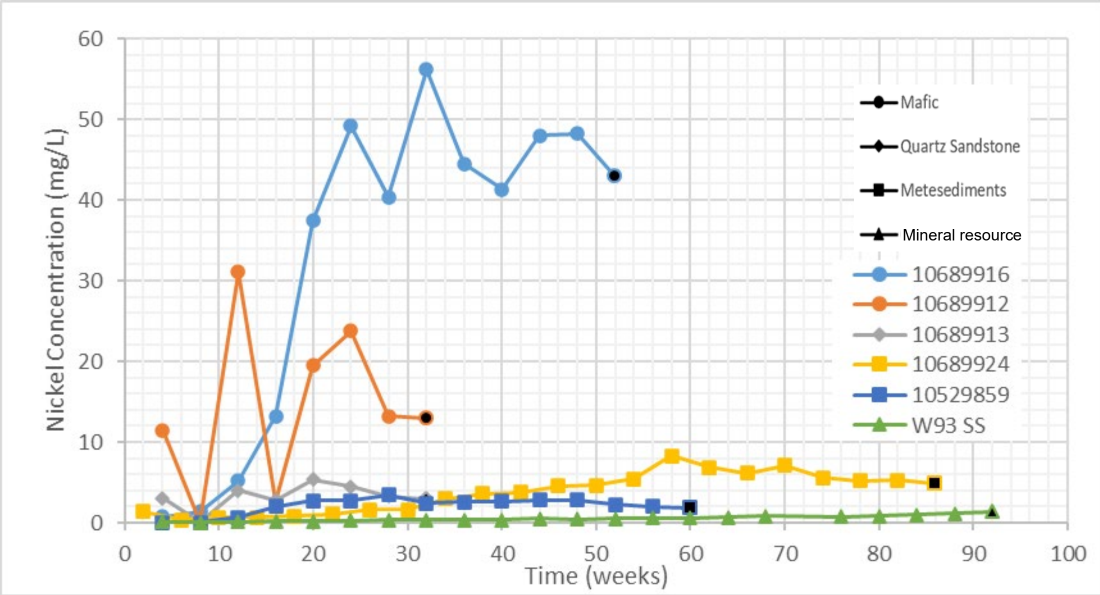

Figure 28: Free draining column Ni concentration vs. time.

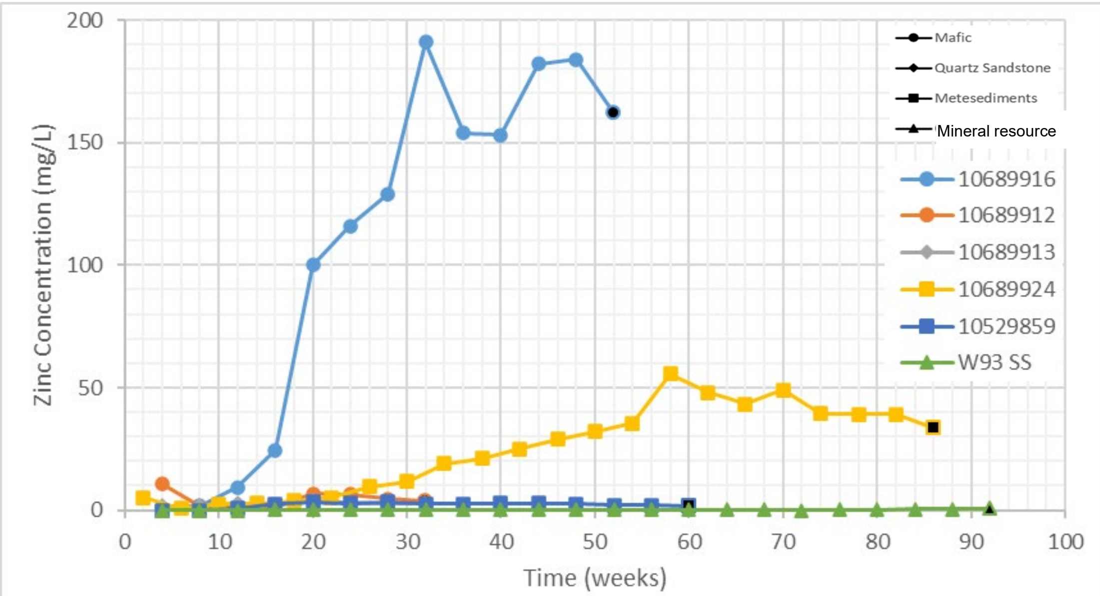

Figure 29: Free draining columns Zn concentration vs. time.

OCR provides an indication of the rate at which minerals in the sample may oxidise. Where sulfide minerals dominate, OCR can be related to sulfide oxidation.

OCR values have been measured in laboratory tests (blue diamonds in Figure 30, secondary sulfide samples surrounded by red triangles). OCR was also calculated from sulfate released in the free draining columns[4] and plotted against the laboratory OCR values as well as other samples in the SRK database (grey triangles) (SRK 2020).

OCR calculated from sulfate release for the samples are typically an order of magnitude lower than that calculated by laboratory for the three reference secondary sulfide samples.

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[4] Sulfate released during the first two to four weeks has been omitted from the OCR calculation to allow mobile sulfate to be flushed out, the average OCR for the remaining life of the column has been used.

The OCR values from the column leach tests align more closely with the samples in the SRK database for lower sulfide samples.

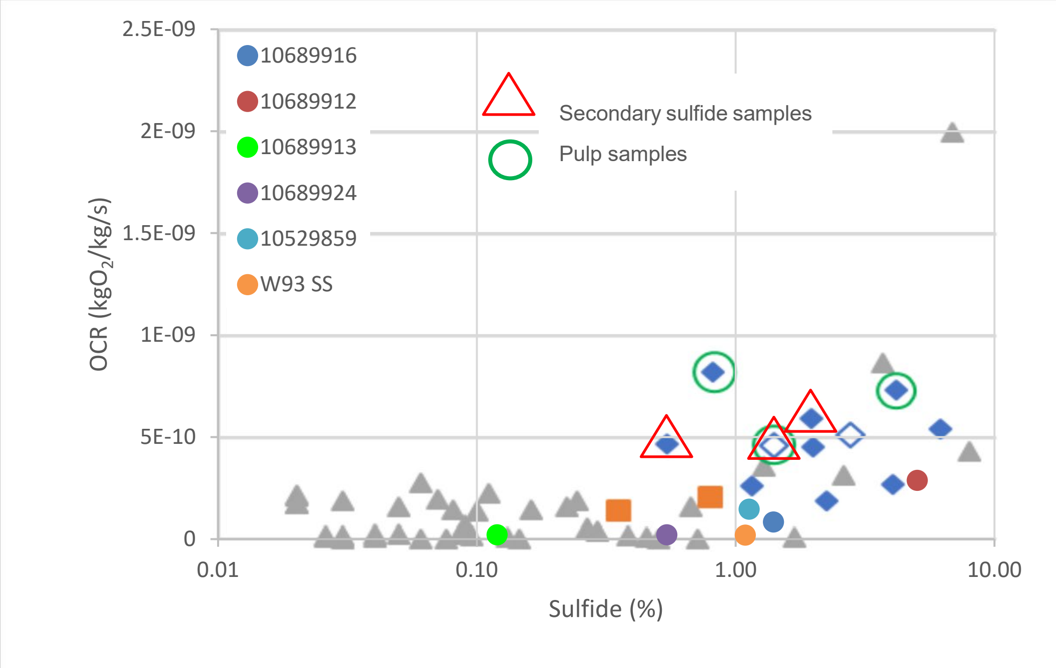

Figure 30: Free draining column oxidation rate vs. sulfide concentration[5]. Blue diamonds are Winu waste rock samples, grey triangles are SRK database, coloured circles are from free-draining leach column results.

[5] Figure adapted from SRK (2020).

3.7.1.1. Decommissioned Columns

Total sulfur was reduced post leach for all samples, consistent with sulfide mineral oxidation and release of sulfuric acid (Table 9).

Table 9: Total sulfur results – pre- and post-leach.

Column ID	Classification	Average final pH	Total S (pre-leach) (%)	Total S (post-leach) (%)
10689916	PAF	3.09	1.95	1.94
10689912	PAF	2.60	5.47	5.18
10689913	PAF-LC	3.18	0.25	0.24
10689924	PAF-LC	4.19	0.59	0.48
10529859	PAF	3.45	1.27	0.98
W93 SS	UC	4.71	1.11	0.96

Post-leach ANC results were below the analytical method reporting limits (< 0.5 kg H_2SO_4/t) for samples 10689912, 10689913 and W93 SS. However, some ANC was still available in the remainder of the samples and was particularly high in sample 10689916. TIC (< 0.02%) and TOC (< 0.02%) were below reporting limits in the pre and post leach solids, which could suggest the acidification delay in some samples is due to faster reacting silicate minerals (Table 10). Depletion of ANC was expected due to the drop in Ca and Mg release (in week 20) and continued acidification.

Table 10: ANC and carbon speciation results – pre- and post-leach.

Column ID	Pre leach ANC (kg H_2SO_4/t)	Post leach ANC (kg H_2SO_4/t)	Pre leach TIC (%)	Post leach TIC (%)
10689916	35.5	11.5	<0.02	< 0.02
10689912	0.5	< 0.5	< 0.02	< 0.02
10689913	1.1	< 0.5	< 0.02	< 0.02
10689924	7.4	3.2	0.02	< 0.02
10529859	11.5	3.4	< 0.02	< 0.02
W93 SS	3.9	< 0.5	0.02	< 0.02

Particle size information was collected for all column tests and is available in Appendix 1.

3.8. QUALITY ASSURANCE / QUALITY CONTROL

Data quality assurance and quality control (QA/QC) was completed by assessing known correlations in the data received and comparing results from repeat sample submissions. The data received from the laboratory was of good quality and can be used for generating defensible conclusions.

The total sulfur assays for the waste rock characterisation programme were consistent with the RTX exploration assay results (Figure 31).

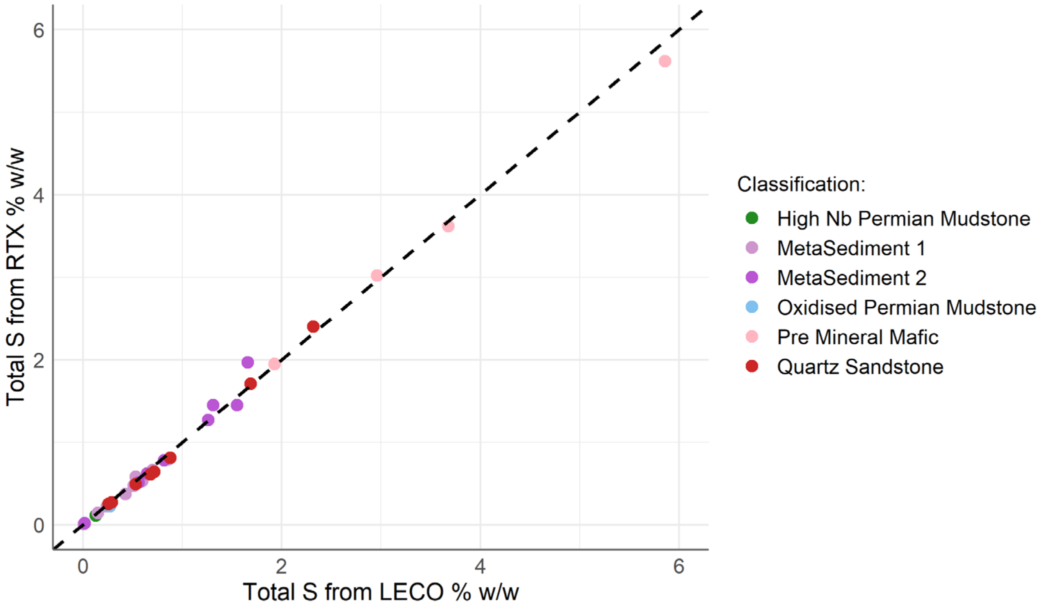

Figure 31: Total sulfur from RTX database and as reported by ALS. Anomalous sample circled in red.

Repeat ABA analysis of four of the 87 samples tested demonstrated generally good repeatability of the assay results (Table 11). Occasional Relative Percentage Differences (RPD) were calculated to be above an acceptable limit (15%), but as these results were relatively close to the reporting limits, the higher error is considered acceptable.

Table 11: Comparison of repeat assay results for ABA tests.

Value	10450175	10450175b	10411941	10411941b	10414945	10414945b	10384663	10384663b
Total S wt. %	1.93	1.93	0.22	0.22	0.51	0.50	1.0	1.0
RPD	0%		0%		2%		0%	
Sulfide S wt. %	1.40	1.49	0.04	0.03	0.32	0.34	0.84	0.87
RPD	6%		29%		6%		4%	
Total C wt. %	0.02	0.02	0.03	0.03	0.03	0.04	0.15	0.13
RPD	0%		0%		29%		14%	
Organic C wt. %	0.02	0.01	0.01	0.01	0.01	0.03	0.01	0.01
RPD	67%		0%		100%		0%	
ANC kg H_2SO_4/t	35.5	35.5	4.6	4.5	1.0	2.8	6.7	7.0
RPD	0%		2%		95%		4%	
NAG (pH 7) kg H_2SO_4/t	40.5	40.5	5.1	3.8	10.0	10.5	20.4	20.6
RPD	0%		29%		5%		1%	

QA/QC for the water leach tests was also acceptable (Table 12). RPD values of greater than 15% were only observed for low concentrations with small absolute differences. Ion balances for the leachates were generally within a 15% RPD, with the exception of two samples (24% and 30%). For these 2 exceptions, the measured EC was low (< 250 µS/cm), and hence, small changes in the concentrations would result in large charge imbalances.

Table 12: Comparison of repeat assay results for metal leaching test (showing only assay repeats with RPD greater than 15%).

Value	10384555	10384555b
NH_3, mg/L	0.27	0.23
RPD	16%	
NO_3, mg/L	0.2	0.3
RPD	40%	
F, mg/L	1.5	2.0
RPD	29%	
Al, mg/L	0.78	1.31
RPD	51%	
As, mg/L	0.002	0.002
RPD	0%	
Cd, mg/L	0.0723	0.0755
RPD	4%	
Co, mg/L	11.0	11.8
RPD	7%	
Cu, mg/L	21.7	33.2
RPD	42%	
Mn, mg/L	5.10	4.32
RPD	17%	
Sb, mg/L	0.002	0.001
RPD	67%	

4. SUMMARY

The secondary sulfide zone of the Winu deposit is characterised by high pyrite concentrations and low acid neutralising capacity. ABA and leach test work has indicated that the pre-mineral mafic and metasediment 2 lithologies are the most likely lithologies in the waste rock to generate acid (due to higher sulfur contents on average) and constituents released. Similarly, pre-mineral mafic mineral resource samples could rapidly generate acidity and contaminated leachates. Overall, most material with total sulfur concentrations > 0.2% from the secondary sulfide zone are expected to be classified as PAF.

Acid neutralisation capacity is mostly absent (due to lack of carbonates) or unavailable for net acid neutralisation (in slow reacting silicates like biotite). As such, the calculated NAPP values for the sulfide waste rock are generally high, classifying the majority of tested samples as PAF (83% PAF or PAF-LC). Sequential NAG tests on three samples resulted in similar (within 20%) acid generation as the NAPP predictions. Although most waste rock types were found to be classified as PAF, the metasediment 2 and pre-mineral mafic samples were the most likely to be classified as PAF due to higher sulfide contents and lower NAG pH values on average (pH < 3).

Constituent release was generally higher in the 'low' pH leachates (~pH 5), particularly Cd, Cu, Co, Mn, Ni, and Zn. In addition, samples from the pre-mineral mafic units with higher K concentrations were more likely to release F at elevated levels (> 1.5 mg/L). Typically, the metal release in kinetic tests was greater from pre-mineral mafic samples and included elevated Al and Fe.

The seven mineral resource grade samples were classified as PAF or PAF-LC due to limited ANC, relatively high sulfide contents and average NAG pH value of 3.0. One mineral resource grade pre-mineral mafic sample has acidified quickly during kinetic leaching, suggesting potential for leaching of constituents and acidity from the mafic mineral resource stockpiles. The secondary sulfide mineral resource composite has an acidification lag, but eventually acidified between pH 4 and 5.

5. KEY REFERENCES

AMIRA (2002), ARD test handbook: Project P387A: Prediction and kinetic control of acid mine drainage, AMIRA International Limited.

Department of Foreign Affairs and Trade (DFAT) (2016), Preventing acid and metalliferous drainage: Leading practical sustainable development program for the mining industry, Commonwealth of Australia.

Hunt, N.A. (1992), Farm monitoring handbook. Perth: University of Western Australia.

International Network for Acid Prevention (INAP) (2018), Global acid rock drainage (GARD) guide.

Lide, D.R. (2005), CRC handbook of chemistry and physics, CRC Press: Boca Raton.

LifeCycleGeo (LCG) (2024), Winu project waste rock geochemical testing.

Mine Environment Neutral Drainage (MEND) program (1991), Acid rock drainage Prediction manual.

MEND (2009), Prediction manual for drainage chemistry from sulphidic materials, MEND Report 1.20.1.

Morin, K.A. and N.M. Hutt (2001), Environmental geochemistry of minesite drainage: Practical theory and case studies. Minesite drainage assessment group, Vancouver British Columbia.

SRK (2020), Winu study – Oxidation rate assessment, Internal report.

APPENDIX 1 – SAMPLE INFORMATION

Acid Base Accounting

Sample ID	Lithology	Depth m	Total S %	Sulfide %	MPA (Sulfide) kg H_2SO_4/t	Total C %	TIC %	ANC kg H_2SO_4/t	ANC_{TIC} kg H_2SO_4/t	NAPP kg H_2SO_4/t	NPR	NAF / PAF
10413605	Metasediment 1	136	0.14	0.1	3.1	0.03	0.02	1.1	1.6	1.5	0.52	PAF-LC
10415451	Metasediment 1	119	0.47	0.33	10.1	0.03	0	1.2	0.0	9.1	0.10	PAF
10415461	Metasediment 1	110	0.53	0.32	9.8	0.02	0	1	0.0	7.0	0.29	PAF
10415948	Metasediment 1	130	0.01	0.01	0.3	0.03	0	2.8	0.0	-1.6	6.21	Barren
10413355	Metasediment 1	126	0.37	0.19	5.8	0.02	0.01	1.9	0.8	4.3	0.26	PAF-LC
10416534	Metasediment 1	111	0.02	0.02	0.6	0.03	0.02	1.5	1.6	0.1	0.82	Barren
10443710	Metasediment 1	114	0.79	0.53	16.2	0.05	0	0.5	0.0	15.7	0.03	PAF
10452517	Metasediment 1	141	0.66	0.43	13.2	0.02	0	0.5	0.0	9.0	0.32	PAF
10450655	Metasediment 1	78	0.22	0.17	5.2	0.01	0	4.2	0.0	-0.5	1.10	UNC
10450661	Metasediment 1	74	0.51	0.35	10.7	0.03	0.02	5.7	1.6	6.1	0.43	PAF-LC
10722145	Metasediment 1	115	0.58	0.54	16.5	0.12	0.01	4.6	0.8	16.0	0.03	PAF
10384821	Metasediment 2	149	1.45	1.31	40.1	0.19	0.18	0.5	14.7	31.9	0.20	PAF
10411056	Metasediment 2	129	0.62	0.48	14.7	0.03	0.02	6.2	1.6	9.8	0.33	PAF
10411063	Metasediment 2	124	0.78	0.61	18.7	0.03	0.02	0.5	1.6	11.3	0.40	PAF
10412525	Metasediment 2	99	0.02	0.02	0.6	0.02	0.01	1.4	0.8	-7.4	13.07	NAF
10415959	Metasediment 2	122	0.49	0.38	11.6	0.03	0.02	8	1.6	10.8	0.07	PAF
10415986	Metasediment 2	101	0.51	0.38	11.6	0.06	0.03	2.2	2.5	3.6	0.69	PAF-LC
10721817	Metasediment 2	87	1.97	1.94	59.4	0.14	0.06	3.9	4.9	49.3	0.17	PAF
10722153	Metasediment 2	107	1.45	1.41	43.1	0.12	0.02	10.1	1.6	41.0	0.05	PAF
10529859	Metasediment 2	144	1.27	1.22	37.3	0.06	0	2.1	0.0	25.8	0.31	PAF
10415978	High Nb permian mudstone	107	0.11	0.03	0.9	0.03	0.01	6.3	0.8	-0.2	1.20	UNC
10443671	Oxidised permian mudstone	129	0.62	0.39	11.9	0.12	0	0.5	0.0	11.4	0.04	PAF
10443750	Oxidised permian mudstone	97	0.22	0.16	4.9	0.06	0.03	0.5	2.5	4.4	0.10	PAF-LC
10413315	Pre-mineral mafic	157	5.62	4.95	151.5	0.02	0	0.5	0.0	151.0	0.00	PAF
10450175	Pre-mineral mafic	138	1.95	1.4	42.8	0.02	0	35.5	0.0	7.3	0.83	PAF
10450179	Pre-mineral mafic	135	3.02	2.78	85.1	0.05	0.02	15.9	1.6	73.2	0.14	PAF

Sample ID	Lithology	Depth m	Total S %	Sulfide %	MPA (Sulfide) kg H_2SO_4/t	Total C %	TIC %	ANC kg H_2SO_4/t	ANC_{TIC} kg H_2SO_4/t	NAPP kg H_2SO_4/t	NPR	NAF / PAF
10450192	Pre-mineral mafic	125	3.62	3	91.8	0.02	0	7.5	0.0	84.3	0.08	PAF
10373702	Quartz sandstone	138	2.4	1.97	60.3	0.05	0.03	4.9	2.5	55.4	0.08	PAF
10384873	Quartz sandstone	104	0.81	0.67	20.5	0.19	0.18	11.9	14.7	2.4	0.88	PAF
10413601	Quartz sandstone	140	0.49	0.38	11.6	0.03	0.02	1	1.6	11.1	0.04	PAF
10413337	Quartz sandstone	140	0.27	0.14	4.3	0.02	0	0.5	0.0	3.8	0.12	PAF-LC
10445114	Quartz sandstone	125	0.61	0.55	16.8	0.23	0.11	1.2	9.0	15.6	0.07	PAF
10446138	Quartz sandstone	112	1.71	1.53	46.8	0.02	0	0.8	0.0	46.0	0.02	PAF
10446147	Quartz sandstone	105	0.25	0.12	3.7	0.02	0	1.1	0.0	2.6	0.30	PAF-LC
10443699	Quartz sandstone	118	0.64	0.45	13.8	0.05	0	0.5	0.0	13.3	0.04	PAF
10411941b	NA	NA	0.21	0.03	0.9	0.03	0.02	4.5	1.6	-3.6	4.90	UNC
10450175b	NA	NA	1.97	1.49	45.6	0.02	0.01	35.5	0.8	10.1	0.78	PAF

Samples from the initial sampling campaign (103xxxxx / 104xxxxx) had been stored at Winu for longer periods before assay and tended to result in higher sulfate contents than fresher samples assayed soon after drilling (105xxxxx / 107xxxxx). It is suspected that the longer storage times in hot conditions at Winu for the first sampling campaign resulted in more oxidation and higher sulfate contents.

RioTinto

Full Whole Rock Digest Assays

Sample_ID	Zone	Lithology	Hole	From	To	Ag_ppm	Al2O3_pct	As_pct	Au_ppm	BaO_pct	Be_ppm	Bi_ppm	CaO_pct	Cd_ppm	Ce_ppm	Co_ppm	Cr_ppm	Cs_ppm	Cu_pct	Fe2O3_pct	Ga_ppm	Ge_ppm	Hf_ppm	In_ppm	K2O_pct	La_ppm	Li_ppm	MgO_pct	MnO_pct	Mo_ppm	Na2O_pct	Nb_ppm	Ni_pct
Average crustal abundance						0.08	15.6	0.0002	0.00	0.05	2.8	0.01	5.81	0.15	66.5	25.0	102	3.0	0.01	8.0	19	1.50	3.0	0.25	2.5	39	20	3.86	0.12	1.2	3.18	20.0	0.008
10529859	Secondary	MetaSediment 2	WINU0561	106	107	0.82	14.4	0.0005	1.70	0.04	3.9	116.5	0.80	0.11	59.0	65.0	73	7.4	0.10	12.4	19	0.12	5.2	0.05	4.0	27	69	2.26	0.06	2.1	0.69	14.7	0.004
10721817	Secondary	MetaSediment 2	WINU0344	163	164	0.43	13.6	0.0001	0.12	0.07	2.9	28.9	1.60	0.16	81.5	59.9	66	14.1	0.08	6.0	17	0.34	4.7	0.04	3.6	37	58	2.09	0.06	0.5	1.05	12.9	0.003
10722153	Secondary	MetaSediment 2	WINU0349	151	152	4.01	14.0	0.0003	0.22	0.01	1.6	28.6	0.03	2.12	73.2	578.0	63	5.9	0.70	2.1	20	0.16	5.4	1.04	1.5	34	30	0.28	0.01	1.6	0.04	12.5	0.027
10722145	Secondary	MetaSediment 1	WINU0349	142.64	143.7	0.22	17.3	0.0002	0.01	0.02	1.8	25.9	0.03	2.05	74.2	365.0	85	3.0	0.17	1.2	28	0.14	4.5	0.41	1.3	33	30	0.20	0.01	3.2	0.04	15.2	0.015
10384821	Secondary	MetaSediment 2	RC18WIN0002	104	105	1.14	13.0	0.0003	0.13	0.06	2.0	21.8	0.20	0.02	13.3	86.9	68	8.3	0.14	8.9	18	0.09	4.6	0.06	5.1	5	79	3.15	0.07	0.7	0.10	13.8	0.006
10384873	Secondary	Quartz Sandstone	RC18WIN0002	151	152	0.60	4.2	0.0002	0.05	0.03	0.7	9.6	0.36	0.05	16.8	35.3	45	4.5	0.05	4.1	6	0.06	3.8	0.02	2.0	8	32	1.81	0.03	3.9	0.07	4.6	0.002
10413355	Secondary	MetaSediment 1	WINU0017	137	138	1.38	8.3	0.0000	0.04	0.06	1.1	1.7	0.01	2.90	62.5	71.0	84	7.0	0.25	1.9	12	0.14	1.7	0.12	3.8	33	17	0.41	0.01	0.8	0.09	6.3	0.002
10413315	Secondary	Pre Mineral Mafic	WINU0017	101	102	1.48	12.2	0.0001	0.72	0.01	0.6	130.0	0.13	0.83	73.9	414.0	146	56.6	0.31	13.7	27	0.30	4.2	0.09	6.9	28	97	5.14	0.12	8.2	0.12	35.8	0.015
10413601	Secondary	Quartz Sandstone	WINU0004	120	121	0.56	9.1	0.0001	0.09	0.04	1.0	4.0	0.03	0.07	77.7	70.9	41	2.7	0.08	1.0	12	0.14	3.4	0.26	1.7	37	14	0.08	0.00	2.4	0.05	7.2	0.003
10450175	Secondary	Pre Mineral Mafic	WINU0036	129	130.1	0.14	14.2	0.0002	0.03	0.03	1.6	9.9	1.94	0.96	113.0	210.0	236	55.8	0.09	12.9	32	0.31	4.3	0.15	3.3	48	72	4.48	0.15	3.0	0.15	42.0	0.024
10450179	Secondary	Pre Mineral Mafic	WINU0036	132	133	0.25	13.2	0.0002	0.06	0.04	2.2	25.9	1.16	0.20	100.5	77.3	228	33.4	0.14	18.0	30	0.30	3.8	0.16	2.8	44	54	3.23	0.12	5.4	0.07	39.2	0.013
10450192	Secondary	Pre Mineral Mafic	WINU0036	144	145	0.45	12.4	0.0003	0.10	0.03	2.3	35.0	0.63	0.00	73.1	80.3	179	73.5	0.18	17.3	32	0.30	3.0	0.02	4.9	30	94	6.93	0.16	1.8	0.04	22.8	0.009
10373702	Secondary	Quartz Sandstone	RC17PAW0002	123	124	1.17	11.3	0.0003	0.16	0.03	2.6	23.8	0.18	1.07	79.7	173.5	80	13.7	0.14	7.6	17	2.50	13.7	0.09	3.4	38	44	1.99	0.04	1.5	0.12	14.7	0.009
10413605	Secondary	MetaSediment 1	WINU0004	124	125	0.19	19.1	0.0001	0.28	0.07	1.9	9.2	0.01	0.16	122.0	39.7	78	6.8	0.02	1.0	25	0.19	4.7	0.30	4.2	63	32	0.38	0.01	0.6	0.10	16.6	0.002
10411056	Secondary	MetaSediment 2	WINU0006	132	133	0.30	13.7	0.0001	0.05	0.05	2.1	4.8	0.07	3.17	83.5	50.7	65	14.1	0.04	4.0	21	0.29	4.4	0.09	4.1	42	56	1.46	0.04	1.0	0.11	13.0	0.003
10411063	Secondary	MetaSediment 2	WINU0006	138	139	1.17	12.7	0.0002	0.03	0.09	1.8	7.6	0.43	2.66	39.4	54.5	62	13.8	0.10	4.4	18	0.17	6.3	0.09	4.4	19	52	1.63	0.04	1.0	0.57	14.4	0.004
10412525	Secondary	MetaSediment 2	WINU0011	156	157	0.46	13.1	0.0001	0.03	0.18	1.5	7.4	0.25	0.01	39.7	12.3	63	14.1	0.06	4.3	17	0.14	4.3	0.04	5.8	19	57	2.06	0.05	1.1	0.27	14.0	0.002
10415451	Secondary	MetaSediment 1	WINU0012	135	136	0.56	21.4	0.0000	0.04	0.15	2.2	4.7	0.03	0.43	195.5	31.7	83	7.3	0.08	1.2	31	0.26	4.3	0.10	8.1	91	40	0.28	0.01	5.1	0.22	18.0	0.003
10415461	Secondary	MetaSediment 1	WINU0012	144	145	0.95	15.5	0.0001	1.19	0.15	1.2	292.0	0.03	5.22	116.5	48.0	67	21.4	0.10	4.0	20	0.22	3.6	0.13	7.4	60	38	1.14	0.03	337.0	0.22	11.5	0.005
10415948	Secondary	MetaSediment 1	WINU0015	136	137	0.18	15.4	0.0002	0.00	0.06	1.7	2.2	0.03	0.21	83.4	48.3	82	4.1	0.03	2.6	20	0.14	3.9	0.71	3.6	36	25	0.22	0.00	0.7	0.11	12.6	0.005
10415959	Secondary	MetaSediment 2	WINU0015	146	147	0.07	14.8	0.0000	0.05	0.11	1.9	9.1	0.01	0.85	103.0	23.9	82	6.0	0.02	1.2	21	0.18	4.6	0.06	5.5	46	26	0.25	0.00	0.6	0.15	13.7	0.003
10415978	Secondary	High Nb Permian Mudstone	WINU0015	163	164	0.68	0.6	0.0001	0.04	0.01	0.1	11.7	0.01	0.18	4.9	3.2	134	0.6	0.11	1.0	1	0.09	0.1	0.05	0.2	2	1	0.03	0.01	0.3	0.02	2.7	0.000
10415986	Secondary	MetaSediment 2	WINU0015	170	171	0.34	21.0	0.0001	0.05	0.13	3.9	10.0	0.52	0.47	83.8	52.1	118	19.7	0.02	5.5	29	0.24	6.7	0.03	5.6	38	85	2.26	0.04	3.9	0.67	20.1	0.004
10413337	Secondary	Quartz Sandstone	WINU0017	121	122	0.97	5.1	0.0000	0.07	0.06	0.4	14.7	0.01	3.91	48.2	31.5	169	3.5	0.19	1.0	6	0.13	2.2	0.11	2.4	23	11	0.12	0.01	0.8	0.05	5.6	0.001
10416534	Secondary	MetaSediment 1	WINU0018	155	156	0.08	12.1	0.0002	0.11	0.06	1.2	19.1	0.03	0.00	119.0	5.1	56	2.3	0.04	0.9	14	0.18	3.5	0.23	1.9	53	22	0.08	0.01	0.8	0.11	8.9	0.001
10445114	Secondary	Quartz Sandstone	WINU0019	139	140	0.64	16.6	0.0002	0.09	0.02	2.2	14.8	0.01	0.17	83.3	35.3	71	2.5	0.09	1.4	23	0.11	5.0	0.20	1.5	30	34	0.17	0.01	1.5	0.04	15.2	0.004
10446138	Secondary	Quartz Sandstone	WINU0020	153	154	0.56	6.7	0.0001	0.07	0.02	0.6	20.5	0.01	2.06	56.5	103.5	85	1.3	0.08	2.4	9	0.11	3.5	0.25	1.1	25	12	0.10	0.00	1.0	0.03	5.5	0.005
10446147	Secondary	Quartz Sandstone	WINU0020	161	162	0.39	5.5	0.0001	0.11	0.04	0.5	9.5	0.01	2.22	50.2	28.1	58	3.5	0.06	0.8	6	0.12	3.2	0.11	1.7	23	10	0.08	0.00	2.5	0.04	4.6	0.002
10443671	Secondary	Oxidised Permian Mudstone	WINU0024	135	136	0.46	17.6	0.0001	0.12	0.17	3.7	10.1	0.07	98.40	500.0	198.0	90	2.3	0.08	1.1	24	0.42	7.3	0.72	0.7	350	52	0.07	0.00	7.3	0.04	21.5	0.009
10443699	Secondary	Quartz Sandstone	WINU0024	148	149	0.49	13.1	0.0002	0.14	0.01	1.9	34.9	0.03	1.13	78.6	65.2	65	4.6	0.11	1.4	16	0.13	7.4	0.12	1.0	38	28	0.15	0.01	3.1	0.04	15.5	0.006
10443710	Secondary	MetaSediment 1	WINU0024	153	154	0.70	18.1	0.0004	0.09	0.06	2.3	15.2	0.01	3.02	101.5	240.0	114	3.9	0.05	1.9	24	0.17	5.2	0.13	2.8	45	33	0.30	0.01	10.2	0.08	16.1	0.021
10443750	Secondary	Oxidised Permian Mudstone	WINU0024	172	173	0.38	17.1	0.0002	0.23	0.14	2.4	35.4	0.03	0.07	83.1	31.4	97	4.8	0.09	0.8	20	0.15	5.1	0.07	4.9	41	38	0.15	0.00	17.4	0.13	14.6	0.002
10452517	Secondary	MetaSediment 1	WINU0026	122	123	0.22	16.3	0.0001	0.04	0.14	2.0	4.0	0.14	0.96	95.6	69.0	111	20.1	0.05	4.6	23	0.21	4.3	0.05	6.2	46	45	1.48	0.03	0.7	0.26	10.0	0.004
10450655	Secondary	MetaSediment 1	WINU0038	198	199	0.16	15.5	0.0003	0.00	0.08	2.4	0.4	0.03	0.02	61.4	27.7	71	9.0	0.01	5.5	22	0.21	3.9	0.06	5.0	25	54	1.92	0.04	0.5	0.10	14.2	0.004
10450661	Secondary	MetaSediment 1	WINU0038	203	204	0.40	16.5	0.0006	0.00	0.10	2.5	1.2	0.01	0.00	59.9	41.9	75	15.8	0.08	5.3	22	0.17	3.7	0.16	6.1	26	55	1.76	0.04	1.3	0.11	16.0	0.004

Sample_ID	Zone	Lithology	P2O5_pct	Pb_pct	Pd_ppm	Pt_ppm	Rb_ppm	Re_ppm	Sb_ppm	Sc_ppm	SiO2_pct	Sn_ppm	S_pct	Sr_ppm	Ta_ppm	Te_ppm	Th_ppm	TiO2_pct	Tl_ppm	U_ppm	V_ppm	W_ppm	Y_ppm	Zn_pct	Zr_ppm	Hg_ppm	Se_ppm	B_ppm	Cl_ppm	F_ppm
		Average crustal abundance	*0.24*	*0.001*	*0.015*	*0.005*	*90*	*0.001*	*0.20*	*22*	*60*	*2*	*0.04*	*370*	*2.0*	*0.001*	*9.6*	*0.94*	*0.9*	*2.7*	*120*	*1.3*	*33*	*0.01*	*165*	*0.085*	*0.05*	*1.00*	*15*	*59*
10529859	Secondary	MetaSediment 2	0.09	0.002	NA	NA	214	0.004	0.18	15	NA	7	1.26	81	1.4	4.040	20.8	0.71	2.6	4.6	75	50.9	34	0.01	168	0.010			50	280
10721817	Secondary	MetaSediment 2	0.10	0.001	0.001	0.002	319	0.004	0.09	15	57	13	1.66	110	1.2	1.030	20.1	0.69	2.7	5.1	82	82.7	30	0.01	182	0.010			90	630
10722153	Secondary	MetaSediment 2	0.02	0.004	0.001	0.002	180	0.047	0.60	14	54	14	1.31	7	1.2	1.265	21.4	0.66	2.3	12.3	78	178.5	20	0.02	178	0.010			90	320
10722145	Secondary	MetaSediment 1	0.02	0.015	0.001	0.002	139	0.064	1.04	18	53	10	0.53	8	1.5	4.410	20.5	0.74	2.1	19.0	118	230.0	20	0.00	158	0.010			90	120
10384821	Secondary	MetaSediment 2	0.09	0.001	0.001	0.002	302	0.002	0.25	13		12	1.55	45	1.3	0.300	17.5	0.65	2.5	3.0	68	137.5	39	0.01	161					
10384873	Secondary	Quartz Sandstone	0.03	0.001	0.001	0.002	136	0.001	0.13	3		4	0.88	19	0.4	0.210	11.8	0.28	1.0	2.7	19	29.7	13	0.00	136					
10413355	Secondary	MetaSediment 1	0.02	0.001	0.001	0.002	235	0.003	0.10	8	85	5	0.43	35	0.6	0.100	9.3	0.35	1.3	2.2	49	33.7	15	0.01	61					
10413315	Secondary	Pre Mineral Mafic	0.18	0.001	0.001	0.002	770	0.012	0.08	48	47	54	5.86	306	2.2	4.970	4.9	3.79	6.2	2.4	423	350.0	70	0.02	151					2308
10413601	Secondary	Quartz Sandstone	0.02	0.001	0.001	0.002	136	0.005	0.13	6		5	0.53	30	0.8	0.440	11.9	0.42	1.4	2.8	43	191.0	22	0.00	109					
10450175	Secondary	Pre Mineral Mafic	0.83	0.000	0.001	0.002	540	0.012	0.11	60		30	1.93	51	2.7	0.250	6.7	4.25	5.5	1.5	492	179.5	67	0.09	140					
10450179	Secondary	Pre Mineral Mafic	0.83	0.000	0.001	0.002	394	0.011	0.08	60		42	2.96	40	2.4	0.490	6.1	4.04	3.5	1.3	461	124.5	68	0.06	95					
10450192	Secondary	Pre Mineral Mafic	0.51	0.008	0.009	0.002	820	0.005	0.20	50		43	3.68	12	1.5	0.960	5.4	3.18	5.6	1.4	384	135.0	37	0.03	103					4100
10373702	Secondary	Quartz Sandstone	0.11	0.004	0.001	0.001	300	0.006	0.27	11	70	12	2.32	44	1.4	1.010	25.8	0.76	2.3	5.5	68	277.0	35	0.03	511					
10413605	Secondary	MetaSediment 1	0.03	0.001	0.001	0.002	299	0.005	0.12	22		5	0.15	28	1.7	0.020	24.5	0.84	1.5	6.2	113	192.0	89	0.00	153					
10411056	Secondary	MetaSediment 2	0.02	0.001	0.002	0.004	349	0.001	0.10	15		6	0.65	51	1.2	0.250	19.0	0.63	2.5	4.7	79	194.0	41	0.01	147					
10411063	Secondary	MetaSediment 2	0.08	0.002	0.004	0.002	322	0.001	0.10	13		10	0.82	74	1.5	0.290	22.5	0.71	2.0	3.9	68	124.5	29	0.02	218					342
10412525	Secondary	MetaSediment 2	0.09	0.003	0.001	0.002	357	0.001	0.12	14		15	0.02	90	1.3	0.130	20.1	0.68	1.9	3.3	80	31.3	20	0.01	156					
10415451	Secondary	MetaSediment 1	0.03	0.002	0.013	0.005	431	0.006	0.06	32		12	0.51	90	1.6	0.440	28.2	0.89	2.4	6.5	148	400.0	44	0.00	142					
10415461	Secondary	MetaSediment 1	0.03	0.002	0.014	0.005	430	0.008	0.14	18		9	0.60	77	1.1	17.550	17.5	0.63	3.9	3.2	90	270.0	63	0.05	123					
10415948	Secondary	MetaSediment 1	0.03	0.002	0.001	0.002	180	0.002	0.38	16	54	5	0.01	35	1.1	3.570	18.4	0.62	0.7	15.0	115	250.0	19	0.00	133					
10415959	Secondary	MetaSediment 2	0.03	0.001	0.006	0.002	285	0.005	0.10	18	55	8	0.53	54	1.2	0.310	19.6	0.68	1.5	4.4	108	209.0	37	0.00	156					
10415978	Secondary	High Nb Permian Mudstone	0.01	0.000	0.001	0.002	15	0.001	0.20	1	85	2	0.13	6	0.0	1.260	0.4	0.02	0.1	0.3	7	2.3	2	0.01	4					
10415986	Secondary	MetaSediment 2	0.13	0.001	0.001	0.002	320	0.002	0.40	21	42	10	0.56	89	1.8	0.540	23.9	0.95	2.6	3.9	121	194.5	37	0.02	231					
10413337	Secondary	Quartz Sandstone	0.01	0.000	0.001	0.002	158	0.001	0.09	4	94	4	0.29	29	0.3	1.090	9.2	0.19	1.3	2.4	23	39.9	25	0.00	70					
10416534	Secondary	MetaSediment 1	0.03	0.005	0.001	0.002	97	0.001	0.21	13	74	5	0.02	25	0.9	2.960	21.2	0.53	0.4	4.3	65	143.5	26	0.00	117					
10445114	Secondary	Quartz Sandstone	0.02	0.001	0.001	0.002	105	0.013	0.29	15	66	9	0.68	7	1.4	1.210	24.9	0.74	2.0	13.4	93	211.0	20	0.00	176					
10446138	Secondary	Quartz Sandstone	0.01	0.001	0.001	0.002	64	0.004	0.09	6	82	5	1.69	9	0.5	1.480	10.3	0.29	0.7	4.6	34	115.5	11	0.00	121					
10446147	Secondary	Quartz Sandstone	0.01	0.001	0.001	0.002	121	0.003	0.13	5	89	5	0.26	17	0.5	0.450	9.8	0.26	0.8	3.2	23	87.9	11	0.00	111					
10443671	Secondary	Oxidised Permian Mudstone	0.52	0.043	0.001	0.002	72	0.117	0.59	15	61	5	0.69	1730	1.9	0.770	32.1	0.99	1.3	23.0	97	350.0	49	0.03	246					
10443699	Secondary	Quartz Sandstone	0.04	0.006	0.002	0.002	129	0.012	0.17	12	68	9	0.72	87	1.4	3.640	27.9	0.81	1.1	9.1	75	197.5	27	0.00	244					
10443710	Secondary	MetaSediment 1	0.05	0.005	0.001	0.002	172	0.031	0.11	22	61	8	0.86	35	1.4	0.920	32.4	0.79	6.6	21.6	122	230.0	25	0.02	184					
10443750	Secondary	Oxidised Permian Mudstone	0.03	0.002	0.005	0.002	250	0.002	0.24	18	63	10	0.27	75	1.2	2.350	19.7	0.72	1.6	3.5	96	158.5	38	0.01	168					
10452517	Secondary	MetaSediment 1	0.10	0.002	0.001	0.002	358	0.003	0.13	18	65	7	0.70	75	0.9	0.110	23.4	0.68	3.0	4.0	99	22.3	22	0.03	151					
10450655	Secondary	MetaSediment 1	0.02	0.001	0.001	0.002	296	0.002	0.22	17	56	7	0.24	12	1.3	0.020	20.0	0.68	1.6	3.0	96	5.5	24	0.01	133					
10450661	Secondary	MetaSediment 1	0.01	0.002	0.001	0.002	387	0.002	0.19	17	57	10	0.53	23	1.3	0.020	21.6	0.72	2.3	3.5	102	7.1	26	0.01	136					535

Full L/S 2:1 Deionised Water Leach Assays

Sample_ID	Description	Zone	Hole	From	To	AQ_Acid_mgCaCO3/L	AQ_Cl_mg/L	AQ_NH3_mg/L	AQ_NO3_mg/L	AQ_NO2_mg/L	TKN_mg/L	AQ_F_mg/L	AQ_Hg_mg/L	AQ_HCO3_mg/L	AQ_CO3_mg/L	AQ_Tot_Alk_mg/L	AQ_EC_uS_cm_mg/L	AQ_pH_mg/L	AQ_Ag_mg/L	AQ_Al_mg/L	AQ_As_mg/L	AQ_Ba_mg/L	AQ_Bi_mg/L	AQ_Ca_mg/L	AQ_Cd_mg/L	AQ_Co_mg/L	AQ_Cr_mg/L	AQ_Cu_mg/L
10722153	Arkose 2	Secondary	WINU0349	151	152	88	46	0.36	0.01	0.01	4.4	0.1	0.0001	1	1	1	900	5.06	0.001	0.11	0.001	0.069	0.001	33	0.128	27.4	0.001	42.2
10413355	Arkose 1	Secondary	WINU0017	137	138		45	0.16	0.07	0.01		0.8	0.0001	10	1	10	422	7.11	0.001	0.02	0.001	0.01	0.001	7	0.0024	0.017	0.001	0.014
10413315	Pre Mineral Mafic	Secondary	WINU0017	101	102		14	0.27	0.2	0.01		1.5	0.0001	1	1	1	1800	5.56	0.001	0.78	0.002	0.054	0.001	82	0.0723	11	0.001	21.7
10450179	Pre Mineral Mafic	Secondary	WINU0036	132	133		28	0.1	0.14	0.02		0.5	0.0001	58	1	58	625	7.76	0.001	0.01	0.001	0.065	0.001	50	0.0006	0.008	0.001	0.077
10450192	Pre Mineral Mafic	Secondary	WINU0036	144	145		198	0.36	0.29	0.01		2	0.0001	114	1	114	968	8.24	0.001	0.05	0.001	0.013	0.001	49	0.0001	0.001	0.001	0.012
10411063	Arkose 2	Secondary	WINU0006	138	139		27	0.42	0.07	0.01		0.6	0.0001	30	1	30	1610	7.35	0.001	0.1	0.001	0.037	0.001	74	0.0018	0.716	0.001	0.702
10415461	Arkose 1	Secondary	WINU0012	144	145		39	0.2	0.04	0.01		0.6	0.0001	5	1	5	536	6.74	0.001	0.02	0.001	0.023	0.001	5	0.0063	0.06	0.001	0.078
10413355	Quartz Vein	Secondary	WINU0017	137	138		45	0.16	0.07	0.01		0.8	0.0001	10	1	10	422	7.11	0.001	0.02	0.001	0.01	0.001	7	0.0024	0.017	0.001	0.014
10413315	Dolerite	Secondary	WINU0017	101	102		14	0.27	0.2	0.01		1.5	0.0001	1	1	1	1800	5.56	0.001	0.78	0.002	0.054	0.001	82	0.0723	11	0.001	21.7
10450179	Dolerite	Secondary	WINU0036	132	133		28	0.1	0.14	0.02		0.5	0.0001	58	1	58	625	7.76	0.001	0.01	0.001	0.065	0.001	50	0.0006	0.008	0.001	0.077
10450192	Dolerite	Secondary	WINU0036	144	145		198	0.36	0.29	0.01		2	0.0001	114	1	114	968	8.24	0.001	0.05	0.001	0.013	0.001	49	0.0001	0.001	0.001	0.012
10411063	Arkose	Secondary	WINU0006	138	139		27	0.42	0.07	0.01		0.6	0.0001	30	1	30	1610	7.35	0.001	0.1	0.001	0.037	0.001	74	0.0018	0.716	0.001	0.702
10415461	Arkose	Secondary	WINU0012	144	145		39	0.2	0.04	0.01		0.6	0.0001	5	1	5	536	6.74	0.001	0.02	0.001	0.023	0.001	5	0.0063	0.06	0.001	0.078

Sample_ID	Description	Zone	Hole	From	To	AQ_Fe_mg/L	AQ_K_mg/L	AQ_Mg_mg/L	AQ_Mn_mg/L	AQ_Mo_mg/L	AQ_Na_mg/L	AQ_Ni_mg/L	AQ_P_mg/L	AQ_Pb_mg/L	AQ_Sb_mg/L	AQ_Si_mg/L	AQ_Sr_mg/L	AQ_SO4_mg/L	AQ_Te_mg/L	AQ_Th_mg/L	AQ_V_mg/L	AQ_W_mg/L	AQ_Zn_mg/L	AQ_B_mg/L	AQ_Se_mg/L	AQ_Tl_mg/L	AQ_U_mg/L
10722153	Arkose 2	Secondary	WINU0349	151	152	0.05	50	13	1.23	0.001	48	8.45	0.01	0.003	0.001	18.2	0.355	378	0.005	0.001	0.01	0.001	11.3	0.05	0.01	0.019	0.007
10413355	Arkose 1	Secondary	WINU0017	137	138	0.05	58	4	0.378	0.003	29	0.003	0.01	0.001	0.001	8.9		101	0.005		0.01	0.01	0.005	0.09	0.01	0.001	0.001
10413315	Pre Mineral Mafic	Secondary	WINU0017	101	102	0.05	173	95	5.1	0.001	39	2.5	0.01	0.001	0.002	20.3		981	0.005		0.01	0.001	1.93	0.07	0.01	0.011	0.001
10450179	Pre Mineral Mafic	Secondary	WINU0036	132	133	0.05	33	21	0.02	0.01	33	0.063	0.01	0.001	0.001	8.09		217	0.005		0.02	0.003	0.011	0.05	0.01	0.001	0.001
10450192	Pre Mineral Mafic	Secondary	WINU0036	144	145	0.05	59	31	0.013	0.007	75	0.003	0.01	0.001	0.001	3.34		125	0.005		0.01	0.004	0.005	0.07	0.01	0.001	0.001
10411063	Arkose 2	Secondary	WINU0006	138	139	0.05	153	82	2.8	0.001	46	0.428	0.01	0.002	0.001	18.5		795	0.005		0.01	0.001	0.308	0.11	0.01	0.002	0.001
10415461	Arkose 1	Secondary	WINU0012	144	145	0.05	91	7	0.395	0.008	30	0.078	0.01	0.001	0.001	4.44		152	0.005		0.01	0.001	0.093	0.08	0.01	0.002	0.001
10413355	Quartz Vein	Secondary	WINU0017	137	138	0.05	58	4	0.378	0.003	29	0.003	0.01	0.001	0.001	8.9		101	0.005		0.01	0.01	0.005	0.09	0.01	0.001	0.001
10413315	Dolerite	Secondary	WINU0017	101	102	0.05	173	95	5.1	0.001	39	2.5	0.01	0.001	0.002	20.3		981	0.005		0.01	0.001	1.93	0.07	0.01	0.011	0.001
10450179	Dolerite	Secondary	WINU0036	132	133	0.05	33	21	0.02	0.01	33	0.063	0.01	0.001	0.001	8.09		217	0.005		0.02	0.003	0.011	0.05	0.01	0.001	0.001
10450192	Dolerite	Secondary	WINU0036	144	145	0.05	59	31	0.013	0.007	75	0.003	0.01	0.001	0.001	3.34		125	0.005		0.01	0.004	0.005	0.07	0.01	0.001	0.001
10411063	Arkose	Secondary	WINU0006	138	139	0.05	153	82	2.8	0.001	46	0.428	0.01	0.002	0.001	18.5		795	0.005		0.01	0.001	0.308	0.11	0.01	0.002	0.001
10415461	Arkose	Secondary	WINU0012	144	145	0.05	91	7	0.395	0.008	30	0.078	0.01	0.001	0.001	4.44		152	0.005		0.01	0.001	0.093	0.08	0.01	0.002	0.001

Full Kinetic Leach Column Assay Results

New ID	Old ID	Zone	Block Model Classification	Lithology	Sample Mass (g)	Sulfide (%)	Total Sulfur (%)	TIC (%)	ANC (kg H_2SO_4/t)	ANC (% $CaCO_3$)
10689916	10450175	Secondary	Mafic	Pre-mineral mafic	1249.5	1.40	1.95	0	35.5	36.3
10689912	10413315	Secondary	Mafic	Pre-mineral mafic	2020.3	4.68	5.47	< 0.02	0.5	0.5
10689913	10446147	Secondary	Secondary sulfide	Quartz sandstone	1739.6	0.12	0.25	-	1.1	1.1
10529859	-	Secondary	Leached cap	Metasediment 2	1994.2	1.13	1.27	<0.02	11.5	1.2
W93 SS	-	Secondary	Mineral resource	Secondary mineral resource composite	1697.4	1.09	1.11	0.02	3.9	0.4
10689924	10411063	Secondary	Secondary sulfide	Metasediment 2	1500	0.47	0.59	0.02	7.4	7.6

New ID	Old ID	NAPP (kg H_2SO_4/t)	Fizz Rating	NAG (pH OX)	NAG pH 4.5 (kg H_2SO_4/t)	NAG pH 7 (kg H_2SO_4/t)	NAF/PAF	Bulk density (kg/m^3)
10689916	10450175	7.4	-	2.7	29.3	40.5	PAF	2820
10689912	10413315	142.8	-	2.2	90.1	111	PAF	2820
10689913	10446147	2.6	-	3.9	1.4	4.3	PAF-LC	2400
10529859	-	23.0	1	2.9	10.1	18.5	PAF	2690
W93 SS	-	29.5	0	5.8	< 0.1	9.6	UNC	2690
10689924	10411063	7.1	-	3.2	4.9	9.4	PAF-LC	2400

Week	Date	Sample ID	Leachate added (mL)	Leachate collected (g)	Density (g/cm^3)	Leachate collected (mL)	pH	EC (µS/cm)	ORP (mV)	Hydroxide as mg/L $CaCO_3$	Carbonate as mg/L $CaCO_3$	Bicarbonate as mg/L $CaCO_3$	Total alkalinity as mg/L $CaCO_3$
4	11/05/2020	10689916	875.0	119.47	0.9987	119.63	6.18	885	-	-	< 1	< 1	< 1
8	9/06/2020		875.0	154.15	0.9985	154.38	5.33	1148	-	-	< 1	30	30
12	6/07/2020		875.0	161.85	0.9999	161.87	4.67	1747	-	-	< 1	30	30
16	3/08/2020		875.0	151.91	1.0000	151.91	4.05	2634	-	-	-	-	-
20	31/08/2020		874.7	166.11	1.0020	165.78	3.76	3759	-	< 1	< 1	< 1	< 1
24	28/09/2020		874.7	172.74	1.0018	172.43	3.45	4107	-	< 1	< 1	< 1	< 1
28	26/10/2020		874.7	159.30	1.0021	158.97	3.26	3976	-	< 1	< 1	< 1	< 1
32	23/11/2020		874.7	155.77	1.0017	155.51	3.21	4371	-	< 1	< 1	< 1	< 1
36	21/12/2020		874.7	150.69	1.0016	150.45	3.02	3680	-	< 1	< 1	< 1	< 1
40	18/01/2021		874.7	162.93	1.0015	162.69	3.15	3780	-	< 1	< 1	< 1	< 1
44	15/02/2021		874.7	169.99	1.0015	169.74	3.07	3811	-	< 1	< 1	< 1	< 1
48	15/03/2021		874.7	162.91	1.0003	162.86	3.05	4014	-	< 1	< 1	< 1	< 1
52	12/04/2021		874.7	156.56	1.0026	156.15	2.89	4003	-	-	-	-	-
4	11/05/2020	10689912	1414.0	386.08	1.0023	385.19	3.51	3405	-	-	< 1	80	80
8	9/06/2020		1414.0	427.11	1.0034	425.66	3.24	4261	-	-	< 1	< 1	< 1
12	6/07/2020		1414.0	429.14	1.0059	426.62	3.02	5365	-	-	< 1	< 1	< 1
16	3/08/2020		1414.0	427.56	1.0056	425.18	2.78	5782	-	-	-	-	-
20	31/08/2020		1414.2	498.16	1.0043	496.03	2.75	4753	-	< 1	< 1	< 1	< 1
24	28/09/2020		1414.2	473.21	1.0052	470.76	2.49	5795	-	< 1	< 1	< 1	< 1
28	26/10/2020		1414.2	501.63	1.0042	499.53	2.51	5272	-	< 1	< 1	< 1	< 1
32	23/11/2020		1414.2	456.27	1.0026	455.09	2.45	5041	-	< 1	< 1	< 1	< 1
4	11/05/2020	10689913	1218.0	272.39	0.9988	272.72	3.99	525.7	-	-	< 1	30	30
8	9/06/2020		1218.0	314.80	0.9981	315.40	3.75	546.9	-	-	< 1	15	15
12	6/07/2020		1218.0	319.53	0.9989	319.88	3.54	648.3	-	-	< 1	25	25
16	3/08/2020		1218.0	330.94	0.9984	331.47	3.41	812.7	-	-	-	-	-
20	31/08/2020		1217.7	347.70	0.9992	347.98	3.30	914.4	-	< 1	< 1	< 1	< 1
24	28/09/2020		1217.7	344.96	0.9986	345.44	3.06	1021.0	-	< 1	< 1	< 1	< 1
28	26/10/2020		1217.7	344.56	0.9989	344.94	3.13	1001.0	-	< 1	< 1	< 1	< 1
32	23/11/2020		1217.7	371.19	0.9980	371.93	3.01	1046.0	-	< 1	< 1	< 1	< 1

Week	Date	Sample ID	Leachate added (mL)	Leachate collected (g)	Density (g/cm^3)	Leachate collected (mL)	pH	EC (µS/cm)	ORP (mV)	Hydroxide as mg/L $CaCO_3$	Carbonate as mg/L $CaCO_3$	Bicarbonate as mg/L $CaCO_3$	Total alkalinity as mg/L $CaCO_3$
4	31/08/2020	10529859	1396.0	386.62	1.0009	386.27	6.50	2674.0	-	< 1	< 1	< 1	< 1
8	28/09/2020		1396.0	398.12	0.9995	398.32	4.65	2066.0	-	< 1	< 1	< 1	< 1
12	26/10/2020		1396.0	441.66	0.9986	442.28	4.61	3090.0	-	< 1	< 1	< 1	< 1
16	23/11/2020		1395.5	458.60	1.0006	458.33	4.23	3358.0	-	< 1	< 1	< 1	< 1
20	21/12/2020		1395.5	465.38	1.0015	464.68	3.73	3370.0	-	< 1	< 1	< 1	< 1
24	18/01/2021		1395.5	477.96	1.0009	477.53	3.80	3098.0	-	< 1	< 1	< 1	< 1
28	15/02/2021		1395.5	478.69	1.0005	478.45	3.64	2844.0	-	< 1	< 1	< 1	< 1
32	15/03/2021		1395.5	489.34	1.0000	489.34	3.56	2746.0	-	< 1	< 1	< 1	< 1
36	12/04/2021		1395.5	478.71	1.0008	478.33	3.41	2421.0	-	< 1	< 1	< 1	< 1
40	10/05/2021		1395.5	469.17	1.0000	469.17	3.37	2443.0	-	< 1	< 1	< 1	< 1
44	7/06/2021		1395.5	456.58	1.0008	456.22	3.33	2388.0	-	< 1	< 1	< 1	< 1
48	5/07/2021		1395.5	464.00	1.0001	463.95	3.33	2137.0	-	< 1	< 1	< 1	< 1
52	2/08/2021		1395.5	449.41	0.9998	449.50	3.24	2023.0	-	< 1	< 1	< 1	< 1
56	30/08/2021		1395.5	478.30	1.0004	478.11	3.28	1838.0	-	< 1	< 1	< 1	< 1
60	27/09/2021		1395.5	465.02	0.9999	465.07	3.23	1906.0	392.9	< 1	< 1	< 1	< 1
4	31/08/2020	W93 SS	1188.2	309.87	0.9992	310.12	6.85	1089.0	-	< 1	< 1	< 1	< 1
8	28/09/2020		1188.2	308.14	0.9982	308.70	6.53	517.7	-	< 1	< 1	2	2
12	26/10/2020		1188.2	325.56	0.9986	326.02	5.95	804.7	-	< 1	< 1	2	2
16	23/11/2020		1188.2	340.42	0.9981	341.07	6.03	1129.0	-	< 1	< 1	1	1
20	21/12/2020		1188.2	339.03	0.9986	339.51	6.01	833.1	-	< 1	< 1	< 1	< 1
24	18/01/2021		1188.2	341.63	0.9983	342.21	5.66	681.8	-	< 1	< 1	< 1	< 1
28	15/02/2021		1188.2	337.94	0.9982	338.55	5.32	636.4	-	< 1	< 1	< 1	< 1
32	15/03/2021		1188.2	340.24	0.9976	341.06	4.31	573.9	-	< 1	< 1	< 1	< 1
36	12/04/2021		1188.2	330.64	0.9990	330.97	4.83	533.4	-	< 1	< 1	< 1	< 1
40	10/05/2021		1188.2	327.89	0.9982	328.48	4.74	527.3	-	< 1	< 1	< 1	< 1
44	7/06/2021		1188.2	318.34	0.9992	318.59	4.40	549.5	-	< 1	< 1	2	2
48	5/07/2021		1188.2	318.12	0.9985	318.60	4.85	474.7	-	< 1	< 1	< 1	< 1
52	2/08/2021		1188.2	313.45	0.9983	313.98	5.11	458.0	-	< 1	< 1	< 1	< 1
56	30/08/2021		1188.2	325.40	0.9990	325.73	4.81	529.2	-	< 1	< 1	< 1	< 1

Week	Date	Sample ID	Leachate added (mL)	Leachate collected (g)	Density (g/cm^3)	Leachate collected (mL)	pH	EC (µS/cm)	ORP (mV)	Hydroxide as mg/L $CaCO_3$	Carbonate as mg/L $CaCO_3$	Bicarbonate as mg/L $CaCO_3$	Total alkalinity as mg/L $CaCO_3$
60	27/09/2021		1188.2	314.96	0.9987	315.37	4.82	541.2	312.9	< 1	< 1	< 1	< 1
64	25/10/2021		1188.2	309.86	0.9986	310.29	4.89	477.6	305.7	< 1	< 1	< 1	< 1
68	22/11/2021		1188.2	310.02	0.9986	310.45	4.84	469.6	328.1	< 1	< 1	< 1	< 1
72	20/12/2021		1188.2	319.78	0.9984	320.29	4.89	477.1	291.3	< 1	< 1	< 1	< 1
76	17/01/2022		1188.2	321.05	0.9986	321.50	4.61	515.0	310.5	< 1	< 1	< 1	< 1
80	14/02/2022		1188.2	317.17	0.9986	317.61	4.64	558.3	297.9	< 1	< 1	< 1	< 1
84	14/03/2022		1188.2	311.97	0.9987	312.38	4.68	600.3	275.6	< 1	< 1	5	5
88	11/04/2022		1188.2	327.29	0.9990	327.62	4.58	630.6	277.6	< 1	< 1	2	2
92	9/05/2022		1188.2	284.70	0.9940	286.42	4.29	844.2	263.1	<1	<1	<1	<1
2	22/04/2020	10689924	600.0	-	-	220	3.38	1140.0	-	< 1	< 1	< 1	< 1
6	21/05/2020		600.0	-	-	270	6.27	798.0	-	< 1	< 1	5	5
10	16/06/2020		600.0	-	-	315	5.99	1010.0	-	< 1	<1	4	4
14	14/07/2020		600.0	-	-	310	6.24	1010.0	-	< 1	< 1	2	2
18	19/08/2020		600.0	-	-	300	5.86	888.0	-	< 1	< 1	4	4
22	10/09/2020		600.0	-	-	290	5.61	796.0	-	< 1	< 1	4	4
26	8/10/2020		600.0	-	-	300	5.13	870.0	-	< 1	< 1	2	2
30	5/11/2020		600.0	-	-	310	5.20	851.0	-	< 1	< 1	2	2
34	3/12/2020		600.0	-	-	300	4.85	922.0	-	< 1	< 1	6	6
38	24/12/2020		600.0	-	-	300	5.18	837.0	-	< 1	< 1	< 1	< 1
42	28/01/2021		600.0	-	-	320	4.70	742.0	-	< 1	< 1	< 1	< 1
46	25/02/2021		600.0	-	-	300	4.45	699.0	-	< 1	< 1	< 1	< 1
50	25/03/2021		600.0	-	-	310	4.61	693.0	-	< 1	< 1	< 1	< 1
54	22/04/2021		600.0	-	-	300	3.95	713.0	-	< 1	< 1	< 1	< 1
58	20/05/2021		600.0	-	-	300	4.28	1000.0	-	< 1	< 1	< 1	< 1
62	17/06/2021		600.0	-	-	370	4.15	886.0	-	< 1	< 1	< 1	< 1
66	15/07/2021		600.0	-	-	330	4.21	802.0	-	< 1	< 1	< 1	< 1
70	12/08/2021		600.0	-	-	330	4.25	866.0	-	< 1	< 1	< 1	< 1
74	15/09/2021		600.0	-	-	330	4.27	823.0	-	< 1	< 1	< 1	< 1
78	14/10/2021		600.0	-	-	490	4.08	902.0	-	< 1	< 1	< 1	< 1

Week	Date	Sample ID	Leachate added (mL)	Leachate collected (g)	Density (g/cm^3)	Leachate collected (mL)	pH	EC (µS/cm)	ORP (mV)	Hydroxide as mg/L $CaCO_3$	Carbonate as mg/L $CaCO_3$	Bicarbonate as mg/L $CaCO_3$	Total alkalinity as mg/L $CaCO_3$
82	11/11/2021		600.0	-	-	510	4.65	797.0	-	< 1	< 1	< 1	< 1
86	9/12/2021		600.0	-	-	490	3.88	878.0	-	< 1	< 1	< 1	< 1

Week	Date	Sample ID	Al (mg/L)	Ba (mg/L)	Fe (mg/L)	Mn (mg/L)	Si (mg/L)	B (mg/L)	Li (mg/L)	Cd (mg/L)	Cr (mg/L)	Cu (mg/L)	Pb (mg/L)	Ni (mg/L)	Zn (mg/L)
4	11/05/2020	10689916	0.039	0.043	< 0.02	0.132	2.15	< 0.02	0.044	0.00389	<0.002	0.317	0.00014	0.714	0.616
8	9/06/2020		0.082	0.029	0.141	0.282	1.9	< 0.02	0.081	0.00816	< 0.002	0.68	< 0.0001	1.417	1.690
12	6/07/2020		0.263	0.027	0.773	1.13	3.52	1.61	0.215	0.0293	< 0.002	2.44	0.00019	5.17	9.380
16	3/08/2020		0.246	0.023	2.87	4.05	4.36	3.03	0.302	0.0954	<0.002	5.46	<0.0001	13.2	24.600
20	31/08/2020		4.25	0.018	7.13	8.37	6.67	< 0.05	-	0.202	0.002	22.7	< 0.001	37.4	99.900
24	28/09/2020		7.4	0.012	12	8.92	6.57	< 0.05	-	0.262	0.006	38.6	< 0.001	49.2	116.000
28	26/10/2020		14.2	0.005	26.8	8.3	7.68	< 0.05	-	0.226	0.012	60.4	< 0.001	40.4	129.000
32	23/11/2020		21	0.002	28.1	8.45	0.7	0.05	0.550	0.259	0.021	74.2	< 0.001	56.2	191.000
36	21/12/2020		23.8	< 0.001	42.8	6.96	7.95	< 0.05	0.415	0.185	0.021	76.3	< 0.001	44.5	154.000
40	18/01/2021		25	0.003	34.9	8.16	8	< 0.05	0.540	0.19	0.027	78.5	< 0.001	41.3	153.000
44	15/02/2021		37.4	< 0.001	47.2	9.32	9.43	< 0.05	0.651	0.206	0.036	102	< 0.001	48	182.000
48	15/03/2021		51.9	< 0.001	57.7	10.2	10	< 0.05	0.748	0.192	0.048	111	< 0.001	48.2	184.000
52	12/04/2021		49.5	< 0.001	56.5	9.34	9.89	< 0.05	0.822	0.172	0.05	109	< 0.001	42.9	162.000
4	11/05/2020	10689912	26.7	0.001	6.1	5.47	2.48	< 0.02	0.219	0.144	<0.002	1.022	<0.0001	11.49	10.600
8	9/06/2020		53.2	< 0.0004	33.2	7.27	< 0.05	< 0.02	0.033	0.166	< 0.002	1455	< 0.0001	0.0246	1.530
12	6/07/2020		85.5	< 0.0004	107	7.68	4.4	0.07	0.046	0.186	< 0.002	1986	0.00032	31.1	1.000
16	3/08/2020		3.21	< 0.0004	195	7.99	4.69	0.144	0.060	0.206	0.0084	133	<0.0001	2.61	0.858
20	31/08/2020		103	< 0.001	264	6.49	6.24	< 0.05	-	0.24	0.172	1030	< 0.001	19.5	6.630
24	28/09/2020		148	< 0.001	333	7.89	7.73	< 0.05	-	0.252	0.246	1070	< 0.001	23.8	6.460
28	26/10/2020		128	< 0.001	426	7.16	8.28	< 0.05	-	0.156	0.215	611	< 0.001	13.2	4.510
32	23/11/2020		139	< 0.001	379	6.27	0.68	< 0.05	0.702	0.123	0.23	513	< 0.001	13	3.580
4	11/05/2020	10689913	4.94	0.003	0.938	4.65	0.57	0.631	0.075	0.457	0.0085	0.0128	< 0.0001	3.086	1.730
8	9/06/2020		6.34	0.001	1.17	5.46	0.45	0.196	0.055	0.501	0.0158	20	< 0.0001	0.00346	1.670

Week	Date	Sample ID	Al (mg/L)	Ba (mg/L)	Fe (mg/L)	Mn (mg/L)	Si (mg/L)	B (mg/L)	Li (mg/L)	Cd (mg/L)	Cr (mg/L)	Cu (mg/L)	Pb (mg/L)	Ni (mg/L)	Zn (mg/L)
12	6/07/2020		10.6	0.001	2.58	5.85	0.46	0.719	0.124	0.533	0.0353	24.2	< 0.0001	3.99	2.840
16	3/08/2020		3.08	0.001	8.37	8.1	0.28	0.582	0.102	0.670	0.0519	17.1	<0.0001	2.83	2.250
20	31/08/2020		24.9	< 0.001	16	8.21	< 0.5	< 0.05	-	0.588	0.158	41	< 0.001	5.38	3.940
24	28/09/2020		26.1	< 0.001	22.4	6.07	0.54	< 0.05	-	0.474	0.187	39.7	< 0.001	4.51	3.380
28	26/10/2020		23.9	< 0.001	27.8	4.35	0.44	< 0.05	-	0.336	0.174	37.9	< 0.001	3.32	2.800
32	23/11/2020		26	< 0.001	24.8	2.95	< 0.05	< 0.05	0.087	0.276	0.173	33.8	< 0.001	3	2.520
4	31/08/2020		< 0.01	0.036	< 0.05	0.149	7.65	0.12	-	0.0003	< 0.001	0.034	< 0.001	0.009	0.006
8	28/09/2020		0.03	0.043	< 0.05	0.348	11.2	0.16	-	0.0009	< 0.001	0.084	< 0.001	0.038	0.019
12	26/10/2020		0.24	0.059	0.08	2.66	21.8	0.21	-	0.0136	< 0.001	8.23	0.003	0.703	0.796
16	23/11/2020		3.03	0.054	1.22	4.63	2.6	0.22	0.729	0.0323	< 0.001	51.2	0.018	1.98	2.430
20	21/12/2020		8.14	0.039	3.33	5.38	27.4	0.17	0.613	0.0343	0.002	103	0.032	2.76	3.270
24	18/01/2021		10.6	0.033	4.34	5.59	27.2	0.15	0.595	0.0302	0.003	104	0.039	2.73	2.850
28	15/02/2021		16.5	0.038	7.54	5.74	28.5	0.14	0.574	0.0316	0.005	136	0.056	3.45	3.360
32	15/03/2021	10529859	15	0.028	7.76	4.63	30.6	0.11	0.426	0.0223	0.006	102	0.044	2.45	2.530
36	12/04/2021		17.8	0.025	9.56	4.36	30.3	0.12	0.476	0.0226	0.007	103	0.047	2.61	2.620
40	10/05/2021		23.6	0.022	11.9	4.34	26.4	0.08	0.414	0.0204	0.011	102	0.05	2.67	2.730
44	7/06/2021		25.8	0.020	13.3	4.23	28.9	0.09	0.425	0.019	0.011	99.6	0.05	2.84	2.670
48	5/07/2021		25.6	0.020	14.6	4.38	27.5	0.06	0.322	0.0178	0.012	118	0.045	2.85	2.510
52	2/08/2021		26.3	0.019	14.8	3.64	28.6	0.08	0.400	0.0168	0.013	90	0.042	2.24	2.140
56	30/08/2021		27.1	0.015	13.6	3.28	25.4	0.05	0.335	0.0148	0.014	82.4	0.037	2.04	1.980
60	27/09/2021		26.2	0.015	15.0	3.09	29	0.07	0.349	0.0137	0.014	73.6	0.038	1.88	1.820
4	31/08/2020		0.02	0.017	< 0.05	0.163	1.02	< 0.05	-	0.0008	< 0.001	0.651	< 0.001	0.135	0.019
8	28/09/2020		< 0.01	0.014	< 0.05	0.055	0.48	< 0.05	-	0.0003	< 0.001	0.724	< 0.001	0.06	0.013
12	26/10/2020		< 0.01	0.013	< 0.05	0.078	0.6	< 0.05	-	0.0008	< 0.001	1.7	< 0.001	0.091	0.026
16	23/11/2020	W93 SS	< 0.01	0.012	< 0.05	0.126	0.15	< 0.05	0.027	0.0025	< 0.001	4.11	< 0.001	0.221	0.066
20	21/12/2020		< 0.01	0.011	< 0.05	0.132	1.57	< 0.05	0.025	0.0027	< 0.001	6.63	< 0.001	0.228	0.064
24	18/01/2021		0.02	0.010	< 0.05	0.142	1.65	< 0.05	0.020	0.0028	< 0.001	8.8	< 0.001	0.248	0.069
28	15/02/2021		0.04	0.013	0.1	0.223	1.85	< 0.05	0.024	0.0048	< 0.001	14.4	< 0.001	0.378	0.106
32	15/03/2021		0.03	0.012	0.21	0.272	2.18	< 0.05	0.022	0.0054	< 0.001	14.2	< 0.001	0.37	0.113

Week	Date	Sample ID	Al (mg/L)	Ba (mg/L)	Fe (mg/L)	Mn (mg/L)	Si (mg/L)	B (mg/L)	Li (mg/L)	Cd (mg/L)	Cr (mg/L)	Cu (mg/L)	Pb (mg/L)	Ni (mg/L)	Zn (mg/L)
36	12/04/2021		0.04	0.011	0.46	0.255	2.07	< 0.05	0.024	0.005	< 0.001	14.7	< 0.001	0.353	0.104
40	10/05/2021		0.06	0.010	0.72	0.309	1.92	< 0.05	0.022	0.0064	< 0.001	17.6	< 0.001	0.391	0.129
44	7/06/2021		0.06	0.008	1.2	0.395	2.32	< 0.05	0.022	0.0074	< 0.001	22.7	< 0.001	0.503	0.163
48	5/07/2021		0.05	0.011	1	0.414	2.22	< 0.05	0.016	0.0071	< 0.001	27	< 0.001	0.462	0.163
52	2/08/2021		0.06	0.010	1.07	0.456	2.38	< 0.05	0.018	0.0078	< 0.001	26.7	< 0.001	0.482	0.170
56	30/08/2021		0.08	0.009	0.96	0.573	2.59	< 0.05	0.017	0.0094	< 0.001	34	< 0.001	0.586	0.214
60	27/09/2021		0.06	0.011	0.95	0.631	3.19	< 0.05	0.019	0.0099	< 0.001	34.1	0.001	0.619	0.219
64	25/10/2021		0.09	0.010	1.32	0.755	2.7	< 0.05	0.020	0.0116	< 0.001	40.7	0.008	0.701	0.281
68	22/11/2021		0.08	0.009	1.18	0.886	2.72	< 0.05	0.020	0.0113	< 0.001	43	0.008	0.799	0.270
72	20/12/2021		-	-	-	-	2.93	-	-	-	-	-	-	-	-
76	17/01/2022		0.06	0.008	0.88	0.814	3.48	< 0.05	0.011	0.0117	< 0.001	46.5	0.002	0.736	0.263
80	14/02/2022		0.05	0.007	0.84	1.03	3.29	< 0.05	0.019	0.0134	< 0.001	50.2	0.001	0.844	0.299
84	14/03/2022		0.08	0.010	0.74	1.08	3.21	< 0.05	0.015	0.0145	< 0.001	66.9	0.001	0.954	0.355
88	11/04/2022		0.05	0.010	0.74	1.3	3.05	< 0.05	0.016	0.017	< 0.001	47.6	0.002	1.13	0.381
92	9/05/2022		0.14	0.024	1.99	2.05	2.69	<0.05	0.012	0.0226	<0.001	84.2	0.002	1.38	0.493
2	22/04/2020	10689924	6.28	0.276	8.55	0.698	5.9	0.74	-	0.0961	0.018	7.71	0.009	1.35	5.060
6	21/05/2020		< 0.01	0.090	< 0.05	0.146	3.4	0.31	-	0.0176	< 0.001	0.071	< 0.001	0.337	0.832
10	16/06/2020		< 0.01	0.105	< 0.05	0.265	4.78	0.48	-	0.0561	< 0.001	0.189	< 0.001	0.706	2.610
14	14/07/2020		< 0.01	0.161	< 0.05	0.389	3.94	0.42	-	0.0738	< 0.001	0.352	< 0.001	0.654	2.920
18	19/08/2020		< 0.01	0.190	< 0.05	0.404	3.12	0.36	-	0.094	< 0.001	0.817	< 0.001	0.824	3.890
22	10/09/2020		0.01	0.171	< 0.05	0.48	3.48	0.43	-	0.131	< 0.001	1.39	< 0.001	1.03	5.260
26	8/10/2020		0.05	0.151	0.26	0.782	3.01	0.34	-	0.214	< 0.001	3.23	0.002	1.6	9.490
30	5/11/2020		0.08	0.140	0.27	0.81	3.26	0.6	-	0.269	< 0.001	3.87	< 0.001	1.66	11.600
34	3/12/2020		0.13	0.142	0.32	1.21	3.22	0.54	-	0.418	< 0.001	6.91	< 0.001	2.98	19.100
38	24/12/2020		0.14	0.090	0.25	1.16	2.11	0.6	0.091	0.443	< 0.001	8.99	0.003	3.59	21.200
42	28/01/2021		0.14	0.073	0.34	1.2	1.6	0.65	0.094	0.453	< 0.001	10.7	< 0.001	3.77	24.900
46	25/02/2021		0.14	0.047	0.37	1.19	0.94	0.43	0.074	0.418	< 0.001	15	< 0.001	4.58	28.900
50	25/03/2021		0.19	0.033	0.45	1.17	0.88	0.51	0.084	0.451	< 0.001	20.5	0.001	4.62	32.200
54	22/04/2021		0.2	0.035	0.35	1.31	0.63	0.4	0.068	0.466	< 0.001	28.5	< 0.001	5.4	35.400

Week	Date	Sample ID	Al (mg/L)	Ba (mg/L)	Fe (mg/L)	Mn (mg/L)	Si (mg/L)	B (mg/L)	Li (mg/L)	Cd (mg/L)	Cr (mg/L)	Cu (mg/L)	Pb (mg/L)	Ni (mg/L)	Zn (mg/L)
58	20/05/2021		0.42	0.019	0.55	1.93	0.6	0.33	0.104	0.806	< 0.001	50.7	0.001	8.31	55.700
62	17/06/2021		0.45	0.019	0.5	1.66	0.65	0.24	0.071	0.616	< 0.001	50.9	0.001	6.9	47.900
66	15/07/2021		0.47	0.024	0.58	1.54	0.77	0.28	0.078	0.593	0.001	55.8	< 0.001	6.11	43.200
70	12/08/2021		0.64	0.015	0.6	1.62	0.67	0.26	0.077	0.622	< 0.001	68.6	0.001	7.14	49.000
74	15/09/2021		0.83	0.012	0.64	1.64	0.76	0.28	0.071	0.588	< 0.001	60.1	< 0.001	5.61	39.400
78	14/10/2021		1.48	0.014	0.82	1.68	4.7	0.95	0.100	0.642	< 0.001	70.4	< 0.001	5.22	39.200
82	11/11/2021		2.18	0.014	1.14	1.73	5.71	0.96	0.097	0.61	< 0.001	83.7	0.001	5.3	39.100
86	9/12/2021		2.38	0.014	0.99	1.54	6.8	0.76	0.060	0.512	< 0.001	79.8	0.001	4.78	33.400

Week	Date	Sample ID	Sb (mg/L)	Co (mg/L)	Se (mg/L)	Te (mg/L)	Ag (mg/L)	Tl (mg/L)	Sn (mg/L)	V (mg/L)	Mo (mg/L)	Zr (mg/L)	Hf (mg/L)
4	11/05/2020		< 0.00003	0.331	0.009	< 0.0002	<0.0001	0.00176	<0.0001	0.012	<0.001	<0.0001	<0.00001
8	9/06/2020		< 0.00003	0.948	0.016	< 0.0002	<0.0001	0.00298	<0.0001	< 0.001	<0.001	<0.0001	<0.00001
12	6/07/2020		0.0001	3.7	0.047	< 0.0002	0.0002	0.00584	0.0002	0.077	<0.001	<0.0001	<0.00001
16	3/08/2020		0.0001	14	0.03	<0.0002	0.0003	0.01036	0.0004	0.171	<0.001	<0.0001	<0.00001
20	31/08/2020		< 0.001	29	0.05	< 0.005	< 0.001	0.014	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
24	28/09/2020		< 0.001	31.8	0.06	< 0.005	< 0.001	0.018	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
28	26/10/2020	10689916	< 0.001	29.2	0.05	< 0.005	< 0.001	0.019	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
32	23/11/2020		< 0.001	41.1	0.05	< 0.005	< 0.001	0.019	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
36	21/12/2020		< 0.001	31.4	0.06	< 0.005	< 0.001	0.017	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
40	18/01/2021		< 0.001	30.5	0.03	< 0.005	< 0.001	0.014	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
44	15/02/2021		< 0.001	33.8	0.04	< 0.005	< 0.001	0.019	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
48	15/03/2021		< 0.001	32.2	0.04	< 0.005	< 0.001	0.015	< 0.001	0.01	< 0.001	< 0.005	< 0.01
52	12/04/2021		< 0.001	29.9	0.04	< 0.005	< 0.001	0.017	< 0.001	0.01	< 0.001	0.014	0.01
4	11/05/2020		< 0.00003	37.2	0.011	0.0015	<0.0001	0.00792	<0.0001	0.024	<0.001	<0.0001	0.000023
8	9/06/2020		< 0.00003	84.3	0.01	0.0031	<0.0001	0.00418	<0.0001	< 0.001	<0.001	<0.0001	0.00005
12	6/07/2020	10689912	< 0.00003	100	< 0.002	0.0219	0.0001	0.00384	<0.0001	0.257	<0.001	<0.0001	0.000172
16	3/08/2020		0	103	0.011	0.0304	0.0002	0.00475	<0.0001	0.466	<0.001	<0.0001	0.000222
20	31/08/2020		< 0.001	59.8	0.06	0.053	< 0.001	0.003	< 0.001	0.34	< 0.001	< 0.005	< 0.01

Week	Date	Sample ID	Sb (mg/L)	Co (mg/L)	Se (mg/L)	Te (mg/L)	Ag (mg/L)	Tl (mg/L)	Sn (mg/L)	V (mg/L)	Mo (mg/L)	Zr (mg/L)	Hf (mg/L)
24	28/09/2020		< 0.001	64.6	0.06	0.078	< 0.001	0.002	< 0.001	0.66	< 0.001	< 0.005	< 0.01
28	26/10/2020		< 0.001	39.8	0.07	0.08	< 0.001	0.002	< 0.001	0.79	< 0.001	< 0.005	< 0.01
32	23/11/2020		< 0.001	37.8	0.06	0.076	< 0.001	0.001	< 0.001	0.99	< 0.001	< 0.005	< 0.01
4	11/05/2020	10689913	< 0.00003	7.14	0.002	0.003	0.003	0.00113	<0.0001	0.006	<0.001	<0.0001	<0.00001
8	9/06/2020		< 0.00003	8.55	<0.002	0.0006	0.0001	0.00099	<0.0001	< 0.001	<0.001	<0.0001	<0.00001
12	6/07/2020		0	9.03	<0.002	0.0007	0.0003	0.00082	<0.0001	0.015	<0.001	<0.0001	0.00001
16	3/08/2020		0.0001	13.3	0.005	0.0006	0.0003	0.00094	0.0001	<0.01	<0.001	<0.0001	0.000025
20	31/08/2020		< 0.001	11.9	< 0.01	< 0.005	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
24	28/09/2020		< 0.001	9.85	0.01	< 0.005	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
28	26/10/2020		< 0.001	7.9	0.01	< 0.005	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
32	23/11/2020		< 0.001	6.14	< 0.01	< 0.005	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
4	31/08/2020	10529859	< 0.001	0.014	0.58	< 0.005	< 0.001	< 0.001	< 0.001	< 0.01	0.012	< 0.005	< 0.01
8	28/09/2020		< 0.001	0.073	0.32	< 0.005	< 0.001	< 0.001	< 0.001	< 0.01	0.003	< 0.005	< 0.01
12	26/10/2020		< 0.001	1.73	0.46	< 0.005	< 0.001	0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
16	23/11/2020		< 0.001	4.01	0.77	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
20	21/12/2020		< 0.001	5.61	0.76	< 0.005	< 0.001	0.003	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
24	18/01/2021		< 0.001	5.53	0.5	< 0.005	< 0.001	0.003	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
28	15/02/2021		< 0.001	6.75	0.54	< 0.005	< 0.001	0.004	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
32	15/03/2021		< 0.001	4.51	0.36	< 0.005	< 0.001	0.004	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
36	12/04/2021		< 0.001	4.48	0.3	< 0.005	< 0.001	0.005	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
40	10/05/2021		< 0.001	4.33	0.28	< 0.005	< 0.001	0.005	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
44	7/06/2021		< 0.001	4.41	0.28	< 0.005	< 0.001	0.005	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
48	5/07/2021		< 0.001	4.32	0.24	< 0.005	< 0.001	0.005	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
52	2/08/2021		< 0.001	3.49	0.21	< 0.005	< 0.001	0.005	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
56	30/08/2021		< 0.001	3.16	0.18	< 0.005	< 0.001	0.004	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
60	27/09/2021		< 0.001	2.82	0.16	< 0.005	< 0.001	0.004	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
4	31/08/2020	W93 SS	< 0.001	0.161	0.31	< 0.005	< 0.001	0.001	< 0.001	< 0.01	0.004	< 0.005	< 0.01
8	28/09/2020		< 0.001	0.113	0.13	< 0.005	< 0.001	0.001	< 0.001	< 0.01	0.003	< 0.005	< 0.01
12	26/10/2020		< 0.001	0.226	0.16	< 0.005	< 0.001	0.003	< 0.001	< 0.01	0.003	< 0.005	< 0.01

Week	Date	Sample ID	Sb (mg/L)	Co (mg/L)	Se (mg/L)	Te (mg/L)	Ag (mg/L)	Tl (mg/L)	Sn (mg/L)	V (mg/L)	Mo (mg/L)	Zr (mg/L)	Hf (mg/L)
16	23/11/2020		< 0.001	0.543	0.21	< 0.005	< 0.001	0.005	< 0.001	< 0.01	0.002	< 0.005	< 0.01
20	21/12/2020		< 0.001	0.58	0.12	< 0.005	< 0.001	0.006	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
24	18/01/2021		< 0.001	0.588	0.06	< 0.005	< 0.001	0.005	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
28	15/02/2021		< 0.001	0.921	0.06	< 0.005	< 0.001	0.008	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
32	15/03/2021		< 0.001	0.883	0.04	< 0.005	< 0.001	0.006	< 0.001	< 0.01	0.004	< 0.005	< 0.01
36	12/04/2021		< 0.001	0.822	0.03	< 0.005	< 0.001	0.007	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
40	10/05/2021		< 0.001	0.918	0.02	< 0.005	< 0.001	0.007	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
44	7/06/2021		< 0.001	1.13	0.02	< 0.005	< 0.001	0.008	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
48	5/07/2021		< 0.001	1.15	0.02	< 0.005	< 0.001	0.007	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
52	2/08/2021		< 0.001	1.07	0.02	< 0.005	< 0.001	0.007	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
56	30/08/2021		< 0.001	1.29	0.02	< 0.005	< 0.001	0.007	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
60	27/09/2021		< 0.001	1.32	0.02	< 0.005	< 0.001	0.009	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
64	25/10/2021		< 0.001	1.51	0.03	< 0.005	< 0.001	0.009	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
68	22/11/2021		< 0.001	1.63	0.02	< 0.005	< 0.001	0.009	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
72	20/12/2021		-	-	-	< 0.005	< 0.001	-	-	-	-	< 0.005	< 0.01
76	17/01/2022		< 0.001	1.51	0.02	< 0.005	< 0.001	0.007	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
80	14/02/2022		< 0.001	1.82	0.02	< 0.005	< 0.001	0.008	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
84	14/03/2022		< 0.001	2.07	0.02	< 0.005	< 0.001	0.004	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
88	11/04/2022		< 0.001	1.65	0.02	< 0.005	< 0.001	0.012	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
92	9/05/2022		<0.001	2.74	0.04	<0.005	<0.001	0.018	<0.001	<0.01	<0.001	<0.005	<0.01
2	22/04/2020		< 0.001	1.3	< 0.01	< 0.005	< 0.001	0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
6	21/05/2020		< 0.001	0.313	< 0.01	< 0.005	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
10	16/06/2020		< 0.001	0.796	0.01	< 0.005	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
14	14/07/2020		< 0.001	0.798	0.01	< 0.005	< 0.001	0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
18	19/08/2020	10689924	< 0.001	1	0.01	< 0.005	< 0.001	0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
22	10/09/2020		< 0.001	1.23	0.01	< 0.005	< 0.001	0.001	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
26	8/10/2020		< 0.001	2.26	0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
30	5/11/2020		< 0.001	2.59	< 0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
34	3/12/2020		< 0.001	4.06	0.01	< 0.005	< 0.001	0.003	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01

Week	Date	Sample ID	Sb (mg/L)	Co (mg/L)	Se (mg/L)	Te (mg/L)	Ag (mg/L)	Tl (mg/L)	Sn (mg/L)	V (mg/L)	Mo (mg/L)	Zr (mg/L)	Hf (mg/L)
38	24/12/2020		< 0.001	4.2	< 0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
42	28/01/2021		< 0.001	4.69	< 0.01	< 0.005	< 0.001	0.003	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
46	25/02/2021		< 0.001	5.15	< 0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
50	25/03/2021		< 0.001	5.26	< 0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
54	22/04/2021		< 0.001	5.28	< 0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
58	20/05/2021		< 0.001	8.44	0.01	< 0.005	< 0.001	0.003	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
62	17/06/2021		< 0.001	6.99	< 0.01	< 0.005	< 0.001	0.003	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
66	15/07/2021		< 0.001	6.32	< 0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
70	12/08/2021		< 0.001	7.05	< 0.01	< 0.005	< 0.001	0.003	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
74	15/09/2021		< 0.001	5.4	< 0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
78	14/10/2021		< 0.001	5.17	< 0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
82	11/11/2021		< 0.001	5.02	< 0.01	< 0.005	< 0.001	0.003	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01
86	9/12/2021		< 0.001	4.5	< 0.01	< 0.005	< 0.001	0.002	< 0.001	< 0.01	< 0.001	< 0.005	< 0.01

Week	Date	Sample ID	Ti (mg/L)	Bi (mg/L)	Cs (mg/L)	W (mg/L)	U (mg/L)	Be (mg/L)	Sr (mg/L)	Th (mg/L)	Au (mg/L)	Re (mg/L)
4	11/05/2020		< 1	< 0.001	0.000928	0.00018	<0.0002	<0.0002	0.8	<0.00001	0.000621	-
8	9/06/2020		< 1	< 0.001	0.000853	0.00007	0.000	< 0.0002	0.937	<0.00001	0.00004	-
12	6/07/2020		< 1	< 0.001	0.00147	0.00005	0.000	0.0002	2.32	0.000025	0.000195	-
16	3/08/2020		<1	0.312	0.00205	0.00008	0.001	0.0009	2.14	0.00008	0.000166	-
20	31/08/2020		< 0.01	< 0.001	0.003	< 0.001	0.001	-	-	-	-	0.002
24	28/09/2020		< 0.01	< 0.001	0.003	< 0.001	0.003	0.005	2.31	0.001	< 0.001	0.003
28	26/10/2020	10689916	< 0.01	< 0.001	0.004	< 0.001	0.006	0.009	1.73	< 0.001	< 0.001	0.002
32	23/11/2020		< 0.01	< 0.001	0.005	< 0.001	0.009	0.012	1.28	0.002	< 0.001	0.002
36	21/12/2020		< 0.01	< 0.001	0.005	< 0.001	0.007	0.012	0.585	< 0.001	< 0.001	< 0.001
40	18/01/2021		< 0.01	< 0.001	0.006	< 0.001	0.008	0.014	0.287	< 0.001	< 0.001	< 0.001
44	15/02/2021		< 0.01	< 0.001	0.01	< 0.001	0.011	0.017	0.198	0.002	< 0.001	< 0.001
48	15/03/2021		< 0.01	< 0.001	0.011	< 0.001	0.010	0.018	0.088	0.005	< 0.001	< 0.001
52	12/04/2021		< 0.01	< 0.001	0.012	0.002	0.010	0.019	0.044	< 0.001	< 0.001	0.003

RioTinto

Week	Date	Sample ID	Ti (mg/L)	Bi (mg/L)	Cs (mg/L)	W (mg/L)	U (mg/L)	Be (mg/L)	Sr (mg/L)	Th (mg/L)	Au (mg/L)	Re (mg/L)
4	11/05/2020	10689912	< 1	< 0.001	0.0015	0.00006	0.021	0.0029	< 0.1	0.000599	0.000203	-
8	9/06/2020		< 1	< 0.001	0.00179	0.00007	0.057	0.0044	0.005	0.00361	0.000042	-
12	6/07/2020		< 1	0.035	0.00804	0.00011	0.071	0.0054	2.43	0.0127	0.00022	-
16	3/08/2020		<1	0.119	0.00564	0.00010	0.076	0.0071	0.004	0.0329	0.000097	-
20	31/08/2020		< 0.01	< 0.001	0.034	< 0.001	0.048	-	-	-	-	< 0.001
24	28/09/2020		< 0.01	< 0.001	0.054	< 0.001	0.056	0.009	0.011	0.083	< 0.001	< 0.001
28	26/10/2020		< 0.01	< 0.001	0.058	< 0.001	0.034	0.006	0.009	0.081	< 0.001	< 0.001
32	23/11/2020		< 0.01	< 0.001	0.074	< 0.001	0.031	0.005	0.007	0.108	< 0.001	< 0.001
4	11/05/2020	10689913	< 1	< 0.001	0.000545	0.00005	0.082	0.0023	0.12	0.00017	0.000101	-
8	9/06/2020		< 1	< 0.001	0.000509	<0.00005	0.113	0.0025	0.077	0.0004	0.000055	-
12	6/07/2020		< 1	< 0.001	0.000692	<0.00005	0.124	0.0032	0.333	0.00103	0.00254	-
16	3/08/2020		<1	<0.01	0.000888	<0.00005	0.150	0.0046	0.049	0.00258	0.000052	-
20	31/08/2020		< 0.01	< 0.001	< 0.001	< 0.001	0.148	-	-	-	-	< 0.001
24	28/09/2020		< 0.01	< 0.001	0.001	< 0.001	0.132	0.004	0.061	0.009	< 0.001	< 0.001
28	26/10/2020		< 0.01	< 0.001	< 0.001	< 0.001	0.096	0.003	0.049	0.009	< 0.001	< 0.001
32	23/11/2020		< 0.01	< 0.001	0.001	< 0.001	0.086	0.003	0.055	0.012	< 0.001	< 0.001
4	31/08/2020	10529859	< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	-	-	-	-	0.009
8	28/09/2020		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	2.14	< 0.001	< 0.001	0.002
12	26/10/2020		< 0.01	< 0.001	< 0.001	< 0.001	0.002	< 0.001	3.74	< 0.001	< 0.001	< 0.001
16	23/11/2020		< 0.01	< 0.001	< 0.001	< 0.001	0.024	0.009	3.98	< 0.001	< 0.001	< 0.001
20	21/12/2020		< 0.01	< 0.001	< 0.001	< 0.001	0.052	0.021	3.81	< 0.001	< 0.001	< 0.001
24	18/01/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.067	0.028	3.22	0.003	< 0.001	< 0.001
28	15/02/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.100	0.044	3.97	0.003	< 0.001	< 0.001
32	15/03/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.073	0.036	2.34	0.006	< 0.001	< 0.001
36	12/04/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.080	0.052	2.19	0.004	< 0.001	< 0.001
40	10/05/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.086	0.05	2.11	0.006	< 0.001	< 0.001
44	7/06/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.078	0.048	2.07	0.007	< 0.001	< 0.001
48	5/07/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.068	0.049	2.11	0.007	< 0.001	< 0.001
52	2/08/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.061	0.047	1.58	0.007	< 0.001	< 0.001

Week	Date	Sample ID	Ti (mg/L)	Bi (mg/L)	Cs (mg/L)	W (mg/L)	U (mg/L)	Be (mg/L)	Sr (mg/L)	Th (mg/L)	Au (mg/L)	Re (mg/L)
56	30/08/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.052	0.04	1.37	0.007	< 0.001	< 0.001
60	27/09/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.050	0.044	1.22	0.007	< 0.001	< 0.001
4	31/08/2020		< 0.01	< 0.001	< 0.001	0.018	< 0.001	-	-	-	-	0.001
8	28/09/2020		< 0.01	< 0.001	< 0.001	0.006	< 0.001	< 0.001	0.187	< 0.001	< 0.001	< 0.001
12	26/10/2020		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.338	< 0.001	< 0.001	< 0.001
16	23/11/2020		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.604	< 0.001	< 0.001	0.001
20	21/12/2020		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.476	< 0.001	< 0.001	< 0.001
24	18/01/2021		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.393	< 0.001	< 0.001	< 0.001
28	15/02/2021		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.534	< 0.001	< 0.001	< 0.001
32	15/03/2021		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.386	< 0.001	< 0.001	< 0.001
36	12/04/2021		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.321	< 0.001	< 0.001	0.003
40	10/05/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.294	< 0.001	< 0.001	< 0.001
44	7/06/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.33	< 0.001	< 0.001	< 0.001
48	5/07/2021	W93 SS	< 0.01	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.27	< 0.001	< 0.001	< 0.001
52	2/08/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.002	< 0.001	0.248	< 0.001	< 0.001	< 0.001
56	30/08/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.002	< 0.001	0.278	< 0.001	< 0.001	< 0.001
60	27/09/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.002	0.001	0.272	< 0.001	< 0.001	< 0.001
64	25/10/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.001	0.001	0.288	< 0.001	< 0.001	< 0.001
68	22/11/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.002	0.001	0.263	< 0.001	< 0.001	< 0.001
72	20/12/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.002	-	0.218	< 0.001	< 0.001	< 0.001
76	17/01/2022		< 0.01	< 0.001	< 0.001	< 0.001	0.002	0.001	0.22	< 0.001	< 0.001	< 0.001
80	14/02/2022		< 0.01	< 0.001	< 0.001	< 0.001	0.002	< 0.001	0.22	< 0.001	< 0.001	< 0.001
84	14/03/2022		< 0.01	< 0.001	< 0.001	< 0.001	0.001	0.001	0.245	0.003	< 0.001	< 0.001
88	11/04/2022		< 0.01	< 0.001	< 0.001	< 0.001	0.002	0.001	0.247	< 0.001	< 0.001	< 0.001
92	9/05/2022		<0.01	<0.001	<0.001	<0.001	0.007	0.003	0.305	<0.001	<0.001	<0.001
2	22/04/2020		< 0.01	<0.001	0.001	< 0.001	0.003	-	-	-	-	< 0.001
6	21/05/2020	10689924	< 0.01	< 0.001	< 0.001	0.01	< 0.001	< 0.001	0.429	< 0.001	< 0.001	< 0.001
10	16/06/2020		< 0.01	< 0.001	< 0.001	0.006	< 0.001	< 0.001	0.761	< 0.001	< 0.001	< 0.001
14	14/07/2020		< 0.01	< 0.001	< 0.001	0.004	< 0.001	< 0.001	0.734	< 0.001	< 0.001	< 0.001

Week	Date	Sample ID	Ti (mg/L)	Bi (mg/L)	Cs (mg/L)	W (mg/L)	U (mg/L)	Be (mg/L)	Sr (mg/L)	Th (mg/L)	Au (mg/L)	Re (mg/L)
18	19/08/2020		< 0.01	< 0.001	< 0.001	0.002	< 0.001	< 0.001	0.675	< 0.001	< 0.001	< 0.001
22	10/09/2020		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.658	< 0.001	< 0.001	< 0.001
26	8/10/2020		< 0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.757	< 0.001	< 0.001	< 0.001
30	5/11/2020		< 0.01	< 0.001	0.001	< 0.001	< 0.001	< 0.001	0.767	< 0.001	< 0.001	< 0.001
34	3/12/2020		< 0.01	< 0.001	0.002	< 0.001	< 0.001	< 0.001	0.742	< 0.001	< 0.001	< 0.001
38	24/12/2020		< 0.01	< 0.001	0.001	< 0.001	< 0.001	0.001	0.595	< 0.001	< 0.001	< 0.001
42	28/01/2021		< 0.01	< 0.001	0.002	< 0.001	0.001	0.002	0.500	< 0.001	< 0.001	< 0.001
46	25/02/2021		< 0.01	< 0.001	0.002	< 0.001	0.002	0.002	0.380	< 0.001	< 0.001	< 0.001
50	25/03/2021		< 0.01	< 0.001	0.002	< 0.001	0.002	0.003	0.378	< 0.001	< 0.001	< 0.001
54	22/04/2021		< 0.01	< 0.001	0.002	< 0.001	0.003	0.003	0.34	< 0.001	< 0.001	< 0.001
58	20/05/2021		< 0.01	< 0.001	0.002	< 0.001	0.005	0.005	0.461	< 0.001	< 0.001	< 0.001
62	17/06/2021		< 0.01	< 0.001	0.001	< 0.001	0.004	0.005	0.367	< 0.001	< 0.001	< 0.001
66	15/07/2021		< 0.01	< 0.001	0.001	< 0.001	0.004	0.005	0.417	< 0.001	< 0.001	< 0.001
70	12/08/2021		< 0.01	< 0.001	0.001	< 0.001	0.007	0.008	0.4	< 0.001	< 0.001	< 0.001
74	15/09/2021		< 0.01	< 0.001	0.001	< 0.001	0.006	0.008	0.344	< 0.001	< 0.001	< 0.001
78	14/10/2021		< 0.01	< 0.001	0.001	< 0.001	0.010	0.012	0.387	< 0.001	< 0.001	< 0.001
82	11/11/2021		< 0.01	< 0.001	0.001	< 0.001	0.015	0.016	0.404	< 0.001	< 0.001	< 0.001
86	9/12/2021		< 0.01	< 0.001	< 0.001	< 0.001	0.014	0.014	0.388	< 0.001	< 0.001	< 0.001

Week	Date	Sample ID	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	F (mg/L)	SO_4 (mg/L)	As (mg/L)	Hg (mg/L)
4	11/05/2020		61.6	23.9	20.5	60.3	-	-	-	< 0.005	< 0.0001
8	9/06/2020		60.2	50.9	25.4	82	44.7	<0.1	468	< 0.005	< 0.0001
12	6/07/2020		81.7	94.4	31.9	102	53	< 0.1	857	< 0.0004	< 0.00009
16	3/08/2020	10689916	136	206	45.6	149	60	0.8	1450	< 0.0001	< 0.001
20	31/08/2020		165	344	59	168	67	0.2	2460	0.007	< 0.0001
24	28/09/2020		155	366	55	159	65	0.4	2490	0.007	< 0.0001
28	26/10/2020		161	347	43	102	44	< 0.1	2710	0.008	< 0.0001

Week	Date	Sample ID	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	F (mg/L)	SO_4 (mg/L)	As (mg/L)	Hg (mg/L)
32	23/11/2020		175	420	40	129	31	< 0.1	2900	0.01	< 0.0001
36	21/12/2020		117	271	18	68	21	0.1	2530	0.002	< 0.0001
40	18/01/2021		136	309	18	59	11	0.1	2600	0.013	< 0.0001
44	15/02/2021		141	313	15	60	7	< 0.1	2820	0.012	< 0.0001
48	15/03/2021		162	346	12	54	21	0.2	2800	0.017	< 0.0001
52	12/04/2021		132	297	9	40	4	0	2730	0.01	< 0.0001
4	11/05/2020	10689912	52	131	4.02	37.5	23.9	6.4	3062	< 0.0004	< 0.0001
8	9/06/2020		76.2	171	0.59	40.5	32.4	5.7	4024	< 0.005	< 0.0001
12	6/07/2020		81	169	0.57	20.6	25.6	6.5	4986	< 0.001	< 0.00009
16	3/08/2020		89	162	<0.5	<1	22	0.1	4940	< 0.0001	< 0.01
20	31/08/2020		63	115	1	< 1	4	< 0.1	9780	0.014	< 0.0001
24	28/09/2020		95	159	< 1	< 1	2	0.2	5150	0.013	< 0.0001
28	26/10/2020		56	153	< 1	< 1	2	0.1	4150	0.012	< 0.0001
32	23/11/2020		32	138	< 1	< 1	2	0.2	3560	0.011	< 0.0001
4	11/05/2020	10689913	11	11.6	3.66	32.1	15.8	0.4	202	< 0.0004	< 0.0001
8	9/06/2020		8.48	12.7	0.62	29.9	11	0.7	260	< 0.005	< 0.0001
12	6/07/2020		7.43	12.7	0.27	25.4	7.4	0.4	265	< 0.005	< 0.00009
16	3/08/2020		10.4	17.9	<0.5	20.2	4	0.5	366	< 0.0001	0.002
20	31/08/2020		10	18	1	21	1	0.3	518	0.004	< 0.0001
24	28/09/2020		11	17	< 1	17	< 1	0.3	518	0.003	< 0.0001
28	26/10/2020		11	15	< 1	11	< 1	< 0.1	521	0.004	< 0.0001
32	23/11/2020		11	14	< 1	8	1	< 0.1	446	0.003	< 0.0001
4	31/08/2020	10529859	249	145	43	207	101	0.4	1180	< 0.001	< 0.0001
8	28/09/2020		191	106	35	110	9	0.2	1210	< 0.001	< 0.0001
12	26/10/2020		351	218	56	111	7	0.1	2100	< 0.001	< 0.0001
16	23/11/2020		407	291	84	97	2	0.3	2240	0.002	< 0.0001
20	21/12/2020		345	255	67	52	1	0.2	2350	0.002	< 0.0001
24	18/01/2021		284	224	65	28	1	0.2	2100	0.002	< 0.0001
28	15/02/2021		250	203	58	16	< 1	< 0.1	1890	0.004	< 0.0001

Week	Date	Sample ID	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	F (mg/L)	SO_4 (mg/L)	As (mg/L)	Hg (mg/L)
32	15/03/2021		222	186	55	10	< 1	0.1	1630	0.003	< 0.0001
36	12/04/2021		196	177	56	8	< 1	0.1	1610	0.002	< 0.0001
40	10/05/2021		184	168	46	6	2	0.1	1490	0.003	< 0.0001
44	7/06/2021		159	154	45	6	1	1.2	1530	0.003	< 0.0001
48	5/07/2021		133	126	38	5	< 1	< 0.1	1200	0.004	< 0.0001
52	2/08/2021		128	136	39	5	2	0.2	1260	0.003	< 0.0001
56	30/08/2021		112	120	37	5	3	0.2	1080	0.003	< 0.0001
60	27/09/2021		103	115	34	4	2	0.2	1250	0.002	< 0.0001
4	31/08/2020		35	14	11	170	104	0.9	391	< 0.001	< 0.0001
8	28/09/2020		19	8	7	64	37	0.4	183	< 0.001	< 0.0001
12	26/10/2020		41	17	11	87	35	0.5	373	< 0.001	< 0.0001
16	23/11/2020		74	31	20	118	24	0.4	562	< 0.001	< 0.0001
20	21/12/2020		69	24	15	47	13	0.2	406	< 0.001	< 0.0001
24	18/01/2021		63	22	14	22	12	0.2	324	< 0.001	< 0.0001
28	15/02/2021		66	21	11	11	10	0.2	296	< 0.001	< 0.0001
32	15/03/2021		68	18	9	5	9	0.2	274	< 0.001	< 0.0001
36	12/04/2021		57	15	7	3	10	0.1	230	< 0.001	< 0.0001
40	10/05/2021		60	15	6	2	9	0.1	250	< 0.001	< 0.0001
44	7/06/2021	W93 SS	57	14	6	1	8	< 0.2	265	< 0.001	< 0.0001
48	5/07/2021		52	11	5	< 1	7	< 0.1	172	< 0.001	< 0.0001
52	2/08/2021		57	12	5	< 1	7	< 0.1	245	< 0.001	< 0.0001
56	30/08/2021		62	14	6	5	7	0.1	251	< 0.001	< 0.0001
60	27/09/2021		58	12	5	< 1	6	0.1	259	< 0.001	< 0.0001
64	25/10/2021		62	12	4	< 1	4	< 0.1	252	< 0.001	< 0.0001
68	22/11/2021		56	13	3	< 1	5	< 0.1	248	< 0.001	< 0.0001
72	20/12/2021		54	11	4	< 1	3	< 0.1	243	-	< 0.0001
76	17/01/2022		61	12	3	< 1	4	< 0.1	270	< 0.001	< 0.0001
80	14/02/2022		59	12	4	< 1	4	< 0.1	282	< 0.001	< 0.0001
84	14/03/2022		58	11	3	1	3	< 0.1	298	< 0.001	< 0.0001

Week	Date	Sample ID	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	F (mg/L)	SO_4 (mg/L)	As (mg/L)	Hg (mg/L)
88	11/04/2022		59	16	4	2	4	< 0.1	317	< 0.001	< 0.0001
92	9/05/2022		73	15	4	<1	4	<0.1	454	<0.001	<0.0001
2	22/04/2020	10689924	38	14	14	86	56	0.3	204	0.001	< 0.0001
6	21/05/2020		35	12	9	102	38	0.4	300	0.002	< 0.0001
10	16/06/2020		54	20	10	110	36	0.2	408	< 0.001	< 0.0001
14	14/07/2020		52	25	11	98	28	0.2	446	< 0.001	< 0.0001
18	19/08/2020		55	25	12	76	17	0.2	414	< 0.001	< 0.0001
22	10/09/2020		44	24	12	60	14	0.1	391	< 0.001	< 0.0001
26	8/10/2020		56	31	15	61	10	0.1	426	0.004	< 0.0001
30	5/11/2020		66	30	15	44	8	0.1	426	< 0.001	< 0.0001
34	3/12/2020		58	40	18	47	7	0.1	494	< 0.001	< 0.0001
38	24/12/2020		55	39	16	33	6	0.1	440	< 0.001	< 0.0001
42	28/01/2021		40	33	12	22	3	< 0.1	374	< 0.001	< 0.0001
46	25/02/2021		31	34	10	18	2	< 0.1	358	< 0.001	< 0.0001
50	25/03/2021		32	32	9	16	2	< 0.1	356	0.002	< 0.0001
54	22/04/2021		28	31	9	17	2	< 0.1	366	< 0.001	< 0.0001
58	20/05/2021		30	47	11	22	2	0.1	570	< 0.001	< 0.0001
62	17/06/2021		30	40	9	16	2	0.1	496	< 0.001	< 0.0001
66	15/07/2021		35	36	9	12	2	0.1	425	< 0.001	< 0.0001
70	12/08/2021		34	34	10	12	2	0.2	427	0.003	< 0.0001
74	15/09/2021		30	32	8	11	1	0.2	430	0.002	< 0.0001
78	14/10/2021		35	31	8	11	2	0.5	473	< 0.001	< 0.0001
82	11/11/2021		44	36	8	10	< 1	0.5	435	0.001	< 0.0001
86	9/12/2021		38	27	7	8	< 1	0.5	424	< 0.001	< 0.0001

Week	Date	Sample ID	Ammonia (mg/L)	Nitrite as mg/L N	Nitrate as mg/L N	Nitrate + Nitrate as mg/L N (Nox)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen as mg/L N (TKN + Nox)	Phosphate (mg/L)	Reactive Phosphorus as mg/L P
4	11/05/2020	10689916	< 0.015	-	-	-	-	-	-	-

Week	Date	Sample ID	Ammonia (mg/L)	Nitrite as mg/L N	Nitrate as mg/L N	Nitrate + Nitrate as mg/L N (Nox)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen as mg/L N (TKN + Nox)	Phosphate (mg/L)	Reactive Phosphorus as mg/L P
8	9/06/2020		0.1	-	1.2	-	-	-	< 0.1	-
12	6/07/2020		0.1	-	-	-	-	-	< 0.1	-
16	3/08/2020		0.02	< 0.01	0.02	0.02	-	-	-	< 0.01
20	31/08/2020		0.12	< 0.01	0.18	0.18	-	-	-	< 0.01
24	28/09/2020		0.24	< 0.01	< 0.01	< 0.01	< 0.2	< 0.2	-	< 0.01
28	26/10/2020		< 0.01	< 0.01	< 0.01	< 0.01	0.4	0.4	-	< 0.01
32	23/11/2020		< 0.01	0.04	0.03	0.07	0.5	0.6	-	< 0.01
36	21/12/2020		< 0.02	0.06	< 0.01	< 0.01	12.3	12.3	-	< 0.01
40	18/01/2021		< 0.01	0.08	< 0.01	< 0.01	0.4	0.4	-	< 0.01
44	15/02/2021		0.06	< 0.02	< 0.02	< 0.02	0.3	0.3	-	0.01
48	15/03/2021		0.28	0.03	< 1	< 1	0.4	< 1	-	< 0.01
52	12/04/2021		0.13	0.02	1.36	1.38	0.5	1.9	-	< 0.01
4	11/05/2020	10689912	0.8	-	0.5	-	-	-	< 0.1	-
8	9/06/2020		1.4	-	0.6	-	-	-	< 0.1	-
12	6/07/2020		1.4	-	-	-	-	-	< 0.1	-
16	3/08/2020		< 0.1	0.11	0.15	0.26	-	-	-	< 0.01
20	31/08/2020		0.24	0.22	0.36	0.58	-	-	-	0.06
24	28/09/2020		0.38	0.18	0.03	0.21	0.4	0.6	-	0.09
28	26/10/2020		< 0.01	0.25	0.05	0.3	0.4	0.7	-	0.14
32	23/11/2020		0.02	0.26	0.08	0.34	0.5	0.8	-	0.08
4	11/05/2020	10689913	0.5	-	0.6	-	-	-	< 0.1	-
8	9/06/2020		0.5	-	0.4	-	-	-	< 0.1	-
12	6/07/2020		0.5	-	-	-	-	-	< 0.1	-
16	3/08/2020		0.16	< 0.01	< 0.01	< 0.01	-	-	-	< 0.01
20	31/08/2020		0.45	0.35	0.13	0.48	-	-	-	0.01
24	28/09/2020		0.3	< 0.01	< 0.01	< 0.01	0.4	0.4	-	< 0.01
28	26/10/2020		< 0.01	< 0.01	< 0.01	< 0.01	0.6	0.6	-	< 0.01
32	23/11/2020		< 0.01	< 0.01	< 0.01	< 0.01	1	1	-	< 0.01
4	31/08/2020	10529859	0.38	< 0.01	-	-	-	-	-	< 0.01

Week	Date	Sample ID	Ammonia (mg/L)	Nitrite as mg/L N	Nitrate as mg/L N	Nitrate + Nitrate as mg/L N (Nox)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen as mg/L N (TKN + Nox)	Phosphate (mg/L)	Reactive Phosphorus as mg/L P
8	28/09/2020		0.02	0.01	0.08	0.09	< 0.2	< 0.2	-	< 0.01
12	26/10/2020		< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	-	< 0.01
16	23/11/2020		< 0.01	< 0.01	< 0.01	< 0.01	< 0.2	< 0.2	-	0.09
20	21/12/2020		< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	-	< 0.01
24	18/01/2021		0.06	< 0.01	< 0.01	< 0.01	0.1	0.1	-	< 0.01
28	15/02/2021		0.03	0.02	< 0.01	< 0.01	0.1	0.1	-	< 0.01
32	15/03/2021		0.04	0.01	< 0.01	< 0.01	0.6	0.6	-	< 0.01
36	12/04/2021		0.03	< 0.01	0.56	0.56	< 0.1	0.6	-	< 0.01
40	10/05/2021		0.05	< 0.01	< 0.01	< 0.01	0.1	0.1	-	< 0.01
44	7/06/2021		0.05	0.01	< 0.01	< 0.01	0.1	0.1	-	< 0.01
48	5/07/2021		0.22	< 0.01	< 1	< 1	0.2	< 1	-	< 0.01
52	2/08/2021		0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	-	< 0.01
56	30/08/2021		0.12	< 0.01	< 0.02	< 0.02	0.2	0.2	-	< 0.01
60	27/09/2021		0.05	< 0.01	< 0.01	< 0.01	0.2	0.2	-	0.01
4	31/08/2020		0.19	0.02	-	-	-	-	-	< 0.01
8	28/09/2020		0.02	0.01	0.07	0.08	< 0.2	< 0.2	-	< 0.01
12	26/10/2020		< 0.01	0.04	< 0.01	0.04	0.1	0.1	-	< 0.01
16	23/11/2020		< 0.01	0.04	< 0.05	0.06	< 0.2	< 0.2	-	< 0.01
20	21/12/2020		< 0.01	0.02	0.01	0.03	< 0.1	< 0.1	-	< 0.01
24	18/01/2021		0.07	0.03	< 0.01	< 0.01	< 0.1	< 0.1	-	< 0.01
28	15/02/2021		0.02	0.02	< 0.01	< 0.01	0.5	0.5	-	< 0.01
32	15/03/2021	W93 SS	0.03	0.03	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.01
36	12/04/2021		0.02	0.03	1.89	1.92	< 0.1	1.9	-	< 0.01
40	10/05/2021		0.02	0.05	< 0.01	< 0.01	< 0.1	< 0.1	-	< 0.01
44	7/06/2021		< 0.01	0.04	< 0.01	< 0.01	< 0.1	< 0.1	-	0.01
48	5/07/2021		0.02	0.03	< 0.02	< 0.02	0.2	0.2	-	< 0.01
52	2/08/2021		< 0.01	0.02	< 0.01	< 0.01	< 0.1	< 0.1	-	< 0.01
56	30/08/2021		0.08	0.02	0.09	0.11	0.6	0.7	-	< 0.01
60	27/09/2021		< 0.01	0.02	< 0.01	< 0.01	0.6	0.6	-	< 0.01

Week	Date	Sample ID	Ammonia (mg/L)	Nitrite as mg/L N	Nitrate as mg/L N	Nitrate + Nitrate as mg/L N (Nox)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen as mg/L N (TKN + Nox)	Phosphate (mg/L)	Reactive Phosphorus as mg/L P
64	25/10/2021		0.02	< 0.01	< 0.05	< 0.05	< 0.1	< 0.1	-	< 0.01
68	22/11/2021		0.12	< 0.01	< 0.01	< 0.01	0.2	0.2	-	< 0.01
72	20/12/2021		0.04	0.01	< 0.01	< 0.01	0.1	0.1		< 0.01
76	17/01/2022		< 0.01	< 0.01	0.47	0.47	< 0.1	0.5	-	< 0.01
80	14/02/2022		0.05	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	-	< 0.01
84	14/03/2022		0.04	< 0.01	< 0.1	< 0.1	0.1	0.1		< 0.01
88	11/04/2022		0.03	< 0.01	< 0.1	< 0.1	0.2	0.2		< 0.01
92	9/05/2022		0.17	<0.01	<0.01	<0.01	0.6	0.6		<0.01
2	22/04/2020		0.04	< 0.01	32.9	32.9	-	-	-	0.28
6	21/05/2020		0.03	0.01	1.2	1.21	0.2	1.4	-	< 0.01
10	16/06/2020		0.05	0.01	1.34	1.35	0.3	1.6	-	< 0.01
14	14/07/2020		< 0.10	< 0.01	0.48	0.48	0.3	0.8	-	< 0.01
18	19/08/2020		0.05	0.27	0	0.27	0.2	0.5	-	< 0.01
22	10/09/2020		0.06	< 0.01	0.11	0.11	0.2	0.3	-	< 0.01
26	8/10/2020		0.06	< 0.01	< 0.01	< 0.01	0.2	0.2	-	< 0.01
30	5/11/2020		0.27	< 0.01	< 0.01	< 0.01	0.4	0.4	-	< 0.01
34	3/12/2020		0.43	< 0.01	< 0.01	< 0.01	0.6	0.6	-	< 0.01
38	24/12/2020		0.69	< 0.01	< 0.01	< 0.01	0.7	0.7	-	< 0.01
42	28/01/2021	10689924	0.79	< 0.01	< 0.01	< 0.01	0.8	0.8	-	< 0.01
46	25/02/2021		1	< 0.01	0.24	0.24	1	1.2	-	< 0.01
50	25/03/2021		1.02	< 0.01	< 1	< 1	1.4	1.4	-	0.17
54	22/04/2021		1.24	< 0.01	< 2.5	< 2.5	1.2	< 2.5	-	< 0.01
58	20/05/2021		1.6	< 0.01	< 0.01	< 0.01	2.1	2.1	-	< 0.01
62	17/06/2021		1.38	< 0.01	< 1	< 1	1.4	1.4	-	< 0.01
66	15/07/2021		1.21	< 0.01	< 1	< 1	1.5	1.5	-	< 0.01
70	12/08/2021		1.31	< 0.01	< 0.5	< 0.5	1.9	1.9	-	< 0.01
74	15/09/2021		1.19	< 0.01	< 1	< 1	1.4	1.4	-	< 0.01
78	14/10/2021		1.15	< 0.01	< 0.1	< 0.1	1.2	1.2	-	< 0.01
82	11/11/2021		0.79	< 0.01	< 1	< 1	0.8	< 1	-	< 0.01

Week	Date	Sample ID	Ammonia (mg/L)	Nitrite as mg/L N	Nitrate as mg/L N	Nitrate + Nitrate as mg/L N (Nox)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen as mg/L N (TKN + Nox)	Phosphate (mg/L)	Reactive Phosphorus as mg/L P
86	9/12/2021		0.71	< 0.01	< 0.05	< 0.05	0.9	0.9	-	< 0.01

Post Column Leach Particle Size Analysis

	< 75 µm (%)	+75 µm (%)	+125 µm (%)	+300 µm (%)	+425 µm (%)	+710 µm (%)	+1400 µm (%)	+2.00 mm (%)	+2.36 mm (%)	+2.80 mm (%)	+3.35 mm (%)	+19.0 mm (%)	+37.5 mm (%)	+75.0 mm (%)
10689916	11	89	-	78	-	67	55	42	34	22	10	-	-	-
10689912	7	92	87	80	77	71	61	-	-	-	-	-	-	-
10689913	3	96	93	88	85	80	69	-	-	-	-	-	-	-
10689924	8	92	87	84	83	80	72	-	46	< 1	< 1	< 1	< 1	< 1
10529859	19	81	-	61	-	42	19	6	3	0.9	0.3	-	-	-
W93 SS	12.2	87.8	-	69.8	-	54.4	37.3	23.4	14.5	4.2	0.1	-	-	-

APPENDIX 2 – ANALYTICAL AND SUPPORTING REPORTS

Weak Enrich ABA_CoA.pdf

Weak Enrich NAG_ANC_CoA.PDF

Weak Enrich Leach_CoA.PDF

2020_analysis_1.pdf

2020_analysis_2.pdf

HGL-RT Winu WR Tests_R0_12May21.p

RTS198_Winu Waste Rock - Oxyge