ATTACHMENT 1

Includes: Appendix B to Appendix G

APPENDIX B SITE VISIT AND CONCEPTUAL SITE MODEL

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MEMORANDUM

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Date:	20 July 2023
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Document Title:	Site Visit and Preliminary CSM

Mine Waste Management Limited (MWM) has completed this site visit summary memorandum for Santana Minerals Limited (Santana) for the proposed Bendigo-Ophir Gold Project (the Project). MWM has been engaged to provide environmental geochemistry advice for the project to support an assessment of environmental effects (AEE) for the Project.

The objectives of this memorandum are to:

- Summarise findings from a 2-day site visit.
- Develop a preliminary conceptual site model (CSM) for the project, with a focus on potential Acid and Metalliferous Drainage (AMD) hazards.
- Identify important knowledge gaps and make recommendations to fill them.

BACKGROUND

Santana is planning to advance their Bendigo-Ophir Project (the Project) into an operational gold mine. The Project is located approximately 10 km north-east of Cromwell in the Dunstan Mountain Range (Figure 1 & Figure 2).

Santana has agreements with Bendigo Station Limited (BSL) and Ardgour Station (ASL), the landowners of freehold land that covers the main prospects. A comprehensive exploration access arrangement with LINZ (Crown) and Matakanui Station (occupiers) is held over leasehold land to the south of Bendigo Station. Minimum impact access (MIA) agreements for non-mechanical geological and geochemical exploration have been reached with owners of freehold land and the Department of Conservation (DOC) stewardship land over the other prospects within the Project Area (Bunting and McLauchlan, 2022).



Figure 1: Location map showing proposed mine project areas.



Figure 2: General terrain and vegetation on site. Looking northwest over the Jean Creek Catchment towards the township of Hawea.

PROJECT DESCIRPTION

Bendigo-Ophir mineral resource covers 251 square kilometres in the Central Otago goldfields and has a resource estimate of 3 Moz gold @ 1.9g/t (0.25 g/t Au lower cut-off grade, no top-cut), which is based on drill results to December 2022[1]. The Bendigo-Ophir resources occur in 4 deposits (Come in Time (CIT), Rise and Shine (RAS), Shreks (SHR), Shreks SE (SRE) that are inferred to extend in a northerly direction within the Rise and Shine Shear Zone (RSSZ), which hosts gold mineralization over a recognised strike length of >20 km.

The mine plan for the Project, focusing on RAS is still advancing. For the purposes of this assessment, it is assumed to include the following components (Figure 1):

- An open pit, targeting the Rise and Shine deposit.
- A waste rock storage facility (WRS) / engineered landform (ELF) with an associated retention pond.
- Plant and processing area, where CIL/CIP[2] extraction technologies may be used as part of the ore recovery process.

[1] Santana Minerals. https://santanaminerals.com/asset/bendigo-ophir-project-new-zealand/. As at 12 June 2023.
[2] CIL/CIP = carbon-in-leach and carbon-in-pulp processes that uses cyanide as the lixiviant.

- A tailings storage facility (TSF) with an associated seepage collection system.
- And other ancillary support services / structures (e.g., roads, water management infrastructure, etc)

Additional deposits (i.e., Come in Time, Shreks, Shreks SE) may be developed as part of future mine plans. A final decision has not been made on whether to proceed with these deposits.

ENVIRONMENTAL SETTING

Climate

Climate data is available for nearby weather stations (Figure 3), with average annual rainfall in the area between 390 and 550 mm (Table 1). Late winter and early spring rainfall can be about 30 mm per month. Median summer air temperatures for the area are 16–17 °C and winter median temperatures are 5-6 °C. The Project has two weather stations[3], located at Come in Time (CIT) and the other at Rise and Shine (RAS). Measurements at Rise and Shine have been occurring since November 2022.

Table 1: Regional rainfall.

Station	From	To	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Tarras	1951	1980	45	35	49	39	46	31	29	36	38	41	41	42	472
Bendigo 1	1951	1980	41	32	47	39	44	32	25	31	38	42	35	40	446
Bendigo 2	1981	2010	39	32	45	28	31	35	31	26	18	35	29	43	390
Matakanui	1951	2020	58	46	50	46	41	37	31	29	36	51	49	61	535
Cromwell	1981	2010	48	33	43	33	33	38	28	27	26	36	41	52	437

Source: http://cliflo.niwa.co.nz/

[3] Personal communications. H McLauchlan. 26th April 2023.

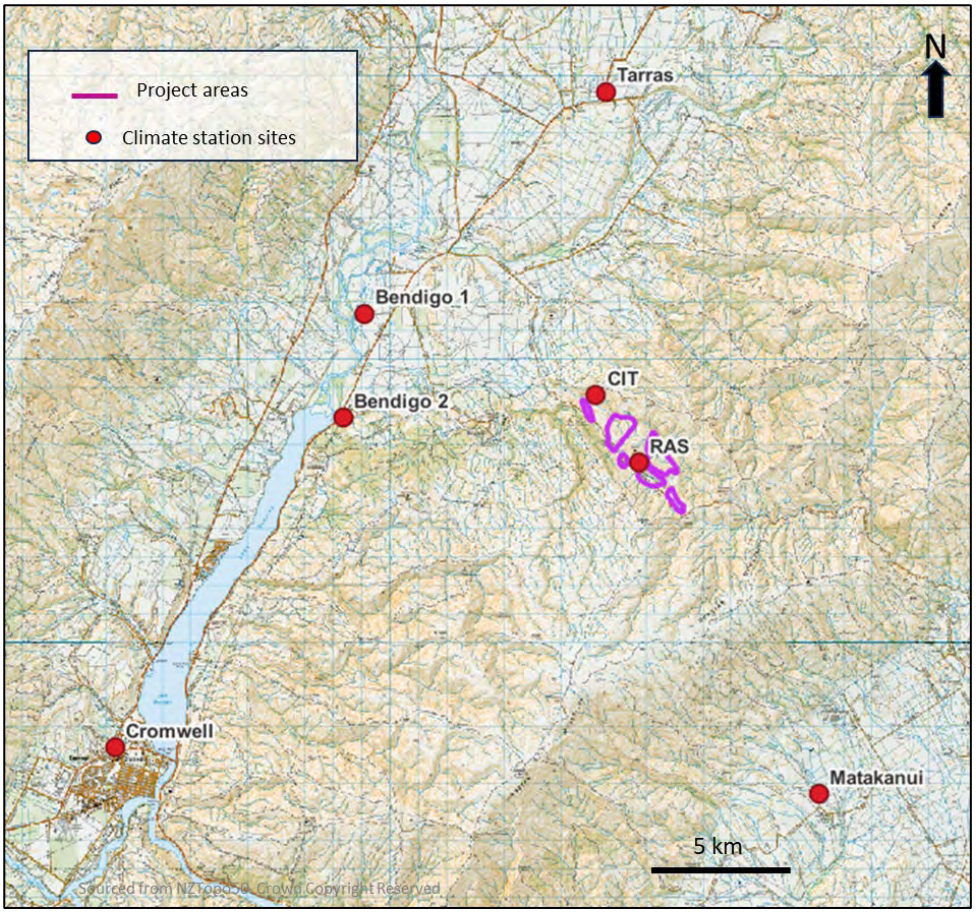


Figure 3: Location of climate stations.

Source: http://cliflo.niwa.co.nz/ and Santana.

Geology

The regional geology of Central Otago goldfields surrounding the Project consists of chlorite and biotite schists. RSSZ, a late metamorphic deformation zone (Cox et al., 2006), runs through the project area. The RSSZ occurs only in the footwall TZ4[4] schist beneath the Thomsons Gorge Fault, which cuts and truncates the Rise & Shine Shear Zone against unmineralised TZ3[5] schist (Cox et al., 2006). There is no gold associated with the Thomsons Gorge Fault itself and gold mineralisation in this area had ceased by the time of formation of the Thomsons Gorge Fault (c. 100 Ma) (Cox et al., 2006).

The hanging wall consists of the TZ3 chlorite zone greenschist facies, and the footwall is the TZ4 garnet-biotite-albite greenschist facies (Mortimer, 2000; Turnbull, 2000). Previous studies in the project area indicated most mineralisation was identified in TZ4 zone, including pyrite, arsenopyrite, and gold (Cox et al., 2006). TZ3 schist has low or zero mineralisation. Field observations by Santana[3] note that the fault zone is a visual boundary in core samples indicated by significant lithological changes in the RSSZ above TZ4. Santana noted that TZ3 is higher in carbon compared to TZ4 (LECO testing in progress to confirm)[3].

[4] TZ4 = Textural Zone 4
[5] TZ3 = Textural Zone 3

Waterways

The project area covers several catchments and sub-catchments, including (Figure 4):

- Shepherds Creek: This creek runs through the project area and runs intermittently towards the Lindis River. An irrigation water-take on Shepherds Creek (RM17.301.15) downstream of SC1 monitoring site takes all available surface water in normal flow conditions, which is supplied to an irrigation dam, so the creek does not flow past this point. There is potential for groundwater to flow past this point via a thin layer of alluvial gravels along the creek bed. This has not been investigated yet. The proposed RAS Pit may straddle this stream.
- Jean Creek: This creek is an intermittent tributary to Shepherds Creek. The proposed WRS / ELF may straddle this catchment.
- Rise and Shine Creek: This creek reek joins Clearwater Creek just South East of the Come in Time Battery and flows into Bendigo Creek.
- Clearwater Creek: Flows into Bendigo Creek.
- Bendigo Creek: Several irrigation water-takes are in place on this creek (RM20.079.01 and RM20.079.02)[6].

A detailed freshwater ecological assessment was undertaken by E3 (2023) and contains freshwater hydrology and more details on the resource consents.

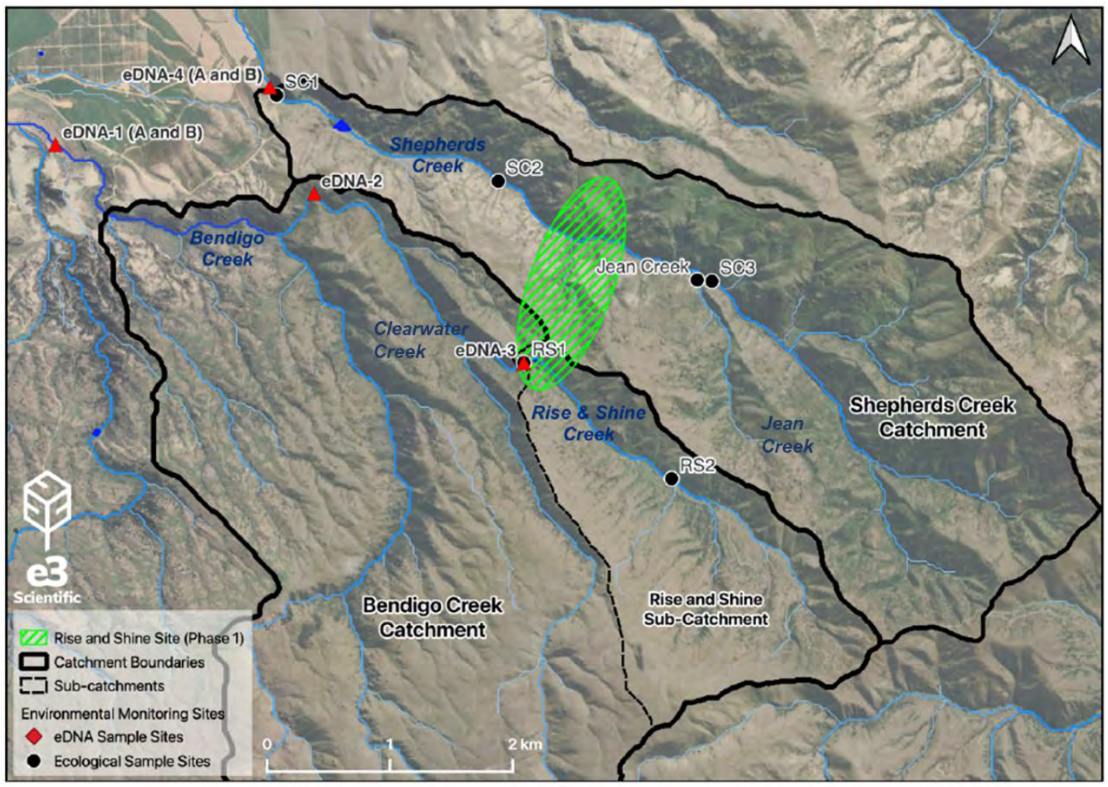


Figure 4: Surface water catchments and monitoring sites.

Source: E3, 2023: Figure 6.

[6] Resource consents granted by Otago Regional Council

Historical Mine Workings

There are numerous historic mine workings throughout the project area, which may have the potential to impact baseline conditions (soils and water). Figure 5 provides an indication of the spatial extent of these historic workings. The archaeological survey completed by Lawrence et al. (2019) indicated 59 historic mine archaeological sites were identified within a 16 km^2 survey area. The majority of mine workings were pre-1900 mining activities (Lawrence et al., 2019) and included the following key historic workings:

- Stamping batteries and processing areas;
- Underground mine adits;
- Mullock piles;
- Tailings mounds; and
- Sluicing areas.

These workings will require the following considerations for any disturbance associated with future mining activities and from a water quality perspective:

- The mine sites and associated workings are considered HAIL[7] sites under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS). As such, disturbance of these sites may require contaminated land assessments and management plans.
- The historic workings are likely influencing baseline water quality. Understanding these impacts will be important for ensuring differentiation of load sources from the Project and from these historic sources.

Data and information are not currently available to assess either of these aspects. Further work will be required to address this knowledge gap.

[7] Hazardous Activities and Industries List (HAIL). https://environment.govt.nz/publications/hazardous-activities-and-industries-list-hail/

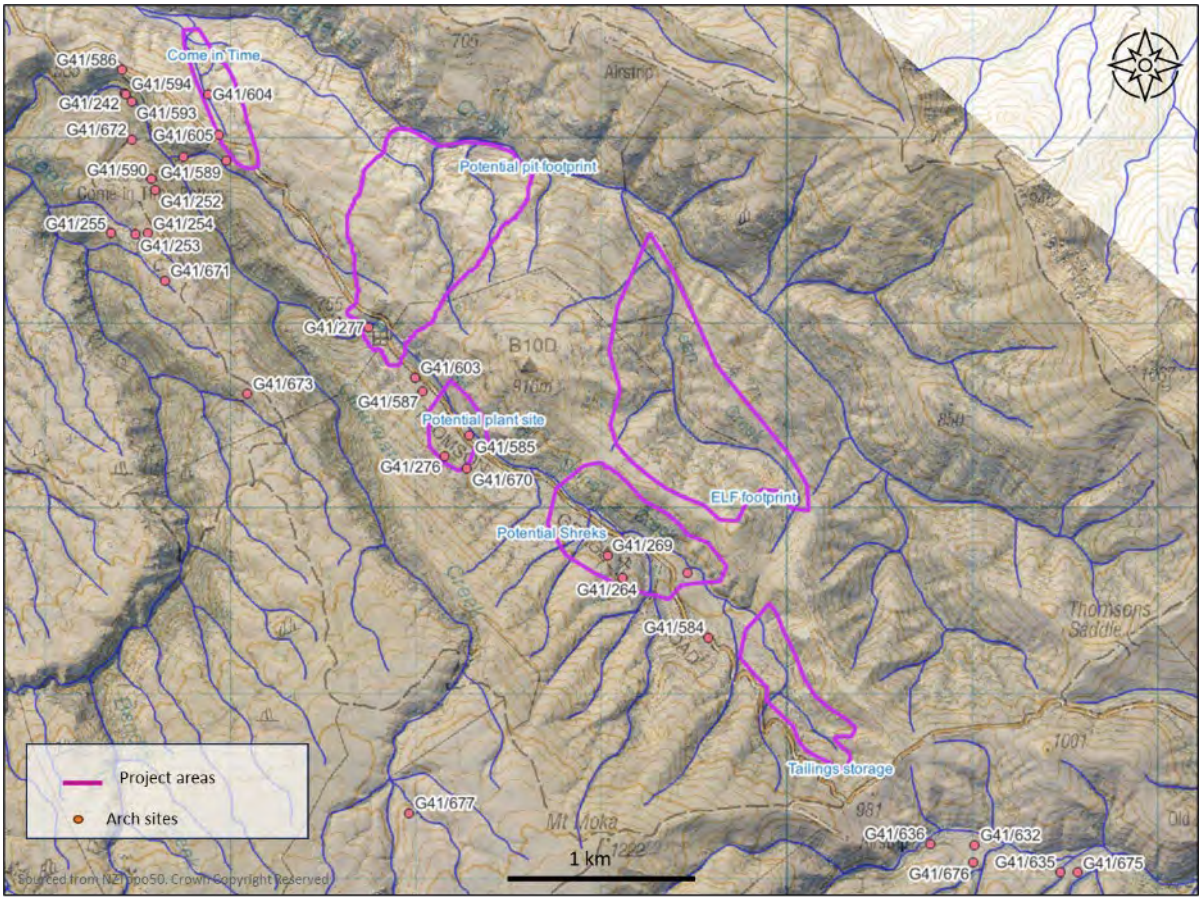


Figure 5: Location of archaeological sites related to mining activities.

Source: Lawrence et al., 2019.

WATER MONITORING

Surface water sites have been established to provide baseline information and understand future mining impacts on the catchments (E3, 2022). The sites are shown in Figure 6 and in Table 2.

Four weirs have been installed for the project to provide accurate flow at medium and low flow conditions at the following water sampling sites:

- SC1
- SC2
- RS1
- RS2

An additional weir site has been installed at Jean Creek since the site visit[8].

Freshwater ecology has been identified as a potentially important sensitive receptor for the proposed mining activities[9], which can be affected by mine-impacted waters.

[8] Personal communications. H McLauchlan. 20th July 2023.

[9] Note: MWM are not experts in ecological assessments and can only comment on the water quality and geochemical impacts of the project.

Baseline ecological monitoring undertaken by E3 (2023) included passive eDNA sampling; freshwater survey flora and fauna; electric fishing; macroinvertebrate at Bendigo Creek (2 sites) and Shepherds Creek (4 sites); and fish passage assessment (Figure 4).

Table 2: Water quality sampling sites.

Drainage	Site ID	Description	Easting	Northing
Shepherds Creek	SC1	Shepherds at Bendigo Terrace. Downstream monitoring site.	1315697	5019155
	SC2	Shepherds below Come in Time. Intermediate downstream site.	1317451	5018499
	SC3	Shepherds below Rise and Shine. Just upstream from Jeans Creek confluence. Immediately downstream of the proposed WRS.	1319246	5017638
	Jean Creek	An intermittent tributary to Shepherds Creek	1319127	5017648
Bendigo Creek	RSA1	Rise and Shine Adit. Historic workings influence.	1317903	5016873
	RS1	Immediate downstream of the Rise and Shine workings.	1317713	5016973
	RS2	Rise and Shine Creek above Rise and Shine Site. Upstream baseline.	1318918	5016027
Groundwater	MRC002	Groundwater from drillhole at the potential plant location	1318777	5016052
	MDD015	Drillhole within the potential pit footprint.	1318096	5017476
	Base (from water supply)	At the downstream base. Example of water supply.	1310587	5019308

Source: E3 (2023) and Santana.

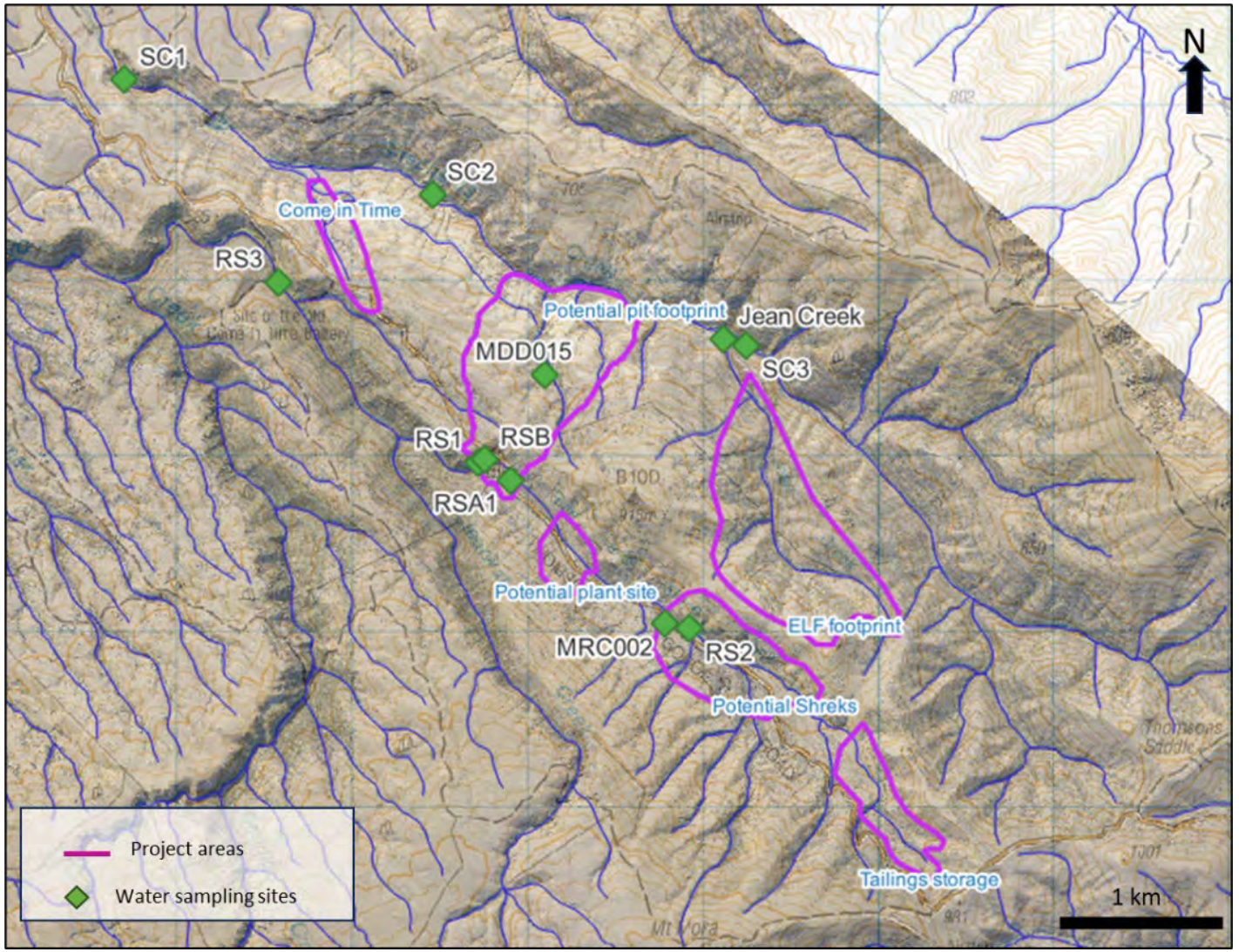


Figure 6: Water sampling sites.

SITE VISIT

A site visit was undertaken between 26 – 27 April 2023 to assess the project area to support water quality and quantity studies, geochemistry studies, and contaminated (mine) site studies.

The site visit focused on:

- Visiting historic mine workings to identify potential source hazards.
- Collecting opportunistic water samples for preliminary assessment of water quality downstream of historic workings.

Field observations and sampling results are described further below.

Historic Mine Workings

The main historic mining sites within the project area visited during the site visit are the Come in Time (CIT) Battery, at the northwest end of the project area, and Rise and Shine (RAS) Battery. A walkover of these sites allowed for observations of potential source hazards and an understanding of the sites to plan future sampling.

CIT Battery (G41/251), associated adits, and mine workings are located at the downstream end of the Rise and Shine Creek and Clearwater Creek (Figure 8). It is located on the southern extent of the project area and borders the Department of Conservation Land that holds the Alta Battery. The CIT mine has a history of repeated operations and closure, being sold to various owners from the mid-1880s until the 1930s (Lawrence et al., 2019). The site had a 10-stamper battery (Figure 8), two adits, ore bins and mullock piles representing the heritage fabric (Lawrence et al., 2019). These are still evident during the site walkover and can provide information to delineate areas of contamination during future site assessments. A large mullock pile occurs out in front and down slope of the red drives (Figure 8). The mullock pile could provide beneficial geochemical information on long term weathering of the waste rock.



Figure 7: Come in Time (CIT) Battery.

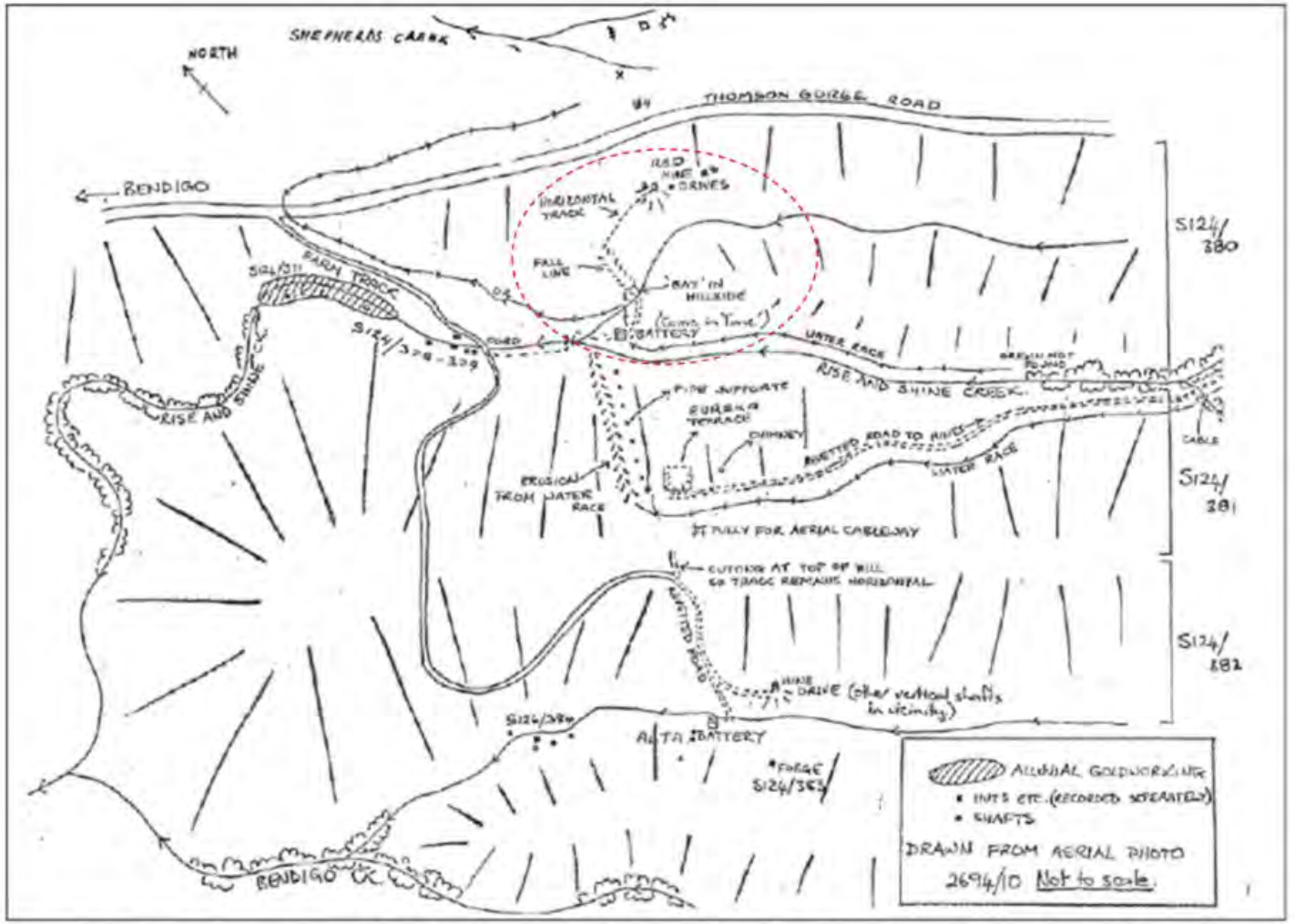


Figure 8-32 Plan of Alta battery (G41/253), Eureka mine and battery (G41/252) and Rise and Shine mine and battery (G41/277) (Hamel, 1993: Figure 19)

Figure 8: Plan of CIT (red circled area) and Alta Battery.

Source: Lawrence et al., 2019 taken from Hamel, J. (1993).

G41/277 at Rise and Shine (Figure 9) had initial mining from 1872 and was re-opened and re-worked during the 1930s and then again from the 1980s to 2000s (Lawrence et al., 2019). The site walkover showed evidence of battery foundations, tailings and workings scattered around the RAS battery and upstream beside the RAS Creek (Figure 9 and Figure 10). The heritage report (Lawrence et al., 2019) noted that the historic tailings have been disturbed by more modern gold workings likely to be early twentieth century.

In the Rise and Shine Creek, in front of the battery site, there was evidence of iron rich precipitates that could indicate seepage of AMD off the processing site. It was localised to an approximately 4 m by 4 m area. A grab water sampling was taken from this site (water monitoring site RSB: see Figure 6) to assess the water quality.

At G41/264 gold mining workings were associated with the 1860s mining activities, including tailings mounds and sluicing activities. The area has been reworked in modern times with evidence of trenching, pitting and drillholes mid-1980s to 20th century (Lawrence et al., 2019) and tailings being spread up to 160 m along the valley floor (Figure 10). Throughout the area, rock walls, mullock piles, and tailings were evident, as well as adits and wetlands in depressions that could have been prospecting pits. These workings are elluvial sluice workings. It is assumed that these materials are likely to have minor, if not less than minor, effects on water quality.

Santana staff were on site with a portable XRF. Qualitative spot testing of a rock sample from RAS with iron veining (Figure 11) indicated As concentrations of ~5,553 ppm compared to the rock without veining that was measured at ~ 200-280 ppm. Arsenic strongly adsorbs to Fe hydroxides and results confirm As mineralisation in the area and association with the ore zones.

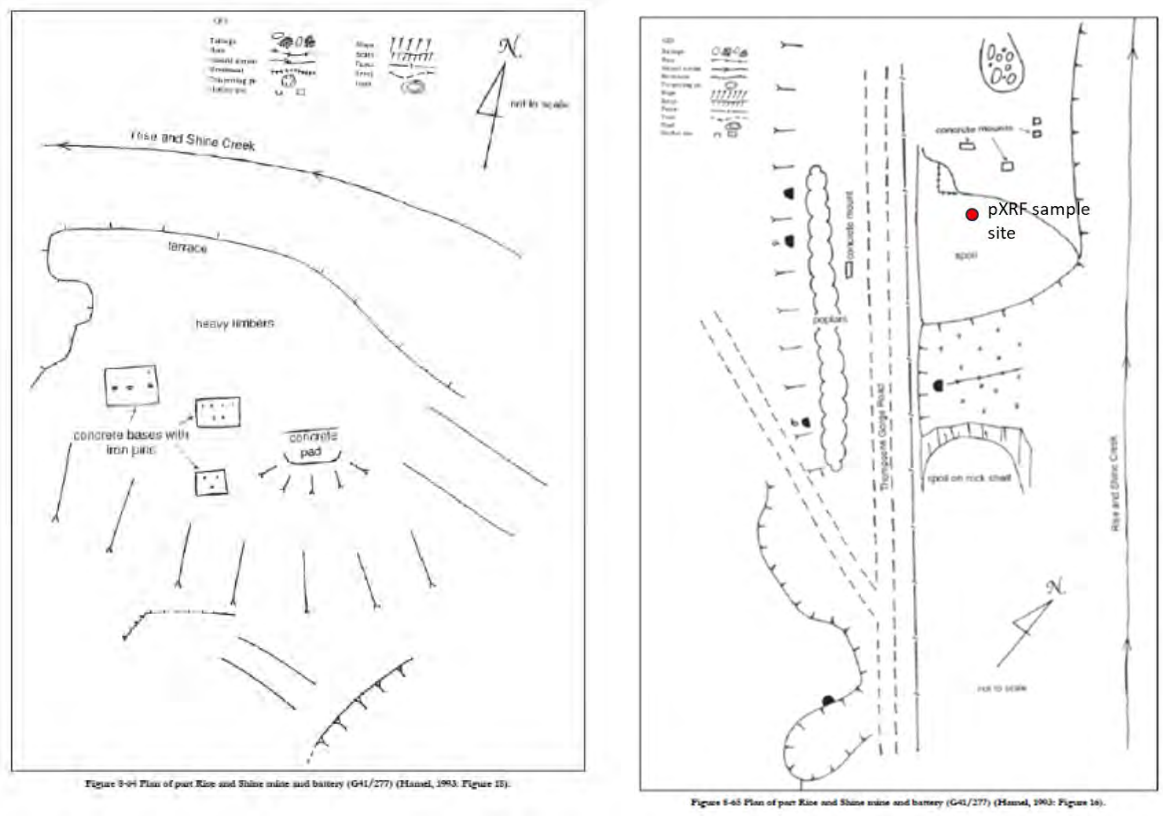


Figure 9: Plans of the Rise and Shine Battery and associated historic workings.

Source: Lawrence et al., 2019 taken from Hamel, J. (1993).

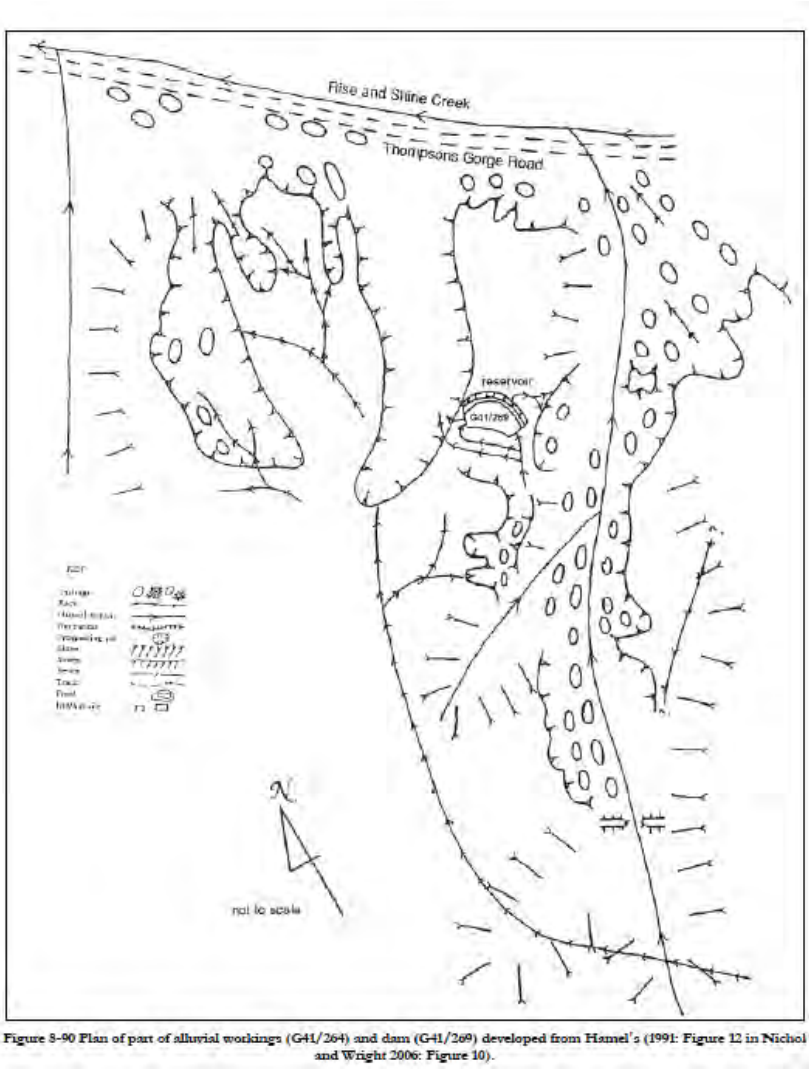


Figure 10: Plans of the elluvial workings southeast and upstream of Rise and Shine Battery.

Source: Lawrence et al., 2019 taken from Hamel, J. (1993).



Figure 11. Fe-rich rock sample from the RAS Spoil

See Figure 9 for sample location (pXRF)

Water Sampling

During the site visit on 27 April 2023, a number of the existing water monitoring sites (SC1, Jean Creek, RS2, RSA) were visited to gain an understanding of the site locations, catchment area, and potential source hazards.

Seepage from groundwater into Ferret Gully and into Shepherds Creek was evident down gradient of MDD015.

During the site visit, three opportunistic water grab samples were taken from the following sites:

- MDD015 - a free flowing drillhole at MDD015 (i.e., groundwater) and the adjacent settling pond (Figure 11). This drillhole is situated within the potential pit footprint.
- RSB - adjacent to RAS Battery Site in the Rise and Shine Creek. There was evidence of iron-rich precipitates in the Rise and Shine Creek adjacent to the battery site that may indicate seepage from the battery residue materials (e.g., spent ore) and the deposition of metals within the sediments of the creek. Due to the high sediment content and difficulty in obtaining sufficient clean samples, only total and dissolved metals and field testing was completed.
- RS3 - downstream of CIT Battery and in Clearwater Creek. Monitoring at this location will provide baseline information on the impact of the historic workings on the water quality. In the future, this will provide information on any changes from the project development and to understand the impacts on surface water from the historic mine workings.

Site locations are provided in Figure 6 with additional details provided in Table 3.

No sampling of the soil and rock at the heritage sites was able to be completed due to the need for archaeological authority from Heritage New Zealand Pouhere Taonga (HNZPT).

Table 3: Site visit water quality sampling locations.

Drainage	Site ID	Description	Easting	Northing
Bendigo Creek	RSB	In Rise and Shine Creek adjacent to RAS Battery Site. Provides an indication of the effects of residue material (tailings) from historic workings within the catchment.	1317842	5016985
	RS3	In Clearwater Creek, downstream of the confluence with Rise and Shine Creek. Downstream from CIT Battery and workings. Provides an indication of effects of historic workings within the catchment.	1316573	5017998



Figure 12: Site MDD015 drillhole with free-flowing groundwater.

Field measurements for the samples taken during the site visit are presented in Table 4 with key lab results presented in in Table 5. Water quality results were compared against ANZG default guideline values (DGVs) for 95% species protection. Full results of the water testing are included in Attachment A. Key findings from the sampling programme indicated that:

- pH ranged from 7.46 to 8.43 for the samples assessed.
- The MDD015 sample was above guideline values, for dissolved arsenic.
- The RSB sample was above guideline values for dissolved arsenic, iron, and manganese.

These data suggest that Fe, As, and Mn could be elevated in drainage waters from site and are amongst the key contaminants of concern for the project.

Table 4: Water quality sampling sites - 27 April 2023.

						Field measurements						
Site ID	Sample type	X	Y	Date	Time	Flow (L/min)	pH	EC	Temp	DO	ORP	Comments
								uS/cm	C	%	mV	
MDD0015	GW	1318096	5017476	24/4/23	11:30	3-6 L/min (estimated)	8.01	421.9	11.7	8.7	-121.2	-60 degree west facing drillhole. Water free flowing. Some white precipitates on stones. Smell of hydrogen sulfide around the bore.
MDD015 pond	GW pond	1318096	5017476	24/4/23	11:30	-	8.43	420	9.7	93	-46.5	Pond receiving water from MDD015.
RSB	SW	1317842	5016985	24/4/23	14:00	-	6.71	206.6	10.2	10.3	30.6	Adjacent to Rise and Shine Battery. Water in RS Creek. Full of reeds. Muddy. Iron-rich precipitates. Only sampled metals due to lack of clean water. The site may provide an indicate of effects if there is seepage of contaminants from the spent ore at the battery site.
RS3	SW	1316573	5017998	24/4/23	14:35	-	7.46	71.2	6.7	100.9	25	New site. Clearwater / RS Creek downstream.

Table 5: Select water quality results from sites sampled 27 April 2023.

SITE ID		MDD015	RSB	RS03	ANZG 2018 DGV 95% species protection
pH	pH units	8.2	-	7.4	6.5-8.5
Total Alkalinity	mg $CaCO_3$/L	195	-	36	0
Sulfate	mg/L	16.5	-	1.07	1,000[1]
Nitrate-N	mg/L	<0.01	-	<0.01	0.7
Dissolved metals and metalloids					
Soluble Aluminium	mg/L	0.003	<0.002	0.006	0.055
Soluble Arsenic	mg/L	0.036	0.142	0.009	0.013
Soluble Cobalt	mg/L	<0.0005	<0.0005	<0.0005	0.0014
Soluble Copper	mg/L	<0.0005	<0.0005	<0.0005	0.0014
Soluble Iron	mg/L	<0.01	1.01	0.07	0.3
Soluble Manganese	mg/L	0.0064	2.76	0.0170	1.9
Soluble Zinc	mg/L	<0.002	<0.002	<0.002	0.008
Total Metals and metalloids					
Total Aluminium	mg/L	0.193	1.17	0.012	
Total Arsenic	mg/L	0.035	5.29	0.011	
Total Chromium	mg/L	<0.001	<0.001	<0.001	
Total Cobalt	mg/L	<0.002	0.006	<0.002	
Total Copper	mg/L	<0.002	0.002	<0.002	
Total Iron	mg/L	0.3	86.5	0.1	
Total Manganese	mg/L	0.009	4.40	0.019	
Total Zinc	mg/L	<0.005	0.079	<0.005	

[1] *– ANZECC (2000) stock water drinking guidelines. Red data are above guideline values.*

Hyphen (-) indicates no data available.

PRELIMINARY SOURCE HAZARD ASSESSMENT

Several source hazards exist:

- Potential AMD source hazards exist due to the mineralised rock containing sulfides, metals, and metalloids that may contribute to AMD. The mine domains that contain these materials (e.g., pits, WRS, low grade ore (LGO) storage, and processing of the ore (i.e., plant and TSF)) may present AMD hazards.
- Materials could also be impacted by nitrogenous compounds such as nitrate and ammoniacal nitrogen due to the use of ammonium-nitrate based explosives. Mine domains that contain blasted materials can therefore be a source hazard for nitrate-impacted drainage.
- Earthworks can disturb significant quantities of materials that can contribute to runoff elevated in total suspended sediment (TSS), which is often a resource consent compliance condition. Sediments can also be elevated in contaminant of concern that can contribute to off-site contamination if not managed in an appropriate manner.

The three hazards described above can be classified as mine-impacted drainage, which can therefore be affected by AMD, nitrate, and TSS.

Basal seepage to groundwater, toe seepage, and surface water runoff from mine domains containing waste materials or where waste materials are exposed (e.g., pit walls) provide a pathway from source hazards to the receiving environment.

Historic mine workings are another source of contaminants that need to be considered.

PRELIMINARY CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) needs to be developed for the project. The CSM is also an essential communication tool for risk assessments with internal and internal stakeholders and:

- Supports the process of risk assessment by providing a clear visual guide;
- Facilitates a process for identifying potential risks and data gaps; and
- Provides a structure to develop performance and compliance monitoring programs.

The CSM will inform the Project's environmental geochemical risk profile, indicating potential sources of contamination such as pits and waste landforms, and their connection to potential receptors (e.g., sensitive ecosystems) via pathways such as surface water and groundwater, commonly referred to as a source-pathway-receptor (SPR) framework.

Note that a comprehensive identification of potential pathways and receptors falls outside the scope of this assessment and reflects a current data gap. Based on the site visit and background information, a preliminary CSM has been provided in the discussion below and in diagrammatic form (Figure 12).

Sources

Sources of contamination may include materials such as rock, ore, soil, and water. Disturbance and storage of these materials may result in geochemical change and degradation. This memorandum addresses geochemical contamination sources and excludes physical and biological contaminants.

Sources of contamination are broken down into the following mine domains:

- Open Pit
- Waste Rock Stack
- Tailings Storage Facility
- Mine Plant and Processing Area
- Historic Workings

Baseline conditions may be elevated due to mineralisation and can be another source of contaminants. Baseline conditions need to be assessed as part of project studies.

Sources are described further in the following sub-sections.

Pit

The proposed pit is expected to be south of Shepherds Creek. It is proposed to cut through the Rise and Shine Creek and into the RAS historic workings.

During operations it is anticipated that runoff within the pit shell will contribute to the contaminant load reporting to the pit sump, which will be removed by pumping (dewatering). At the end of operations, a pit lake is likely to form with water quality reflective of the geochemistry of the pit walls and waste rock (if backfilled). The pit lake itself maybe a source hazard at some time post-closure.

Only high-level conceptual information is available for the pit design. The following data gaps are noted that need to be addressed:

- A detailed block model with lithological /material volumes per operational year (including waste rock, waste rock types, ore, LGO).
- Location and detailed design of the pit.
- Understanding of AMD potential for pit wall runoff and explosive residue.

It is recommended, to progress studies, that:

- A cross section be provided through the conceptual pit orientated north – south with drillholes provided and logs to select samples for environmental geochemistry studies.
- Estimated materials quantities be provided to commence sample selection for the environmental geochemistry studies.
- That geochemical testing be developed to generate source terms for the various materials that would influence pit water quality.
- That a source term be developed for nitrate and ammoniacal nitrogen using available literature and industry experience (as this can't be derived from unblasted drillcore).
- A site wide water balance model needs to be constructed in the future so that contaminant loads can be determined using flows and source terms.

Waste Rock Stack

The WRS (or ELF) is expected to have a seepage capture system and a downgradient retention pond. Potentially a catchment spillway from Jean Creek into Shepherds Creek will be constructed.

Pathways from this mine domain include WRS seepage, WRS runoff, and overflow from down gradient retention pond.

The following data gaps are noted that need to be addressed:

- Determine final location and design of the WRS.
- Determine the waste rock material balance and any lithological / geochemical differences of the waste rock.
- Understand the AMD potential from the oxidation of sulfides contained in mine waste.
- Understand the effects of mine waste rock containing blasting residues (ammoniacal nitrogen).

Tailings Storage Facility

The proposed TSF is likely to contain materials elevated in sulfides (sulfide oxidation products), processing residues (e.g., lime, cyanide, etc), and blasting residues. Pathways from the proposed TSF include process return water; seepage of tailings pore water, and surface runoff from the TSF.

The following data gaps are noted that need to be addressed:

- Confirm the final location and design of the TSF to understand potential pathways (basal and toe seepage).
- Determine the environmental geochemistry risk associated with the tailings material and any embankment materials [noting the environmental geochemistry source hazards can be determined from metallurgical test residues: materials are available]
- Determine the quality of the process water.

Historic Mine Workings

Historic workings can contribute to contaminant loads from mine impacted water, sediment discharge and seepage. It is important to understand baseline conditions to separate historic legacy issues form future project effects. Information from these historic workings can also provide an understanding of the potential environmental impacts of long-term storage of waste rock. Identified source hazards at the historic mine workings include:

- Mine adits.
- Sluicing areas.
- Waste rock and mullock piles.
- Processing areas.
- Tailings.

The following data gaps are noted that need to be addressed:

- Understand AMD potential (water quality and contaminant loads) from historic wastes and adits.
- Understand current insitu contamination (e.g., soils, groundwater, etc.).
- Understand potential for erosion and sediment release.
- Derive source terms from historic materials to include in water quality models. This will require an archaeological authority from HNZPT and permission from DOC to sample materials if they are on Public Conservation Land.

Mine Plant and Processing Area

The location of the processing plant is not yet finalised but may be on the ridge between the pit and WRS or on flat land near Thomson Gorge Road. Regardless of the location, the potential geochemical sources include:

- Process water.
- Treatment chemicals.

- Ore and residue.
- Tailings.

The following data gaps are noted to consider environmental geochemistry risks:

- Information on the plant design and processing operations.
- The location, design and storage of impacted water, rock and ore at the plant and associated sites.

Pathways

Pathways are how contaminants can move into the wider environments from the source hazard to the receptors. The pathways identified for this project associated with environmental geochemistry hazards include:

- Surface water flow, specifically along drainage pathways.
- Groundwater flow through alluvial sediments and bedrock.
- Soil and rock movement.
- Direct human exposure.

Limited information is available to support understanding pathways and further monitoring is required. The following data gaps are noted:

- Long-term site-specific climate records.
- Surface and groundwater quantity and quality variability in time and space.
- Current sampling site locations do not capture the potential impact from all historic mine workings on waterways that the Project has the potential to impact.
- Runoff generation rates for undisturbed catchments.
- Hydrogeological characteristics and conditions of alluvial sediment and bedrock.

Filling these data gaps will be important to understand the Project's risk to the environment, and support future studies (e.g., water quality modelling) that are required for the assessment of environmental effects and water management designs.

Receptors

The receiving environment includes the following:

- Surface water bodies (Jean Creek, Shepherds Creek, Clearwater Creek, Rise and Shine Creek, Bendigo Creek, Clutha and Lindis rivers).
- Ecology (aquatic, terrestrial).
- Groundwater:
    - Domestic groundwater abstraction.

    - Irrigation groundwater abstraction.

- Heritage areas / workers / volunteers / public.
- Project workers and visitors.

A more detailed risk assessment is recommended once additional data and information are collected to improve understanding of sources, pathways, and receptors. Such data can be used to support the site-wide water quality model of the various mine domains and the receiving environment to understand effects and thus risks.

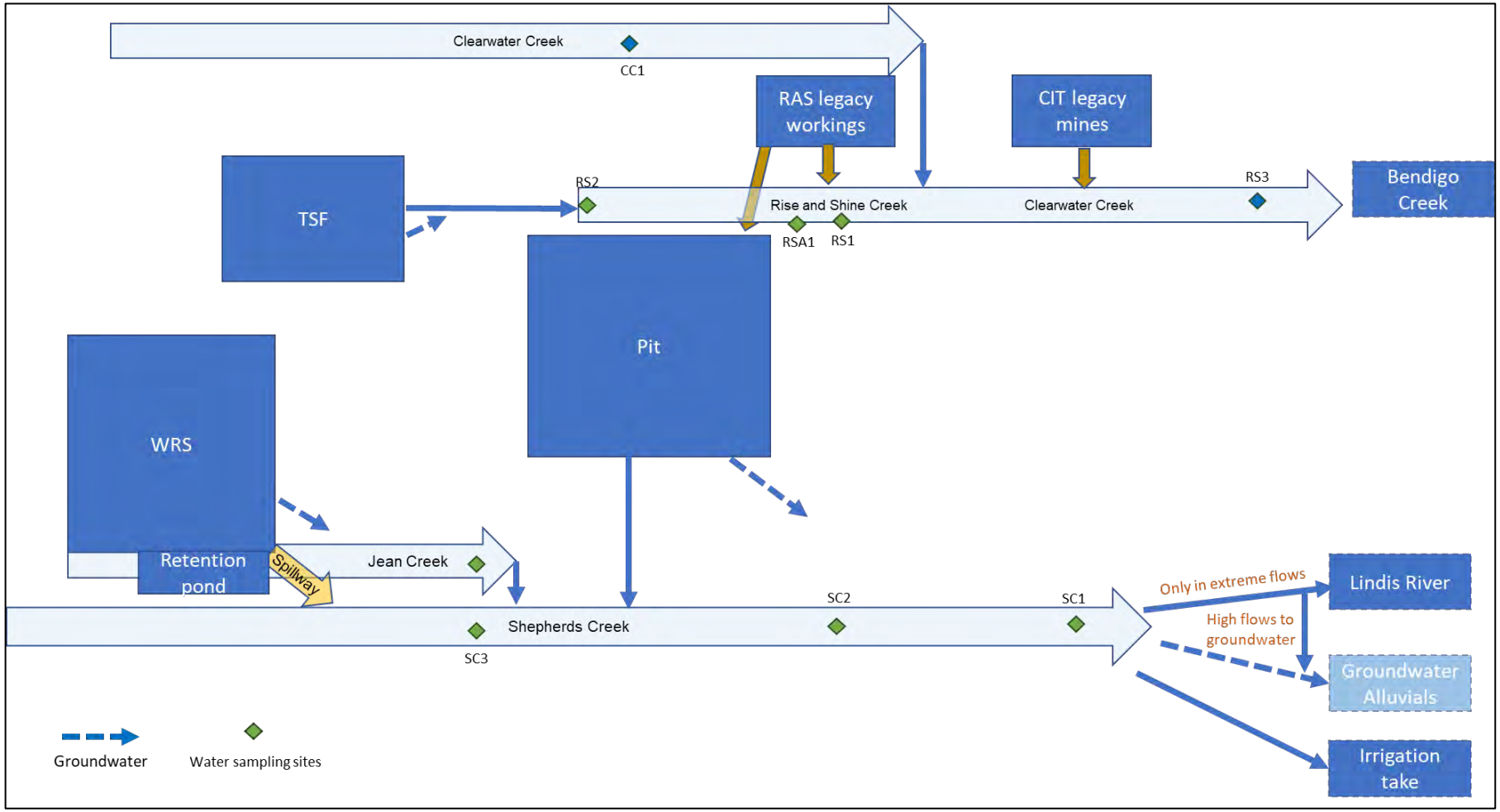


Figure 13: Diagrammatic preliminary CSM.

SUMMARY AND RECOMMENDATIONS

The following summary and recommendations are provided:

Summary

The historic legacy workings will require the following considerations:

- The mine sites and associated workings are considered HAIL[10] sites under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS). As such, disturbance of these sites may require contaminated land assessments and management plans. This would include preliminary site investigations (PSI) and detailed site investigation (DSI)
- The material from historic workings are likely influencing baseline water quality. Understanding these impacts will be important for ensuring differentiation of load sources from the Project and from these historic sources.

Data and information are not currently available to assess either of these aspects. Further work will be required to address this knowledge gap.

Data from legacy sites and from current drillhole water suggest contaminants of concern could include As, Fe, Mn. Other contaminants of concern may also be elevated, and further work is required to identify this (which will be addressed by environmental geochemistry studies).

Knowledge Gaps

Discipline specific recommendations to fill identified knowledge gaps are described below.

Geochemistry

Understanding the geological environment of the ore and waste rock units will be important to advance the understanding of the environmental geochemistry hazards associated with the project.

Santana is working on the development of a preliminary pit shell that will provide estimates of waste rock (and waste rock types), mineralised waste, and ore quantities. This knowledge will be important for advancing the CSM including the extent of each mine domain (e.g., pit, waste rock stack, tailings storage facility, LGO stockpile, etc).

The preliminary pit shell material estimate will be important for guiding the sampling and analysis plan for waste rock / ore as well as the conceptual assessment of the potential effects from the various mine domains.

Request for Further Information

The following information is required from Santana:

[10] Hazardous Activities and Industries List (HAIL). https://environment.govt.nz/publications/hazardous-activities-and-industries-list-hail/

- A long section be provided through the conceptual pit orientated north – south with drillholes provided and logs to select samples for environmental geochemistry studies.
- Estimated materials quantities be provided to commence sample selection for the environmental geochemistry studies.
- Confirm expected final location and design of the WRS.
- Provide the waste rock material balance and any lithological / geochemical differences of the waste rock.
- Confirm the final location and design of the TSF to understand potential pathways (basal and toe seepage).
- Obtain archaeological authorities from HNZPT for disturbance of historic area, as required.
- Obtain access from DOC for any samples on their land with the historic mullock dumps.

Further Studies

Further work is required to constrain and update the preliminary CSM and refine geochemical assessments, as summarised below:

- Chemical and nutrient soil analyses would be useful to inform soil capacity and future remediation potential.
- A source term needs to be developed for nitrate and ammoniacal nitrogen using available literature and industry experience (as this can't be derived from unblasted drillcore).
- Understand the AMD potential from the oxidation of sulfides contained in mine waste.
- Determine the environmental geochemistry risk associated with the tailings material and any embankment materials [noting the environmental geochemistry source hazards can be determined from metallurgical test residues: materials are available]
- Determine the quality of the process water.
- Develop a site wide water balance model needs to be constructed in the future so that contaminant loads can be determined using flows and source terms.

<u>Historical Mine Workings</u>

Further detailed delineation and load contribution from the historic workings are required. This information will inform the CSM and understand the contaminant contribution from these sites. Further work required includes:

Further Studies

A mullock pile (< ~1,000 m^3) occurs in front and down slope of the red drives (Figure 8). The mullock pile could provide beneficial geochemical information on long term weathering of the waste rock. It is important to manage the work around these sites to protect the heritage and archaeological values. Soil and rock sampling will involve the disturbance of the heritage and archaeological sites requiring an archaeological authority from Heritage New Zealand Pouhere Taonga (HNZPT). Santana needs to apply for permits to access these materials.

Other work that needs to be completed includes:

- Compile existing geochemical and contaminant information to identify gaps and provide background on the sites.
- Understand AMD potential (water quality and contaminant loads) from historic wastes and adits.
- Understand current insitu contamination (e.g., soils, groundwater, etc.).
- Understand the potential for erosion and sediment release from historic materials.
- Derive source terms from historic materials to include in water quality models.
- Additional detailed soil testing to supplement existing information, to define the lateral and vertical extent of the sites.
- Water sampling upstream and downstream of the main sites over different flow regimes (similar analytical suite as for waste rock) to understand impacts from the sites on water quality in different seasons.
- Groundwater sampling (e.g., groundwater wells) to understand subsurface contributions from the historical sites may be required following the completion of the DSI.

If historical sites are to be disturbed, then PSI and DSI studies may need to be completed. Resource consents for disturbance of historic mine sites are likely to be required, which includes associated investigations, management plans and remedial plans.

Water Monitoring

Further Studies: Surface Water

The existing surface water monitoring sites in Table 2 include sites downstream of the main mine domains (i.e., contaminant sources). However, as noted in the CSM a small number of gaps were identified. The following recommendations are provided to improve the baseline monitoring program and support future assessments required for the AEE:

- Site RS3 should be incorporated into the baseline monitoring program to monitor for water quality impacts from historic mine workings (e.g., CIT battery) not already captured by existing monitoring sites.
- A site for long term monitoring of baseline in a non-impacted area such as Clearwater Creek (CC1) (Figure 13) or an equivalent site would allow for robust distinction between potential natural changes in flow and water quality related to climate variability, and those from the Project.
- Plan for flow gauging at RS3 to inform contaminant load calculations and provide information for future compliance. This can be completed as part of water quality monitoring. Note that this will also support the development of rating curves which will support other aspects of the Project (e.g., water management designs)
- Frequency of monitoring should be planned to represent seasonal changes and different flow regimes. This is to cover high and low flow conditions. A monthly frequency for surface water is recommended.

- Compile and maintain a monitoring database for all water quantity and quality data to ensure robust dataset are available for future assessments and studies. Experience at many mines has shown that poor data storage and housekeeping leads to data quality issues and additional consultant costs that could have been avoided.
- Assess the data collected after 12 months of monitoring and after geochemistry assessments have confirmed the potential contaminants of concern to identify appropriate modifications to sampling locations and/or lab analysis suits (e.g., reduction in frequency and/or sampling sites where appropriate).

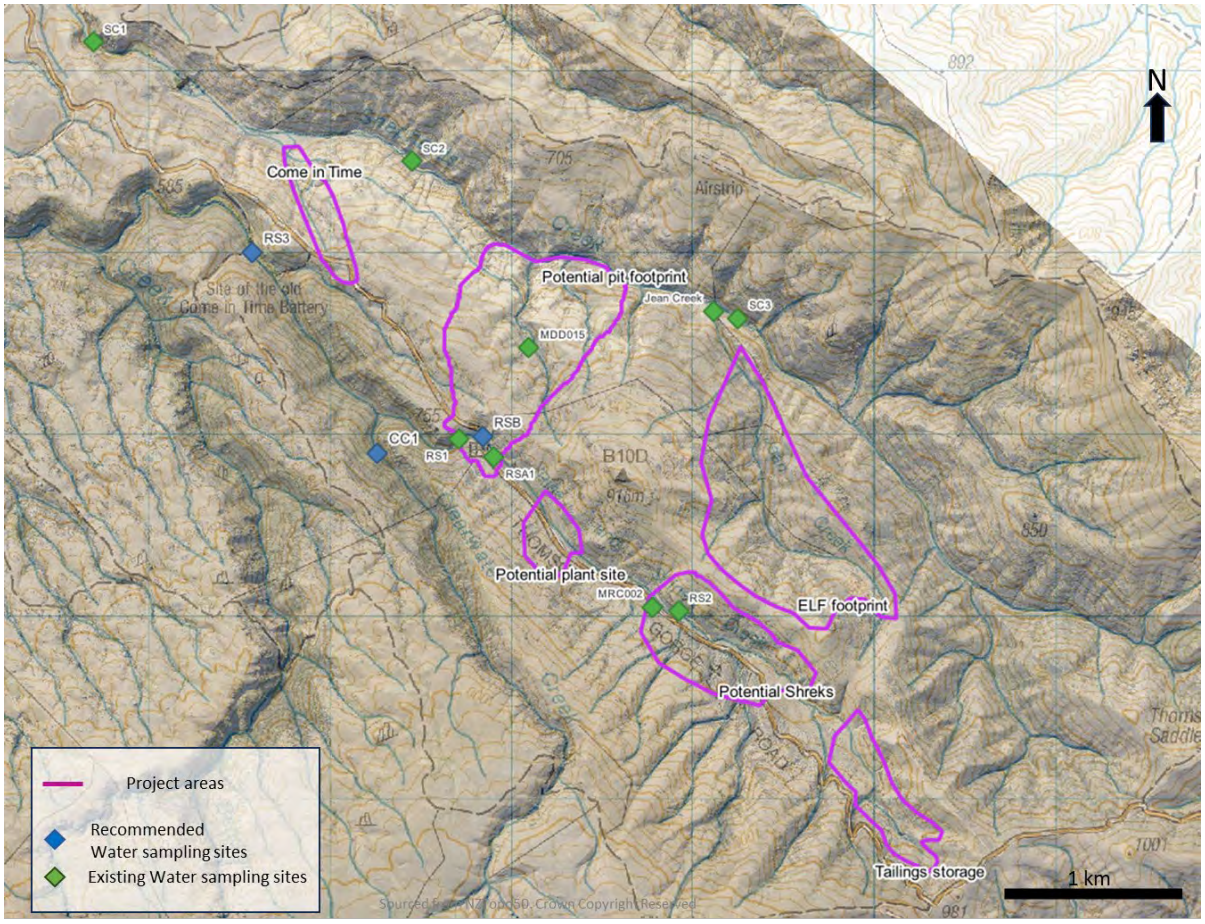


Figure 14: Recommended and existing monitoring sites.

Further Studies: Groundwater

Mine impacted waters entering groundwater has the potential to migrate towards downgradient groundwater users in the Lindis / Clutha River valley. Further studies are recommended to understand this potential risk:

- Santana[11] will undertake necessary work to document the hydrogeological characteristics of the valley bottom sediments of Shepherds Creek and Bendigo Creek to inform the potential for

[11] Personal communications. H McLauchlan. 20th July 2023.

transport of AMD via groundwater along the creek valleys. This will also help support the design of seepage collection systems planned for the TSF and WRS and understand the potential for seepage bypass.

- A groundwater monitoring network should be established to confirm the performance of seepage collection systems and ensure seepage bypass does not become problematic for water quality. Establishing baseline monitoring for groundwater will be required. This monitoring network should be optimised to fulfil groundwater assessment requirements for historical mine workings where possible.
- Investigate the hydrogeological characteristics of the bedrock beneath the site to confirm that bedrock has a low potential for transporting AMD generated by the Project. This may also include considerations for faults (e.g., the Thompson Gorge Fault) to provide preferential pathways for contaminant migration from mine domains (including a pit lake post-closure). This characterisation will also inform estimates of pit dewatering requirements and associated water management designs.

CLOSURE

Please do not hesitate to contact Paul Weber at +64 27 294 5181 paul.weber@minewaste.com.au should you wish to discuss this in greater detail.

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ATTACHMENT A – WATER SAMPLING RESULTS

SampLe ID		MDD015	RSB	RS03
SampLe date and time		**27/04/2023 11:30:00**	**27/04/2023 13:30:00**	**27/04/2023 14:53:00**
Laboratory number	**Units**	**817-2023-00038807**	**817-2023-00038808**	**817-2023-00038809**
pH	pH units	8.2	-	7.4
Conductivity	mS/m	42.1	-	7.1
Suspended Solids	mg/L	10	-	<6
Total Non-Purgeable Organic Carbon	mg/L	0.1	-	2.2
Turbidity	NTU	0.44	-	0.31
Total Dissolved Solids	mg/L	206	-	35
Acidity to pH 8.3	mg $CaCO_3$/L	<1	-	<1
Acidity to pH 3.7	mg $CaCO_3$/L	<1	-	<1
Acidity to pH 7.0	mg $CaCO_3$/L	<1	-	<1
Total Alkalinity	mg $CaCO_3$/L	195	-	36
Total Hardness	mg $CaCO_3$/L	7	-	7
Fluoride	mg/L	0.19	-	0.07
Chloride	mg/L	10.1	-	1.47
Bromide	mg/L	0.09	-	<0.02
Sulfate	mg/L	16.5	-	1.07
Silica - Dissolved	mg/L	18.8	-	9.82
Dissolved (NP) Organic Carbon	mg/L	0.1	-	2.1
Cyanide	mg/L	<0.005	-	<0.005
Ammonia Nitrogen	mg/L	0.20	-	0.02
Nitrate-N	mg/L	<0.01	-	<0.01
Nitrite-N	mg/L	<0.01	-	<0.01
Total Nitrogen	mg/L	0.150	-	0.120
Total Phosphorus	mg/L	0.010	-	0.016
Dissolved Metals and metalloids				
Soluble Aluminium	mg/L	0.003	<0.002	0.006
Soluble Antimony	mg/L	<0.001	<0.001	<0.001
Soluble Arsenic	mg/L	0.036	0.142	0.009
Soluble Barium	mg/L	0.124	0.036	0.006
Soluble Beryllium	mg/L	<0.001	<0.001	<0.001
Soluble Bismuth	mg/L	<0.001	<0.001	<0.001
Soluble Boron	mg/L	0.04	<0.03	<0.03
Soluble Cadmium	mg/L	<0.0002	<0.0002	<0.0002
Soluble Calcium	mg/L	30.2	24.3	8.7
Soluble Chromium	mg/L	<0.001	<0.001	<0.001
Soluble Cobalt	mg/L	<0.0005	<0.0005	<0.0005
Soluble Copper	mg/L	<0.0005	<0.0005	<0.0005
Soluble Iron	mg/L	<0.01	1.01	0.07
Soluble Lead	mg/L	<0.0005	<0.0005	<0.0005
Soluble Lithium	mg/L	0.049	0.002	0.001
Soluble Magnesium	mg/L	16.7	5.38	1.90
Soluble Manganese	mg/L	0.0064	2.76	0.0170
Soluble Mercury	mg/L	<0.0005	<0.0005	<0.0005
Soluble Molybdenum	mg/L	0.0007	<0.0005	<0.0005
Soluble Nickel	mg/L	<0.0005	0.0007	<0.0005
Soluble Potassium	mg/L	1.58	1.76	0.51
Soluble Selenium	mg/L	<0.005	<0.005	<0.005
Soluble Silver	mg/L	<0.0005	<0.0005	<0.0005
Soluble Sodium	mg/L	36.8	8.06	4.58
Soluble Strontium	mg/L	8.45	0.327	0.105
Soluble Tin	mg/L	<0.0005	<0.0005	<0.0005
Soluble Titanium	mg/L	<0.0005	<0.0005	<0.0005
Soluble Thallium	mg/L	<0.0005	<0.0005	<0.0005
Soluble Uranium	mg/L	0.0012	<0.0002	<0.0002
Soluble Vanadium	mg/L	<0.0005	<0.0005	<0.0005
Soluble Zinc	mg/L	<0.002	<0.002	<0.002
Total Metals and metalloids				
Total Silicon	mg/L	7.43	6.49	3.64
Total Aluminium	mg/L	0.193	1.17	0.012
Total Antimony	mg/L	<0.002	<0.002	<0.002
Total Arsenic	mg/L	0.035	5.29	0.011
Total Barium	mg/L	0.146	0.130	0.005
Total Beryllium	mg/L	<0.005	<0.005	<0.005
Total Bismuth	mg/L	<0.005	<0.005	<0.005
Total Boron	mg/L	0.10	0.05	<0.05
Total Cadmium	mg/L	<0.001	<0.001	<0.001
Total Calcium	mg/L	31.5	29.6	8.2
Total Chromium	mg/L	<0.001	<0.001	<0.001
Total Cobalt	mg/L	<0.002	0.006	<0.002
Total Copper	mg/L	<0.002	0.002	<0.002
Total Iron	mg/L	0.3	86.5	0.1
Total Lead	mg/L	<0.001	0.003	<0.001
Total Lithium	mg/L	0.055	0.003	0.001
Total Magnesium	mg/L	17.7	5.3	1.7
Total Manganese	mg/L	0.009	4.40	0.019
Total Mercury	mg/L	<0.001	<0.001	<0.001
Total Molybdenum	mg/L	<0.001	<0.001	<0.001
Total Nickel	mg/L	<0.001	0.004	<0.001
Total Potassium	mg/L	1.4	2.7	0.5
Total Selenium	mg/L	<0.005	<0.005	<0.005
Total Silver	mg/L	<0.001	<0.001	<0.001
Total Sodium	mg/L	43.3	7.0	3.0
Total Strontium	mg/L	8.97	0.414	0.071
Total Tin	mg/L	<0.001	<0.001	<0.001
Total Titanium	mg/L	0.004	0.020	<0.001
Total Vanadium	mg/L	<0.001	0.002	<0.001
Total Zinc	mg/L	<0.005	0.079	<0.005

Notes

A hyphen (-) indicates that no data are available

ATTACHMENT B – ARCHAEOLOGICAL SITES

Site		Description	Arch Value
G41/604	CIT	Au mining. Turbine and battery	Med
G41/605	CIT	Au mining. Mine	Med
G41/586	CIT	Water race	Low
G41/589	Close to CIT	Revetted road	Low
G41/277	Pit footprint	Au mining. Rise and Shine battery and mine. Adits, slucing face, spoil, foundations, dam, stone faced terrace.	High
G41/603	Between Pit and Plant	Revetted road	Low
G41/588	Between Pit and Plant	European midden	Low
G41/587	Between Pit and Plant	Timber milling. Terraces	Low
G41/276	Plant site	Stone Chimney. Unclassified site type.	Med
G41/585	Plant site	Timber milling. Dam	Low
G41/670	Close to Plant site	Au mining. Tailings dam	Low
G41/669	Potential Shreks	Au mining. Mine working. Sluiced area	Low
G41/264	Potential Shreks	Au mining. Mine workings – water race, dam, adit, tailings, terrace, and sluice faces.	Med
G41/269	Potential Shreks	Au mining. Dam – 10 m wide	Med
G41/584	Between Shreks and Tailings	Water race	High
G41/251	On DOC land to West CIT No proposed impact	Au mining. Come in Time Battery. 10-stamper battery. 2 adits. Mullock. Track, wall and possible ore bins.	High

Source: Lawrence et al., 2019

APPENDIX C PRELIMINARY SITE INVESTIGATION

Preliminary Site Investigation

Bendigo-Ophir Gold Project

5 August 2025

J-G-NZ0005-001-R-Rev3

GEOCONTAM RISK MANAGEMENT
GREENROAD GROUP

MATAKANUI GOLD LIMITED

PRELIMINARY SITE INVESTIGATION

Bendigo-Ophir Gold Project

Document Number: J-AU0005-001-R-Rev3

Document Date: 5 August 2025

Prepared for:

MATAKANUI GOLD LIMITED

PO Box 11, Hokitika, West Coast 7842, New Zealand

Prepared by:

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REVISION	DATE	AUTHOR	RECORD OF REVIEW
RevA	02/11/2024	JP	PW
Rev0	17/02/2025	JP	PW
Rev 1	09/05/2025	JP	PW
Rev 2	09/06/2025	JP/VM	PW
Rev 3	05/08/2025	JP	PW

EXECUTIVE SUMMARY

Geocontam Risk Management Ltd (GRM) has undertaken a Preliminary Site Investigation (PSI) on behalf of Matakanui Gold Limited (MGL), a fully-owned subsidiary of Santana Minerals Limited, for the Bendigo-Ophir Gold Project (the Project), which is located in the Dunstan Mountains of Central Otago, New Zealand (NZ). This evaluation of the current and potential future site contamination risks associated with the development of the Project, has been undertaken to support the assessment of environmental effects (AEE) and meet regulatory obligations under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations (NESCS) that arise from the recognition that historic and future mining operations associated with the project are defined in the Hazardous Activities and Industries List (HAIL) as a potentially contaminating land use (Category E7).

The report concludes that determining appropriate ecological background threshold values, and inclusion in site management plans, should ensure that future mining activities within the Project area that have the potential to release contaminants to the environment are appropriately managed. This has been integrated into the soil management plan to address this environmental aspect.

The purpose of this PSI is to identify any existing and potential future risks to receptors associated with the historic and proposed future land uses to ensure potential risks to receptors can be appropriately mitigated during the proposed mine development, operations, and closure stages. The key objectives of this PSI are therefore to:

- Define the existing and potential sources of contamination and their associated potential constituents of concern (PCOC) associated with historic land use and future mine development activities;
- Identify the pathways for PCOC migration and potential receptors that could be impacted; and
- Determine future requirements for further investigation or management of contamination risks.

The following scope of work was undertaken in accordance with the requirements of the Contaminated Land Management Guidelines (CLMG) (MfE, 2021) and included:

- A desktop review of the site history and environmental setting from site-specific reports and publicly available maps and databases;
- Completion of a site inspection and a review of the existing physical environment;
- Development of a conceptual site model (CSM) identifying areas of potential environmental concern (APECs), PCOC, potential migration and exposure pathways, and key receptors;
- Identification of data gaps in the context of future site development and land uses, and provision of recommendations for further detailed site investigation (DSI) and/or development of a site management plan (SMP); and
- Preparation of this PSI report.

The results of this PSI have identified the following site conditions and potential contamination risks associated with the historic land use and proposed future mining activities:

- The Project area is located within the Otago Schist belt, which comprises metasedimentary and metavolcanic rocks metamorphosed to greenschist facies. Gold mineralisation is widespread within the Otago Shists with the dominant mineralisation in the region generally associated with silica-siderite/ankerite alteration with minor arsenopyrite sulfides associated with the gold;
- There is no record of permanent Māori occupation within the Project area, however the Project area has a long history of pastoral occupation dating back to the late-1850s, and historic gold mining operations comprising alluvial sluicing and shallow mining of quartz reefs occurred in several areas across the site and surrounds between the 1860s through to the 1940s. Whilst pastoral land use has continued through to present day, only limited exploration activities have been undertaken since the 1980s;
- Detailed heritage mapping of the historic land use has been undertaken with numerous historic mining features, including prospecting pits, water races, mullock piles, tailings and dams, sluices areas, mine adits, turbines and batteries, alluvial workings, mapped as being present within the Project area. Several agricultural and pastoral features and one feature that may be associated with Māori activity have been identified within the broader mining lease area, however most are distal to the Project area;
- Baseline environmental studies have been undertaken within the Project area to assess the ecological values of the environment with respect to groundwater, surface water, and aquatic and terrestrial ecosystems. Based on these studies, few of the identified indigenous grasses and herbs are known to be rare or under any significant threat locally, regionally or nationally. Several indigenous habitats and protected wildlife species are present, but no threatened or At-Risk freshwater species have been identified;
- Notable evidence of the mining history is present within the Thomson Gorge along Rise and Shine Creek. Remnant impacts from the historic activities are visible within the Project area associated with the accumulation of sluicing debris and migration of tailings along creek beds, adits, mullock piles, and the former battery sites. Soil sampling and water quality monitoring around these areas has identified potentially elevated concentrations of metals in shallow soil (arsenic (As) and possibly cadmium (Cd)), surface water (As, cobalt (Co), copper (Cu), and iron (Fe)), and groundwater (As, Cr, Cu, Fe, strontium (Sr), thallium (Tl), and zinc (Zn)) within the project area;
- Arsenic (As) has been identified at concentrations above industrial land use human health protection criteria and above 60% and 80% Eco-SGV in shallow soils within the Project area, predominantly within the historic mining areas. Potentially complete exposure pathways may result from the disturbance of these soils during future mining activities. Cadmium (Cd) was found extensively above 80% Eco-SGV and may also warrant management during operations to meet post-closure land use objectives; and
- If not appropriately managed, future mining activities within the Project area have the potential to release contaminants to the environment, potentially resulting in adverse impacts to terrestrial and aquatic ecosystems. Future mine site features including the open pit, underground workings, an engineered landform (ELF), tailings storage facility (TSF),

processing plant, run-of-mine (ROM) pad, topsoil stockpiles, vehicle washdown and refuelling facilities, explosives magazine and emulsion factory, and mining fleet workshops will require appropriate facility design and management plans to minimise potential risks to human health and the environment.

Based on the findings of this PSI, the following recommendations are made:

- A detailed evaluation of the extensive soil dataset should be undertaken for the Rise and Shine Valley to better inform a risk assessment of the disturbance of soils with elevated As (and potentially Cd) concentrations during operations. Using the existing soil dataset, appropriate ecological background threshold values (BTV) should be derived using an appropriate industry-recognised methodology (e.g., upper tolerance limit (UTL)) for the Project area to support the assessment of environmental effects during operations and closure;
- A SMP should be developed in accordance with the requirements defined in the *Contaminated Land Guidelines No. 1* (MfE, 2021) to define the risks, control strategies, and management responsibilities associated with shallow soil management (i.e., arsenic impacted soils) within the Project area; and
- Management plans and associated conditions of consent should be developed to address operational risks associated with key mine sources that have the potential to adversely impact human health or ecological receptors. These should include procedures around waste rock and processing residues (e.g., tailings) to reduce environmental risks from AMD, dust management, chemical storage, spill response, and surface and groundwater monitoring.

SUITABLY QUALIFIED ENVIRONMENTAL PRACTITIONER – CERTIFYING STATEMENT

I certify that the site has been assessed in accordance with current New Zealand Regulations and guidance documents and that this report has been prepared in general accordance with the Ministry for the Environment's *Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand*, 2021.

I am considered by Matakanui Gold Ltd to be a suitably qualified and experienced practitioner (SQEP) able to certify reports pursuant to the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011, based on the company's definition of a SQEP as given below.

Matakanui Gold Ltd requires that a SQEP has the following Qualifications / Experience:

- Tertiary science or engineering qualification relevant to environmental assessment.
- A minimum of 10 years of relevant experience.
- Registration with a professional body that assess and certifies environmental professionals in the competency criteria of training, experience, professional conduct and ethical behaviour.



Julie Palich, B.Sc., M.Sc., CEnvP #1883
5 August 2025

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1 INTRODUCTION

Geocontam Risk Management Limited (GRM) has undertaken a Preliminary Site Investigation (PSI) on behalf of Matakanui Gold Limited (MGL), a fully owned subsidiary of Santana Minerals Limited, for the Bendigo-Ophir Gold Project (the Project), which is located in the Dunstan Mountains of Central Otago, New Zealand (NZ) as depicted in Figure 1.

The Bendigo-Ophir mineral resource covers 251 square kilometres in the Central Otago goldfields and occurs in four deposits [Come-in-Time (CIT), Rise and Shine (RAS), Srex (SRX), Srex East (SRE)] that are inferred to extend in a northerly direction within the Rise and Shine Shear Zone (RSSZ), which hosts gold mineralisation over a recognised strike length of >20 km. The Bendigo-Ophir Gold Project (BOGP) area (Figure 2) has been mined since the late 1800s and there are numerous historic mine workings throughout the Project area, as identified in an archaeological survey (Lawrence et al., 2019). Further gold mining within this area is proposed by MGL, with approvals being sought through the New Zealand Fast Track Approval process.

1.1 Regulatory Framework

Disturbance of soil associated with developments on potentially contaminated land is a regulated activity under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health - NESCS) Regulations 2011 (MfE, 2012).

Mine sites and associated workings are defined in the Hazardous Activities and Industries List (HAIL) under the NESCS. As such, a contaminated land assessment is required to ensure future potential disturbance of the land can be undertaken in a manner that does not pose a risk to human health and/or ecological receptors. The first stage of the contaminated sites assessment process is to prepare a PSI report that meets the requirements of the NESCS and is prepared in accordance with the Ministry for the Environment (MfE) Contaminated Land Management Guidelines (CLMG) No 1: Reporting on Contaminated Sites in New Zealand (MfE, 2021). A detailed site investigation (DSI) is not anticipated at this stage as it is likely that any mining operation will address legacy and future contamination risks under a site management plan (SMP) and mine closure plan.

1.2 Purpose and Scope

The purpose of this PSI is to address the regulatory requirements of the NESCS to identify any existing and potential future risks to receptors associated with the historic and proposed future land uses to ensure potential risks to receptors can be appropriately mitigated during the proposed mine development, operations and closure stages.

1.2.1 Objectives

The objectives of this PSI are to:

- Define the existing and potential sources of contamination and their associated potential constituents of concern (PCOC) associated with historic land use and future mine development activities;
- Identify the pathways for PCOC migration and potential receptors that could be impacted; and
- Determine future requirements for further investigation or management of contamination risks.

1.2.2 Scope of Work

The following scope of work was undertaken in accordance with requirements of the CLMG and included the following:

- A desktop review of the site history and environmental setting from site-specific reports and publicly available maps and databases;
- Completion of a site inspection and a review of existing physical environment;
- Development of a conceptual site model (CSM) identifying areas of potential environmental concern (APECs), PCOC, potential migration and exposure pathways, and key receptors;
- Identification of data gaps in the context of future site development and land uses, and provision of recommendations for further DSIs and/or development of a SMP; and
- Preparation of this PSI report.

1.3 Statement of Qualifications

GRM confirms that, in accordance with the requirements of the NESCS (2011), this PSI has been prepared in accordance with the current edition of the CLMG (MfE, 2021a), and has been reviewed and approved by a suitably qualified and experienced practitioner. Evidence of the qualifications and experience of the authors who have prepared and reviewed this report are provided in Table 1.

Table 1: Suitably qualified and experienced practitioner details.

ITEM	DETAILS
Author	
Name	Julie Palich, MSc, CEnvP (Certification #1883)
Job title	Principal Environmental Geoscientist
Years' industry experience	27
Reviewer	
Name	Paul Weber, PhD, MAusIMM CP(Env)
Job title	Principal Environmental Geochemist
Years' industry experience	26

1.4 Report Structure

The PSI has been structured in accordance with the guidance provided in the CLMG (MfE, 2021), with the subsequent sections organised as follows:

- Section 2: Site identification;
- Section 3: Environmental setting;
- Section 4: Site history;
- Section 5: Site condition and surrounding environment;
- Section 6: Site characterisation investigations;
- Section 7: Proposed site development;

- Section 8 Conceptual site model; and
- Section 9: Conclusions and recommendations.

Acronyms used in this report are summarised in Appendix A and figures are presented in Appendix B.

2 SITE IDENTIFICATION

2.1 Site Identification and Land Tenure

The site (Project area) is located in the Central Otago region of New Zealand, between the townships of Bendigo (northwest corner) and Ophir (southwest).

Land tenure across the Project area (Figure 3) is a combination of freehold, private land with Bendigo Station to the SW and Ardgour Station to the NE as summarised in Table 2. Adjacent to the Project area is freehold, private land owned by Cherri Holdings Limited to the NW; otherwise, the Project area is adjacent to Crown Land being the Bendigo Historic Reserve to the west, and the Ardgour Conservation Reserve to the east, both administered by the Department of Conservation (DOC), and Matakanui Station also to the east which is leasehold land administered by Land Information New Zealand (LINZ).

The Project area is located within two mineral exploration and prospecting permits issued by New Zealand Petroleum and Minerals (NZPM) (Figure 1). Table 3 presents the relevant site details as provided through the NZPM online database (accessed 24 July 2024).

Table 2: Land tenure.

LOCATION	DESCRIPTION				
	TITLE NUMBER	TYPE	AREA (Ha)	OWNER	DESCRIPTION
Within BOGP Project Area	841663 (portion)	Freehold	262.68558	Ardgour Station Ltd	Lot 11 Deposited Plan 525588 and Lot 2 Deposited Plan 505064 and Section 18 Survey Office Plan 24641
	841657	Freehold	78.1313		Lot 1 Deposited Plan 525588
	808256 (portion)	Freehold	231.91924	Bendigo Station Ltd	Section 11-16, 23, 27, 37, 39 Survey Office Plan 24641 and Section 2 Survey Office Plan 332575 and Lot 6 Deposited Plan 517385
	941795	Freehold	7.356	Cherri Holdings Ltd	Lot 14 Deposited Plan 548903
	841228 (portion)	Freehold	237.4312	Bendigo Station Ltd	Lot 4-6 Deposited Plan 525495 and Part Lot 10 Deposited Plan 391334 and Lot 5 Deposited Plan 517385
Offsite (adjacent)	1071231	Freehold	19.7433	Cherri Holdings Ltd	Lot 13 Deposited Plan 548903 and Section 10, 15 Survey Office Plan 554095
	1071232	Freehold	5.9833		Lot 15 Deposited Plan 548903 and Section 18 Survey Office Plan 554095
	952819	Freehold	19.113		Lot 16 Deposited Plan 548903
	767270	Freehold	239.1198	Tarras Farm Pty Ltd	Lot 1 Deposited Plan 505064

LOCATION	DESCRIPTION				
	TITLE NUMBER	TYPE	AREA (Ha)	OWNER	DESCRIPTION
	201479	Freehold	458.047	DOC Public Conservation Land	Section 10, 21, 25-26, 31 Survey Office Plan 24641 and Section 32 Block III Wakefield Survey District
	OT19C/127	Freehold	303.3	DOC Public Conservation Land	Section 1 Survey Office Plan 24604

Table 3: Summary of mineral permits.

ITEM	DESCRIPTION
Mineral Permit	MEP60311 – Minerals Exploration Permit, expires 12 April 2028 MPPA60882 (Ardgour) – Minerals Prospecting Permit, expires 30 November 2025
Owner	Matakanui Gold Ltd (100%)
Approximate Site Area	MEP60311 – 251.62 km^2 MPPA60882 – 40.292 km^2
Territorial Authority	Central Otago District Council
Current Site Use	Mineral exploration/prospecting (gold)
Proposed Site Use	Mining

2.2 HAIL Classification

A review of the Otago Regional Council (ORC) HAIL Site View Map was undertaken to identify sites of interest within 1 km of the site (ORC, 23 July 2024). The site is not a registered HAIL site and there are no HAIL sites located within the search radius.

Historic and proposed mining activities within the exploration permit area, however, meet the definition of HAIL Category E7 – Mining industries (excluding gravel extraction), including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings. The absence of a site from the HAIL register does not mean that environmental hazards are not present in association with the site and may only reflect that the site has not formally been reported to the regulator due to an absence of a regulatory requirement to do so or an absence of appropriate data to define its contamination status.

3 ENVIRONMENTAL SETTING

Details of the environmental setting for the site are presented in the following sections and have been informed through a review of:

- Local topography and surface water drainage to identify possible contaminant migration controls, pathways, and sensitive environmental receptors;
- Local and regional geology, hydrology, and hydrogeology maps and site-specific investigation reports to determine the likely soil type and water flow regimes;
- Registered groundwater monitoring bores and wells through the data.govt.nz database to evaluate the use and available groundwater quality within the vicinity of the site;
- Site-specific studies regarding flora and fauna to assist in evaluating potential ecological receptors associated with the site; and
- Site-specific archaeological studies to assist in evaluating features of potential heritage value.

3.1 Climate

The Central Otago region is the driest in New Zealand, receiving less than 400 mm of annual rainfall. Median summer air temperatures for the area are 16°C to 17°C and winter median temperatures are 5°C to 6°C. Climate information available from several nearby weather stations reports long-term average annual rainfall in the area between 390 mm and 550 mm (Table 4) with the highest rainfall reported in December and January and lowest rainfall in July and August. Rainfall is highest to the east of the Dunstan Ranges at Matakanui compared to the low-lying stations west of the range. The project site has two weather stations located at CIT and RAS. Measurements at RAS have been occurring since November 2022.

Table 4: Regional rainfall.

STATION	FROM	TO	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Tarras	1951	1980	45	35	49	39	46	31	29	36	38	41	41	42	472
Bendigo 1	1951	1980	41	32	47	39	44	32	25	31	38	42	35	40	446
Bendigo 2	1981	2010	39	32	45	28	31	35	31	26	18	35	29	43	390
Matakanui	1951	2020	58	46	50	46	41	37	31	29	36	51	49	61	535
Cromwell	1981	2010	48	33	43	33	33	38	28	27	26	36	41	52	437

Source: http://cliflo.niwa.co.nz/

3.2 Topography

The Project area sits on semi-arid grazing land with moderate topography (Figure 2). The mine sites and proposed plant site are located between incised valleys. The topography of the area rises from the Bendigo terraces at 370 mRL to the top of the RAS future pit crest at approximately 770 mRL. The head of Rise and Shine Valley is at 970 mRL and serves as a watershed divide into the Matakanui catchment to the east.

3.3 Geology, Mineralogy and Soils

The following information is sourced from Santana Minerals Limited (2024) unless otherwise referenced.

3.3.1 Regional Geology

The Project area is located within the Otago Schist belt comprising Permo-Triassic metasedimentary and metavolcanic rocks metamorphosed to greenschist facies with peak metamorphism in the Cretaceous period (Figure 4).

The Dunstan Mountains, located in the north and southeast of the Project area, are an uplifted block of the Otago Schists tilted to the northwest with remnants of a Cretaceous peneplain well preserved on its northern slopes. The Manuka Basin to the southeast is infilled by Cenozoic sediments, and the fluvio-glacial Tarras Terraces lay the northwestern margin of the Dunstan Range.

The Otago Schist is formed from sedimentary and minor intermediate volcanics and volcaniclastics of the Caples and Torlesse tectono-stratigraphic terranes. Greenschist facies rocks of the Otago Shist are sub-divided into four textural zones based on mineralogy and mineral textures. Gold mineralisation is widespread within the Otago Shists with over 5 million ounces of hard-rock gold and 8 million ounces of alluvial gold historically being won from the Otago Goldfields.

3.3.2 Deposit Geology

The North Dunstan Mountain sector of the Project area contains four discrete mineral occurrences – RAS, CIT, SRX, and SRE.

The RSSZ is an approximately 50 m thick, late metamorphic low angle shear zone dipping 20 – 30 degrees northeast and crosscutting the metamorphic foliation at a low angle (McKenzie and Craw 2010). From its outcrop in the Rise and Shine Valley, it has been traced for 1.7 km north-northeast beneath the unconforming TZ3 cover rocks with the bulk of the RAS mineralisation sitting beneath 150 m to 300 m of the benign cover rock.

The gently (25 degree) north-north-east plunging RAS deposit sits within a zone up to 400 m wide and can be up to 90 m in thickness (typically 30 m to 40 m). The RAS deposit is one of several zones of highly anomalous gold mineralisation truncated by the Thomson Gorge Fault (TGF). On a mine scale, the TGF is a post metamorphic, post mineralisation cataclastic fault zone developed predominantly along the hanging wall of the RSSZ. It separates chlorite rich, textural zone 3 (TZ3) schists in the hanging wall from biotite rich textural zone 4 (TZ4) schists in the shear zone and foot wall.

Within the 500 m wide zone of NNE trending mineralisation at RAS, a higher-grade core approximately 150 m to 200 m wide contains the majority of gold. The RAS deposit is primarily all fresh rock with subsurface oxidation variably extending from 5 m to 20 m depth.

The main mineralisation at RAS is associated with silica-siderite/ankerite alteration with minor arsenopyrite sulfides associated with the gold. In some areas a cataclastite (brecciated) network of anastomosing, post-metamorphic quartz, occurs with minor sulfide veins in a halo around the core mineralisation.

Gold occurs as free gold particles, typically up to 400 µm but with some coarser visible gold. A minor gold component occurs associated with the arsenopyrite grains, but typically not in solid solution, giving rise to the free milling and highly gravity recoverable components expressed by metallurgical testing.

3.3.3 Soils

According to the Landcare Research national soils dataset (S-Map) (Figure 6), the Project area and surrounding environment is mapped as comprising mature soils with well-developed topsoil and subsoil horizons that have developed in quartz-rich material that show the effects of climate. In accordance with the New Zealand Soil Classification system (Hewitt,1992), the southern portion of the Project area (higher elevations) is characterised as immature pallic soils. Further down the valley (to the northwest), soils transition to immature semiarid and argillic semiarid soils. Acid brown soils are mapped in the valley/lowest elevations in the northernmost extent of the Project area and into the grazing fields to surrounding the Project area. In general, these soil types are weakly to very-weakly weathered and weakly leached.

3.4 Hydrology

The following sections describe the surface water hydrology associated with the Project area.

3.4.1 Catchments

The site is located on the northeast side of Lake Dunstan in the Dunstan Mountains with catchments open to the northwest onto the intervening fluvio-glacial sediments of the Cromwell-Tarras Valley.

The site covers the Bendigo Creek Catchment (28.15 km^2) in the south and west, which includes the Rise and Shine Creek Sub-catchment. The Shepherds Creek Catchment (12.36 km^2) is present in the northeast.

3.4.2 Surface Water Bodies

There are no permanent surface water bodies within the Project area.

Over 30 locations, interpreted to be points of groundwater seepage, have been mapped along Shepherds Creek, Bendigo Stream and in an unnamed stream within the Lindis River Catchment (Figure 6).

3.4.3 Streams

The flow in the streams as they exit the mountains after passing through the MGL exploration permit and areas of potential mining interest are estimated to range from 48 L/s to 129 L/s (median) and 99 L/s to 236 L/s (mean), with mean of minimum 7-day flow of 19 L/s to 65 L/s despite catchment areas of approximately 11.5 km^2 to15.5 km^2 (https://shiny.niwa.co.nz/nzrivermaps/ , accessed 23/07/2024).

Mapped streams in the Project area have predominantly been mapped as perennial (e.g., Bendigo Creek, Shepherds Creek) or intermittent (e.g., Jean Creek) with ephemeral flow along smaller tributaries, at lower elevations and to the northwest of the Project area (Waterways, 2024). Streams can go to ground seasonally or consistently across reaches as a function of valley alluvium depths, local groundwater, and upstream flow (e3 Scientific, 2003). A hydrogeologic investigation in 2021 by Landpro Limited established that Bendigo Creek loses all of its flow into the ground following creek flow passing from schist into alluvium. It is inferred that the Bendigo Aquifer receives any net creek flow from Bendigo Creek after irrigation off-take and evapotranspiration (KSL, 2024a).

If/when streams do persist and flow onto the Bendigo Terrace, it is expected that they will experience transmission losses and go to ground, recharging local groundwater given the depth to terrace groundwater and coarse subsurface materials. Surface water flow is typically only intermittent across the valley with surface flows potentially reaching the Lindis and Clutha Rivers and Lake Dunstan approximately 5 kilometres to the north-west only during large events.

3.5 Hydrogeology

The following sections describe the regional aquifer systems and groundwater use associated with the Project area.

3.5.1 Aquifer Systems

The following description of the aquifer systems has been adapted from KSL (2024a)

Groundwater in the Bendigo district has two overarching domains:

- Alluvium or outwash sediments, generally coarse sandy gravels, and
- Saturated consolidated rocks such as schist basement.

Alluvium and voluminous outwash gravel deposits are concentrated within the valley systems such as the Lindis Valley and Upper Clutha Valley. The alluvium and outwash gravel deposits have high permeability and porosity, allowing the conveyance of copious quantities of groundwater through the deposits. Three such deposits are of note in the Project area: Lindus alluvium, Bendigo Creek alluvium, and Bendigo outwash.

Post-glacial outwash associated with the Hāwea and Albert Town glacial advances (and the advances' collapse) has accumulated between the Clutha River / Mata Au and the terrace riser of the Bendigo Terrace. The higher elevation (340 mAMSL) Bendigo Terrace is correlated with the Lindis Glacial Advance and the upper surfaces are generally separated by 80 m vertical between the Bendigo and Hāwea - Albert Town outwash deposits. The Hāwea and Albert Town outwash gravel deposits host the Bendigo Aquifer with a roughly triangular outline delineated by Bendigo Loop Road and the Clutha River. The Bendigo Aquifer has a measured mean depth of 33 m, and a mean depth to the water table of 12 m. Approximately 30 production bores are scattered across the surface of the Bendigo Aquifer. The Bendigo Aquifer has some of the highest well yields of aquifers in Otago Regional, up to 110 L/s. The water table is less volatile than the land surface across the aquifer with the water table elevation ranging between 195 mAMSL to 201 mAMSL in the core of the aquifer.

While there is appreciable passage of water through the fractured schist rock basement due to their wide and pervasive distribution across Central Otago, much of the potential groundwater recharge of excess precipitation is refused at the soil/regolith interface due to the generally low permeability of the fractured rock and feeds surface stream flow instead. Groundwater from this aquifer exhibits incidental emergence from rock fracture as diffuse seepage, spring flow and base flow in surface water courses. The fractured schist rock groundwater systems have had the depth to water measured in 80 separate locations across the RAS, CIT, and SRX gold deposits zones. The depth to water exhibits depths up to 42 m directly beneath steep ridges and tends to rise to near land surface at slope bottoms. Some flowing artesian pressures were also encountered, suggesting compartmentalisation or proximity to a groundwater seepage zone. The water table varies vertically across hundreds of metres of elevation in the Dunstan Range including within the Shepherds Creek and Bendigo Creek catchments. Overall, the water table tends to follow the land surface across areas of sharply undulating terrain. Groundwater

transmission rates in the schist basement are considered to be low, especially within the intact parts of the schist basement rocks. There are few signs of surface water being significantly lost to groundwater nor making discrete gains from groundwater.

3.5.2 Groundwater Use

There has been substantial irrigation bore development of groundwater aquifers in the Hawea and Albert Town Advance gravel aquifers in the Bendigo – Tarras area with registered wells located at a distance of at least 1 km to the northwest of the Project area (Figure 7). Despite this only a single permanent ORC monitoring bore has been installed along the northern end of Bendigo Loop Road. No effective monitoring of Lindis alluvial groundwater system has been undertaken by ORC to date (KSL, 2024a).

3.6 Flora and Fauna

Several baseline ecology investigations have been undertaken in the Project area and investigations remain on-going. The following summary details the understanding of flora and fauna in the project area based on field investigations completed prior to 2025.

3.6.1 Vegetation and Ecology

The vegetation cover and ecology of the site varies considerably with altitude. As described by Central Environmental Services (2021):

- The lower altitudes, near the CIT mine, exhibit drier environmental conditions with depleted sunny aspects and moderately dense, scrub-covered shaded aspects and gullies on Bendigo Station. Further north onto Ardgour Station, the sunny aspects are severely rabbit-affected with considerable bare ground, extensive scab-weed and heavily browsed grasses and herbs;
- The mid-altitudes, around RAS and SRX, exhibit mixed short tussock and over-sown and top-dressed (OSTD) grassland (silver and fescue tussock, cocksfoot and clover) with sporadic scrub cover. North of the ridge and dipping down into Shepherds Creek/Ardgour Station most riparian areas have good scrub cover, phasing into depleted pastoral scabweed on exposed sunny aspects; and
- The higher elevations (900 mRL to 1,000 mRL), exhibit more typical sub-alpine vegetation with hawkweed-infested tussock grassland and taramea herbfield interspersed with low-growing matagouri scrub interspersed with scented tree-daisy, occasional mingimingi and kowhai.

The vegetation comprises a mixture of indigenous and introduced species resulting from a history of low input pastoral management and is ecologically quite typical of similar hill terrain throughout Central Otago. The upper section of the Rise and Shine and Shepherds Creek catchments were considered to be of average-good ecological and conservation value but is reduced on the depleted soils of the lower sunny slopes.

Few of the identified indigenous grasses and herbs that comprise much of the vegetation in the locality are known to be rare or under any significant threat locally, regionally or nationally. Plant species that have been confirmed to be present at the site that are referenced in the NZ Plant Conservation Network include:

- *Kunzea ericoides* (kanuka), *Kunzea robusta* (Rawirinui), *Kunzea serotina* (Makahikatoa), and *mysosotis brevis* (tiny forget-me-not) are listed as "Threatened – Nationally Vulnerable" and have been confirmed within the Project area along with several individual kowhai (not threatened but rare in this locality).
- Over 20 plant species listed as "At Risk – Declining" are confirmed to be present within the Project area. These include various species of Bidibid/piripiri (*Acaena buchananii*), sedge (*Carex sp.*), broom and mimiki (*Carmichaelia sp., Colobanthus, and Coprosma sp.),* scabweed (*Raoulia parkii sp.*), celadon mat daisy (*Rytidosperma buchananii, Styphelia nana*), thick-leaved mahoe (*Melicytus aff. Crassifolius, Olearia lineata, Pimelea aridula aridula)* and Matagouri / tamatakuru (*Discaria toumatou, Hypericum involutum*).
- *R. australis* and *R. parkii* are currently listed as "At Risk – Declining". Both are widespread in the Central Otago hill country;
- *Anthosachne (syn Elymus) aprica* (blue wheatgrass) is still listed as uncommon but is known to be quite widespread locally;
- *Carmichaelia petriei* (Petrie's broom) and *Pimelea aridula* (desert pimelea) are mainly present at the CIT and RAS and are largely sited away from areas of future disturbance; and
- Indigenous scrubs like *Melicytus alpina* (porcupine scrub), *Olearia odorata* (scented tree-daisy) and *Coprosma propinqua* (mingimingi) populations are at risk of decline in this region.

3.6.2 Terrestrial Ecology

As part of the preliminary assessment of ecological effects undertaken by Alliance Ecology (2025), a desktop study and field investigation were undertaken to determine habitat quality/value and the presence or likely presence of nationally 'Threatened', 'At Risk' or otherwise notable species for a range of terrestrial species including long-tailed bats, terrestrial birds, lizards, terrestrial invertebrates, and mammalian pests.

Several indigenous habitats and protected wildlife species were confirmed to be present in the Project area. These included:

- Avifauna including the Karearea (New Zealand falcon, *Falco novaeseelandiae*), which is listed as Nationally 'Threatened' – vulnerable, and Pihoiloi (New Zealand pipit, *Anthus novaeseelandiae*), which is listed as At Risk – Declining;
- Lizards including the Southern grass skink (*Oligosoma polychroma*) and Kawarrau gecko (*Woodworthia Cromwell*) which are nationally and regionally At Risk – Declining and the McCann's Skink (*Oligosoma maccanni*) which is Not Threatened;
- Terrestrial invertebrates including several moths (Lepidoptera - *Pseudocoremia cineracia*, *Ichneutica toroneura, Ichneutica Barbara*, and *Asaphodes recta*) which range from Nationally Threatened – vulnerable to Not Assessed – potentially threatened;
- Seven Coleptera beetle species of which all have been identified as undescribed species – possible new species that are Not Assessed – potentially threatened; and

- Six Arachnid spider species of which four have been identified as undescribed species – possible new species and two are Not Assessed – potentially threatened.

3.6.3 Freshwater Ecology

Baseline freshwater ecological studies have been completed by e3Scientific Ltd (2023) and Waterways (2024) including electric fishing, macroinvertebrate sampling, macrophyte assessment and a water quality sampling event across the RAS, Bendigo and Shepherds Creeks.

Freshwater ecological values are associated with the overall stream habitat and the macroinvertebrates present. Based on the investigation:

- No freshwater fish values were identified within Shepherds Creek and Rise and Shine Creek;
- In lower Bendigo Creek, *koaro galaxiid (spp.)* and brown trout markers were identified in eDNA sampling indicating fish are present within the wider Bendigo catchment but not within the RAS sub-catchment;
- Macroinvertebrate samples varied in community health and diversity, with water quality classifications ranging from “good” to “poor” within each stream suggesting a wide range of water quality and habitat conditions based on localised influences such as flow, stock access, and substrate;
- Macrophyte species observed across all sites were common, with the invasive *Lagarosiphon major* found present throughout the lower reaches of both Shepherds and Bendigo Creek catchments; and
- No Threatened or At-Risk freshwater species were identified during the surveys. *Koaro* is classified as a declining fish species.

Based on the survey findings, streams are considered ecologically integral freshwater resources and support the ecology of the area, including both terrestrial and in-water flora and fauna.

3.6.4 Stream State Assessment

Waterways (2024) undertook an assessment of stream state associated with channel modifications, and stock access and damage to physical habitat using hoof damage and cattle faeces along stream edges as a crude guide to impact.

Stream condition mapping noted channel modifications in Shepherd Creek, Rise and Shine Creek and the un-named Lindis River tributaries. In Shepherd Creek there is an unlined pond. The pond dam wall is partially broken, and the water impounded in the pond is limited. Upstream of the pond there is the stock water take point and occasional farm track crossings. Rise and Shine Creek appears to be heavily modified. There is a small pond downstream of the Thomson Gorge Road. Upstream of this the stream flows on a broad valley floor that is at least partially created by sediment deposition from historic gold mining activity. In this area there are water race channels along the valley edge and small dam structures extending across the valley floor and areas where the stream channel has been straightened or modified to flow through old dam structures.

There is no stock exclusion fencing in the Shepherd Creek and Rise and Shine Creek catchments. Shepherd Creek had nearly continuous hoof damage to varying degrees along its full length. In Jean Creek cattle and sheep damage was present in all perennial and intermittent flow areas. The single

spring found was heavily damaged by stock. Stock were also using the dry/near dry stream channel as a pathway to move under the matagouri grey scrub. Rise and Shine Creek had low to moderate levels of stock impact in the upper reaches. Grazing (during the mapping period) was mainly sheep in the intermittent and ephemeral upper reaches. A fence line part way down the valley separated the upper reach area of lower impact from a higher impact area that extended downstream past the Rise and Shine pond. The cattle damage extended upslope along the small tributaries and included some localised areas of high damage associated with cattle resting areas and at the small springs. The wetland valley floor was less intensively impacted as cattle did not appear to graze the wetland area as intensively as the drier pasture grass hillslopes.

3.7 Heritage

A baseline survey of archaeological sites within the Project area has been undertaken (New Zealand Heritage Properties Ltd (NZHPL), 2019) using a combination of LiDAR imagery and historical photographs in tandem with other historical documents, previous archaeological investigations, and several site-specific archaeologic surveys to establish a detailed archaeological map for the site. A total of 59 archaeological sites (Figure 8) were identified within the archaeological survey area (although others may be present) and include:

- Historic – Domestic: Stone Huts (21 features);
- Mining – Gold: Prospecting pits, water races, mullock piles, tailings and dams, sluices areas, mine adits, turbines and batteries, alluvial workings (19 features/sites);
- Timber Milling: Terraces and Dam (4 features);
- Agricultural/Pastoral: Stone structures, stockyards and enclosures (3 features);
- Transport/Communication: historic roads and tracks (3 features);
- Unclassified: European midden (1), chimney and mineshaft (2); and
- Industrial: Forge (1 feature).

Table 5 presents summary of the features located within the Project area that may reflect a potential source of historic contamination. The locations of these features are presented in Figure 8.

Table 5: Heritage features that represent a potential source of historic contamination (NZHPL, 2019).

FEATURE ID	SITE TYPE	SITE DESCRIPTION	NZTM COORDINATES
G41/242	Mining – Gold	Clearwater Creek – alluvial gold working including stacked tailings 2m long by 500 mm high	E1316429, N5018239
G41/251	Mining – Gold	Come-in-Time Battery – 10-stamper battery, two adits, mullock, track, wall, and possible ore bin	E1316750, N5017894
G41/252	Mining – Gold	Eureka Mine and Battery – mine, battery, water race	E1316598, N5017711
G41/253	Mining – Gold	Alta Mine and battery – battery (mortar box) and adit linked by cutting to return wheel.	E1316487, N5017477
G41/264	Mining – Gold	Gold workings, water race, dam, adit, breastwork, tailings, terrace, and sluice faces	E1319112, N5015622
G41/269	Mining – Gold	Dam 10m wide	E1319033, N5015744

FEATURE ID	SITE TYPE	SITE DESCRIPTION	NZTM COORDINATES
G41/277	Mining – Gold	Rise and Shine Mine and Battery – Mine and battery site, adits, sluicing face, spoil, machine foundations, dam, stone faced terrace (possible dam)	E1317748, N5016974
G41/604	Mining – Gold	Turbine and battery	E1316877, N5018231
G41/604	Mining – Gold	Mine	E1316937, N5018011
G41/635	Mining – Gold	Collapsed schist hut with large standing chimney, built on slope of tributary to Thomsons Creek	E1321477, N5014039
G41/636	Mining – Gold	Gold mining tailing field along Thomsons Creek from Thomson Gorge Road	E1320774, N5014188
G41/669	Mining – Gold	Gold mine workings – sluiced area	E1319468, N5015649
G41/670	Mining – Gold	Tailings	E1318278, N5016214
G41/671	Mining – Gold	Dam	E1316650, N5017223
G41/672	Mining – Gold	Mullock Pile	E1316466, N5017988
G41/673	Mining – Gold	Water Race	E1317092, N5016614
G41/675	Mining – Gold	Prospecting Pit	E1321568, N5014033
G41/676	Mining – Gold	Prospecting Pit	E1321010, N5014087
G41/677	Mining – Gold	Water Race	E1317965, N5014354

The majority of the sites are associated with the intensive history of mining in the area although some huts, enclosures and transport features may be associated with pastoral use and mustering. Only one site within the survey area may be associated with Māori activity, namely a large pit previously identified as a possible umu. The assessed archaeological values indicate that there are a large number of medium and low value sites ranging from hut sites to expansive water races. Higher value sites include the larger sites recording battery and mines and a couple more prominent hut sites. Activities that risk disturbance of archaeological sites should consider their value and be undertaken under archaeological authority in accordance with Section 44 of the heritage New Zealand Pouhere Taonga.

4 SITE HISTORY

An evaluation of the site history has been undertaken through a review of the following:

- Literature review of the mining history in the Otago Valley;
- Historical aerial photo review (1950s and 1980s); and
- Review of previous relevant site investigation reports.

4.1 Iwi History

The Central Otago area was accessed by a network of ara tawhito (travel routes) that connected the coastal settlements with the inland lakes, Te Koroka (Dart River), and with Tai Poutini (West Coast). The Mata-au (Clutha River) was part of a mahinga kai trail that led inland and was used by Otago hapu including Kati Kuri, Ngai Ruahikihiki and Ngati Tuahuriri. The river was used as a highway to the interior, for transport of pounamu and provided many resources to sustain travellers.

Matakanui is the Māori name for the Dunstan Mountains. The people came from Moeraki to Makarora in the spring and remained for the summer catching eels and drying them in the winter. When iwi returned home, they floated down the Lake and Mata-au (Clutha River to Lindis on koradi rafts which they abandoned and made a short cut across the ranges, by what is since known as the Māori Pass (Thomson Pass in the Dunstan Range) (Aukaha, 2018).

There is no record of permanent Māori occupation within the Project area but a route that passed over Thomsons Saddle was used to provide access between seasonal camps at Moeraki and the inland lakes (NZHPL, 2019).

4.2 Pastoral Occupation

The following account of colonial pastoral occupation within the Project area is summarised from information provided by NZHPL (2019).

Pastoral occupation of the Project area first commenced in 1858. Run 223, which is known today as Matakanui Station, covered the area southeast of Thompson's saddle. Run 223 was operated by five different entities prior to 1914. The homestead for the run lies beyond the pastoral lease itself in the Manuherikia Valley.

On the other side of Thompson's Saddle, Run 238 (also known as the Morven Hills Station) was first granted in 1858 and extended from the Lindis Pass in the north to Cromwell Gorge in the south. A stone woolshed and farmstead were constructed in the Lindis Valley, whilst a secondary woolshed and associated stone buildings were constructed of corrugated iron off Ardgour Road, south of Tarras. In 1910 this run was subdivided into several smaller stations including Bendigo and Ardgour which lie within the current Project area.

It is noted that from the 1840's sheep-dipping to manage external parasites was required by law. From the 1840's through to the 1980's, arsenic was commonly used for parasite treatment and is recognised as a persistent chemical that has the potential to be present in elevated concentrations in soils near woolsheds of this era (MfE, 2006). Additionally, from 1945 to 1961, persistent organochlorine pesticides (OCPs) including DDT, lindane, dieldrin and aldrin were commonly used.

Pastoral land use has continued uninterrupted to current day with little change in surface features evident in the Project area on the 1950 and 1980 aerial photos.

4.3 Mining in Project Area – 1860s to 1940s

Mining activities commenced within and around the Project area from the mid-1860s. There are six main areas in which mining claims were focused: Rise and Shine, Alta, Eureka, Come-in-Time, Shepherds Creek, and Thomsons Creek (NZHPL, 2019). Multiple mining syndicates and companies have mined the various gold bearing reefs constructing new, and often recycling older, mines, batteries, water races and tramways from the 1860s through until the 1940s, the locations of which are presented in Figure 9.

Two mining methods have predominated in the Project area over the past century – alluvial sluicing and hard rock mining with battery stamping:

- Alluvial sluicing was a method used to separate the gold from alluvium whereby water was used to wash away stream beds or banks to expose alluvial gravels. These were then flushed through sluice boxes to separate any gold. Worked alluvium (the gravel that remained after this process) was typically returned to the sluiced area or deposited on surrounding ground; and
- Mining from the quartz reefs was undertaken by sinking a shaft or adit to access the gold-rich ore zones. The mined hard rock was carted by road or transported via tramway to the stamper battery for crushing. After the gold-bearing rock has been crushed, a mixture of water, pulverized ore, and any valuable minerals is passed over a series of tables or screens. The heavy minerals (like gold) settle to the bottom and are collected for further processing, while the lighter waste material is washed away.

The following account of mining activities within the Project area is summarised from information provided by NZHPL (2019).

4.3.1 Rise and Shine

The Rise and Shine Valley was developed for sluicing from 1864, when work began to construct a race sourcing water from the Tipperary Creek headwaters over Thomsons Saddle. Sluice-mining commenced in the Bendigo Creek following completion of the race over 11 miles in 1865. The Rise and Shine race held 12 sluice heads of water, and two areas of the Rise and Shine claim were worked with sluicing guns. By 1871, a scarcity of water led to a transition to box sluicing and subsequent construction of a dam in the lowest reaches of the claim by 1873. Prospecting shafts were sunk in 1871 on either end of their alluvial ground which found stone that was ‘very hard, but gold visible throughout’ that was not further developed. The Rise and Shine gold sluicing was the longest running in the Otago goldfields, lasting for a total of 35 years (Carpenter, 2013).

In 1888 a new venture commenced in the Rise and Shine Valley as a result of discovery of a new reef and established a shaft, adit and quarry within their claim. The Jubilee Company constructed a waterwheel to power a battery that operated for less than one year due to untenable returns. The company shifted its operation to a more favourable reef and shifted and refurbished a battery from Thomson Gorge; this mine was abandoned in the early 1890s.

Operations in the Rise and Shine Valley recommenced in 1932 with the reopening of the Eureka mine by the Bendigo Rise and Shine Company. Numerous workers huts and housing were established in

the valley but with limited funds only built and installed a crusher, ball mill, berdan pan, Wilfley table and a 10-horsepower motor. Eventually the company also built an inclined tram line and installed the region's first roasting plant at Bendigo. Operations ceased in 1937 due to insufficient investment to gain profitable returns from the mine. In the same year the Shine Again Gold Mining Company began mining from the Rise and Shine reefs; positive gold returns led to their establishment of a 5-head quartz battery in 1938 and the construction of a new tramline in the lower reaches of the Rise and Shine valley between the mine and battery. Shine Again closed in 1942 due to declining ore quality.

4.3.2 The Alta and the Eureka

The Alta reef, situated between Bendigo and Rise and Shine Creeks was discovered in 1869. The Rise and Shine Company rented their tailwater to the new claim in 1870 and the Alta shareholder quickly purchased a new 10-stamp battery which was established on the ridgeline southwest of the Clearwater Creek, sunk a shaft, and widened the bridle track to facilitate the carting of ore to the Aurora public battery. A double-lined tramway was also constructed that ran from the main Alta adit to the battery enabling 25 tons of stone per day to be moved. Limited water yields along the Alta water race led to the closure of the mine in 1872 and the plant was sold in its entirety to the Eureka Syndicate in 1875. The Alta mine was opened a number of times for short periods between 1897 and 1913 and the Jubilee battery was operated near the Alta water race between 1903 and 1905; new adits were established however with lower gold yields mining focused on the extraction of scheelite and quartz.

The Eureka Syndicate established their mine in 1874, on their claim near the Rise and Shine adit, and established a mile-long tramway to the Alta battery. They further restored the Alta race and started a new adit. The mine and operations only ran until 1876, and the battery was shifted to Come-in-Time in 1880.

4.3.3 Come-In-Time

In mid-1880, another auriferous reef was discovered along the ridgeline between the Rise and Shine and Shepherds Creek which resulted in the establishment of the Come-in-Time mine and the relocation of the Eureka Battery to the other side of the valley. The tailwater for the Rise and Shine Company was redirected from the Alta and Eureka rack and fed the Come-in-Time's water wheel and battery but cutting a new race into the north face of the valley. Another small race was cut from Shepherds Creek to provide clean water for their tables. By 1881 works at Come-in-Time ceased and the battery was sold and moved to another mining area in the Otago region.

Come-in-Time reopened from 1908, and a new battery was moved into the valley. The operations closed due to poor gold returns in 1910. An attempt to mine an outcrop on the Shepherds Creek side of the Come-in-Time claim in 1914 was also unsuccessful and closed the next year. A final venture to establish the Come-in-Time mine was unsuccessfully instigated in 1933 and attempts to sell the Come-in-Time battery were unsuccessful; as a result, the dilapidated twentieth century battery still stands at Come-in-Time today.

4.3.4 Shepherds Creek

Limited information is available regarding mining up and down Shepherds Creek. The Koh-i-noor Syndicate worked in the Shepherds Creek valley from early 1865, successfully using box sluicing to mine the area. In 1866 they constructed a large dam to collect water, and they turned to ground-sluicing. A race was constructed from immediately beneath the outfall of the Alta Company's quartz mill and over the Rise and Shine spur to sluice the low-lying spurs between Shepherds Creek and

Bendigo. Other groups may also have been working this area between 1869 and 1871. Between 1872 and 1874 mining in this area gradually declined and ceased.

4.3.5 Thomsons Creek

Various gullies in Thomsons Creek appear to have been mined as early as 1863, although it is not known who mined the area beyond claims in early mining records noting 200 miners and working parties scattered through the various gullies. Residual gold mining tailings remain present along Thomsons Creek from Thomson Gorge Road.

4.3.6 Registered Abandoned Mines

Three abandoned, Crown mines are registered by NZPM on their NZ Mine Plans Database (accessed 24 July 2024) within the Project area as detailed in Table 6.

Table 6: Summary of registered abandoned mines.

SITE ID/ MINE NAME	OPERATOR NAME	OPERATION TYPE	COMMODITY	EASTING (NZTM2000)	NORTHING (NZTM2000)
O10222 – Cromwell Mine	The Cromwell Gold Company Ltd	Underground	Gold	1313529.112	5017300.952
O10228 – Bendigo	New Bendigo Gold Mining Company Ltd	Underground	Gold	1314856.763	5016778.193
O10601 – Rise and Shine	Bendigo Rise and Shine Gold Mining Company Ltd	Underground	Gold	1318759.990	5016181.155

4.4 Mining from 1980's

There have been several modern mining explorations over the Bendigo-Ophir Project area since the 1980s (NZHPL, 2019). Recent exploration work has focused on the Bendigo and RAS goldfields which have been recognised as similar to the successful Macraes gold mining deposit. Both Bendigo-Ophir and Macraes have gold concentrations and prospects within bedrock metamorphic schist with exploration concentrated along the known shear zones. These prospects occur in multiple north-west and south-east trending shear zones that extend intermittently for 30 km in strike length (NZHPL, 2019).

The exploration works have involved surface or underground data collection using soil, rock, stream-sediment sampling, pitting, trenching and drilling. This has been done using both hand (minimum impact activities) and mechanical drilling methods.

5 SITE CONDITION AND SURROUNDING ENVIRONMENT

A site walkover was undertaken of accessible areas on 26 August 2024 to evaluate the site condition and surrounding environment. Site photographs are presented in Appendix C (it is noted that due to limited reception, photographs were unable to be geospatially located). The following observations pertaining to the site condition and surrounding environment were made during the site walkover.

- Evidence of the historic gold sluicing and mining activities is prevalent within Bendigo Creek in Thompson's Gorge at the historic CIT, RAS, and SRX operations. This includes:
    - The presence of former buildings and gravelly wash (Photo C1) within the historic Bendigo sluicing area, located beyond the northwestern extent of the Project area;
    - CIT Battery, associated adits, and mine workings are located at the downstream end of the Rise and Shine Creek and Clearwater Creek (Photos C1 to C5). It is located on the southern extent of the Project area and borders the Department of Conservation Land that holds the Alta Battery;
    - The former RAS battery area is located further upstream along Rise and Shine Creek and includes evidence of the battery foundations, adits, mullock piles, and evidence of tailings and workings scattered around the RAS battery and upstream beside the Rise and Shine Creek. (Photos C6 to C11); and
    - The former SRX mining area, located still further upstream along Rise and Shine Creek, is represented by sluicing faces and sluicing debris (Photos C14 and C14). A water storage dam was constructed above the sluicing area and is bunded by a rock wall (Photos C15 and C16). The dam was constructed to hold water transported from Thomsons Creek via the water race overnight to supply the next day's sluicing. Tailings have been transported over time into the low-lying areas below Srex (Photo C17).
- Shepherds Creek, Jean Creek, Rise and Shine Creek and Bendigo Creek exhibited both dry and flowing segments;
- The RAS open pit will be excavated from the top of the hill between the Rise and Shine Creek and Shepherds Creek with future mining infrastructure proposed to be developed within Shepherds Valley. The terrain is steep and rocky but well-vegetated (Photos C18 to C24); and
- The pastoral use of the land for grazing was evident in the low-lying valley to the northwest of the Project area. This included a homestead and a water feature that is gravity fed by surface water from Bendigo Creek within the pastoral property, and a stock water dam supplied by bores. Cattle were observed to be present within the Project area, even at higher elevations.

6 PREVIOUS SITE INVESTIGATIONS

Several investigations have been conducted as part of the assessment of environmental effects of the project to characterise the existing geochemical conditions and potential future environmental risks associated with soil/rock, surface water and groundwater at the site. The key findings of these studies are detailed in the following sections.

6.1.1 Assessment Criteria

Table 7 details the environmental assessment criteria relevant to the Project and the rationale for adopting the criteria. These criteria are considered suitable as a preliminary screening tool for any future assessment of environmental risks associated with soil and water at the site.

Table 7: Relevant assessment criteria for the BOGP.

MEDIA	ASSESSMENT CRITERIA	REFERENCE NAME	APPLICABILITY
Soil	Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health (MfE, 2011) – guidelines for the protection of human health in an industrial land use scenario.	NES Soil-Industrial	Applicable for the assessment of risks to human health for commercial/industrial outdoor workers
	National Environmental Protection (Assessment of Site Contamination) Measure 1999 (NEPC, 2013) – human health investigation levels for an industrial land use scenario.	HIL-F	Adopted for metals for which there are no NES Soil guideline values
	Landcare Research New Zealand Ltd and Hawke's Bay Regional Council (2023) Determining Background Soil Concentrations of Trace Elements across New Zealand	Eco-SGV	Applicable for the assessment of risks to ecosystems in a range of land use settings.
	Site-specific soil background criteria may need to be derived for the site to assess potential ecological risks.	Background	Applicable for the risk to ecological receptors in consideration of the range of habitat and species diversity present pre-mining.
Rock	Global abundance index (GAI) (Förstner et al, 1993; INAP 2009).	GAI	Used for the preliminary screening assessment of enrichment of metals in rocks for acid and metalliferous drainage (AMD) risk assessment.
Surface Water	Australia and New Zealand Guidelines (ANZG) for Fresh and Marine Water Quality – 95% default guideline values (DGV) (ANZG, 2018)	95% ANZG DGV	Applicable for the assessment of potential impacts to the freshwater ecosystem in the Project area. 95% DGV is conservatively adopted in the absence of a site-specific catchment value assessment (in progress).
	Resource Management (National Environmental Standards for Freshwater) Regulations (MfE, 2020	NES Freshwater	Concentrations from the NPS have been adopted for nitrate as nitrogen (NO_3-N) and ammoniacal nitrogen (Amm-N)
	ANZECC Livestock Drinking Water guidelines (2023).	LDWG	Adopted for sulfate (SO_4) for the protection of livestock.
Groundwater	Australia and New Zealand Guidelines (ANZG) for Fresh and Marine Water Quality – 95% default guideline values (DGV) (ANZG, 2018)	95% ANZG DGV	Applicable for the assessment of potential impacts to the freshwater ecosystem from dewater effluent that may be discharged to the environment. 95% DGV is

MEDIA	ASSESSMENT CRITERIA	REFERENCE NAME	APPLICABILITY
			conservatively adopted in the absence of a site-specific catchment value assessment (in progress).
	Resource Management (National Environmental Standards for Freshwater) Regulations (MfE, 2020)	NES Freshwater	Concentrations from the NPS have been adopted for nitrate as nitrogen (NO_3-N) and ammoniacal nitrogen (Amm-N)
	ANZECC Livestock Drinking Water guidelines (2023)	LDWG	Adopted for sulfate (SO_4) for the protection of livestock.

A metal ecotoxicity quotient (MEQ) will also be used to identify PCOC for surface water and groundwater that may be elevated with respect to water quality guidelines (Weber and Olds, 2016). The MEQ value for a PCOC is determined by dividing the measured maximum concentration by the adopted assessment criteria. MEQ values greater than 1 indicate parameters that exceed the relevant assessment criteria. Conversely, MEQ values less than 1 are below the relevant assessment criteria. If any PCOC are within 50% of the assessment criteria (i.e., 1≥ MEQ ≥0.5) they are considered potentially elevated and ongoing monitoring is recommended to confirm trends and/or potential hazards. This approach is similar to using 50% of maximum acceptable value (MAV) for drinking water where it is used as a screening level for follow up action (Ministry of Health, 2018).

6.1.2 Geoenvironmental Hazards Assessment

An AMD source hazard assessment of materials to be generated and encountered as part of the proposed BOGP mining activities (e.g., waste rock, ore, low grade ore, tailings, and legacy materials) was undertaken by Mine Waste Management (MWM, 2025a) through the assessment of 1,608 samples from the Project area. Analysis included a combination of acid-base accounting (ABA), compositional, mineralogical, and leachate testwork as detailed in Table 8.

Table 8: Summary of the number of sample analysis for geochemical testwork.

PROSPECT/TYPE	ABA	4-ACID	pXRF	LEACHATE	XRD	TOTAL
RAS	377	266	774	9	3	1,426
SRX	0	32	20	0	0	52
SRE	0	15	26	0	0	41
CIT	0	4	32	0	0	36
TSD	0	0	5	0	0	5
QA/QC	11	32	0	0	0	43
Total	388	349	857	9	3	1,603

Key findings of the geochemical analysis and characterisation were:

- Total sulfur ABA data indicate that sulfur ranges from <0.005 wt% to 1.38%, although the average sulfur content is close to 0.094 wt% for waste rock (mixed TZ3, TZ4, and RSSZ) and 0.504 wt% for ore (based on 5 samples from the ABA dataset). This average sulfur content represents a maximum potential acidity (MPA) of 2.9 kg H_2SO_4/t for the waste rock, which is considered low risk for AMD (DFAT, 2016). The average MPA for the ore is 15.4 kg H_2SO_4/t;
- Average sulfur is higher in RSSZ and TZ4 waste rock compared to TZ3, which indicates these materials are a higher priority for management;

- NAG pH varied from 6.1 to 11, suggesting excess acid neutralising capacity (ANC) may be present in the materials. This was supported by the analytical results which reported ANC ranging from 9 kg H_2SO_4/t to 95 kg H_2SO_4/t. Average ANC was highest in the RSSZ (67.5 kg H_2SO_4/t) compared to the TZ3 (36.5 kg H_2SO_4/t) and TZ4 (65.9 kg H_2SO_4/t). The average ANC in the ore (75.3 kg H_2SO_4/t) was higher than in the waste rock (38.5 kg H_2SO_4/t);
- All geologic units (RSSZ, TZ3, and TZ4) and rock types (waste rock and ore) reported a negative net acid producing potential (NAPP) ranging from -91.67 kg H_2SO_4/t (TZ3) to -8.85 (TZ3) with the neutralisation potential ratio (NPR) of RSSZ, TZ3 and TZ4 indicating that all lithologies are non-acid forming (NAF) according to the Price (2009) classification system;
- Geochemical compositional analysis was undertaken on 317 samples for the determination of the concentration of 34 elements using ICP-MS found that arsenic (As), antimony (Sb), and sulfur (S) exhibit a global abundance index (GAI) value equal or greater than 3 (i.e., approximately at least 8 times the average crustal value) suggesting potential enrichment in the RSSZ and TZ4 lithologies;
- A total of 857 samples were tested by pXRF from the three geological units and found that As was consistently enriched in the RSSZ and TZ4 with 97% of samples reporting a GAI ≥ 3; in comparison the TZ3 only exhibited As enrichment in 21% of samples. Limited analysis (total of 15 samples) of antimony (Sb) suggested potential enrichment across all units, noting that Sb has a very low GAI and therefore concentrations above the GAI may not necessarily result in environmental impacts of concern. Other metals including cobalt, molybdenum, lead, and selenium reported limited exceedances of GAI ≥ 3, however, are considered insignificant because concentrations were at or below the limit of reporting (LOR) and therefore unlikely to have reliable concentrations determined through use of the pXRF; and
- Leachate testing using the static precipitation leaching procedure (SPLP) on the waste rock (using a 1:20 solid:liquid ratio) reported pH values between 9.72 and 9.18 and low sulfate (SO_4) concentrations (<1 to 4 mg/L) in the leachate. Metals including aluminium (Al), arsenic (As), and chromium (Cr) were reported at concentrations exceeding the ANZG (2018) 95% default guideline value (DGV) suggesting that they may pose a geoenvironmental hazard in leachate generated from future waste rock and tailings.

Based on the findings of the geoenvironmental hazard assessment. Table 9 summarises the key potential environmental risks for the geologic units associated with the project.

Table 9: Summary of AMD classifications and PCOC in key geologic units for the BOGP.

GEOLOGICAL UNIT	TYPE OF MATERIAL	AMD CLASSIFICATION	PCOC		
			GEOCHEMICAL COMPOSITION (BASED ON GAI [1])	LEACHATE TESTS	OTHER
TZ3	Waste Rock	NAF	As, Co, Sb	-	N-Compounds, SO_4

[1] *Geochemical Abundance Index*

GEOLOGICAL UNIT	TYPE OF MATERIAL	AMD CLASSIFICATION	PCOC		
			GEOCHEMICAL COMPOSITION (BASED ON GAI [1])	LEACHATE TESTS	OTHER
TZ4 & RSSZ	Waste Rock / Ore	NAF	As, S, Sb	Al, As, Cr, Zn	N-Compounds, SO_4
Soils	Soils	-	As	Al, As, Co, Cu, Fe, Zn	-

Note: Red PCOC may not be elevated, but current data suggests it cannot be excluded as a PCOC for the BOGP.

6.1.3 Soil Concentrations

Between 2013 and 2024, MGL undertook various field programs to determine metals concentrations in near surface soils, comprising the analysis of up to 1,589 samples described as loess, topsoil or outcrop, in the various prospect areas including CIT, RAS, SRX, SHE, and Thompson's Saddle (TSD). An additional investigation targeting the upper portion of Shepherd's Creek valley was undertaken in January 2025. Determination of soil concentrations was undertaken using a portable x-ray fluorescence (pXRF) which provided concentrations for a range of analytes (with N≥10) including: Ag, Al, As, Ba, Bi, Br, Ca, Cd, Co, Cr, Cu, Fe, Ge, Hf, Hg, Ir, K, Le, Mg, Mn, Mo, Nb, Nd, Ni, P, Pb, Pr, Pt, Rb, Rh, RS, Sb, Sc, Se, Si, Sr, Te, Th, Ti, U, V, W, Zn, and Zr (refer to Appendix A for chemical names).

For the purpose of this PSI, preliminary analysis of the data has been undertaken with respect to those metals for which the MfE has derived standards for contaminants in soil to protect human health and the environment in an outdoor worker, industrial land use setting (MfE, 2011), namely As, Cd, Cr, Cu, Hg, Pb, and Zn for the purpose of assessing risks to human health during mining operations. Comparison has also been made across the range of Eco-SGVs to assess potential risks to ecosystem at various levels of protection, namely 60% Eco-SGV (industrial landuse setting) which is suitable for assessment of risk during operations, and the 80% Eco-SGV (recreational land use) and 95% Eco-SGV (non-food production land) which may be applicable post-closure.

A summary of the soil data with comparison to these guidelines is provided in Table 10 (CIT, RAS, SRX, SHE, and TSD) and Table 11 (Shepherd's Creek).

Table 10: Summary of soil concentrations (in mg/kg) for As, Cd, Cr, Cu, Hg, Pb and Zn (CIT, RAS, SRX, SHE, and TSD)

DATA STATISTIC	ARSENIC	CADMIUM	TOTAL CHROMIUM	COPPER	MERCURY	LEAD	ZINC
SCS-Industrial	70	1,300	6,300	10,000	4,200	3,300	NA
ECO-SGV (60%)	150	33	660	640	NA	2,500	597
ECO-SGV (80%)	60	12	400	350	NA	900	361
ECO-SGV (95%)	20	1.5	200	135	NA	NA	203
No of Samples	1,607	19	741	1,239	249	1,254	1,255
Minimum	3	13	4	7	3	5	34
Maximum	3,477	46	189	149	21	99	274
Median	16	15	10	21	6	22	87
Mean	37	18	15	22	9	22	90
Exceedances of SCS-Industrial	122	0	0	0	0	0	NA
Exceedances of ECO-SGV Industrial (60%)	47	1	0	0	-	0	0
Exceedances of ECO-SGV Industrial (80%)	156	15	0	0	-	0	0
Exceedances of ECO-SGV Industrial (95%)	596	19	0	1	-	0	4

NA – no applicable guideline

Table 11: Summary of soil concentrations (in mg/kg) for As, Cd, Cr, Cu, Hg, Pb and Zn (Shepherd's Creek)

DATA STATISTIC	ARSENIC	CADMIUM	TOTAL CHROMIUM	COPPER	MERCURY	LEAD	ZINC
SCS-Industrial	70	1,300	6,300	10,000	4,200	3,300	NA
ECO-SGV (60%)	150	33	660	640	NA	2,500	597
ECO-SGV (80%)	60	12	400	350	NA	900	361
ECO-SGV (95%)	20	1.5	200	135	NA	NA	203
No of Samples	72	4	72	72	7	72	72
Minimum	5	13	5	11	13	7	61

DATA STATISTIC	ARSENIC	CADMIUM	TOTAL CHROMIUM	COPPER	MERCURY	LEAD	ZINC
Maximum	38	15	37	57	21	48	143
Median	12	15	21	26	18	18	95
Mean	13	15	20	27	18	19	96
Exceedances of SCS-Industrial	0	0	0	0	0	0	NA
Exceedances of ECO-SGV Industrial (60%)	0	0	0	0	-	0	0
Exceedances of ECO-SGV Industrial (80%)	0	1	0	0	-	0	0
Exceedances of ECO-SGV Industrial (95%)	5	1	0	0	-	0	0

NA – no applicable guideline

The results of the preliminary investigation indicate that Cr, Cu, Hg Pb and Zn are predominantly not present in the shallow soils at concentrations that would not be considered to pose a risk to human health or ecosystem health in an industrial setting.

Arsenic (As) concentrations are above the SCS-Industrial guideline of 70 mg/kg in 7.7% of soils (Figure 10) as well as the 60%, 80% and 95% Eco-SGV guidelines. Arsenic (As) is a main pathfinder element for gold mineralisation and therefore is expected to be naturally present in elevated concentrations within the Project area, however, elevated As concentrations may also be present due to the historic alluvial mining practices. The elevated As concentrations above the SCS-Industrial guideline suggests that a management plan will be required to address potential risks to site workers. Further assessment of the data, which is beyond the scope of this PSI, could be warranted to differentiate between endemic and anthropogenic arsenic concentrations.

Cadmium (Cd) concentrations were reported above the Eco-SGV (95%) threshold for non-productive land use and Eco-SGV 80% but did not exceed the relevant human health criteria or the industrial Eco-SGV threshold (60%). Cadmium (Cd) is not typically associated with gold mineralisation within the Project area and therefore elevated cadmium concentrations in soils may be related to historical mining activity, where disturbance and oxidation of mineralised rock and mine waste may have mobilised trace metals into the surrounding environment. Although Cd poses less direct risk to human health via soil contact compared to As, Cd can pose long term ecological risks through uptake by plants and aquatic organisms and can be transported via leaching into surface or groundwater systems and may warrant management during operations to meet post-closure land use objectives.

Further evaluation of the soil dataset is recommended to differentiate between endemic and anthropogenic metals concentrations in the Rise and Shine valley, and if required, derive appropriate ecological background metals concentrations for the Project area. Given the duration of time that has passed since historic mining activities, it is possible that ecological populations within the catchments have adapted to historic mining impacts. Notwithstanding, deriving background metals concentrations in disturbed and undisturbed areas of the Project area will assist in the development of appropriate monitoring requirements and trigger values to assess potential effects on ecological receptors within the Project area during operations.

6.1.4 Surface Water Quality

As reported in the baseline water quality study report (MWM, 2025b), surface water quality data have been variably collected from 11 sites with the Project area between September 2022 and August 2024 as summarised in Table 12 and depicted in (Figure 4).

Table 12: Water quality sampling sites.

DOMAINS	SITE ID	EASTING	NORTHING	NUMBER OF SAMPLES	DESCRIPTION
Shepherds Creek	SC01	1315697	5019155	25	Shepherds Creek at Bendigo Terrace. Downstream monitoring site.
	SC03	1319246	5017638	21	Shepherds Creek below Rise and Shine. Just upstream from Jean Creek confluence.
	JC01	1319122	5017651	6	An intermittent tributary to Shepherds Creek.
Bendigo Creek	RSA1	1317903	5016873	25	Rise and Shine Adit. Historic workings.
	RS01	1317713	5016973	26	Immediately downstream of the Rise and Shine workings.
	RS02	1318918	5016027	26	Rise and Shine Creek above Rise and Shine workings. Upstream baseline.
	RS03	1316585	5017993	25	Rise and Shine Creek below Come-in-Time.
	RS04	1319364	5015799	14	Rise and Shine Creek above Rise and Shine workings. Upstream baseline.
	RSB	1317482	5016985	2	Water in Rise and Shine Creek at the historic Rise and Shine Battery.
	CC01	1317569	5016455	16	Water quality monitoring site in Clearwater Creek.
	LBA	1312968	5018094	18	Lower Bendigo Adit – historical working.

Source: E3 (2023) and Matakanui.

Surface water quality was analysed for a range of analytes as detailed in Table 13. It is noted that not all sites had all analyses completed.

Table 13: Surface water quality analysis suite.

MEASUREMENT TYPE		PARAMETER
Field		Flow (spot gauging), pH, redox potential (ORP), electrical conductivity (EC), temperature, turbidity, dissolved oxygen (DO)
Lab	Physical Parameters	pH, electrical conductivity (EC), total hardness, total dissolved solids (TDS), total suspended solids (TSS), turbidity
	Major Anions	Alkalinity – total, acidity[1], chloride (Cl), fluoride (F), bromide (Br), sulfate (SO_4), sum of anions
	Nutrients and Organics	Nitrate as nitrogen (NO_3-N), nitrite as nitrogen (NO_2-N) ammoniacal nitrogen (Amm-N), total nitrogen (TN), total phosphorus (TP), total cyanide (CN), dissolved silicon (DSi), silicon (Si), total organic carbon (TOC), dissolved organic carbon (DOC), total Kjeldahl nitrogen (TKN), dissolved reactive phosphorus (DRP)
	Total & Dissolved Metals	Aluminium (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), bismuth (Bi), boron (B), bromide (Br), cadmium (Cd), caesium (Cs), calcium (Ca), chromium (Cr), cobalt (Co), copper (Cu), germanium (Ge), iron (Fe), lanthanum (La), lead (Pb), lithium (Li), magnesium (Mg), manganese (Mn), mercury (Hg), molybdenum (Mo), nickel (Ni), phosphorus (P), potassium (K), rubidium (Rb), selenium (Se), sodium (Na), strontium (Sr), sulfur (S), titanium (Ti), thallium (Tl), tin (Sn), uranium (U), vanadium (V), yttrium (Y), zinc (Zn)

1 – Acidity titrations have been completed to pH 4,5,7,8.3.

6.1.4.1 Shepherds Creek Catchment

Based on the preliminary evaluation of the surface water quality data for the Shepherds Creek catchment, the following surface water conditions are present:

- The pH ranged from 5.40 to 8.50 across all Shepherd Creek sites. Surface water in the catchment has predominantly reported alkaline pH conditions;
- The EC ranged from 253 µS/cm to 626 µS/cm and TDS ranged from 120 mg/L to 380 mg/L across all surface water sites, which is indicative of freshwater conditions;
- TSS ranged from 3.00 mg/L to 122.0 mg/L and turbidity ranged from 0.170 NTU to 57.0 NTU indicating generally clear waters;
- Acidity (pH 8.3) concentrations ranged between 1.0 mg $CaCO_3$/L and 12.0 mg $CaCO_3$/L across all Shepherd Creek sites;
- Alkalinity ranged between 2.0 mg $CaCO_3$/L and 285 mg $CaCO_3$/L across all Shepherd Creek sites and indicates there is excess alkalinity in the surface waters compared to acidity;
- Average Fe concentrations were <0.100 mg/L
- SO_4 concentrations were mostly below 100 mg/L but were higher at SC01 compared to SC03, possibly reflecting the presence of mineralisation mid-catchment (e.g., the RAS deposit);
- TN ranged from 0.1 mg/L to 1.4 mg/L and largely comprised TKN. Concentrations of NO_3-N ranged from 0.001 mg/L to 0.040 mg/L.;
- TCN was reported at or below the LOR in all samples (LORs ranged from 0.001 mg/L to 0.005 mg/L);
- TOC ranged from total <0.500 mg/L to 6.30 mg/L;
- Copper (Cu) reported an MEQ>1 at JC01 indicating that the maximum concentrations for the parameter exceeded the DGV;
- Copper (Cu) and Sr reported maximum concentrations resulting in 0.5 ≤ MEQ < 1.0 indicating that a PCOC is potentially elevated but still below the respective DGV;
- Metals including Ag, Cd, Cr, Hg and Tl were analysed with LORs greater than the 95% ANZG DGV therefore calculated MEQ values were elevated and may not reflect actual risks to the environment. Lower LORs will be required for future monitoring to appropriately assess potential environmental risks; and
- All other PCOC had MEQ values <0.50.

The majority of parameters in the Shepherd Creek Catchment exhibited consistent concentrations across the monitoring events. Seasonal concentration fluctuations were observed for Fe, As, and Al.

E3 Scientific (2023) noted that concentrations of nutrients (e.g., NO_3-N and Amm-N) were elevated in Shepherds Creek and may be attributed to the presence of livestock. Similarly, TKN concentrations could be a result of animal waste inputs or rock weathering processes within those watersheds (E3 Scientific, 2023).

6.1.4.2 Bendigo Creek Catchment

Based on the preliminary evaluation of the surface water quality data for the Bendigo Creek catchment, the following surface water conditions are present:

- The pH ranged from 6.60 to 9.30 across all Bendigo Creek Catchment sites indicating slightly acidic to highly alkaline conditions. CC01 reported the lowest average pH (7.08) indicating it is more acidic than other monitoring locations in the catchment area;
- EC ranged from 21.8 µS/cm to 526 µS/cm, which is indicative of freshwater conditions;
- TSS and turbidity concentrations were consistent across all sites except for RS01, which had 1,200 mg/L and 750 NTU respectively;
- Acidity (pH 8.3) concentrations ranged from 1.00 mg $CaCO_3$/L to 53.0 mg $CaCO_3$/L across all Bendigo Creek sites;
- Alkalinity ranged from 7.40 mg $CaCO_3$/L to 242 mg $CaCO_3$/L and indicates there is excess alkalinity in the surface waters in the Bendigo Creek catchment compared to acidity;
- Average Fe concentrations were reported as being <0.1 mg/L, except for RSA1 which had an average Fe concentration of 0.205 mg/L;
- SO_4 concentrations were typically <100 mg/L, except at LBA which represents mine-impacted water;
- TN ranged from 0.047 mg/L to 2.40 mg/L and was predominantly present as TKN, which ranged from 0.1 mg/L to 2.350 mg/L. Concentrations of NO_3-N were considerably lower with a maximum concentration of 0.010 mg/L;
- TCN was reported at or below the LOR in all samples (LORs ranged from 0.001 mg/L to 0.005 mg/L);
- The following PCOC variable reported an MEQ>1 (indicating that the maximum concentrations for the parameter exceeded the DGV) at the monitoring sites: As, Co, Cu, and Fe;
- The following PCOC reported maximum concentrations resulting in 0.5 ≤ MEQ < 1.0 indicating that a PCOC is potentially elevated but still below the respective DGV: Al, As, Cu, Cr, Fe, Sr, and Zn;
- Metals including Ag, Cd, Cr, Hg and Tl were analysed with LORs greater than the 95% ANZG DGV therefore calculated MEQ values were elevated and may not reflect actual risks to the environment. Lower LORs will be required for future monitoring to appropriately assess potential environmental risks;
- One sample from site RSB (Rise and Shine Battery Site within the Rise and Shine Creek) recorded elevated manganese (Mn) of 2.76 mg/L, which is above the proposed water quality compliance limits of 2.5 mg/L. This sample was collected during preliminary fieldwork and involved sampling of the old battery site (MWM, 2024) where the stream vegetation (reeds) was disturbed mobilising a significant amount of Fe precipitates. Subsequent samples of this site were much lower (0.67 mg/L) and involved minor disturbance to the stream vegetation; and
- All other PCOC had MEQ values <0.50.

Due to the limited data, concentration trends for Bendigo Creek were unable to be determined, however concentration fluctuations have been observed for several analytes during the monitoring period.

6.1.5 Groundwater Quality

As reported in the baseline water quality study report (MWM 2025b), groundwater quality data have been collected from five sites with the Project area between September 2022 and August 2024 as summarised in Table 14 and depicted in (Figure 7). Groundwater from all three monitoring well is defined as artesian.

Table 14: Groundwater quality sampling sites.

SITE ID	EASTING	NORTHING	NO. OF SAMPLES	DESCRIPTION
MRC002	1318777	5016051	1	Groundwater from drillhole at the potential processing plant location. Drilled to 46 m.
MDD015	1318096	5017475	18	Drillhole within the potential pit footprint. Drilled to 294.9 m at a dip of -58.62°.
MDD302	1318985	5015814	12	Groundwater from drillhole in Rise and Shine Valley. Drilled to 55 m at a dip of -49.84°.
Base (from water supply)	Not known	Not known	1	At the downstream base. Example of water supply quality.

Source: E3 (2023) and Matakanui.

Groundwater quality was analysed for pH, EC, acidity (to pH 8.3), alkalinity, SO_4, NO_3-N, Amm-N, and metals (Ag, Al, As, B, Cd, Co, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, and Zn). Water quality results were compared to the 95% ANZG DGV and NPS (as applicable). The MEQ was calculated to identify PCOC that may be elevated with respect to water quality guidelines. Based on the evaluation of the groundwater quality the following groundwater conditions are present:

- The pH ranged from 7.7 to 8.7 across all monitoring sites indicating alkaline conditions;
- The EC ranged from 149 µS/cm to 550 µS/cm across all groundwater sites, which is indicative of freshwater conditions;
- Acidity (to pH 8.3) ranged from 1.0 mg $CaCO_3$/L to 11.7 mg $CaCO_3$/L;
- Alkalinity ranged from 81.4 mg $CaCO_3$/L to 251 mg $CaCO_3$/L across all groundwater sites, which indicates there is excess alkalinity in the groundwater system;
- Average Fe concentrations were reported as being <0.1 mg/L and SO_4 concentrations were reported <100 mg/L;
- The following PCOC variably reported an MEQ>1 (indicating that the maximum concentrations for the parameter exceeded the DGV): As, total Fe, Pb, Sr, Tl , V, and Zn;
- The following PCOC reported maximum concentrations resulting in 0.5 ≤ MEQ < 1.0 indicating that a PCOC is potentially elevated but still below the respective DGV: Amm-N (MDD015), Sr MRC002) and Zn (Office Base);
- Metals including Ag, Cd, Cr, Hg and Tl were analysed with LORs greater than the 95% ANZG DGV therefore calculated MEQ values were elevated and may not reflect actual risks to the

environment. Lower LORs will be required for future monitoring to appropriately assess potential environmental risks; and

- All other PCOC had MEQ values <0.5.

Further baseline monitoring is ongoing and will inform a more robust evaluation including the development of an understanding of seasonal trends.

7 PROPOSED SITE DEVELOPMENT

Table 15 provides a summary of the proposed site development components for the BOGP which is based upon the current Project Description (Santana Minerals, 2025). Figure 10 depicts the layout of the proposed future operations. The Project area is currently 1,300 Ha, on the basis that, until defined, all elements of the project could be located anywhere within this area.

Table 15: Proposed site development components.

COMPONENT	DESCRIPTION
Mining	The resources will be mined by both open pit (RAS, CIT, SRX, and SRE) and underground methods (RAS). Underground mining will use paste backfill, comprising a mixture of process tailings and cement. The open pit mine and underground mines will deliver to the processing with the majority of ore sourced from the RAS open pit. There is likely to be combined open cut and underground feed sources supplying the processing plant in later years.
Processing Plant	The process plant will be located in the lower Shepherds Creek Valley. The run-of-mine (ROM) pad for ore stockpiling and blending into the process plant will be positioned immediately east of the process plant. The processing plant will be a conventional hard rock gold processing plant (1.2 million tonnes per annum expandable to 1.8Mtpa) applying modern Carbon-in-Leach (CIL) technology. The plant will operate in a closed water circuit with the TSF. Residual chemicals in the tailings slurry will be detoxified and/or precipitated with specialist plant. The construction of the plant in the lower reaches of the Shepherds valley will include the realignment of Shepherds Creek.
Waste Rock Storage	Non-ore-bearing waste rock is planned to be backfilled into the CIT and SRE pits. The remainder of the waste rock is scheduled to be stored in an Engineered Landform (ELF).
ELFs	Waste rock from RAS will be emplaced in the upper/middle Shepherds Creek Valley (Shepherds ELF). Waste rock from SRX and SRE will have a separate dedicated ELF (SRX ELF) located in the Rise and Shine Valley. A small ELF (Western ELF) will be located between the CIT and RAS Pits. A construction and demolition waste landfill may be established within the Shepherds ELF. It is noted that the ELFs are significantly less feasibly contained than in-pit backfill in terms of toe seepage. Such toe seepage can be expected to contain potentially elevated concentrations of SO_4, NO_3-N, and various metals (KSL, 2024b).
Tailings Storage Facility (TSF)	The process tailings will be pumped to a conventional wet TSF facility (including clean water diversion drains) constructed in the upper reach of Shepherds Valley utilising waste rock from mining activities within the project site. The TSF will be buttressed by the Shepherds Creek ELF. Spigots will be placed to produce a decant pond at the eastern end of the TSF away from the embankments. Embankments will be constructed according to the International Committee of Large Dams (ICOLD) standards. Overburden from the RAS deposit will be used in the construction of the TSF embankment.
Topsoil Management	Temporary and permanent topsoil stockpiles and biological rehabilitation resource storage areas will be established around the project site Some topsoil in the Rise and Shine Valley floor contains elevated arsenic, particularly in the historic mining areas. These soils will be stripped and stockpiled in Rise and Shine Valley for rehabilitation in Rise and Shine Valley.
Site Infrastructure	Most site infrastructure will be located in the lower Shepherds Creek Valley and will include: • Processing plant and associated infrastructure; • Open pit and underground mining fleet workshops; • Vehicle washing and refuelling facilities; • Warehouses and laydown areas;

COMPONENT	DESCRIPTION
	• Open pit and underground mining offices, crew meeting, lunchroom, and ablutions; and • Water treatment plant facilities. The underground portals, workshops, and offices will be located upstream of the main infrastructure but downstream of the RAS pit and the ELF/TSF. The explosives magazines and emulsion factory will be located outside of the RAS and Shepherds valleys on the terraces. Non-operational infrastructure associated with the BOGP including an administration office, high voltage substation and temporary construction workers accommodation will be established on the Ardgour Terrace. The main explosives magazines and emulsion mixing facilities will be located outside the project site on Ardgour Station. Storage of hazardous substances will be undertaken in accordance with the requirements of the *Hazardous Substances and New Organisms Act 1996* (HSNO).
Water Supply	Service water will come from a borefield in the Bendigo aquifer and will be pumped via pipeline over a distance of approximately 7 km to a proposed water storage tank near the process plant. Once in operation return water from the TSF and substantially reduced dust suppression at times will support a reduction in the average water. Eventually pit and underground dewatering plus the collection of mine impacted water may result in borefield make-up water requirements being substantially reduced. Mine impacted water will be pumped to the TSF impoundment or reused as process water. Zero release of mine impacted waters is considered feasible due to the relatively low rainfall environment, high potential evaporation rates, a shortage of process water, and the significant water storage capacity of the TSF.
Roads	The main project will require upgrades to the Ardgour and Thomsons Gorge public roads from SH8 to the entry point of Shepherds valley, a new road from Thomsons Gorge station through the “neck of the lower Shepherds gorge into the process plant area, and realignment of the western portion of the Thomson Gorge Road via Ardgour Station to provide public access through to the Manuherikia Valley.
Power	A new 66 kV above-ground powerline will be installed from the existing Lindis Crossing sub-station to the processing plant site following the existing road reserve corridor.

8 CONCEPTUAL SITE MODEL

The conceptual site model (CSM) describes the possible pathways through which exposure to potential contamination may occur. For an exposure risk to occur, a complete pathway must exist between the source of contamination and the receptor (e.g., the human or ecosystem potentially affected by the contamination) or result in a detrimental change to the potential beneficial use or value of a resource (e.g., the use of groundwater or preservation of cultural values). Where the exposure pathway is incomplete, exposure cannot occur, resulting in no risk via that pathway. A complete exposure pathway will typically consist of the following elements:

- A source of contamination (i.e., a point or area of potential concern (APEC) where contaminants were, are, or could be released to the environment);
- A transport pathway (e.g., migration in soil, leaching to water, emission to air);
- An exposure mechanism (e.g., inhalation, ingestion, absorption, biotic uptake); and
- A receptor (e.g., human or ecological community)

The following sections detail the key considerations that define the components of the CSM to identify the potentially complete exposure pathways. A graphical representation of the CSM is provided as Figures 12 and 13.

8.1 Sources and Potential Constituents of Concern

Sources of historic and potential future contamination are summarised in Table 16 with respect to potentially relevant PCOC. It is noted that PCOC include metals and chemicals that could be present in association with historic or future land use and have not been limited to those PCOC confirmed to be present during the baseline assessments. A qualitative inherent risk ranking has been assigned to the potential sources of contamination, prior to the implementation of any controls (i.e. resource consent conditions), using the following criteria:

INSIGNIFICANT	Unlikely for sources of contamination to be present.
LOW	May result in minor contamination of limited extent.
MODERATE	May result in contamination over a moderate area that can be contained on-site and managed or remediated in the short-term.
HIGH	May result in extensive contamination to multiple media with long-term environmental impact.

Table 16: Potential sources of contamination and PCOC.

APEC	DESCRIPTION	PCOC	STATUS	RISK
		HISTORIC/EXISTING FEATURES		
CIT Historic Mining Area	Features include a 10-stamper battery, two adits, mullock, track, wall, and possible ore bin. (G41/251)	Sulfate (SO_4) Metals: Al, As, Fe, Cd, Co, Cu, Hg, Mn, Ni, Pb, Tl and Zn	An extensive pXRF characterisation survey for metals concentrations in shallow soils has been undertaken across the historic mining areas. Elevated concentrations of As and possibly Cd have been identified within the soils. Surface water monitoring at sites near the historic workings show evidence of AMD with elevated concentrations of metals including As, Cd, Cu, Cr, Mn, and Zn in Bendigo Creek. Based on limited data, groundwater exhibited potentially elevated concentrations of As, Co, Cu, and Amm-N. Mercury (Hg) was used as part of historic gold recovery methods but has not been identified in the catchment at elevated concentrations from limited surface water sampling.	MODERATE
Eureka Historic Mining Area	Features include an underground mine adits, battery, and water race. (G41/252)			
Alta Historic Mining Area	Mortar box battery, and adit linked by cutting to return wheel. (G41/253)			
RAS Historic Mining Area	Features include underground mine adits, battery, sluicing face, dam, and spoil piles (G41/277)			
Historic Sluicing Area	The historic sluicing area in the vicinity of the SRX deposit (G41/669) exhibits evidence of tailings fields.			
Historic Mine	Historic mine with turbine (G41/604) and battery (G41/605)			
Historic Tailings Fields	Gold mining tailing fields along Thomsons Creek (G41/636) from Thomson Gorge Road. Tailings piles (G41/670)			
Historic Water Races	Water races (G41/673 and G41/677) transported surface water to the sluicing areas. Portions of the water races transect several historic mining areas.			INSIGNIFICANT
Historic Dam	A constructed dam is present in the SRX deposit area to capture water from the water race. Construction involved the creation of a dam wall and creation of a basin behind it.	None identified	This feature is unlikely to be a source of contamination as it was used to capture rainwater. Healthy vegetation was observed in the dam during the site visit.	INSIGNIFICANT
Pastoral Land Use	The land has been used for pastoral purposes since the 1860s	Nitrogen compounds: NO_3, Amm-N	Nitrogen compounds were elevated in Shepherds Creek potentially associated with faecal matter from livestock associated with pastoral land use.	MODERATE
Woolsheds	Two historic woolsheds (circa 1860s) are present within the Run238N area but are located at some distance from proposed operations (Lindis Valley and Ardgour Rd south of Tarras). Sheep dipping practices were likely undertaken proximal to the woolsheds. Sheep dipping using As was required by law from the 1840s (MfE, 2006) and there are numerous historic sites within New Zealand that exhibit	Metals: As OCP, DDT, lindane, dieldrin and aldrin	Historic woolshed locations are not accurately known, and potential impacts are likely limited to localised hotspots. Woolshed areas are located outside the project disturbance area. Elevated As concentrations are naturally present in soils in the Project area in association with the natural lithologies suggesting potential ecologic	INSIGNIFICANT (Offsite - Not a source that will impact this project)

APEC	DESCRIPTION	PCOC	STATUS	RISK
	elevated As hotspots resulting from these practices. Use of OCPs at sheep dips was introduced in the early 1900's.		receptors may have a tolerance to elevated As concentrations.	
		FUTURE PROPOSED INFRASTRUCTURE		
Open Pits (RAS, CIT, SRX, SRE)	Open pit mining will be developed through blasting and excavation. Exposure of fresh rock faces may result in the oxidation of arsenopyrite and release of metals.	Nitrogen compounds: NO_3, Amm-N SO_4 Metals: Metals: Al, As, Fe, Cd, Co, Cu, Hg, Mn, Ni, Pb, Tl, and Zn	Open pit mining will progressively develop in line with the conditions of the Resource Consent to ensure future risks to the environment are minimised.	HIGH[1]
Underground Mine (RAS)	Underground mining will require blasting to develop stopes within the schist basement and dewatering to support the exposure of the gold-bearing reef. Exposure of fresh rock faces may result in the oxidation of arsenopyrite and result in the release of metals to the environment.	Petroleum hydrocarbons: total recoverable hydrocarbons (TRH), monocyclic aromatic hydrocarbons (MAH including benzene, toluene, ethylbenzene, and xylenes (BTEX)), polycyclic aromatic hydrocarbons (PAH)	Underground mining will progressively develop following open pit mining of the RAS in line with the conditions of the Resource Consent to ensure future risks to the environment are minimised.	HIGH[1]
ROM Pad	The ROM pad receives the excavated or mined material prior to it being sent to the processing plant. This material may contain blast residue and residual explosives. Depending on retention time at the ROM, the oxidation of sulfide minerals may occur. During normal operations, the residence time of materials at the ROM pad is usually relatively short which limits the potential for oxidation of sulfide minerals, leaching and contaminant migration to the environment.	Nitrogen compounds: NO_3, Amm-N SO_4 Metals: Al, As, Fe, Cd, Co, Cu, Mn, Ni, Pb, Tl and Zn	This storage area is not currently constructed. Design of the ROM pad will be undertaken in accordance with the conditions of the Resource Consent to ensure future risks to the environment are minimised. Appropriate management plans will be prepared to define on-going obligations for the operation and maintenance of this attribute.	MODERATE[1]
Processing Plant	Processing is estimated to be a conventional single stage crush, single stage grind via a SAG mill, gravity gold recovery, with a follow up cyanide leach to carbon recovery then electro-winning and final smelting to produce ore on site. Material and chemical spills that may occur during operations but are generally small-scale pose limited risks	Cyanide (CN) SO_4 Metals: As, Cu	This facility is not currently constructed. Design of the facility will be undertaken in accordance with the conditions of the Resource Consent to ensure future risks to the environment are minimised. Appropriate management plans will	MODERATE[1]

APEC	DESCRIPTION	PCOC	STATUS	RISK
	to the environment if appropriately managed at the time of occurrence.		be prepared to define on-going obligations for the operation and maintenance of this attribute.	
Engineered Landform (ELF)	The ELF receives the non-ore bearing overburden and interburden from the mining operations. Due to limitations in mining methods and economic decisions on cut-off grades for mineralisation, TZ4 and RSSZ geologic units which contain sulfide minerals (including arsenopyrite) will inevitably be disposed of within the WRD. Oxidation of sulfide minerals can result in the generation of acidity and leaching of metals to the environment. Blast residues may also adhere to waste rock.	Nitrogen compounds: NO_3, Amm-N SO_4 Metals: Al, As, Fe, Cd, Co, Cu, Hg, Mn, Ni, Pb, Tl and Zn	These material storage areas are not currently constructed. Design of these area will be undertaken in accordance with the conditions of the Resource Consent to ensure future risks to the environment are minimised. Appropriate management plans will be prepared to define on-going obligations for the operation and maintenance of these attributes to reduce long-term environmental risk.	HIGH[1]
Tailings Storage Facility (TSF)	The TSF will receive the post-processed tailings. This fine-grained (sand, silt, and clay-type) waste material contains the presence of inorganic chemical residues from reagents used in the metallurgical extraction process and residual metals, minerals and sulfides not extracted from via processing. As a result, the mine tailings disposed to the TSF can represent a significant potential source of contamination both during operations and post-closure. Design attributes of the TSF will aim to mitigate these risks.	CN Nitrogen compounds: NO_3, Amm-N SO_4 Metals: Al, As, Fe, Cd, Co, Cu, Hg, Mn, Ni, Pb, Tl and Zn		HIGH[1]
Topsoil Stockpiles	Several topsoil stockpiles will be present to support future rehabilitation of the site. Some topsoil will be elevated in As and possibly Cd. Windborne particulates, and runoff from As/Cd-rich stockpiles may distribute contaminants to other portions of the Project area.	Metals: Al, As, Fe, Cd, Co, Cu, Hg, Mn, Ni, Pb, Tl and Zn	Stockpiles are not currently present. Stockpile management will be undertaken in accordance with the conditions of the Resource Consent to ensure future risks to the environment are minimised.	LOW
Vehicle Washdown and Refuelling Facilities	Vehicle washing and refuelling facilities will be appropriately constructed to prevent release of hydrocarbons to the environment. A triple interceptor trap will be installed at the washdown bay to filter out hydrocarbons facilitating recycling of water.	TRH, BTEX, PAH	These facilities are not currently constructed. Design of these facilities will be undertaken in accordance with the conditions of the Resource Consent to ensure future risks to the environment are minimised. Appropriate management plans will be prepared to define on-going obligations for the operation and maintenance of this attribute.	MODERATE[1]
Explosives Magazine and Emulsion Factory	Chemicals used to produce explosives and manufactured ANFO (ammonia nitrate fuel oil) will be stored within a designated area on the site. This area will be designed to regulatory requirements and produced material will be stored within an enclosed area. Over time, minor spillage of product through transport loading may occur.	Ammonium nitrate, TRH (diesel)		MODERATE[1]

APEC	DESCRIPTION	PCOC	STATUS	RISK
Open Pit and Underground mining fleet workshops	Maintenance of mine vehicles will be undertaken in designated and appropriately designed workshop areas to minimise risk of spills to the environment. Chemicals will be stored onsite in designated areas in accordance with the requirements defined in the HNSO.	Solvents, TRH, BTEX, PAH, metals, oils, and grease		MODERATE[1]

1. *Risk ranking is based on inherent contamination risk, prior to the establishment of management controls (i.e. resource consent conditions).*

8.2 Potential Migration Pathways and Exposure Mechanisms

Table 17 summarises the potential migration pathways relevant for the Project area.

Table 17: Potential migration pathways.

MIGRATION PATHWAYS	EXPOSURE MECHANISMS
Transport of contaminants by mechanical disturbance	Direct contact with contaminated media (soils)
Windborne contaminant transport	Inhalation of contaminated media
Volatilisation to air	Vapour inhalation
Leaching of contaminants through the soil profile to groundwater	Ingestion of or direct contact with abstracted groundwater
Transport of contaminants via surface water within the Bendigo and Shepherds Creek catchments	Ingestion of or direct contact with contaminated surface water
Uptake/bioaccumulation of contaminants by terrestrial biota	Ingestion
Precipitation of contaminants into sediments	Ingestion
Uptake/bioaccumulation by aquatic macrophytes	Ingestion

8.3 Potential Receptors

Table 18 summarises the potential current and future receptors relevant for the site.

Table 18: Potential receptors.

POTENTIAL RECEPTORS	DESCRIPTION
Site workers/site visitors	Site workers will reside offsite and work a 12-hour shift across a 4-panel roster which is less than the default exposure period for the derivation of default contaminant guidelines for industrial land use. Exposure to potential contamination risks can be mitigated through site management plans, training, and personal protective equipment (PPE).
Pastoral land users	Pastoral land users will have limited exposure to operational areas of the site where risks are highest.
Groundwater users	Abstraction of groundwater by pastoral land users is possible but it is unlikely to be used for potable water purposes.
Surface water users	Surface water in the Project area does not have a beneficial use.
Pastoral livestock	Pastoral livestock (e.g. cows, sheep) are present on the land. These livestock have access to a wide grazing area and may access perennial streams for drinking water.
Terrestrial fauna	A range of mammals, avifauna, lizards, and terrestrial invertebrates are present in the Project area. Some of these faunae are protected under the Wildlife Act and designated as being Nationally Threatened, At Risk, or Not Assessed – Potentially Threatened.
Aquatic fauna	Macroinvertebrates, macrophytes and freshwater fish are present in the catchments surrounding the site (no fish found onsite). Only one At-Risk freshwater species has been identified.
Native flora	A mix of indigenous and introduced species are present in the Project area resulting from a history of pastoral management. Several Threatened or At-Risk flora species have been identified onsite, however, few of the indigenous species are rare or under any significant threat.

8.4 Potentially Complete Exposure Pathways

The following potentially complete exposure pathways may currently be present in the Project area in association with elevated concentrations of arsenic, and other metals in near surface soils/sediments that have resulted from historic alluvial and underground mining, and gold-processing activities within the Thompson's Creek Valley:

- Inhalation of dust by site workers/visitors, pastoral workers, terrestrial fauna and livestock may result through mechanical disturbance or windborne transport of contaminated soils;
- Bioaccumulation of metals by terrestrial biota and ingestion by native fauna and livestock;
- Migration of impacted soil or leachable contaminants by surface water flow in the Bendigo Creek Catchment may result in the uptake/bioaccumulation of contaminants by aquatic macrophytes and aquatic biota and primary or secondary ingestion by native aquatic and/or terrestrial fauna and livestock; and
- Leaching of PCOC through the soil profile to groundwater with the potential for terrestrial biota uptake and/or direct contact/ingestion by pastoral land users and/or livestock in the event that groundwater is abstracted for irrigation/stock water purposes. It is noted that the likelihood of this exposure pathway being complete is low given the depth to groundwater and the extensive distance to the nearest groundwater abstraction bores.

It is noted that under present conditions terrestrial fauna and livestock have access to other nearby catchments (i.e., Jean Creek, Shepherds Creek) that are relatively undisturbed by historic mining activities and that represent a less impacted source of fresh water and vegetation. Future development of mining infrastructure within these catchments is likely to reduce the nearby clean water source options for terrestrial fauna and livestock.

The following potentially complete exposure pathways may occur in the Project area in association with the planned future development of the BOGP project:

- Generation and release of AMD (associated with the oxidation of arsenopyritic mineralisation) and nitrates (associated with unexploded ANFO residues) within underground mine workings to groundwater upon rebound of the water table, post-dewatering resulting in the degradation of the beneficial use of groundwater;
- Migration of AMD and nitrates generated within the open pit, ELF, TSF and ROM pad into the underlying groundwater aquifer with the potential for terrestrial biota uptake and/or direct contact/ingestion by pastoral land users and/or livestock in the event that groundwater is abstracted for irrigation/stock water purposes;
- Migration of AMD and nitrates generated within the ELF, TSF, underground workings, and ROM pad via toe seepage or run-off into surface water into Shepherds Creek and Rise and Shine Creek may result in the uptake/bioaccumulation of contaminants by aquatic macrophytes and aquatic biota and primary or secondary ingestion by native aquatic and/or terrestrial fauna and livestock;
- Potential for dermal contact, ingestion and vapour inhalation of PCOC by site workers in APECs including the processing plant, fuel storage/refuelling areas, vehicle washdown, workshops,

and explosives magazines with respect to the use and potential spillage of PCOC (including petroleum hydrocarbons and other hazardous materials) that are used and stored on site; and

- Potential for the migration of PCOC into surface water and groundwater from APECs including the processing plant, fuel storage/refuelling areas, vehicle washdown, workshops, and explosives magazines with respect the potential spillage of PCOC (including petroleum hydrocarbons and other hazardous materials) that are used and stored on site, resulting in the degradation of the beneficial use of soil and water resources and/or adverse impacts to terrestrial and aquatic biota and fauna through primary or secondary uptake of contaminated media.

9 CONCLUSIONS AND RECOMMENDATIONS

This evaluation of the current and potential future site contamination risks associated with the development of the Project, has been undertaken to support the AEE and meet regulatory obligations under the NESCS that arise from the recognition that historic and future mining operations are defined in the Hazardous Activities and Industries List (HAIL) as a potentially contaminating land use (Category E7).

9.1 Conclusions

Based on a desktop review of publicly available data, site walkover, and evaluation of preliminary findings associated with other environmental studies currently being undertaken as part of the AEE, the following conclusions are drawn with respect to the Project area:

- The Project area is located within the Otago Schist belt which comprises metasedimentary and metavolcanic rocks metamorphosed to greenschist facies. Gold mineralisation is widespread within the Otago Shists with main mineralisation in the region generally associated with silica-siderite/ankerite alteration with minor arsenopyrite sulfides associated with the gold;
- There is no record of permanent Māori occupation within the Project area, however the Project area has a long history of pastoral occupation dating back to the late-1850s, and historic gold mining operations comprising alluvial sluicing and shallow mining of quartz reefs that occurred in several areas across the site and surrounds between the 1960s through to the 1940s. Whilst pastoral land use has continued through to present day, only limited exploration activities have been undertaken since the 1980s;
- Detailed heritage mapping of the historic land use has been undertaken with numerous historic mining features, including prospecting pits, water races, mullock piles, tailings and dams, sluices areas, mine adits, turbines and batteries, alluvial workings, mapped as being present within the Project area. Several agricultural and pastoral features and one feature that may be associated with Māori activity have been identified within the broader mining lease area, however most are distal to the Project area;
- Baseline environmental studies have been undertaken within the Project area to assess the ecological values of the environment with respect to groundwater, surface water, and aquatic and terrestrial ecosystems. Based on these studies, several Threatened or At-Risk flora species have been identified onsite, however, few of the identified indigenous grasses and herbs are known to be rare or under any significant threat locally, regionally or nationally. Several indigenous habitats and protected wildlife species are present, but no threatened or At-Risk freshwater species have been identified;
- Notable evidence of the mining history is present within the Thomson Gorge along Rise and Shine Creek. Remnant impacts from the historic activities are visible within the Project area associated with the accumulation of sluicing debris and migration of tailings along creek beds, adits, mullock piles, and the former battery sites. Soil sampling and water quality monitoring around these areas has identified potentially elevated concentrations of metals in shallow soil (As and possibly Cd), surface water (As, Co, Cu, and Fe), and groundwater (As, Cr, Cu, Fe, Sr, Tl, and Zn) within the project area;

- Arsenic (As) has been identified at concentrations above industrial land use human health protection criteria and above 60% and 80% Eco-SGV in shallow soils within the Project area, predominantly within the historic mining areas. Potentially complete exposure pathways may result from the disturbance of these soils during future mining activities. Cadmium (Cd) was found extensively above 80% Eco-SGV and may also warrant management during operations to meet post-closure land use objectives; and
- If not appropriately managed, future mining activities within the Project area have the potential to release contaminants to the environment, potentially resulting in adverse impacts to terrestrial and aquatic ecosystems. Future mine site features including the open pit, underground workings, ELF, TSF, processing plant, ROM pad, topsoil stockpiles, vehicle washdown and refuelling facilities, explosives magazine and emulsion factory, and mining fleet workshops will require appropriate facility design and management plans to minimise potential risks to human health and the environment.

9.2 Recommendations

Based on the findings of this PSI, the following recommendations are made:

- A detailed evaluation of the extensive soil dataset should be undertaken for the Rise and Shine Valley to better inform a risk assessment of the disturbance of soils with elevated As (and potentially Cd) concentrations during operations. Using the existing soil dataset, appropriate ecological background threshold values (BTV) should be derived using an appropriate industry-recognised methodology (e.g., upper tolerance limit (UTL)) for the Project area to support the assessment of environmental effects during operations and closure;
- A SMP should be developed in accordance with the requirements defined in the *Contaminated Land Guidelines No. 1* (MfE, 2021) to define the risks, control strategies, and management responsibilities associated with shallow soil management (i.e. arsenic impacted soils) within the Project area; and
- Management plans and associated conditions of consent should be developed to address operational risks associated with key mine sources that have the potential to adversely impact human health or ecological receptors. These should include procedures around waste rock and processing residues (e.g., tailings) to reduce environmental risks from AMD, dust management, chemical storage, spill response, and surface and groundwater monitoring.

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11 LIMITATIONS

Attention is drawn to the document “Limitations”, which is included in Appendix D of this report. The statements presented in this document are intended to provide advice on what the realistic expectations of this report should be, and to present recommendations on how to minimise the risks associated with this project. The document is not intended to reduce the level of responsibility accepted by Mine Waste Management, but rather to ensure that all parties who may rely on this report are aware of the responsibilities each assumes in doing so.

APPENDIX A ABBREVIATIONS AND ACRONYMS

Table A-1: Abbreviations and acronyms

ABBREVIATION	DEFINITION
ABA	Acid base accounting
AMD	Acid and metalliferous drainage
ANC	Acid neutralising capacity
ANFO	Ammonia nitrate fuel oil
APEC	Areas of potential environmental concern
BGV	Background guideline value
BOGP	Bendigo-Ophir gold project
CIL	Carbon-in-leach
CIT	Come-in-Time deposit
CLMG	Contaminated land management guidelines
PCOC	Constituents of potential concern
CSM	Conceptual site model
DGV	Default guideline value
DOC	Department of Conservation
DSI	Detailed site investigation
ELF	Engineered landform
GAI	Global abundance index
GRM	Geocontam Risk Management Limited
HAIL	Hazardous activities and industries list
HSNO	*Hazardous Substances and New Organisms Act 1996*
ICOLD	International Committee of Large Dams
LINZ	Land Information NZ
MAV	Maximum acceptable value
MEQ	Metals ecotoxicity quotient
MfE	Ministry for Environment, NZ
MGL	Matakanui Gold Limited
MPA	Maximum potential acidity
NAF	Non-acid forming
NAG	Net acid generating
NAPP	Net acid producing potential
NESCS	Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011

ABBREVIATION	DEFINITION
NES Freshwater	Resource Management (National Environmental Standards for Freshwater) Regulations 2020
NES Soil	National environmental standard for contaminants in soil
NPR	Neutralisation potential ratio
NZ	New Zealand
NZHPL	New Zealand Heritage Properties Limited
NZPM	New Zealand Petroleum and Minerals
ORC	Otago Regional Council
OSTD	Over-sown and top-dressed
PAF	Potentially acid forming
PPE	Personal protective equipment
PSI	Preliminary site investigation
RAS	Rise and Shine deposit
ROM	Run-of-mine
RSSZ	Rise and Shine shear zone
SAG	Semi-autogenous grinding
SRX	Srex deposit
SMP	Site management plan
SPLP	Static precipitation leaching procedure
SQEP	Suitably qualified and experienced practitioner
SRE	Srex East deposit
TGF	Thomson gorge fault
TSD	Thomson’s Saddle
TSF	Tailings storage facility
UTL	Upper tolerance limit
WRS	Waste rock storage
XRF	X-ray fluorescence

Table A-2: Chemical abbreviations

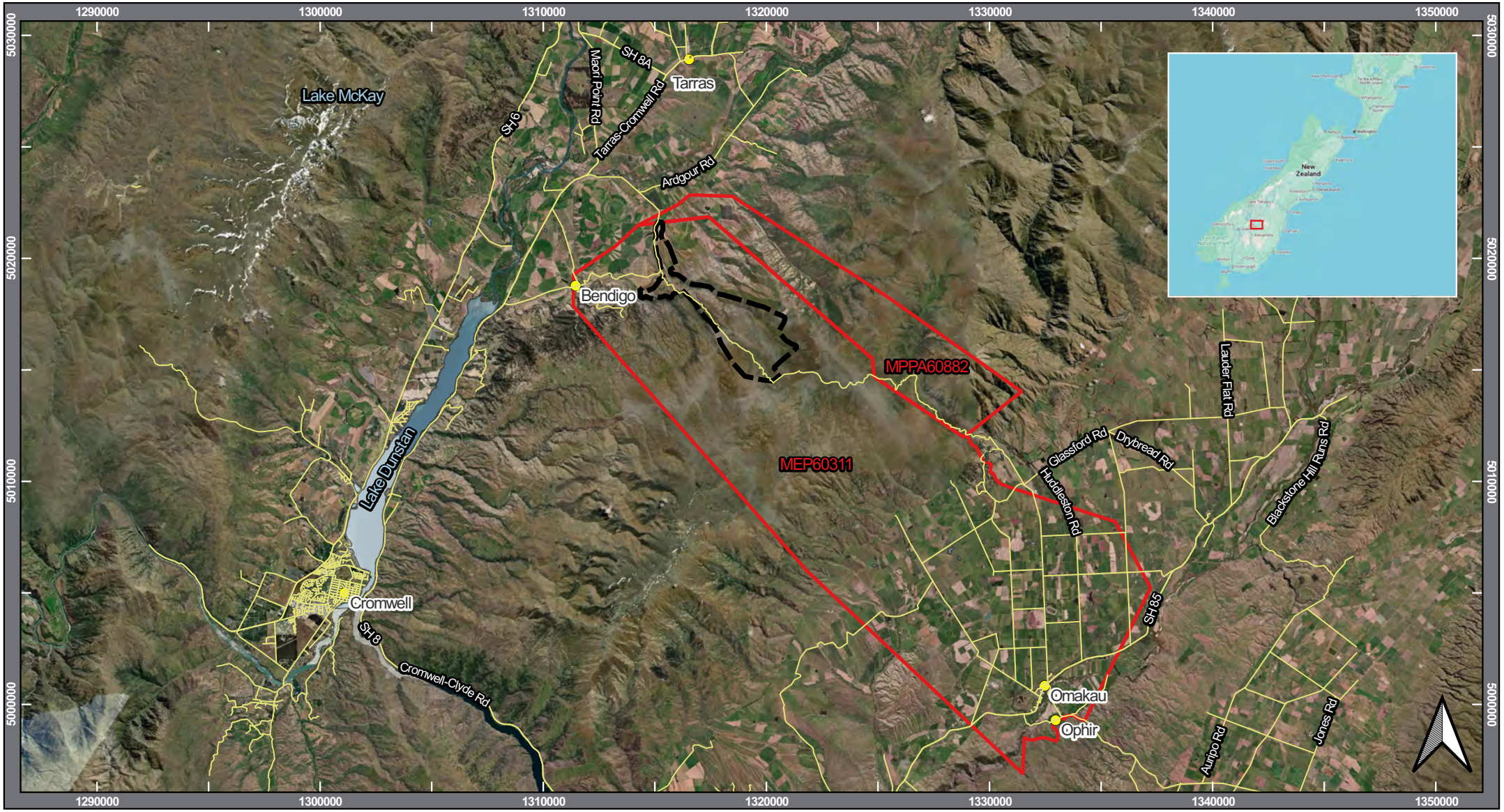
ABBREVIATION	CHEMICAL
Al	aluminium
Amm-N	ammoniacal nitrogen
As	arsenic
B	boron
Ba	barium
Be	beryllium
Bi	bismuth
Br	bromide
BTEX	benzene, toluene, ethylbenzene, and xylenes
Ca	calcium
Cd	cadmium
Cl	chloride
CN	cyanide
Co	cobalt
Cr	chromium
Cs	caesium
Cu	copper
DDT	dichloro-diphenyl-trichloroethane
DO	dissolved oxygen
DOC	dissolved organic carbon
DRP	dissolved reactive phosphorus
DSi	dissolved silicon
EC	electrical conductivity
F	fluoride
Fe	iron
Ge	germanium
Hg	mercury
La	lanthanum
Li	lithium
MAH	monocyclic aromatic hydrocarbons
Mg	magnesium
Mn	manganese
Mo	molybdenum

ABBREVIATION	CHEMICAL
Na	sodium
Ni	nickel
NO_3	nitrate
NO_3-N	nitrate reported as nitrogen
OCP	organochlorine pesticides
ORP	redox potential
PAH	polycyclic aromatic hydrocarbons
P	phosohorus
Pb	lead
Rb	rubidium
S	sulfur
Sb	antimony
Se	selenium
Si	silicon
Sn	tin
SO_4	sulfate
Sr	strontium
TDS	total dissolved solids
Ti	titanium
Tl	thallium
TN	total nitrogen
TKN	total Kjeldahl nitrogen
TOC	total organic carbon
TP	total phophorus
TRH	total recoverable hydrocarbons
TSS	total suspended solids
U	uranium
V	vanadium
Y	yttrium
Zn	zinc

Table A-3: Units of measure

ABBREVIATION	UNIT OF MEASURE
km	kilometres
kV	kilovolts
L/s	litres per second
m	metres
mAMSL	metres above mean sea level
mm	millimetres
µm	mircometres
mRL	metres relative to sea level
Mt	megatonnes
Mtpa	megatonnes per annum

APPENDIX B FIGURES



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PROJECT
Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 1
Site Location

Legend

- Mining Lease Boundary
- Project Area
- Roads

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NOTES

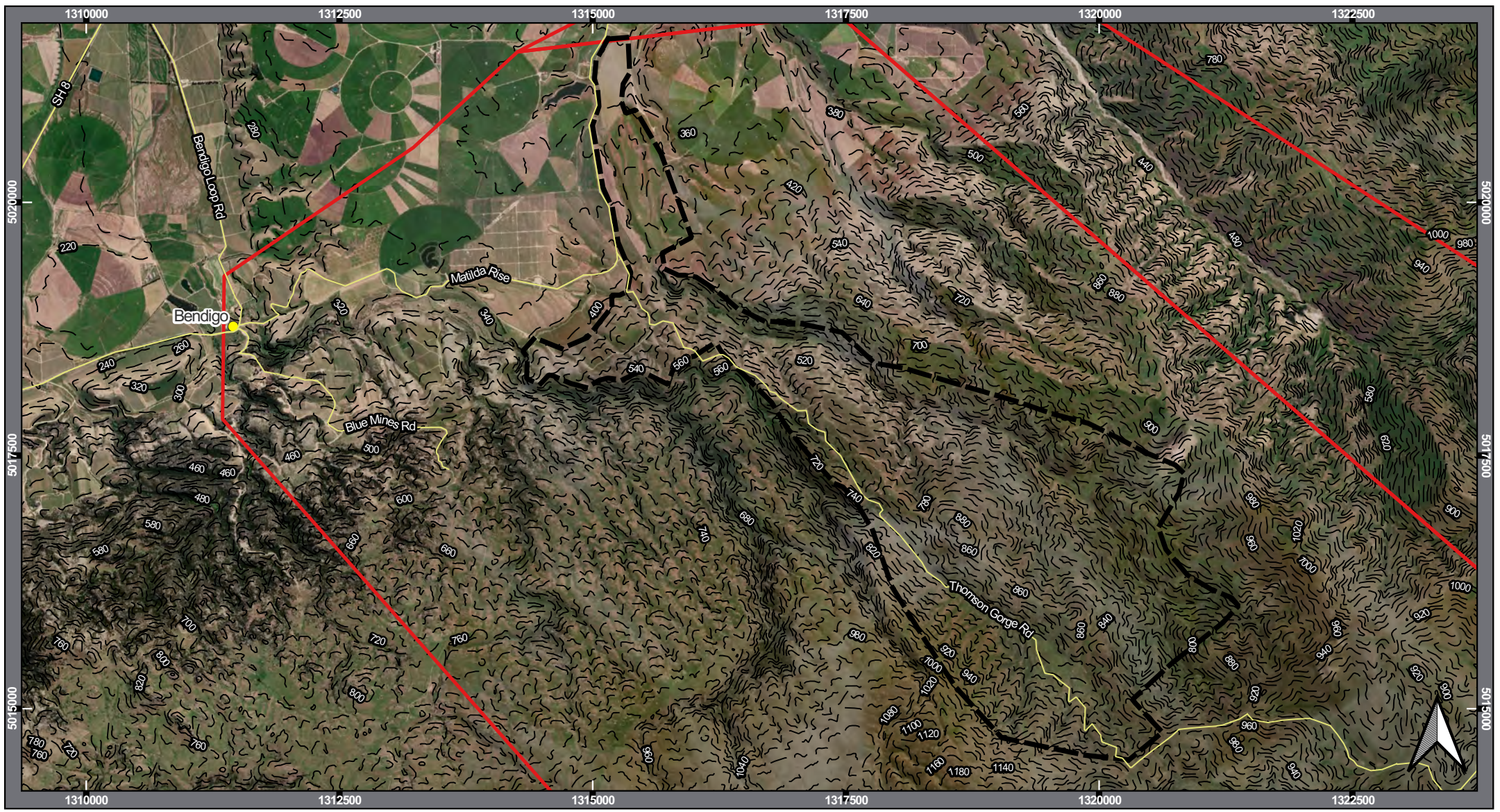
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J-H-AU074	001 R	1	29/10/2024

PREPARED	REVIEW	APPROVED
VM	JP	JP

GEOCONTAM RISK MANAGEMENT



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Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 2
Project Area

Legend

- Mining Lease Boundary
- Project Area
- Roads
- Topography

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0 1 2 km

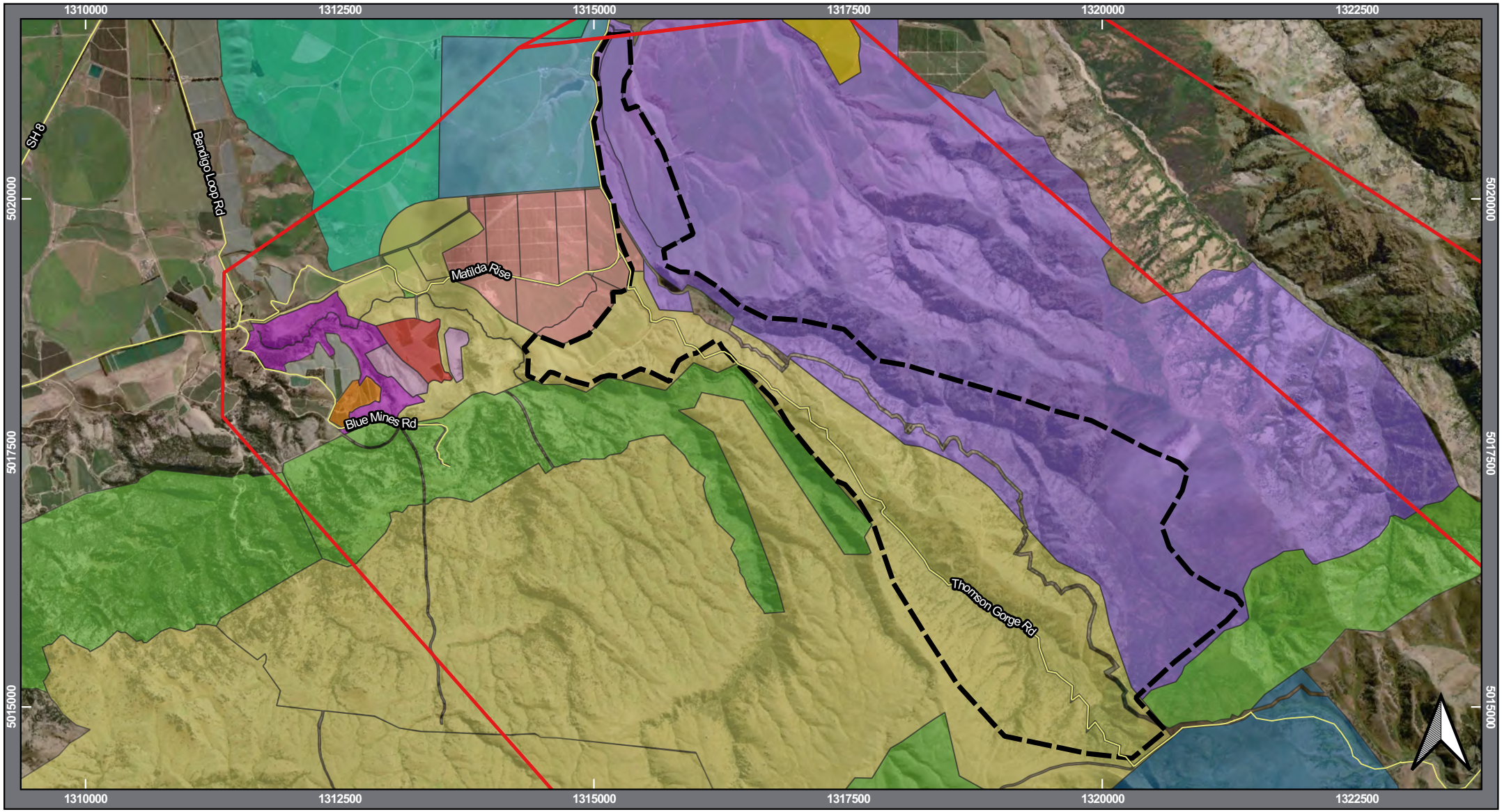
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COORDINATE SYSTEM NZGD2000
AERIAL IMAGE ESRI 2024



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Preliminary Site Investigation

FIGURE 3
Land Tenure

Legend

- Mining Lease Boundary
- Project Area

Land Tenure

- Bendigo Station Development Ltd
- Bendigo Station Ltd
- Bendigo Terrace Farming Pty Ltd
- Constellation Brannds NZ Ltd
- Fishtail Vineyards Ltd
- Sheperds Creek Ltd
- Tarras Farm Pty Ltd
- DOC Public Conservation Land
- Prunus Orchards Ltd
- Ardgour Station
- John Charles Perriam
- Matakanui Station Ltd

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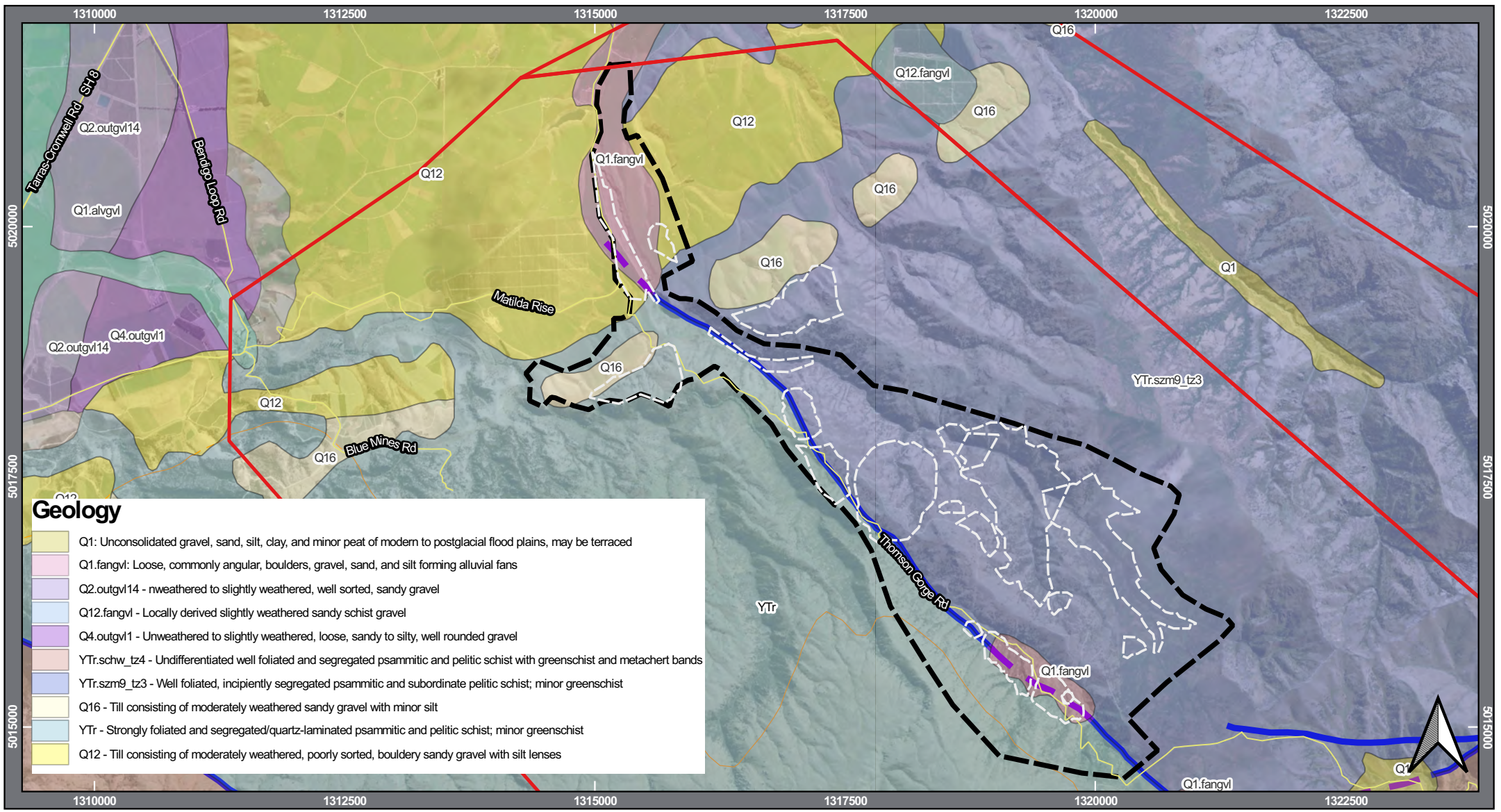
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PREPARED	REVIEW	APPROVED
VM	JP	JP

GEOCONTAM RISK MANAGEMENT



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PROJECT
Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 4
Regional Geology

Legend

- Mining Lease Boundary
- Project Area
- Roads
- Proposed Development
- Inactive fold, exposed
- Inactive fault (accurately located)
- Inactive fault/thrust (approximately located)

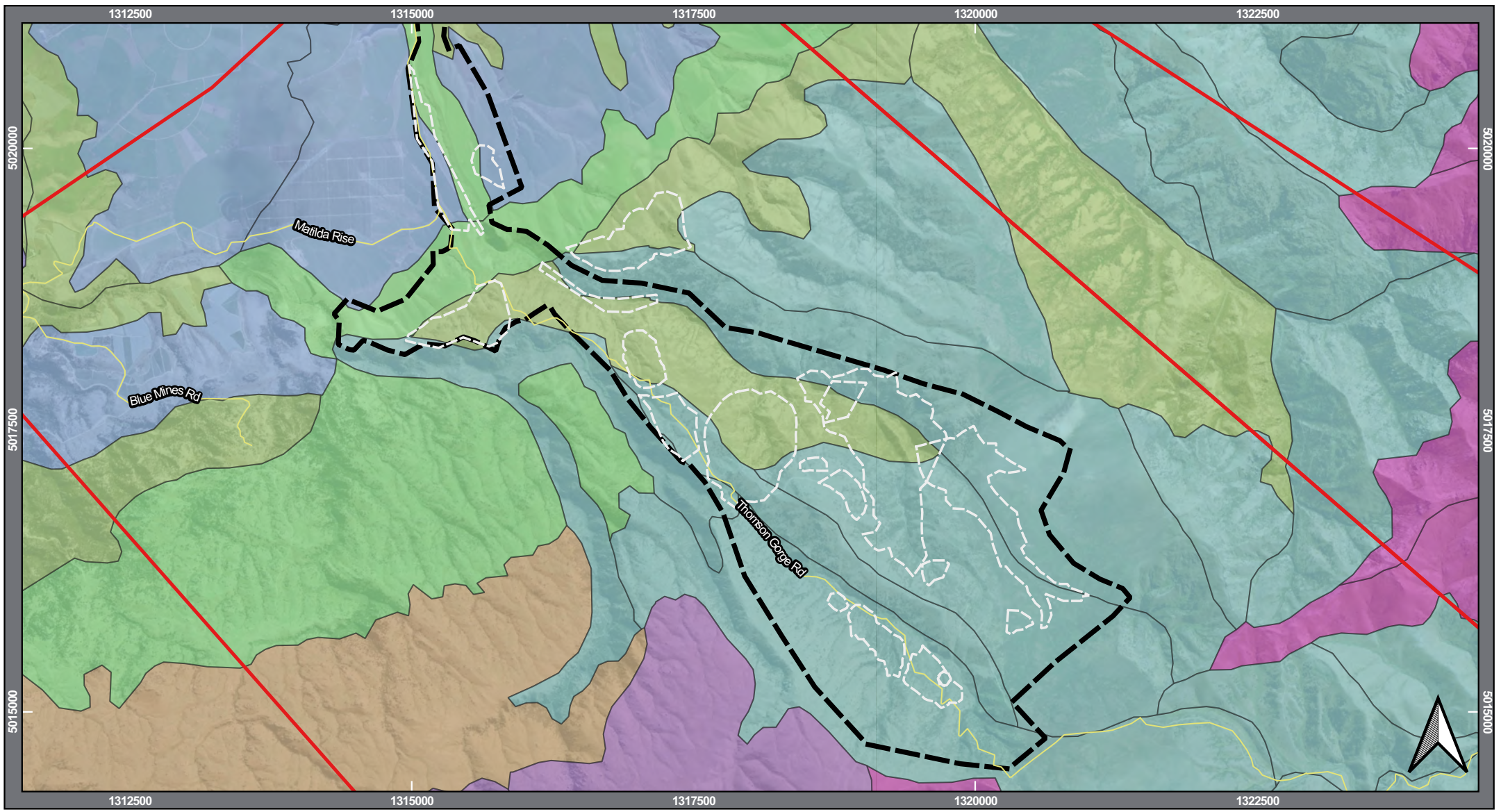
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COORDINATE SYSTEM NZGD2000
AERIAL IMAGE ESRI 2024

PROJECT No.	CONTROL	REV	DATE
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PREPARED	REVIEW		APPROVED
VM	JP		JP

GEOCONTAM RISK MANAGEMENT



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PROJECT
Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 5
Regional Soil Classification

Legend

- Mining Lease Boundary
- Project Area
- Proposed Development

Soil Classification

- BA - Acid Brown
- BO - Orthic Brown
- PI - Immature Pallic
- PJ - Argillic Pallic
- SA - Aged Semiarid
- SI - Immature Semiarid
- SJ - Argillic Semiarid

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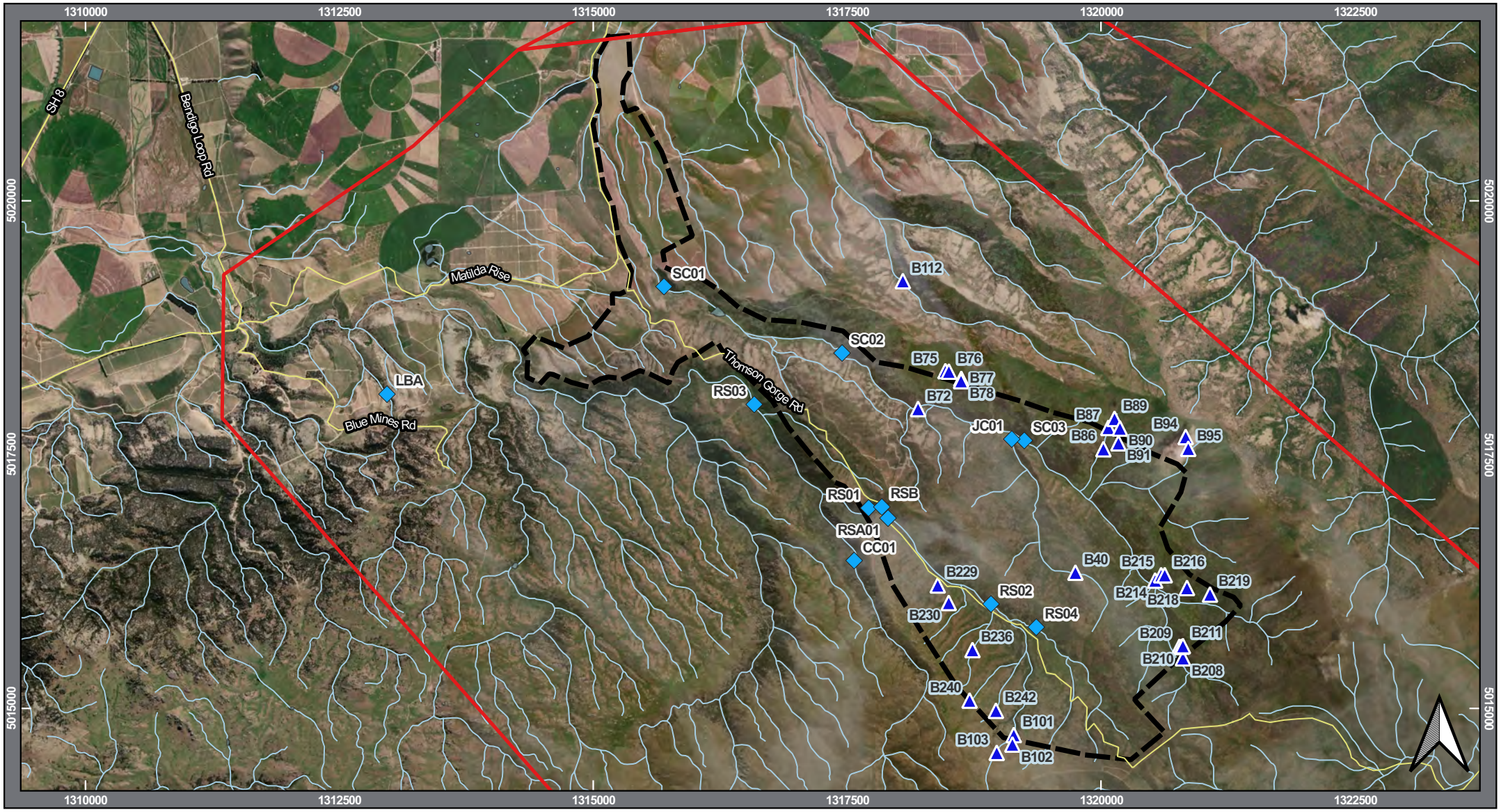
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PROJECT No.	CONTROL	REV	DATE
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PREPARED	REVIEW	APPROVED
VM	JP	JP

GEOCONTAM RISK MANAGEMENT



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PROJECT
Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 6
Surface Water

Legend

- Mining Lease Boundary
- Project Area
- Roads
- Hydrology
- Water Monitoring Sites
- Bendigo Spring Locations

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COORDINATE SYSTEM NZGD2000
AERIAL IMAGE ESRI 2024

0 1 2 km

PROJECT No.	CONTROL	REV	DATE
J-H-AU074	001 R	1	05/11/2024

PREPARED	REVIEW	APPROVED
VM	JP	JP

GEOCONTAM RISK MANAGEMENT



CLIENT
Matakanui Gold Ltd

PROJECT
Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 7
Groundwater Use

Legend

- Mining Lease Boundary
- Project Area
- Roads
- Registered Groundwater Wells
- Groundwater Monitoring Sites

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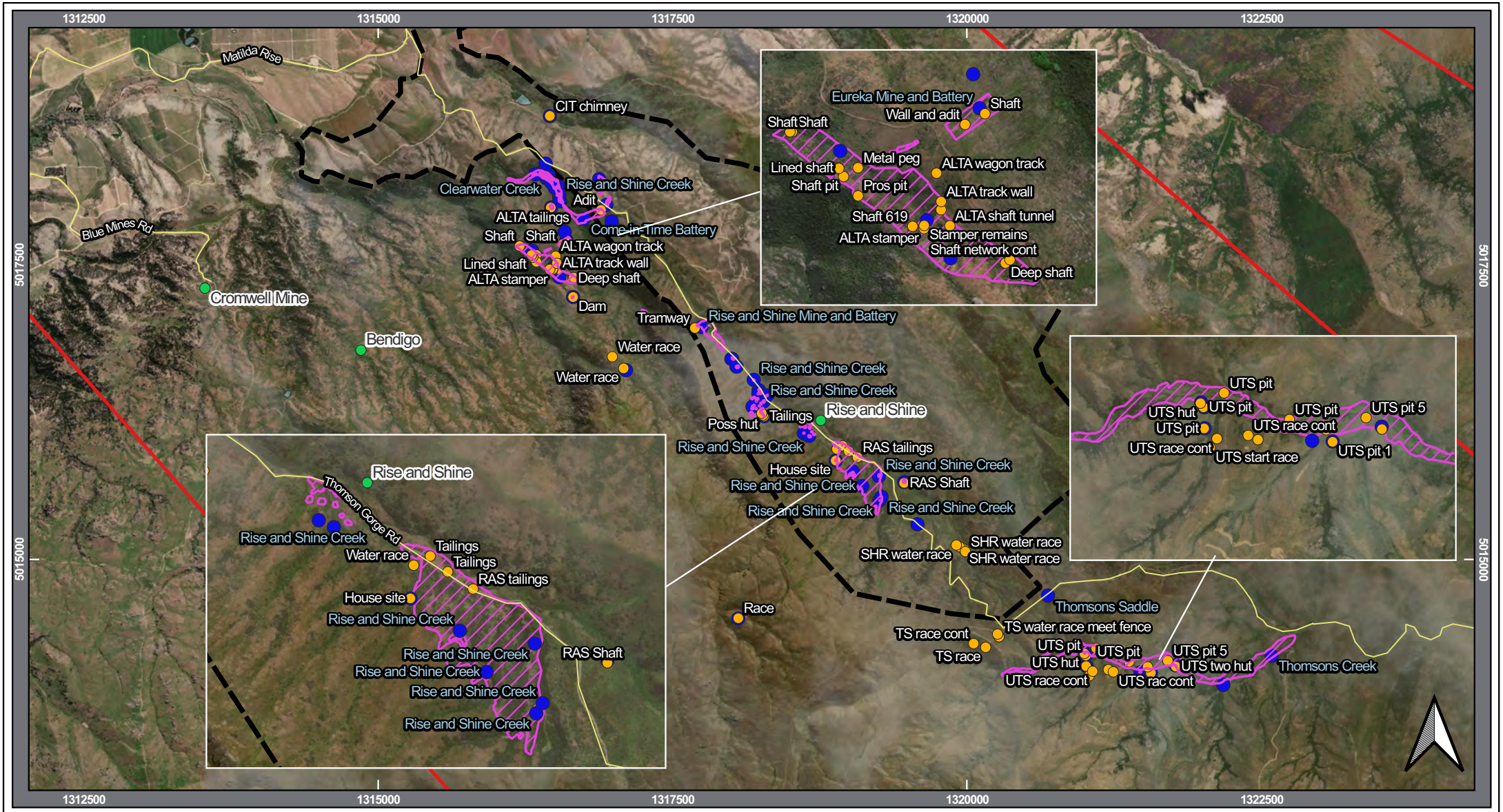
COORDINATE SYSTEM NZGD2000
AERIAL IMAGE ESRI 2024

0 1 2 3 km

PROJECT No.	CONTROL	REV	DATE
J-H-AU074	001 R	1	30/10/2024

PREPARED	REVIEW	APPROVED
VM	JP	JP

GEOCONTAM RISK MANAGEMENT



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PROJECT
Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 8
Heritage Features

Legend

- Mining Lease Boundary
- Project Area
- Roads
- Historical mine workings
- Abandonned Mines
- Archaeological Survey Point
- Archsites

MATAKANUI GOLD LIMITED

NOTES

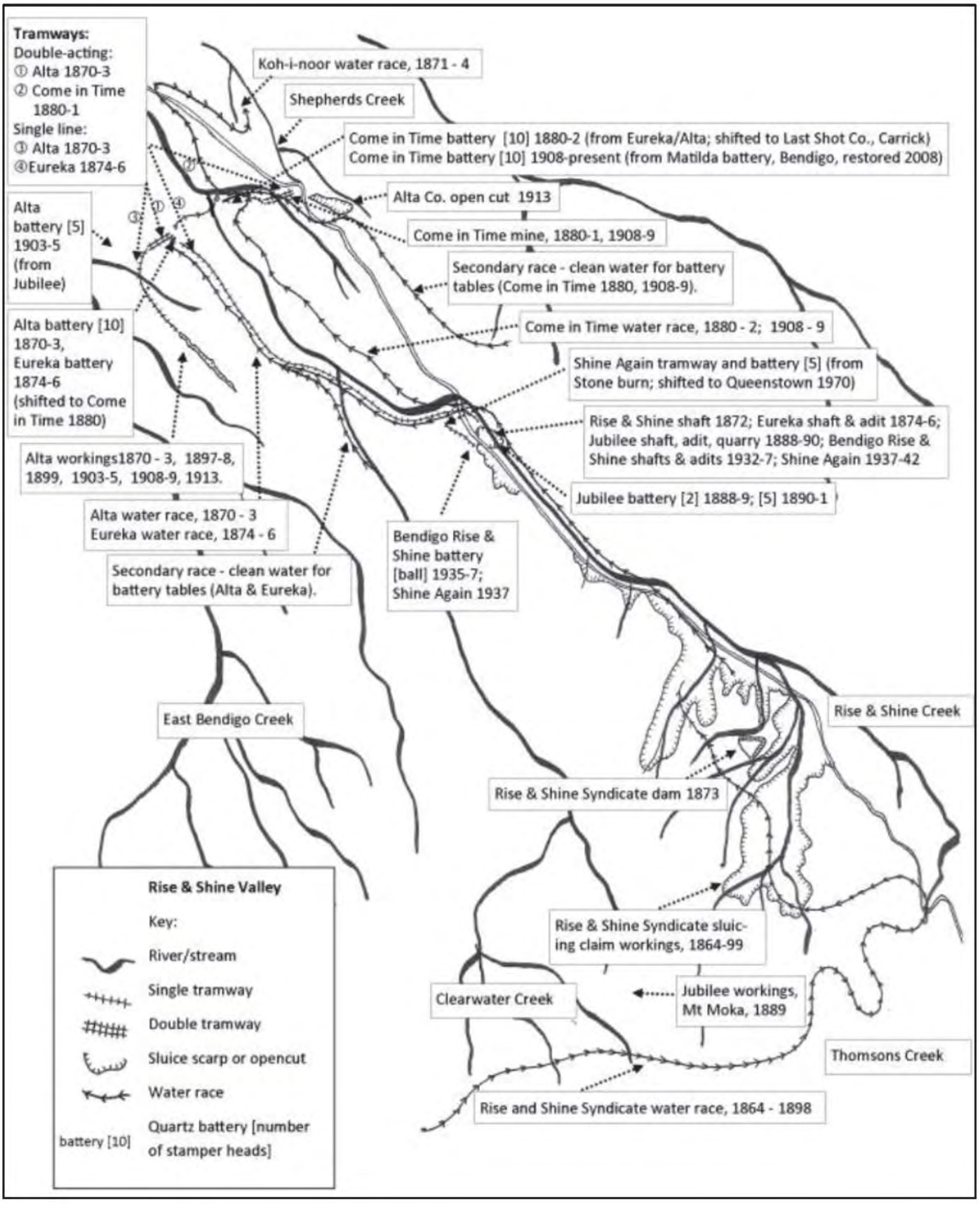
COORDINATE SYSTEM NZGD2000
AERIAL IMAGE ESRI 2024

0 1 2 km

PROJECT No.	CONTROL	REV	DATE
J-H-AU074	001 R	1	30/10/2024

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Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 9
Historic Mining Activities

SOURCE

Carpenter, L. 2013.*Specimens liberally studded with gold: the mining history of a remote Otago Valley.*

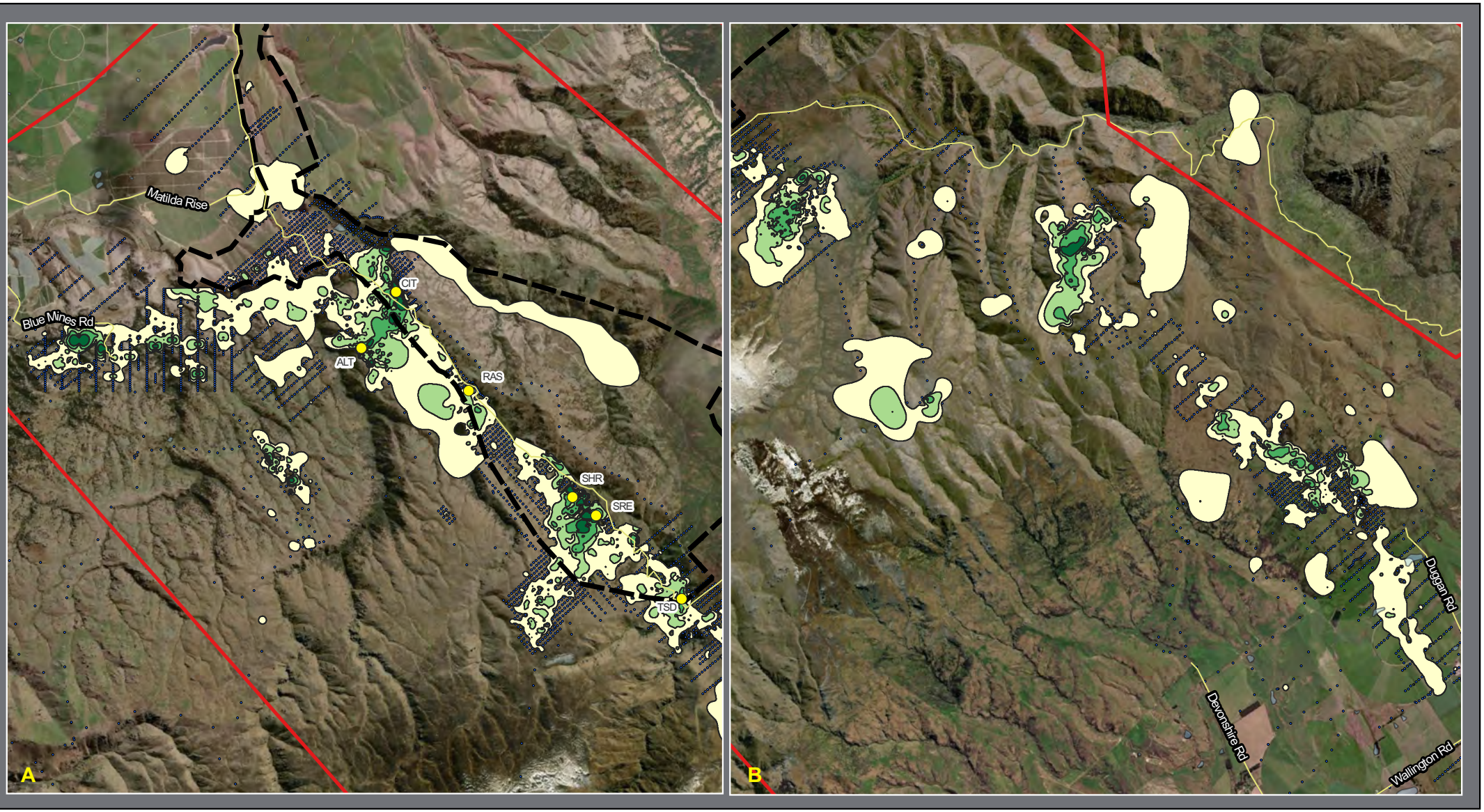
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PROJECT No.	CONTROL REV	DATE
J-G-NZ0005-R-001	1	28/10/2024

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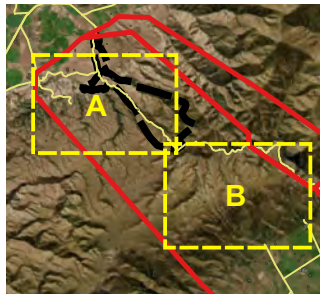
FIGURE 10
Soil Arsenic Concentrations

Legend

- Mining Lease Boundary
- Project Area
- Proposed Development
- Soil XRF Locations
- Gold deposit exploration areas

Soil arsenic concentrations (ppm)

- 20-50
- 50-150
- 150-500
- >500



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NOTES

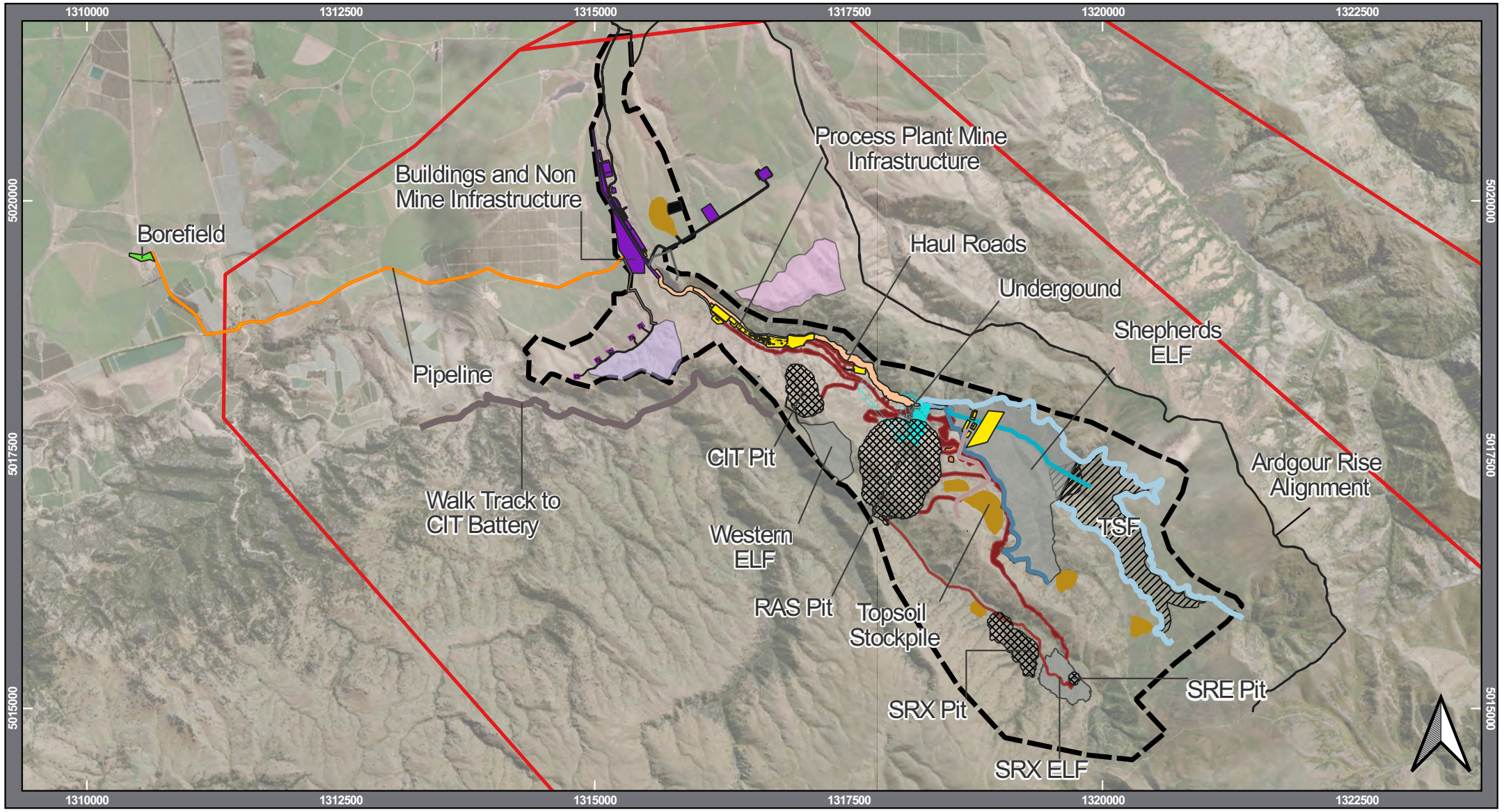
COORDINATE SYSTEM NZGD2000
AERIAL IMAGE ESRI 2024

0 1 2 km

PROJECT No.	CONTROL	REV	DATE
J-H-AU074	001 R	2	02/02/2025

PREPARED	REVIEW	APPROVED
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PROJECT
Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 11
Proposed Site Development

Legend

- Mining Lease Boundary
- Project Area
- Mining Pits
- ELF
- TSF
- Underground
- Bendigo Pest Exclusion Area
- Ardgour Pest Exclusion Area
- Topsoil Stockpile
- Haul Roads
- Process Plant Mine Infrastructure
- Quarry
- Borefield
- Buildings and Non Mine Infrastruc
- Clean Water Diversion Channel
- Dirty Water Diversion Channel
- Seepage Collection Pipe

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NOTES

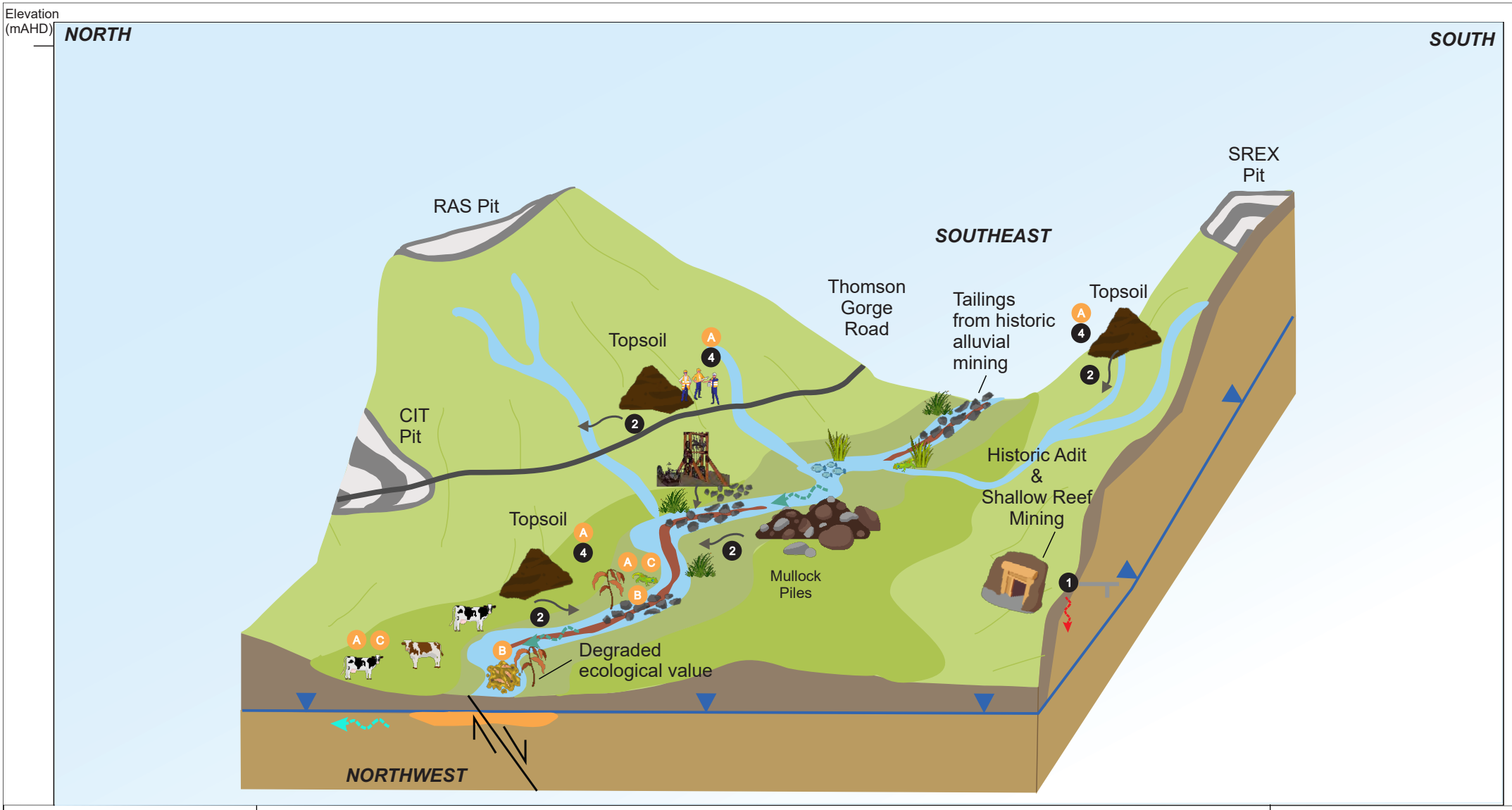
COORDINATE SYSTEM NZGD2000
AERIAL IMAGE ESRI 2024

0 1 2 km

PROJECT No.	CONTROL	REV	DATE
J-H-AU074	001 R	1	09/05/2025

PREPARED	REVIEW	APPROVED
VM	JP	JP

GEOCONTAM RISK MANAGEMENT



Legend

Geology
- Schist
- Alluvial and weathered rocks
- Groundwater Table
- Leachate from tailings
- AMD Leachate

Release Mechanism
1. Oxidation of sulfide minerals
2. Discharge of chemicals
3. Infiltration/leaching of discharge
4. Airborne Particulates

Migration Pathways
- Toe Seepage or vertical migration to groundwater
- Overflow/runoff
- Lateral Migration of dissolved contaminants via groundwater flow
- Downstream migration

Exposure Route
- A Inhalation
- B Biotic Uptake
- C Ingestion

Not to Scale

CLIENT
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PROJECT
Bendigo-Ophir Gold Project

Preliminary Site Investigation

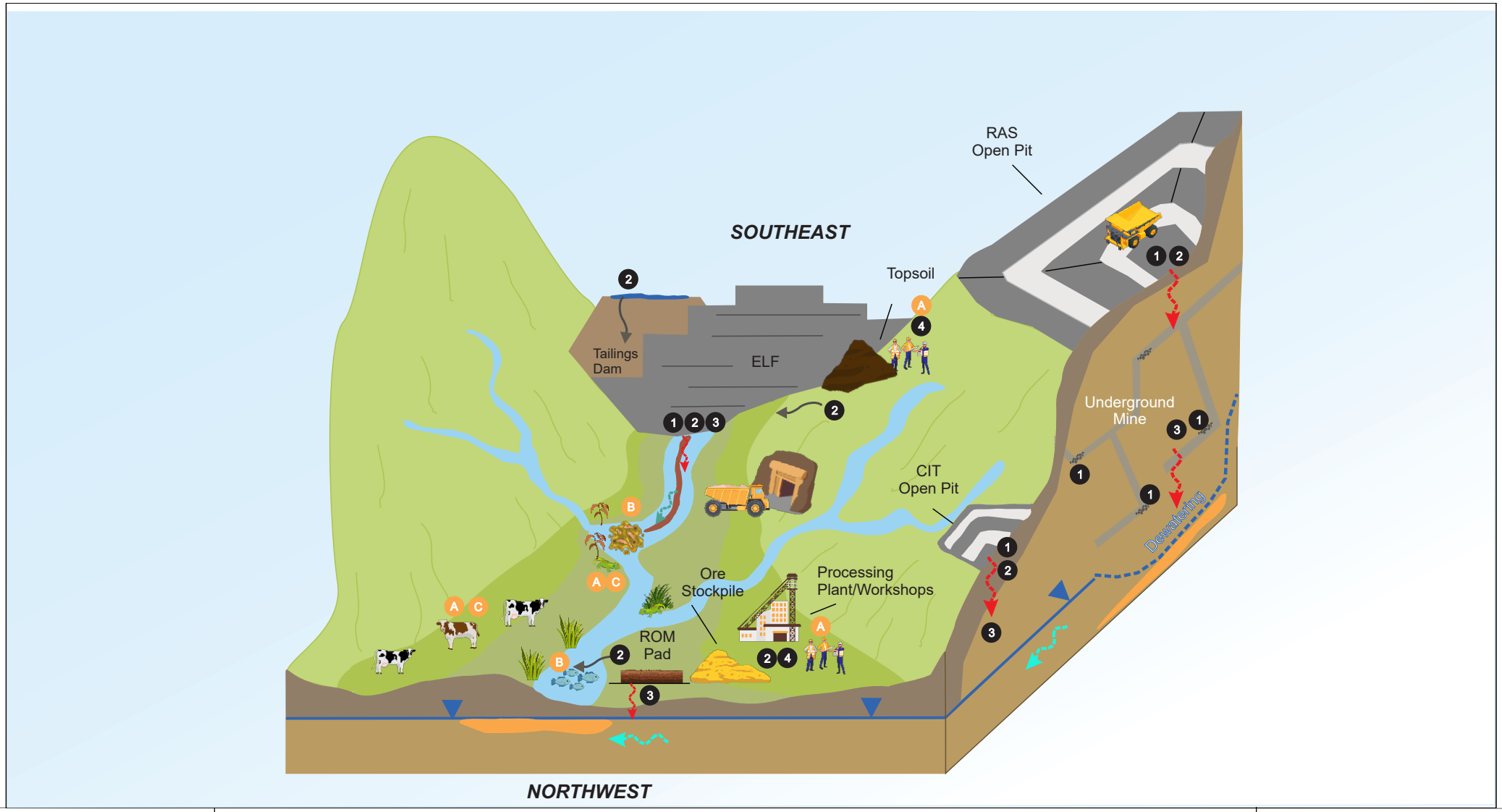
FIGURE 12
CSM Rise and Shine Valley

PROJECT No.	CONTROL	REV	DATE
J-G-NZ005	001 R	1	29/10/24

PREPARED	REVIEW	APPROVED
VM	JP	JP

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PROJECT
Bendigo-Ophir Gold Project

Preliminary Site Investigation

FIGURE 13
CSM Shepherds Creek Valley

Legend

Geology
- Schist
- Alluvial and weathered rocks
- Groundwater Table
- Leachate from tailings
- AMD Leachate

Release Mechanism
1. Oxidation of sulfide minerals
2. Discharge of chemicals
3. Infiltration/leaching of discharge
4. Airborne Particulates

Migration Pathways
- Toe Seepage or vertical migration to groundwater
- Overflow/runoff
- Lateral Migration of dissolved contaminants via groundwater flow
- Downstream migration

Exposure Route
- A Inhalation
- B Biotic Uptake
- C Ingestion

Not to Scale

PROJECT No.	CONTROL	REV	DATE
J-G-NZ005	001 R	1	29/10/24

PREPARED	REVIEW	APPROVED
VM	JP	JP

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GEOCONTAM RISK MANAGEMENT

APPENDIX C SITE PHOTOS



Photo C1: Historic Bendigo sluicing area, offsite (looking east).



Photo C2: CIT historic battery (view from back).



Photo C3: CIT historic battery and water wheel.



Photo C4: CIT historic adit entry.



Photo C5: CIT former pit floor and adit (looking north towards Shepherds Creek).



Photo C6: RAS former battery area and farmer's dam.



Photo C7: RAS mullock pile.



Photo C8: Example of potential ore-bearing rock at RAS mullock pile.



Photo C9: RAS historic pit and adit (in gully)



Photo C10: Historic RAS battery location



Photo C11: Tailings washing area below former RAS battery.



Photo C12: Shreks historic tailings in low-lying creek bed.



Photo C13: Shreks historic sluicing face.



Photo C14: Washing residue in Shreks sluicing area.



Photo C15: Shreks historic water storage dam.



Photo C16: Rock wall above Shreks historic water dam.



Photo C17: Tailings in low-lying areas below Shreks sluicing area.



Figure C18: BOGP processing plant proposed to be constructed in valley (looking northeast, left side of photo)



Photo C19: Photo from on top of RAS deposit looking towards Shepherds Creek.



Photo C20: RAS pit area – hill crest and green valley(looking northwest)

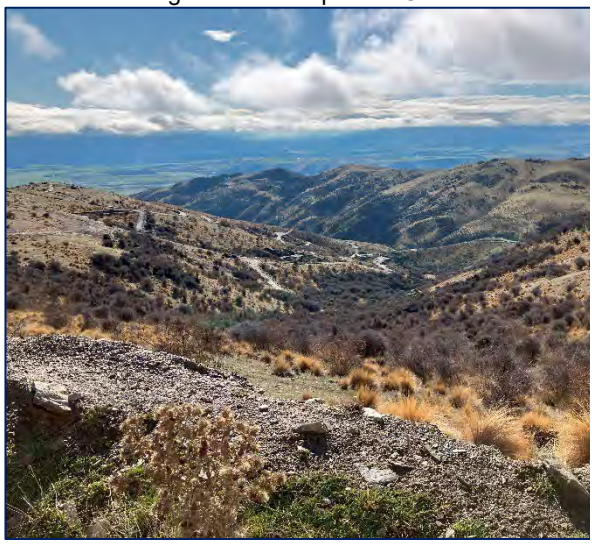


Photo C21: View of valley that will contain the ELF (looking southeast).



Photo C22: Jeans Creek and DOC land beyond (looking southeast).

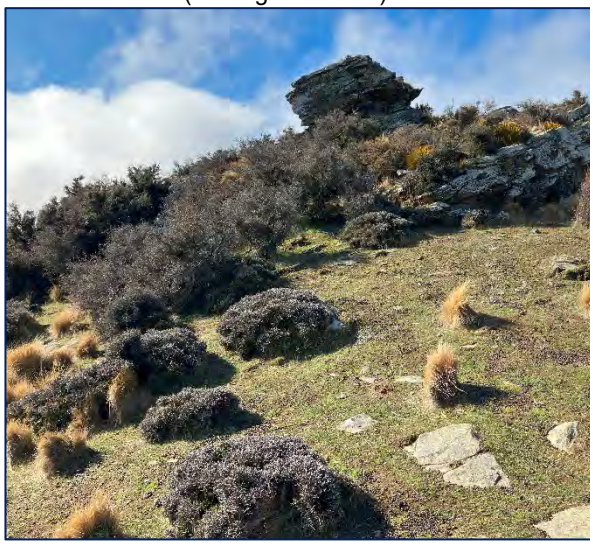


Photo C23: Schist outcrop on ridge peak at SE end of proposed mine development area.



Photo C24: View of Jeans Creek valley, northwest extent (looking north).

APPENDIX D LIMITATIONS

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APPENDIX D BASELINE WATER QUALITY REPORT

Baseline Water Quality Report

Bendigo-Ophir Gold Project

4 August 2025

J-NZ0233-006-R-Rev6

MINE WASTE MANAGEMENT
GREENROAD GROUP

MATAKANUI GOLD LIMITED

Baseline Water Quality Report

Bendigo-Ophir Gold Project

Document Number: J-NZ0233-006-R-Rev6

Document Date: 4 August 2025

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REVISION	DATE	AUTHOR	RECORD OF REVIEW
RevA	22/04/2024	CH/QY	PW
RevB	04/10/2024	LL/QY/CH	PW
Rev0	07/01/2025	CH	PW
Rev1	05/02/2025	KD	PW
Rev2	01/06/2025	CH/PW	PW
Rev3	03/06/2025	PW	PW
Rev4	06/06/2205	CH/PW	PW
Rev5	01/08/2025	CH/PW	JP/PW
Rev6	04/08/2025	CH/PW	JP/PW

EXECUTIVE SUMMARY

Mine Waste Management Limited (MWM) has prepared this baseline water quality report for Matakanui Gold Limited (MGL) for the proposed Bendigo-Ophir Gold Project (BOGP). This report presents water quality data for the period September 2022 to November 2024.

Objectives of this Study

The objectives of this report are to:

- Summarise the water quality monitoring plan that has been established to characterise baseline conditions including historic mining effects and any effects of natural mineralisation.
- Present data as a factual report.
- Provide recommendations.

Findings

For this report, the proposed BOGP water quality compliance limits (Ryder, 2025) are used as a screening tool to determine whether baseline water quality data are elevated. This assessment indicated that:

- Shepherds Creek is elevated in copper (Cu).
- Bendigo Creek is elevated in arsenic (As), cobalt (Co), Cu, and iron (Fe).
- Groundwater is elevated in As, Cu, Fe, zinc (Zn), and on occasion strontium (Sr) within the project area. Thallium (Tl) was elevated on one occasion (although this appears anomalous).

Baseline Studies

A number of the streams associated with the BOGP have been impacted by historical mining activities contributing to elevated metals such as As in waterways. Some streams are also elevated in metals such as Cu due to natural baseline conditions unaffected by mining (e.g., Shepherds Creek). Ongoing baseline water quality monitoring is recommended to develop a robust dataset to support the development of site-specific water quality criteria for the BOGP.

Management

These baseline conditions should be considered when setting water quality objectives for the operational and closure phases of the BOGP. Further discussion is provided by Ryder (2025).

Some monitoring locations have <2 years of data. ANZG (2018) notes that site-specific guideline values should be based on at least 2 years of monthly monitoring data from an appropriate site to address seasonality during different flow regimes (low, median, and high flow). Such data should be assessed once it is available to confirm baseline conditions.

General Background

MGL is proposing to establish the BOGP, which comprises gold mining operations, processing operations, ancillary facilities and environmental mitigation measures on Bendigo and Ardgour Stations in the Dunstan Mountains of Central Otago. The project site is located approximately 20 km north of Cromwell and will have a maximum disturbance footprint of 550 hectares.

The total Mineral Resource Estimate for the BOGP using a 0.5 g/t cut-off for open pit and 1.5 g/t for underground is 34.3 Mt at 2.1 g/t for 2.34 M oz (MGL, 2025). The Bendigo-Ophir resources occur in four deposits: Come in Time (CIT), Rise and Shine (RAS), Srex (SRX), Srex East (SRE). The majority of identified mineral resources are located within the RAS deposit. Three primary geological units are recognised at site:

- RSSZ – Rise and Shine Shear Zone
- TZ3 – Lower Greenschist facies Textural Zone 3 rocks of the Otago Schist
- TZ4 – Upper Greenschist facies Textural Zone 4 rocks of the Otago Schist

The resources will be mined by open pit methods at each deposit within the project site, with underground mining methods also proposed to be utilised at RAS to access the deeper gold deposits. The majority of the mining activities, ancillary facilities and associated infrastructure will be located in the Shepherds Valley – which includes a conventional carbon-in-leach (CIL) gold processing plant and water treatment plant, a tailing storage facility, three engineered landforms, internal haul roads, topsoil stockpiles, water pipelines, underground utilities and electrical supply with non-operational infrastructure located on the adjoining Ardgour Terrace. The BOGP also involves the taking of groundwater from the Bendigo Aquifer for use in mining-related activities and the realignment of Thomson Gorge Road via Ardgour Station.

There are numerous historic mine workings throughout the project area, which can impact baseline water quality. The archaeological survey completed by Lawrence et al. (2019) indicated 59 historic mine archaeological sites were identified within a 16 km^2 survey area. The majority of mine workings were pre-1900 mining activities and included the following key historic workings (Lawrence et al., 2019):

- Stamping batteries and processing areas.
- Underground mine adits.
- Mullock piles.
- Tailings mounds.
- Sluicing areas.

Baseline Water Quality Review

The BOGP covers several catchments and sub-catchments, including:

- Shepherds Creek (SC): This creek flows intermittently towards the Lindis River. Downstream of the SC01 monitoring site, an irrigation water-take diverts surface water to an irrigation reservoir, causing cessation of the creek's surficial flow. Potential groundwater movement through alluvial gravels along the Shepherds Creek bed remains unexplored.

- Jean Creek (JC): This creek is an intermittent tributary to Shepherds Creek.
- Rise and Shine (RAS) Creek (Bendigo Creek): This creek joins Clearwater Creek (CC) just Southeast of the Come in Time Battery and flows into Bendigo Creek.
- Groundwater: Groundwater has been assessed at drillhole locations within the BOGP footprint.

A metal ecotoxicity quotient (MEQ) is used in this report to identify potential constituents of concern (PCOC) that may be elevated with respect to water quality guidelines, compliance limits, or trigger values that mange ecotoxicity risks (Weber and Olds, 2016). For this report, the proposed BOGP water quality compliance limits (Ryder, 2025) are used as a MEQ screening tool to determine whether baseline water quality data were elevated. The approach does not use toxicity modification factors to calculate MEQ and uses conservative data when available (e.g., chronic limits rather than acute limits). Where no limits have been proposed by Ryder (2025) the 95% ANZG (2018) limits, or similar, have been used as a screening tool to determine if the PCOC is elevated.

The MEQ value for a PCOC is determined by dividing the measured maximum concentration by the water quality reference limit (WQ Limit). MEQ values greater than 1 indicate parameters that exceed the relevant WQ Limit. Conversely, MEQ values less than 1 are below the relevant WQ Limit. If any constituents are within 50% of the WQ Limit (i.e., 1≥ MEQ ≥0.5) they are considered potentially elevated (and are noted as being potentially elevated in this report) and ongoing monitoring is recommended to confirm trends and/or potential hazards. This approach is similar to using 50% of maximum acceptable value (MAV) for New Zealand drinking water where it is used as a screening level for follow up action (Taumata Arowai, 2022).

From the available water quality data provided, the following observations were made:

<u>Shepherds Creek:</u>

- Sample site JC01 had elevated Cu concentrations (maximum MEQ value of 1.67). Average Cu concentrations were 0.0014 mg/L.
- MEQ data 0.5 ≤ MEQ < 1.0 indicate that a PCOC is potentially elevated but still below the respective WQ Limit. The following was observed:
  - Sampling sites SC01 and SC03 had elevated Cu concentrations (MEQ values of 0.556 and 0.611 respectively). Average Cu concentrations were 0.0005 mg/L and 0.0006 mg/L respectively.
  - Sample site SC01 had elevated Sr concentrations (MEQ value of 0.500). Average Sr concentrations were 0.947 mg/L.
- E3 Scientific (2023) noted that concentrations of nutrients (e.g., nitrate and ammoniacal nitrogen) were elevated in Shepherds Creek and may be attributed to the presence of livestock in the vicinity. Similarly, TKN[1] concentrations could also be a result of animal waste inputs or rock weathering processes within those watersheds (E3 Scientific, 2023).

[1] *TKN = Total Kjeldahl Nitrogen*

Bendigo Creek:

- Arsenic concentrations were reported as exceeding the WQ Limit across RSA1 and LBA (i.e., MEQ >1). Note that baseline data shows that CC01 (Clearwater Creek) and RS04 above the Rise and Shine historic workings were not elevated in As.
- Cobalt concentrations were reported as exceeding the WQ Limit at RSA1 (maximum MEQ value of 1.80).
- Copper was elevated above the WQ Limit for RSA1 with a maximum MEQ value of 18.9.
- MEQ data 0.5 ≤ MEQ < 1.0 indicate that a PCOC is potentially elevated but still below the respective WQ Limit. The following was observed:
    - Aluminium concentrations from the sampling site CC01 had a MEQ value of 0.613.
    - Arsenic concentrations from the sampling site RS01 had a MEQ value of 0.833.
    - Cadmium concentrations from the sampling site LBA had a MEQ value of 0.636.
    - Copper from the sampling site RS01, RS02, RS04, and CC01 with MEQ values of 0.833, 0.889, 0.944, and 0.500 respectively.
    - Zinc concentrations from the sampling sites RSA1 and RS03 had a MEQ values of 0.791 and 0.594 respectively.
    - Strontium had a MEQ value of 0.536 at the sampling site RSA1.

Groundwater:

- Arsenic concentrations were reported as exceeding the WQ Limit for sampling sites MDD015, MRC002, and MDD302.
- Copper concentrations were reported as exceeding the WQ Limit for sampling sites MRC002, Base (Office), and Base (Exploration Camp).
- Iron concentrations exceeded their WQ Limit at MDD015, MRC002, and MDD302.
- Lead concentrations were reported as exceeding the WQ Limit for the sampling site Base (Exploration Camp).
- Strontium concentrations exceeded the WQ Limit at MDD015.
- Thallium concentrations exceeded the WQ Limit at sampling site MDD015 during the sampling event in April 2024.
- Zinc concentrations exceeded their WQ Limit at MRC002 and Base (Exploration Camp).
- MEQ data 0.5 ≤ MEQ < 1.0 indicate that a PCOC is potentially elevated but still below the adopted WQ Limit. The following was observed:
    - Ammoniacal nitrogen concentrations at MDD015 had a MEQ value of 0.833.
    - Strontium concentrations at MRC002 had a MEQ value of 0.893.

- Zinc concentrations at Base (Office) had a MEQ value of 0.914.

Summary and Recommendations

An understanding of the baseline water quality conditions is required to assess whether any potential future effects are associated with the project. The following recommendations are provided:

Water Quality Monitoring Program

- Continue baseline water quality sampling for all current sampling sites. This will ensure that there are sufficient data are available to understand baseline conditions prior to the BOGP starting operations.
- Water quality datasets need to be compared to historical mining activity and soil mineralisation mapping to confirm natural baseline water quality versus water quality affected by historic mining activities. Such effects, based on preliminary data, have been considered as part of determining appropriate compliance water quality limits for the BOGP (Ryder, 2025).
- Monitoring of flow rates is a critical component of understanding potential project effects. Continuous monitoring is recommended and will form part of the proposed consent conditions (Ryder, 2025). This will enable an ongoing understanding of loads associated with PCOC.
- It is important that current monitoring sites align with any future resource consent monitoring locations (compliance monitoring). If other sites are to be used for compliance monitoring, then it is recommended that monitoring commence as soon as possible to obtain baseline data. Current proposed compliance monitoring sites include SC01 in Shepherds Creek (surface and groundwater) and RS03 in Rise and Shine Creek. A groundwater quality compliance site is required within the Ardgour Aquifer to understand any potential effects of mine-impacted water discharge from Shepherds Creek. These groundwater monitoring bores will be installed once the BOGP is approved. Further details are provided in Rekker and Dumont (2025).
- The groundwater quality datasets are limited at this early stage of the BOGP as monitoring requirements have only been recently identified. Further samples taken at regular intervals are required to understand baseline water quality and seasonal fluctuations. A groundwater monitoring network needs to be established for performance and compliance monitoring purposes.
- The frequency of monitoring should be reviewed after 2 years of consistent data collection to consider the parameters that require monitoring (e.g., not all metals are elevated) and the monitoring intensity (e.g., monthly/quarterly/etc). Currently, some monitoring locations have <2 years of data. ANZG (2018) notes that that site-specific guideline values should be based on at least 2 years of monthly monitoring data from an appropriate site to address seasonality during different flow regimes (low, median, and high flow).
- Develop a management process for sample collection, dispatch, and analysis that will be used operationally.

- For QA/QC[2] purposes, duplicate samples should be taken and submitted to the laboratory for analysis to assess the precision and consistency of the results, ensuring that the sampling, handling, and analytical processes produce reliable and reproducible data. Industry standards indicate one duplicate should be collected for every 10 samples (Department of Environment, Science and Innovation, 2018).
- Monitoring should also include temperature, pH, dissolved organic carbon (DOC), and hardness as these parameters are toxicity modifying factors that are required to adjust trigger values.

Data Management

MGL should continue to compile and maintain a monitoring database for all water quantity and quality data to ensure robust datasets for future assessments and studies. MWM has provided guidance on QA/QC procedures for the water quality database, and this should be utilised (MWM, 2025a).

Annual Reporting

It is recommended that this baseline water quality report be updated annually in an Annual Water Report (AWR) to summarise baseline water quality (and quantity) during the project operational phase and into the active closure and post closure phases of the project. The provision of long-term water quality datasets in the AWR will be a key dataset for understanding any potential effects of the BOGP and to demonstrate that any engineering controls introduced to mitigate any deleterious effects are working effectively.

[2] *Quality Assurance / Quality Control*

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1 INTRODUCTION

Mine Waste Management Limited (MWM) has prepared this factual baseline water quality report for Matakanui Gold Limited (MGL) for the proposed Bendigo-Ophir Gold Project (BOGP). This report presents water quality data for the period September 2022 to November 2024.

1.1 Project Description

MGL is proposing to establish the BOGP (Figure 1), which comprises gold mining operations, processing operations, ancillary facilities, and environmental mitigation measures on Bendigo and Ardgour Stations in the Dunstan Mountains of Central Otago. The project site is located approximately 20 km north of Cromwell and will have a maximum disturbance footprint of 550 hectares.

The total Mineral Resource Estimate for the BOGP using a 0.5 g/t cut-off for open pit and 1.5 g/t for underground is 34.3 Mt at 2.1 g/t for 2.34 M oz (MGL, 2025). The Bendigo-Ophir resources occur in four deposits: Come in Time (CIT), Rise and Shine (RAS), Srex (SRX), Srex East (SRE). The majority of identified mineral resources are located within the RAS deposit. Three primary geological units are recognised at site:

- RSSZ – Rise and Shine Shear Zone
- TZ3 – Lower Greenschist facies Textural Zone 3 rocks of the Otago Schist
- TZ4 – Upper Greenschist facies Textural Zone 4 rocks of the Otago Schist

The resources will be mined by open pit methods at each deposit within the project site, with underground mining methods also proposed to be utilised at RAS to access the deeper gold deposits. The majority of the mining activities, ancillary facilities and associated infrastructure will be located in the Shepherds Valley with non-operational infrastructure located on the adjoining Ardgour Terrace. The BOGP also involves the taking of groundwater from the Bendigo Aquifer for use in mining-related activities and the realignment of Thomson Gorge Road via Ardgour Station.

The following mine facilities are proposed (Figure 2):

- Open pits targeting the RAS, SRX, SRE, and CIT deposits.
- An underground mine targeting the RAS deposit.
- Three ex-pit engineered landforms (ELFs) – Shepherds ELF, SRX ELF, and West ELF (WELF).
- Two in-pit landforms (backfill) – CIT and SRE[3].
- Plant and processing area, where carbon-in-leach extraction (CIL) extraction technologies will be used as part of the ore recovery process.
- A tailings storage facility (TSF) and TSF Embankment.
- Other ancillary support services/structures (e.g., roads, water management infrastructure, water treatment plants, etc).

[3] *Note: SRE Pit is backfilled by the SRX ELF.*

These facilities will be placed in the catchment of Shepherds and Bendigo creeks. Understanding baseline water quality (surface and groundwater) is important to enable the establishment of site-specific water quality compliance criteria for any resource consent that may be granted in the future.

1.2 Report Objectives

The objectives of this report are to:

- Summarise the water quality monitoring plan that has been undertaken to characterise baseline conditions including historic mining effects and any effects of natural mineralisation.
- Present data as a factual report.
- Provide recommendations.

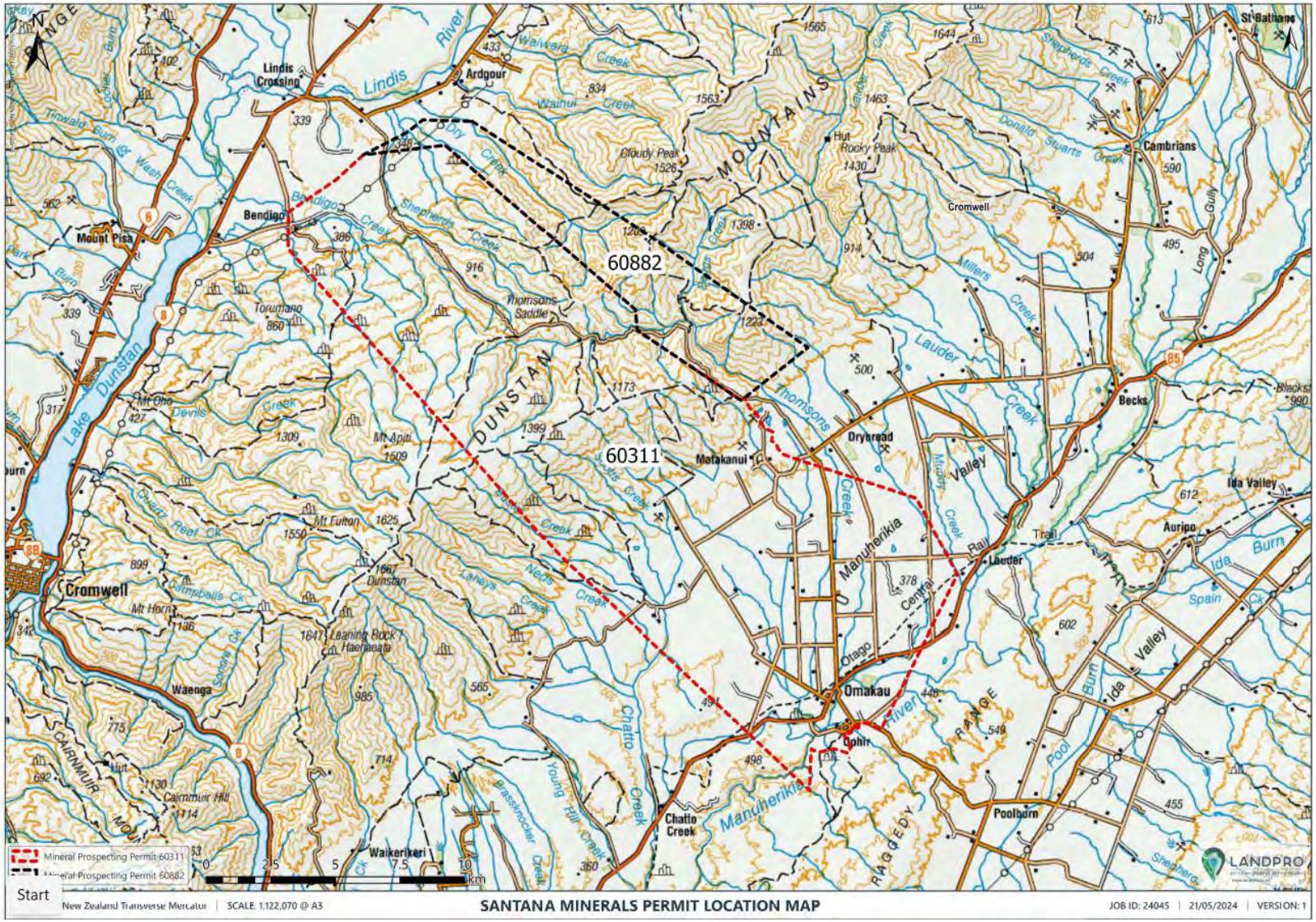


Figure 1. Location map showing the permit boundaries showing MEP60311 and PEP60882.

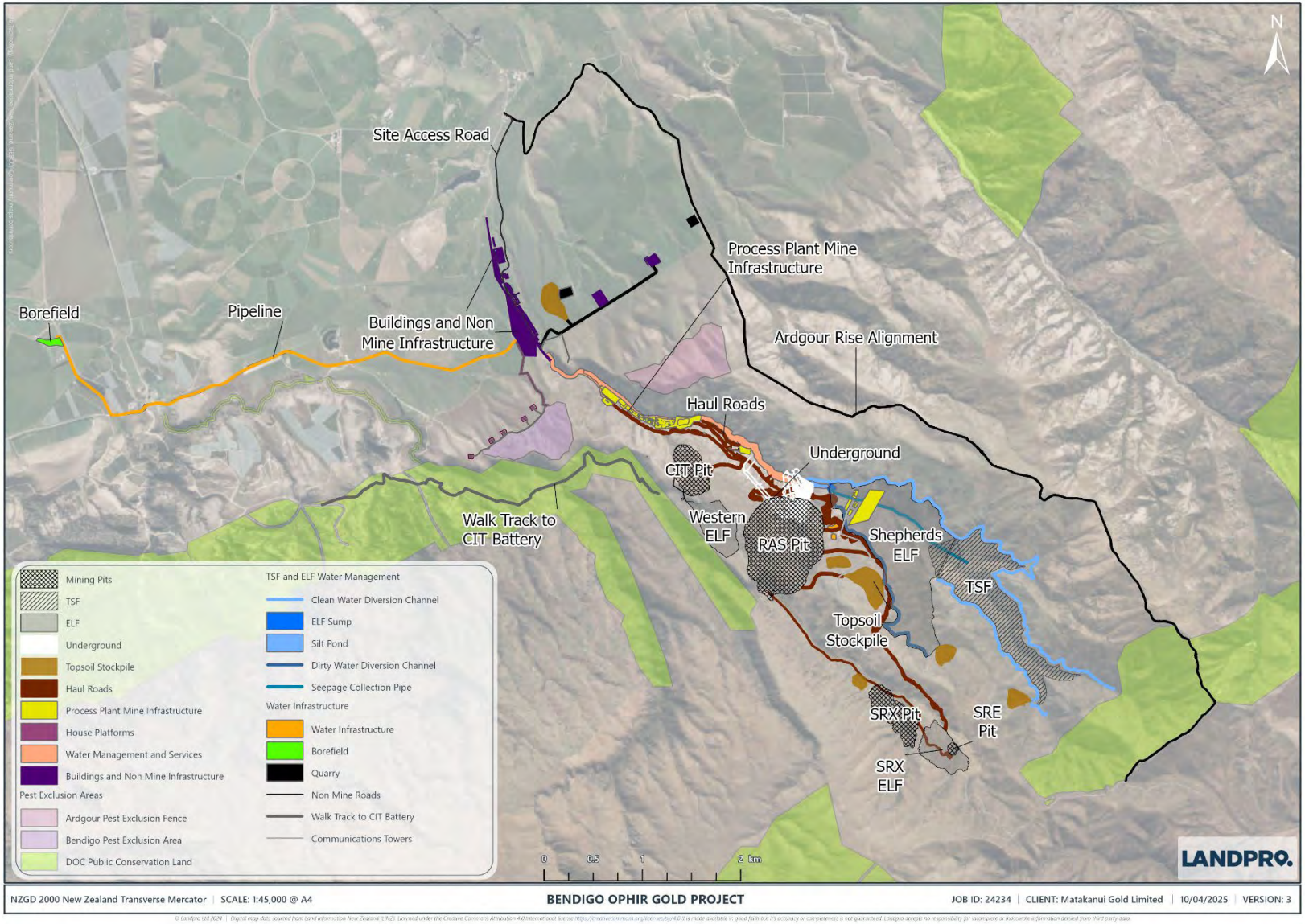


Figure 2. Bendigo-Ophir Gold Project Infrastructure .

2 HISTORIC MINE WORKINGS

There are numerous historic mine workings throughout the BOGP area, which may have the potential to impact baseline conditions (Figure 3). An archaeological survey (Lawrence et al., 2019) indicated 59 historic mine archaeological sites were identified within a 16 km^2 survey area. The majority of mine workings were pre-1900 mining activities (Lawrence et al., 2019) and included the following key historic workings:

- Stamping batteries and processing areas.
- Underground mine adits.
- Mullock piles.
- Tailings mounds.
- Sluicing areas.

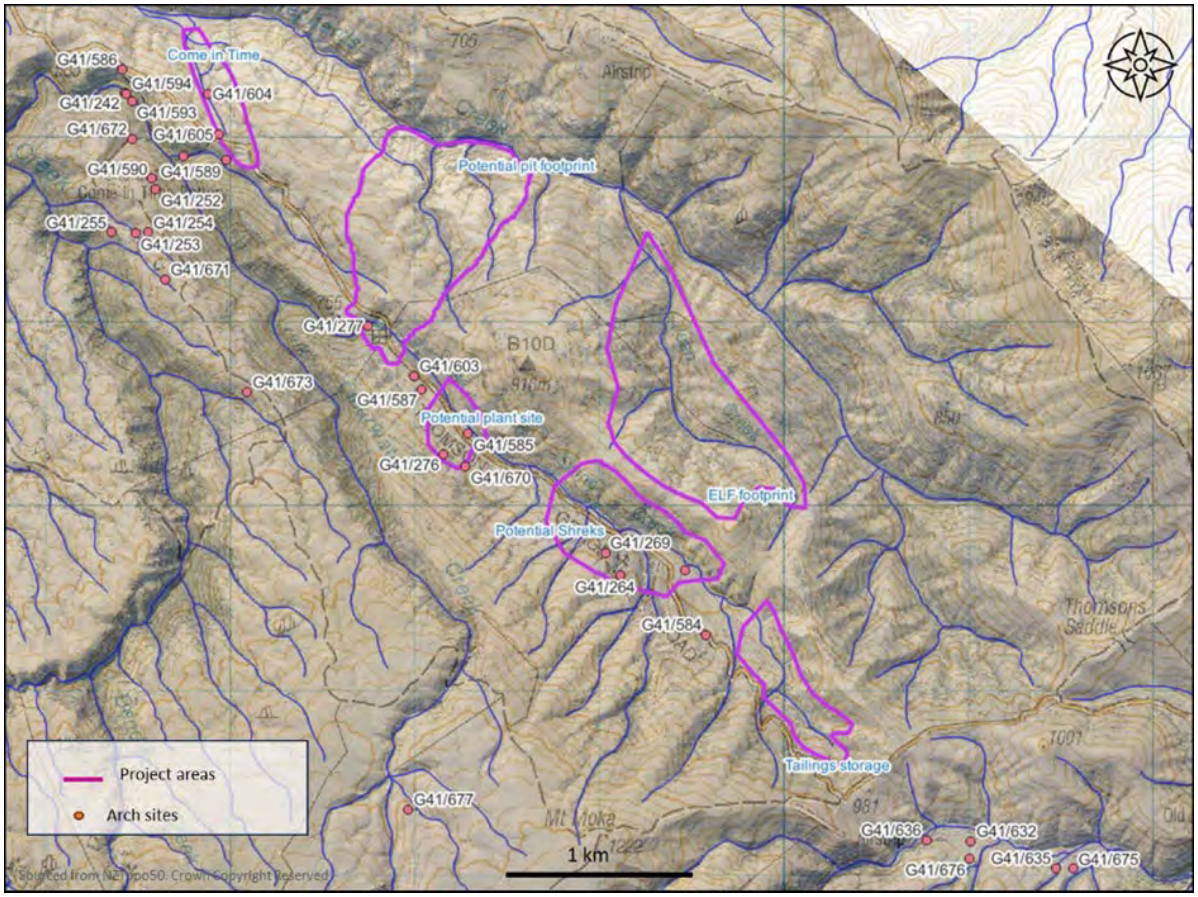


Figure 3. Location of archaeological sites related to mining activities.

Source: Lawrence et al (2019).

3 WATER SAMPLING PLAN

The following section details the baseline water sampling and analysis plan.

3.1 Water Quality Monitoring Sites

The BOGP area covers several catchments and sub-catchments (Table 1 and Figure 4), including:

- Shepherds Creek (SC): This creek flows intermittently towards the Lindis River. Downstream of the SC01 monitoring site, an irrigation water-take diverts surface water to an irrigation reservoir, causing cessation of the creek's surficial flow. There is potential for groundwater to flow past this point via a thin layer of alluvial gravels along the creek bed.
- Jean Creek (JC): This creek is an intermittent tributary to Shepherds Creek.
- Rise and Shine (RAS) Creek: This creek joins Clearwater Creek just southeast of the Come in Time Battery and flows into Bendigo Creek.
- Clearwater Creek: Flows into Bendigo Creek.
- Bendigo Creek: Several irrigation water-takes are in place on this creek (RM20.079.01 and RM20.079.02).
- Groundwater: Groundwater has been assessed at drillhole locations within the BOGP footprint.

Water quality monitoring locations were chosen (E3 Scientific, 2023) during early baseline studies. Later sites were identified during the MWM site visit (MWM, 2025a) as being suitable to assess groundwater and surface water.

Table 1. Water quality sampling sites.

DOMAINS	SITE ID	DESCRIPTION
Shepherds Creek	SC01	Shepherds Creek at Bendigo Terrace. Downstream monitoring site.
	SC03	Shepherds Creek below Rise and Shine. Just upstream from Jeans Creek confluence.
	Jean Creek (JC01)	An intermittent tributary to Shepherds Creek.
Bendigo Creek	RSB	Rise and Shine Battery Site within the Rise and Shine Creek.
	RSA1	Rise and Shine Adit. Historic workings.
	RS01	Immediately downstream of the Rise and Shine workings.
	RS02	Rise and Shine Creek above Rise and Shine workings. Upstream baseline.
	RS03	Rise and Shine Creek below Come in Time.
	RS04	Rise and Shine Creek above Rise and Shine workings. Upstream baseline.
	CC01	Water quality monitoring site in Clearwater Creek.
	LBA	Lower Bendigo Adit – historical working.
Groundwater	MRC002	Groundwater from drillhole MRC002
	MDD015	Drillhole within the potential pit footprint.
	MDD302	Groundwater from drillhole in RAS Valley.
	Base (from water supply)	At the downstream base. Example of water supply.
	Base (exploration camp)	At the exploration camp. Example of water supply.

Source: E3 (2023) and MGL.

Three groundwater monitoring sites are proposed (MW-101, MW-102, MW-103) and may be used for compliance monitoring of groundwater if the BOGP proceeds (Figure 4).

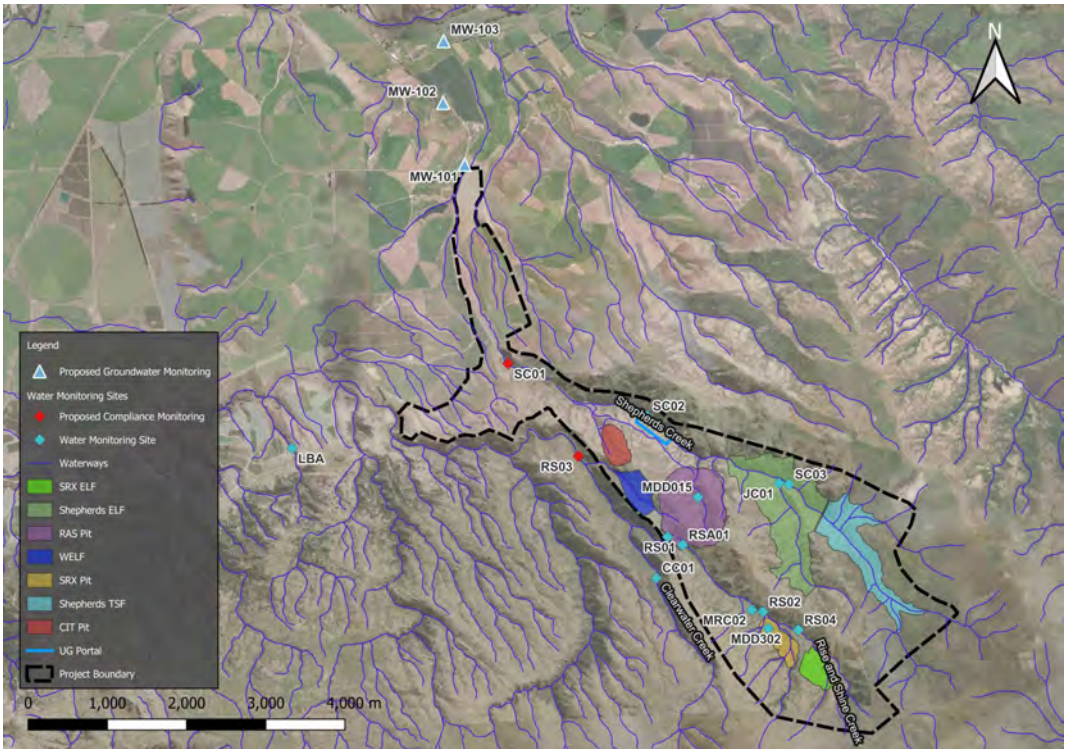


Figure 4. Water monitoring sites.

3.2 Monitoring Program and Frequency

Several water quality datasets were provided by MGL for the assessment of baseline water quality for the BOGP (Table 2). Table 3 provides the number of samples per sampling site taken between September 2022 and November 2024. MGL has indicated that groundwater and surface water sampling is in accordance with the standard operating procedures (SOP) in Appendix B.

Table 2. Water quality analysis suite.

MEASUREMENT TYPE		PARAMETER
Field		flow, pH, redox potential (ORP), electrical conductivity (EC), temperature, turbidity, dissolved oxygen (DO).
Lab	Physical Parameters	pH, electrical conductivity (EC), total hardness, total dissolved solids (TDS), total suspended solids (TSS), turbidity,
	Major Anions	alkalinity – total, acidity, chloride (Cl), fluoride (F), bromide (Br), sulfate (SO4), sum of anions
	Nutrients and Organics	nitrate (NO_3), nitrite (NO_2), ammoniacal nitrogen (Amm-N), total nitrogen (TN), total phosphorus (TP), total cyanide (TCN), dissolved silicon (DSi), silicon (Si), phosphorus (P), total organic carbon (TOC), dissolved organic carbon (DOC), total Kjeldahl nitrogen (TKN), dissolved reactive phosphorus (DRP).
	Total & Dissolved Metals	silver (Ag), aluminium (Al), arsenic (As), boron (B), barium (Ba), beryllium (Be), bismuth (Bi), calcium (Ca), cadmium (Cd), cobalt (Co), chromium (Cr), caesium (Cs), copper (Cu), iron (Fe), germanium (Ge), mercury (Hg), potassium (K), lanthanum (La), lithium (Li), magnesium (Mg), manganese (Mn), molybdenum (Mo), sodium (Na), nickel (Ni), phosphorus (P), lead (Pb), rubidium (Rb), sulfur (S), antimony (Sb), selenium (Se), tin (Sn), strontium (Sr), titanium (Ti), thallium (Tl), uranium (U), vanadium (V), yttrium (Y), zinc (Zn).

1 – Acidity titrations have been completed to pH 4,5,7, and 8.3.

Note: Not all sites had all analyses completed. s

Table 3. Sample numbers for each monitoring site (September 2022 to December 2024).

DOMAIN	SAMPLE SITE	NUMBER OF SAMPLES
Shepherds Creek	SC01	25
	SC03	21
	JC01	6
Bendigo Creek	RSB	2
	RSA1	25
	RS01	26
	RS02	26
	RS03	25
	RS04	14
	CC01	16
	LBA	18
Groundwater	MRC002	1
	MDD015	18
	MDD302	12
	Base (office water supply)	1
	Base (exploration camp water supply)	1

Samples were assessed for total and dissolved parameters as appropriate. Full datasets are provided in Appendix D. The analysis provided in this report focus on dissolved parameters being the constituents of interest for water quality compliance limits.

The frequency of monitoring should be reviewed after 2 years of consistent data collection to consider the parameters that require monitoring (e.g., not all metals are elevated) and the monitoring intensity (e.g., monthly/quarterly, etc.). Currently some monitoring locations have <2 years of data. ANZG (2018) notes that that site-specific guideline values should be based on at least 2 years of monthly monitoring data from an appropriate site to address seasonality during different flow regimes (low, median, and high flow). As shown in Table 3 some sites need additional data to comply with the ANZG (2018) guidance.

3.3 Water Quality Analysis

This section explains how water quality data were assessed as being elevated or not elevated to understand baseline water quality.

3.3.1 Metal Ecotoxicity Quotient

A metal ecotoxicity quotient (MEQ) is used in this report to identify potential constituents of concern (PCOC) that may be elevated with respect to water quality guidelines, compliance limits, or trigger values that mange ecotoxicity risks (Weber and Olds, 2016). For this report, the proposed BOGP water quality compliance limits (Ryder, 2025) are used as a MEQ screening tool to determine whether baseline water quality data were elevated. The approach does not use toxicity modification factors to calculate MEQ and uses conservative data when available (e.g., chronic limits rather than acute limits).

Where no water quality limit (WQ Limit) was provided by Ryder (2025), other guideline values were applied to have a water quality limit (WQ Limit) for assessment purposes. Iron (Fe) and U are not used in the assessment of surface water, instead the groundwater limits for iron and uranium remain

applicable and will be used to assess compliance at SC01 and RS03, as well as in test work and baseline studies. The following WQ Limits have been adopted:

- The 95% ANZG (2018) DGVs:
  - Surface water: Ag, B, Ni, Pb, Se, and V.
  - Groundwater: Ag, B, Ni, and V.
- The 90% ANZG (2018) DGVs:
  - Surface water: Al, Cu, and Zn.
  - Groundwater: Al, Cu, and Zn.
- Guidelines from the NPS[4] for Freshwater Management (MfE, 2020) for ammoniacal-N in groundwater: 0.24 mg/L.
- A limit of 2.5 mg/L was applied to Sr in surface and groundwater. This guideline is based on the Canadian Federal Environmental Quality Guidelines (2020), but its noted Ryder (2025) recommends 4 mg/L for groundwater.

The MEQ value for a PCOC is determined by dividing the measured maximum concentration by the WQ Limit. MEQ values greater than 1 indicate parameters that exceed the relevant WQ Limit. Conversely, MEQ values less than 1 are below the relevant WQ Limit. If any constituents are within 50% of the WQ Limit (i.e., MEQ ≥0.5) they are considered potentially elevated (and are noted as being potentially elevated in this report) and ongoing monitoring is recommended to confirm trends and/or potential hazards. This approach is similar to using 50% of maximum acceptable value (MAV) for New Zealand drinking water where it is used as a screening level for follow up action (Taumata Arowai, 2022).

In this report MEQ data are colour coded for ease of analysis and data interpretation whereby:

- Red MEQ indicates that concentrations exceed the adopted WQ Limit or similar guidelines (i.e., MEQ ≥1).
- Orange MEQ indicated the PCOC is potentially elevated (i.e., 0.5 ≤ MEQ < 1).
- Blue MEQ indicates all data are influenced by the limit of reporting (LOR) being higher than the adopted WQ Limit and may not be elevated.

3.4 Change in Laboratories

Several laboratories have been contracted by MGL to analyse the water quality samples throughout the baseline monitoring period:

- Analytica Laboratories (Analytica) were contracted to analyse the first round of water quality samples in September 2022.
- SGS Laboratories (SGS) were contracted to analyse the water quality samples taken in October 2022 and March 2023.

[5] *nephelometric turbidity units*

- Eurofins Laboratories (Eurofins) were contracted to analyse the water quality samples taken from April 2023 through to May 2024. Hill Laboratories (Hills) were used during this period to analyse duplicate samples for inter-lab quality assurance / quality control (QA/QC) purposes. Inter-lab QA/QC is discussed further in Section 4.5.
- Analytica are the current supplier of laboratory analysis services and analysed the water quality samples taken from late May 2024 through to November 2024. It should be noted that the ALS Laboratories (ALS) acquired Analytica in 2024 (hence the shift in laboratories during the October sampling events).

The primary reason for the change in laboratory to Analytica/ALS in May 2024 was for the capability to provide analysis at a lower limit of reporting (LOR) for a range of key parameters. For example, the LOR for chromium at Analytica Laboratories is 0.0002 mg/L, compared to 0.001 mg/L at Eurofins.

As noted by MWM (2024a) small concentration changes at low analyte concentrations (typically defines as <10x LOR) will result in larger calculated variations in precision – the significance of this large change should be considered in the context of the data quality objectives (e.g., Australian Standards, 2005).

4 DATA ANALYSIS

The following sections examine the water quality data for surface and groundwater samples. Seasonal trends are discussed where applicable. All laboratory certificates are provided in Appendix C. Full tabulated water quality analyses are presented in Appendix D.

4.1 Baseline Surface Water Quality Data Analysis

Surface water quality data from 204 samples collected from Shepherds Creek and Bendigo Creek catchments between September 2022 and November 2024 were reviewed. This section presents and discusses the key water quality parameters obtained from each water monitoring location.

4.1.1 Shepherds Creek Catchment

Water quality data for Shepherds Creek Catchment comprised 52 samples from three sampling sites (SC01 (n=25), SC03 (n=21), and JC01 (n=6)). The MEQ analyses are presented in Table 4, Figure 5 and Figure 6. Table 5 presents a summary of additional parameters (e.g., physical parameters, nutrients, anions, and cations).

Based on the data the following observations were made:

- The pH ranged from 5.40 to 8.50 across all Shepherd Creek sites, with site averages of 8.11 (SC01), 7.88 (SC03), and 8.30 (JC01).
- Acidity (pH 8.3) concentrations ranged from 1.0 mg $CaCO_3$/L to 12.0 mg $CaCO_3$/L across all Shepherd Creek sites.
- Alkalinity ranged from 2.0 mg $CaCO_3$/L to 285 mg $CaCO_3$/L across all Shepherd Creek sites. Site averages were 216 mg $CaCO_3$/L (SC01), 136 mg $CaCO_3$/L (SC03), and 246 mg $CaCO_3$/L (JC01).
- The EC ranged from 253 µS/cm to 626 µS/cm. Site averages were 489 µS/cm (SC01), 319 µS/cm (SC03), and 498 µS/cm (JC01).
- MEQ values in **blue** (Table 4) indicate that data are influenced by the LOR being higher than the WQ Limit. The following was noted:
    - Ag has a MEQ of 10.0 indicating that it is elevated above the WQ Limit (0.00005 mg/L). However, all data for Ag were below the LOR (0.0005 mg/L), indicating the MEQ is elevated due to the LOR.
    - Similarly, Co, Hg, and Tl have MEQ values of 0.500, 0.833, and 16.7 respectively, due to a LOR > WQ Limit for all Shepherd Creek Catchment sites.
- MEQ data in **red** indicate that the maximum value for a parameter exceeds its adopted WQ Limit:
    - Sample site JC01 had elevated Cu concentrations (maximum MEQ value of 1.67). Average Cu concentrations were 0.0014 mg/L.
- MEQ data in **orange** (i.e., 0.5 ≤ MEQ < 1.0) indicates that a PCOC is potentially elevated but still below the WQ Limit. The following was observed:

    - Sampling sites SC01 and SC03 had elevated Cu concentrations (maximum MEQ values of 0.556 and 0.611 respectively). Average Cu concentrations were 0.0005 mg/L and 0.0006 mg/L respectively.
    - Sample site SC01 had elevated Sr concentrations (MEQ value of 0.500). Average Sr concentrations were 0.947 mg/L.
- Sulfate concentrations were low (e.g., below 100 mg/L) but higher at SC01 (average of 40.5 mg/L) than at SC03 (average of 14.4 mg/L) and JC01 (average of 18.5 mg/L), possibly reflecting the presence of mineralisation mid-catchment (e.g., the RAS deposit).
- Chloride had an average value of 6.08 mg/L at SC01, 2.7 mg/L at SC03, and 5.5 mg/L at JC01. Chloride has been identified as a sulfate toxicity modifier when concentrations are >5 mg/L (Ryder, 2025).
- Average Ca, K, and Mg concentrations were consistent across all Shepherd Creek Catchment.
- All other PCOC had MEQ values <0.50.
- The majority of parameters shown in Table 5 exhibited consistent concentrations across the Shepherd Creek Catchment. E3 Scientific (2023) noted that concentrations of nutrients (e.g., nitrate and ammoniacal nitrogen) were elevated in Shepherds Creek and may be attributed to the presence of livestock. Similarly, total Kjeldahl nitrogen (TKN) concentrations could be a result of animal waste inputs or rock weathering processes within those watersheds (E3 Scientific, 2023).
- From the data available, the following observations are noted:
    - Nitrite-N ranged from 0.001 mg/L to 0.040 mg/L.
    - TCN ranged from 0.001 mg/L to 0.005 mg/L.
    - TKN ranged from 0.100 mg/L to 0.750 mg/L.
    - TN ranged from 0.100 mg/L to 1.4 mg/L.
    - TOC ranged from 0.500 mg/L to 6.30 mg/L.
    - TSS ranged from 3.00 mg/L to 122 mg/L.
    - Turbidity ranged from 0.170 NTU[5] to 57.0 NTU.
    - TDS ranged from 120 mg/L to 380 mg/L.

[5] *nephelometric turbidity units*

Table 4. MEQ analysis and average concentrations for Shepherds Creek Catchment.

PARAMETERS	WQ LIMIT	SC01 (N=25)		SC03 (N=21)		JC01 (N=6)	
		MEQ (MAX VALUE)	AVE (mg/L)	MEQ (MAX VALUE)	AVE (mg/L)	MEQ (MAX VALUE)	AVE (mg/L)
Ag	0.00005	**10.0**	0.0005	**10.0**	0.0005	**10.0**	0.0005
Al	0.08	0.124	0.0045	0.200	0.0064	0.150	0.0070
As	0.042	0.143	0.0024	0.024	0.0008	0.024	0.0008
B	0.94	0.064	0.033	0.043	0.028	0.053	0.034
Cd	0.0004	0.455	0.0001	0.455	0.0001	0.455	0.0001
Co	0.001	**0.500**	0.0003	**0.500**	0.0003	**0.500**	0.0003
Cr	0.0033	0.303	0.0006	0.303	0.0006	0.303	0.0006
Cu	0.0018	**0.556**	0.0005	**0.611**	0.0006	**1.67**	0.0014
Fe (dissolved)	0.30	0.133	0.0113	0.233	0.0215	0.033	0.0075
Hg	0.0006	**0.833**	0.0003	**0.833**	0.0003	**0.833**	0.0003
Mn	0.40	0.040	0.0026	0.029	0.0036	0.005	0.001
Mo	0.034	0.024	0.0005	0.024	0.0004	0.041	0.001
Ni	0.011	0.045	0.0004	0.045	0.0004	0.045	0.0004
Pb	0.0034	0.147	0.0002	0.147	0.0003	0.147	0.0003
Total Sb	0.074	0.081	0.0010	0.108	0.0013	0.027	0.0011
Se	0.011	0.455	0.0025	0.455	0.0029	0.455	0.0028
Sr	2.50	**0.500**	0.947	0.318	0.675	0.392	0.718
Tl	0.00003	**16.7**	0.0002	**16.7**	0.0003	**16.7**	0.0003
U	0.03	-	0.0051	-	0.0022	-	0.0061
V	0.006	0.083	0.0005	0.083	0.0005	0.100	0.0005
Zn	0.015	0.075	0.0017	0.031	0.0015	0.038	0.0025
Sulfate	500	0.127	40.5	0.037	14.4	0.053	18.5
Ammoniacal nitrogen	0.400	0.100	0.010	0.100	0.0117	0.025	0.0075
Nitrate-N	3.50	0.089	0.0829	0.091	0.139	0.043	0.0623

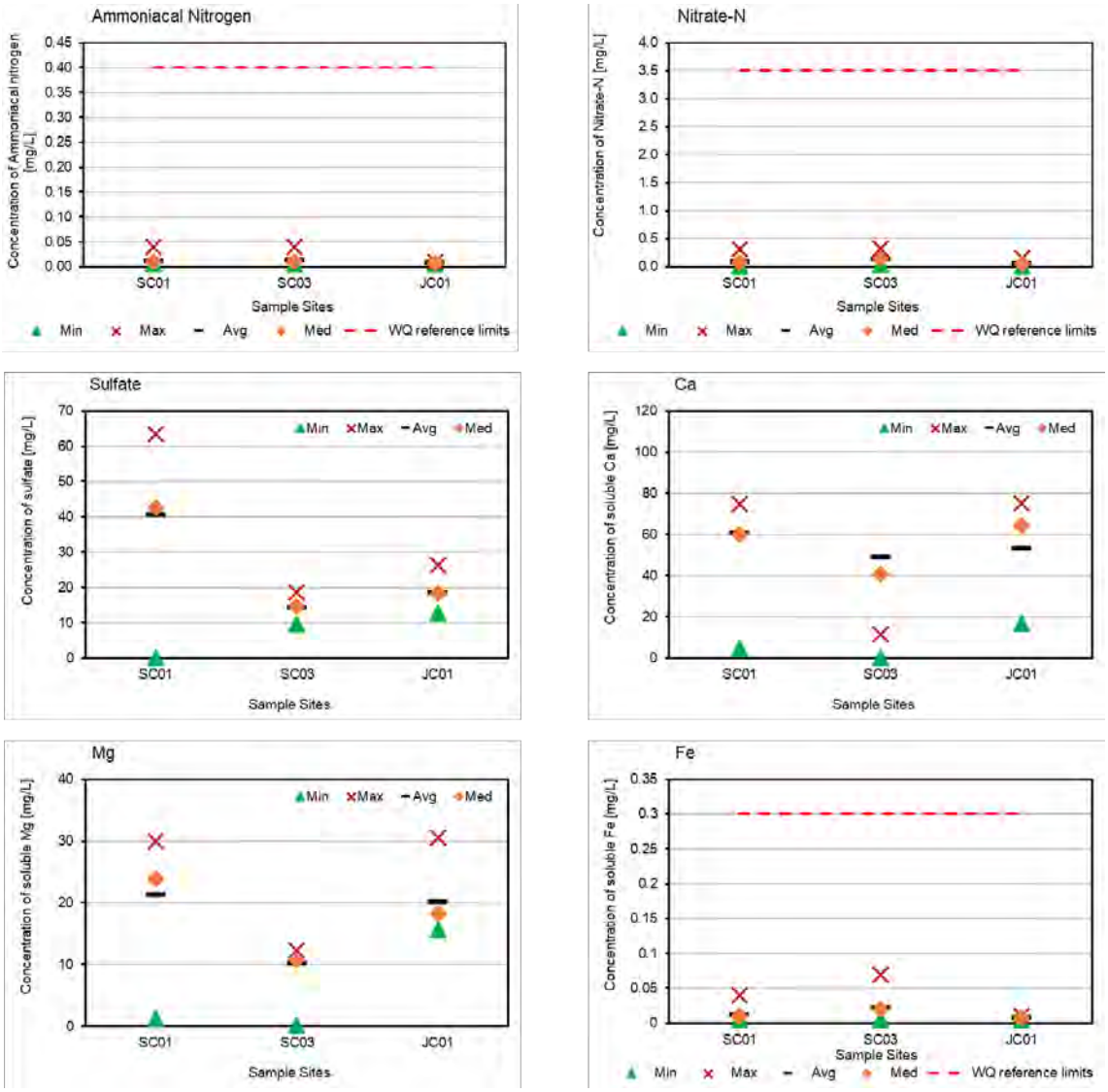


Figure 5. Selected key water quality parameters for Shepherds Creek Catchment (Part 1).

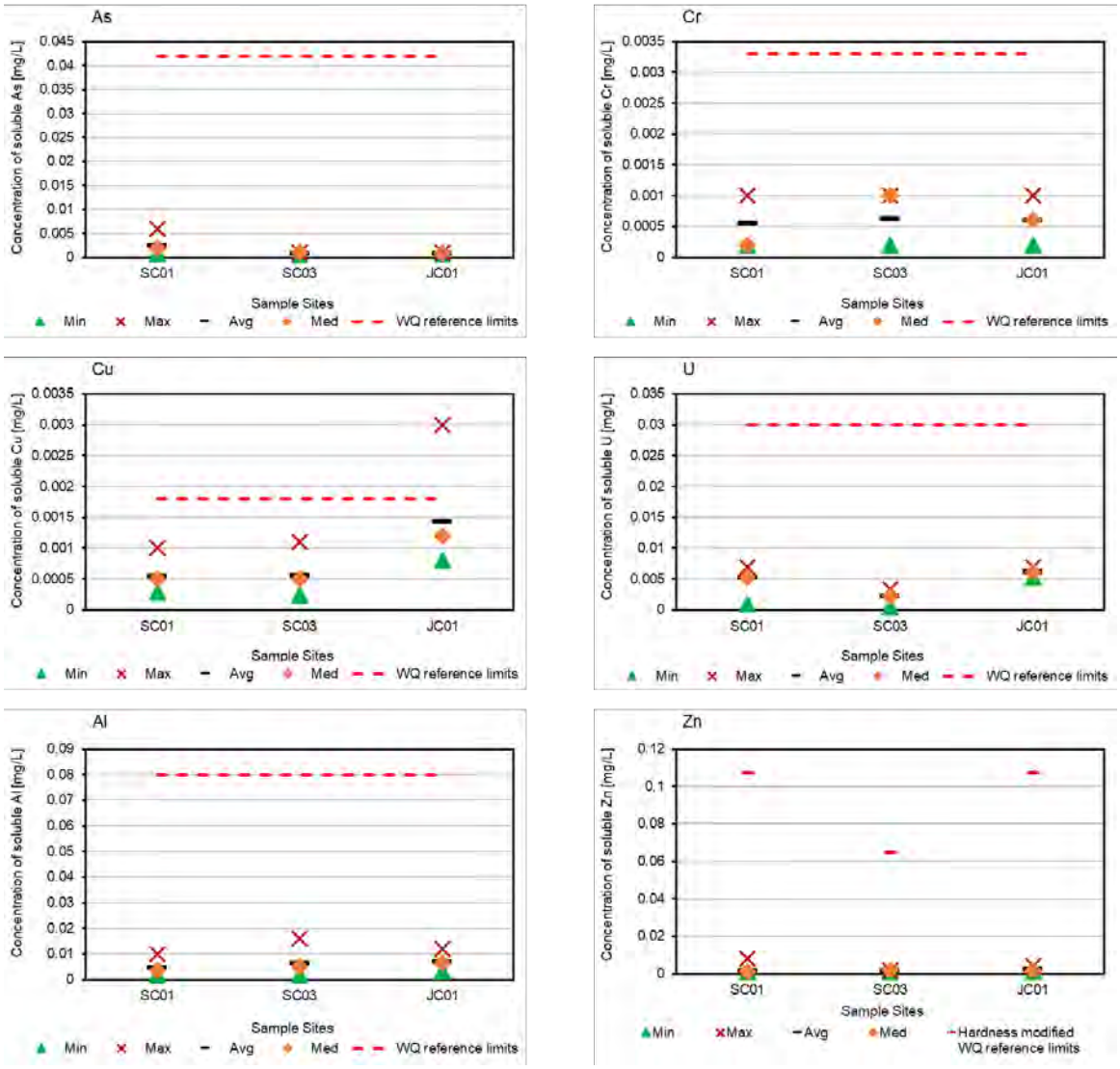


Figure 6. Selected key water quality parameters for Shepherds Creek Catchment (Part 2).

Table 5. Water quality summary in Shepherds Creek Catchment.

PARAMETERS	SC01 (n=25)			SC03 (n=21)			JC01 (n=6)		
	MIN	MAX	AVE	MIN	MAX	AVE	MIN	MAX	AVE
Acidity to pH 7 (mg $CaCO_3$/L)	1.0	5.0[1]	1.36	1.0	5.0[1]	1.36	1.0	1.0	1.0
Acidity to pH 8.3 (mg $CaCO_3$/L)	1.0	12.0	3.88	1.0	10.0	3.85	1.0	2.0	1.17
Alkalinity (mg $CaCO_3$/L)	145	273	216	2	160	136	207	285	246
pH (pH units)	7.70	8.50	8.11	5.40	8.20	7.88	8.20	8.40	8.30
EC (µS/cm)	342	626	489	253	359	319	404	560	498
DO (%)	0.02	2202	127	9.62	16.8	12.9	10.7	16.2	12.8
ORP (mV)	-0.70	328	112	-0.200	313	123	18.2	194	99.2
Temp (°C)	2.60	16.6	9.25	0.500	15.2	6.86	3.10	11.6	7.72
Ca	4.60	74.7	60.8	11.6	48.7	40.9	16.8	75.3	53.3
Cl	3.63	9.30	6.08	1.73	3.94	2.74	4.03	7.04	5.55
F	0.057	0.230	0.103	0.076	0.290	0.119	0.055	0.100	0.076
K	1.25	3.97	2.01	0.640	3.87	1.43	1.34	2.36	1.98
Mg	1.17	30.0	21.3	0.150	12.3	10.2	15.6	30.5	20.1
Na	8.16	198	20.3	5.41	471	36.2	13.3	196	59.0
Nitrite N	0.001	0.010	0.006	0.001	0.040	0.008	0.001	0.010	0.006
TCN	0.001	0.005	0.003	0.001	0.005	0.003	0.001	0.005	0.003
TKN	0.100	1.29	0.373	0.130	0.750	0.406	0.260	0.500	0.377
TN	0.100	1.40	0.371	0.171	0.940	0.473	0.350	0.610	0.458
TOC	0.500	3.60	2.08	0.500	3.80	2.01	3.30	6.30	4.40
TP	0.005	0.500	0.039	0.005	0.100	0.023	0.005	0.052	0.029
TSS	3.00	122	12.0	3.0	54.0	14.0	6.0	42.0	15.4
Turbidity (NTU)	0.170	57.0	4.75	1.33	32.0	5.78	0.620	9.06	4.10
TDS	186	380	269	120	212	164	230	280	265

Note: Other parameters are presented in Table 4.

All units are presented in mg/L unless otherwise specified.

[1] - Maximum acidity (to pH 7) concentrations are a result of the LOR at SGS. The average concentration presented is therefore influenced by the LOR.

Average pH presented is not based on H^+ content due to approx. consistent pH values for each site.

4.1.2 Bendigo Creek Catchment

Water quality data for the Bendigo Creek Catchment comprises 124 samples from seven sampling sites (RSA1 (n=25), RS01 (n=26), RS02 (n=26), RS03 (n=25), RS04 (n=14), CC01 (n=16), and LBA (n=18). The MEQ analyses are presented in Table 6, Figure 7, and Figure 8. Table 7 and Table 8 present a summary of additional parameters (e.g., physical parameters, nutrients, anions, and cations).

Based on the data the following observations were made:

- The pH ranged from 6.00 to 9.30 across all Bendigo Creek Catchment sites with an average of 7.32 (RSA1), 7.61 (RS01), 7.57 (RS02), 7.42 (RS03), 7.51 (RS04), 7.03 (CC01), and 8.06 (LBA).
- Acidity (pH 8.3) concentrations ranged from 1.00 mg $CaCO_3$/L to 53.0 mg $CaCO_3$/L.

- Alkalinity ranged from 7.40 mg $CaCO_3$/L to 242 mg $CaCO_3$/L with an average of 108 mg $CaCO_3$/L (RSA1), 87.5 mg $CaCO_3$/L (RS01), 65.8 mg $CaCO_3$/L (RS02), 39.1 mg $CaCO_3$/L (RS03), 72.8 mg $CaCO_3$/L (RS04), 14.7 mg $CaCO_3$/L (CC01), and 191 mg $CaCO_3$/L (LBA)
- EC ranged from 21.8 µS/cm to 526 µS/cm with an average of 212 µS/cm (RSA1), 182 µS/cm (RS01), 151 µS/cm (RS02), 86.4 µS/cm (RS03), 165 µS/cm (RS04), 34.0 µS/cm (CC01), and 468 µS/cm (LBA).
- MEQ values in **blue** indicate that all data are influenced by the LOR being higher than the WQ Limit. For example:
    - Ag has a MEQ of 10.0 indicating that it is elevated above the WQ Limit (0.00005 mg/L). However, all data for Ag were below the LOR (0.0005 mg/L), indicating the MEQ is elevated due to the LOR.
    - Similarly, Hg, and Tl have MEQ values of 0.833 and 16.7, which were due to a LOR > WQ Limit for all Bendigo Creek Catchment sites.
    - A number of sites had MEQ values of 0.500 for Co (with the exception of RSA1), which were attributed to LOR values.
    - RS03, CC01, and LBA had MEQ values of 0.606 for Cr, which were attributed to LOR values.
- MEQ data in **red** indicates that the maximum value for a parameter exceeds the WQ Limit.
    - Arsenic concentrations were reported as exceeding the WQ Limit at RSA1 and LBA (i.e., MEQ >1). Note that baseline data show that CC01 (Clearwater Creek) and RS04 above the Rise and Shine historic workings were not elevated in As.
    - Cobalt concentrations were reported as exceeding the WQ Limit at RSA1 (MEQ 1.80).
    - Copper was elevated above the WQ Limit for RSA1 with a MEQ value of 18.9.
    - Iron concentrations were elevated above the WQ Limit for RSA1 and LBA with MEQ values of 3.57 and 1.37 respectively.
- MEQ data in **orange** (i.e., 0.5 ≤ MEQ < 1.0) indicates that a PCOC is potentially elevated but still below the respective WQ Limit. The following was observed:
    - Aluminium concentrations from the sampling site CC01 had a MEQ value of 0.613.
    - Arsenic concentrations from the sampling site RS01 had a MEQ value of 0.833.
    - Cadmium concentrations from the sampling site LBA had a MEQ value of 0.636.
    - Copper concentrations from the sampling sites RS01, RS02, RS04, and CC01 had MEQ values of 0.833, 0.889, 0.944, and 0.500, respectively.
    - Iron concentrations from the sampling sites RS01, RS04, and CC01 had MEQ values of 0.767, 0.700, and 0.800, respectively.

    - Zinc concentrations from the sampling sites RSA1 and RS03 had MEQ values of 0.791 and 0.594, respectively.
    - Strontium had a MEQ value of 0.536 at the sampling site RSA1.
- All other PCOC had MEQ values <0.5.
- Sulfate concentrations were typically low (e.g., <100 mg/L). The only site that had sulfate > 10 mg/L was LBA (Lower Bendigo Adit), which is mine-impacted water.
- The majority of parameters shown in Table 7 and Table 8 exhibited consistent concentrations across the Bendigo Creek Catchment with minor exceptions. The following was observed:
    - Maximum nitrite-N concentrations were reported as 0.010 mg/L.
    - TCN ranged from 0.001 mg/L to 0.005 mg/L.
    - TKN ranged from 0.1 mg/L to 2.35 mg/L.
    - TN ranged from 0.047 mg/L to 2.40 mg/L.
    - TSS and turbidity concentrations were consistent across all sites with the exception of RS01, which had 1,200 mg/L and 750 NTU, respectively.
    - TDS concentrations were consistent across all sites with the exception of the RSA1 and LBA, which had maximum concentration of 310 mg/L and 271 mg/L, respectively.
- One sample from site RSB (Rise and Shine Battery Site within the Rise and Shine Creek) recorded elevated manganese (Mn) of 2.76 mg/L, which is above the proposed water quality compliance limits of 0.4 mg/L. This sample was collected during preliminary fieldwork and involved sampling of the old battery site (MWM, 2024b) where the stream vegetation (reeds) was disturbed mobilising a significant amount of Fe precipitates. Subsequent samples of this site were much lower (0.67 mg/L) and involved minor disturbance to the stream vegetation. The risks to water quality from Mn are considered low (i.e., Mn is not identified as being elevated in surface water and only performance monitoring is recommended).

Table 6. MEQ analysis and average concentrations for Bendigo Creek Catchment.

PARAMETERS	WQ LIMIT	RSA1 (n=25)		RS01 (n=26)		RS02 (n=26)		RS03 (n=25)		RS04 (n=14)		CC01 (n=16)		LBA (n=18)	
		MEQ (MAX VALUE)	AVE (mg/L)	MEQ (MAX VALUE)	AVE (mg/L)	MEQ (MAX VALUE)	AVE (mg/L)	MEQ (MAX VALUE)	AVE (mg/L)	MEQ (MAX VALUE)	AVE (mg/L)	MEQ (MAX VALUE)	AVE (mg/L)	MEQ (MAX VALUE)	AVE (mg/L)
Ag	0.00005	10.0	0.0005	10.0	0.0005	10.0	0.0005	10.0	0.0005	10.0	0.0003	10.0	0.0004	10.0	0.0004
Al	0.080	0.065	0.0029	0.325	0.0042	0.413	0.0082	0.350	0.0076	0.388	0.007	0.613	0.0123	0.085	0.003
As	0.042	3.10	0.0386	0.833	0.0193	0.169	0.0049	0.333	0.0085	0.045	0.001	0.026	0.0010	27.6	1.05
B	0.94	0.032	0.0188	0.032	0.0185	0.032	0.0185	0.032	0.0188	0.032	0.011	0.032	0.0175	0.032	0.018
Cd	0.0004	0.455	0.0001	0.455	0.0001	0.455	0.0001	0.455	0.0001	0.455	0.00003	0.455	0.0001	0.636	0.0001
Co	0.001	1.80	0.0005	0.500	0.0003	0.500	0.0003	0.500	0.0002	0.500	0.0001	0.500	0.0002	0.500	0.0002
Cr	0.003	0.303	0.0006	0.303	0.0005	0.303	0.0005	0.606	0.0006	0.303	0.0003	0.606	0.0006	0.606	0.0004
Cu	0.0018	18.9	0.0018	0.833	0.0006	0.889	0.0006	0.411	0.0005	0.944	0.001	0.500	0.0004	0.278	0.0003
Fe (dissolved)	0.30	3.57	0.205	0.767	0.061	0.367	0.024	0.333	0.037	0.700	0.068	0.800	0.0293	1.37	0.045
Hg	0.0006	0.833	0.0003	0.833	0.0003	0.833	0.0003	0.833	0.0003	0.833	0.00011	0.833	0.0002	0.833	0.0002
Mn	0.40	0.299	0.1614	0.025	0.0211	0.002	0.0011	0.010	0.0095	0.012	0.006	0.002	0.0009	0.015	0.023
Mo	0.034	0.015	0.0003	0.024	0.0003	0.015	0.0003	0.015	0.0003	0.015	0.0002	0.015	0.0003	0.044	0.0011
Ni	0.011	0.236	0.0005	0.100	0.0004	0.053	0.0004	0.045	0.0003	0.127	0.0005	0.400	0.0006	0.045	0.0003
Pb	0.0034	0.147	0.0002	0.147	0.0002	0.147	0.0003	0.147	0.0002	0.147	0.0001	0.147	0.0002	0.147	0.0002
Total Sb	0.074	0.027	0.0008	0.027	0.0008	0.027	0.0008	0.027	0.0008	0.002	0.00011	0.027	0.0007	0.027	0.0005
Se	0.011	0.455	0.0025	0.455	0.0024	0.455	0.0024	0.455	0.0025	0.455	0.0008	0.455	0.0022	0.455	0.002
Sr	2.50	0.536	0.381	0.206	0.358	0.158	0.266	0.076	0.136	0.162	0.315	0.021	0.042	0.209	0.468
Tl	0.00003	16.7	0.0002	16.7	0.0002	16.7	0.0002	16.7	0.0002	16.7	0.00005	16.7	0.0002	16.7	0.0001
U	0.03	0.073	0.0002	0.007	0.0001	0.013	0.0003	0.007	0.0001	0.014	0.0003	0.007	0.0001	0.090	0.0021
V	0.006	0.083	0.0005	0.083	0.0005	0.083	0.0005	0.083	0.0005	0.083	0.0005	0.083	0.0005	0.083	0.0005
Zn	0.015	0.791	0.0047	0.148	0.0018	0.356	0.0020	0.594	0.0023	0.105	0.0014	0.321	0.0016	0.045	0.0014
Sulfate	500	0.037	4.52	0.030	5.13	0.015	2.72	0.008	1.57	0.013	2.80	0.008	0.843	0.068	27.6
Ammoniacal nitrogen	0.400	0.325	0.02	0.125	0.01	0.250	0.0121	0.075	0.0092	0.275	0.013	0.075	0.0086	0.025	0.006
Nitrate-N	3.50	0.040	0.015	0.037	0.0171	0.066	0.0308	0.014	0.0088	0.003	0.003	0.008	0.0096	0.074	0.214

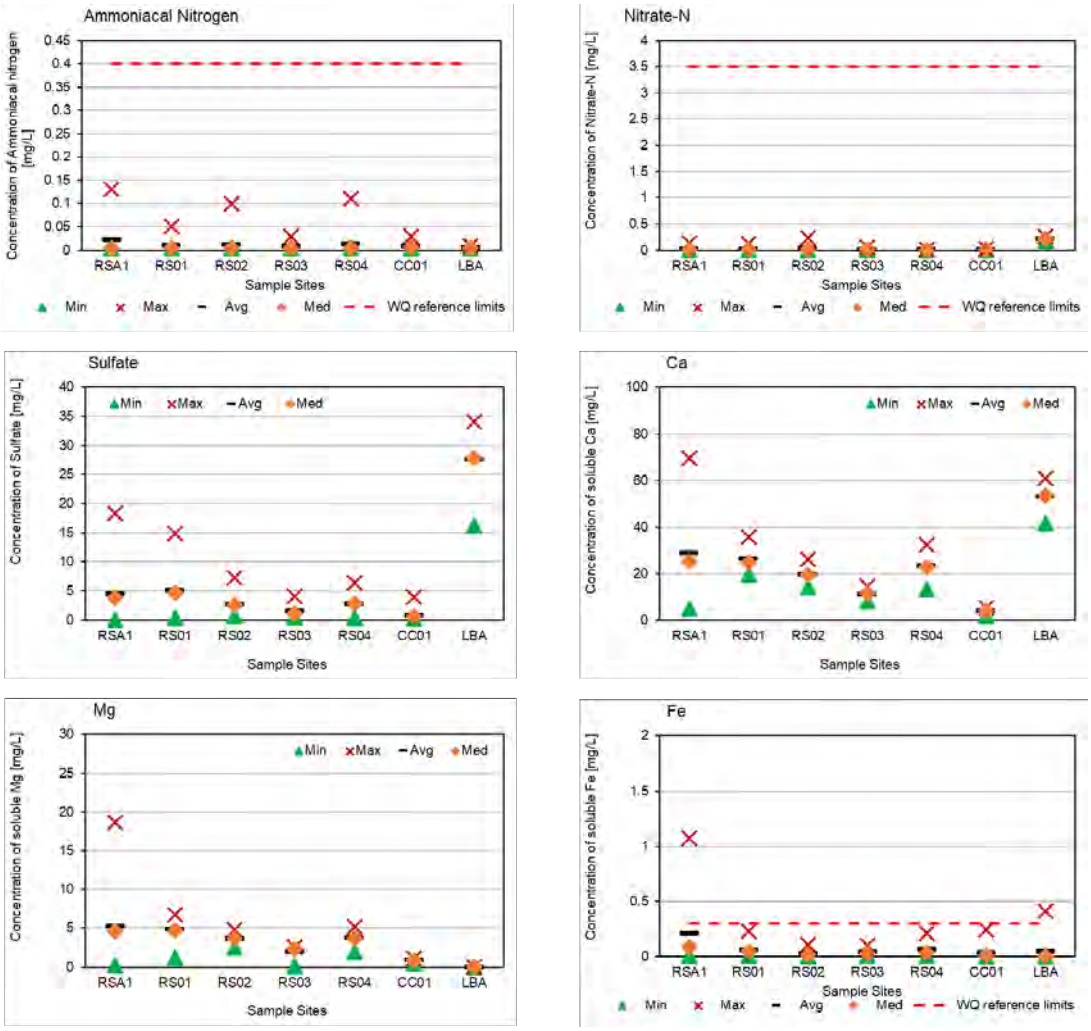


Figure 7. Selected key water quality parameters for Bendigo Creek Catchment (Part 1).

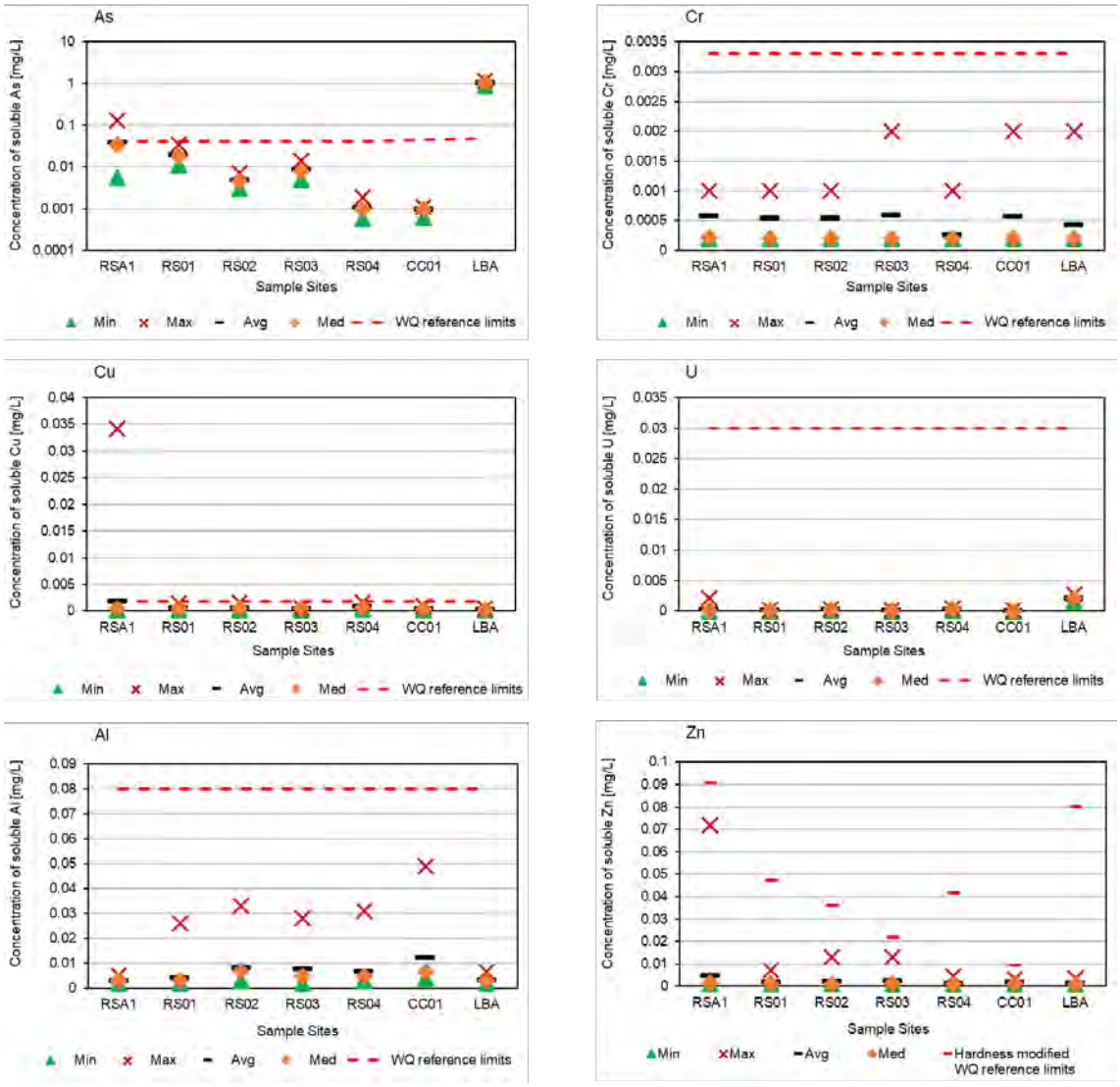


Figure 8. Selected key water quality parameters for Bendigo Creek Catchment (Part 2).

Table 7. Water quality summary in Bendigo Creek Catchment (RSA1, RS01, RS02, RS03).

PARAMETERS	RSA1 (N=25)			RS01 (N=26)			RS02 (N=26)			RS03 (N=25)		
	MIN	MAX	AVE	MIN	MAX	AVE	MIN	MAX	AVE	MIN	MAX	AVE
Acidity to pH 7 (mg $CaCO_3$/L)	1.00	26.0	3.82	1.00	5.00[1]	1.36	1.00	5.00[1]	1.36	1.00	1.00	1.00
Acidity to pH 8.3 (mg $CaCO_3$/L)	1.00	53.0	18.0	1.00	13.0	4.19	1.00	6.67	2.97	1.00	6.00	2.97
Alkalinity (mg $CaCO_3$/L)	64.3	242	108	65.4	125	87.5	44.2	96.3	65.8	23.0	58.0	39.1
pH (pH units)	6.70	8.00	7.32	7.10	7.90	7.61	6.90	7.90	7.57	7.00	9.30	7.42
EC (µS/cm)	149	481	212	156	212	182	103	204	151	54.2	108	86.4
DO (%)	1.33	12.6	6.88	7.78	20.2	11.6	8.99	125	17.8	9.07	25.9	12.7
ORP (mV)	-134	173	11.4	-13.8	182	36.7	-3.20	241	91.8	-20.4	166	52.4
Temp (°C)	1.10	13.0	7.37	0.060	14.6	7.32	-0.100	13.9	6.48	2.20	11.8	6.50
Ca	5.00	69.6	28.7	19.5	35.8	26.3	14.3	26.3	19.7	8.04	14.5	11.1
Cl	0.430	7.91	2.55	0.830	4.18	2.38	1.12	3.51	2.07	0.700	2.44	1.33
F	0.040	0.240	0.096	0.043	0.190	0.086	0.04	0.25	0.08	0.040	0.090	0.057
K	0.140	2.79	1.04	0.100	2.10	1.14	0.49	2.50	1.07	0.220	1.100	0.578
Mg	0.170	18.6	5.22	1.23	6.74	4.82	2.50	4.79	3.61	0.070	2.60	1.99
Na	4.59	648	52.5	4.78	122	10.4	3.15	63.1	6.87	2.59	620	39.5
Nitrite-N	0.001	0.010	0.005	0.001	0.010	0.005	0.001	0.01	0.0047	0.001	0.010	0.005
TCN	0.001	0.005	0.003	0.001	0.005	0.003	0.001	0.01	0.0028	0.001	0.005	0.003
TKN	0.100	2.33	0.479	0.100	1.53	0.369	0.100	2.35	0.53	0.100	0.390	0.199
TN	0.065	1.83	0.367	0.106	1.71	0.357	0.095	2.40	0.40	0.053	0.390	0.161
TOC	0.960	10.4	4.04	0.600	7.80	2.77	0.500	3.60	2.09	0.890	2.900	1.749
TP	0.005	0.420	0.052	0.005	0.861	0.050	0.005	0.160	0.02	0.005	0.092	0.013
TSS	3.00	87.0	21.4	3.00	1200	54.2	3.00	75.0	12.0	3.00	8.00	4.36
TDS	77.0	310	123	66.0	130	101	61.0	120	77.8	13.0	83.0	47.3
Turbidity (NTU)	0.700	60.5	13.0	0.200	750	35.8	1.00	47.00	6.16	0.200	3.10	0.786

Note: Other parameters are presented in Table 6.

All units are presented in mg/L unless otherwise specified. Average pH presented is not based on H^+ content due to consistent pH values for each site. A hyphen (-) indicates no value is given.

[1] - Maximum acidity (to pH 7) for sample sites RS01 and RS02 concentrations are a result of the LOR at SGS. The average concentration presented is therefore influenced by the LOR.

Table 8. Water quality summary in Bendigo Creek Catchment (RS04, CC01, LBA).

PARAMETERS	RS04 (N=14)			CC01 (N=16)			LBA (N=18)		
	MIN	MAX	AVE	MIN	MAX	AVE	MIN	MAX	AVE
Acidity to pH 7 (mg $CaCO_3$/L)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Acidity to pH 8.3 (mg $CaCO_3$/L)	1.00	9.00	3.57	1.00	6.67	2.85	1.00	4.00	1.24
Alkalinity (mg $CaCO_3$/L)	41.9	99.6	72.8	7.40	18.1	14.7	181	198	191
pH (pH units)	7.40	7.70	7.51	6.60	7.40	7.03	6.00	8.30	8.06
EC (µS/cm)	90	213	165	21.8	42.3	34.0	427	526	468
DO (%)	7.92	19.9	11.6	9.62	17.2	12.6	8.10	10.8	9.56
ORP (mV)	11.4	118	66.9	-2.10	242	117	-61.7	282	82.4
Temp (°C)	0.600	13.8	6.52	2.10	11.1	6.13	10.0	12.4	11.1
Ca	13.3	32.5	23.3	2.00	5.30	3.88	41.70	60.9	53.1
Cl	0.870	3.28	1.96	0.500	1.61	0.79	5.05	8.06	7.19
F	0.040	0.100	0.059	0.040	0.080	0.055	0.220	0.350	15.4
K	0.400	1.70	1.18	0.260	0.460	0.335	1.66	2.20	19.9
Mg	1.95	5.13	3.74	0.460	1.12	0.844	14.5	16.6	0.003
Na	2.87	7.72	5.15	1.76	2.92	2.35	18.6	23.1	0.002
Nitrite-N	0.0010	0.010	0.0017	0.0010	0.010	0.004	0.0010	0.010	0.149
TCN	0.0010	0.005	0.0013	0.0010	0.005	0.003	0.0010	0.005	0.322
TKN	0.290	0.970	0.46	0.100	0.250	0.139	0.100	0.450	1.40
TN	0.290	1.47	0.54	0.047	0.250	0.118	0.200	0.700	0.225
TOC	2.00	3.50	2.75	0.500	2.10	1.23	0.500	2.30	5.33
TP	0.005	0.070	0.023	0.005	0.016	0.011	0.014	0.390	245
TSS	3.00	56.0	13.9	3.00	6.00	3.75	3.00	22.0	2.92
TDS	47.0	153	92.2	14.0	45.0	23.8	209	271	0.074
Turbidity (NTU)	0.400	26.0	6.35	0.200	1.00	0.390	0.600	28.1	-

Note: Other parameters are presented in Table 6.

All units are presented in mg/L unless otherwise specified. Average pH presented is not based on H^+ content due to consistent pH values for each site. A hyphen (-) indicates no value is given.

4.2 Surface Water Seasonal Trends

The following section examines the seasonal trends for the surface water data in the Shepherds Creek and Bendigo Creek catchments.

4.2.1 Shepherds Creek

Data from 2022 to 2024 were used to determine if seasonal trends were observable, however, due to inconsistent sampling over those two years, determining if seasonal trends are observable is difficult. Within the limitations of the data, the following observations were noted:

- Maximum ammoniacal nitrogen concentrations were observed in March 2024 (SC01 and SC03) and October 2024 (SC03).
- Fluctuations were observed for Fe, As, and Al concentrations but remained relatively consistent for each individual sampling site.
- Sulfate concentrations were consistent for SC03 and JC01. Sulfate concentrations at SC01 appear to peak in March each year. During the May 2024 sampling round, sulfate concentrations at SC01 dropped to 0.020 mg/L. This laboratory result is likely erroneous when compared to the overall dataset. Since May 2024, sulfate concentrations have seen a general decrease in concentrations in SC01.
- Calcium and Mg concentrations across all Shepherd Creek Catchment sites can be observed following similar trends. Of note was a decrease in concentrations July 2023 (SC03 and JC01) and September 2023 (SC01). The decrease at SC01 appears anomalous to other data and may be a lab error.
- Chromium and Pb concentrations remained below LOR for all sampling sites (i.e., the reported change in concentrations is due to a change in laboratories and the respective LOR). Lead concentrations at SC03 were observed increasing during the November 2024 sampling event.
- Copper concentrations decreased since monitoring began for all sampling sites; however, no seasonal effect can be conclusively determined from the data. Copper concentrations at SC03 were observed increasing during the November 2024 sampling event.
- Zinc concentrations can be observed fluctuating at the sampling site JC01. SC01 and SC03 remained consistent over the sampling period. A spike in Zn concentrations was observed in May 2024, however, this seems anomalous.

Fluctuations may be a result of flow rates and wetter/dryer periods. A larger dataset will help inform the impact of seasonal trends.

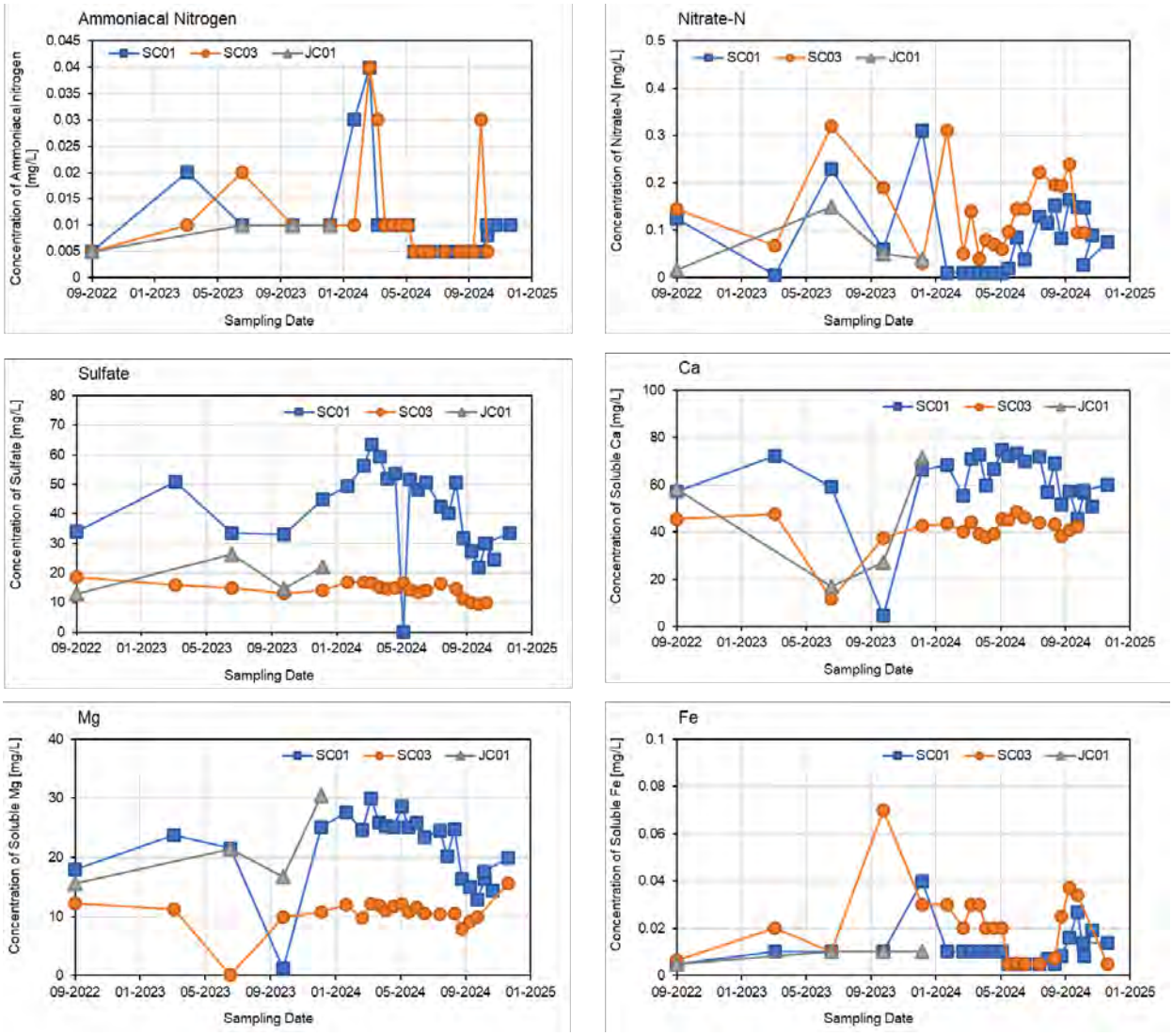


Figure 9. Seasonal trends of selected key water quality parameters of the Shepherds Creek Catchment (Part 1).

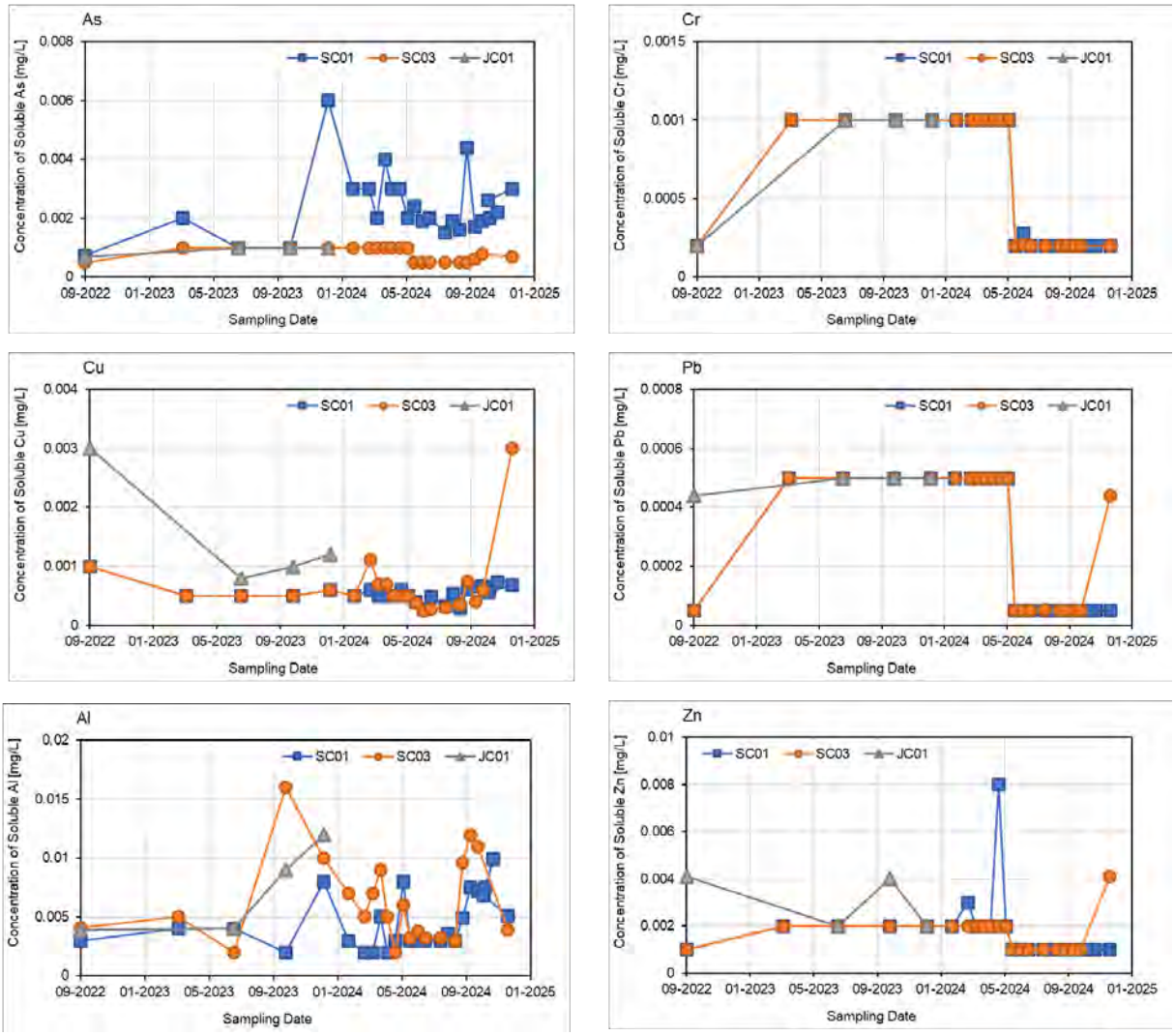


Figure 10. Seasonal trends of selected key water quality parameters of the Shepherds Creek Catchment (Part 2).

4.2.2 Bendigo Creek Catchment

Due to the limited data, seasonal trends were unable to be determined. However, the following observations were noted:

- Ammoniacal nitrogen concentrations at RSA1 can be observed to increase in September 2023. RS01 and RS02 exhibited similar increases in December 2023.
- Nitrate-N concentrations at RSA1, RS01, and RS02 can be observed to fluctuate in concentration throughout the sampling period. Nitrate-N concentrations are consistently higher for the LBA monitoring site compared to other sites.
- Iron concentrations at RSA1, RS01, and RS02 were relatively stable. A spike in concentrations for RSA1 was observed in February 2024 and then in May 2024 before decreasing.
- Arsenic concentrations at RSA1, RS01, and RS02 were relatively stable. RSA1 can be observed gradually decreasing throughout the sampling period. LBA concentrations are stable yet notably elevated compared to the other monitoring sites.

- Aluminium concentrations fluctuated at RSA1, RS01, and RS02 respectively. A general decreasing trend can be observed throughout the sampling period, prior to spikes in concentrations in winter 2024. A spike in concentrations can be observed during August 2024 and September 2024 sampling events for RS01, RS02, and CC01.

- Sulfate concentrations at RS01 and RS02 increased in March 2023 before decreasing. Sulfate concentrations at RSA1 exhibited fluctuations throughout the sampling period. Sulfate concentrations again increased in autumn 2024 for most sites before a gradual reduction to the end of the sampling period. Sulfate is notably higher at site LBA compared to other sites, which is due to mine-impacted water.

- Calcium and Mg concentrations from site RSA1 decreased until Sep 2023 and then increased, while concentrations for all other sites were generally stable. Calcium and Mg are notably higher at site LBA compared to other sites.

- Chromium and Pb concentrations remained close to, or below, the LOR (the observed change in concentrations is due to a change in laboratories). The apparent reduction in concentrations from May 2024 is a result of switching to a different laboratory with a lower LOR for Cr and Pb. Lead concentrations were observed increasing during the last November 2024 event for the sampling site RS02.

- Copper concentrations from Bendigo Creek Catchment exhibited minor fluctuations but generally remained below 0.0008 mg/L. A spike in Cu concentrations at RS01 and RSA1 was observed in May 2024.

- Zinc concentrations from all monitoring sites generally remained below the LOR, however spikes were observed in February 2024 for RSA1, RS01, and RS03. RSA1 observed a spike in Zn concentration in May 2024, and RS02 observed spikes in March 2024, July 2024, and September 2024.

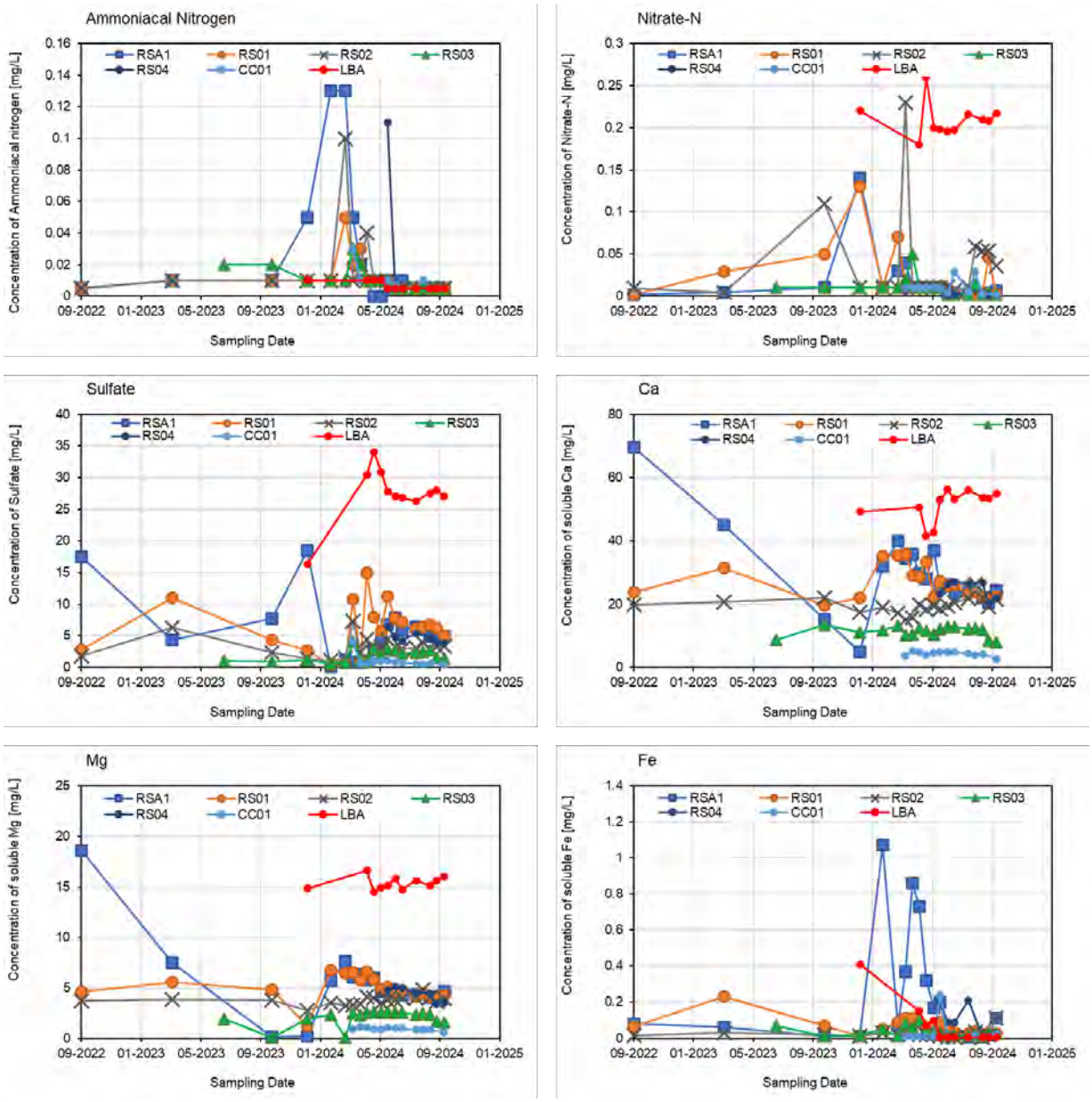


Figure 11. Seasonal trends of selected key water quality parameters of the Bendigo Creek Catchment (Part 1).

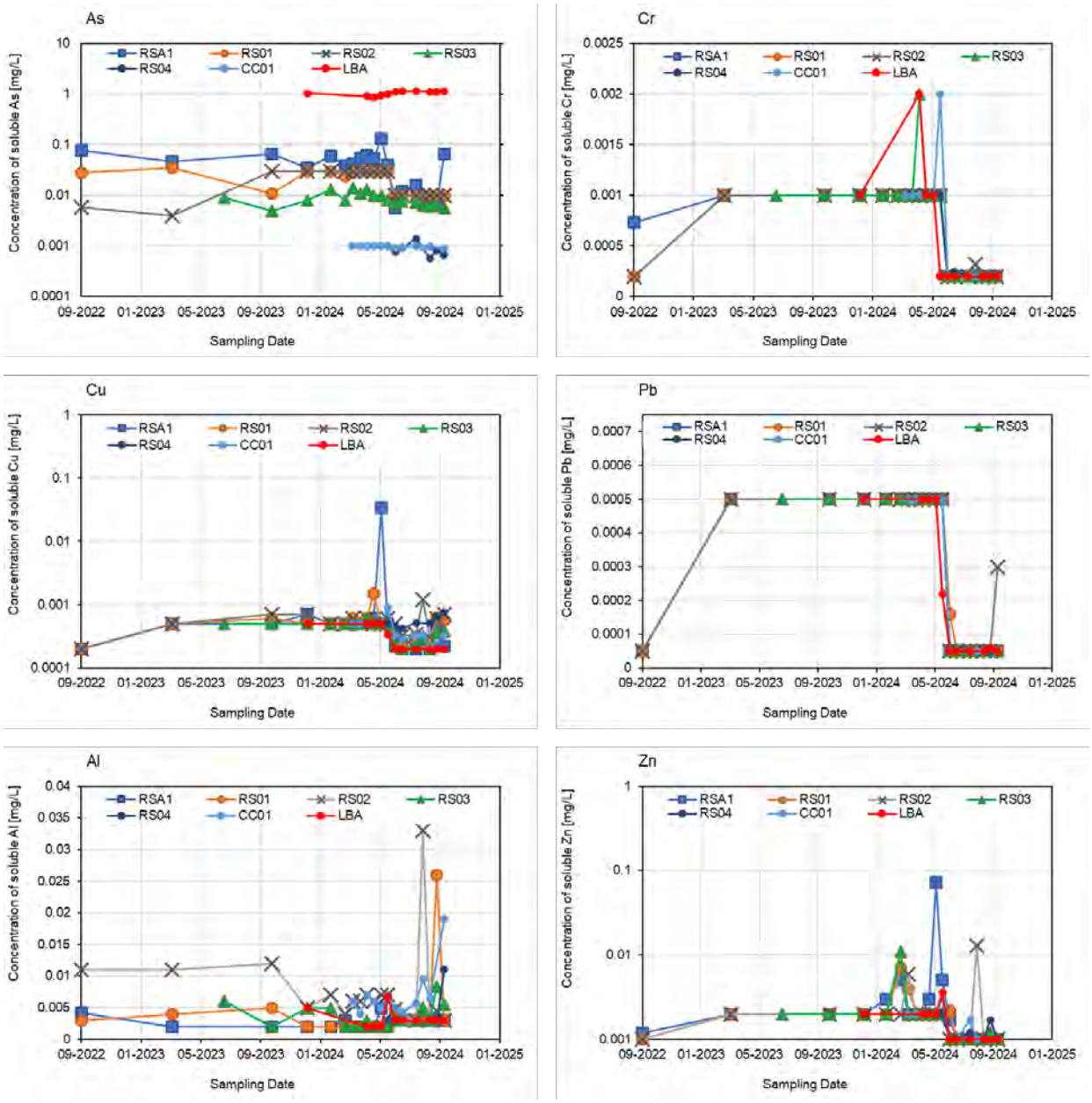


Figure 12. Seasonal trends of selected key water quality parameters of the Bendigo Creek Catchment (Part 2).

4.3 Groundwater Quality Data Analysis

Groundwater quality data from samples collected from across the BOGP site between September 2022 and August 2024 were analysed. This section presents and discusses the key water quality data obtained from each monitoring site.

4.3.1 Groundwater Quality

Groundwater quality data comprised 33 samples from five sampling sites (MRC002 (n=1), MDD015 (n=18), MDD302 (n=12), Base (office) (n=1), and Base (exploration camp) (n=1)). The MEQ analyses are presented in Table 9, Figure 13, and Figure 14. Table 10 presents a summary of additional parameters (e.g., physical parameters, nutrients, anions, and cations).

Based on the data the following observations were made:

- The pH ranged from 6.8 to 8.7, with an average of 8.1 (MDD015), 8.0 (MRC002), 7.8 (MDD302), 8.0 (Base (Office)), and 6.8 (Base (Exploration Camp)).
- Acidity (to pH 8.3) concentrations ranged from 1.0 to 16.7 mg $CaCO_3$/L.
- Alkalinity ranged from 36.0 mg $CaCO_3$/L to 251 mg $CaCO_3$/L across all groundwater sites, with averages of 202 mg $CaCO_3$/L (MDD015), 110 mg $CaCO_3$/L (MRC002), 150 mg $CaCO_3$/L (Base (Office)), 237 mg $CaCO_3$/L (MDD302), and 36.0 mg $CaCO_3$/L (Base (Exploration Camp).
- The EC ranged from 106 µS/cm to 550 µS/cm across all groundwater sites, with site averages of 446 µS/cm (MDD015), 250 µS/cm (MRC002), 360 µS/cm (Base (Office)), 493 µS/cm (MDD302), and 106 µS/cm (Base (Exploration Camp)).
- MEQ values in **blue** indicate that all data are influenced by the LOR being higher than the adopted WQ Limits. For example:
    - Ag has a MEQ of 10 for MDD015, MRC002 and Base (Office), indicating that it is elevated above the adopted WQ Limit (0.00005 mg/L). MDD302 had a MEQ of 1.60, although this reflected a lower LOR from a different lab. All data for Ag were below the LOR, indicating the MEQ is elevated due to the LOR.
    - For sites MDD015, MRC002, and Base (Office), Hg concentrations MEQ values 0.833, which were due to a LOR > WQ Limit.
    - For sites MRC002 and Base (Office), Tl has an MEQ value of 16.7 due to a LOR > WQ Limit.
- MEQ data in **red** indicates that the maximum value for a parameter exceeds the WQ Limit.
    - Arsenic concentrations were reported as exceeding the WQ Limit for sampling sites MDD015, MRC002, and MDD302.
    - Copper concentrations were reported as exceeding the WQ Limit for sampling sites MRC002, Base (Office), and Base (Exploration Camp).
    - Iron concentrations exceeded their WQ Limit at MDD015, MRC002, and MDD302.
    - Lead concentrations were reported as exceeding the WQ Limit for the sampling site Base (Exploration Camp).
    - Strontium concentrations exceeded their WQ Limit at MDD015.
    - Thallium concentrations exceeded the WQ Limit at sampling site MDD015 during the sampling event in April 2024.
    - Zinc concentrations exceeded their WQ Limit at MRC002 and Base (Exploration Camp).
- MEQ data in **orange** (i.e., 0.5 ≤ MEQ < 1.0) indicates that a PCOC is potentially elevated but still below the adopted WQ Limit. The following was observed:
    - Ammoniacal nitrogen concentrations at MDD015 had a MEQ value of 0.833.

    - Strontium concentrations at MRC002 had a MEQ value of 0.893.
    - Zinc concentrations at Base (Office) had a MEQ value of 0.914.
- All other PCOC had MEQ values <0.50.
- Average Fe concentrations were reported as being <0.10 mg/L.
- Sulfate concentrations were reported <100 mg/L.
- Due to the limited data, the majority of parameters shown in Table 10 are comparable across the groundwater sampling sites (where data exists).

Table 9. MEQ analysis and average concentrations for groundwater.

PARAMETERS	WQ LIMIT	MDD015 (n=18)		MRC002 (n=1)		MDD302 (n=12)		Office Base (n=1)		Base (Exploration Camp) (n=1)	
		MEQ (max value)	AVE (mg/L)	MEQ (max value)	AVE (mg/L)	MEQ (max value)	AVE (mg/L)	MEQ (max value)	REPORTED VALUE (mg/L)	MEQ (max value)	REPORTED VALUE (mg/L)
Ag	0.00005	10.0	0.0002	10.0	0.0005	1.60	0.00008	10.0	0.0005	-	-
Al	0.08	0.238	0.0061	0.075	0.006	0.150	0.004	0.025	0.002	0.038	0.003
As	0.01	5.47	0.024	1.10	0.011	5.84	0.052	0.100	0.001	0.083	0.001
B	0.94	0.064	0.033	-	-	0.011	0.010	-	-	0.011	0.010
Cd	0.004	0.050	0.0001	0.050	0.0002	0.005	0.00002	0.050	0.0002	0.025	0.00010
Co	1.0	0.001	0.00019	0.001	0.0005	0.00001	0.00001	0.001	0.0005	0.00003	0.00003
Cr	0.05	0.020	0.00047	0.020	0.001	0.004	0.0002	0.020	0.001	0.004	0.0002
Cu	0.0018	0.278	0.0003	1.11	0.002	0.406	0.0002	2.22	0.004	85.6	0.154
Total Fe	0.3	11.8	0.315	6.67	2.00	1.30	0.338	0.333	0.100	0.017	0.005
Hg	0.0006	0.833	0.0002	0.833	0.0005	0.133	0.0001	0.833	0.0005	0.133	0.0001
Mn	0.4	0.021	0.0068	0.009	0.0034	0.014	0.005	0.0013	0.0005	0.0013	0.001
Mo	0.01	0.070	0.0004	0.090	0.0009	0.040	0.0003	0.050	0.0005	0.020	0.0002
Ni	0.011	0.045	0.0003	0.045	0.0005	0.018	0.0002	0.064	0.0007	0.118	0.0013
Pb	0.01	0.050	0.0002	0.050	0.0005	0.005	0.00005	0.050	0.0005	1.80	0.0180
Total Sb	0.02	0.100	0.0006	-	-	0.010	0.00017	-	-	0.005	0.0001
Se	0.02	0.250	0.0018	-	-	0.025	0.0005	-	-	0.025	0.001
Sr	4.0	2.65	9.76	0.893	3.57	0.300	1.13	0.111	0.443	0.027	0.109
Tl	0.00003	110	0.0003	16.7	0.0005	0.333	0.00001	16.7	0.0005	0.333	0.00001
U	0.03	0.040	0.0010	-	-	0.168	0.005	-	-	0.001	0.00003
V	0.006	0.083	0.0005	0.083	0.001	0.083	0.001	0.083	0.0005	0.083	0.0005
Zn	0.015	0.041	0.001	3.28	0.094	0.010	0.001	0.914	0.057	25.5	0.468
Sulfate	250	0.068	10.3	0.022	5.40	0.041	9.59	0.096	24.0	0.016	4.10
Ammoniacal nitrogen	0.24	0.833	0.109	-	-	0.208	0.050	-	-	0.021	0.005
Nitrate-N	11.3	0.001	0.005	-	-	0.001	0.0033	-	-	0.045	0.508

All units are presented in mg/L unless otherwise specified. A hyphen (-) indicates no value is given.

For quality assurance the Office Base and Base (Exploration Camp) sampling sites were compared the New Zealand drinking water standards (NZDWS) (2022). All reported concentrations had a MEQ below <0.50 (for the available NZDWS WQ Limits) indicating that the parameters are not elevated.

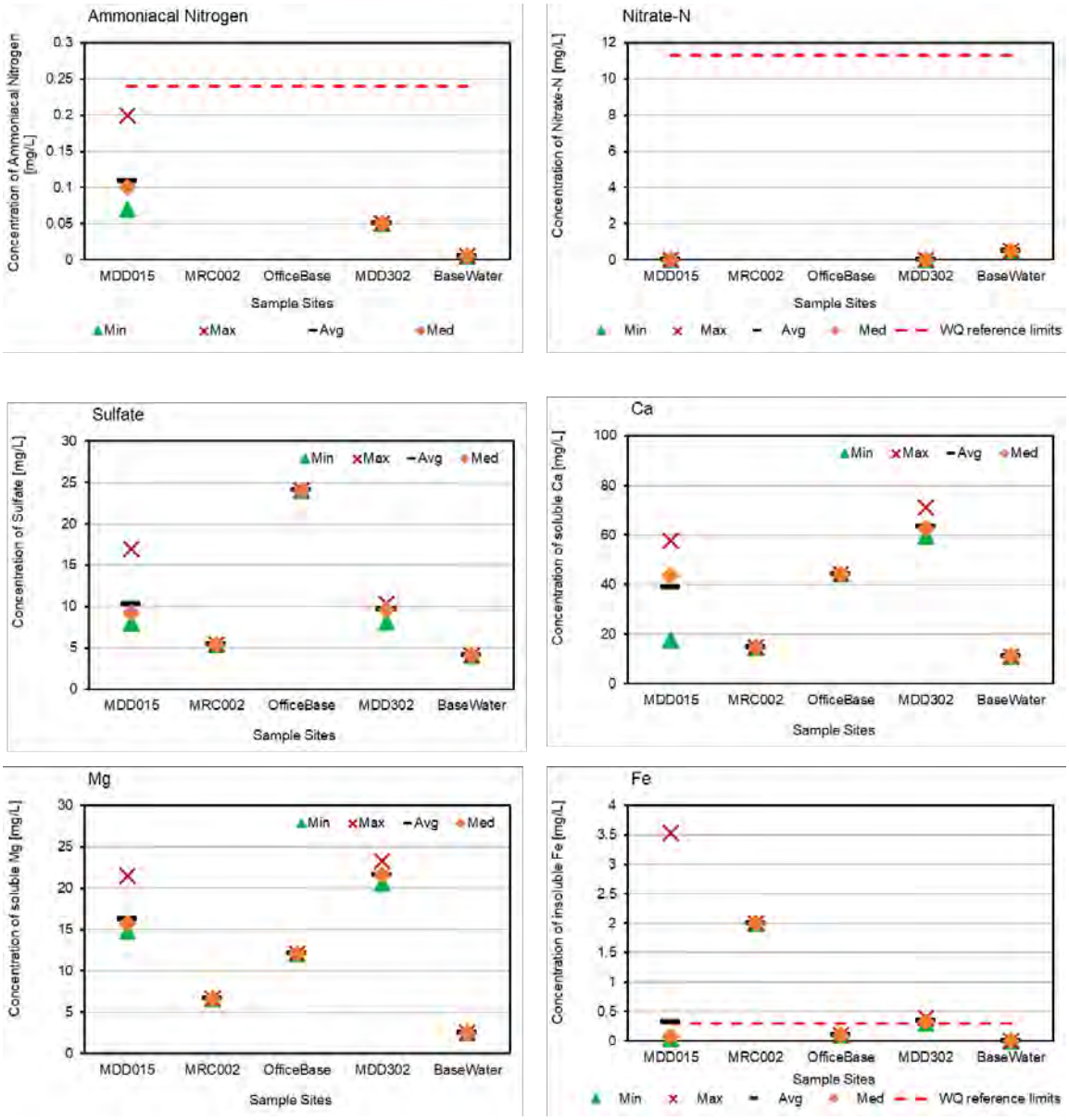


Figure 13. Selected groundwater quality parameters (Part 1).

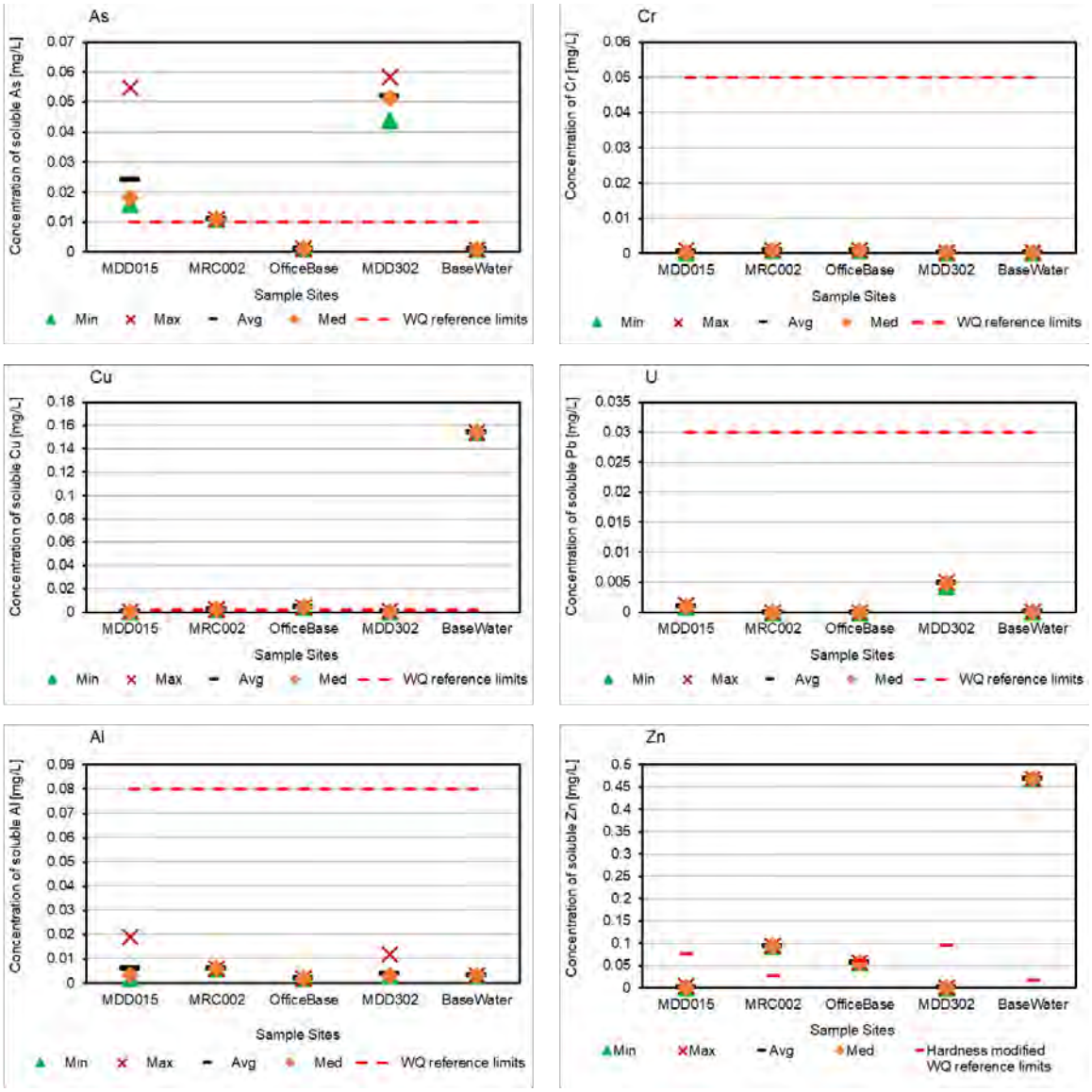


Figure 14. Selected key groundwater quality parameters (Part 2).

Table 10. Groundwater water quality summary.

PARAMETERS	MDD015 (n=18)			MRC002 (n=1)			MDD302 (n=12)			OFFICE BASE (n=1)	BASE (EXPLORATION CAMP) (n=1)
	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	REPORTED VALUE	REPORTED VALUE
Acidity to pH 7 (mg $CaCO_3$/L)	1.0	1.00	1.00	-	-	-	-	-	-	-	-
Acidity to pH 8.3 (mg $CaCO_3$/L)	1.0	6.00	3.20	-	-	-	4.67	16.7	8.05	-	6.67
Alkalinity (mg $CaCO_3$/L)	195	205	202	110	110	110	232	251	237	150	36.0
pH (pH units)	8.00	8.70	8.10	8.00	8.00	8.00	7.70	7.90	7.78	8.00	6.80
EC (µS/cm)	410	498	446	250	250	250	458	550	493	360	106
Ca	17.6	57.7	38.9	14.8	14.8	14.8	59.5	71.2	63.3	44.3	11.0
Cl	7.65	10.6	9.42	3.50	3.50	3.50	2.32	3.41	2.96	6.00	2.45
F	0.12	0.230	0.162	-	-	-	0.11	0.18	0.14	-	0.054
K	1.27	1.88	1.44	-	-	-	1.30	1.70	1.42	-	-
Mg	14.8	21.5	16.2	6.61	6.61	6.61	20.6	23.3	21.6	12.1	2.57
Na	36.8	59.6	43.6	27.0	27.0	27.0	7.60	8.92	7.98	16.7	5.07
Nitrite-N	0.001	0.010	0.004	-	-	-	-	-	-	-	0.001
TCN	0.001	0.005	0.002	-	-	-	-	-	-	-	0.001
TN	0.107	0.320	0.161	-	-	-	0.100	0.130	0.106	-	0.510
TOC	0.1	0.500	0.300	-	-	-	0.500	0.500	0.500	-	-
TP	0.005	0.470	0.040	-	-	-	0.005	0.150	0.021	-	0.005
TSS	3	160	13.8	-	-	-	3.00	3.00	3.00	-	3.00
Turbidity (NTU)	206	260	227	170	170	170	232	282	257	200	71.0
TDS	0.17	110	7.47	-	-	-	2.40	4.30	3.42	-	0.900

All units are presented in mg/L unless otherwise specified. Average pH presented is not based on H^+ content due to consistent pH values for each site.

A hyphen (-) indicates no value is given.

4.3.2 Groundwater Seasonal Trends

Based on the limited groundwater data, no seasonal trends could be observed (Figure 15 and Figure 16). Only MDD015 has data spanning longer than a year, although data were not collected on a regular basis. However, the following observations are noted:

- All parameters measured at MDD302 were relatively consistent through the monitoring period.
- Maximum Fe concentrations were observed in April 2024 at MDD015, before gradually reducing. However, no data were collected in the previous 12 months.
- Calcium notably increased in May 2024, whilst Mg stays relatively consistent.
- Notable decreases in nitrate-N, Cr, Pb, and Zn in May 2024 are due to switching to a laboratory with lower LORs for those parameters.
- Sulfate concentrations have remained relatively consistent from May 2024 onwards.
- Zinc had a reported spike in concentrations in October 2024 at the Base (Exploration Camp) during the October sampling event. MDD015 and MDD302 have remained fairly consistent over their respective monitoring periods.

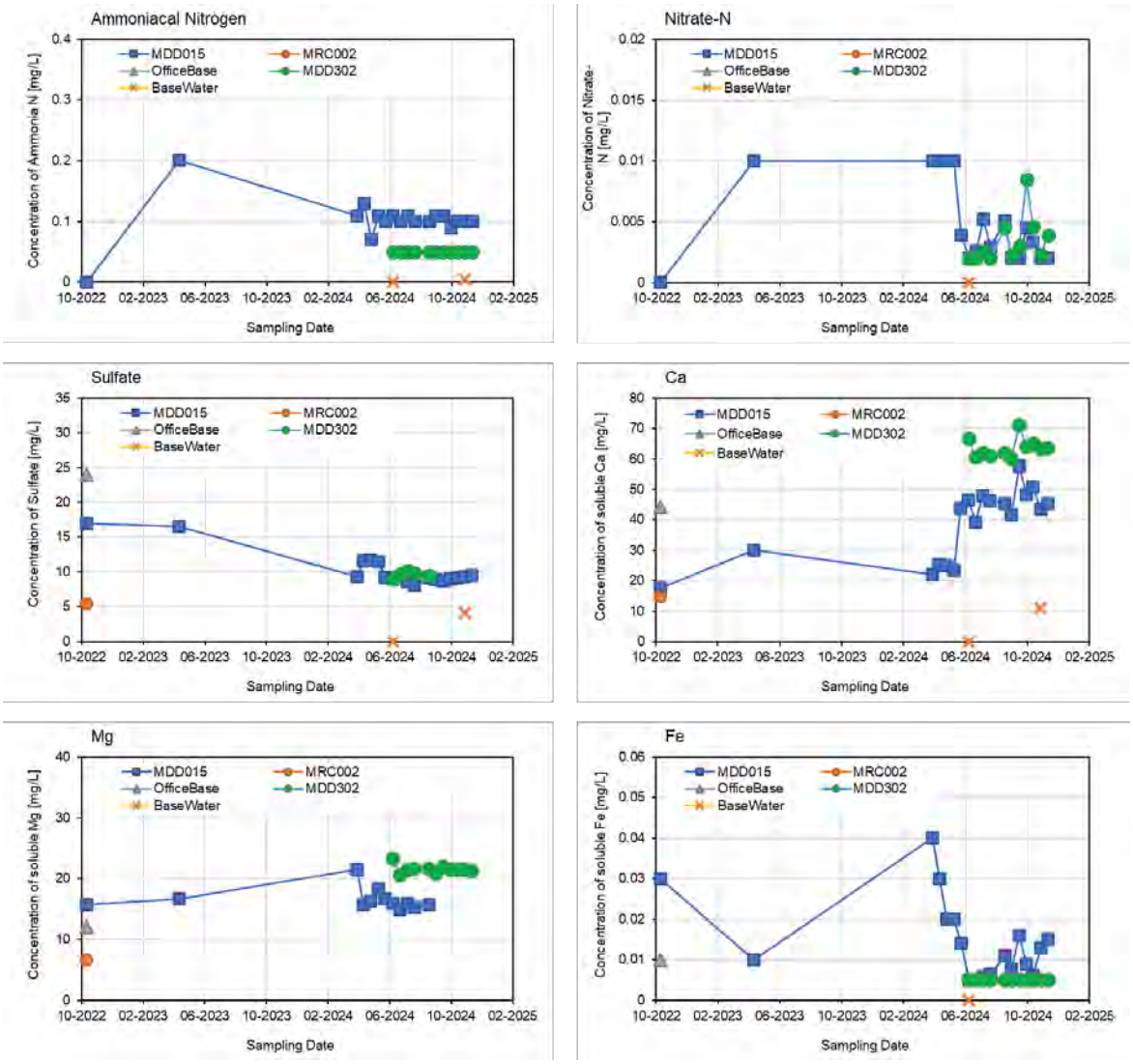


Figure 15. Seasonal trends of selected key water quality parameters from groundwater monitoring wells (Part 1).

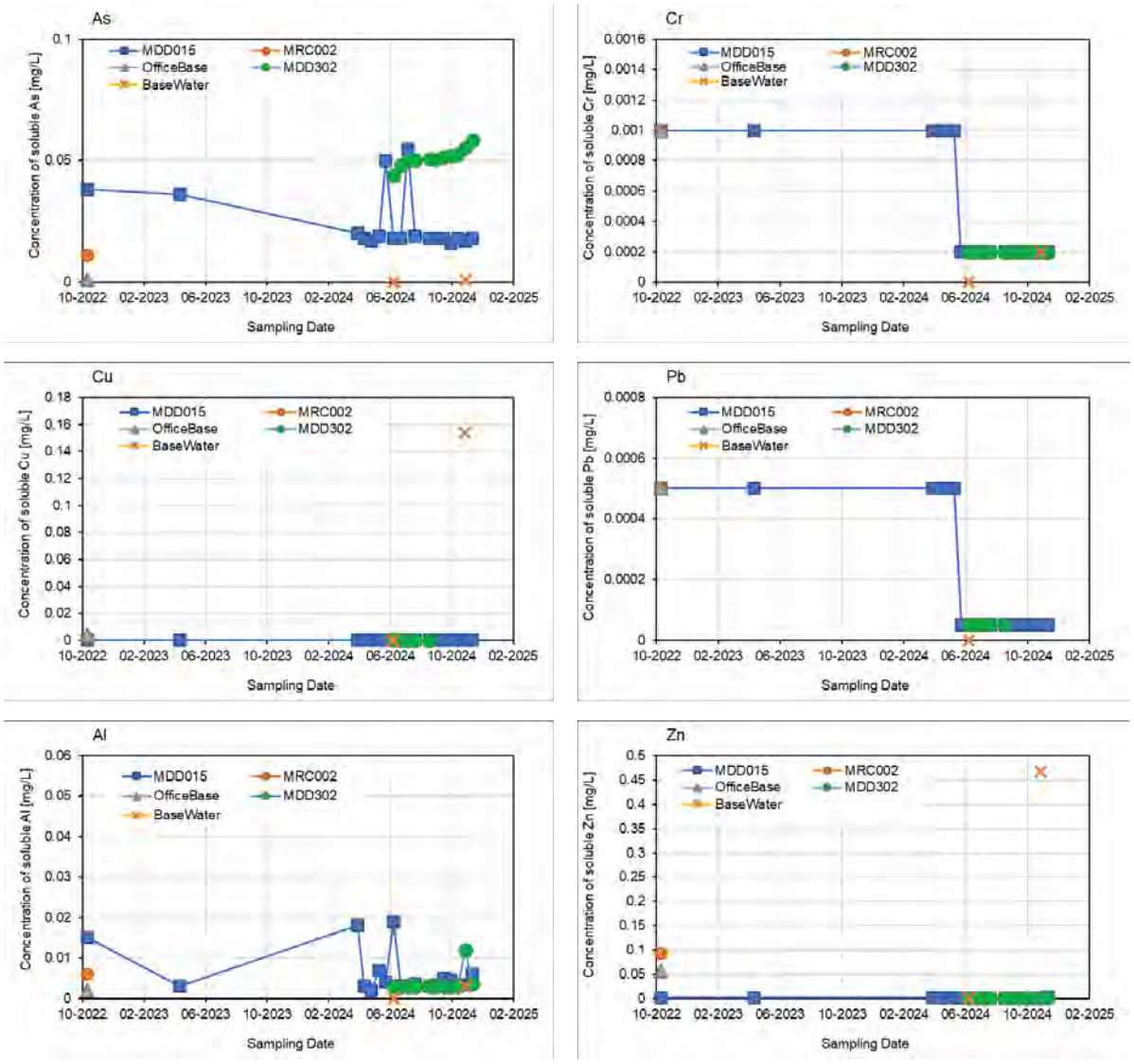


Figure 16. Seasonal trends of selected key water quality parameters from groundwater monitoring wells (Part 2).

4.4 Flow Rate Monitoring

Five weirs have been installed for the project to provide accurate low to moderate flow conditions at the following sampling sites:

- SC01 (December 2022 – May 2024).
- SC03 (December 2022 – May 2024).
- JC01 (July 2023 – May 2024).
- RS01 (December 2022 – May 2024).
- RS02 (December 2022 – May 2024).

Table 11 provides a statistical summary of the flow measurements monitored at each location. It should be noted that the data presented are the statistical analyses of the mean daily averages captured at each weir. Where applicable, negative flow data points were removed from the analyses. The following observations were noted:

- SC01 had the highest recorded flow in Shepherds Creek (133.3 L/s). The average recorded flow was 10.4 L/s.
- SC03 had flow rates of 0.00 to 103.0 L/s with an average of 9.70 L/s.
- JC01 had flow rates of 0.00 to 13.9 L/s with an average of 1.47 L/s.
- RS02 had the highest recorded flow in Bendigo Creek (76.9 L/s). The average recorded flow was 7.28 L/s.
- RS01 had flow rates of 0.01 to 74.7 L/s with an average of 7.12 L/s.

Table 11. Reported flow monitoring statistics.

SAMPLE SITE	READING COUNT	MIN	MAX	AVE	MED
SC01	482	2.17	113.3	14.0	10.4
SC03	472	0.00	103.0	9.70	5.71
JC01	284	0.00	13.9	1.47	1.38
RS01	388	0.01	74.7	7.12	4.29
RS02	479	0.52	76.9	7.28	4.93

All units are provided in L/s.

Monitoring of flow rates is a critical component of understanding potential project effects and is ongoing. Continuous monitoring is recommended as part of the proposed consent conditions (Ryder, 2025) and will enable an ongoing understanding of loads associated with PCOC.

4.5 Quality Assurance and Quality Control

QA/QC are essential steps to ensure the data are fit for purpose and suitable for informed decision making. QA/QC can be further defined as:

- QA: is focused on providing confidence that quality requirements will be fulfilled and includes for instance: prevention of mistakes or defects by paying attention to detail; and reviewing the way in which processes are performed to ensure the quality of a product or service.
- QC: is focused on fulfilling quality requirements and includes for instance: detection of mistakes or defects through monitoring products and verifying quality of output; and systematic processes for determining whether a product/service meets specified requirements.

For the purposes of this report, an inter-laboratory assessment was conducted. Samples from the monitoring location RS01 were sent to both Eurofins and Hills on six occasions between July 2023 and May 2024.

To determine if there were differences in concentration values a relative percent difference (RPD) calculation was used. As a conservative approach, a RPD of ≤20% was used as an indicator for determining appropriate discrepancies between the two laboratories. A RPD of ≤20% was used as:

- The samples were taken at the same time; and
- The water samples are expected to be homogeneous.

Appendix E provides a summary of the inter-laboratory analysis and shows the concentrations (total and dissolved) for parameters that had a calculated RPD ≤20% (without being influenced by the different laboratory LORs).

Based on the data, the following observations can be made:

- On average Hills Laboratory had lower LOR than Eurofins Laboratory. For some parameters there was an order of magnitude difference between the two laboratories (e.g., Cd, Cr, and Cu).
- The statistical summary of RPDs (that weren't influenced by LORs) were:
    - RPDs for the July 2023 samples ranged between 0% and 187.6%.
    - RPDs for the October 2023 samples ranged between 0% and 182.7%.
    - RPDs for the February 2024 samples ranged between 0% and 196.7%.
    - RPDs for the March 2024 samples ranged between 0% and 194.4%.
    - RPDs for the April 2024 samples ranged between 0% and 194.4%.
    - RPDs for the May 2024 samples ranged between 0% and 193.4%.

Further QA/QC studies are required to provide confidence in data reliability. Additional inter-laboratory testing should be completed for Analytica Laboratory results given they are the current preferred service provider.

4.6 Water Quality Data Summary

Analysis of water quality data indicated:

4.6.1 Shepherds Creek:

- Sample site JC01 had elevated Cu concentrations (MEQ value of 1.67). Average Cu concentrations were 0.0014 mg/L.
- Sampling sites had an exceedance for Cu. SC01 and SC03 had elevated Cu concentrations (MEQ values of 0.556 and 0.611 respectively). Average Cu concentrations were 0.0005 mg/L and 0.0006 mg/L, respectively.
- Sample site SC01 had elevated Sr concentrations (MEQ value of 0.500). The average Sr concentration was 0.947 mg/L.
- MEQ data in orange (i.e., 0.5 ≤ MEQ < 1.0) indicate that a PCOC is potentially elevated but still below the respective WQ Limit. The following was observed:
    - Sampling sites SC01 and SC03 had elevated Cu concentrations (MEQ values of 0.556 and 0.611 respectively). Average Cu concentrations were 0.0005 mg/L and 0.0006 mg/L respectively.
    - Sample site SC01 had elevated Sr concentrations (MEQ value of 0.500). Average Sr concentrations were 0.947 mg/L.
- E3 Scientific (2023) noted that concentrations of nutrients (e.g., nitrate and ammoniacal nitrogen) were elevated in Shepherds Creek and may be attributed to the presence of livestock

in the vicinity. Similarly, TKN[6] concentrations could also be a result of animal waste inputs or rock weathering processes within those watersheds (E3 Scientific, 2023).

4.6.2 Bendigo Creek:

- Arsenic concentrations were reported as exceeding the WQ Limit across RSA1 and LBA (i.e., MEQ >1). Note: baseline data shows that CC01 (Clearwater Creek) and RS04 above the Rise and Shine historic workings were not elevated in As.
- Cobalt was elevated above the WQ Limit at RSA1 (MEQ 1.80).
- Copper was elevated above the WQ Limit for RSA1 with a MEQ value of 18.9.
- Iron was elevated above the WQ Limit for RSA1 and LBA with MEQ values of 3.57 and 1.37 respectively.
- MEQ data in orange (i.e., 0.5 ≤ MEQ < 1.0) indicates that a PCOC is potentially elevated but still below the respective WQ Limit. The following was observed:
    - Aluminium concentrations from the sampling site CC01 had a MEQ value of 0.613.
    - Arsenic concentrations from the sampling site RS01 had a MEQ value of 0.833.
    - Cadmium concentrations from the sampling site LBA had a MEQ value of 0.636.
    - Copper from the sampling site RS01, RS02, RS04, and CC01 with MEQ values of 0.833, 0.889, 0.944, and 0.500 respectively.
    - Zinc concentrations from the sampling sites RSA1 and RS03 had a MEQ values of 0.791 and 0.594 respectively.
    - Strontium had a MEQ value of 0.536 at the sampling site RSA1.
    - Iron concentrations were elevated above the WQ Limit for RSA1 and LBA with MEQ values of 3.57 and 1.37 respectively.

<u>Groundwater:</u>

- Arsenic concentrations were reported as exceeding the WQ Limit for sampling sites MDD015, MRC002, and MDD302.
- Copper concentrations were reported as exceeding the WQ Limit for sampling sites MRC002, Base (Office), and Base (Exploration Camp).
- Iron concentrations exceeded their WQ Limit at MDD015, MRC002, and MDD302.
- Lead concentrations were reported as exceeding the WQ Limit for the sampling site Base (Exploration Camp).
- Strontium concentrations exceeded their WQ Limit at MDD015.
- Thallium concentrations exceeded the WQ Limit at sampling site MDD015 during the sampling event in April 2024.

[6] *TKN = Total Kjeldahl Nitrogen*

- Zinc concentrations exceeded their WQ Limit at MRC002 and Base (Exploration Camp).
- MEQ data in orange (i.e., 0.5 ≤ MEQ < 1.0) indicates that a PCOC is potentially elevated but still below the adopted WQ Limit. The following was observed:
    - Ammoniacal nitrogen concentrations at MDD015 had a MEQ value of 0.833.
    - Strontium concentrations at MRC002 had a MEQ value of 0.893.
    - Zinc concentrations at Base (Office) had a MEQ value of 0.914.

5 SUMMARY AND RECOMMENDATIONS

A number of the streams associated with BOGP have elevated metals, which is either a function of:

- Historical mining activities; or
- Natural baseline conditions.

Ongoing baseline water quality monitoring is recommended to develop a robust dataset to support the development of site-specific water quality criteria for the BOGP. Further work is required to define the source of elevated metals in the catchment as being a function of natural mineralisation, or whether elevated metals is due to historic mining activities. The following recommendations are provided.

5.1 Water Quality Monitoring Program

- Continue baseline water quality sampling for all current sampling sites. This will ensure that sufficient data are available to understand baseline conditions prior to the BOGP starting operations.
- Water quality datasets need to be compared to historical mining activity and soil mineralisation mapping to confirm natural baseline water quality versus water quality affected by historic mining activities. Such effects, based on preliminary data, have been considered as part of determining appropriate compliance water quality limits for the BOGP (Ryder, 2025).
- Monitoring of flow rates is a critical component of understanding potential project effects. Continuous monitoring is recommended and will form part of the proposed consent conditions (Ryder, 2025). This will enable an ongoing understanding of loads associated with PCOC.
- It is important that current monitoring sites align with any future resource consent monitoring locations (compliance monitoring). If other sites are to be used for compliance monitoring, then it is recommended that monitoring commence as soon as possible to obtain baseline data. Current proposed compliance monitoring sites include SC01 in Shepherds Creek (surface and groundwater) and RS03 in Rise and Shine Creek. A groundwater quality compliance site is required within the Ardgour Aquifer to understand any potential effects of mine-impacted water discharge from Shepherds Creek; these groundwater monitoring bores will be installed once the BOGP is approved. Further details are provided in Rekker and Dumont (2025).
- The groundwater quality datasets are limited at this early stage of the BOGP as monitoring requirements have only been recently identified. Further samples taken at regular intervals are required to understand baseline water quality and seasonal fluctuations. A groundwater monitoring network needs to be established for performance and compliance monitoring purposes.
- The frequency of monitoring should be reviewed after 2 years of consistent data collection to consider the parameters that require monitoring (e.g., not all metals are elevated) and the monitoring intensity (e.g., monthly / quarterly / etc). Currently, some monitoring locations have <2 years of data. ANZG (2018) notes that site-specific guideline values should be based on at least 2 years of monthly monitoring data from an appropriate site to address seasonality during different flow regimes (low, median, and high flow).

- A management process should be developed for sample collection, dispatch, and analysis that will be used operationally.
- For QA/QC[7] purposes, duplicate samples should be taken and submitted to the laboratory for analysis to assess the precision and consistency of the results, ensuring that the sampling, handling, and analytical processes produce reliable and reproducible data. Industry standards indicate one duplicate should be collected for every 10 samples (Department of Environment, Science and Innovation, 2018).
- Monitoring should also include temperature, pH, dissolved organic carbon (DOC), and hardness as these parameters are toxicity modifying factors that are required to adjust trigger values.

5.2 Data Management

MGL should continue to compile and maintain a monitoring database for all water quantity and quality data to ensure robust datasets for future assessments and studies. MWM has provided guidance on QA/QC procedures for the water quality database, and this should be utilised (MWM, 2025a).

5.3 Annual Reporting

It is recommended that this baseline water quality report be updated annually (Annual Water Report [AWR]) to summarise baseline water quality (and quantity) during the project operational phase and into the active closure and post closure phases of the project. The provision of long-term water quality datasets in the AWR will be a key dataset for understanding any potential effects of the BOGP and to demonstrate that any engineering controls introduced to mitigate any deleterious effects are working effectively.

[7] *Quality Assurance / Quality Control*

6 REFERENCES

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7 LIMITATIONS

Attention is drawn to the document “Limitations”, which is included in Appendix F of this report. The statements presented in this document are intended to provide advice on what the realistic expectations of this report should be, and to present recommendations on how to minimise the risks associated with this project. The document is not intended to reduce the level of responsibility accepted by Mine Waste Management, but rather to ensure that all parties who may rely on this report are aware of the responsibilities each assumes in doing so.

APPENDIX A ABBREVIATIONS

ABBREVIATION	DEFINITION
AMD	Acid and metalliferous drainage
AWR	Annual water report
CIL	Carbon-in-leach
CIT	Come in Time
DGV	Default guideline value
ELF	Engineered landform
LOR	Limit of reporting
LRT	Low reliability trigger
MAV	Maximum acceptable value
MEQ	Metal ecotox quotient
MfE	Ministry for the Environment
Mt	Million tonnes
MGL	Matakanui Gold Limited
MWM	Mine Waste Management Limited
NPS	National Policy Statement
NZDWS	New Zealand drinking water standards
PCOC	Potential constituents of concern
QA/QC	Quality assurance and quality control
RAS	Rise and Shine
RPD	Relative percent difference
RSSZ	Rise and Shine Shear Zone
SRX	Srex
SOP	Standard operating procedure
SRE	Srex East
TSF	Tailings Storage Facility
WQ Limit	Water Quality Limit
WELF	West ELF
WRS	Waste rock stack

APPENDIX B STANDARD OPERATING PROCEDURES

SAN-SOP

Water Sampling SOP

DOCUMENT OWNER: Hamish McLauchlan			
APPROVED BY: *Signature: ..... Date: .....*			
REVISION HISTORY:			
Date	***Revision***	***Author***	***Detail / Changes***
29/10/2024	*Version 1*	*P Becker*	*Creation*
TITLE: VWP Download ***Document Number: Matakanui Gold SOP***			***PLANNED REVIEW:***

Water Sampling SOP

1. APPLICATION

To provide a standard work practice for sampling both ground and surface water from around site by Santana Minerals staff and contractors. The standard operating procedure (SOP) presented in this document outlines the field procedures for collecting samples from monitoring locations. The SOP refers to health and safety considerations, personnel undertaking the fieldwork, materials and equipment, as well as the methodology for sampling. The methodology described in this document provides guidance on preparation, and sampling. The SOP further provides guidance on quality assurance (QA) and quality control (QC) procedures associated with the aforementioned activities.

2. HAZARDS AND RISKS

The SOP has been designed to provide technical guidance for water sampling. The health and safety considerations for each sampling event need to be assessed using established health and safety procedures, take-5 or Job Safety Analysis (JSA). Health and safety considerations that will need to be considered would be expected to include considerations associated with:

- Travel to and from the sampling locations.
- Manual handling of sampling equipment, sample preservatives and sample bottles.
- Potentially encountering water samples that may have deleterious water quality.
- Movement of vehicles and traffic risks associated with sampling locations.
- Environmental hazards (including heat stress and biological hazards) associated with the sampling locations.

All health and safety considerations and potential hazards associated with the tasks will need to be assessed through formal health and safety processes with relevant documentation completed.

The following risks and hazards have been identified for collecting data while water sampling:

- **Physical hazards:** these can include slips, trips, and falls especially when working near water bodies, or uneven terrain. It is important to wear appropriate footwear and use safety gear to mitigate this risk.
- **Weather-related hazards**: exposure to extreme weather conditions such as heat, cold rain or strong winds can pose risks. Proper protective clothing and hydration are essential to prevent weather related illnesses. Road conditions need to be assessed in poor weather.
- **Remote location risk:** Drill sites may be located in remote areas posing risks related to limited communication, access, and medical facilities. Ensure proper planning, communication devices, and emergency protocols are in place.
- **Electric fences:** Sampling locations could be behind electric fences.

3. PPE REQUIREMENTS

Personal Protective Equipment (PPE): It is essential to protect yourself from injury by wearing appropriate PPE when risks and hazards cannot be removed or sufficiently mitigated.

- Gloves: protect your hands from cuts and abrasions. Choose gloves that are appropriate for the specific task and hazard present.
- **NB – Each Site requires New Gloves to be worn**
- Footwear: safety boots to provide protection from sharp objects, slips and falls. Boots with slip resistant soles are recommended, especially when working in wet or muddy conditions.
- High-visibility clothing improves your visibility to others, especially in low-light conditions or when working near the tracks.

4. EQUIPMENT REQUIREMENTS

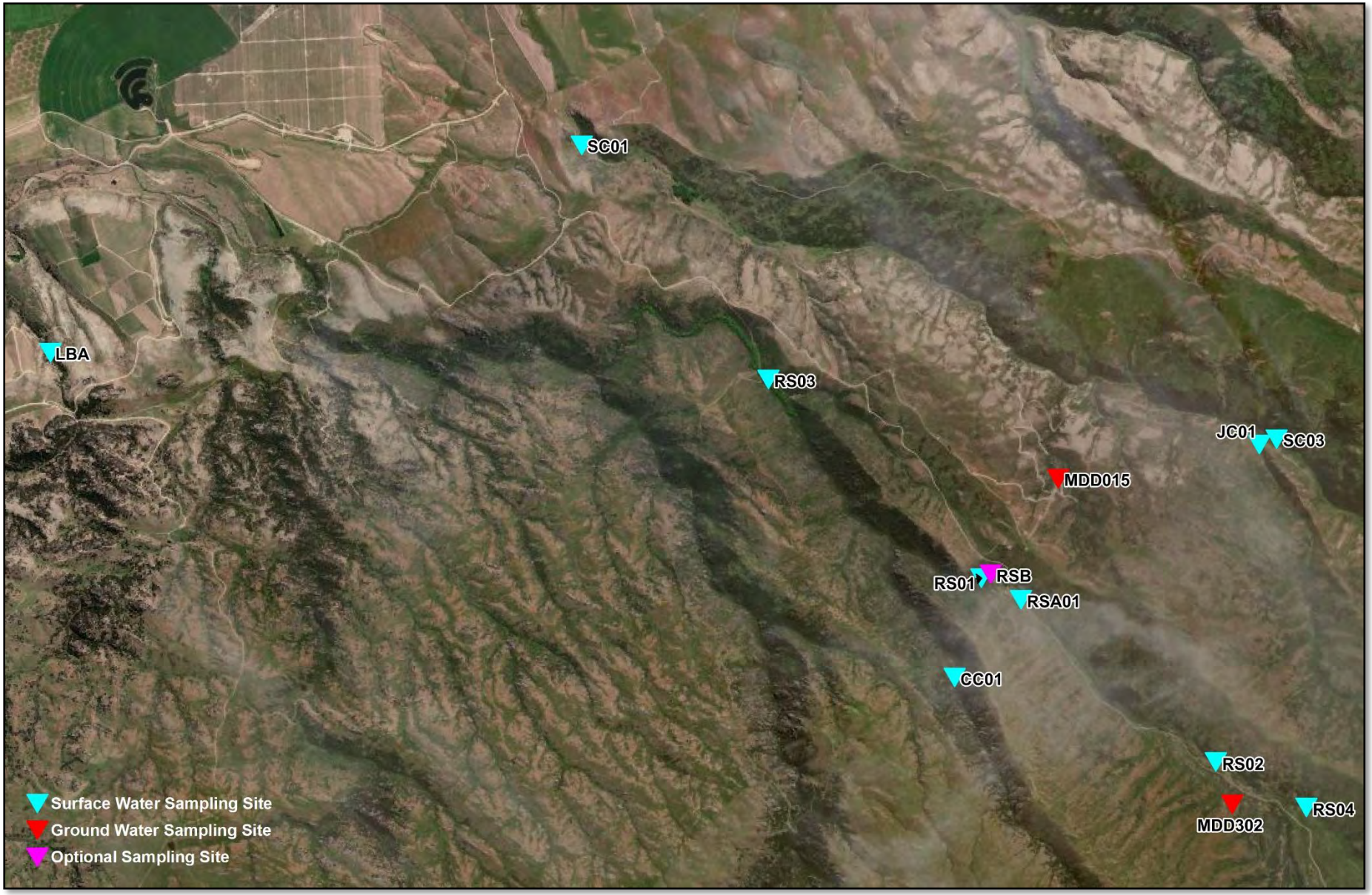
1. 20L Bucket
2. Sample Bottles – pre-labelled
3. Turbidity meter
4. Tablet
5. Shovel
6. Rubber Gloves

5. COLLECTION OF WATER SAMPLES

WATER SAMPLING LOCATIONS

- CC01 - Clearwater Creek - Surface Water site
- LBA - Lower Bendigo Adit - Surface Water site
- RS01 - RAS Creek at downstream flume - Surface Water site
- RS02 - RAS Creek at upstream flume - Surface Water site
- RS03 - RAS Creek upstream of Alta crossing - Surface Water site
- RS04 - RAS Creek upstream of Poplar track - Surface Water site
- RSA01 - RAS Adit at the cattle yards - Surface Water site
- SC01 - Shepherds Creek at bottom flume - Surface Water site
- SC03 - Shepherds Creek at top flume - Surface Water site
- JC01 - Jean Creek at flume - Surface Water site
- MDD015 - Artesian flow at MDD015 - Ground Water site
- MDD302 - Artesian flow at MDD302 - Ground Water site
- BASE - Optional Base drinking water - Ground Water site
- RSB - Optional RAS Battery - Surface water site (Total and dissolved metals only)

Water Sampling SOP



GROUND WATER SAMPLING PROCEDURE

The following guidance is provided for groundwater sampling:

- Samples are taken from artesian wells and collected from PVC pipes at collar.
- Readings of Turbidity / pH / Dissolved Oxygen etc are taken once the field parameters have stabilized.
- Photos of meter taken as a record with Site ID from bag included.
- Take samples for specific analysis in a consistent order across sampling locations (for example, take samples for organic compound analysis first, major ions second, nutrients third follow by samples for metal and metalloid analysis). As a general rule, and where applicable, samples should be taken in order of decreasing volatility.
- Samples taken for volatile organic compound (VOC) or isotope analysis must be taken with no head space. This can be done by filling the sample vial or bottle with a positive meniscus, i.e. above the rim of the sample container. Once the sample container has been closed, turn the container upside down and tap the side of the bottle to see whether air bubbles are present (if the bubbles are present refill the sample container).
- For samples with acid preservative, care should be taken not to overfill the sample bottle. If overfilling occurs, the bottle should be discarded and replaced with a new sample container.
- Label all samples with relevant project information, including the sample ID, and sample date. This is also recorded into the tablet along with sample time and field technician.
- Place samples into a chilled cooler directly after sampling. Ensure that samples bottles and vials are securely packed in the cooler and utilize bubble wrap or similar material if required. Aim to maintain the cooler temperate at 4 degrees Celsius (note do not freeze samples).

Once samples have been taken, complete laboratory COC paperwork and send samples to the contract laboratory within the holding times that apply to the specific laboratory analysis being undertaken.

SURFACE WATER SAMPLING PROCEDURE

The following guidance is provided for surface water quality sampling.

- Surface water samples are typically collected either by directly filling the sample bottle or vial from the feature being sampled or by decanting water from a collection device into a sample bottle (US EPA, 2021).

- Collect a water quality sample approximately 10 cm below the surface of the surface water feature (Department of Water, 2009a). Water samples should not be taken directly at the surface as residue or films floating on the surface may affect analytical results of laboratory testing.

- Water quality measurements can be taken directly from the surface water feature (if the sample location is readily accessible) or from samples taken from the collection device. Water quality measurements to be taken in the field include pH, temperature, electrical conductivity (EC), oxidation reduction potential (ORP) and dissolved oxygen (DO).

- For each set of recorded measurements, note down the time, water quality parameter values and any visual (such as extent of turbidity) and olfactory observations (such as hydrogen sulfide which is indicative of highly reducing conditions – influencing the redox chemistry of a number of metals and metalloids). Also record observations on the degree of flow and biological activity within the surface water feature.

- Use well maintained and calibrated field probes for the field parameter measurements. Probes are supplied to SMI calibrated.

- For laboratory analysis, take samples for specific analysis in a consistent order across sampling locations (for example, take samples for organic compound analysis first, major ions second, nutrients third follow by samples for metal and metalloid analysis). As a general rule, and where applicable, samples should be taken in order of decreasing volatility.

- Samples taken for volatile organic compound (VOC) or isotope analysis must be taken with no head space. This can be done by filling the sample vial or bottle with a positive meniscus, i.e. above the rim of the sample container. Once the sample container has been closed, turn the container upside down and tap the side of the bottle to see whether air bubbles are present (if the bubbles are present refill the sample container).

- For samples with acid preservative, care should be taken not to overfill the sample bottle. If overfilling occurs, the bottle should be discarded and replaced with a new sample container.

- Label all samples with relevant project information, including the sample ID, and sample date. This is also recorded into the tablet along with sample time and field technician.

- Place samples into a chilled cooler directly after sampling. Ensure that samples bottles and vials are securely packed in the cooler and utilize bubble wrap or similar material if required. Aim to maintain the cooler temperate at 4 degrees Celsius (note do not freeze samples).

Once samples have been taken, complete laboratory COC paperwork and send samples to the contract laboratory within the holding times that apply to the specific laboratory analysis being undertaken.

APPENDIX C LABORATORY REPORTS

Analytica Laboratories Limited
Ruakura Research Centre
10 Bisley Road
Hamilton
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Certificate of Analysis

e3 Scientific Limited
Arrow Lane
Arrowtown

Attention: Brian McGlynn
Phone: 0211697362
Email: brian.mcglynn@e3scientific.co.nz

Sampling Site: Matakanui

Lab Reference: 22-35194
Submitted by: McGlynn
Date Received: 23/09/2022
Testing Initiated: 23/09/2022
Date Completed: 6/10/2022
Order Number:
Reference: 22065

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Please note Fraction 4 was not received in a glass container for TOC and DOC analysis. The laboratory aliquoted from a plastic container upon receipt. Please interpret results with caution.

Anion/Cation Suite

	Client Sample ID		RS1	RS2	RSA1	SC4	Jean Crk
	Date Sampled		22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
pH	pH	*1*	7.8	7.7	8.0	8.0	8.4
Electrical Conductivity	µS/cm	*0.2*	160	134	481	261	404
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	99.4	68.8	235	124	207
Chloride	g/m^3	*0.5*	3.14	2.17	7.91	3.02	6.58
Sulfate	g/m^3	*0.15*	2.74	1.77	17.5	12.7	12.9
Nitrate-N	g/m^3	*0.002*	<0.0020	0.0092	<0.0020	0.144	0.0158
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	<0.002	<0.002	<0.002	<0.002	<0.002
Ammonia as N	g/m^3	*0.005*	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	g/m^3	*0.01*	5.57	4.60	15.5	6.59	13.3
Potassium	g/m^3	*0.05*	1.3	1.0	1.3	1.2	2.0
Calcium	g/m^3	*0.05*	23.8	19.9	69.6	38.3	58.2
Magnesium	g/m^3	*0.01*	4.61	3.68	18.6	9.69	15.6
Iron	g/m^3	*0.005*	0.066	0.015	0.080	0.021	<0.0050
Zinc	g/m^3	*0.001*	<0.0010	<0.0010	0.0012	<0.0010	0.0041
Manganese	g/m^3	*0.0005*	0.0059	0.00062	0.035	0.0042	0.00095
Sum of Anions*	meq/L	*0.01*	2.15	1.48	5.35	2.87	4.73
Sum of Cations*	meq/L	*0.01*	1.85	1.53	5.71	3.03	4.82
EC/10*	(mS/m)/10	*0.002*	1.60	1.34	4.81	2.61	4.04
Conductivity of Water (mS/m)	mS/m	*0.02*	16.0	13.0	48.0	26.0	40.0

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Anion/Cation Suite

			Client Sample ID	SC3	SC1
			Date Sampled	22/09/2022	22/09/2022
Analyte		Unit	*Reporting Limit*	22-35194-6	22-35194-7
pH		pH	*1*	8.2	8.3
Electrical Conductivity		µS/cm	*0.2*	318	408
Total Alkalinity (CaCO3)		g $CaCO_3/m^3$	*1*	147	181
Chloride		g/m^3	*0.5*	3.94	5.61
Sulfate		g/m^3	*0.15*	18.6	34.0
Nitrate-N		g/m^3	*0.002*	0.144	0.124
Dissolved Reactive Phosphorus (FIA)		g/m^3	*0.002*	<0.002	0.004
Ammonia as N		g/m^3	*0.005*	<0.005	<0.005
Sodium		g/m^3	*0.01*	9.15	10.9
Potassium		g/m^3	*0.05*	1.3	1.5
Calcium		g/m^3	*0.05*	45.4	57.1
Magnesium		g/m^3	*0.01*	12.3	17.9
Iron		g/m^3	*0.005*	0.0065	<0.0050
Zinc		g/m^3	*0.001*	<0.0010	<0.0010
Manganese		g/m^3	*0.0005*	0.0012	<0.00050
Sum of Anions*		meq/L	*0.01*	3.53	4.59
Sum of Cations*		meq/L	*0.01*	3.71	4.84
EC/10*		(mS/m)/10	*0.002*	3.18	4.08
Conductivity of Water (mS/m)		mS/m	*0.02*	32.0	41.0

Total Nitrogen / Kjeldahl Nitrogen in Water

		Client Sample ID	RS1	RS2	RSA1	SC4	Jean Crk
		Date Sampled	22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.24	0.35	2.33	0.24	0.26

Total Nitrogen / Kjeldahl Nitrogen in Water

		Client Sample ID	SC3	SC1
		Date Sampled	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-6	22-35194-7
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.21	0.22

Total Phosphorus in Water

		Client Sample ID	RS1	RS2	RSA1	SC4	Jean Crk
		Date Sampled	22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
Total Phosphorus	g/m^3	*0.005*	0.0080	0.048	0.42	0.014	<0.0050

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Total Phosphorus in Water

Client Sample ID			SC3	SC1
Date Sampled			22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-6	22-35194-7
Total Phosphorus	g/m^3	*0.005*	0.0088	0.0064

Cyanide in Water

Client Sample ID			RS1	RS2	RSA1	SC4	Jean Crk
Date Sampled			22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
Total Cyanide	g/m^3	*0.001*	<0.001	0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			SC3	SC1
Date Sampled			22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-6	22-35194-7
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001

Carbon in Water

Client Sample ID			RS1	RS2	RSA1	SC4	Jean Crk
Date Sampled			22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
Total Organic Carbon	g/m^3	*0.5*	3.1	2.5	7.1	2.7	6.3
Dissolved Organic Carbon*	g/m^3	*0.5*	3.6	2.5	7.1	2.6	6.2

Carbon in Water

Client Sample ID			SC3	SC1
Date Sampled			22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-6	22-35194-7
Total Organic Carbon	g/m^3	*0.5*	3.2	3.6
Dissolved Organic Carbon*	g/m^3	*0.5*	3.2	3.7

Water Hardness

Client Sample ID			RS1	RS2	RSA1	SC4	Jean Crk
Date Sampled			22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
Total Hardness	g eqv. $CaCO_3$/m^3	*0.05*	77	66	260	140	210

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Water Hardness

Client Sample ID			SC3	SC1
Date Sampled			22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-6	22-35194-7
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	170	210

Solids in Water

Client Sample ID			RS1	RS2	RSA1	SC4	Jean Crk
Date Sampled			22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
Total Dissolved Solids	g/m^3	*3*	116	102	310	174	272

Solids in Water

Client Sample ID			SC3	SC1
Date Sampled			22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-6	22-35194-7
Total Dissolved Solids	g/m^3	*3*	212	286

Water Aggregate Properties

Client Sample ID			RS1	RS2	RSA1	SC4	Jean Crk
Date Sampled			22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	4.00	2.00	6.00	2.00	<2

Water Aggregate Properties

Client Sample ID			SC3	SC1
Date Sampled			22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-6	22-35194-7
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	2.00	2.00

Elements in Water (Soluble)

Client Sample ID			RS1	RS2	RSA1	SC4	Jean Crk
Date Sampled			22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
Arsenic	g/m^3	*0.0005*	0.028	0.0059	0.0761	<0.00050	0.00069
Aluminium	g/m^3	*0.003*	<0.0030	0.011	0.0042	0.0060	0.0039
Barium	g/m^3	*0.0002*	0.0106	0.0095	0.0189	0.0255	0.0258
Beryllium	g/m^3	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m^3	*0.01*	<0.010	<0.010	<0.010	0.023	0.024
Cadmium	g/m^3	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m^3	*0.00001*	0.000094	0.000077	0.00019	0.000057	0.00012

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Elements in Water (Soluble)

Client Sample ID			RS1	RS2	RSA1	SC4	Jean Crk
Date Sampled			22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	0.00073	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	0.0030
Germanium	g/m³	*0.00005*	0.00014	<0.000050	0.000082	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00228	0.00275	0.00646	0.00440	0.00785
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00031	0.00031	0.00096
Nickel	g/m³	*0.0002*	0.00050	0.00029	0.00041	0.00023	0.00030
Phosphorus	g/m³	*0.04*	<0.040	<0.040	0.13	0.11	0.16
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	0.00044
Rubidium	g/m³	*0.00002*	0.00026	0.00028	0.00047	0.00025	0.00022
Sulfur*	g/m³	*10*	<10	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	0.00037
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.302	0.304	1.34	0.692	0.835
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00011	0.00037	0.00219	0.00270	0.00550
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000016	0.000020	0.000014	0.000017	0.000029

Elements in Water (Soluble)

Client Sample ID			SC3	SC1
Date Sampled			22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-6	22-35194-7
Arsenic	g/m³	*0.0005*	<0.00050	0.00074
Aluminium	g/m³	*0.003*	0.0041	<0.0030
Barium	g/m³	*0.0002*	0.0258	0.0290
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010
Boron	g/m³	*0.01*	0.024	0.029
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000065	0.000057
Chromium	g/m³	*0.0002*	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.0010	0.0010
Germanium	g/m³	*0.00005*	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00570	0.00756
Molybdenum	g/m³	*0.0002*	0.00044	0.00046
Nickel	g/m³	*0.0002*	0.00020	0.00030
Phosphorus	g/m³	*0.04*	0.14	0.12
Lead	g/m³	*0.00005*	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00021	0.00020
Sulfur*	g/m³	*10*	<10	13
Antimony	g/m³	*0.0001*	0.00011	0.00012
Selenium	g/m³	*0.0005*	<0.00050	0.00057
Tin	g/m³	*0.0002*	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.755	0.968
Thallium	g/m³	*0.00001*	<0.000010	<0.000010

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Elements in Water (Soluble)

Client Sample ID			SC3	SC1
Date Sampled			22/09/2022	22/09/2022
Uranium	g/m³	*0.00003*	0.00336	0.00492
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000023	0.000030

Elements in Water (Total Recoverable)

Client Sample ID			RS1	RS2	RSA1	SC4	Jean Crk
Date Sampled			22/09/2022	22/09/2022	22/09/2022	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*	22-35194-1	22-35194-2	22-35194-3	22-35194-4	22-35194-5
Arsenic	g/m³	*0.0005*	0.038	0.012	0.243	0.00061	0.00086
Aluminium	g/m³	*0.003*	0.037	0.380	0.0074	0.329	0.026
Barium	g/m³	*0.0001*	0.0131	0.0183	0.0263	0.0391	0.0337
Beryllium	g/m³	*0.00001*	<0.000010	0.000024	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.010	0.029	0.031
Calcium	g/m³	*0.05*	23.4	20.1	71.2	38.6	58.3
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00015	0.00032	0.00024	0.00029	0.00015
Chromium	g/m³	*0.0002*	<0.00020	0.00029	<0.00020	0.00038	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.000068	<0.000010	0.000061	<0.000010
Copper	g/m³	*0.0002*	0.00055	0.0013	0.00035	0.00089	0.0014
Iron	g/m³	*0.005*	0.543	0.780	0.913	0.515	0.028
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	1.3	1.2	1.3	1.4	2.0
Lanthanum	g/m³	*0.00001*	0.000047	0.00034	0.000012	0.00026	0.000027
Lithium	g/m³	*0.00001*	0.00219	0.00286	0.00592	0.00451	0.00747
Magnesium	g/m³	*0.01*	4.45	3.71	18.8	9.57	15.9
Manganese	g/m³	*0.0005*	0.0538	0.028	0.0510	0.034	0.0016
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00030	0.00031	0.00097
Sodium	g/m³	*0.01*	5.48	4.76	15.8	6.57	13.8
Nickel	g/m³	*0.0002*	0.00036	0.00061	0.00028	0.00042	0.00025
Phosphorus	g/m³	*0.04*	<0.040	<0.040	0.084	<0.040	<0.040
Lead	g/m³	*0.00005*	0.000095	0.00064	<0.000050	0.00034	<0.000050
Rubidium	g/m³	*0.00005*	0.00040	0.0016	0.00056	0.0012	0.00030
Sulfur*	g/m³	*10*	<10	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	0.00011	0.00014	0.00013	0.00050
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.349	0.306	1.38	0.719	0.847
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00010	0.00028	0.0014	0.0017	0.00351
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	0.00020	<0.000050	0.00016	<0.000050
Zinc	g/m³	*0.003*	<0.0030	0.0052	<0.0030	<0.0030	<0.0030

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Elements in Water (Total Recoverable)

			Client Sample ID	SC3	SC1
			Date Sampled	22/09/2022	22/09/2022
Analyte	Unit	*Reporting Limit*		22-35194-6	22-35194-7
Arsenic	g/m³	*0.0005*		0.00060	0.0011
Aluminium	g/m³	*0.003*		0.26	0.047
Barium	g/m³	*0.0001*		0.0380	0.0384
Beryllium	g/m³	*0.00001*		0.000011	<0.000010
Bismuth	g/m³	*0.0001*		<0.00010	<0.00010
Boron	g/m³	*0.005*		0.034	0.034
Calcium	g/m³	*0.05*		45.9	55.2
Cadmium	g/m³	*0.00002*		<0.000020	<0.000020
Cobalt	g/m³	*0.00001*		0.00021	0.00010
Chromium	g/m³	*0.0002*		0.00041	0.00034
Caesium	g/m³	*0.00001*		0.000047	<0.000010
Copper	g/m³	*0.0002*		0.00084	0.0043
Iron	g/m³	*0.005*		0.35	0.057
Germanium	g/m³	*0.00005*		<0.000050	<0.000050
Mercury	g/m³	*0.0001*		<0.00010	<0.00010
Potassium	g/m³	*0.05*		1.4	1.5
Lanthanum	g/m³	*0.00001*		0.00017	0.000047
Lithium	g/m³	*0.00001*		0.00605	0.00751
Magnesium	g/m³	*0.01*		12.5	17.5
Manganese	g/m³	*0.0005*		0.016	0.0025
Molybdenum	g/m³	*0.0002*		0.00046	0.00045
Sodium	g/m³	*0.01*		9.19	11.1
Nickel	g/m³	*0.0002*		0.00040	0.00029
Phosphorus	g/m³	*0.04*		<0.040	<0.040
Lead	g/m³	*0.00005*		0.00028	0.000073
Rubidium	g/m³	*0.00005*		0.0010	0.00040
Sulfur*	g/m³	*10*		<10	<10
Antimony	g/m³	*0.0001*		0.00019	0.00018
Selenium	g/m³	*0.001*		<0.0010	<0.0010
Tin	g/m³	*0.0005*		<0.00050	<0.00050
Strontium	g/m³	*0.0001*		0.793	0.980
Thallium	g/m³	*0.0001*		<0.00010	<0.00010
Uranium	g/m³	*0.00003*		0.00220	0.00310
Vanadium	g/m³	*0.0005*		<0.00050	<0.00050
Yttrium	g/m³	*0.00005*		0.00013	0.000052
Zinc	g/m³	*0.003*		<0.0030	<0.0030

Method Summary

pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).

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Method Summary

NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
Total Phosphorus	Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Organic Carbon	Samples analysed as received by combustion analysis at 850°C. Organic carbon is calculated through subtraction of inorganic carbon from total carbon (APHA 5310 B - Online edition)
Dissolved Organic Carbon	Samples analysed as received by combustion analysis at 850°C following a filtration step.(APHA 5310 B - Online edition)
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Acidity to pH 8.3	Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.

Sandra Mathews, B.Eng.
Technologist

Sharelle Frank, B.Sc. (Tech)
Technologist

Thara Samarasinghe, B.Sc.
Technician

L. Coombridge
Louise Coombridge, B.Sc.
Laboratory Technician

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ANALYSIS REPORT

WP22-11185.001

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention:

Description:
Sample ID: Base 25/10/22

Received: 26/10/2022
Completed: 14/11/2022
Job Number: WP22-11185
Report Number: 0000023708
Order Reference: Matakanui Gold Water

Analysis	Method	Result	Unit
pH in Water (analysed outside 6 hour holding time)	APHA 4500 H SGS Westport	8.0	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	360	µS/cm
Total Dissolved Solids g/m3	APHA 2510 SGS Westport	240	g/m3
Chloride	APHA 4110 B	6.0	g/m3
Sulphate as SO4	APHA 4110 B	24	g/m3
Total Alkalinity as CaCO3	APHA 2320B	150	g/m3
Bicarbonate Alkalinity as HCO3	APHA 2320B	180	mg/l
Carbonate Alkalinity as CO3	APHA 2320B	<5	mg/l
Total Dissolved Solids Dried at 104°C	APHA 2540 C	200	mg/l
Sample density	In-house	0.998	g/cm3
Aluminium (Al) dissolved	APHA 3125 subcontracted ELS	<0.002	g/m3
Arsenic (As) dissolved	APHA 3125 subcontracted ELS	<0.001	g/m3
Silver (Ag) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Barium (Ba) dissolved	APHA 3125 subcontracted ELS	0.01	g/m3
Bismuth (Bi) dissolved	APHA 3125 subcontracted ELS	<0.001	g/m3
Calcium (Ca) dissolved	APHA 3125 subcontracted ELS	44.3	g/m3
Cadmium (Cd) dissolved	APHA 3125 subcontracted ELS	<0.0002	g/m3
Cobalt (Co) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Chromium (Cr) dissolved	APHA 3125 subcontracted ELS	<0.001	g/m3
Copper (Cu) dissolved	APHA 3125 subcontracted ELS	0.004	g/m3
Iron (Fe) dissolved	APHA 3125 subcontracted ELS	<0.01	g/m3
Mercury (Hg) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Potassium (K) dissolved	APHA 3125 subcontracted ELS	1.36	g/m3
Lithium (Li) dissolved	APHA 3125 subcontracted ELS	0.002	g/m3
Magnesium (Mg) dissolved	APHA 3125 subcontracted ELS	12.1	g/m3
Manganese (Mn) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Molybdenum (Mo) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Sodium (Na) dissolved	APHA 3125 subcontracted ELS	16.7	g/m3
Nickel (Ni) dissolved	APHA 3125 subcontracted ELS	0.0007	g/m3
Lead (Pb) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Strontium (Sr) dissolved	APHA 3125 subcontracted ELS	0.443	g/m3
Titanium (Ti) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Thallium (Tl) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Vanadium (V) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Zinc (Zn) dissolved	APHA 3125 subcontracted ELS	0.057	g/m3
Aluminium (Al) total recoverable	APHA 3125 (modified) subcontracted ELS	0.007	g/m3
Arsenic (As) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Silver, (Ag) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Barium (Ba) total recoverable	APHA 3125 (modified) subcontracted ELS	0.016	g/m3
Bismuth (Bi) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Calcium (Ca) total recoverable	APHA 3125 (modified) subcontracted ELS	41.9	g/m3
Cadmium (Cd) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Cobalt (Co) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Chromium (Cr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.002	g/m3

Analysis Report:
WP22-11185.001

Analysis	Method	Result	Unit
Copper (Cu) total recoverable	APHA 3125 (modified) subcontracted ELS	0.004	g/m3
Iron (Fe) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.1	g/m3
Mercury (Hg) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Potassium (K) total recoverable	APHA 3125 (modified) subcontracted ELS	1.3	g/m3
Lithium (Li) total recoverable	APHA 3125 (modified) subcontracted ELS	0.003	g/m3
Magnesium (Mg) total recoverable	APHA 3125 (modified) subcontracted ELS	11.4	g/m3
Manganese (Mn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.001	g/m3
Molybdenum (Mo) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Sodium (Na) total recoverable	APHA 3125 (modified) subcontracted ELS	16.3	g/m3
Nickel (Ni) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Lead (Pb) total recoverable	APHA 3125 (modified) subcontracted ELS	0.007	g/m3
Strontium (Sr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.492	g/m3
Thallium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Titanium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	0.001	g/m3
Vanadium (V) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Zinc (Zn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.060	g/m3
Phosphorus	APHA 3120B subcontracted ELS	<0.01	g/m3
Phosphorus P) total recoverable	APHA 3120B subcontracted ELS	<0.025	g/m3

Analysis of Total and Dissolved Metals subcontracted to Eurofins ELS Ltd, 85 Port Rd, Seaview, Lower Hutt 5045 :
Report No. AR-22NW039420-01.
Note analyte Phosphorus is the dissolved phosphorus.

Date Start/End Analysis (26/10/2022 - 14/11/2022)

Reported: 14/11/2022 4:27:08PM

ANALYSIS REPORT

WP22-11185.002

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention:

Description:
Sample ID: MRC002 25/10/22

Received: 26/10/2022
Completed: 14/11/2022
Job Number: WP22-11185
Report Number: 0000023708
Order Reference: Matakanui Gold Water

Analysis	Method	Result	Unit
pH in Water (analysed outside 6 hour holding time)	APHA 4500 H SGS Westport	8.0	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	250	µS/cm
Total Dissolved Solids g/m3	APHA 2510 SGS Westport	170	g/m3
Chloride	APHA 4110 B	3.5	g/m3
Sulphate as SO4	APHA 4110 B	5.4	g/m3
Total Alkalinity as CaCO3	APHA 2320B	110	g/m3
Bicarbonate Alkalinity as HCO3	APHA 2320B	130	mg/l
Carbonate Alkalinity as CO3	APHA 2320B	<5	mg/l
Total Dissolved Solids Dried at 104°C	APHA 2540 C	170	mg/l
Sample density	In-house	0.998	g/cm3
Aluminium (Al) dissolved	APHA 3125 subcontracted ELS	0.006	g/m3
Arsenic (As) dissolved	APHA 3125 subcontracted ELS	0.011	g/m3
Silver (Ag) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Barium (Ba) dissolved	APHA 3125 subcontracted ELS	0.26	g/m3
Bismuth (Bi) dissolved	APHA 3125 subcontracted ELS	<0.001	g/m3
Calcium (Ca) dissolved	APHA 3125 subcontracted ELS	14.8	g/m3
Cadmium (Cd) dissolved	APHA 3125 subcontracted ELS	<0.0002	g/m3
Cobalt (Co) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Chromium (Cr) dissolved	APHA 3125 subcontracted ELS	<0.001	g/m3
Copper (Cu) dissolved	APHA 3125 subcontracted ELS	0.002	g/m3
Iron (Fe) dissolved	APHA 3125 subcontracted ELS	0.090	g/m3
Mercury (Hg) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Potassium (K) dissolved	APHA 3125 subcontracted ELS	1.88	g/m3
Lithium (Li) dissolved	APHA 3125 subcontracted ELS	0.017	g/m3
Magnesium (Mg) dissolved	APHA 3125 subcontracted ELS	6.61	g/m3
Manganese (Mn) dissolved	APHA 3125 subcontracted ELS	0.0034	g/m3
Molybdenum (Mo) dissolved	APHA 3125 subcontracted ELS	0.0009	g/m3
Sodium (Na) dissolved	APHA 3125 subcontracted ELS	27.0	g/m3
Nickel (Ni) dissolved	APHA 3125 subcontracted ELS	0.0005	g/m3
Lead (Pb) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Strontium (Sr) dissolved	APHA 3125 subcontracted ELS	3.57	g/m3
Titanium (Ti) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Thallium (Tl) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Vanadium (V) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Zinc (Zn) dissolved	APHA 3125 subcontracted ELS	0.094	g/m3
Aluminium (Al) total recoverable	APHA 3125 (modified) subcontracted ELS	0.545	g/m3
Arsenic (As) total recoverable	APHA 3125 (modified) subcontracted ELS	0.021	g/m3
Silver, (Ag) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Barium (Ba) total recoverable	APHA 3125 (modified) subcontracted ELS	0.308	g/m3
Bismuth (Bi) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Calcium (Ca) total recoverable	APHA 3125 (modified) subcontracted ELS	14.4	g/m3
Cadmium (Cd) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Cobalt (Co) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Chromium (Cr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.002	g/m3

Analysis Report:
WP22-11185.002

Analysis	Method	Result	Unit
Copper (Cu) total recoverable	APHA 3125 (modified) subcontracted ELS	0.004	g/m3
Iron (Fe) total recoverable	APHA 3125 (modified) subcontracted ELS	2.0	g/m3
Mercury (Hg) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Potassium (K) total recoverable	APHA 3125 (modified) subcontracted ELS	2.1	g/m3
Lithium (Li) total recoverable	APHA 3125 (modified) subcontracted ELS	0.019	g/m3
Magnesium (Mg) total recoverable	APHA 3125 (modified) subcontracted ELS	6.7	g/m3
Manganese (Mn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.033	g/m3
Molybdenum (Mo) total recoverable	APHA 3125 (modified) subcontracted ELS	0.001	g/m3
Sodium (Na) total recoverable	APHA 3125 (modified) subcontracted ELS	27.9	g/m3
Nickel (Ni) total recoverable	APHA 3125 (modified) subcontracted ELS	0.001	g/m3
Lead (Pb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Strontium (Sr) total recoverable	APHA 3125 (modified) subcontracted ELS	3.66	g/m3
Thallium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Titanium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	0.016	g/m3
Vanadium (V) total recoverable	APHA 3125 (modified) subcontracted ELS	0.001	g/m3
Zinc (Zn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.135	g/m3
Phosphorus	APHA 3120B subcontracted ELS	<0.01	g/m3
Phosphorus P) total recoverable	APHA 3120B subcontracted ELS	0.07	g/m3

Analysis of Total and Dissolved Metals subcontracted to Eurofins ELS Ltd, 85 Port Rd, Seaview, Lower Hutt 5045 :
Report No. AR-22NW039420-01.
Note analyte Phosphorus is the dissolved phosphorus.

Date Start/End Analysis (26/10/2022 - 14/11/2022)

Reported: 14/11/2022 4:27:08PM

ANALYSIS REPORT

WP22-11185.003

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention:

Description:
Sample ID: MDD015 25/10/22

Received: 26/10/2022
Completed: 14/11/2022
Job Number: WP22-11185
Report Number: 0000023708
Order Reference: Matakanui Gold Water

Analysis	Method	Result	Unit
pH in Water (analysed outside 6 hour holding time)	APHA 4500 H SGS Westport	8.7	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	410	µS/cm
Total Dissolved Solids g/m3	APHA 2510 SGS Westport	280	g/m3
Chloride	APHA 4110 B	9.9	g/m3
Sulphate as SO4	APHA 4110 B	17	g/m3
Total Alkalinity as CaCO3	APHA 2320B	200	g/m3
Bicarbonate Alkalinity as HCO3	APHA 2320B	240	mg/l
Carbonate Alkalinity as CO3	APHA 2320B	<5	mg/l
Total Dissolved Solids Dried at 104°C	APHA 2540 C	260	mg/l
Sample density	In-house	0.998	g/cm3
Aluminium (Al) dissolved	APHA 3125 subcontracted ELS	0.015	g/m3
Arsenic (As) dissolved	APHA 3125 subcontracted ELS	0.038	g/m3
Silver (Ag) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Barium (Ba) dissolved	APHA 3125 subcontracted ELS	0.12	g/m3
Bismuth (Bi) dissolved	APHA 3125 subcontracted ELS	<0.001	g/m3
Calcium (Ca) dissolved	APHA 3125 subcontracted ELS	17.6	g/m3
Cadmium (Cd) dissolved	APHA 3125 subcontracted ELS	<0.0002	g/m3
Cobalt (Co) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Chromium (Cr) dissolved	APHA 3125 subcontracted ELS	<0.001	g/m3
Copper (Cu) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Iron (Fe) dissolved	APHA 3125 subcontracted ELS	0.030	g/m3
Mercury (Hg) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Potassium (K) dissolved	APHA 3125 subcontracted ELS	1.42	g/m3
Lithium (Li) dissolved	APHA 3125 subcontracted ELS	0.046	g/m3
Magnesium (Mg) dissolved	APHA 3125 subcontracted ELS	15.7	g/m3
Manganese (Mn) dissolved	APHA 3125 subcontracted ELS	0.0050	g/m3
Molybdenum (Mo) dissolved	APHA 3125 subcontracted ELS	0.0005	g/m3
Sodium (Na) dissolved	APHA 3125 subcontracted ELS	42.0	g/m3
Nickel (Ni) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Lead (Pb) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Strontium (Sr) dissolved	APHA 3125 subcontracted ELS	9.00	g/m3
Titanium (Ti) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Thallium (Tl) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Vanadium (V) dissolved	APHA 3125 subcontracted ELS	<0.0005	g/m3
Zinc (Zn) dissolved	APHA 3125 subcontracted ELS	<0.002	g/m3
Aluminium (Al) total recoverable	APHA 3125 (modified) subcontracted ELS	0.128	g/m3
Arsenic (As) total recoverable	APHA 3125 (modified) subcontracted ELS	0.039	g/m3
Silver, (Ag) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Barium (Ba) total recoverable	APHA 3125 (modified) subcontracted ELS	0.128	g/m3
Bismuth (Bi) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Calcium (Ca) total recoverable	APHA 3125 (modified) subcontracted ELS	15.7	g/m3
Cadmium (Cd) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Cobalt (Co) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Chromium (Cr) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3

Analysis Report:
WP22-11185.003

Analysis	Method	Result	Unit
Copper (Cu) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Iron (Fe) total recoverable	APHA 3125 (modified) subcontracted ELS	0.2	g/m3
Mercury (Hg) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Potassium (K) total recoverable	APHA 3125 (modified) subcontracted ELS	1.4	g/m3
Lithium (Li) total recoverable	APHA 3125 (modified) subcontracted ELS	0.049	g/m3
Magnesium (Mg) total recoverable	APHA 3125 (modified) subcontracted ELS	15.0	g/m3
Manganese (Mn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.009	g/m3
Molybdenum (Mo) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Sodium (Na) total recoverable	APHA 3125 (modified) subcontracted ELS	41.4	g/m3
Nickel (Ni) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Lead (Pb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Strontium (Sr) total recoverable	APHA 3125 (modified) subcontracted ELS	8.75	g/m3
Thallium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Titanium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	0.006	g/m3
Vanadium (V) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Zinc (Zn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.009	g/m3
Phosphorus	APHA 3120B subcontracted ELS	<0.01	g/m3
Phosphorus P) total recoverable	APHA 3120B subcontracted ELS	<0.025	g/m3

Analysis of Total and Dissolved Metals subcontracted to Eurofins ELS Ltd, 85 Port Rd, Seaview, Lower Hutt 5045 :
Report No. AR-22NW039420-01.
Note analyte Phosphorus is the dissolved phosphorus.

Date Start/End Analysis (26/10/2022 - 14/11/2022)

Reported: 14/11/2022 4:27:08PM

Signed and dated on 14-Nov-2022

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ANALYSIS REPORT

WP23-11797.001

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention:

Description: Matakanui Gold
Sample ID: RS1

Received: 23/03/2023
Completed: 11/04/2023
Job Number: WP23-11797
Report Number: 0000024791
Order Reference: Matakanui Gold Water

Analysis	Method	Result	Unit
Date and time sampled		23/3/23 12:01	
Date & Time Received		24/3/23 7:00	
pH in Water (analysed outside 6 hour holding time)	APHA 4500 H SGS Westport	7.1	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	210	µS/cm
Acidity to pH 4.0	APHA 2310	<5	mg/l
Acidity to pH 5.0	APHA 2310	<5	mg/l
Acidity to pH 7.0	APHA 2310	<5	mg/l
Turbidity	APHA 2130 B (modified) SGS Westport	750	NTU
Total Alkalinity as CaCO3	APHA 2320B	110	g/m3
Bromide*	APHA 4110 B	<0.01	g/m3
Chloride*	APHA 4110 B	2.4	g/m3
Fluoride*	APHA 4110 B	0.19	g/m3
Nitrate, NO3*	APHA 4110 B	0.13	g/m3
Nitrite, NO2*	APHA 4110 B	<0.01	g/m3
Sulphate as SO4*	APHA 4110 B	11	g/m3
Total Dissolved Solids Dried at 104°C*	APHA 2540 C	130	mg/l
Total suspended solids	APHA2540 D modified SGS Westport	1200	mg/l
Total Suspended Solids Dried at 103-105°C - use minimum 500mL	APHA2540 D modified SGS Westport	1200	g/m3
Aluminium (Al) dissolved*	APHA 3125 subcontracted ELS	0.004	g/m3
Antimony*	APHA 3125 subcontracted ELS	<0.001	g/m3
Arsenic (As) dissolved*	APHA 3125 subcontracted ELS	0.035	g/m3
Barium (Ba) dissolved*	APHA 3125 subcontracted ELS	0.011	g/m3
Beryllium (Be) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Bismuth (Bi) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Boron (B) dissolved*	APHA 3125 subcontracted ELS	<0.03	g/m3
Cadmium (Cd) dissolved*	APHA 3125 subcontracted ELS	<0.0002	g/m3
Calcium (Ca) dissolved*	APHA 3125 subcontracted ELS	31.4	g/m3
Chromium (Cr) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Cobalt (Co) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Copper (Cu) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Iron (Fe) dissolved*	APHA 3125 subcontracted ELS	0.23	g/m3
Lead (Pb) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Lithium (Li) dissolved*	APHA 3125 subcontracted ELS	0.003	g/m3
Magnesium (Mg) dissolved*	APHA 3125 subcontracted ELS	5.54	g/m3
Manganese (Mn) dissolved*	APHA 3125 subcontracted ELS	0.0146	g/m3
Mercury (Hg) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Molybdenum (Mo) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Nickel (Ni) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Potassium (K) dissolved*	APHA 3125 subcontracted ELS	1.17	g/m3
Selenium (Se) dissolved*	APHA 3125 subcontracted ELS	<0.005	g/m3
Silver (Ag) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Sodium (Na) dissolved*	APHA 3125 subcontracted ELS	6.46	g/m3
Strontium (Sr) dissolved*	APHA 3125 subcontracted ELS	0.347	g/m3
Tin (Sn) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Thallium (Tl) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Titanium (Ti) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Uranium (U) dissolved*	APHA 3125 subcontracted ELS	<0.0002	g/m3
Vanadium (V) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Zinc (Zn) dissolved*	APHA 3125 subcontracted ELS	<0.002	g/m3

Analysis	Method	Result	Unit
Total Hardness*	APHA 3125 subcontracted ELS	100	mg/l CaCO3
Aluminium (Al) total recoverable	APHA 3125 (modified) subcontracted ELS	5.69	g/m3
Antimony (Sb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Arsenic (As) total recoverable	APHA 3125 (modified) subcontracted ELS	3.19	g/m3
Barium (Ba) total recoverable	APHA 3125 (modified) subcontracted ELS	0.245	g/m3
Beryllium (Be) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Bismuth (Bi) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Boron (B) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.05	g/m3
Cadmium (Cd) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Calcium (Ca) total recoverable	APHA 3125 (modified) subcontracted ELS	33.9	g/m3
Chromium (Cr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.005	g/m3
Cobalt (Co) total recoverable	APHA 3125 (modified) subcontracted ELS	0.009	g/m3
Copper (Cu) total recoverable	APHA 3125 (modified) subcontracted ELS	0.008	g/m3
Iron (Fe) total recoverable	APHA 3125 (modified) subcontracted ELS	76.9	g/m3
Lead (Pb) total recoverable	APHA 3125 (modified) subcontracted ELS	0.006	g/m3
Lithium (Li) total recoverable	APHA 3125 (modified) subcontracted ELS	0.010	g/m3
Magnesium (Mg) total recoverable	APHA 3125 (modified) subcontracted ELS	6.2	g/m3
Manganese (Mn) total recoverable	APHA 3125 (modified) subcontracted ELS	8.15	g/m3
Mercury (Hg) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Molybdenum (Mo) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Nickel (Ni) total recoverable	APHA 3125 (modified) subcontracted ELS	0.006	g/m3
Potassium (K) total recoverable	APHA 3125 (modified) subcontracted ELS	3.7	g/m3
Selenium (Se) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Silver, (Ag) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Sodium (Na) total recoverable	APHA 3125 (modified) subcontracted ELS	5.6	g/m3
Strontium (Sr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.569	g/m3
Thallium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Tin (Sn) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Titanium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	0.115	g/m3
Uranium (U) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Vanadium (V) total recoverable	APHA 3125 (modified) subcontracted ELS	0.008	g/m3
Zinc (Zn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.022	g/m3
Dissolved Silicon	APHA 3120B subcontracted ELS	4.68	g/m3
Silicon (Si) total recoverable	APHA 3120B subcontracted ELS	13.8	g/m3
Total Cyanide by distillation and colorimetric finish	APHA 4500-CN C,E subcontracted	<0.005	g/m3
Ammonia nitrogen by CFA/FIA	APHA 4500 NH3 H online edition subcontracted ELS	<0.01	g/m3

Analysis Report:
WP23-11797.001

Analysis	Method	Result	Unit
Total nitrogen in water	APHA 4500-NO3 I Subcontracted ELS	1.71	g/m3
Total phosphorus in water	APHA 4500-P G subcontracted ELS	0.861	g/m3
Dissolved Organic Carbon	APHA 5310 B Subcontracted	3.1	g/m3
Total Organic Carbon	APHA 5310 B Subcontracted	7.8	g/m3

* denotes test not IANZ accredited.

Analysis of Total Phosphorus, Total Nitrogen, Ammonia Nitrogen, TOC,DOC,Total and Dissolved Metals subcontracted to IANZ Accredited Laboratory Eurofins ELS Ltd, 85 Port Rd, Seaview, Lower Hutt 5045 :
Report No. AR-23-NW-015529-01
Note: SC2 changed to SC3 via email Hamish 23/3/23 & no collection of Jean Creek as no water.
Cyanide analysed without NaOH preservation and without repeat samples as request for cyanide added after analysis for samples had been sent to third party laboratory

Date Start/End Analysis (23/3/2023 - 11/4/2023)

Reported: 11/04/2023 4:20:09PM

ANALYSIS REPORT

WP23-11797.002

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention:

Description: Matakanui Gold
Sample ID: RS2

Received: 23/03/2023
Completed: 11/04/2023
Job Number: WP23-11797
Report Number: 0000024791
Order Reference: Matakanui Gold Water

Analysis	Method	Result	Unit
Date and time sampled		23/3/23 12:30	
Date & Time Received		24/3/23 7:00	
pH in Water (analysed outside 6 hour holding time)	APHA 4500 H SGS Westport	6.9	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	150	µS/cm
Acidity to pH 4.0	APHA 2310	<5	mg/l
Acidity to pH 5.0	APHA 2310	<5	mg/l
Acidity to pH 7.0	APHA 2310	<5	mg/l
Turbidity	APHA 2130 B (modified) SGS Westport	5.9	NTU
Total Alkalinity as CaCO3	APHA 2320B	68	g/m3
Bromide*	APHA 4110 B	0.06	g/m3
Chloride*	APHA 4110 B	2.0	g/m3
Fluoride*	APHA 4110 B	0.25	g/m3
Nitrate, NO3*	APHA 4110 B	<0.02	g/m3
Nitrite, NO2*	APHA 4110 B	<0.01	g/m3
Sulphate as SO4*	APHA 4110 B	6.3	g/m3
Total Dissolved Solids Dried at 104°C*	APHA 2540 C	120	mg/l
Total suspended solids	APHA2540 D modified SGS Westport	13	mg/l
Total Suspended Solids Dried at 103-105°C - use minimum 500mL	APHA2540 D modified SGS Westport	13	g/m3
Aluminium (Al) dissolved*	APHA 3125 subcontracted ELS	0.011	g/m3
Antimony*	APHA 3125 subcontracted ELS	<0.001	g/m3
Arsenic (As) dissolved*	APHA 3125 subcontracted ELS	0.004	g/m3
Barium (Ba) dissolved*	APHA 3125 subcontracted ELS	0.009	g/m3
Beryllium (Be) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Bismuth (Bi) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Boron (B) dissolved*	APHA 3125 subcontracted ELS	<0.03	g/m3
Cadmium (Cd) dissolved*	APHA 3125 subcontracted ELS	<0.0002	g/m3
Calcium (Ca) dissolved*	APHA 3125 subcontracted ELS	20.6	g/m3
Chromium (Cr) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Cobalt (Co) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Copper (Cu) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Iron (Fe) dissolved*	APHA 3125 subcontracted ELS	0.03	g/m3
Lead (Pb) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Lithium (Li) dissolved*	APHA 3125 subcontracted ELS	0.003	g/m3
Magnesium (Mg) dissolved*	APHA 3125 subcontracted ELS	3.83	g/m3
Manganese (Mn) dissolved*	APHA 3125 subcontracted ELS	0.0009	g/m3
Mercury (Hg) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Molybdenum (Mo) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Nickel (Ni) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Potassium (K) dissolved*	APHA 3125 subcontracted ELS	0.65	g/m3
Selenium (Se) dissolved*	APHA 3125 subcontracted ELS	<0.005	g/m3
Silver (Ag) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Sodium (Na) dissolved*	APHA 3125 subcontracted ELS	5.05	g/m3
Strontium (Sr) dissolved*	APHA 3125 subcontracted ELS	0.247	g/m3
Tin (Sn) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Thallium (Tl) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Titanium (Ti) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Uranium (U) dissolved*	APHA 3125 subcontracted ELS	0.0002	g/m3
Vanadium (V) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Zinc (Zn) dissolved*	APHA 3125 subcontracted ELS	<0.002	g/m3

Analysis	Method	Result	Unit
Total Hardness*	APHA 3125 subcontracted ELS	67	mg/l CaCO3
Aluminium (Al) total recoverable	APHA 3125 (modified) subcontracted ELS	0.304	g/m3
Antimony (Sb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Arsenic (As) total recoverable	APHA 3125 (modified) subcontracted ELS	0.006	g/m3
Barium (Ba) total recoverable	APHA 3125 (modified) subcontracted ELS	0.015	g/m3
Beryllium (Be) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Bismuth (Bi) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Boron (B) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.05	g/m3
Cadmium (Cd) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Calcium (Ca) total recoverable	APHA 3125 (modified) subcontracted ELS	21.2	g/m3
Chromium (Cr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.002	g/m3
Cobalt (Co) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Copper (Cu) total recoverable	APHA 3125 (modified) subcontracted ELS	0.005	g/m3
Iron (Fe) total recoverable	APHA 3125 (modified) subcontracted ELS	0.4	g/m3
Lead (Pb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Lithium (Li) total recoverable	APHA 3125 (modified) subcontracted ELS	0.010	g/m3
Magnesium (Mg) total recoverable	APHA 3125 (modified) subcontracted ELS	3.7	g/m3
Manganese (Mn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.012	g/m3
Mercury (Hg) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Molybdenum (Mo) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Nickel (Ni) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Potassium (K) total recoverable	APHA 3125 (modified) subcontracted ELS	0.9	g/m3
Selenium (Se) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Silver, (Ag) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Sodium (Na) total recoverable	APHA 3125 (modified) subcontracted ELS	4.9	g/m3
Strontium (Sr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.260	g/m3
Thallium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Tin (Sn) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Titanium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	0.016	g/m3
Uranium (U) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Vanadium (V) total recoverable	APHA 3125 (modified) subcontracted ELS	0.006	g/m3
Zinc (Zn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.006	g/m3
Dissolved Silicon	APHA 3120B subcontracted ELS	4.91	g/m3
Silicon (Si) total recoverable	APHA 3120B subcontracted ELS	4.79	g/m3
Total Cyanide by distillation and colorimetric finish	APHA 4500-CN C,E subcontracted	<0.005	g/m3
Ammonia nitrogen by CFA/FIA	APHA 4500 NH3 H online edition subcontracted ELS	<0.01	g/m3

Analysis Report:
WP23-11797.002

Analysis	Method	Result	Unit
Total nitrogen in water	APHA 4500-NO3 I Subcontracted ELS	0.26	g/m3
Total phosphorus in water	APHA 4500-P G subcontracted ELS	0.024	g/m3
Dissolved Organic Carbon	APHA 5310 B Subcontracted	2.7	g/m3
Total Organic Carbon	APHA 5310 B Subcontracted	3.0	g/m3

* denotes test not IANZ accredited.

Analysis of Total Phosphorus, Total Nitrogen, Ammonia Nitrogen, TOC,DOC,Total and Dissolved Metals subcontracted to IANZ Accredited Laboratory Eurofins ELS Ltd, 85 Port Rd, Seaview, Lower Hutt 5045 :
Report No. AR-23-NW-015529-01
Note: SC2 changed to SC3 via email Hamish 23/3/23 & no collection of Jean Creek as no water.
Cyanide analysed without NaOH preservation and without repeat samples as request for cyanide added after analysis for samples had been sent to third party laboratory

Date Start/End Analysis (23/3/2023 - 11/4/2023)

Reported: 11/04/2023 4:20:09PM

ANALYSIS REPORT

WP23-11797.004

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention:

Description: Matakanui Gold
Sample ID: SC1

Received: 23/03/2023
Completed: 11/04/2023
Job Number: WP23-11797
Report Number: 0000024791
Order Reference: Matakanui Gold Water

Analysis	Method	Result	Unit
Date and time sampled		23/3/23 13:20	
Date & Time Received		24/3/23 7:00	
pH in Water (analysed outside 6 hour holding time)	APHA 4500 H SGS Westport	7.7	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	570	µS/cm
Acidity to pH 4.0	APHA 2310	<5	mg/l
Acidity to pH 5.0	APHA 2310	<5	mg/l
Acidity to pH 7.0	APHA 2310	<5	mg/l
Turbidity	APHA 2130 B (modified) SGS Westport	1.1	NTU
Total Alkalinity as CaCO3	APHA 2320B	250	g/m3
Bromide*	APHA 4110 B	0.23	g/m3
Chloride*	APHA 4110 B	8.1	g/m3
Fluoride*	APHA 4110 B	0.23	g/m3
Nitrate, NO3*	APHA 4110 B	<0.02	g/m3
Nitrite, NO2*	APHA 4110 B	<0.01	g/m3
Sulphate as SO4*	APHA 4110 B	51	g/m3
Total Dissolved Solids Dried at 104°C*	APHA 2540 C	380	mg/l
Total suspended solids	APHA2540 D modified SGS Westport	<3	mg/l
Total Suspended Solids Dried at 103-105°C - use minimum 500mL	APHA2540 D modified SGS Westport	<3	g/m3
Aluminium (Al) dissolved*	APHA 3125 subcontracted ELS	0.004	g/m3
Antimony*	APHA 3125 subcontracted ELS	<0.001	g/m3
Arsenic (As) dissolved*	APHA 3125 subcontracted ELS	0.002	g/m3
Barium (Ba) dissolved*	APHA 3125 subcontracted ELS	0.039	g/m3
Beryllium (Be) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Bismuth (Bi) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Boron (B) dissolved*	APHA 3125 subcontracted ELS	0.06	g/m3
Cadmium (Cd) dissolved*	APHA 3125 subcontracted ELS	<0.0002	g/m3
Calcium (Ca) dissolved*	APHA 3125 subcontracted ELS	72.1	g/m3
Chromium (Cr) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Cobalt (Co) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Copper (Cu) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Iron (Fe) dissolved*	APHA 3125 subcontracted ELS	<0.01	g/m3
Lead (Pb) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Lithium (Li) dissolved*	APHA 3125 subcontracted ELS	0.013	g/m3
Magnesium (Mg) dissolved*	APHA 3125 subcontracted ELS	23.8	g/m3
Manganese (Mn) dissolved*	APHA 3125 subcontracted ELS	0.0009	g/m3
Mercury (Hg) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Molybdenum (Mo) dissolved*	APHA 3125 subcontracted ELS	0.0005	g/m3
Nickel (Ni) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Potassium (K) dissolved*	APHA 3125 subcontracted ELS	2.88	g/m3
Selenium (Se) dissolved*	APHA 3125 subcontracted ELS	<0.005	g/m3
Silver (Ag) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Sodium (Na) dissolved*	APHA 3125 subcontracted ELS	13.8	g/m3
Strontium (Sr) dissolved*	APHA 3125 subcontracted ELS	0.975	g/m3
Tin (Sn) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Thallium (Tl) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Titanium (Ti) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Uranium (U) dissolved*	APHA 3125 subcontracted ELS	0.0055	g/m3
Vanadium (V) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Zinc (Zn) dissolved*	APHA 3125 subcontracted ELS	<0.002	g/m3

Analysis	Method	Result	Unit
Total Hardness*	APHA 3125 subcontracted ELS	280	mg/l CaCO3
Aluminium (Al) total recoverable	APHA 3125 (modified) subcontracted ELS	0.015	g/m3
Antimony (Sb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Arsenic (As) total recoverable	APHA 3125 (modified) subcontracted ELS	0.003	g/m3
Barium (Ba) total recoverable	APHA 3125 (modified) subcontracted ELS	0.049	g/m3
Beryllium (Be) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Bismuth (Bi) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Boron (B) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.05	g/m3
Cadmium (Cd) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Calcium (Ca) total recoverable	APHA 3125 (modified) subcontracted ELS	78.2	g/m3
Chromium (Cr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.001	g/m3
Cobalt (Co) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Copper (Cu) total recoverable	APHA 3125 (modified) subcontracted ELS	0.005	g/m3
Iron (Fe) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.1	g/m3
Lead (Pb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Lithium (Li) total recoverable	APHA 3125 (modified) subcontracted ELS	0.019	g/m3
Magnesium (Mg) total recoverable	APHA 3125 (modified) subcontracted ELS	26.5	g/m3
Manganese (Mn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.002	g/m3
Mercury (Hg) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Molybdenum (Mo) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Nickel (Ni) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Potassium (K) total recoverable	APHA 3125 (modified) subcontracted ELS	3.2	g/m3
Selenium (Se) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Silver, (Ag) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Sodium (Na) total recoverable	APHA 3125 (modified) subcontracted ELS	15.3	g/m3
Strontium (Sr) total recoverable	APHA 3125 (modified) subcontracted ELS	1.34	g/m3
Thallium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Tin (Sn) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Titanium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	0.007	g/m3
Uranium (U) total recoverable	APHA 3125 (modified) subcontracted ELS	0.006	g/m3
Vanadium (V) total recoverable	APHA 3125 (modified) subcontracted ELS	0.005	g/m3
Zinc (Zn) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Dissolved Silicon	APHA 3120B subcontracted ELS	4.77	g/m3
Silicon (Si) total recoverable	APHA 3120B subcontracted ELS	4.23	g/m3
Total Cyanide by distillation and colorimetric finish	APHA 4500-CN C,E subcontracted	<0.005	g/m3
Ammonia nitrogen by CFA/FIA	APHA 4500 NH3 H online edition subcontracted ELS	0.02	g/m3

Analysis Report:
WP23-11797.004

Analysis	Method	Result	Unit
Total nitrogen in water	APHA 4500-NO3 I Subcontracted ELS	0.22	g/m3
Total phosphorus in water	APHA 4500-P G subcontracted ELS	0.019	g/m3
Dissolved Organic Carbon	APHA 5310 B Subcontracted	2.7	g/m3
Total Organic Carbon	APHA 5310 B Subcontracted	2.8	g/m3

* denotes test not IANZ accredited.

Analysis of Total Phosphorus, Total Nitrogen, Ammonia Nitrogen, TOC,DOC,Total and Dissolved Metals subcontracted to IANZ Accredited Laboratory Eurofins ELS Ltd, 85 Port Rd, Seaview, Lower Hutt 5045 :
Report No. AR-23-NW-015529-01
Note: SC2 changed to SC3 via email Hamish 23/3/23 & no collection of Jean Creek as no water.
Cyanide analysed without NaOH preservation and without repeat samples as request for cyanide added after analysis for samples had been sent to third party laboratory

Date Start/End Analysis (23/3/2023 - 11/4/2023)

Reported: 11/04/2023 4:20:09PM

ANALYSIS REPORT

WP23-11797.005

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention:

Description: Matakanui Gold
Sample ID: SC3

Received: 23/03/2023
Completed: 11/04/2023
Job Number: WP23-11797
Report Number: 0000024791
Order Reference: Matakanui Gold Water

Analysis	Method	Result	Unit
Date and time sampled		23/3/23 13:00	
Date & Time Received		24/3/23 7:00	
pH in Water (analysed outside 6 hour holding time)	APHA 4500 H SGS Westport	7.8	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	350	µS/cm
Acidity to pH 4.0	APHA 2310	<5	mg/l
Acidity to pH 5.0	APHA 2310	<5	mg/l
Acidity to pH 7.0	APHA 2310	<5	mg/l
Turbidity	APHA 2130 B (modified) SGS Westport	1.4	NTU
Total Alkalinity as CaCO3	APHA 2320B	160	g/m3
Bromide*	APHA 4110 B	<0.01	g/m3
Chloride*	APHA 4110 B	3.5	g/m3
Fluoride*	APHA 4110 B	0.29	g/m3
Nitrate, NO3*	APHA 4110 B	0.30	g/m3
Nitrite, NO2*	APHA 4110 B	<0.02	g/m3
Sulphate as SO4*	APHA 4110 B	16	g/m3
Total Dissolved Solids Dried at 104°C*	APHA 2540 C	200	mg/l
Total suspended solids	APHA2540 D modified SGS Westport	3	mg/l
Total Suspended Solids Dried at 103-105°C - use minimum 500mL	APHA2540 D modified SGS Westport	3	g/m3
Aluminium (Al) dissolved*	APHA 3125 subcontracted ELS	0.005	g/m3
Antimony*	APHA 3125 subcontracted ELS	<0.001	g/m3
Arsenic (As) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Barium (Ba) dissolved*	APHA 3125 subcontracted ELS	0.027	g/m3
Beryllium (Be) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Bismuth (Bi) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Boron (B) dissolved*	APHA 3125 subcontracted ELS	0.04	g/m3
Cadmium (Cd) dissolved*	APHA 3125 subcontracted ELS	<0.0002	g/m3
Calcium (Ca) dissolved*	APHA 3125 subcontracted ELS	47.6	g/m3
Chromium (Cr) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Cobalt (Co) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Copper (Cu) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Iron (Fe) dissolved*	APHA 3125 subcontracted ELS	0.02	g/m3
Lead (Pb) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Lithium (Li) dissolved*	APHA 3125 subcontracted ELS	0.006	g/m3
Magnesium (Mg) dissolved*	APHA 3125 subcontracted ELS	11.2	g/m3
Manganese (Mn) dissolved*	APHA 3125 subcontracted ELS	0.0034	g/m3
Mercury (Hg) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Molybdenum (Mo) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Nickel (Ni) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Potassium (K) dissolved*	APHA 3125 subcontracted ELS	1.50	g/m3
Selenium (Se) dissolved*	APHA 3125 subcontracted ELS	<0.005	g/m3
Silver (Ag) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Sodium (Na) dissolved*	APHA 3125 subcontracted ELS	7.70	g/m3
Strontium (Sr) dissolved*	APHA 3125 subcontracted ELS	0.682	g/m3
Tin (Sn) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Thallium (Tl) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Titanium (Ti) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Uranium (U) dissolved*	APHA 3125 subcontracted ELS	0.0021	g/m3
Vanadium (V) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Zinc (Zn) dissolved*	APHA 3125 subcontracted ELS	<0.002	g/m3

Analysis	Method	Result	Unit
Total Hardness*	APHA 3125 subcontracted ELS	160	mg/l CaCO3
Aluminium (Al) total recoverable	APHA 3125 (modified) subcontracted ELS	0.063	g/m3
Antimony (Sb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Arsenic (As) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Barium (Ba) total recoverable	APHA 3125 (modified) subcontracted ELS	0.035	g/m3
Beryllium (Be) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Bismuth (Bi) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Boron (B) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.05	g/m3
Cadmium (Cd) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Calcium (Ca) total recoverable	APHA 3125 (modified) subcontracted ELS	47.8	g/m3
Chromium (Cr) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Cobalt (Co) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Copper (Cu) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Iron (Fe) total recoverable	APHA 3125 (modified) subcontracted ELS	0.1	g/m3
Lead (Pb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Lithium (Li) total recoverable	APHA 3125 (modified) subcontracted ELS	0.005	g/m3
Magnesium (Mg) total recoverable	APHA 3125 (modified) subcontracted ELS	10.4	g/m3
Manganese (Mn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.011	g/m3
Mercury (Hg) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Molybdenum (Mo) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Nickel (Ni) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Potassium (K) total recoverable	APHA 3125 (modified) subcontracted ELS	1.7	g/m3
Selenium (Se) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Silver, (Ag) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Sodium (Na) total recoverable	APHA 3125 (modified) subcontracted ELS	7.0	g/m3
Strontium (Sr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.907	g/m3
Thallium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Tin (Sn) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Titanium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	0.002	g/m3
Uranium (U) total recoverable	APHA 3125 (modified) subcontracted ELS	0.002	g/m3
Vanadium (V) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Zinc (Zn) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Dissolved Silicon	APHA 3120B subcontracted ELS	4.22	g/m3
Silicon (Si) total recoverable	APHA 3120B subcontracted ELS	3.60	g/m3
Total Cyanide by distillation and colorimetric finish	APHA 4500-CN C,E subcontracted	<0.005	g/m3
Ammonia nitrogen by CFA/FIA	APHA 4500 NH3 H online edition subcontracted ELS	<0.01	g/m3

Analysis Report:
WP23-11797.005

Analysis	Method	Result	Unit
Total nitrogen in water	APHA 4500-NO3 I Subcontracted ELS	0.55	g/m3
Total phosphorus in water	APHA 4500-P G subcontracted ELS	0.016	g/m3
Dissolved Organic Carbon	APHA 5310 B Subcontracted	2.7	g/m3
Total Organic Carbon	APHA 5310 B Subcontracted	2.7	g/m3

* denotes test not IANZ accredited.

Analysis of Total Phosphorus, Total Nitrogen, Ammonia Nitrogen, TOC,DOC,Total and Dissolved Metals subcontracted to IANZ Accredited Laboratory Eurofins ELS Ltd, 85 Port Rd, Seaview, Lower Hutt 5045 :
Report No. AR-23-NW-015529-01
Note: SC2 changed to SC3 via email Hamish 23/3/23 & no collection of Jean Creek as no water.
Cyanide analysed without NaOH preservation and without repeat samples as request for cyanide added after analysis for samples had been sent to third party laboratory

Date Start/End Analysis (23/3/2023 - 11/4/2023)

Reported: 11/04/2023 4:20:09PM

ANALYSIS REPORT

WP23-11797.006

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention:

Description: Matakanui Gold
Sample ID: RSA1

Received: 23/03/2023
Completed: 11/04/2023
Job Number: WP23-11797
Report Number: 0000024791
Order Reference: Matakanui Gold Water

Analysis	Method	Result	Unit
Date and time sampled		23/3/23 12:15	
Date & Time Received		24/3/23 7:00	
pH in Water (analysed outside 6 hour holding time)	APHA 4500 H SGS Westport	7.4	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	270	µS/cm
Acidity to pH 4.0	APHA 2310	<5	mg/l
Acidity to pH 5.0	APHA 2310	<5	mg/l
Acidity to pH 7.0	APHA 2310	<5	mg/l
Turbidity	APHA 2130 B (modified) SGS Westport	10	NTU
Total Alkalinity as CaCO3	APHA 2320B	140	g/m3
Bromide*	APHA 4110 B	<0.01	g/m3
Chloride*	APHA 4110 B	2.6	g/m3
Fluoride*	APHA 4110 B	0.24	g/m3
Nitrate, NO3*	APHA 4110 B	<0.02	g/m3
Nitrite, NO2*	APHA 4110 B	<0.01	g/m3
Sulphate as SO4*	APHA 4110 B	4.3	g/m3
Total Dissolved Solids Dried at 104°C*	APHA 2540 C	200	mg/l
Total suspended solids	APHA2540 D modified SGS Westport	87	mg/l
Total Suspended Solids Dried at 103-105°C - use minimum 500mL	APHA2540 D modified SGS Westport	87	g/m3
Aluminium (Al) dissolved*	APHA 3125 subcontracted ELS	<0.002	g/m3
Antimony*	APHA 3125 subcontracted ELS	<0.001	g/m3
Arsenic (As) dissolved*	APHA 3125 subcontracted ELS	0.047	g/m3
Barium (Ba) dissolved*	APHA 3125 subcontracted ELS	0.017	g/m3
Beryllium (Be) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Bismuth (Bi) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Boron (B) dissolved*	APHA 3125 subcontracted ELS	<0.03	g/m3
Cadmium (Cd) dissolved*	APHA 3125 subcontracted ELS	<0.0002	g/m3
Calcium (Ca) dissolved*	APHA 3125 subcontracted ELS	45.0	g/m3
Chromium (Cr) dissolved*	APHA 3125 subcontracted ELS	<0.001	g/m3
Cobalt (Co) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Copper (Cu) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Iron (Fe) dissolved*	APHA 3125 subcontracted ELS	0.06	g/m3
Lead (Pb) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Lithium (Li) dissolved*	APHA 3125 subcontracted ELS	0.004	g/m3
Magnesium (Mg) dissolved*	APHA 3125 subcontracted ELS	7.49	g/m3
Manganese (Mn) dissolved*	APHA 3125 subcontracted ELS	0.0325	g/m3
Mercury (Hg) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Molybdenum (Mo) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Nickel (Ni) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Potassium (K) dissolved*	APHA 3125 subcontracted ELS	1.23	g/m3
Selenium (Se) dissolved*	APHA 3125 subcontracted ELS	<0.005	g/m3
Silver (Ag) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Sodium (Na) dissolved*	APHA 3125 subcontracted ELS	7.72	g/m3
Strontium (Sr) dissolved*	APHA 3125 subcontracted ELS	0.503	g/m3
Tin (Sn) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Thallium (Tl) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Titanium (Ti) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Uranium (U) dissolved*	APHA 3125 subcontracted ELS	<0.0002	g/m3
Vanadium (V) dissolved*	APHA 3125 subcontracted ELS	<0.0005	g/m3
Zinc (Zn) dissolved*	APHA 3125 subcontracted ELS	<0.002	g/m3

Analysis	Method	Result	Unit
Total Hardness*	APHA 3125 subcontracted ELS	140	mg/l CaCO3
Aluminium (Al) total recoverable	APHA 3125 (modified) subcontracted ELS	0.046	g/m3
Antimony (Sb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Arsenic (As) total recoverable	APHA 3125 (modified) subcontracted ELS	0.122	g/m3
Barium (Ba) total recoverable	APHA 3125 (modified) subcontracted ELS	0.022	g/m3
Beryllium (Be) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Bismuth (Bi) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Boron (B) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.05	g/m3
Cadmium (Cd) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Calcium (Ca) total recoverable	APHA 3125 (modified) subcontracted ELS	41.4	g/m3
Chromium (Cr) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Cobalt (Co) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Copper (Cu) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.002	g/m3
Iron (Fe) total recoverable	APHA 3125 (modified) subcontracted ELS	0.8	g/m3
Lead (Pb) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Lithium (Li) total recoverable	APHA 3125 (modified) subcontracted ELS	0.003	g/m3
Magnesium (Mg) total recoverable	APHA 3125 (modified) subcontracted ELS	6.3	g/m3
Manganese (Mn) total recoverable	APHA 3125 (modified) subcontracted ELS	0.050	g/m3
Mercury (Hg) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Molybdenum (Mo) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Nickel (Ni) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Potassium (K) total recoverable	APHA 3125 (modified) subcontracted ELS	1.3	g/m3
Selenium (Se) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Silver, (Ag) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Sodium (Na) total recoverable	APHA 3125 (modified) subcontracted ELS	6.4	g/m3
Strontium (Sr) total recoverable	APHA 3125 (modified) subcontracted ELS	0.619	g/m3
Thallium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Tin (Sn) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Titanium (Ti) total recoverable	APHA 3125 (modified) subcontracted ELS	0.003	g/m3
Uranium (U) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Vanadium (V) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.001	g/m3
Zinc (Zn) total recoverable	APHA 3125 (modified) subcontracted ELS	<0.005	g/m3
Dissolved Silicon	APHA 3120B subcontracted ELS	5.75	g/m3
Silicon (Si) total recoverable	APHA 3120B subcontracted ELS	4.94	g/m3
Total Cyanide by distillation and colorimetric finish	APHA 4500-CN C,E subcontracted	<0.005	g/m3
Ammonia nitrogen by CFA/FIA	APHA 4500 NH3 H online edition subcontracted ELS	<0.01	g/m3

Analysis Report:
WP23-11797.006

Analysis	Method	Result	Unit
Total nitrogen in water	APHA 4500-NO3 I Subcontracted ELS	0.34	g/m3
Total phosphorus in water	APHA 4500-P G subcontracted ELS	0.017	g/m3
Dissolved Organic Carbon	APHA 5310 B Subcontracted	4.1	g/m3
Total Organic Carbon	APHA 5310 B Subcontracted	4.3	g/m3

* denotes test not IANZ accredited.

Analysis of Total Phosphorus, Total Nitrogen, Ammonia Nitrogen, TOC,DOC,Total and Dissolved Metals subcontracted to IANZ Accredited Laboratory Eurofins ELS Ltd, 85 Port Rd, Seaview, Lower Hutt 5045 :
Report No. AR-23-NW-015529-01
Note: SC2 changed to SC3 via email Hamish 23/3/23 & no collection of Jean Creek as no water.
Cyanide analysed without NaOH preservation and without repeat samples as request for cyanide added after analysis for samples had been sent to third party laboratory

Date Start/End Analysis (23/3/2023 - 11/4/2023)

Reported: 11/04/2023 4:20:09PM

Signed and dated on 11-Apr-2023

Julie HALLIGAN
Environmental Technician

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Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-23-NC-010499-01	REPORT DATE	11/05/2023

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders: James Thornton
Contract: Water (Dunedin) - Service Now
Order code: EUNZCH-00134989
Purchase Order Number: 10104

SAMPLE CODE	817-2023-00038807

Client Reference: MDD015
Reception Date & Time: 28/04/2023 9:00
Analysis Start Date & Time: 28/04/2023 15:27
Sampled Date & Time 27/04/2023 11:30
Reception temperature: 9.7 °C
Analysis Ending Date: 11/05/2023

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.20	mg/l	0.01
②NW583	**Arsenic - Soluble**			
	Arsenic (As)	0.036	mg/l	0.001
②NW009	**Bromide**			
	Bromide	0.09	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	10.1	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	42.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.1	mg/l	0.1
②NW006	**Fluoride**			
	Fluoride	0.19	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01

		RESULTS		LOQ
②NW195	**pH**			
	pH	8.2		0.1
②NW472	**Silica - Dissolved**			
	Sand/silica	18.8	mg/l	0.02
②NW098	**Soluble Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Soluble Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW100	**Soluble Barium**			
	Barium (Ba)	0.124	mg/l	0.002
②NW101	**Soluble Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Soluble Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Soluble Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Soluble Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Soluble Calcium**			
	Calcium (Ca)	30.2	mg/l	0.1
②NW106	**Soluble Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Soluble Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Soluble Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Soluble Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Soluble Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Soluble Lithium**			
	Lithium (Li)	0.049	mg/l	0.001
②NW112	**Soluble Magnesium**			
	Magnesium (Mg)	16.7	mg/l	0.01
②NW113	**Soluble Manganese**			
	Manganese (Mn)	0.0064	mg/l	0.0005
②NW114	**Soluble Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Soluble Molybdenum**			
	Molybdenum (Mo)	0.0007	mg/l	0.0005
②NW116	**Soluble Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Soluble Potassium**			
	Potassium (K)	1.58	mg/l	0.01

		RESULTS		LOQ
②NW118	**Soluble Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW119	**Soluble Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Soluble Sodium**			
	Sodium (Na)	36.8	mg/l	0.01
②NW121	**Soluble Strontium**			
	Strontium (Sr)	8.45	mg/l	0.0005
②NW122	**Soluble Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Soluble Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW124	**Soluble Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Soluble Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW011	**Sulphate**			
	Sulphate	16.5	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	10	mg/l	3
②NW584	**Thallium - Soluble**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	195	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.193	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.035	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.146	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	0.10	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	31.5	mg/l	0.1

		RESULTS		LOQ
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	206	mg/l	1
②NW030	**Total Hardness**			
	Hardness	7	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.3	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.055	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	17.7	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.009	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.150	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.1	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.010	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	7.43	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	43.3	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	8.97	mg/l	0.002

		RESULTS		LOQ
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.004	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.44	NTU	0.01
②NW585	**Uranium - Soluble**			
	Uranium (U)	0.0012	mg/l	0.0002
②NW581	**Uranium - Total**			
	Uranium (U)	0.001	mg/l	0.001

SAMPLE CODE **817-2023-00038808**

Client Reference: RSB
Reception Date & Time: 28/04/2023 9:00
Analysis Start Date & Time: 28/04/2023 15:27
Sampled Date & Time 27/04/2023 13:30
Reception temperature: 9.7 °C
Analysis Ending Date: 11/05/2023

		RESULTS		LOQ
②NW584	**Thallium - Soluble**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW147	**Total Aluminium**			
	Aluminium	1.17	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	5.29	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.130	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	29.6	mg/l	0.1
②NW157	**Total Chromium**			

		RESULTS		LOQ
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	0.006	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	0.002	mg/l	0.002
②NW160	**Total Iron**			
	Iron (Fe)	86.5	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	0.003	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.3	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	4.40	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	2.7	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	6.49	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	7.0	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.414	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.020	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	0.002	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.079	mg/l	0.005
②NW585	**Uranium - Soluble**			
	Uranium (U)	<0.0002	mg/l	0.0002

		RESULTS		LOQ
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE **817-2023-00038809**

Client Reference: RS03
Reception Date & Time: 28/04/2023 9:00
Analysis Start Date & Time: 28/04/2023 15:27
Sampled Date & Time 27/04/2023 14:53
Reception temperature: 9.7 °C
Analysis Ending Date: 11/05/2023

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.02	mg/l	0.01
②NW583	**Arsenic - Soluble**			
	Arsenic (As)	0.009	mg/l	0.001
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.47	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	7.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.1	mg/l	0.1
②NW006	**Fluoride**			
	Fluoride	0.07	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH**			
	pH	7.4		0.1
②NW472	**Silica - Dissolved**			
	Sand/silica	9.82	mg/l	0.02
②NW098	**Soluble Aluminium**			
	Aluminium	0.006	mg/l	0.002
②NW099	**Soluble Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW100	**Soluble Barium**			

		RESULTS		LOQ
②NW100	**Soluble Barium**			
	Barium (Ba)	0.006	mg/l	0.002
②NW101	**Soluble Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Soluble Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Soluble Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Soluble Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Soluble Calcium**			
	Calcium (Ca)	8.7	mg/l	0.1
②NW106	**Soluble Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Soluble Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Soluble Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Soluble Iron**			
	Iron (Fe)	0.07	mg/l	0.01
②NW110	**Soluble Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Soluble Lithium**			
	Lithium (Li)	0.001	mg/l	0.001
②NW112	**Soluble Magnesium**			
	Magnesium (Mg)	1.90	mg/l	0.01
②NW113	**Soluble Manganese**			
	Manganese (Mn)	0.0170	mg/l	0.0005
②NW114	**Soluble Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Soluble Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Soluble Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Soluble Potassium**			
	Potassium (K)	0.51	mg/l	0.01
②NW118	**Soluble Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW119	**Soluble Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Soluble Sodium**			
	Sodium (Na)	4.58	mg/l	0.01
②NW121	**Soluble Strontium**			
	Strontium (Sr)	0.105	mg/l	0.0005

		RESULTS		LOQ
②NW122	**Soluble Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Soluble Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW124	**Soluble Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Soluble Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW011	**Sulphate**			
	Sulphate	1.07	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW584	**Thallium - Soluble**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	36	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.012	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.011	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	8.2	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	35	mg/l	1

		RESULTS		LOQ
②NW030	**Total Hardness**			
	Hardness	7	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.7	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.019	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.120	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.016	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.5	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.64	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	3.0	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.071	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	0.31	NTU	0.01
②NW585	**Uranium - Soluble**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

LIST OF METHODS

NW003 **Total Alkalinity:** APHA Online Edition 2320 B
NW006 **Fluoride:** APHA Online Edition 4110 B
NW007 **Chloride:** APHA Online Edition 4110 B
NW008 **Nitrite-N:** APHA Online Edition 4110 B
NW009 **Bromide:** APHA Online Edition 4110 B
NW010 **Nitrate-N:** APHA Online Edition 4110 B
NW011 **Sulphate:** APHA Online Edition 4110 B
NW023 **Conductivity:** APHA Online Edition 2510 B
NW030 **Total Hardness:** APHA Online Edition 2340 B
NW098 **Soluble Aluminium:** APHA Online Edition 3125 B mod.
NW099 **Soluble Antimony:** APHA Online Edition 3125 B mod.
NW100 **Soluble Barium:** APHA Online Edition 3125 B mod.
NW101 **Soluble Beryllium:** APHA Online Edition 3125 B mod.
NW102 **Soluble Bismuth:** APHA Online Edition 3125 B mod.
NW103 **Soluble Boron:** APHA Online Edition 3125 B mod.
NW104 **Soluble Cadmium:** APHA Online Edition 3125 B mod.
NW105 **Soluble Calcium:** APHA Online Edition 3125 B mod.
NW106 **Soluble Chromium:** APHA Online Edition 3125 B mod.
NW107 **Soluble Cobalt:** APHA Online Edition 3125 B mod.
NW108 **Soluble Copper:** APHA Online Edition 3125 B mod.
NW109 **Soluble Iron:** APHA Online Edition 3125 B mod.
NW110 **Soluble Lead:** APHA Online Edition 3125 B mod.
NW111 **Soluble Lithium:** APHA Online Edition 3125 B mod.
NW112 **Soluble Magnesium:** APHA Online Edition 3125 B mod.
NW113 **Soluble Manganese:** APHA Online Edition 3125 B mod.
NW114 **Soluble Mercury:** APHA Online Edition 3125 B mod.
NW115 **Soluble Molybdenum:** APHA Online Edition 3125 B mod.
NW116 **Soluble Nickel:** APHA Online Edition 3125 B mod.
NW117 **Soluble Potassium:** APHA Online Edition 3125 B mod.
NW118 **Soluble Selenium:** APHA Online Edition 3125 B mod.
NW119 **Soluble Silver:** APHA Online Edition 3125 B mod.
NW120 **Soluble Sodium:** APHA Online Edition 3125 B mod.
NW121 **Soluble Strontium:** APHA Online Edition 3125 B mod.
NW122 **Soluble Tin:** APHA Online Edition 3125 B mod.
NW123 **Soluble Titanium:** APHA Online Edition 3125 B mod.
NW124 **Soluble Vanadium:** APHA Online Edition 3125 B mod.
NW125 **Soluble Zinc:** APHA Online Edition 3125 B mod.
NW143 **Total Silicon:** APHA Online Edition 3120 B mod.
NW147 **Total Aluminium:** APHA Online Edition 3125 B mod.
NW148 **Total Antimony:** APHA Online Edition 3125 B mod.
NW149 **Total Arsenic:** APHA Online Edition 3125 B mod.
NW150 **Total Barium:** APHA Online Edition 3125 B mod.
NW151 **Total Beryllium:** APHA Online Edition 3125 B mod.
NW152 **Total Bismuth:** APHA Online Edition 3125 B mod.
NW153 **Total Boron:** APHA Online Edition 3125 B mod.
NW154 **Total Cadmium:** APHA Online Edition 3125 B mod.
NW156 **Total Calcium:** APHA Online Edition 3125 B mod.
NW157 **Total Chromium:** APHA Online Edition 3125 B mod.
NW158 **Total Cobalt:** APHA Online Edition 3125 B mod.
NW159 **Total Copper:** APHA Online Edition 3125 B mod.
NW160 **Total Iron:** APHA Online Edition 3125 B mod.
NW161 **Total Lead:** APHA Online Edition 3125 B mod.
NW162 **Total Lithium:** APHA Online Edition 3125 B mod.
NW163 **Total Magnesium:** APHA Online Edition 3125 B mod.
NW164 **Total Manganese:** APHA Online Edition 3125 B mod.
NW165 **Total Mercury:** APHA Online Edition 3125 B mod.
NW166 **Total Molybdenum:** APHA Online Edition 3125 B mod.
NW167 **Total Nickel:** APHA Online Edition 3125 B mod.
NW168 **Total Potassium:** APHA Online Edition 3125 B mod.
NW169 **Total Selenium:** APHA Online Edition 3125 B mod.
NW170 **Total Silver:** APHA Online Edition 3125 B mod.
NW171 **Total Sodium:** APHA Online Edition 3125 B mod.
NW172 **Total Strontium:** APHA Online Edition 3125 B mod.
NW173 **Total Tin:** APHA Online Edition 3125 B mod.
NW174 **Total Titanium:** APHA Online Edition 3125 B mod.
NW176 **Total Vanadium:** APHA Online Edition 3125 B mod.
NW177 **Total Zinc:** APHA Online Edition 3125 B mod.
NW179 **Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H
NW189 **Total Nitrogen:** APHA Online Edition 4500-NO3- I

NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B	NW195	**pH:** APHA Online Edition 4500-H B
NW206	**Suspended Solids:** APHA Online Edition 2540 D	NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B
NW212	**Turbidity:** APHA Online Edition 2130 B	NW339	**Total Dissolved Solids:** Internal Method, Gravimetry
NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)	NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)
NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry	NW472	**Silica - Dissolved:** APHA Online Edition 3120 B mod.
NW580	**Thallium - Total:** APHA Online Edition 3125 B mod.	NW581	**Uranium - Total:** APHA Online Edition 3125 B mod.
NW583	**Arsenic - Soluble:** APHA Online Edition 3125 B mod.	NW584	**Thallium - Soluble:** APHA Online Edition 3125 B mod.
NW585	**Uranium - Soluble:** APHA Online Edition 3125 B mod.	NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E		

Signature



Tim Marcinowski Senior Laboratory Technician

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit

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Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-23-NC-028806-02#** REPORT DATE **16/12/2023**

#This amended report supersedes Analytical Report number AR-23-NC-028806-01, dated 26/10/2023.

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders: James Thornton **Order code:** EUNZCH-00153232
Contract: Matakanui Gold Water Monitoring
Submission Reference: Oct-10 collection **Purchase Order Number:** NA
Comments: Analysis start date and time corrected

SAMPLE CODE **817-2023-00110960**

Client Reference: RAS_01
Sample described as: Rise and shine stream 1
Client described sample as: naturally occurring water
Reception Date & Time: 11/10/2023 9:00 **Reception temperature:** 14.9 °C
Analysis Start Date & Time: 11/10/2023 14:54 **Analysis Ending Date:** 24/10/2023
Sampling date 2023-10-10

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.42	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	17.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.4	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.015	mg/l	0.001
②NW100	**Dissolved Barium**			

		RESULTS		LOQ
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.011	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	22.1	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	1.23	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.74	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	7.37	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	122	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.244	mg/l	0.0005
②NW584	**Dissolved Thallium**			

		RESULTS		LOQ
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.13	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.9		0.1
②NW011	**Sulphate**			
	Sulphate	2.64	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<5	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	81	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.084	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.046	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.013	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	19.3	mg/l	0.1
②NW157	**Total Chromium**			

		RESULTS		LOQ
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	84	mg/l	1
②NW030	**Total Hardness**			
	Hardness	60	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.7	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	3.7	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.071	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.260	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.5	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.011	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.6	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.19	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	38.6	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.276	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	0.001	mg/l	0.001
②NW174	**Total Titanium**			

		RESULTS		LOQ
②NW174	**Total Titanium**			
	Titanium (Ti)	0.003	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	4.59	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE **817-2023-00110961**

Client Reference: SC01
Sample described as: Sheperd Creek
Client described sample as: naturally occurring water
Reception Date & Time: 11/10/2023 9:00 **Reception temperature:** 14.9 °C
Analysis Start Date & Time: 11/10/2023 11:21 **Analysis Ending Date:** 25/10/2023
Sampling date 2023-10-10

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.03	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	4.70	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	42.5	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.002	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			

		RESULTS		LOQ
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	4.6	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	1.17	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	0.0007	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.25	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	3.61	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	198	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.167	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			

		RESULTS		LOQ
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0009	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.06	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.5		0.1
②NW011	**Sulphate**			
	Sulphate	33.0	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<5	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	187	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.054	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	0.006	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.034	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	46.1	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			

		RESULTS		LOQ
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	208	mg/l	1
②NW030	**Total Hardness**			
	Hardness	16	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.006	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	15.5	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.003	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.260	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.7	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.1	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	2.58	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	101	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.794	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			

		RESULTS		LOQ
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.62	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.003	mg/l	0.001

SAMPLE CODE **817-2023-00110962**

Client Reference: SC03
Sample described as: Sheperd Creek 3
Client described sample as: naturally occurring water
Reception Date & Time: 11/10/2023 9:00 **Reception temperature:** 14.9 °C
Analysis Start Date & Time: 11/10/2023 14:54 **Analysis Ending Date:** 24/10/2023
Sampling date 2023-10-10

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.72	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	27.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.4	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.016	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.033	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			

		RESULTS		LOQ
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	37.5	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.07	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	9.90	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0114	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.16	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	7.27	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	22.2	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.618	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0022	mg/l	0.0002
②NW124	**Dissolved Vanadium**			

		RESULTS		LOQ
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.13	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.19	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	13.2	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	18	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	125	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.464	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.038	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	32.9	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	133	mg/l	1
②NW030	**Total Hardness**			

		RESULTS		LOQ
②NW030	**Total Hardness**			
	Hardness	134	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.6	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	8.3	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.036	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.740	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.4	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.038	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.3	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.41	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	131	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.544	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.007	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	7.99	NTU	0.01
②NW581	**Uranium - Total**			

		RESULTS		LOQ
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE **817-2023-00110963**

Client Reference: JC1
Sample described as: Jean Creek 1
Client described sample as: naturally occurring water
Reception Date & Time: 11/10/2023 9:00
Reception temperature: 14.9 °C
Analysis Start Date & Time: 11/10/2023 11:21
Analysis Ending Date: 26/10/2023
Sampling date 2023-10-10

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.04	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	4.03	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	46.8	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.9	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.009	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.015	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	27.1	mg/l	0.1
②NW106	**Dissolved Chromium**			

		RESULTS		LOQ
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0010	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.006	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	16.7	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0011	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0010	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.34	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	6.53	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	83.6	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.385	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0053	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.004	mg/l	0.002
②NW006	**Fluoride**			

		RESULTS		LOQ
②NW006	**Fluoride**			
	Fluoride	0.09	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.05	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.3		0.1
②NW011	**Sulphate**			
	Sulphate	14.7	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	42	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	235	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.974	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.044	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	55.6	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	230	mg/l	1
②NW030	**Total Hardness**			
	Hardness	137	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.9	mg/l	0.1
②NW161	**Total Lead**			

		RESULTS		LOQ
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.009	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	16.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.028	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.520	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.9	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.042	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.9	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.88	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	105	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.722	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.018	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	0.002	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.006	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	9.06	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.004	mg/l	0.001

SAMPLE CODE	817-2023-00110964

Client Reference: RS2
Sample described as: Rise and shine stream 2
Client described sample as: naturally occurring water
Reception Date & Time: 11/10/2023 9:00 **Reception temperature:** 14.9 °C
Analysis Start Date & Time: 11/10/2023 11:21 **Analysis Ending Date:** 26/10/2023
Sampling date 2023-10-10

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.68	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	13.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.005	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.011	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	17.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			

		RESULTS		LOQ
②NW108	**Dissolved Copper** Copper (Cu)	0.0007	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.01	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	2.72	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.55	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	8.08	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	63.1	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.190	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	0.0003	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride** Fluoride	0.09	mg/l	0.02
②NW010	**Nitrate-N** Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			

		RESULTS		LOQ
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.9		0.1
②NW011	**Sulphate**			
	Sulphate	1.38	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	61	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.129	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.007	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.013	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	15.9	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	65	mg/l	1
②NW030	**Total Hardness**			
	Hardness	54	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			

		RESULTS		LOQ
②NW163	**Total Magnesium**			
	Magnesium (Mg)	3.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.006	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.210	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.7	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.012	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.5	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.45	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	44.5	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.246	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.004	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	2.40	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2023-00110965**

Client Reference: RSA1
Sample described as: Rise and shine Adit
Client described sample as: naturally occurring water
Reception Date & Time: 11/10/2023 9:00
Reception temperature: 14.9 °C
Analysis Start Date & Time: 11/10/2023 11:21
Analysis Ending Date: 26/10/2023
Sampling date 2023-10-10

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	28	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.05	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	6.09	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	49.5	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	5.0	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.035	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.003	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	5.0	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0007	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	0.18	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0020	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.12	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	9.94	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	512	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.145	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0008	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	<0.2	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.14	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.3		0.1
②NW011	**Sulphate**			
	Sulphate	18.4	mg/l	0.02
②NW206	**Suspended Solids**			

		RESULTS		LOQ
②NW206	**Suspended Solids**			
	Suspended Solids	7	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	242	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.100	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.113	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.030	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	59.5	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	0.002	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	243	mg/l	1
②NW030	**Total Hardness**			
	Hardness	13	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.8	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.009	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	15.5	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.161	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			

		RESULTS		LOQ
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.410	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	5.1	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.014	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	5.83	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	895	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.873	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.004	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	0.002	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	5.71	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.003	mg/l	0.001

SAMPLE CODE	**817-2023-00110966**

Client Reference: RS3
Sample described as: Rise and shine stream 3
Client described sample as: naturally occurring water
Reception Date & Time: 11/10/2023 9:00
Reception temperature: 14.9 °C
Analysis Start Date & Time: 11/10/2023 14:54
Analysis Ending Date: 25/10/2023
Sampling date 2023-10-10

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			

		RESULTS		LOQ
②NW345	**Acidity to pH 8.3**			
	Acidity	1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.11	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	8.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.008	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.006	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	11.0	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.001	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	1.92	mg/l	0.01
②NW113	**Dissolved Manganese**			

		RESULTS		LOQ
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0033	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.45	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.70	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	56.0	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.114	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.07	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.6		0.1
②NW011	**Sulphate**			
	Sulphate	1.17	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<5	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			

		RESULTS		LOQ
②NW003	**Total Alkalinity**			
	Alkalinity total	38	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.019	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.010	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.007	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	9.1	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	41	mg/l	1
②NW030	**Total Hardness**			
	Hardness	35	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.9	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.013	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			

		RESULTS		LOQ
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.170	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.6	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.010	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.51	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	20.0	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.128	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.56	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2023-00111382**		
Client Reference:	LBA		
Sample described as:	Lower Bendigo Addit		
Reception Date & Time:	11/10/2023 9:00	**Reception temperature:**	14.9 °C
Analysis Start Date & Time:	11/10/2023 15:27	**Analysis Ending Date:**	26/10/2023

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.08	mg/l	0.02

		RESULTS		LOQ
②NW007	**Chloride**			
	Chloride (Cl)	5.05	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	42.6	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	1.05	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.004	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	49.2	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.41	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.010	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	14.8	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0281	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0015	mg/l	0.0005
②NW116	**Dissolved Nickel**			

		RESULTS		LOQ
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.66	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	15.6	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	19.1	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.358	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0027	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.35	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.22	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.2		0.1
②NW011	**Sulphate**			
	Sulphate	16.3	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	22	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	181	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.073	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			

		RESULTS		LOQ
②NW149	**Total Arsenic**			
	Arsenic (As)	2.21	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.008	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	53.5	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	209	mg/l	1
②NW030	**Total Hardness**			
	Hardness	184	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	3.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.016	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	14.4	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.115	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.002	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.570	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.3	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.091	mg/l	0.005
②NW168	**Total Potassium**			

		RESULTS		LOQ
②NW168	**Total Potassium**			
	Potassium (K)	2.0	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	6.80	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	19.1	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.467	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.003	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	0.002	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	28.1	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.003	mg/l	0.001

LIST OF METHODS

NW003	**Total Alkalinity:** APHA Online Edition 2320 B	NW006	**Fluoride:** APHA Online Edition 4110 B
NW007	**Chloride:** APHA Online Edition 4110 B	NW008	**Nitrite-N:** APHA Online Edition 4110 B
NW009	**Bromide:** APHA Online Edition 4110 B	NW010	**Nitrate-N:** APHA Online Edition 4110 B
NW011	**Sulphate:** APHA Online Edition 4110 B	NW023	**Conductivity:** APHA 24th Edition 2510 B
NW030	**Total Hardness:** APHA Online Edition 2340 B	NW098	**Dissolved Aluminium:** APHA Online Edition 3125 B mod.
NW099	**Dissolved Antimony:** APHA Online Edition 3125 B mod.	NW100	**Dissolved Barium:** APHA Online Edition 3125 B mod.
NW101	**Dissolved Beryllium:** APHA Online Edition 3125 B mod.	NW102	**Dissolved Bismuth:** APHA Online Edition 3125 B mod.
NW103	**Dissolved Boron:** APHA Online Edition 3125 B mod.	NW104	**Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105	**Dissolved Calcium:** APHA Online Edition 3125 B mod.	NW106	**Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW107	**Dissolved Cobalt:** APHA Online Edition 3125 B mod.	NW108	**Dissolved Copper:** APHA Online Edition 3125 B mod.
NW109	**Dissolved Iron:** APHA Online Edition 3125 B mod.	NW110	**Dissolved Lead:** APHA Online Edition 3125 B mod.
NW111	**Dissolved Lithium:** APHA Online Edition 3125 B mod.	NW112	**Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113	**Dissolved Manganese:** APHA Online Edition 3125 B mod.	NW114	**Dissolved Mercury:** APHA Online Edition 3125 B mod.
NW115	**Dissolved Molybdenum:** APHA Online Edition 3125 B mod.	NW116	**Dissolved Nickel:** APHA Online Edition 3125 B mod.
NW117	**Dissolved Potassium:** APHA Online Edition 3125 B mod.	NW118	**Dissolved Selenium:** APHA Online Edition 3125 B mod.
NW119	**Dissolved Silver:** APHA Online Edition 3125 B mod.	NW120	**Dissolved Sodium:** APHA Online Edition 3125 B mod.
NW121	**Dissolved Strontium:** APHA Online Edition 3125 B mod.	NW122	**Dissolved Tin:** APHA Online Edition 3125 B mod.
NW123	**Dissolved Titanium:** APHA Online Edition 3125 B mod.	NW124	**Dissolved Vanadium:** APHA Online Edition 3125 B mod.
NW125	**Dissolved Zinc:** APHA Online Edition 3125 B mod.	NW143	**Total Silicon:** APHA Online Edition 3120 B mod.

NW147	**Total Aluminium:** APHA Online Edition 3125 B mod.
NW148	**Total Antimony:** APHA Online Edition 3125 B mod.
NW149	**Total Arsenic:** APHA Online Edition 3125 B mod.
NW150	**Total Barium:** APHA Online Edition 3125 B mod.
NW151	**Total Beryllium:** APHA Online Edition 3125 B mod.
NW152	**Total Bismuth:** APHA Online Edition 3125 B mod.
NW153	**Total Boron:** APHA Online Edition 3125 B mod.
NW154	**Total Cadmium:** APHA Online Edition 3125 B mod.
NW156	**Total Calcium:** APHA Online Edition 3125 B mod.
NW157	**Total Chromium:** APHA Online Edition 3125 B mod.
NW158	**Total Cobalt:** APHA Online Edition 3125 B mod.
NW159	**Total Copper:** APHA Online Edition 3125 B mod.
NW160	**Total Iron:** APHA Online Edition 3125 B mod.
NW161	**Total Lead:** APHA Online Edition 3125 B mod.
NW162	**Total Lithium:** APHA Online Edition 3125 B mod.
NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW164	**Total Manganese:** APHA Online Edition 3125 B mod.
NW165	**Total Mercury:** APHA Online Edition 3125 B mod.
NW166	**Total Molybdenum:** APHA Online Edition 3125 B mod.
NW167	**Total Nickel:** APHA Online Edition 3125 B mod.
NW168	**Total Potassium:** APHA Online Edition 3125 B mod.
NW169	**Total Selenium:** APHA Online Edition 3125 B mod.
NW170	**Total Silver:** APHA Online Edition 3125 B mod.
NW171	**Total Sodium:** APHA Online Edition 3125 B mod.
NW172	**Total Strontium:** APHA Online Edition 3125 B mod.
NW173	**Total Tin:** APHA Online Edition 3125 B mod.
NW174	**Total Titanium:** APHA Online Edition 3125 B mod.
NW176	**Total Vanadium:** APHA Online Edition 3125 B mod.
NW177	**Total Zinc:** APHA Online Edition 3125 B mod.
NW179	**Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H
NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I
NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B
NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B
NW206	**Suspended Solids:** APHA Online Edition 2540 D
NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B
NW212	**Turbidity:** APHA 24th Edition 2130 B
NW339	**Total Dissolved Solids:** Internal Method, Gravimetry
NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)
NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)
NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry
NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.
NW580	**Thallium - Total:** APHA Online Edition 3125 B mod.
NW581	**Uranium - Total:** APHA Online Edition 3125 B mod.
NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.
NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.
NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.
NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

The Customer acknowledges and accepts that: (a) where Eurofins is not responsible for sampling, the test result(s) in this report apply only to the sample as received. Customer is solely responsible for the sampling process and warrants that the sample provided to Eurofins is representative of the lot / batch from which the samples were drawn; and (b) Eurofins expresses no opinion and accepts no liability in respect of the Customer's production process or homogeneity of the product.
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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-000295-01	REPORT DATE	07/01/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders: James Thornton
Order code: EUNZCH-00161669
Contract: Matakanui Gold Water Monitoring
Submission Reference: 20-12-23 Sampling
Purchase Order Number: NA

SAMPLE CODE **817-2023-00141591**

Client Reference: RS01
Sample described as: Rise and shine stream 1
Reception Date & Time: 21/12/2023 9:00
Reception temperature: 21.9 °C
Analysis Start Date & Time: 21/12/2023 10:27
Analysis Ending Date: 07/01/2024
Product Type Water

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	3	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.00	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	24.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.021	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.014	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	35.2	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.05	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	6.74	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0357	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.10	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	8.88	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	6.37	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.516	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	0.36	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	125	mg CaCO3/l	1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	120	mg/l	1
②NW030	**Total Hardness**			
	Hardness	116	mg CaCO3/l	1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.270	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.1	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.007	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.68	NTU	0.01

SAMPLE CODE	**817-2023-00141592**		
Client Reference:	SC01		
Sample described as:	Shepherds Creek by irrigation take		
Reception Date & Time:	21/12/2023 9:00	**Reception temperature:**	21.9 °C
Analysis Start Date & Time:	21/12/2023 10:27	**Analysis Ending Date:**	07/01/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			

		RESULTS		LOQ
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.07	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	7.83	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	56.3	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.4	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.008	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.006	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.045	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	66.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.04	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.010	mg/l	0.001
②NW112	**Dissolved Magnesium**			

		RESULTS		LOQ
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	25.1	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0067	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0007	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	3.97	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.47	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	15.4	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	1.08	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0058	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.12	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.31	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	44.9	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	12	mg/l	3
②NW003	**Total Alkalinity**			

		RESULTS		LOQ
②NW003	**Total Alkalinity**			
	Alkalinity total	247	mg CaCO3/l	1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	276	mg/l	1
②NW030	**Total Hardness**			
	Hardness	269	mg CaCO3/l	1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.430	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.034	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.95	NTU	0.01

SAMPLE CODE **817-2023-00141593**

Client Reference: SC03
Sample described as: Shepherds Creek 3 above Jean creek
Reception Date & Time: 21/12/2023 9:00 **Reception temperature:** 21.9 °C
Analysis Start Date & Time: 21/12/2023 10:27 **Analysis Ending Date:** 07/01/2024
Product Type Water

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.02	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	31.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.1	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.010	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			

		RESULTS		LOQ
②NW100	**Dissolved Barium** Barium (Ba)	0.032	mg/l	0.002
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	42.7	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	10.7	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0028	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.64	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	6.11	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	7.51	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.716	mg/l	0.0005
②NW584	**Dissolved Thallium**			

		RESULTS		LOQ
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0018	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.13	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.03	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	14.1	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	145	mg CaCO3/l	1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	152	mg/l	1
②NW030	**Total Hardness**			
	Hardness	151	mg CaCO3/l	1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.240	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.7	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.020	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.36	NTU	0.01

SAMPLE CODE	**817-2023-00141594**

Client Reference: JC01
Sample described as: Jean Creek 1
Reception Date & Time: 21/12/2023 9:00
Reception temperature: 21.9 °C
Analysis Start Date & Time: 21/12/2023 10:35
Analysis Ending Date: 06/01/2024
Product Type Water

		RESULTS	LOQ
②NW409	**Acidity to pH 3.7**		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.09	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	7.04	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	57.2	mS/m	0.1
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.9	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.012	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.033	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.05	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	71.4	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0012	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.013	mg/l	0.001
②NW112	**Dissolved Magnesium**			

		RESULTS		LOQ
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	30.5	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0019	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0014	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	2.36	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.36	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	22.5	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.957	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	0.0007	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0065	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	0.0006	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.04	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.4		0.1
②NW011	**Sulphate**			
	Sulphate	22.2	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW003	**Total Alkalinity**			

		RESULTS		LOQ
②NW003	**Total Alkalinity**			
	Alkalinity total	285	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	73.1	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	280	mg/l	1
②NW030	**Total Hardness**			
	Hardness	276	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	22.6	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.350	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.3	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.036	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.62	NTU	0.01

SAMPLE CODE	**817-2023-00141595**		
Client Reference:	RS02		
Sample described as:	Rise and shine stream 2 at Shreks		
Reception Date & Time:	21/12/2023 9:00	**Reception temperature:**	21.9 °C
Analysis Start Date & Time:	21/12/2023 10:27	**Analysis Ending Date:**	07/01/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	3	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.32	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	14.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.0	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			

		RESULTS		LOQ
②NW099	**Dissolved Antimony** Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic** Arsenic (As)	0.006	mg/l	0.001
②NW100	**Dissolved Barium** Barium (Ba)	0.011	mg/l	0.002
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	19.0	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	3.52	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0009	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.49	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	8.91	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			

		RESULTS		LOQ
②NW120	**Dissolved Sodium**			
	Sodium (Na)	4.34	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.277	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	1.00	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	6	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	67	mg CaCO3/l	1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	68	mg/l	1
②NW030	**Total Hardness**			
	Hardness	62	mg CaCO3/l	1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.160	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.8	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.50	NTU	0.01

SAMPLE CODE	817-2023-00141596

Client Reference: RSA1
Sample described as: Rise and shine Adit
Reception Date & Time: 21/12/2023 9:00
Reception temperature: 21.9 °C
Analysis Start Date & Time: 21/12/2023 10:27
Analysis Ending Date: 07/01/2024
Product Type Water

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	53	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.13	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.43	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	22.8	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.060	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.036	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	31.9	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	0.0014	mg/l	0.0005
②NW108	**Dissolved Copper**			

		RESULTS		LOQ
②NW108	**Dissolved Copper** Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	1.07	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	5.68	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.690	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.14	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	16.4	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	7.75	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.563	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	0.003	mg/l	0.002
②NW006	**Fluoride** Fluoride	0.12	mg/l	0.02
②NW010	**Nitrate-N** Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			

		RESULTS		LOQ
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	6.7		0.1
②NW011	**Sulphate**			
	Sulphate	0.06	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	87	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	112	mg CaCO3/l	1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	112	mg/l	1
②NW030	**Total Hardness**			
	Hardness	103	mg CaCO3/l	1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.480	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	6.6	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.016	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	60.5	NTU	0.01

SAMPLE CODE	**817-2023-00141597**		
Client Reference:	RS03		
Sample described as:	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	21/12/2023 9:00	**Reception temperature:**	21.9 °C
Analysis Start Date & Time:	21/12/2023 10:27	**Analysis Ending Date:**	07/01/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	2	mg CaCO3/l	1
②NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.90	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	9.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			

		RESULTS		LOQ
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.9	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.013	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.006	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	11.6	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.05	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.001	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	2.31	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0057	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.27	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			

		RESULTS		LOQ
②NW472	**Dissolved Silica**			
	Sand/silica	8.65	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	3.61	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.150	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.08	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.5		0.1
②NW011	**Sulphate**			
	Sulphate	0.63	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	43	mg CaCO3/l	1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	44	mg/l	1
②NW030	**Total Hardness**			
	Hardness	38	mg CaCO3/l	1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.100	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.6	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.015	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.49	NTU	0.01

LIST OF METHODS

NW003	**Total Alkalinity:** APHA Online Edition 2320 B
NW006	**Fluoride:** APHA Online Edition 4110 B
NW007	**Chloride:** APHA Online Edition 4110 B
NW008	**Nitrite-N:** APHA Online Edition 4110 B
NW009	**Bromide:** APHA Online Edition 4110 B
NW010	**Nitrate-N:** APHA Online Edition 4110 B
NW011	**Sulphate:** APHA Online Edition 4110 B
NW023	**Conductivity:** APHA 24th Edition 2510 B
NW030	**Total Hardness:** APHA Online Edition 2340 B
NW098	**Dissolved Aluminium:** APHA Online Edition 3125 B mod.
NW099	**Dissolved Antimony:** APHA Online Edition 3125 B mod.
NW100	**Dissolved Barium:** APHA Online Edition 3125 B mod.
NW101	**Dissolved Beryllium:** APHA Online Edition 3125 B mod.
NW102	**Dissolved Bismuth:** APHA Online Edition 3125 B mod.
NW103	**Dissolved Boron:** APHA Online Edition 3125 B mod.
NW104	**Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105	**Dissolved Calcium:** APHA Online Edition 3125 B mod.
NW106	**Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW107	**Dissolved Cobalt:** APHA Online Edition 3125 B mod.
NW108	**Dissolved Copper:** APHA Online Edition 3125 B mod.
NW109	**Dissolved Iron:** APHA Online Edition 3125 B mod.
NW110	**Dissolved Lead:** APHA Online Edition 3125 B mod.
NW111	**Dissolved Lithium:** APHA Online Edition 3125 B mod.
NW112	**Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113	**Dissolved Manganese:** APHA Online Edition 3125 B mod.
NW114	**Dissolved Mercury:** APHA Online Edition 3125 B mod.
NW115	**Dissolved Molybdenum:** APHA Online Edition 3125 B mod.
NW116	**Dissolved Nickel:** APHA Online Edition 3125 B mod.
NW117	**Dissolved Potassium:** APHA Online Edition 3125 B mod.
NW118	**Dissolved Selenium:** APHA Online Edition 3125 B mod.
NW119	**Dissolved Silver:** APHA Online Edition 3125 B mod.
NW120	**Dissolved Sodium:** APHA Online Edition 3125 B mod.
NW121	**Dissolved Strontium:** APHA Online Edition 3125 B mod.
NW122	**Dissolved Tin:** APHA Online Edition 3125 B mod.
NW123	**Dissolved Titanium:** APHA Online Edition 3125 B mod.
NW124	**Dissolved Vanadium:** APHA Online Edition 3125 B mod.
NW125	**Dissolved Zinc:** APHA Online Edition 3125 B mod.
NW156	**Total Calcium:** APHA Online Edition 3125 B mod.
NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW179	**Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H
NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I
NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B
NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B
NW206	**Suspended Solids:** APHA Online Edition 2540 D
NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B
NW212	**Turbidity:** APHA 24th Edition 2130 B
NW339	**Total Dissolved Solids:** Internal Method, Gravimetry
NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)
NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)
NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry
NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.
NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.
NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.
NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.
NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

Eurofins ELS Limited
43 Detroit Drive
Rolleston
Christchurch 7614
NEW ZEALAND

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www.eurofins.co.nz

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-005601-01	REPORT DATE	23/02/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders:	James Thornton	**Order code:**	EUNZCH-00166192
Contract:	Matakanui Gold Water Monitoring		
Submission Reference:	5-02-2024	**Purchase Order Number:**	NA

SAMPLE CODE	817-2024-00015361		
Client Reference:	RS01		
Sample described as:	Rise and shine stream 1		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.05	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.05	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	24.9	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.4	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.024	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.013	mg/l	0.002

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	35.3	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.09	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	6.46	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0613	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.57	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	9.55	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	7.08	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.511	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.007	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.12	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.07	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.9		0.1
②NW011	**Sulphate**			
	Sulphate	0.70	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	9	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	124	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	31.2	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	122	mg/l	1
②NW030	**Total Hardness**			
	Hardness	100	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.4	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.240	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.9	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.012	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	8.93	NTU	0.01

SAMPLE CODE	**817-2024-00015362**		
Client Reference:	SC01		
Sample described as:	Shepherds Creek by irrigation take		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

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		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.03	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.07	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	7.09	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	57.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.003	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.046	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	68.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.010	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	27.6	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0011	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.57	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	9.24	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	16.5	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	1.08	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0047	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.13	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	49.5	mg/l	0.02
②NW206	**Suspended Solids**			

	RESULTS		LOQ
②NW206 **Suspended Solids**			
Suspended Solids	<5	mg/l	3
②NW003 **Total Alkalinity**			
Alkalinity total	241	mg CaCO3/l	1
②NW156 **Total Calcium**			
Calcium (Ca)	62.5	mg/l	0.1
③NW339 **Total Dissolved Solids**			
Total dissolved Solids	279	mg/l	1
②NW030 **Total Hardness**			
Hardness	255	mg CaCO3/l	1
②NW163 **Total Magnesium**			
Magnesium (Mg)	23.9	mg/l	0.1
②NW189 **Total Nitrogen**			
Total Nitrogen (N)	0.220	mg/l	0.002
②NW210 **Total Non-Purgeable Organic Carbon**			
Total Organic Carbon	3.1	mg/l	0.1
②NW194 **Total Phosphorus**			
Total phosphorus	0.038	mg/l	0.005
②NW212 **Turbidity**			
Turbidity	0.79	NTU	0.01

SAMPLE CODE 817-2024-00015363

Client Reference: SC03
Sample described as: Shepherds Creek 3
Reception Date & Time: 07/02/2024 8:30
Reception temperature: Ambient
Analysis Start Date & Time: 07/02/2024 10:33
Analysis Ending Date: 23/02/2024
Product Type Water
Sampler(s) Hamish
Sampled Date & Time 04/02/2024 00:00

	RESULTS		LOQ
②NW409 **Acidity to pH 3.7**			
Acidity	<1	mg CaCO3/l	1
③NW410 **Acidity to pH 7.0**			
Acidity	<1	mg CaCO3/l	1
②NW345 **Acidity to pH 8.3**			
Acidity	<1	mg CaCO3/l	1
②NW676 **Ammonia Nitrogen**			
Ammonia nitrogen	<0.01	mg/l	0.01
②NW009 **Bromide**			
Bromide	<0.02	mg/l	0.02
②NW007 **Chloride**			
Chloride (Cl)	3.25	mg/l	0.02
②NW023 **Conductivity**			
Conductivity	33.6	mS/m	0.1
②NW679 **Cyanide**			
Cyanide	<0.005	mg/l	0.005
③NW671 **Dissolved (NP) Organic Carbon**			
Carbon	3.0	mg/l	0.1
②NW098 **Dissolved Aluminium**			

		RESULTS		LOQ
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.038	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	43.5	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	12.0	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0038	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	3.87	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.14	mg/l	0.02
②NW119	**Dissolved Silver**			

		RESULTS		LOQ
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	8.17	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.724	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0018	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.14	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.31	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	0.04	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	16.9	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	17	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	149	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	39.4	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	165	mg/l	1
②NW030	**Total Hardness**			
	Hardness	138	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	9.7	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.940	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.4	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.018	mg/l	0.005
②NW212	**Turbidity**			

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	4.79	NTU	0.01

SAMPLE CODE	**817-2024-00015364**		
Client Reference:	RS02		
Sample described as:	Rise and shine stream 2 at Shreks		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.10	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.52	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	13.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.8	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.004	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.004	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.009	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	17.2	mg/l	0.1
②NW106	**Dissolved Chromium**			

		RESULTS		LOQ
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	3.23	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0006	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.50	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	10.3	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	4.65	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.238	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			

	RESULTS		LOQ
②NW006 **Fluoride**			
Fluoride	0.09	mg/l	0.02
②NW010 **Nitrate-N**			
Nitrate-N	<0.01	mg/l	0.01
②NW008 **Nitrite-N**			
Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195 **pH (Tested beyond 15 minute APHA holding time)**			
pH	7.6		0.1
②NW011 **Sulphate**			
Sulphate	1.49	mg/l	0.02
②NW206 **Suspended Solids**			
Suspended Solids	6	mg/l	3
②NW003 **Total Alkalinity**			
Alkalinity total	58	mg CaCO3/l	1
②NW156 **Total Calcium**			
Calcium (Ca)	15.0	mg/l	0.1
③NW339 **Total Dissolved Solids**			
Total dissolved Solids	64	mg/l	1
②NW030 **Total Hardness**			
Hardness	49	mg CaCO3/l	1
②NW163 **Total Magnesium**			
Magnesium (Mg)	2.8	mg/l	0.1
②NW189 **Total Nitrogen**			
Total Nitrogen (N)	0.180	mg/l	0.002
②NW210 **Total Non-Purgeable Organic Carbon**			
Total Organic Carbon	2.3	mg/l	0.1
②NW194 **Total Phosphorus**			
Total phosphorus	0.009	mg/l	0.005
②NW212 **Turbidity**			
Turbidity	3.56	NTU	0.01

SAMPLE CODE	**817-2024-00015365**		
Client Reference:	RSA1		
Sample described as:	Rise and shine Adit		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

	RESULTS		LOQ
②NW409 **Acidity to pH 3.7**			
Acidity	<1	mg CaCO3/l	1
③NW410 **Acidity to pH 7.0**			
Acidity	<1	mg CaCO3/l	1
②NW345 **Acidity to pH 8.3**			
Acidity	48	mg CaCO3/l	1
②NW676 **Ammonia Nitrogen**			
Ammonia nitrogen	0.13	mg/l	0.01
②NW009 **Bromide**			

		RESULTS		LOQ
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.44	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	27.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	4.0	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.038	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.030	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	39.9	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.07	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	7.64	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0115	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			

		RESULTS		LOQ
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.34	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	15.4	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	7.43	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.536	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.005	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.13	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.03	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.6		0.1
②NW011	**Sulphate**			
	Sulphate	1.15	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	69	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	134	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	33.7	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	133	mg/l	1
②NW030	**Total Hardness**			

		RESULTS		LOQ
②NW030	**Total Hardness**			
	Hardness	108	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.9	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	1.83	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	10.4	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.188	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	30.5	NTU	0.01

SAMPLE CODE	**817-2024-00015366**		
Client Reference:	RS03		
Sample described as:	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.08	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	12.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.6	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.008	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.007	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	13.3	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	0.09	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.43	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	8.79	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	233	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.136	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.011	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.06	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	9.3		0.1
②NW011	**Sulphate**			
	Sulphate	0.66	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<5	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	58	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	11.2	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	59	mg/l	1
②NW030	**Total Hardness**			
	Hardness	36	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.1	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.120	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.3	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.014	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.75	NTU	0.01

LIST OF METHODS

NW003 **Total Alkalinity:** APHA Online Edition 2320 B

NW006 **Fluoride:** APHA Online Edition 4110 B

NW007 **Chloride:** APHA Online Edition 4110 B

NW008 **Nitrite-N:** APHA Online Edition 4110 B

NW009 **Bromide:** APHA Online Edition 4110 B

NW010 **Nitrate-N:** APHA Online Edition 4110 B

NW011 **Sulphate:** APHA Online Edition 4110 B

NW023 **Conductivity:** APHA 24th Edition 2510 B

NW030 **Total Hardness:** APHA Online Edition 2340 B

NW098	**Dissolved Aluminium:** APHA Online Edition 3125 B mod.	NW099	**Dissolved Antimony:** APHA Online Edition 3125 B mod.
NW100	**Dissolved Barium:** APHA Online Edition 3125 B mod.	NW101	**Dissolved Beryllium:** APHA Online Edition 3125 B mod.
NW102	**Dissolved Bismuth:** APHA Online Edition 3125 B mod.	NW103	**Dissolved Boron:** APHA Online Edition 3125 B mod.
NW104	**Dissolved Cadmium:** APHA Online Edition 3125 B mod.	NW105	**Dissolved Calcium:** APHA Online Edition 3125 B mod.
NW106	**Dissolved Chromium:** APHA Online Edition 3125 B mod.	NW107	**Dissolved Cobalt:** APHA Online Edition 3125 B mod.
NW108	**Dissolved Copper:** APHA Online Edition 3125 B mod.	NW109	**Dissolved Iron:** APHA Online Edition 3125 B mod.
NW110	**Dissolved Lead:** APHA Online Edition 3125 B mod.	NW111	**Dissolved Lithium:** APHA Online Edition 3125 B mod.
NW112	**Dissolved Magnesium:** APHA Online Edition 3125 B mod.	NW113	**Dissolved Manganese:** APHA Online Edition 3125 B mod.
NW114	**Dissolved Mercury:** APHA Online Edition 3125 B mod.	NW115	**Dissolved Molybdenum:** APHA Online Edition 3125 B mod.
NW116	**Dissolved Nickel:** APHA Online Edition 3125 B mod.	NW117	**Dissolved Potassium:** APHA Online Edition 3125 B mod.
NW118	**Dissolved Selenium:** APHA Online Edition 3125 B mod.	NW119	**Dissolved Silver:** APHA Online Edition 3125 B mod.
NW120	**Dissolved Sodium:** APHA Online Edition 3125 B mod.	NW121	**Dissolved Strontium:** APHA Online Edition 3125 B mod.
NW122	**Dissolved Tin:** APHA Online Edition 3125 B mod.	NW123	**Dissolved Titanium:** APHA Online Edition 3125 B mod.
NW124	**Dissolved Vanadium:** APHA Online Edition 3125 B mod.	NW125	**Dissolved Zinc:** APHA Online Edition 3125 B mod.
NW156	**Total Calcium:** APHA Online Edition 3125 B mod.	NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I	NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B
NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B	NW206	**Suspended Solids:** APHA Online Edition 2540 D
NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B	NW212	**Turbidity:** APHA 24th Edition 2130 B
NW339	**Total Dissolved Solids:** Internal Method, Gravimetry	NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)
NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)	NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry
NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.	NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.
NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.	NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.
NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C	NW676	**Ammonia Nitrogen:** Internal Method, Electrometry
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E		

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

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Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-24-NC-003109-02 #** REPORT DATE **20/02/2024**

This amended report supersedes Analytical Report number AR-24-NC-003109-01, dated 02/02/2024.

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders: James Thornton
Contract: Matakanui Gold Water Monitoring
Comments: LOQs amended
Order code: EUNZCH-00163623
Purchase Order Number: NA

SAMPLE CODE **817-2024-00005355**

Sample described as: MG41400
Reception Date & Time: 15/01/2024 14:50
Analysis Start Date & Time: 15/01/2024 15:51
Analysis Ending Date: 20/02/2024
Sampler(s) Hamish
Sampled Date & Time 20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)** Aluminium	0.52	mg/l	0.02
④NU0ZC	**Antimony (Sb)** Antimony (Sb)	0.013	mg/l	0.005
④VQ364	**Arsenic (As)** Arsenic (As)	0.24	mg/l	0.0001
④NU0PF	**Barium (Ba)** Barium (Ba)	0.21	mg/l	0.001
④NU0LB	**Beryllium (Be)** Beryllium (Be)	<0.001	mg/l	0.005
④VQ022	**Boron (B)** Boron (B)	<0.05	mg/l	0.05
④VQ058	**Chromium (Cr)** Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)** Cobalt (Co)	0.0020	mg/l	0.001
④VQ107	**Iron (Fe)** Iron (Fe)	0.36	mg/l	0.001
④VQ368	**Lead (Pb)** Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)** Manganese (Mn)	0.52	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)** Molybdenum (Mo)	0.0080	mg/l	0.005
④VQ068	**Selenium (Se)** Selenium (Se)	<0.001	mg/l	0.001

		RESULTS		LOQ
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	done		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.028	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	23.4	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.003	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	3.9	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.001	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	12.7	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	0.77	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1260	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.004	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.035	mg/l	0.005
⑤VQ764	**USA Leaching Procedure**			
	Leachate Fluid	1.0		-
	pH (initial)	7.3	pH units	0.01
	pH (Leachate fluid)	4.9	pH units	0.01
	pH (off)	4.9	pH units	0.01
	pH (USA HCl addition)	1.3	pH units	0.01
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00005356**		
Sample described as:	MG41405		
Reception Date & Time:	15/01/2024 14:50		
Analysis Start Date & Time:	15/01/2024 15:51	**Analysis Ending Date:**	20/02/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.50	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	1
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.020	mg/l	0.0001

		RESULTS		LOQ
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.35	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④VQ022	**Boron (B)**			
	Boron (B)	<0.05	mg/l	0.05
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0070	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.27	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.70	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	1
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.005
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	done		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.014	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	21.7	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.002	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	4.4	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	6.7	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	0.44	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1380	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.003	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.035	mg/l	0.005
⑤VQ764	**USA Leaching Procedure**			

		RESULTS		LOQ
⑤VQ764	**USA Leaching Procedure**			
	Leachate Fluid	1.0		-
	pH (initial)	6.3	pH units	0.01
	pH (Leachate fluid)	4.9	pH units	0.01
	pH (off)	4.9	pH units	0.01
	pH (USA HCl addition)	1.3	pH units	0.01
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00005357**		
Sample described as:	MG41409		
Reception Date & Time:	15/01/2024 14:50		
Analysis Start Date & Time:	15/01/2024 15:51	**Analysis Ending Date:**	20/02/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.66	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	1
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.050	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.30	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④VQ022	**Boron (B)**			
	Boron (B)	<0.05	mg/l	0.05
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.005
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.015	mg/l	0.01
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.35	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.91	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	1
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.005
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	done		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0090	mg/l	0.001

		RESULTS		LOQ
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	12.1	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.004	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.0	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.008	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	4.3	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	0.60	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1380	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.004	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.044	mg/l	0.005
⑤VQ764	**USA Leaching Procedure**			
	Leachate Fluid	1.0		-
	pH (initial)	6.6	pH units	0.01
	pH (Leachate fluid)	4.9	pH units	0.01
	pH (off)	4.9	pH units	0.01
	pH (USA HCl addition)	1.2	pH units	0.01
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00005358**		
Sample described as:	MG41410		
Reception Date & Time:	15/01/2024 14:50		
Analysis Start Date & Time:	15/01/2024 15:51	**Analysis Ending Date:**	20/02/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.96	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.050	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.21	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④VQ022	**Boron (B)**			
	Boron (B)	<0.05	mg/l	0.05

		RESULTS		LOQ
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.005
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0050	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.10	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.29	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	1
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.005
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	done		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0060	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	6.5	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.002	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.5	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.002	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	3.6	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	0.47	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1340	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.032	mg/l	0.005
⑤VQ764	**USA Leaching Procedure**			
	Leachate Fluid	1.0		-
	pH (initial)	6.2	pH units	0.01
	pH (Leachate fluid)	4.9	pH units	0.01
	pH (off)	4.9	pH units	0.01
	pH (USA HCl addition)	1.3	pH units	0.01
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

	RESULTS	LOQ

SAMPLE CODE	817-2024-00005359		
Sample described as:	MG41414		
Reception Date & Time:	15/01/2024 14:50		
Analysis Start Date & Time:	15/01/2024 15:51	**Analysis Ending Date:**	20/02/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	1.0	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.010	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.16	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④VQ022	**Boron (B)**			
	Boron (B)	<0.05	mg/l	0.05
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.005
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0030	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.14	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.62	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	1
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.005
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	done		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	<0.005	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	6.9	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.003	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.0	mg/l	0.1

		RESULTS		LOQ
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	6.2	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	0.69	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1900	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.005	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.046	mg/l	0.005
⑤VQ764	**USA Leaching Procedure**			
	Leachate Fluid	1.0		-
	pH (initial)	6.1	pH units	0.01
	pH (Leachate fluid)	4.9	pH units	0.01
	pH (off)	4.9	pH units	0.01
	pH (USA HCl addition)	1.3	pH units	0.01
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

LIST OF METHODS

NU0K0	**Tin (Sn):** US EPA 6020	NU0LB	**Beryllium (Be):** US EPA 6020
NU0LE	**Silver (Ag):** US EPA 6020	NU0M0	**Vanadium (V):** US EPA 6020
NU0PF	**Barium (Ba):** US EPA 6020	NU0SJ	**Molybdenum (Mo):** US EPA 6020
NU0YE	**Cobalt (Co):** US EPA 6020	NU0ZC	**Antimony (Sb):** US EPA 6020
NW143	**Total Silicon:** APHA Online Edition 3120 B mod.	NW154	**Total Cadmium:** APHA Online Edition 3125 B mod.
NW156	**Total Calcium:** APHA Online Edition 3125 B mod.	NW159	**Total Copper:** APHA Online Edition 3125 B mod.
NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.	NW167	**Total Nickel:** APHA Online Edition 3125 B mod.
NW168	**Total Potassium:** APHA Online Edition 3125 B mod.	NW171	**Total Sodium:** APHA Online Edition 3125 B mod.
NW174	**Total Titanium:** APHA Online Edition 3125 B mod.	NW177	**Total Zinc:** APHA Online Edition 3125 B mod.
VQ022	**Boron (B):** US EPA 6020	VQ050	**Aluminium (Al):** US EPA 6020
VQ058	**Chromium (Cr):** US EPA 6020	VQ068	**Selenium (Se):** US EPA 6020
VQ107	**Iron (Fe):** US EPA 6020	VQ364	**Arsenic (As):** US EPA 6020
VQ368	**Lead (Pb):** US EPA 6020	VQ395	**Manganese (Mn):** US EPA 6020
VQ763	**Soil Preparation - Metals Digestion:**	VQ764	**USA Leaching Procedure:** US EPA 1311

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

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Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-005601-01	REPORT DATE	23/02/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders:	James Thornton	**Order code:**	EUNZCH-00166192
Contract:	Matakanui Gold Water Monitoring		
Submission Reference:	5-02-2024	**Purchase Order Number:**	NA

SAMPLE CODE	817-2024-00015361		
Client Reference:	RS01		
Sample described as:	Rise and shine stream 1		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.05	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.05	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	24.9	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.4	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.024	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.013	mg/l	0.002

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	35.3	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.09	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	6.46	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0613	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.57	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	9.55	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	7.08	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.511	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.007	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.12	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.07	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.9		0.1
②NW011	**Sulphate**			
	Sulphate	0.70	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	9	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	124	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	31.2	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	122	mg/l	1
②NW030	**Total Hardness**			
	Hardness	100	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.4	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.240	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.9	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.012	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	8.93	NTU	0.01

SAMPLE CODE	**817-2024-00015362**		
Client Reference:	SC01		
Sample described as:	Shepherds Creek by irrigation take		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

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		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.03	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.07	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	7.09	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	57.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.003	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.046	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	68.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.010	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	27.6	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0011	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.57	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	9.24	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	16.5	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	1.08	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0047	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.13	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	49.5	mg/l	0.02
②NW206	**Suspended Solids**			

	RESULTS		LOQ
②NW206 **Suspended Solids**			
Suspended Solids	<5	mg/l	3
②NW003 **Total Alkalinity**			
Alkalinity total	241	mg CaCO3/l	1
②NW156 **Total Calcium**			
Calcium (Ca)	62.5	mg/l	0.1
③NW339 **Total Dissolved Solids**			
Total dissolved Solids	279	mg/l	1
②NW030 **Total Hardness**			
Hardness	255	mg CaCO3/l	1
②NW163 **Total Magnesium**			
Magnesium (Mg)	23.9	mg/l	0.1
②NW189 **Total Nitrogen**			
Total Nitrogen (N)	0.220	mg/l	0.002
②NW210 **Total Non-Purgeable Organic Carbon**			
Total Organic Carbon	3.1	mg/l	0.1
②NW194 **Total Phosphorus**			
Total phosphorus	0.038	mg/l	0.005
②NW212 **Turbidity**			
Turbidity	0.79	NTU	0.01

SAMPLE CODE 817-2024-00015363

Client Reference: SC03
Sample described as: Shepherds Creek 3
Reception Date & Time: 07/02/2024 8:30
Reception temperature: Ambient
Analysis Start Date & Time: 07/02/2024 10:33
Analysis Ending Date: 23/02/2024
Product Type Water
Sampler(s) Hamish
Sampled Date & Time 04/02/2024 00:00

	RESULTS		LOQ
②NW409 **Acidity to pH 3.7**			
Acidity	<1	mg CaCO3/l	1
③NW410 **Acidity to pH 7.0**			
Acidity	<1	mg CaCO3/l	1
②NW345 **Acidity to pH 8.3**			
Acidity	<1	mg CaCO3/l	1
②NW676 **Ammonia Nitrogen**			
Ammonia nitrogen	<0.01	mg/l	0.01
②NW009 **Bromide**			
Bromide	<0.02	mg/l	0.02
②NW007 **Chloride**			
Chloride (Cl)	3.25	mg/l	0.02
②NW023 **Conductivity**			
Conductivity	33.6	mS/m	0.1
②NW679 **Cyanide**			
Cyanide	<0.005	mg/l	0.005
③NW671 **Dissolved (NP) Organic Carbon**			
Carbon	3.0	mg/l	0.1
②NW098 **Dissolved Aluminium**			

		RESULTS		LOQ
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.038	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	43.5	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	12.0	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0038	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	3.87	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.14	mg/l	0.02
②NW119	**Dissolved Silver**			

		RESULTS		LOQ
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	8.17	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.724	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0018	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.14	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.31	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	0.04	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	16.9	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	17	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	149	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	39.4	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	165	mg/l	1
②NW030	**Total Hardness**			
	Hardness	138	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	9.7	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.940	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.4	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.018	mg/l	0.005
②NW212	**Turbidity**			

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	4.79	NTU	0.01

SAMPLE CODE	**817-2024-00015364**		
Client Reference:	RS02		
Sample described as:	Rise and shine stream 2 at Shreks		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.10	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.52	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	13.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.8	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.004	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.004	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.009	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	17.2	mg/l	0.1
②NW106	**Dissolved Chromium**			

		RESULTS		LOQ
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	3.23	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0006	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.50	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	10.3	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	4.65	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.238	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			

	RESULTS		LOQ
②NW006 **Fluoride**			
Fluoride	0.09	mg/l	0.02
②NW010 **Nitrate-N**			
Nitrate-N	<0.01	mg/l	0.01
②NW008 **Nitrite-N**			
Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195 **pH (Tested beyond 15 minute APHA holding time)**			
pH	7.6		0.1
②NW011 **Sulphate**			
Sulphate	1.49	mg/l	0.02
②NW206 **Suspended Solids**			
Suspended Solids	6	mg/l	3
②NW003 **Total Alkalinity**			
Alkalinity total	58	mg CaCO3/l	1
②NW156 **Total Calcium**			
Calcium (Ca)	15.0	mg/l	0.1
③NW339 **Total Dissolved Solids**			
Total dissolved Solids	64	mg/l	1
②NW030 **Total Hardness**			
Hardness	49	mg CaCO3/l	1
②NW163 **Total Magnesium**			
Magnesium (Mg)	2.8	mg/l	0.1
②NW189 **Total Nitrogen**			
Total Nitrogen (N)	0.180	mg/l	0.002
②NW210 **Total Non-Purgeable Organic Carbon**			
Total Organic Carbon	2.3	mg/l	0.1
②NW194 **Total Phosphorus**			
Total phosphorus	0.009	mg/l	0.005
②NW212 **Turbidity**			
Turbidity	3.56	NTU	0.01

SAMPLE CODE	**817-2024-00015365**		
Client Reference:	RSA1		
Sample described as:	Rise and shine Adit		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

	RESULTS		LOQ
②NW409 **Acidity to pH 3.7**			
Acidity	<1	mg CaCO3/l	1
③NW410 **Acidity to pH 7.0**			
Acidity	<1	mg CaCO3/l	1
②NW345 **Acidity to pH 8.3**			
Acidity	48	mg CaCO3/l	1
②NW676 **Ammonia Nitrogen**			
Ammonia nitrogen	0.13	mg/l	0.01
②NW009 **Bromide**			

		RESULTS		LOQ
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.44	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	27.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	4.0	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.038	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.030	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	39.9	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.07	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	7.64	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0115	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			

		RESULTS		LOQ
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.34	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	15.4	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	7.43	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.536	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.005	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.13	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.03	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.6		0.1
②NW011	**Sulphate**			
	Sulphate	1.15	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	69	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	134	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	33.7	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	133	mg/l	1
②NW030	**Total Hardness**			

		RESULTS		LOQ
②NW030	**Total Hardness**			
	Hardness	108	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.9	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	1.83	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	10.4	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.188	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	30.5	NTU	0.01

SAMPLE CODE	**817-2024-00015366**		
Client Reference:	RS03		
Sample described as:	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	07/02/2024 8:30	**Reception temperature:**	Ambient
Analysis Start Date & Time:	07/02/2024 10:33	**Analysis Ending Date:**	23/02/2024
Product Type	Water	**Sampler(s)**	Hamish
Sampled Date & Time	04/02/2024 00:00		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.08	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	12.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.6	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.008	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.007	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	13.3	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	0.09	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.43	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	8.79	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	233	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.136	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.011	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.06	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	9.3		0.1
②NW011	**Sulphate**			
	Sulphate	0.66	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<5	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	58	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	11.2	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	59	mg/l	1
②NW030	**Total Hardness**			
	Hardness	36	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.1	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.120	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.3	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.014	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.75	NTU	0.01

LIST OF METHODS

NW003 **Total Alkalinity:** APHA Online Edition 2320 B

NW006 **Fluoride:** APHA Online Edition 4110 B

NW007 **Chloride:** APHA Online Edition 4110 B

NW008 **Nitrite-N:** APHA Online Edition 4110 B

NW009 **Bromide:** APHA Online Edition 4110 B

NW010 **Nitrate-N:** APHA Online Edition 4110 B

NW011 **Sulphate:** APHA Online Edition 4110 B

NW023 **Conductivity:** APHA 24th Edition 2510 B

NW030 **Total Hardness:** APHA Online Edition 2340 B

NW098	**Dissolved Aluminium:** APHA Online Edition 3125 B mod.	NW099	**Dissolved Antimony:** APHA Online Edition 3125 B mod.
NW100	**Dissolved Barium:** APHA Online Edition 3125 B mod.	NW101	**Dissolved Beryllium:** APHA Online Edition 3125 B mod.
NW102	**Dissolved Bismuth:** APHA Online Edition 3125 B mod.	NW103	**Dissolved Boron:** APHA Online Edition 3125 B mod.
NW104	**Dissolved Cadmium:** APHA Online Edition 3125 B mod.	NW105	**Dissolved Calcium:** APHA Online Edition 3125 B mod.
NW106	**Dissolved Chromium:** APHA Online Edition 3125 B mod.	NW107	**Dissolved Cobalt:** APHA Online Edition 3125 B mod.
NW108	**Dissolved Copper:** APHA Online Edition 3125 B mod.	NW109	**Dissolved Iron:** APHA Online Edition 3125 B mod.
NW110	**Dissolved Lead:** APHA Online Edition 3125 B mod.	NW111	**Dissolved Lithium:** APHA Online Edition 3125 B mod.
NW112	**Dissolved Magnesium:** APHA Online Edition 3125 B mod.	NW113	**Dissolved Manganese:** APHA Online Edition 3125 B mod.
NW114	**Dissolved Mercury:** APHA Online Edition 3125 B mod.	NW115	**Dissolved Molybdenum:** APHA Online Edition 3125 B mod.
NW116	**Dissolved Nickel:** APHA Online Edition 3125 B mod.	NW117	**Dissolved Potassium:** APHA Online Edition 3125 B mod.
NW118	**Dissolved Selenium:** APHA Online Edition 3125 B mod.	NW119	**Dissolved Silver:** APHA Online Edition 3125 B mod.
NW120	**Dissolved Sodium:** APHA Online Edition 3125 B mod.	NW121	**Dissolved Strontium:** APHA Online Edition 3125 B mod.
NW122	**Dissolved Tin:** APHA Online Edition 3125 B mod.	NW123	**Dissolved Titanium:** APHA Online Edition 3125 B mod.
NW124	**Dissolved Vanadium:** APHA Online Edition 3125 B mod.	NW125	**Dissolved Zinc:** APHA Online Edition 3125 B mod.
NW156	**Total Calcium:** APHA Online Edition 3125 B mod.	NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I	NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B
NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B	NW206	**Suspended Solids:** APHA Online Edition 2540 D
NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B	NW212	**Turbidity:** APHA 24th Edition 2130 B
NW339	**Total Dissolved Solids:** Internal Method, Gravimetry	NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)
NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)	NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry
NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.	NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.
NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.	NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.
NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C	NW676	**Ammonia Nitrogen:** Internal Method, Electrometry
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E		

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-007599-01	REPORT DATE	12/03/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders: James Thornton
Contract: Matakanui Gold Water Monitoring
Order code: EUNZCH-00166903
Purchase Order Number: NA

SAMPLE CODE	817-2024-00018180		
Sample Reference	MG41400		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.33	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.33	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.090	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0040	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.55	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.31	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005

		RESULTS		LOQ
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	complete		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0060	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.4	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.012	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.0	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	7.8	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	13.6	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	2.5	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.154	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.080	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018181**		
Sample Reference	MG41400		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	<0.05	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.040	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.090	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001

		RESULTS		LOQ
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0020	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.49	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	<0.2	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	complete		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	<0.005	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.1	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.007	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	0.8	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.003	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	3.7	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	9.15	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1.8	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.122	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.058	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018182**		
Sample Reference	MG41400		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

	RESULTS	LOQ

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.24	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.10	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.11	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0080	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	1.1	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.36	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	complete		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0070	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.1	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.012	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.0	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.007	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	4.5	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	13.8	mg/l	0.03
②NW171	**Total Sodium**			

		RESULTS		LOQ
②NW171	**Total Sodium**			
	Sodium (Na)	1.5	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.225	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.080	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018183**		
Sample Reference	MG41400		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.59	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.10	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.090	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0030	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.60	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.22	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	completed		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0050	mg/l	0.001

		RESULTS		LOQ
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	0.9	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.005	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.3	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	5.3	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	16.7	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1.7	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.220	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.081	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018184**		
Sample Reference	MG41400		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	1.1	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.020	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.10	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0020	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.61	mg/l	0.001

		RESULTS		LOQ
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.30	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	completed		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	<0.005	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.0	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.004	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.4	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	8.2	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	23.4	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1.8	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.332	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.088	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

LIST OF METHODS

NU0K0	**Tin (Sn):** US EPA 6020	NU0LB	**Beryllium (Be):** US EPA 6020
NU0LE	**Silver (Ag):** US EPA 6020	NU0M0	**Vanadium (V):** US EPA 6020
NU0PF	**Barium (Ba):** US EPA 6020	NU0Q1	**Boron (B) - Low Level:** US EPA 6020
NU0SJ	**Molybdenum (Mo):** US EPA 6020	NU0YE	**Cobalt (Co):** US EPA 6020
NU0ZC	**Antimony (Sb):** US EPA 6020	NW143	**Total Silicon:** APHA Online Edition 3120 B mod.
NW154	**Total Cadmium:** APHA Online Edition 3125 B mod.	NW156	**Total Calcium:** APHA Online Edition 3125 B mod.
NW159	**Total Copper:** APHA Online Edition 3125 B mod.	NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW167	**Total Nickel:** APHA Online Edition 3125 B mod.	NW168	**Total Potassium:** APHA Online Edition 3125 B mod.

NW171	**Total Sodium:** APHA Online Edition 3125 B mod.	NW174	**Total Titanium:** APHA Online Edition 3125 B mod.
NW177	**Total Zinc:** APHA Online Edition 3125 B mod.	VQ050	**Aluminium (Al):** US EPA 6020
VQ058	**Chromium (Cr):** US EPA 6020	VQ068	**Selenium (Se):** US EPA 6020
VQ107	**Iron (Fe):** US EPA 6020	VQ364	**Arsenic (As):** US EPA 6020
VQ368	**Lead (Pb):** US EPA 6020	VQ395	**Manganese (Mn):** US EPA 6020
VQ763	**Soil Preparation - Metals Digestion:**		

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

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Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-24-NC-007599-02 #** REPORT DATE **13/03/2024**

This amended report supersedes Analytical Report number AR-24-NC-007599-01, dated 12/03/2024.

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
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9383 Cromwell
NEW ZEALAND
Phone 0064275886631
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Contact for your orders: James Thornton
Contract: Matakanui Gold Water Monitoring
Comments: sample refs amended
Order code: EUNZCH-00166903
Purchase Order Number: NA

SAMPLE CODE **817-2024-00018180**

Sample Reference MG41400
Reception Date & Time: 12/02/2024 10:55
Analysis Started on: 12/02/2024
Analysis Ending Date: 08/03/2024
Sampler(s) Hamish
Sampled Date & Time 20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)** Aluminium	0.33	mg/l	0.02
④NU0ZC	**Antimony (Sb)** Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)** Arsenic (As)	0.33	mg/l	0.0001
④NU0PF	**Barium (Ba)** Barium (Ba)	0.090	mg/l	0.001
④NU0LB	**Beryllium (Be)** Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level** Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)** Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)** Cobalt (Co)	0.0040	mg/l	0.001
④VQ107	**Iron (Fe)** Iron (Fe)	0.55	mg/l	0.001
④VQ368	**Lead (Pb)** Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)** Manganese (Mn)	0.31	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)** Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)** Selenium (Se)	<0.001	mg/l	0.001

		RESULTS		LOQ
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	complete		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0060	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.4	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.012	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.0	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	7.8	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	13.6	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	2.5	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.154	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.080	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018181**		
Sample Reference	MG41405		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	<0.05	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.040	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.090	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005

		RESULTS		LOQ
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0020	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.49	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	<0.2	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	complete		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	<0.005	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.1	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.007	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	0.8	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.003	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	3.7	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	9.15	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1.8	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.122	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.058	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018182**		
Sample Reference	MG41409		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

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		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.24	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.10	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.11	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0080	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	1.1	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.36	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	complete		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0070	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.1	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.012	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.0	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.007	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	4.5	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	13.8	mg/l	0.03
②NW171	**Total Sodium**			

		RESULTS		LOQ
②NW171	**Total Sodium**			
	Sodium (Na)	1.5	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.225	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.080	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018183**		
Sample Reference	MG41410		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.59	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.10	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.090	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0030	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.60	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.22	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	completed		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0050	mg/l	0.001

		RESULTS		LOQ
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	0.9	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.005	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.3	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	5.3	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	16.7	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1.7	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.220	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.081	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018184**		
Sample Reference	MG41414		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	1.1	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.020	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.10	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0020	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.61	mg/l	0.001

		RESULTS		LOQ
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.30	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	completed		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	<0.005	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.0	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.004	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.4	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	8.2	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	23.4	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1.8	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.332	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.088	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

LIST OF METHODS

NU0K0	**Tin (Sn):** US EPA 6020	NU0LB	**Beryllium (Be):** US EPA 6020
NU0LE	**Silver (Ag):** US EPA 6020	NU0M0	**Vanadium (V):** US EPA 6020
NU0PF	**Barium (Ba):** US EPA 6020	NU0Q1	**Boron (B) - Low Level:** US EPA 6020
NU0SJ	**Molybdenum (Mo):** US EPA 6020	NU0YE	**Cobalt (Co):** US EPA 6020
NU0ZC	**Antimony (Sb):** US EPA 6020	NW143	**Total Silicon:** APHA Online Edition 3120 B mod.
NW154	**Total Cadmium:** APHA Online Edition 3125 B mod.	NW156	**Total Calcium:** APHA Online Edition 3125 B mod.
NW159	**Total Copper:** APHA Online Edition 3125 B mod.	NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW167	**Total Nickel:** APHA Online Edition 3125 B mod.	NW168	**Total Potassium:** APHA Online Edition 3125 B mod.

NW171	**Total Sodium:** APHA Online Edition 3125 B mod.	NW174	**Total Titanium:** APHA Online Edition 3125 B mod.
NW177	**Total Zinc:** APHA Online Edition 3125 B mod.	VQ050	**Aluminium (Al):** US EPA 6020
VQ058	**Chromium (Cr):** US EPA 6020	VQ068	**Selenium (Se):** US EPA 6020
VQ107	**Iron (Fe):** US EPA 6020	VQ364	**Arsenic (As):** US EPA 6020
VQ368	**Lead (Pb):** US EPA 6020	VQ395	**Manganese (Mn):** US EPA 6020
VQ763	**Soil Preparation - Metals Digestion:**		

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-008972-01	REPORT DATE	22/03/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders:	James Thornton	**Order code:**	EUNZCH-00169980
Contract:	Matakanui Gold Water Monitoring		
Submission Reference:	5/3/2024	**Purchase Order Number:**	NA

SAMPLE CODE	817-2024-00029411		
Sample Name	RS01		
Sample Reference	Rise and shine stream 1		
Reception Date & Time:	07/03/2024 8:30	**Reception temperature:**	12.6 °C
Analysis Started on:	07/03/2024	**Analysis Ending Date:**	22/03/2024
Product Type	Water	**Sampled Date & Time**	06/03/2024 00:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.02	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	3.32	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	26.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.3	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.024	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.013	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	35.8	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.11	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	6.53	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0470	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	0.0008	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.25	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	9.91	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	7.27	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.458	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.004	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.14	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	10.8	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<3	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	117	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.017	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.031	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.012	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	29.2	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			

		RESULTS		LOQ
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	128	mg/l	1
②NW030	**Total Hardness**			
	Hardness	94	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.4	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.1	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.068	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.220	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.3	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.0	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.60	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	5.7	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.369	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			

		RESULTS		LOQ
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.21	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00029412**		
Sample Name	SC01		
Sample Reference	Shepherds Creek by irrigation take		
Reception Date & Time:	07/03/2024 8:30	**Reception temperature:**	12.6 °C
Analysis Started on:	07/03/2024	**Analysis Ending Date:**	22/03/2024
Product Type	Water	**Sampled Date & Time**	06/03/2024 00:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	11	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.04	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.08	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	8.65	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	57.8	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.6	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.003	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.046	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			

		RESULTS		LOQ
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	55.4	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.007	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	24.6	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0011	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	2.89	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	10.0	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	13.4	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	1.03	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			

		RESULTS		LOQ
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0052	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.003	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.13	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	56.4	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<5	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	244	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.035	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.003	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.045	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	59.8	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			

		RESULTS		LOQ
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	283	mg/l	1
②NW030	**Total Hardness**			
	Hardness	240	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.011	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	23.8	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.002	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.250	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.6	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.014	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	2.6	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.89	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	13.9	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.919	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	0.49	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.005	mg/l	0.001

SAMPLE CODE	**817-2024-00029413**		
Sample Name	SC03		
Sample Reference	Shepherds Creek 3		
Reception Date & Time:	07/03/2024 8:30	**Reception temperature:**	12.6 °C
Analysis Started on:	07/03/2024	**Analysis Ending Date:**	22/03/2024
Product Type	Water	**Sampled Date & Time**	06/03/2024 00:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.04	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	3.55	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	32.7	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.3	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.029	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			

		RESULTS		LOQ
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	40.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0011	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.004	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	9.71	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0026	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0008	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.98	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	6.79	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	134	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.619	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0020	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			

		RESULTS		LOQ
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.16	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.05	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	16.8	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	149	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.238	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.045	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	54.4	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	160	mg/l	1
②NW030	**Total Hardness**			
	Hardness	195	mg CaCO3/l	1
②NW160	**Total Iron**			

		RESULTS		LOQ
②NW160	**Total Iron**			
	Iron (Fe)	0.3	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	14.2	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.018	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.280	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.8	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.008	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	2.2	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.59	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	165	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.919	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.004	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.96	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.003	mg/l	0.001

SAMPLE CODE	817-2024-00029414		
Sample Name	RS02		
Sample Reference	Rise and shine stream 2 at Shreks		
Reception Date & Time:	07/03/2024 8:30	**Reception temperature:**	12.6 °C
Analysis Started on:	07/03/2024	**Analysis Ending Date:**	20/03/2024
Product Type	Water	**Sampled Date & Time**	06/03/2024 00:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.98	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	13.7	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.006	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.004	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.010	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	14.9	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			

		RESULTS		LOQ
②NW108	**Dissolved Copper** Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	3.30	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0013	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.06	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	10.2	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	3.94	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.229	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	0.006	mg/l	0.002
②NW006	**Fluoride** Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N** Nitrate-N	0.23	mg/l	0.01
②NW008	**Nitrite-N**			

		RESULTS		LOQ
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	7.31	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	7	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	60	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.144	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.005	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.012	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	16.1	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	67	mg/l	1
②NW030	**Total Hardness**			
	Hardness	51	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.3	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			

		RESULTS		LOQ
②NW163	**Total Magnesium**			
	Magnesium (Mg)	3.3	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.008	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.150	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.008	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.0	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.37	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	4.3	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.239	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.005	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	2.33	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00029415**		
Sample Name	RSA1		
Sample Reference	Rise and shine Adit		
Reception Date & Time:	07/03/2024 8:30	**Reception temperature:**	12.6 °C
Analysis Started on:	07/03/2024	**Analysis Ending Date:**	22/03/2024
Product Type	Water	**Sampled Date & Time**	06/03/2024 00:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	37	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.05	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.03	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.54	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	24.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	3.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.043	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.033	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	34.4	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.37	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	6.04	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.169	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.55	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	12.3	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	7.48	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.398	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.15	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.04	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	6.9		0.1
②NW011	**Sulphate**			
	Sulphate	0.85	mg/l	0.02
②NW206	**Suspended Solids**			

		RESULTS		LOQ
②NW206	**Suspended Solids**			
	Suspended Solids	37	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	119	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.453	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.812	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.056	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	33.9	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	118	mg/l	1
②NW030	**Total Hardness**			
	Hardness	110	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	11.3	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	6.2	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.593	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			

		RESULTS		LOQ
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.280	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	5.0	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.6	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	6.01	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.9	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.495	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.010	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	26.4	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00029416**		
Sample Name	RS03		
Sample Reference	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	07/03/2024 8:30	**Reception temperature:**	12.6 °C
Analysis Started on:	07/03/2024	**Analysis Ending Date:**	20/03/2024
Product Type	Water	**Sampled Date & Time**	06/03/2024 00:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			

		RESULTS		LOQ
②NW345	**Acidity to pH 8.3**			
	Acidity	3	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.03	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.28	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	10.8	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.1	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.014	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.006	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	10.2	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.08	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	2.45	mg/l	0.01
②NW113	**Dissolved Manganese**			

		RESULTS		LOQ
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0230	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.48	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.91	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	3.28	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.157	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.09	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.02	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.5		0.1
②NW011	**Sulphate**			
	Sulphate	4.05	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<4	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			

		RESULTS		LOQ
②NW003	**Total Alkalinity**			
	Alkalinity total	44	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.043	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.019	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.007	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	10.8	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	53	mg/l	1
②NW030	**Total Hardness**			
	Hardness	36	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.4	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.2	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.057	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			

		RESULTS		LOQ
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.100	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.010	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.63	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	3.4	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.149	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.57	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00029417**		
Sample Name	CC01		
Sample Reference	Clearwater creek above DOC		
Reception Date & Time:	07/03/2024 8:30	**Reception temperature:**	12.6 °C
Analysis Started on:	07/03/2024	**Analysis Ending Date:**	22/03/2024
Product Type	Water	**Sampled Date & Time**	06/03/2024 00:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.03	mg/l	0.01
②NW009	**Bromide**			

		RESULTS		LOQ
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.61	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	4.3	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.0	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.006	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.005	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	3.6	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	0.93	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0009	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			

		RESULTS		LOQ
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.40	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.19	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	2.75	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.0435	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.08	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.3		0.1
②NW011	**Sulphate**			
	Sulphate	4.00	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<3	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	17	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.018	mg/l	0.005
②NW148	**Total Antimony**			

		RESULTS		LOQ
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	4.1	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	21	mg/l	1
②NW030	**Total Hardness**			
	Hardness	13	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	0.9	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.002	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.140	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.1	mg/l	0.1
②NW194	**Total Phosphorus**			

		RESULTS		LOQ
②NW194	**Total Phosphorus**			
	Total phosphorus	0.014	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.3	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.33	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	2.2	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.049	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.23	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

LIST OF METHODS

NW003	**Total Alkalinity:** APHA Online Edition 2320 B	NW006	**Fluoride:** APHA Online Edition 4110 B
NW007	**Chloride:** APHA Online Edition 4110 B	NW008	**Nitrite-N:** APHA Online Edition 4110 B
NW009	**Bromide:** APHA Online Edition 4110 B	NW010	**Nitrate-N:** APHA Online Edition 4110 B
NW011	**Sulphate:** APHA Online Edition 4110 B	NW023	**Conductivity:** APHA 24th Edition 2510 B
NW030	**Total Hardness:** APHA Online Edition 2340 B	NW098	**Dissolved Aluminium:** APHA Online Edition 3125 B mod.
NW099	**Dissolved Antimony:** APHA Online Edition 3125 B mod.	NW100	**Dissolved Barium:** APHA Online Edition 3125 B mod.
NW101	**Dissolved Beryllium:** APHA Online Edition 3125 B mod.	NW102	**Dissolved Bismuth:** APHA Online Edition 3125 B mod.
NW103	**Dissolved Boron:** APHA Online Edition 3125 B mod.	NW104	**Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105	**Dissolved Calcium:** APHA Online Edition 3125 B mod.	NW106	**Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW107	**Dissolved Cobalt:** APHA Online Edition 3125 B mod.	NW108	**Dissolved Copper:** APHA Online Edition 3125 B mod.
NW109	**Dissolved Iron:** APHA Online Edition 3125 B mod.	NW110	**Dissolved Lead:** APHA Online Edition 3125 B mod.
NW111	**Dissolved Lithium:** APHA Online Edition 3125 B mod.	NW112	**Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113	**Dissolved Manganese:** APHA Online Edition 3125 B mod.	NW114	**Dissolved Mercury:** APHA Online Edition 3125 B mod.
NW115	**Dissolved Molybdenum:** APHA Online Edition 3125 B mod.	NW116	**Dissolved Nickel:** APHA Online Edition 3125 B mod.
NW117	**Dissolved Potassium:** APHA Online Edition 3125 B mod.	NW118	**Dissolved Selenium:** APHA Online Edition 3125 B mod.
NW119	**Dissolved Silver:** APHA Online Edition 3125 B mod.	NW120	**Dissolved Sodium:** APHA Online Edition 3125 B mod.
NW121	**Dissolved Strontium:** APHA Online Edition 3125 B mod.	NW122	**Dissolved Tin:** APHA Online Edition 3125 B mod.

NW123	**Dissolved Titanium:** APHA Online Edition 3125 B mod.	NW124	**Dissolved Vanadium:** APHA Online Edition 3125 B mod.
NW125	**Dissolved Zinc:** APHA Online Edition 3125 B mod.	NW143	**Total Silicon:** APHA Online Edition 3120 B mod.
NW147	**Total Aluminium:** APHA Online Edition 3125 B mod.	NW148	**Total Antimony:** APHA Online Edition 3125 B mod.
NW149	**Total Arsenic:** APHA Online Edition 3125 B mod.	NW150	**Total Barium:** APHA Online Edition 3125 B mod.
NW151	**Total Beryllium:** APHA Online Edition 3125 B mod.	NW152	**Total Bismuth:** APHA Online Edition 3125 B mod.
NW153	**Total Boron:** APHA Online Edition 3125 B mod.	NW154	**Total Cadmium:** APHA Online Edition 3125 B mod.
NW156	**Total Calcium:** APHA Online Edition 3125 B mod.	NW157	**Total Chromium:** APHA Online Edition 3125 B mod.
NW158	**Total Cobalt:** APHA Online Edition 3125 B mod.	NW159	**Total Copper:** APHA Online Edition 3125 B mod.
NW160	**Total Iron:** APHA Online Edition 3125 B mod.	NW161	**Total Lead:** APHA Online Edition 3125 B mod.
NW162	**Total Lithium:** APHA Online Edition 3125 B mod.	NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW164	**Total Manganese:** APHA Online Edition 3125 B mod.	NW165	**Total Mercury:** APHA Online Edition 3125 B mod.
NW166	**Total Molybdenum:** APHA Online Edition 3125 B mod.	NW167	**Total Nickel:** APHA Online Edition 3125 B mod.
NW168	**Total Potassium:** APHA Online Edition 3125 B mod.	NW169	**Total Selenium:** APHA Online Edition 3125 B mod.
NW170	**Total Silver:** APHA Online Edition 3125 B mod.	NW171	**Total Sodium:** APHA Online Edition 3125 B mod.
NW172	**Total Strontium:** APHA Online Edition 3125 B mod.	NW173	**Total Tin:** APHA Online Edition 3125 B mod.
NW174	**Total Titanium:** APHA Online Edition 3125 B mod.	NW176	**Total Vanadium:** APHA Online Edition 3125 B mod.
NW177	**Total Zinc:** APHA Online Edition 3125 B mod.	NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I
NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B	NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B
NW206	**Suspended Solids:** APHA Online Edition 2540 D	NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B
NW212	**Turbidity:** APHA 24th Edition 2130 B	NW339	**Total Dissolved Solids:** Internal Method, Gravimetry
NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)	NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)
NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry	NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.
NW580	**Thallium - Total:** APHA Online Edition 3125 B mod.	NW581	**Uranium - Total:** APHA Online Edition 3125 B mod.
NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.	NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.
NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.	NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C
NW676	**Ammonia Nitrogen:** Internal Method, Spectrophotometry (DA)	NW679	**Cyanide:** APHA Online Edition 4500-CN C & E

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

① Test is not accredited
② Test is subcontracted within Eurofins group and is accredited
③ Test is subcontracted within Eurofins group and is not accredited
④ Test is subcontracted outside Eurofins group and is accredited
⑤ Test is subcontracted outside Eurofins group and is not accredited
⑥ Test result is provided by the customer and is not accredited
⑦ Tested at the sampling point by Eurofins and is not accredited
⑧ Tested at the sampling point by Eurofins and is accredited
⑨ Test is RLP accredited
⑩ Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-010966-01	REPORT DATE	09/04/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders:	James Thornton	**Order code:**	EUNZCH-00171594
Contract:	Matakanui Gold Water Monitoring		
Submission Reference:	20/03/24	**Purchase Order Number:**	NA

SAMPLE CODE	817-2024-00035194		
Sample Name	RS01		
Sample Reference	Rise and shine stream 1		
Reception Date & Time:	21/03/2024 9:00	**Reception temperature:**	15.3 °C
Analysis Started on:	21/03/2024	**Analysis Ending Date:**	05/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	8	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.03	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.15	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	21.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.3	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.018	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.010	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	29.1	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.11	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.001	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	5.73	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0451	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	0.0011	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.27	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	9.44	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	6.70	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.444	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.09	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	1.14	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<4	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	104	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.010	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.031	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.011	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	22.5	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			

		RESULTS		LOQ
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	105	mg/l	1
②NW030	**Total Hardness**			
	Hardness	74	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.4	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	4.4	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.077	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.140	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.3	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	<0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.57	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	5.1	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.345	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			

		RESULTS		LOQ
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.23	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00035195**		
Sample Name	SC01		
Sample Reference	Shepherds Creek by irrigation take		
Reception Date & Time:	21/03/2024 9:00	**Reception temperature:**	15.3 °C
Analysis Started on:	21/03/2024	**Analysis Ending Date:**	09/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	11	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.08	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	8.73	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	62.9	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.8	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.002	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.047	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			

		RESULTS		LOQ
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	70.8	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.008	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	30.0	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0007	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.77	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	10.4	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	16.4	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	1.25	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			

		RESULTS		LOQ
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0060	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	63.5	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<4	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	264	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.015	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.050	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	64.1	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			

		RESULTS		LOQ
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	308	mg/l	1
②NW030	**Total Hardness**			
	Hardness	264	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.009	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	25.1	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.001	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.037	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.134	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.9	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.1	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.96	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	12.7	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	1.19	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	0.39	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.006	mg/l	0.001

SAMPLE CODE	**817-2024-00035196**		
Sample Name	SC03		
Sample Reference	Shepherds Creek 3		
Reception Date & Time:	21/03/2024 9:00	**Reception temperature:**	15.3 °C
Analysis Started on:	21/03/2024	**Analysis Ending Date:**	05/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	7	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.03	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.95	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	33.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.8	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.031	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			

		RESULTS		LOQ
②NW105	**Dissolved Calcium** Calcium (Ca)	44.1	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	0.0007	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.004	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	12.1	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0026	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.45	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	7.98	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	8.36	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.782	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	0.0021	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			

		RESULTS		LOQ
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.13	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.14	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	16.6	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	4	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	151	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.135	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.036	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	37.8	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	163	mg/l	1
②NW030	**Total Hardness**			
	Hardness	135	mg CaCO3/l	1
②NW160	**Total Iron**			

		RESULTS		LOQ
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.004	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	9.8	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.010	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.038	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.215	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.8	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.007	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.9	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.27	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.2	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.760	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.005	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.33	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE	817-2024-00035197		
Sample Name	RS02		
Sample Reference	Rise and shine stream 2 at Shreks		
Reception Date & Time:	21/03/2024 9:00	**Reception temperature:**	15.3 °C
Analysis Started on:	21/03/2024	**Analysis Ending Date:**	05/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.02	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.65	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	12.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.006	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.003	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.009	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	15.6	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			

		RESULTS		LOQ
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	3.35	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0007	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.62	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	10.7	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	4.58	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.234	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride** Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N** Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			

		RESULTS		LOQ
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.6		0.1
②NW011	**Sulphate**			
	Sulphate	2.32	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	7	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	56	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.219	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.004	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.012	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	13.5	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	61	mg/l	1
②NW030	**Total Hardness**			
	Hardness	46	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.3	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			

		RESULTS		LOQ
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.9	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.008	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.040	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.095	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.3	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.007	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.61	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	3.5	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.196	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.008	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	2.00	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00035198**		
Sample Name	RSA1		
Sample Reference	Rise and shine Adit		
Reception Date & Time:	21/03/2024 9:00	**Reception temperature:**	15.3 °C
Analysis Started on:	21/03/2024	**Analysis Ending Date:**	04/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	49	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.02	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.85	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	21.9	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.0	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.055	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.028	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	35.9	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	0.0007	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.86	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	6.31	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.426	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.18	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	12.2	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	7.56	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.371	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.12	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	6.8		0.1
②NW011	**Sulphate**			
	Sulphate	0.72	mg/l	0.02
②NW206	**Suspended Solids**			

		RESULTS		LOQ
②NW206	**Suspended Solids**			
	Suspended Solids	22	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	106	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.022	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.476	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.035	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	26.6	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	107	mg/l	1
②NW030	**Total Hardness**			
	Hardness	88	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	9.4	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.1	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.457	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			

		RESULTS		LOQ
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.161	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.1	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.1	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	5.29	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.3	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.401	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	29.9	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00035199**		
Sample Name	RS03		
Sample Reference	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	21/03/2024 9:00	**Reception temperature:**	15.3 °C
Analysis Started on:	21/03/2024	**Analysis Ending Date:**	05/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			

		RESULTS		LOQ
②NW345	**Acidity to pH 8.3**			
	Acidity	5	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.02	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.29	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	9.3	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.011	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.005	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	10.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.06	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	2.26	mg/l	0.01
②NW113	**Dissolved Manganese**			

		RESULTS		LOQ
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0246	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.22	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	9.43	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	3.84	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.143	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.07	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.05	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.4		0.1
②NW011	**Sulphate**			
	Sulphate	1.13	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<4	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			

		RESULTS		LOQ
②NW003	**Total Alkalinity**			
	Alkalinity total	42	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.005	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.012	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.006	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	9.4	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	45	mg/l	1
②NW030	**Total Hardness**			
	Hardness	31	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.9	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.035	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.033	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			

		RESULTS		LOQ
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.078	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.3	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.1	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.60	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	2.9	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.130	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.43	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00035200**		
Sample Name	CC01		
Sample Reference	Clearwater creek above DOC		
Reception Date & Time:	21/03/2024 9:00	**Reception temperature:**	15.3 °C
Analysis Started on:	21/03/2024	**Analysis Ending Date:**	05/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	3	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			

		RESULTS		LOQ
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.90	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	4.3	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.9	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.004	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.004	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	5.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.001	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	1.12	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0006	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			

		RESULTS		LOQ
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.31	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.65	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	2.92	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.0433	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.08	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.3		0.1
②NW011	**Sulphate**			
	Sulphate	0.67	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<4	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	18	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.012	mg/l	0.005
②NW148	**Total Antimony**			

		RESULTS		LOQ
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	<0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	4.0	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	21	mg/l	1
②NW030	**Total Hardness**			
	Hardness	14	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	0.9	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	<0.001	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.064	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.0	mg/l	0.1
②NW194	**Total Phosphorus**			

		RESULTS		LOQ
②NW194	**Total Phosphorus**			
	Total phosphorus	0.012	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.2	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.42	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	2.3	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.052	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.20	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

LIST OF METHODS

NW003	**Total Alkalinity:** APHA Online Edition 2320 B
NW006	**Fluoride:** APHA Online Edition 4110 B
NW007	**Chloride:** APHA Online Edition 4110 B
NW008	**Nitrite-N:** APHA Online Edition 4110 B
NW009	**Bromide:** APHA Online Edition 4110 B
NW010	**Nitrate-N:** APHA Online Edition 4110 B
NW011	**Sulphate:** APHA Online Edition 4110 B
NW023	**Conductivity:** APHA 24th Edition 2510 B
NW030	**Total Hardness:** APHA Online Edition 2340 B
NW098	**Dissolved Aluminium:** APHA Online Edition 3125 B mod.
NW099	**Dissolved Antimony:** APHA Online Edition 3125 B mod.
NW100	**Dissolved Barium:** APHA Online Edition 3125 B mod.
NW101	**Dissolved Beryllium:** APHA Online Edition 3125 B mod.
NW102	**Dissolved Bismuth:** APHA Online Edition 3125 B mod.
NW103	**Dissolved Boron:** APHA Online Edition 3125 B mod.
NW104	**Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105	**Dissolved Calcium:** APHA Online Edition 3125 B mod.
NW106	**Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW107	**Dissolved Cobalt:** APHA Online Edition 3125 B mod.
NW108	**Dissolved Copper:** APHA Online Edition 3125 B mod.
NW109	**Dissolved Iron:** APHA Online Edition 3125 B mod.
NW110	**Dissolved Lead:** APHA Online Edition 3125 B mod.
NW111	**Dissolved Lithium:** APHA Online Edition 3125 B mod.
NW112	**Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113	**Dissolved Manganese:** APHA Online Edition 3125 B mod.
NW114	**Dissolved Mercury:** APHA Online Edition 3125 B mod.
NW115	**Dissolved Molybdenum:** APHA Online Edition 3125 B mod.
NW116	**Dissolved Nickel:** APHA Online Edition 3125 B mod.
NW117	**Dissolved Potassium:** APHA Online Edition 3125 B mod.
NW118	**Dissolved Selenium:** APHA Online Edition 3125 B mod.
NW119	**Dissolved Silver:** APHA Online Edition 3125 B mod.
NW120	**Dissolved Sodium:** APHA Online Edition 3125 B mod.
NW121	**Dissolved Strontium:** APHA Online Edition 3125 B mod.
NW122	**Dissolved Tin:** APHA Online Edition 3125 B mod.

NW123	**Dissolved Titanium:** APHA Online Edition 3125 B mod.	NW124	**Dissolved Vanadium:** APHA Online Edition 3125 B mod.
NW125	**Dissolved Zinc:** APHA Online Edition 3125 B mod.	NW143	**Total Silicon:** APHA Online Edition 3120 B mod.
NW147	**Total Aluminium:** APHA Online Edition 3125 B mod.	NW148	**Total Antimony:** APHA Online Edition 3125 B mod.
NW149	**Total Arsenic:** APHA Online Edition 3125 B mod.	NW150	**Total Barium:** APHA Online Edition 3125 B mod.
NW151	**Total Beryllium:** APHA Online Edition 3125 B mod.	NW152	**Total Bismuth:** APHA Online Edition 3125 B mod.
NW153	**Total Boron:** APHA Online Edition 3125 B mod.	NW154	**Total Cadmium:** APHA Online Edition 3125 B mod.
NW156	**Total Calcium:** APHA Online Edition 3125 B mod.	NW157	**Total Chromium:** APHA Online Edition 3125 B mod.
NW158	**Total Cobalt:** APHA Online Edition 3125 B mod.	NW159	**Total Copper:** APHA Online Edition 3125 B mod.
NW160	**Total Iron:** APHA Online Edition 3125 B mod.	NW161	**Total Lead:** APHA Online Edition 3125 B mod.
NW162	**Total Lithium:** APHA Online Edition 3125 B mod.	NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW164	**Total Manganese:** APHA Online Edition 3125 B mod.	NW165	**Total Mercury:** APHA Online Edition 3125 B mod.
NW166	**Total Molybdenum:** APHA Online Edition 3125 B mod.	NW167	**Total Nickel:** APHA Online Edition 3125 B mod.
NW168	**Total Potassium:** APHA Online Edition 3125 B mod.	NW169	**Total Selenium:** APHA Online Edition 3125 B mod.
NW170	**Total Silver:** APHA Online Edition 3125 B mod.	NW171	**Total Sodium:** APHA Online Edition 3125 B mod.
NW172	**Total Strontium:** APHA Online Edition 3125 B mod.	NW173	**Total Tin:** APHA Online Edition 3125 B mod.
NW174	**Total Titanium:** APHA Online Edition 3125 B mod.	NW176	**Total Vanadium:** APHA Online Edition 3125 B mod.
NW177	**Total Zinc:** APHA Online Edition 3125 B mod.	NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I
NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B	NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B
NW206	**Suspended Solids:** APHA Online Edition 2540 D	NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B
NW212	**Turbidity:** APHA 24th Edition 2130 B	NW339	**Total Dissolved Solids:** Internal Method, Gravimetry
NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)	NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)
NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry	NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.
NW580	**Thallium - Total:** APHA Online Edition 3125 B mod.	NW581	**Uranium - Total:** APHA Online Edition 3125 B mod.
NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.	NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.
NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.	NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C
NW676	**Ammonia Nitrogen:** Internal Method, Spectrophotometry (DA)	NW679	**Cyanide:** APHA Online Edition 4500-CN C & E

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

① Test is not accredited
② Test is subcontracted within Eurofins group and is accredited
③ Test is subcontracted within Eurofins group and is not accredited
④ Test is subcontracted outside Eurofins group and is accredited
⑤ Test is subcontracted outside Eurofins group and is not accredited
⑥ Test result is provided by the customer and is not accredited
⑦ Tested at the sampling point by Eurofins and is not accredited
⑧ Tested at the sampling point by Eurofins and is accredited
⑨ Test is RLP accredited
⑩ Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-011976-01	REPORT DATE	18/04/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders:	James Thornton	**Order code:**	EUNZCH-00173192
Contract:	Matakanui Gold Water Monitoring		
Submission Reference:	2024-March 04	**Purchase Order Number:**	NA

SAMPLE CODE	817-2024-00041158		
Sample Name	RS01		
Sample Reference	Rise and shine stream downstream RAS		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	15/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	13	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.42	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	23.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.0	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.018	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.013	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	28.5	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	0.002	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.09	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	6.61	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0517	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.34	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	7.38	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	7.72	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.408	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.08	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	14.9	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	101	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.018	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.034	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.014	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	31.3	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			

		RESULTS		LOQ
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	115	mg/l	1
②NW030	**Total Hardness**			
	Hardness	103	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.5	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	6.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.087	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.143	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.13	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.8	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.514	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			

		RESULTS		LOQ
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.20	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00041159**		
Sample Name	SC01		
Sample Reference	Shepherds Creek by irrigation take		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	18/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	12	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.10	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	9.30	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	63.9	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.1	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.004	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.049	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			

		RESULTS		LOQ
②NW103	**Dissolved Boron**			
	Boron (B)	0.05	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	72.6	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.016	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	25.9	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0041	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0008	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	3.40	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	10.2	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	12.7	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	1.11	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			

		RESULTS		LOQ
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0069	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.09	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	59.3	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	273	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.182	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.004	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.055	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	82.3	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			

		RESULTS		LOQ
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	313	mg/l	1
②NW030	**Total Hardness**			
	Hardness	332	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.012	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	30.6	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.012	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.170	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.1	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.013	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	3.9	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.66	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	16.8	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	1.30	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.005	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	2.72	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.007	mg/l	0.001

SAMPLE CODE	**817-2024-00041160**		
Sample Name	SC03		
Sample Reference	Shepherds Creek 3		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	15/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	10	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.84	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	33.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.6	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.009	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.030	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			

		RESULTS		LOQ
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	39.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	0.002	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0007	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.007	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	11.9	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0014	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0006	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.21	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	10.4	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	8.53	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.592	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0020	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			

		RESULTS		LOQ
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.04	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	15.1	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	152	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.163	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.034	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	43.0	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	162	mg/l	1
②NW030	**Total Hardness**			
	Hardness	156	mg CaCO3/l	1
②NW160	**Total Iron**			

		RESULTS		LOQ
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	11.7	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.011	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.182	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.8	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.48	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	8.0	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.741	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.005	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	2.39	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE	817-2024-00041161		
Sample Name	RS02		
Sample Reference	Rise and shine stream 2 at Shreks		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	13/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.04	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.91	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	14.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.004	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.011	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	19.9	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			

		RESULTS		LOQ
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	4.09	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.11	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.18	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	4.93	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.249	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.05	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			

		RESULTS		LOQ
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	4.46	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	65	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.103	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.004	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.013	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	17.9	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	70	mg/l	1
②NW030	**Total Hardness**			
	Hardness	60	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			

		RESULTS		LOQ
②NW163	**Total Magnesium**			
	Magnesium (Mg)	3.8	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.004	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.134	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.5	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.1	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.65	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	4.5	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.259	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.95	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00041162**		
Sample Name	RSA1		
Sample Reference	Rise and shine Adit		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	13/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	44	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.96	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	21.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.8	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.061	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.026	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	29.6	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	0.002	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	0.0006	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.73	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.004	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	5.76	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.205	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	0.0006	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.23	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	9.08	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	7.51	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.365	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.0		0.1
②NW011	**Sulphate**			
	Sulphate	1.00	mg/l	0.02
②NW206	**Suspended Solids**			

		RESULTS		LOQ
②NW206	**Suspended Solids**			
	Suspended Solids	17	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	103	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.049	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.337	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.029	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	27.3	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	103	mg/l	1
②NW030	**Total Hardness**			
	Hardness	89	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	5.7	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.2	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.243	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			

		RESULTS		LOQ
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.065	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.9	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.012	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.3	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.98	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.4	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.361	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	21.2	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00041163**		
Sample Name	RS03		
Sample Reference	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	13/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			

		RESULTS		LOQ
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.37	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	9.6	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.3	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.013	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.007	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	12.4	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	0.002	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.10	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	2.53	mg/l	0.01
②NW113	**Dissolved Manganese**			

		RESULTS		LOQ
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0143	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.42	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	14.8	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	4.29	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.137	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.07	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.5		0.1
②NW011	**Sulphate**			
	Sulphate	0.79	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			

		RESULTS		LOQ
②NW003	**Total Alkalinity**			
	Alkalinity total	43	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.055	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.026	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.009	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	11.6	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	47	mg/l	1
②NW030	**Total Hardness**			
	Hardness	39	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.8	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.4	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.081	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			

	RESULTS		LOQ
②NW189 **Total Nitrogen**			
Total Nitrogen (N)	0.152	mg/l	0.002
②NW210 **Total Non-Purgeable Organic Carbon**			
Total Organic Carbon	1.3	mg/l	0.1
②NW194 **Total Phosphorus**			
Total phosphorus	0.006	mg/l	0.005
②NW168 **Total Potassium**			
Potassium (K)	0.5	mg/l	0.1
②NW169 **Total Selenium**			
Selenium (Se)	<0.005	mg/l	0.005
②NW143 **Total Silicon**			
Silicon (Si)	3.98	mg/l	0.03
②NW170 **Total Silver**			
Silver (Ag)	<0.001	mg/l	0.001
②NW171 **Total Sodium**			
Sodium (Na)	4.0	mg/l	0.1
②NW172 **Total Strontium**			
Strontium (Sr)	0.155	mg/l	0.002
②NW173 **Total Tin**			
Tin (Sn)	<0.001	mg/l	0.001
②NW174 **Total Titanium**			
Titanium (Ti)	<0.001	mg/l	0.001
②NW176 **Total Vanadium**			
Vanadium (V)	<0.001	mg/l	0.001
②NW177 **Total Zinc**			
Zinc (Zn)	<0.005	mg/l	0.005
②NW212 **Turbidity**			
Turbidity	0.82	NTU	0.01
②NW581 **Uranium - Total**			
Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00041164**		
Sample Name	CC01		
Sample Reference	Clearwater creek above DOC		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	13/04/2024
Product Type	Water		

	RESULTS		LOQ
②NW409 **Acidity to pH 3.7**			
Acidity	<1	mg CaCO3/l	1
③NW410 **Acidity to pH 7.0**			
Acidity	<1	mg CaCO3/l	1
②NW345 **Acidity to pH 8.3**			
Acidity	4	mg CaCO3/l	1
②NW676 **Ammonia Nitrogen**			
Ammonia nitrogen	<0.01	mg/l	0.01
②NW009 **Bromide**			

		RESULTS		LOQ
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.91	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	4.3	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.9	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.005	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	4.7	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	0.002	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	1.05	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			

		RESULTS		LOQ
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.30	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	11.2	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	2.64	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.0502	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.06	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.4		0.1
②NW011	**Sulphate**			
	Sulphate	0.68	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	18	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.019	mg/l	0.005
②NW148	**Total Antimony**			

		RESULTS		LOQ
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	4.3	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	21	mg/l	1
②NW030	**Total Hardness**			
	Hardness	15	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.002	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.047	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.0	mg/l	0.1
②NW194	**Total Phosphorus**			

	RESULTS		LOQ
②NW194 **Total Phosphorus**			
Total phosphorus	0.010	mg/l	0.005
②NW168 **Total Potassium**			
Potassium (K)	0.3	mg/l	0.1
②NW169 **Total Selenium**			
Selenium (Se)	<0.005	mg/l	0.005
②NW143 **Total Silicon**			
Silicon (Si)	3.42	mg/l	0.03
②NW170 **Total Silver**			
Silver (Ag)	<0.001	mg/l	0.001
②NW171 **Total Sodium**			
Sodium (Na)	2.5	mg/l	0.1
②NW172 **Total Strontium**			
Strontium (Sr)	0.051	mg/l	0.002
②NW173 **Total Tin**			
Tin (Sn)	<0.001	mg/l	0.001
②NW174 **Total Titanium**			
Titanium (Ti)	<0.001	mg/l	0.001
②NW176 **Total Vanadium**			
Vanadium (V)	<0.001	mg/l	0.001
②NW177 **Total Zinc**			
Zinc (Zn)	<0.005	mg/l	0.005
②NW212 **Turbidity**			
Turbidity	0.45	NTU	0.01
②NW581 **Uranium - Total**			
Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00041165**		
Sample Name	LBA		
Sample Reference	Lower Bendigo Addit		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	18/04/2024
Product Type	Water		

	RESULTS		LOQ
②NW409 **Acidity to pH 3.7**			
Acidity	<1	mg CaCO3/l	1
③NW410 **Acidity to pH 7.0**			
Acidity	<1	mg CaCO3/l	1
②NW345 **Acidity to pH 8.3**			
Acidity	4	mg CaCO3/l	1
②NW676 **Ammonia Nitrogen**			
Ammonia nitrogen	<0.01	mg/l	0.01
②NW009 **Bromide**			
Bromide	0.08	mg/l	0.02
②NW007 **Chloride**			
Chloride (Cl)	8.06	mg/l	0.02
②NW023 **Conductivity**			

		RESULTS		LOQ
②NW023	**Conductivity**			
	Conductivity	43.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.910	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.004	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	50.7	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	0.002	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.15	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.019	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	16.6	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0111	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0011	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			

		RESULTS		LOQ
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.93	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	17.8	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	23.1	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.422	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0021	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.27	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.18	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.2		0.1
②NW011	**Sulphate**			
	Sulphate	30.4	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	181	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.017	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	1.05	mg/l	0.002
②NW150	**Total Barium**			

		RESULTS		LOQ
②NW150	**Total Barium**			
	Barium (Ba)	0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	48.4	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	211	mg/l	1
②NW030	**Total Hardness**			
	Hardness	184	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.4	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.013	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	15.4	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.037	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.275	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.7	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.030	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	2.1	mg/l	0.1
②NW169	**Total Selenium**			

		RESULTS		LOQ
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	6.66	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	19.8	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.447	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.26	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE	**817-2024-00041166**		
Sample Name	MDD015		
Sample Reference	MDD015 drillhole discharge		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	18/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.11	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.11	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	10.5	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	43.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			

		RESULTS		LOQ
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.018	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.020	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.188	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.06	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	22.1	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.04	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.090	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	21.5	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0085	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.27	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			

		RESULTS		LOQ
②NW472	**Dissolved Silica**			
	Sand/silica	18.4	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	59.6	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	10.2	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0009	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.15	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	9.29	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	201	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.336	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.019	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.190	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			

		RESULTS		LOQ
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	21.9	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	211	mg/l	1
②NW030	**Total Hardness**			
	Hardness	120	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.3	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.051	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	16.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.011	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.122	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.7	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	8.38	mg/l	0.03
②NW170	**Total Silver**			

		RESULTS		LOQ
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	42.2	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	8.98	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.009	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.46	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

LIST OF METHODS

NW003 **Total Alkalinity:** APHA Online Edition 2320 B
NW006 **Fluoride:** APHA Online Edition 4110 B
NW007 **Chloride:** APHA Online Edition 4110 B
NW008 **Nitrite-N:** APHA Online Edition 4110 B
NW009 **Bromide:** APHA Online Edition 4110 B
NW010 **Nitrate-N:** APHA Online Edition 4110 B
NW011 **Sulphate:** APHA Online Edition 4110 B
NW023 **Conductivity:** APHA 24th Edition 2510 B
NW030 **Total Hardness:** APHA Online Edition 2340 B
NW098 **Dissolved Aluminium:** APHA Online Edition 3125 B mod.
NW099 **Dissolved Antimony:** APHA Online Edition 3125 B mod.
NW100 **Dissolved Barium:** APHA Online Edition 3125 B mod.
NW101 **Dissolved Beryllium:** APHA Online Edition 3125 B mod.
NW102 **Dissolved Bismuth:** APHA Online Edition 3125 B mod.
NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.
NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.
NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW107 **Dissolved Cobalt:** APHA Online Edition 3125 B mod.
NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.
NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.
NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.
NW111 **Dissolved Lithium:** APHA Online Edition 3125 B mod.
NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.
NW114 **Dissolved Mercury:** APHA Online Edition 3125 B mod.
NW115 **Dissolved Molybdenum:** APHA Online Edition 3125 B mod.
NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.
NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.
NW118 **Dissolved Selenium:** APHA Online Edition 3125 B mod.
NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.
NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.
NW121 **Dissolved Strontium:** APHA Online Edition 3125 B mod.
NW122 **Dissolved Tin:** APHA Online Edition 3125 B mod.
NW123 **Dissolved Titanium:** APHA Online Edition 3125 B mod.
NW124 **Dissolved Vanadium:** APHA Online Edition 3125 B mod.
NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.
NW143 **Total Silicon:** APHA Online Edition 3120 B mod.
NW147 **Total Aluminium:** APHA Online Edition 3125 B mod.
NW148 **Total Antimony:** APHA Online Edition 3125 B mod.
NW149 **Total Arsenic:** APHA Online Edition 3125 B mod.
NW150 **Total Barium:** APHA Online Edition 3125 B mod.
NW151 **Total Beryllium:** APHA Online Edition 3125 B mod.
NW152 **Total Bismuth:** APHA Online Edition 3125 B mod.
NW153 **Total Boron:** APHA Online Edition 3125 B mod.
NW154 **Total Cadmium:** APHA Online Edition 3125 B mod.
NW156 **Total Calcium:** APHA Online Edition 3125 B mod.
NW157 **Total Chromium:** APHA Online Edition 3125 B mod.
NW158 **Total Cobalt:** APHA Online Edition 3125 B mod.

NW159	**Total Copper:** APHA Online Edition 3125 B mod.	NW160	**Total Iron:** APHA Online Edition 3125 B mod.
NW161	**Total Lead:** APHA Online Edition 3125 B mod.	NW162	**Total Lithium:** APHA Online Edition 3125 B mod.
NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.	NW164	**Total Manganese:** APHA Online Edition 3125 B mod.
NW165	**Total Mercury:** APHA Online Edition 3125 B mod.	NW166	**Total Molybdenum:** APHA Online Edition 3125 B mod.
NW167	**Total Nickel:** APHA Online Edition 3125 B mod.	NW168	**Total Potassium:** APHA Online Edition 3125 B mod.
NW169	**Total Selenium:** APHA Online Edition 3125 B mod.	NW170	**Total Silver:** APHA Online Edition 3125 B mod.
NW171	**Total Sodium:** APHA Online Edition 3125 B mod.	NW172	**Total Strontium:** APHA Online Edition 3125 B mod.
NW173	**Total Tin:** APHA Online Edition 3125 B mod.	NW174	**Total Titanium:** APHA Online Edition 3125 B mod.
NW176	**Total Vanadium:** APHA Online Edition 3125 B mod.	NW177	**Total Zinc:** APHA Online Edition 3125 B mod.
NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I	NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B
NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B	NW206	**Suspended Solids:** APHA Online Edition 2540 D
NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B	NW212	**Turbidity:** APHA 24th Edition 2130 B
NW339	**Total Dissolved Solids:** Internal Method, Gravimetry	NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)
NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)	NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry
NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.	NW580	**Thallium - Total:** APHA Online Edition 3125 B mod.
NW581	**Uranium - Total:** APHA Online Edition 3125 B mod.	NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.
NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.	NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.
NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C	NW676	**Ammonia Nitrogen:** Internal Method, Spectrophotometry (DA)
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E		

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

The Customer acknowledges and accepts that: (a) where Eurofins is not responsible for sampling, the test result(s) in this report apply only to the sample as received. Customer is solely responsible for the sampling process and warrants that the sample provided to Eurofins is representative of the lot / batch from which the samples were drawn; and (b) Eurofins expresses no opinion and accepts no liability in respect of the Customer's production process or homogeneity of the product.
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END OF REPORT

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Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-24-NC-011976-02 #** REPORT DATE **22/05/2024**

This amended report supersedes Analytical Report number AR-24-NC-011976-01, dated 18/04/2024.

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders: James Thornton **Order code:** EUNZCH-00173192
Contract: Matakanui Gold Water Monitoring
Submission Reference: 2024-March 04 **Purchase Order Number:** NA
Comments: Dissolved Chromium retested and result amended on samples 817-2024-00041158 817-2024-00041160 817-2024-00041162 817-2024-00041164

SAMPLE CODE 817-2024-00041158

Sample Name RS01
Sample Reference Rise and shine stream downstream RAS
Reception Date & Time: 05/04/2024 8:30 **Reception temperature:** 13.2 °C
Analysis Started on: 05/04/2024 **Analysis Ending Date:** 22/05/2024
Product Type Water

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	13	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.42	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	23.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.0	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.018	mg/l	0.001
②NW100	**Dissolved Barium**			

		RESULTS		LOQ
②NW100	**Dissolved Barium** Barium (Ba)	0.013	mg/l	0.002
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	28.5	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.09	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	6.61	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0517	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.34	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	7.38	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	7.72	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.408	mg/l	0.0005
②NW584	**Dissolved Thallium**			

		RESULTS		LOQ
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.08	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	14.9	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	101	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.018	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.034	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.014	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	31.3	mg/l	0.1
②NW157	**Total Chromium**			

		RESULTS		LOQ
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	115	mg/l	1
②NW030	**Total Hardness**			
	Hardness	103	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.5	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	6.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.087	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.143	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.13	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.8	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.514	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			

		RESULTS		LOQ
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.20	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00041159**		
Sample Name	SC01		
Sample Reference	Shepherds Creek by irrigation take		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	18/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	12	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.10	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	9.30	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	63.9	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.1	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.004	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.049	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			

		RESULTS		LOQ
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	0.05	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	72.6	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.01	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.016	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	25.9	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0041	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	0.0008	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	3.40	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	10.2	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	12.7	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	1.11	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			

		RESULTS		LOQ
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0069	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.09	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	59.3	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	273	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.182	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.004	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.055	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	82.3	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			

		RESULTS		LOQ
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	313	mg/l	1
②NW030	**Total Hardness**			
	Hardness	332	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.012	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	30.6	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.012	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.170	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.1	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.013	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	3.9	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.66	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	16.8	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	1.30	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.005	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			

		RESULTS		LOQ
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	2.72	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.007	mg/l	0.001

SAMPLE CODE	**817-2024-00041160**		
Sample Name	SC03		
Sample Reference	Shepherds Creek 3		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	22/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	10	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.84	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	33.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.6	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.009	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.030	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			

		RESULTS		LOQ
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	39.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0007	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.007	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	11.9	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0014	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0006	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.21	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	10.4	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	8.53	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.592	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0020	mg/l	0.0002
②NW124	**Dissolved Vanadium**			

		RESULTS		LOQ
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.04	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	15.1	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	152	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.163	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.034	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	43.0	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	162	mg/l	1
②NW030	**Total Hardness**			

		RESULTS		LOQ
②NW030	**Total Hardness**			
	Hardness	156	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	11.7	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.011	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.182	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.8	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.48	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	8.0	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.741	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.005	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	2.39	NTU	0.01
②NW581	**Uranium - Total**			

		RESULTS		LOQ
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE	**817-2024-00041161**		
Sample Name	RS02		
Sample Reference	Rise and shine stream 2 at Shreks		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	13/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.04	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.91	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	14.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.004	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.011	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	19.9	mg/l	0.1
②NW106	**Dissolved Chromium**			

		RESULTS		LOQ
②NW106	**Dissolved Chromium** Chromium (Cr)	0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	4.09	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.11	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	8.18	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	4.93	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.249	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			

		RESULTS		LOQ
②NW006	**Fluoride**			
	Fluoride	0.05	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	4.46	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	65	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.103	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.004	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.013	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	17.9	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	70	mg/l	1
②NW030	**Total Hardness**			
	Hardness	60	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.1	mg/l	0.1
②NW161	**Total Lead**			

		RESULTS		LOQ
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	3.8	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.004	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.134	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.5	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.1	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.65	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	4.5	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.259	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.95	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	817-2024-00041162

Sample Name RSA1
Sample Reference Rise and shine Adit
Reception Date & Time: 05/04/2024 8:30
Reception temperature: 13.2 °C
Analysis Started on: 05/04/2024
Analysis Ending Date: 22/05/2024
Product Type Water

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	44	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.96	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	21.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.8	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.061	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.026	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	29.6	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	0.0006	mg/l	0.0005
②NW108	**Dissolved Copper**			

		RESULTS		LOQ
②NW108	**Dissolved Copper** Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.73	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.004	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	5.76	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.205	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	0.0006	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.23	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	9.08	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	7.51	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.365	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride** Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N** Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			

		RESULTS		LOQ
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.0		0.1
②NW011	**Sulphate**			
	Sulphate	1.00	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	17	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	103	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.049	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.337	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.029	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	27.3	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	103	mg/l	1
②NW030	**Total Hardness**			
	Hardness	89	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	5.7	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			

		RESULTS		LOQ
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.2	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.243	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.065	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.9	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.012	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.3	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.98	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.4	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.361	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	21.2	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00041163**		
Sample Name	RS03		
Sample Reference	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	13/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.37	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	9.6	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.3	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.013	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.007	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	12.4	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	0.002	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.10	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	2.53	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0143	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.42	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	14.8	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	4.29	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.137	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.07	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.5		0.1
②NW011	**Sulphate**			
	Sulphate	0.79	mg/l	0.02
②NW206	**Suspended Solids**			

		RESULTS		LOQ
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	43	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.055	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.026	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.009	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	11.6	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	47	mg/l	1
②NW030	**Total Hardness**			
	Hardness	39	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.8	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.4	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.081	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			

		RESULTS		LOQ
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.152	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.3	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.006	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.5	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.98	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	4.0	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.155	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.82	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00041164**		
Sample Name	CC01		
Sample Reference	Clearwater creek above DOC		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	22/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			

		RESULTS		LOQ
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.91	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	4.3	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.9	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.005	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	4.7	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	1.05	mg/l	0.01
②NW113	**Dissolved Manganese**			

		RESULTS		LOQ
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.30	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	11.2	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	2.64	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.0502	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.06	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.4		0.1
②NW011	**Sulphate**			
	Sulphate	0.68	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			

		RESULTS		LOQ
②NW003	**Total Alkalinity**			
	Alkalinity total	18	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.019	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	4.3	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	21	mg/l	1
②NW030	**Total Hardness**			
	Hardness	15	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.002	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			

		RESULTS		LOQ
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.047	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.0	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.010	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.3	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.42	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	2.5	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.051	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.45	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00041165**		
Sample Name	LBA		
Sample Reference	Lower Bendigo Addit		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	18/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			

		RESULTS		LOQ
②NW009	**Bromide**			
	Bromide	0.08	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	8.06	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	43.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.910	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.004	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	50.7	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	0.002	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.15	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.019	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	16.6	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0111	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			

		RESULTS		LOQ
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0011	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.93	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	17.8	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	23.1	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.422	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0021	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.27	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.18	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.2		0.1
②NW011	**Sulphate**			
	Sulphate	30.4	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	181	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.017	mg/l	0.005
②NW148	**Total Antimony**			

		RESULTS		LOQ
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	1.05	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	48.4	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	211	mg/l	1
②NW030	**Total Hardness**			
	Hardness	184	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.4	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.013	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	15.4	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.037	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.275	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.7	mg/l	0.1
②NW194	**Total Phosphorus**			

		RESULTS		LOQ
②NW194	**Total Phosphorus**			
	Total phosphorus	0.030	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	2.1	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	6.66	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	19.8	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.447	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.26	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE	**817-2024-00041166**		
Sample Name	MDD015		
Sample Reference	MDD015 drillhole discharge		
Reception Date & Time:	05/04/2024 8:30	**Reception temperature:**	13.2 °C
Analysis Started on:	05/04/2024	**Analysis Ending Date:**	18/04/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.11	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.11	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	10.5	mg/l	0.02
②NW023	**Conductivity**			

		RESULTS		LOQ
②NW023	**Conductivity**			
	Conductivity	43.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.018	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.020	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.188	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.06	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	22.1	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.04	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.090	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	21.5	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0085	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			

		RESULTS		LOQ
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.27	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	18.4	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	59.6	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	10.2	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0009	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.15	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	9.29	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	201	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.336	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.019	mg/l	0.002
②NW150	**Total Barium**			

		RESULTS		LOQ
②NW150	**Total Barium**			
	Barium (Ba)	0.190	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	21.9	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	211	mg/l	1
②NW030	**Total Hardness**			
	Hardness	120	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.3	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.051	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	16.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.011	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.122	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.7	mg/l	0.1
②NW169	**Total Selenium**			

		RESULTS		LOQ
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	8.38	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	42.2	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	8.98	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.009	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.46	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

LIST OF METHODS

NW003	**Total Alkalinity:** APHA Online Edition 2320 B	NW006	**Fluoride:** APHA Online Edition 4110 B
NW007	**Chloride:** APHA Online Edition 4110 B	NW008	**Nitrite-N:** APHA Online Edition 4110 B
NW009	**Bromide:** APHA Online Edition 4110 B	NW010	**Nitrate-N:** APHA Online Edition 4110 B
NW011	**Sulphate:** APHA Online Edition 4110 B	NW023	**Conductivity:** APHA 24th Edition 2510 B
NW030	**Total Hardness:** APHA Online Edition 2340 B	NW098	**Dissolved Aluminium:** APHA Online Edition 3125 B mod.
NW099	**Dissolved Antimony:** APHA Online Edition 3125 B mod.	NW100	**Dissolved Barium:** APHA Online Edition 3125 B mod.
NW101	**Dissolved Beryllium:** APHA Online Edition 3125 B mod.	NW102	**Dissolved Bismuth:** APHA Online Edition 3125 B mod.
NW103	**Dissolved Boron:** APHA Online Edition 3125 B mod.	NW104	**Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105	**Dissolved Calcium:** APHA Online Edition 3125 B mod.	NW106	**Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW107	**Dissolved Cobalt:** APHA Online Edition 3125 B mod.	NW108	**Dissolved Copper:** APHA Online Edition 3125 B mod.
NW109	**Dissolved Iron:** APHA Online Edition 3125 B mod.	NW110	**Dissolved Lead:** APHA Online Edition 3125 B mod.
NW111	**Dissolved Lithium:** APHA Online Edition 3125 B mod.	NW112	**Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113	**Dissolved Manganese:** APHA Online Edition 3125 B mod.	NW114	**Dissolved Mercury:** APHA Online Edition 3125 B mod.
NW115	**Dissolved Molybdenum:** APHA Online Edition 3125 B mod.	NW116	**Dissolved Nickel:** APHA Online Edition 3125 B mod.
NW117	**Dissolved Potassium:** APHA Online Edition 3125 B mod.	NW118	**Dissolved Selenium:** APHA Online Edition 3125 B mod.
NW119	**Dissolved Silver:** APHA Online Edition 3125 B mod.	NW120	**Dissolved Sodium:** APHA Online Edition 3125 B mod.
NW121	**Dissolved Strontium:** APHA Online Edition 3125 B mod.	NW122	**Dissolved Tin:** APHA Online Edition 3125 B mod.
NW123	**Dissolved Titanium:** APHA Online Edition 3125 B mod.	NW124	**Dissolved Vanadium:** APHA Online Edition 3125 B mod.
NW125	**Dissolved Zinc:** APHA Online Edition 3125 B mod.	NW143	**Total Silicon:** APHA Online Edition 3120 B mod.
NW147	**Total Aluminium:** APHA Online Edition 3125 B mod.	NW148	**Total Antimony:** APHA Online Edition 3125 B mod.
NW149	**Total Arsenic:** APHA Online Edition 3125 B mod.	NW150	**Total Barium:** APHA Online Edition 3125 B mod.

NW151	**Total Beryllium:** APHA Online Edition 3125 B mod.	NW152	**Total Bismuth:** APHA Online Edition 3125 B mod.
NW153	**Total Boron:** APHA Online Edition 3125 B mod.	NW154	**Total Cadmium:** APHA Online Edition 3125 B mod.
NW156	**Total Calcium:** APHA Online Edition 3125 B mod.	NW157	**Total Chromium:** APHA Online Edition 3125 B mod.
NW158	**Total Cobalt:** APHA Online Edition 3125 B mod.	NW159	**Total Copper:** APHA Online Edition 3125 B mod.
NW160	**Total Iron:** APHA Online Edition 3125 B mod.	NW161	**Total Lead:** APHA Online Edition 3125 B mod.
NW162	**Total Lithium:** APHA Online Edition 3125 B mod.	NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW164	**Total Manganese:** APHA Online Edition 3125 B mod.	NW165	**Total Mercury:** APHA Online Edition 3125 B mod.
NW166	**Total Molybdenum:** APHA Online Edition 3125 B mod.	NW167	**Total Nickel:** APHA Online Edition 3125 B mod.
NW168	**Total Potassium:** APHA Online Edition 3125 B mod.	NW169	**Total Selenium:** APHA Online Edition 3125 B mod.
NW170	**Total Silver:** APHA Online Edition 3125 B mod.	NW171	**Total Sodium:** APHA Online Edition 3125 B mod.
NW172	**Total Strontium:** APHA Online Edition 3125 B mod.	NW173	**Total Tin:** APHA Online Edition 3125 B mod.
NW174	**Total Titanium:** APHA Online Edition 3125 B mod.	NW176	**Total Vanadium:** APHA Online Edition 3125 B mod.
NW177	**Total Zinc:** APHA Online Edition 3125 B mod.	NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I
NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B	NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B
NW206	**Suspended Solids:** APHA Online Edition 2540 D	NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B
NW212	**Turbidity:** APHA 24th Edition 2130 B	NW339	**Total Dissolved Solids:** Internal Method, Gravimetry
NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)	NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)
NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry	NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.
NW580	**Thallium - Total:** APHA Online Edition 3125 B mod.	NW581	**Uranium - Total:** APHA Online Edition 3125 B mod.
NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.	NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.
NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.	NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C
NW676	**Ammonia Nitrogen:** Internal Method, Spectrophotometry (DA)	NW679	**Cyanide:** APHA Online Edition 4500-CN C & E

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-013497-01	REPORT DATE	02/05/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders:	James Thornton	**Order code:**	EUNZCH-00174859
Contract:	Matakanui Gold Water Monitoring		
Submission Reference:	17/04/2024	**Purchase Order Number:**	NA

SAMPLE CODE	817-2024-00047510		
Sample Name	RS01		
Sample Reference	Rise and shine stream 1		
Reception Date & Time:	18/04/2024 8:30	**Reception temperature:**	12.8 °C
Analysis Started on:	18/04/2024	**Analysis Ending Date:**	01/05/2024
Product Type	Water	**Sampled Date & Time**	17/04/2024 12:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	7	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	3.90	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	21.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.020	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.013	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	33.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0015	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.06	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.004	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	5.85	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0201	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	2.00	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.70	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	8.01	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.394	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.6		0.1
②NW011	**Sulphate**			
	Sulphate	7.92	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	93	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.014	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.026	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.014	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	25.3	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			

		RESULTS		LOQ
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	105	mg/l	1
②NW030	**Total Hardness**			
	Hardness	107	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.2	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.037	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.141	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.006	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.6	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.87	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.4	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.402	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			

		RESULTS		LOQ
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.01	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00047511**		
Sample Name	SC01		
Sample Reference	Shepherds Creek by irrigation take		
Reception Date & Time:	18/04/2024 8:30	**Reception temperature:**	12.8 °C
Analysis Started on:	18/04/2024	**Analysis Ending Date:**	01/05/2024
Product Type	Water	**Sampled Date & Time**	17/04/2024 12:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.08	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	7.85	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	58.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.1	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.003	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.037	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			

		RESULTS		LOQ
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	59.7	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.010	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	25.3	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0028	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	2.37	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.70	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	14.9	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.752	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			

		RESULTS		LOQ
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0052	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	52.0	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	251	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.067	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.004	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.047	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	64.7	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			

		RESULTS		LOQ
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	284	mg/l	1
②NW030	**Total Hardness**			
	Hardness	254	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.009	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	26.9	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.006	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.164	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.1	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.015	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	2.5	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.77	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	15.4	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	1.16	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	0.92	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.006	mg/l	0.001

SAMPLE CODE	**817-2024-00047512**		
Sample Name	SC03		
Sample Reference	Shepherds Creek 3		
Reception Date & Time:	18/04/2024 8:30	**Reception temperature:**	12.8 °C
Analysis Started on:	18/04/2024	**Analysis Ending Date:**	02/05/2024
Product Type	Water	**Sampled Date & Time**	17/04/2024 12:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	3.00	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	34.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.9	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.026	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			

		RESULTS		LOQ
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	37.7	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.004	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	11.0	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0032	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.25	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	7.93	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	7.51	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.705	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0019	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			

		RESULTS		LOQ
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.12	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.08	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	5.4		0.1
②NW011	**Sulphate**			
	Sulphate	14.6	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	2	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.148	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.036	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	41.8	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	167	mg/l	1
②NW030	**Total Hardness**			
	Hardness	140	mg CaCO3/l	1
②NW160	**Total Iron**			

		RESULTS		LOQ
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.004	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	11.7	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.011	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.205	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.9	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.3	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.54	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	7.9	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.814	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	2.03	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE	817-2024-00047513		
Sample Name	RS02		
Sample Reference	Rise and shine stream 2 at Shreks		
Reception Date & Time:	18/04/2024 8:30	**Reception temperature:**	12.8 °C
Analysis Started on:	18/04/2024	**Analysis Ending Date:**	01/05/2024
Product Type	Water	**Sampled Date & Time**	17/04/2024 12:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.85	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	15.7	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.9	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.006	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.004	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.011	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	18.2	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			

		RESULTS		LOQ
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	3.96	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0007	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.34	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	10.5	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	4.89	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.253	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	0.0003	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride** Fluoride	0.09	mg/l	0.02
②NW010	**Nitrate-N** Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			

		RESULTS		LOQ
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.6		0.1
②NW011	**Sulphate**			
	Sulphate	2.77	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	72	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.067	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.005	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.013	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	20.3	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	0.004	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	77	mg/l	1
②NW030	**Total Hardness**			
	Hardness	62	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			

		RESULTS		LOQ
②NW163	**Total Magnesium**			
	Magnesium (Mg)	4.2	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.005	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.128	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.9	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.37	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	5.2	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.272	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.003	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.81	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00047514**		
Sample Name	RSA1		
Sample Reference	Rise and shine Adit		
Reception Date & Time:	18/04/2024 8:30	**Reception temperature:**	12.8 °C
Analysis Started on:	18/04/2024	**Analysis Ending Date:**	02/05/2024
Product Type	Water	**Sampled Date & Time**	17/04/2024 12:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	36	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.02	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.72	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	22.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.053	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.025	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	27.9	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.32	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	5.96	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.102	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.99	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	12.7	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	8.20	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.356	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.003	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	6.9		0.1
②NW011	**Sulphate**			
	Sulphate	2.80	mg/l	0.02
②NW206	**Suspended Solids**			

		RESULTS		LOQ
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	104	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.007	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.128	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.027	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	26.5	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	108	mg/l	1
②NW030	**Total Hardness**			
	Hardness	94	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	1.6	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	5.4	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.094	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			

		RESULTS		LOQ
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.210	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.7	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.011	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.7	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	5.15	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.8	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.411	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	3.05	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00047515**		
Sample Name	RS03		
Sample Reference	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	18/04/2024 8:30	**Reception temperature:**	12.8 °C
Analysis Started on:	18/04/2024	**Analysis Ending Date:**	01/05/2024
Product Type	Water	**Sampled Date & Time**	17/04/2024 12:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			

		RESULTS		LOQ
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.44	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	11.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.0	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.010	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.006	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	11.4	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.04	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.001	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	2.60	mg/l	0.01
②NW113	**Dissolved Manganese**			

		RESULTS		LOQ
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0172	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.68	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.85	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	4.06	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.157	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.07	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.4		0.1
②NW011	**Sulphate**			
	Sulphate	3.03	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			

		RESULTS		LOQ
②NW003	**Total Alkalinity**			
	Alkalinity total	48	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	<0.005	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.012	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.008	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	13.5	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	55	mg/l	1
②NW030	**Total Hardness**			
	Hardness	39	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.9	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.029	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			

		RESULTS		LOQ
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.101	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.0	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.014	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.8	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.75	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	4.7	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.182	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.33	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00047516**		
Sample Name	CC01		
Sample Reference	Clearwater creek above DOC		
Reception Date & Time:	18/04/2024 8:30	**Reception temperature:**	12.8 °C
Analysis Started on:	18/04/2024	**Analysis Ending Date:**	01/05/2024
Product Type	Water	**Sampled Date & Time**	17/04/2024 12:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	3	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			

		RESULTS		LOQ
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.33	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	4.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.006	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.004	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	3.9	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	0.95	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			

		RESULTS		LOQ
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.46	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.77	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	2.51	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.0481	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.06	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.2		0.1
②NW011	**Sulphate**			
	Sulphate	0.96	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	18	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	<0.005	mg/l	0.005
②NW148	**Total Antimony**			

		RESULTS		LOQ
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	<0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	4.7	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	21	mg/l	1
②NW030	**Total Hardness**			
	Hardness	14	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.001	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.077	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.8	mg/l	0.1
②NW194	**Total Phosphorus**			

		RESULTS		LOQ
②NW194	**Total Phosphorus**			
	Total phosphorus	0.014	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.54	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	2.6	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.050	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.28	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00047517**		
Sample Name	LBA		
Sample Reference	Lower Bendigo Addit		
Reception Date & Time:	18/04/2024 8:30	**Reception temperature:**	12.8 °C
Analysis Started on:	18/04/2024	**Analysis Ending Date:**	01/05/2024
Product Type	Water	**Sampled Date & Time**	17/04/2024 12:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.08	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	7.85	mg/l	0.02
②NW023	**Conductivity**			

		RESULTS		LOQ
②NW023	**Conductivity**			
	Conductivity	43.7	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.873	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.004	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	41.7	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.07	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.009	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	14.5	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0200	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0009	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			

		RESULTS		LOQ
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.83	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	14.7	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	18.9	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.403	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0019	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.32	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.26	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.2		0.1
②NW011	**Sulphate**			
	Sulphate	34.1	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	183	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	<0.005	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	1.00	mg/l	0.002
②NW150	**Total Barium**			

		RESULTS		LOQ
②NW150	**Total Barium**			
	Barium (Ba)	<0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	42.8	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	214	mg/l	1
②NW030	**Total Hardness**			
	Hardness	164	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.012	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	15.6	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.026	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.270	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.7	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.027	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.8	mg/l	0.1
②NW169	**Total Selenium**			

		RESULTS		LOQ
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	6.16	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	20.6	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.449	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.28	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE	**817-2024-00047518**		
Sample Name	MDD015		
Sample Reference	MDD015 drillhole discharge		
Reception Date & Time:	18/04/2024 8:30	**Reception temperature:**	12.8 °C
Analysis Started on:	18/04/2024	**Analysis Ending Date:**	01/05/2024
Product Type	Water	**Sampled Date & Time**	17/04/2024 12:00

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.13	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.10	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	10.2	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	43.7	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			

		RESULTS		LOQ
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.018	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.185	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	25.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.037	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	15.8	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0067	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.39	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			

		RESULTS		LOQ
②NW472	**Dissolved Silica**			
	Sand/silica	17.9	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	39.6	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	10.5	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	0.0033	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0009	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.18	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	11.6	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	201	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	<0.005	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.018	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.192	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			

		RESULTS		LOQ
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	23.6	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	214	mg/l	1
②NW030	**Total Hardness**			
	Hardness	128	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.046	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	15.9	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.007	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.120	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.008	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.3	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	7.37	mg/l	0.03
②NW170	**Total Silver**			

		RESULTS		LOQ
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	43.5	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	9.54	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.17	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

LIST OF METHODS

NW003 **Total Alkalinity:** APHA Online Edition 2320 B
NW006 **Fluoride:** APHA Online Edition 4110 B
NW007 **Chloride:** APHA Online Edition 4110 B
NW008 **Nitrite-N:** APHA Online Edition 4110 B
NW009 **Bromide:** APHA Online Edition 4110 B
NW010 **Nitrate-N:** APHA Online Edition 4110 B
NW011 **Sulphate:** APHA Online Edition 4110 B
NW023 **Conductivity:** APHA 24th Edition 2510 B
NW030 **Total Hardness:** APHA Online Edition 2340 B
NW098 **Dissolved Aluminium:** APHA Online Edition 3125 B mod.
NW099 **Dissolved Antimony:** APHA Online Edition 3125 B mod.
NW100 **Dissolved Barium:** APHA Online Edition 3125 B mod.
NW101 **Dissolved Beryllium:** APHA Online Edition 3125 B mod.
NW102 **Dissolved Bismuth:** APHA Online Edition 3125 B mod.
NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.
NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.
NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW107 **Dissolved Cobalt:** APHA Online Edition 3125 B mod.
NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.
NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.
NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.
NW111 **Dissolved Lithium:** APHA Online Edition 3125 B mod.
NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.
NW114 **Dissolved Mercury:** APHA Online Edition 3125 B mod.
NW115 **Dissolved Molybdenum:** APHA Online Edition 3125 B mod.
NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.
NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.
NW118 **Dissolved Selenium:** APHA Online Edition 3125 B mod.
NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.
NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.
NW121 **Dissolved Strontium:** APHA Online Edition 3125 B mod.
NW122 **Dissolved Tin:** APHA Online Edition 3125 B mod.
NW123 **Dissolved Titanium:** APHA Online Edition 3125 B mod.
NW124 **Dissolved Vanadium:** APHA Online Edition 3125 B mod.
NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.
NW143 **Total Silicon:** APHA Online Edition 3120 B mod.
NW147 **Total Aluminium:** APHA Online Edition 3125 B mod.
NW148 **Total Antimony:** APHA Online Edition 3125 B mod.
NW149 **Total Arsenic:** APHA Online Edition 3125 B mod.
NW150 **Total Barium:** APHA Online Edition 3125 B mod.
NW151 **Total Beryllium:** APHA Online Edition 3125 B mod.
NW152 **Total Bismuth:** APHA Online Edition 3125 B mod.
NW153 **Total Boron:** APHA Online Edition 3125 B mod.
NW154 **Total Cadmium:** APHA Online Edition 3125 B mod.
NW156 **Total Calcium:** APHA Online Edition 3125 B mod.
NW157 **Total Chromium:** APHA Online Edition 3125 B mod.
NW158 **Total Cobalt:** APHA Online Edition 3125 B mod.

NW159	**Total Copper:** APHA Online Edition 3125 B mod.	NW160	**Total Iron:** APHA Online Edition 3125 B mod.
NW161	**Total Lead:** APHA Online Edition 3125 B mod.	NW162	**Total Lithium:** APHA Online Edition 3125 B mod.
NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.	NW164	**Total Manganese:** APHA Online Edition 3125 B mod.
NW165	**Total Mercury:** APHA Online Edition 3125 B mod.	NW166	**Total Molybdenum:** APHA Online Edition 3125 B mod.
NW167	**Total Nickel:** APHA Online Edition 3125 B mod.	NW168	**Total Potassium:** APHA Online Edition 3125 B mod.
NW169	**Total Selenium:** APHA Online Edition 3125 B mod.	NW170	**Total Silver:** APHA Online Edition 3125 B mod.
NW171	**Total Sodium:** APHA Online Edition 3125 B mod.	NW172	**Total Strontium:** APHA Online Edition 3125 B mod.
NW173	**Total Tin:** APHA Online Edition 3125 B mod.	NW174	**Total Titanium:** APHA Online Edition 3125 B mod.
NW176	**Total Vanadium:** APHA Online Edition 3125 B mod.	NW177	**Total Zinc:** APHA Online Edition 3125 B mod.
NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I	NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B
NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B	NW206	**Suspended Solids:** APHA Online Edition 2540 D
NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B	NW212	**Turbidity:** APHA 24th Edition 2130 B
NW339	**Total Dissolved Solids:** Internal Method, Gravimetry	NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)
NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)	NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry
NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.	NW580	**Thallium - Total:** APHA Online Edition 3125 B mod.
NW581	**Uranium - Total:** APHA Online Edition 3125 B mod.	NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.
NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.	NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.
NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C	NW676	**Ammonia Nitrogen:** Internal Method, Spectrophotometry (DA)
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E		

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-015251-01	REPORT DATE	16/05/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders:	James Thornton	**Order code:**	EUNZCH-00176359
Contract:	Matakanui Gold Water Monitoring		
Submission Reference:	20230501_sampling	**Purchase Order Number:**	NA

SAMPLE CODE	817-2024-00052692		
Sample Name	RS01		
Sample Reference	Rise and shine stream 1		
Reception Date & Time:	03/05/2024 8:30	**Reception temperature:**	10.6 °C
Analysis Started on:	03/05/2024	**Analysis Ending Date:**	13/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	4.18	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	19.5	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.019	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.011	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	22.2	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.07	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	4.86	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0188	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.59	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	9.92	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	6.29	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.340	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.6		0.1
②NW011	**Sulphate**			
	Sulphate	5.71	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<4	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	86	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.010	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.029	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.015	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	21.2	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			

		RESULTS		LOQ
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	96	mg/l	1
②NW030	**Total Hardness**			
	Hardness	70	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.3	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	4.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.040	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.120	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.7	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.007	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.2	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.72	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	4.7	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.348	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			

		RESULTS		LOQ
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.16	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00052693**		
Sample Name	SC01		
Sample Reference	Shepherds Creek by irrigation take		
Reception Date & Time:	03/05/2024 8:30	**Reception temperature:**	10.6 °C
Analysis Started on:	03/05/2024	**Analysis Ending Date:**	16/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.08	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	7.40	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	57.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.003	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.042	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			

		RESULTS		LOQ
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	66.5	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.010	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	25.1	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0016	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.85	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	7.97	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	14.2	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	1.01	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			

		RESULTS		LOQ
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0061	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.008	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.13	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.2		0.1
②NW011	**Sulphate**			
	Sulphate	53.7	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<4	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	243	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.040	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.003	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.048	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	62.2	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			

		RESULTS		LOQ
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	280	mg/l	1
②NW030	**Total Hardness**			
	Hardness	270	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.008	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	24.0	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.003	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.296	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.7	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.012	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.7	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.56	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	12.7	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.965	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	1.02	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.006	mg/l	0.001

SAMPLE CODE	**817-2024-00052694**		
Sample Name	SC03		
Sample Reference	Shepherds Creek 3		
Reception Date & Time:	03/05/2024 8:30	**Reception temperature:**	10.6 °C
Analysis Started on:	03/05/2024	**Analysis Ending Date:**	16/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.85	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	33.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.027	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			

		RESULTS		LOQ
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	39.1	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	11.7	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0038	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.22	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.43	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	7.98	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.695	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0019	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			

		RESULTS		LOQ
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.15	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.07	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	15.0	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	5	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	152	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.138	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.035	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	37.2	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	162	mg/l	1
②NW030	**Total Hardness**			
	Hardness	133	mg CaCO3/l	1
②NW160	**Total Iron**			

		RESULTS		LOQ
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	9.7	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.010	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.195	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.6	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.010	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.0	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.27	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	6.1	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.654	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.003	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.92	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE	817-2024-00052695		
Sample Name	RS02		
Sample Reference	Rise and shine stream 2 at Shreks		
Reception Date & Time:	03/05/2024 8:30	**Reception temperature:**	10.6 °C
Analysis Started on:	03/05/2024	**Analysis Ending Date:**	16/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	2	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	3.35	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	15.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.005	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.011	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	19.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			

		RESULTS		LOQ
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	3.49	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.40	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	10.1	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	4.69	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.253	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	0.0003	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride** Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N** Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			

		RESULTS		LOQ
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.8		0.1
②NW011	**Sulphate**			
	Sulphate	3.24	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	10	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	67	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.299	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.007	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.017	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	16.2	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	75	mg/l	1
②NW030	**Total Hardness**			
	Hardness	63	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.4	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			

		RESULTS		LOQ
②NW163	**Total Magnesium**			
	Magnesium (Mg)	3.3	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.010	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.131	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.4	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.012	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.4	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.65	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	3.9	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.275	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.009	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	5.92	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00052696**		
Sample Name	RSA1		
Sample Reference	Rise and shine Adit		
Reception Date & Time:	03/05/2024 8:30	**Reception temperature:**	10.6 °C
Analysis Started on:	03/05/2024	**Analysis Ending Date:**	16/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	27	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.02	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	3.41	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	20.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.8	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.130	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.027	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	37.0	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	0.0018	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0341	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.17	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	4.65	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.273	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	0.0026	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	2.79	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	11.3	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	9.27	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.274	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.072	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	6.8		0.1
②NW011	**Sulphate**			
	Sulphate	4.09	mg/l	0.02
②NW206	**Suspended Solids**			

		RESULTS		LOQ
②NW206	**Suspended Solids**			
	Suspended Solids	20	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	90	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	<0.005	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.454	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.030	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	22.0	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	98	mg/l	1
②NW030	**Total Hardness**			
	Hardness	72	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	6.9	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	4.1	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.205	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			

		RESULTS		LOQ
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.144	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.6	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.7	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	4.66	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	4.9	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.341	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	13.8	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00052697**		
Sample Name	RS03		
Sample Reference	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	03/05/2024 8:30	**Reception temperature:**	10.6 °C
Analysis Started on:	03/05/2024	**Analysis Ending Date:**	16/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			

		RESULTS		LOQ
②NW345	**Acidity to pH 8.3**			
	Acidity	3	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.91	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	10.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.3	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.010	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.006	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	10.3	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.03	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	2.55	mg/l	0.01
②NW113	**Dissolved Manganese**			

		RESULTS		LOQ
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0155	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.69	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	9.33	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	4.09	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.154	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.09	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.4		0.1
②NW011	**Sulphate**			
	Sulphate	2.08	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	8	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			

		RESULTS		LOQ
②NW003	**Total Alkalinity**			
	Alkalinity total	43	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.030	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.012	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.008	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	10.5	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	49	mg/l	1
②NW030	**Total Hardness**			
	Hardness	35	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	0.2	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.2	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.025	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			

		RESULTS		LOQ
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.071	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.4	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.011	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.5	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.54	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	3.1	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.162	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.002	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.42	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00052698**		
Sample Name	CC01		
Sample Reference	Clearwater creek above DOC		
Reception Date & Time:	03/05/2024 8:30	**Reception temperature:**	10.6 °C
Analysis Started on:	03/05/2024	**Analysis Ending Date:**	16/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			

		RESULTS		LOQ
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.01	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	4.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.1	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.005	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.005	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	4.5	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	0.87	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			

		RESULTS		LOQ
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.34	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	8.53	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	2.30	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.0446	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.07	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.3		0.1
②NW011	**Sulphate**			
	Sulphate	0.95	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<5	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	17	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	<0.005	mg/l	0.005
②NW148	**Total Antimony**			

		RESULTS		LOQ
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	<0.002	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.005	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	3.7	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	21	mg/l	1
②NW030	**Total Hardness**			
	Hardness	15	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	<0.001	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	0.8	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.001	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.053	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.1	mg/l	0.1
②NW194	**Total Phosphorus**			

		RESULTS		LOQ
②NW194	**Total Phosphorus**			
	Total phosphorus	0.012	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	0.3	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	3.29	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	1.9	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.052	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.20	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

SAMPLE CODE	**817-2024-00052699**		
Sample Name	LBA		
Sample Reference	Lower Bendigo Addit		
Reception Date & Time:	03/05/2024 8:30	**Reception temperature:**	10.6 °C
Analysis Started on:	03/05/2024	**Analysis Ending Date:**	16/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.08	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	7.72	mg/l	0.02
②NW023	**Conductivity**			

		RESULTS		LOQ
②NW023	**Conductivity**			
	Conductivity	44.0	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.950	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.004	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	42.8	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.10	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.013	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	14.9	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0334	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0008	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			

		RESULTS		LOQ
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.93	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	15.3	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	19.5	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.413	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0018	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.33	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.20	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	30.9	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	9	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	182	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	0.106	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	1.24	mg/l	0.002
②NW150	**Total Barium**			

		RESULTS		LOQ
②NW150	**Total Barium**			
	Barium (Ba)	0.008	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	45.0	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	216	mg/l	1
②NW030	**Total Hardness**			
	Hardness	167	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	1.0	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.009	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	13.2	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.121	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.302	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.6	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.014	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.6	mg/l	0.1
②NW169	**Total Selenium**			

		RESULTS		LOQ
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	5.99	mg/l	0.03
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	15.8	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	0.419	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	0.004	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.007	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	3.72	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	0.002	mg/l	0.001

SAMPLE CODE	**817-2024-00052700**		
Sample Name	MDD015		
Sample Reference	MDD015		
Reception Date & Time:	03/05/2024 8:30	**Reception temperature:**	10.6 °C
Analysis Started on:	03/05/2024	**Analysis Ending Date:**	16/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg CaCO3/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg CaCO3/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	3	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.07	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.11	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	10.2	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	43.5	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			

		RESULTS		LOQ
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.1	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.017	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.180	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	24.8	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.051	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	16.3	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0064	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.44	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			

		RESULTS		LOQ
②NW472	**Dissolved Silica**			
	Sand/silica	18.9	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	44.2	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	8.93	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0008	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.22	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	11.7	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<4	mg/l	3
②NW580	**Thallium - Total**			
	Thallium (Tl)	<0.001	mg/l	0.001
②NW003	**Total Alkalinity**			
	Alkalinity total	202	mg CaCO3/l	1
②NW147	**Total Aluminium**			
	Aluminium	<0.005	mg/l	0.005
②NW148	**Total Antimony**			
	Antimony (Sb)	<0.002	mg/l	0.002
②NW149	**Total Arsenic**			
	Arsenic (As)	0.018	mg/l	0.002
②NW150	**Total Barium**			
	Barium (Ba)	0.210	mg/l	0.005
②NW151	**Total Beryllium**			
	Beryllium (Be)	<0.005	mg/l	0.005
②NW152	**Total Bismuth**			

		RESULTS		LOQ
②NW152	**Total Bismuth**			
	Bismuth (Bi)	<0.005	mg/l	0.005
②NW153	**Total Boron**			
	Boron (B)	<0.05	mg/l	0.05
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	16.2	mg/l	0.1
②NW157	**Total Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW158	**Total Cobalt**			
	Cobalt (Co)	<0.002	mg/l	0.002
②NW159	**Total Copper**			
	Copper (Cu)	<0.002	mg/l	0.002
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	213	mg/l	1
②NW030	**Total Hardness**			
	Hardness	97	mg CaCO3/l	1
②NW160	**Total Iron**			
	Iron (Fe)	<0.1	mg/l	0.1
②NW161	**Total Lead**			
	Lead (Pb)	<0.001	mg/l	0.001
②NW162	**Total Lithium**			
	Lithium (Li)	0.036	mg/l	0.001
②NW163	**Total Magnesium**			
	Magnesium (Mg)	13.8	mg/l	0.1
②NW164	**Total Manganese**			
	Manganese (Mn)	0.006	mg/l	0.001
②NW165	**Total Mercury**			
	Mercury (Hg)	<0.001	mg/l	0.001
②NW166	**Total Molybdenum**			
	Molybdenum (Mo)	<0.001	mg/l	0.001
②NW167	**Total Nickel**			
	Nickel (Ni)	<0.001	mg/l	0.001
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.110	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	<0.005	mg/l	0.005
②NW168	**Total Potassium**			
	Potassium (K)	1.1	mg/l	0.1
②NW169	**Total Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW143	**Total Silicon**			
	Silicon (Si)	6.91	mg/l	0.03
②NW170	**Total Silver**			

		RESULTS		LOQ
②NW170	**Total Silver**			
	Silver (Ag)	<0.001	mg/l	0.001
②NW171	**Total Sodium**			
	Sodium (Na)	35.3	mg/l	0.1
②NW172	**Total Strontium**			
	Strontium (Sr)	8.93	mg/l	0.002
②NW173	**Total Tin**			
	Tin (Sn)	<0.001	mg/l	0.001
②NW174	**Total Titanium**			
	Titanium (Ti)	<0.001	mg/l	0.001
②NW176	**Total Vanadium**			
	Vanadium (V)	<0.001	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	<0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.18	NTU	0.01
②NW581	**Uranium - Total**			
	Uranium (U)	<0.001	mg/l	0.001

LIST OF METHODS

NW003 **Total Alkalinity:** APHA Online Edition 2320 B
NW006 **Fluoride:** APHA Online Edition 4110 B
NW007 **Chloride:** APHA Online Edition 4110 B
NW008 **Nitrite-N:** APHA Online Edition 4110 B
NW009 **Bromide:** APHA Online Edition 4110 B
NW010 **Nitrate-N:** APHA Online Edition 4110 B
NW011 **Sulphate:** APHA Online Edition 4110 B
NW023 **Conductivity:** APHA 24th Edition 2510 B
NW030 **Total Hardness:** APHA Online Edition 2340 B
NW098 **Dissolved Aluminium:** APHA Online Edition 3125 B mod.
NW099 **Dissolved Antimony:** APHA Online Edition 3125 B mod.
NW100 **Dissolved Barium:** APHA Online Edition 3125 B mod.
NW101 **Dissolved Beryllium:** APHA Online Edition 3125 B mod.
NW102 **Dissolved Bismuth:** APHA Online Edition 3125 B mod.
NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.
NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.
NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW107 **Dissolved Cobalt:** APHA Online Edition 3125 B mod.
NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.
NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.
NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.
NW111 **Dissolved Lithium:** APHA Online Edition 3125 B mod.
NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.
NW114 **Dissolved Mercury:** APHA Online Edition 3125 B mod.
NW115 **Dissolved Molybdenum:** APHA Online Edition 3125 B mod.
NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.
NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.
NW118 **Dissolved Selenium:** APHA Online Edition 3125 B mod.
NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.
NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.
NW121 **Dissolved Strontium:** APHA Online Edition 3125 B mod.
NW122 **Dissolved Tin:** APHA Online Edition 3125 B mod.
NW123 **Dissolved Titanium:** APHA Online Edition 3125 B mod.
NW124 **Dissolved Vanadium:** APHA Online Edition 3125 B mod.
NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.
NW143 **Total Silicon:** APHA Online Edition 3120 B mod.
NW147 **Total Aluminium:** APHA Online Edition 3125 B mod.
NW148 **Total Antimony:** APHA Online Edition 3125 B mod.
NW149 **Total Arsenic:** APHA Online Edition 3125 B mod.
NW150 **Total Barium:** APHA Online Edition 3125 B mod.
NW151 **Total Beryllium:** APHA Online Edition 3125 B mod.
NW152 **Total Bismuth:** APHA Online Edition 3125 B mod.
NW153 **Total Boron:** APHA Online Edition 3125 B mod.
NW154 **Total Cadmium:** APHA Online Edition 3125 B mod.
NW156 **Total Calcium:** APHA Online Edition 3125 B mod.
NW157 **Total Chromium:** APHA Online Edition 3125 B mod.
NW158 **Total Cobalt:** APHA Online Edition 3125 B mod.

NW159	**Total Copper:** APHA Online Edition 3125 B mod.	NW160	**Total Iron:** APHA Online Edition 3125 B mod.
NW161	**Total Lead:** APHA Online Edition 3125 B mod.	NW162	**Total Lithium:** APHA Online Edition 3125 B mod.
NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.	NW164	**Total Manganese:** APHA Online Edition 3125 B mod.
NW165	**Total Mercury:** APHA Online Edition 3125 B mod.	NW166	**Total Molybdenum:** APHA Online Edition 3125 B mod.
NW167	**Total Nickel:** APHA Online Edition 3125 B mod.	NW168	**Total Potassium:** APHA Online Edition 3125 B mod.
NW169	**Total Selenium:** APHA Online Edition 3125 B mod.	NW170	**Total Silver:** APHA Online Edition 3125 B mod.
NW171	**Total Sodium:** APHA Online Edition 3125 B mod.	NW172	**Total Strontium:** APHA Online Edition 3125 B mod.
NW173	**Total Tin:** APHA Online Edition 3125 B mod.	NW174	**Total Titanium:** APHA Online Edition 3125 B mod.
NW176	**Total Vanadium:** APHA Online Edition 3125 B mod.	NW177	**Total Zinc:** APHA Online Edition 3125 B mod.
NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I	NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B
NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B	NW206	**Suspended Solids:** APHA Online Edition 2540 D
NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B	NW212	**Turbidity:** APHA 24th Edition 2130 B
NW339	**Total Dissolved Solids:** Internal Method, Gravimetry	NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)
NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)	NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry
NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.	NW580	**Thallium - Total:** APHA Online Edition 3125 B mod.
NW581	**Uranium - Total:** APHA Online Edition 3125 B mod.	NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.
NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.	NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.
NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C	NW676	**Ammonia Nitrogen:** Internal Method, Spectrophotometry (DA)
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E		

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-24-NC-016767-01	REPORT DATE	30/05/2024

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders:	James Thornton	**Order code:**	EUNZCH-00178122
Contract:	Matakanui Gold Water Monitoring		
Submission Reference:	2024-05-16_sampling	**Purchase Order Number:**	NA

SAMPLE CODE	817-2024-00059261		
Sample Name	RS01		
Sample Reference	Rise and shine stream 1		
Reception Date & Time:	17/05/2024 8:30	**Reception temperature:**	12.4 °C
Analysis Started on:	17/05/2024	**Analysis Ending Date:**	29/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.84	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	19.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.8	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.018	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.012	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	27.2	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.09	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	5.10	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0285	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.28	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	18.4	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	6.68	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.358	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.5		0.1
②NW011	**Sulphate**			
	Sulphate	11.2	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	7	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	78	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	23.4	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	94	mg/l	1
②NW030	**Total Hardness**			
	Hardness	89	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	4.3	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.106	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.8	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.005	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	3.55	NTU	0.01

SAMPLE CODE	**817-2024-00059262**		
Sample Name	SC01		
Sample Reference	Shepherds Creek by irrigation take		
Reception Date & Time:	17/05/2024 8:30	**Reception temperature:**	12.4 °C
Analysis Started on:	17/05/2024	**Analysis Ending Date:**	29/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	<1	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.08	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	7.38	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	56.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.008	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.002	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.046	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	74.7	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.011	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	28.6	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0007	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	2.36	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	9.46	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	16.3	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	1.07	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0069	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.14	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.3		0.1
②NW011	**Sulphate**			
	Sulphate	<0.02	mg/l	0.02
②NW206	**Suspended Solids**			

		RESULTS		LOQ
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	236	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	67.5	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	275	mg/l	1
②NW030	**Total Hardness**			
	Hardness	304	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	24.2	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.100	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.5	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.58	NTU	0.01

SAMPLE CODE	**817-2024-00059263**		
Sample Name	SC03		
Sample Reference	Shepherds Creek 3		
Reception Date & Time:	17/05/2024 8:30	**Reception temperature:**	12.4 °C
Analysis Started on:	17/05/2024	**Analysis Ending Date:**	29/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	4	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.77	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	32.3	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			

		RESULTS		LOQ
②NW098	**Dissolved Aluminium**			
	Aluminium	0.006	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.032	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	45.6	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.005	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	12.1	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0024	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.40	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	7.79	mg/l	0.02
②NW119	**Dissolved Silver**			

		RESULTS		LOQ
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	8.32	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.709	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0024	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.15	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	0.06	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
②NW011	**Sulphate**			
	Sulphate	16.7	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	8	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	146	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	41.7	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	158	mg/l	1
②NW030	**Total Hardness**			
	Hardness	164	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	10.2	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.171	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.7	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.009	mg/l	0.005
②NW212	**Turbidity**			

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	3.46	NTU	0.01

SAMPLE CODE	**817-2024-00059264**		
Sample Name	RS02		
Sample Reference	Rise and shine stream 2 at Shreks		
Reception Date & Time:	17/05/2024 8:30	**Reception temperature:**	12.4 °C
Analysis Started on:	17/05/2024	**Analysis Ending Date:**	29/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	2	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	3.08	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	14.1	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.5	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.004	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.010	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	18.5	mg/l	0.1
②NW106	**Dissolved Chromium**			

		RESULTS		LOQ
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	0.0006	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.01	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	3.79	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	<0.0005	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	1.54	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	10.8	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	5.29	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.243	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			

		RESULTS		LOQ
②NW006	**Fluoride**			
	Fluoride	0.11	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
②NW011	**Sulphate**			
	Sulphate	4.44	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	60	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	17.6	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	69	mg/l	1
②NW030	**Total Hardness**			
	Hardness	62	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	3.4	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.164	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	2.6	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.011	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	1.00	NTU	0.01

SAMPLE CODE	**817-2024-00059265**		
Sample Name	RSA1		
Sample Reference	Rise and shine Adit		
Reception Date & Time:	17/05/2024 8:30	**Reception temperature:**	12.4 °C
Analysis Started on:	17/05/2024	**Analysis Ending Date:**	29/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	3	mg/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	33	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.01	mg/l	0.01
②NW009	**Bromide**			

		RESULTS		LOQ
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.35	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	17.7	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.040	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.021	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	25.1	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	0.0008	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.20	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.003	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	4.82	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.253	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			

		RESULTS		LOQ
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	0.65	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	7.84	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	6.62	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.297	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	0.005	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	6.7		0.1
②NW011	**Sulphate**			
	Sulphate	6.77	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	16	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	78	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	23.0	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	87	mg/l	1
②NW030	**Total Hardness**			

		RESULTS		LOQ
②NW030	**Total Hardness**			
	Hardness	82	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	4.2	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.187	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.014	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	14.7	NTU	0.01

SAMPLE CODE	**817-2024-00059266**		
Sample Name	RS03		
Sample Reference	Rise and shine stream 3 at Alta crossing		
Reception Date & Time:	17/05/2024 8:30	**Reception temperature:**	12.4 °C
Analysis Started on:	17/05/2024	**Analysis Ending Date:**	29/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	2	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	1.59	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	9.4	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	1.1	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	<0.002	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.008	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.006	mg/l	0.002
②NW101	**Dissolved Beryllium**			

		RESULTS		LOQ
②NW101	**Dissolved Beryllium** Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth** Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron** Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium** Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium** Calcium (Ca)	12.1	mg/l	0.1
②NW106	**Dissolved Chromium** Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	2.58	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0151	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.52	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	9.42	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	4.29	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.143	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			

		RESULTS		LOQ
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.09	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.4		0.1
②NW011	**Sulphate**			
	Sulphate	2.92	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	40	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	11.1	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	46	mg/l	1
②NW030	**Total Hardness**			
	Hardness	41	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	2.2	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.053	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.007	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.27	NTU	0.01

SAMPLE CODE	**817-2024-00059267**		
Sample Name	RS04		
Sample Reference	Rise and shine stream upstream of Shreks		
Reception Date & Time:	17/05/2024 8:30	**Reception temperature:**	12.4 °C
Analysis Started on:	17/05/2024	**Analysis Ending Date:**	29/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	9	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.11	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	2.77	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	17.6	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	2.7	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.003	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.015	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	23.1	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.20	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			

		RESULTS		LOQ
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.002	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	4.74	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0082	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.59	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	<0.02	mg/l	0.02
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	7.72	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	0.309	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.10	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.4		0.1
②NW011	**Sulphate**			
	Sulphate	6.44	mg/l	0.02
②NW206	**Suspended Solids**			

		RESULTS		LOQ
②NW206	**Suspended Solids**			
	Suspended Solids	25	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	76	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	20.9	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	86	mg/l	1
②NW030	**Total Hardness**			
	Hardness	77	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	4.3	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	1.47	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	3.1	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.063	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	6.64	NTU	0.01

SAMPLE CODE	**817-2024-00059268**		
Sample Name	MDD015		
Sample Reference	groundwater from MDD15 collar		
Reception Date & Time:	17/05/2024 8:30	**Reception temperature:**	12.4 °C
Analysis Started on:	17/05/2024	**Analysis Ending Date:**	30/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	6	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	0.11	mg/l	0.01
②NW009	**Bromide**			
	Bromide	0.12	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	10.6	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	43.7	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.2	mg/l	0.1
②NW098	**Dissolved Aluminium**			

		RESULTS		LOQ
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.019	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.215	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	0.04	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	23.4	mg/l	0.1
②NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
②NW107	**Dissolved Cobalt**			
	Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
②NW109	**Dissolved Iron**			
	Iron (Fe)	0.02	mg/l	0.01
②NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium**			
	Lithium (Li)	0.059	mg/l	0.001
②NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	18.4	mg/l	0.01
②NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0080	mg/l	0.0005
②NW114	**Dissolved Mercury**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum**			
	Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
②NW117	**Dissolved Potassium**			
	Potassium (K)	1.88	mg/l	0.01
②NW118	**Dissolved Selenium**			
	Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica**			
	Sand/silica	11.9	mg/l	0.02
②NW119	**Dissolved Silver**			

		RESULTS		LOQ
②NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium**			
	Sodium (Na)	47.8	mg/l	0.01
②NW121	**Dissolved Strontium**			
	Strontium (Sr)	8.38	mg/l	0.0005
②NW584	**Dissolved Thallium**			
	Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin**			
	Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium**			
	Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium**			
	Uranium (U)	0.0010	mg/l	0.0002
②NW124	**Dissolved Vanadium**			
	Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
②NW006	**Fluoride**			
	Fluoride	0.23	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.0		0.1
②NW011	**Sulphate**			
	Sulphate	11.5	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	201	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	15.5	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	214	mg/l	1
②NW030	**Total Hardness**			
	Hardness	134	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	14.7	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.107	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.2	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.006	mg/l	0.005
②NW212	**Turbidity**			

		RESULTS		LOQ
②NW212	**Turbidity**			
	Turbidity	0.26	NTU	0.01

SAMPLE CODE	**817-2024-00059269**		
Sample Name	CC01		
Sample Reference	Clear water ck US DOC boundary		
Reception Date & Time:	17/05/2024 8:30	**Reception temperature:**	12.4 °C
Analysis Started on:	17/05/2024	**Analysis Ending Date:**	30/05/2024
Product Type	Water		

		RESULTS		LOQ
②NW409	**Acidity to pH 3.7**			
	Acidity	<1	mg/l	1
③NW410	**Acidity to pH 7.0**			
	Acidity	<1	mg/l	1
②NW345	**Acidity to pH 8.3**			
	Acidity	2	mg CaCO3/l	1
②NW676	**Ammonia Nitrogen**			
	Ammonia nitrogen	<0.01	mg/l	0.01
②NW009	**Bromide**			
	Bromide	<0.02	mg/l	0.02
②NW007	**Chloride**			
	Chloride (Cl)	0.89	mg/l	0.02
②NW023	**Conductivity**			
	Conductivity	4.2	mS/m	0.1
②NW679	**Cyanide**			
	Cyanide	0.005	mg/l	0.005
③NW671	**Dissolved (NP) Organic Carbon**			
	Carbon	0.9	mg/l	0.1
②NW098	**Dissolved Aluminium**			
	Aluminium	0.007	mg/l	0.002
②NW099	**Dissolved Antimony**			
	Antimony (Sb)	<0.001	mg/l	0.001
②NW583	**Dissolved Arsenic**			
	Arsenic (As)	0.001	mg/l	0.001
②NW100	**Dissolved Barium**			
	Barium (Ba)	0.005	mg/l	0.002
②NW101	**Dissolved Beryllium**			
	Beryllium (Be)	<0.001	mg/l	0.001
②NW102	**Dissolved Bismuth**			
	Bismuth (Bi)	<0.001	mg/l	0.001
②NW103	**Dissolved Boron**			
	Boron (B)	<0.03	mg/l	0.03
②NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
②NW105	**Dissolved Calcium**			
	Calcium (Ca)	4.9	mg/l	0.1
②NW106	**Dissolved Chromium**			

		RESULTS		LOQ
②NW106	**Dissolved Chromium** Chromium (Cr)	0.002	mg/l	0.001
②NW107	**Dissolved Cobalt** Cobalt (Co)	<0.0005	mg/l	0.0005
②NW108	**Dissolved Copper** Copper (Cu)	0.0009	mg/l	0.0005
②NW109	**Dissolved Iron** Iron (Fe)	0.24	mg/l	0.01
②NW110	**Dissolved Lead** Lead (Pb)	<0.0005	mg/l	0.0005
②NW111	**Dissolved Lithium** Lithium (Li)	<0.001	mg/l	0.001
②NW112	**Dissolved Magnesium** Magnesium (Mg)	1.06	mg/l	0.01
②NW113	**Dissolved Manganese** Manganese (Mn)	0.0045	mg/l	0.0005
②NW114	**Dissolved Mercury** Mercury (Hg)	<0.0005	mg/l	0.0005
②NW115	**Dissolved Molybdenum** Molybdenum (Mo)	<0.0005	mg/l	0.0005
②NW116	**Dissolved Nickel** Nickel (Ni)	0.0044	mg/l	0.0005
②NW117	**Dissolved Potassium** Potassium (K)	0.44	mg/l	0.01
②NW118	**Dissolved Selenium** Selenium (Se)	<0.005	mg/l	0.005
②NW472	**Dissolved Silica** Sand/silica	8.62	mg/l	0.02
②NW119	**Dissolved Silver** Silver (Ag)	<0.0005	mg/l	0.0005
②NW120	**Dissolved Sodium** Sodium (Na)	2.64	mg/l	0.01
②NW121	**Dissolved Strontium** Strontium (Sr)	0.0537	mg/l	0.0005
②NW584	**Dissolved Thallium** Thallium (Tl)	<0.0005	mg/l	0.0005
②NW122	**Dissolved Tin** Tin (Sn)	<0.0005	mg/l	0.0005
②NW123	**Dissolved Titanium** Titanium (Ti)	<0.0005	mg/l	0.0005
②NW585	**Dissolved Uranium** Uranium (U)	<0.0002	mg/l	0.0002
②NW124	**Dissolved Vanadium** Vanadium (V)	<0.0005	mg/l	0.0005
②NW125	**Dissolved Zinc** Zinc (Zn)	0.003	mg/l	0.002
②NW006	**Fluoride**			

		RESULTS		LOQ
②NW006	**Fluoride**			
	Fluoride	0.07	mg/l	0.02
②NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
②NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
②NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.3		0.1
②NW011	**Sulphate**			
	Sulphate	1.04	mg/l	0.02
②NW206	**Suspended Solids**			
	Suspended Solids	<6	mg/l	3
②NW003	**Total Alkalinity**			
	Alkalinity total	16	mg CaCO3/l	1
②NW156	**Total Calcium**			
	Calcium (Ca)	4.3	mg/l	0.1
③NW339	**Total Dissolved Solids**			
	Total dissolved Solids	21	mg/l	1
②NW030	**Total Hardness**			
	Hardness	17	mg CaCO3/l	1
②NW163	**Total Magnesium**			
	Magnesium (Mg)	0.9	mg/l	0.1
②NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.073	mg/l	0.002
②NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	1.0	mg/l	0.1
②NW194	**Total Phosphorus**			
	Total phosphorus	0.010	mg/l	0.005
②NW212	**Turbidity**			
	Turbidity	0.28	NTU	0.01

LIST OF METHODS

NW003	**Total Alkalinity:** APHA Online Edition 2320 B	NW006	**Fluoride:** APHA Online Edition 4110 B
NW007	**Chloride:** APHA Online Edition 4110 B	NW008	**Nitrite-N:** APHA Online Edition 4110 B
NW009	**Bromide:** APHA Online Edition 4110 B	NW010	**Nitrate-N:** APHA Online Edition 4110 B
NW011	**Sulphate:** APHA Online Edition 4110 B	NW023	**Conductivity:** APHA 24th Edition 2510 B
NW030	**Total Hardness:** APHA Online Edition 2340 B	NW098	**Dissolved Aluminium:** APHA Online Edition 3125 B mod.
NW099	**Dissolved Antimony:** APHA Online Edition 3125 B mod.	NW100	**Dissolved Barium:** APHA Online Edition 3125 B mod.
NW101	**Dissolved Beryllium:** APHA Online Edition 3125 B mod.	NW102	**Dissolved Bismuth:** APHA Online Edition 3125 B mod.
NW103	**Dissolved Boron:** APHA Online Edition 3125 B mod.	NW104	**Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105	**Dissolved Calcium:** APHA Online Edition 3125 B mod.	NW106	**Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW107	**Dissolved Cobalt:** APHA Online Edition 3125 B mod.	NW108	**Dissolved Copper:** APHA Online Edition 3125 B mod.
NW109	**Dissolved Iron:** APHA Online Edition 3125 B mod.	NW110	**Dissolved Lead:** APHA Online Edition 3125 B mod.
NW111	**Dissolved Lithium:** APHA Online Edition 3125 B mod.	NW112	**Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113	**Dissolved Manganese:** APHA Online Edition 3125 B mod.	NW114	**Dissolved Mercury:** APHA Online Edition 3125 B mod.
NW115	**Dissolved Molybdenum:** APHA Online Edition 3125 B mod.		

NW116	**Dissolved Nickel:** APHA Online Edition 3125 B mod.	NW117	**Dissolved Potassium:** APHA Online Edition 3125 B mod.
NW118	**Dissolved Selenium:** APHA Online Edition 3125 B mod.	NW119	**Dissolved Silver:** APHA Online Edition 3125 B mod.
NW120	**Dissolved Sodium:** APHA Online Edition 3125 B mod.	NW121	**Dissolved Strontium:** APHA Online Edition 3125 B mod.
NW122	**Dissolved Tin:** APHA Online Edition 3125 B mod.	NW123	**Dissolved Titanium:** APHA Online Edition 3125 B mod.
NW124	**Dissolved Vanadium:** APHA Online Edition 3125 B mod.	NW125	**Dissolved Zinc:** APHA Online Edition 3125 B mod.
NW156	**Total Calcium:** APHA Online Edition 3125 B mod.	NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I	NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B
NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B	NW206	**Suspended Solids:** APHA Online Edition 2540 D
NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B	NW212	**Turbidity:** APHA 24th Edition 2130 B
NW339	**Total Dissolved Solids:** Internal Method, Gravimetry	NW345	**Acidity to pH 8.3:** APHA Online Edition 2310 B (Free CO2)
NW409	**Acidity to pH 3.7:** APHA Online Edition 2310 B (Mineral Acidity)	NW410	**Acidity to pH 7.0:** Internal Method, Titrimetry
NW472	**Dissolved Silica:** APHA Online Edition 3120 B mod.	NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.
NW584	**Dissolved Thallium:** APHA Online Edition 3125 B mod.	NW585	**Dissolved Uranium:** APHA Online Edition 3125 B mod.
NW671	**Dissolved (NP) Organic Carbon:** APHA Online Edition 5310 B,C	NW676	**Ammonia Nitrogen:** Internal Method, Spectrophotometry (DA)
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E		

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

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www.hill-labs.co.nz

Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3550388 SPv1
Contact:	Hamish Mclauchlan	**Date Received:**	19-Apr-2024
	C/- Matakanui Gold Limited	**Date Reported:**	01-May-2024
	305 Bendigo Loop Road	**Quote No:**	123215
	Bendigo	**Order No:**	
	Cromwell 9383	**Client Reference:**	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

Sample Name:		RS01 17-Apr-2024
Lab Number:		3550388.1
Individual Tests		
Turbidity	NTU	0.56
pH	pH Units	8.0
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	94
Electrical Conductivity (EC)	mS/m	20.7
Total Suspended Solids	g/m³	< 3
Total Dissolved Solids (TDS)	g/m³	127
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	< 0.00021
Dissolved Strontium	g/m³	0.39
Total Strontium	g/m³	0.41
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	3.6
Fluoride	g/m³	0.09
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	< 0.002
Nitrate-N + Nitrite-N	g/m³	< 0.002
Total Phosphorus	g/m³	0.004
Reactive Silica	g/m³ as SiO_2	9.8
Silicon	g/m³	4.6
Sulphate	g/m³	7.0
Dissolved Organic Carbon (DOC)	g/m³	< 0.5
Total Organic Carbon (TOC)	g/m³	3.7
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	98
Dissolved Aluminium	g/m³	< 0.003
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0183
Dissolved Barium	g/m³	0.013
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	0.005 #1

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The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		RS01 17-Apr-2024
Lab Number:		3550388.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	31 #1
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	< 0.0005
Dissolved Iron	g/m³	0.06
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0028 #1
Dissolved Magnesium	g/m³	5.2 #1
Dissolved Manganese	g/m³	0.0171
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.63 #1
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	6.4 #1
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00006
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.0044
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.027
Total Barium	g/m³	0.0134
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	< 0.0053 #1
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	27 #1
Total Chromium	g/m³	< 0.00053
Total Copper	g/m³	< 0.00053
Total Iron	g/m³	0.21
Total Lead	g/m³	< 0.00011
Total Lithium	g/m³	0.0025 #1
Total Magnesium	g/m³	4.4 #1
Total Manganese	g/m³	0.035
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.58 #1
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	6.3 #1
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000068
Total Zinc	g/m³	< 0.0011

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (up to 100-200% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 22-Apr-2024 and 01-May-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Ara Heron BSc (Tech)
Client Services Manager - Environmental

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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3568945 SPv1
Contact:	Hamish Mclauchlan C/- Matakanui Gold Limited 305 Bendigo Loop Road Bendigo Cromwell 9383	**Date Received:**	03-May-2024
		Date Reported:	10-May-2024
		Quote No:	123215
		Order No:	
		Client Reference:	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

Sample Name:		RS 01 01-May-2024
Lab Number:		3568945.1
Individual Tests		
Turbidity	NTU	1.13
pH	pH Units	8.0
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	88
Electrical Conductivity (EC)	mS/m	19.1
Total Suspended Solids	g/m³	< 3
Total Dissolved Solids (TDS)	g/m³	111
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	< 0.00021
Dissolved Strontium	g/m³	0.40 #1
Total Strontium	g/m³	0.39 #1
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	0.004
Chloride	g/m³	3.7
Fluoride	g/m³	0.10
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	< 0.002
Nitrate-N + Nitrite-N	g/m³	< 0.002
Total Phosphorus	g/m³	0.006
Reactive Silica	g/m³ as SiO_2	9.5
Silicon	g/m³	4.5
Sulphate	g/m³	4.8
Dissolved Organic Carbon (DOC)	g/m³	1.0
Total Organic Carbon (TOC)	g/m³	2.0
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	89
Dissolved Aluminium	g/m³	< 0.003
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0187
Dissolved Barium	g/m³	0.013
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	0.006 #1

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The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		RS 01 01-May-2024
Lab Number:		3568945.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	28 #1
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	< 0.0005
Dissolved Iron	g/m³	0.06
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0026
Dissolved Magnesium	g/m³	4.9 #1
Dissolved Manganese	g/m³	0.0169
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.63 #1
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	6.2 #1
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00005
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.0067
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.028
Total Barium	g/m³	0.0138
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	0.0055 #1
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	26 #1
Total Chromium	g/m³	< 0.00053
Total Copper	g/m³	< 0.00053
Total Iron	g/m³	0.25
Total Lead	g/m³	< 0.00011
Total Lithium	g/m³	0.0026
Total Magnesium	g/m³	4.7 #1
Total Manganese	g/m³	0.045
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.53 #1
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	6.0 #1
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000057
Total Zinc	g/m³	< 0.0011

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (up to 200-300% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 04-May-2024 and 10-May-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Ara Heron BSc (Tech)
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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3583767 SPv1
Contact:	Hamish Mclauchlan	**Date Received:**	17-May-2024
	C/- Matakanui Gold Limited	**Date Reported:**	27-May-2024
	305 Bendigo Loop Road	**Quote No:**	123215
	Bendigo	**Order No:**	
	Cromwell 9383	**Client Reference:**	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

	Sample Name:	RS01 16-May-2024
	Lab Number:	3583767.1
Individual Tests		
Turbidity	NTU	3.0
pH	pH Units	8.0
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	82
Electrical Conductivity (EC)	mS/m	18.8
Total Suspended Solids	g/m³	4
Total Dissolved Solids (TDS)	g/m³	113
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	< 0.00021
Dissolved Strontium	g/m³	0.35
Total Strontium	g/m³	0.36
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	2.6
Fluoride	g/m³	0.09
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	< 0.002
Nitrate-N + Nitrite-N	g/m³	< 0.002
Total Phosphorus	g/m³	0.012
Reactive Silica	g/m³ as SiO_2	9.8
Silicon	g/m³	4.6
Sulphate	g/m³	10.1
Dissolved Organic Carbon (DOC)	g/m³	1.5
Total Organic Carbon (TOC)	g/m³	1.8
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	92
Dissolved Aluminium	g/m³	< 0.003
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0161
Dissolved Barium	g/m³	0.012
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	< 0.005

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		RS01 16-May-2024
Lab Number:		3583767.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	28
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	< 0.0005
Dissolved Iron	g/m³	0.06
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0026
Dissolved Magnesium	g/m³	5.5
Dissolved Manganese	g/m³	0.0190
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.05
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	6.7
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00004
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.032
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.047
Total Barium	g/m³	0.0145
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	< 0.0053
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	26
Total Chromium	g/m³	< 0.00053
Total Copper	g/m³	< 0.00053
Total Iron	g/m³	0.83
Total Lead	g/m³	< 0.00011
Total Lithium	g/m³	0.0023
Total Magnesium	g/m³	4.8
Total Manganese	g/m³	0.127
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.00
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	6.0
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000047
Total Zinc	g/m³	< 0.0011

Analyst's Comments

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (up to 200-300% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 18-May-2024 and 27-May-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3596507 SPv1
Contact:	Hamish Mclauchlan	**Date Received:**	31-May-2024
	C/- Matakanui Gold Limited	**Date Reported:**	11-Jun-2024
	305 Bendigo Loop Road	**Quote No:**	123215
	Bendigo	**Order No:**	
	Cromwell 9383	**Client Reference:**	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

Sample Name:		MGL RS01 29-May-2024
Lab Number:		3596507.1
Individual Tests		
Turbidity	NTU	2.1
pH	pH Units	7.4
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	82
Electrical Conductivity (EC)	mS/m	18.7
Total Suspended Solids	g/m³	< 3
Total Dissolved Solids (TDS)	g/m³	112
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	< 0.00021
Dissolved Strontium	g/m³	0.36 #1
Total Strontium	g/m³	0.35 #1
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	2.9
Fluoride	g/m³	0.08
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	< 0.002
Nitrate-N + Nitrite-N	g/m³	< 0.002
Total Phosphorus	g/m³	0.017
Reactive Silica	g/m³ as SiO_2	10.0
Silicon	g/m³	4.7
Sulphate	g/m³	7.5
Dissolved Organic Carbon (DOC)	g/m³	1.6
Total Organic Carbon (TOC)	g/m³	1.7
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	82
Dissolved Aluminium	g/m³	< 0.003
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0161
Dissolved Barium	g/m³	0.012
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	0.005 #1

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		MGL RS01 29-May-2024
Lab Number:		3596507.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	26 #1
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	< 0.0005
Dissolved Iron	g/m³	0.05
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0025 #1
Dissolved Magnesium	g/m³	4.6 #1
Dissolved Manganese	g/m³	0.0143
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.10 #1
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	5.9 #1
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00005
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.0168
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.032
Total Barium	g/m³	0.0130
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	< 0.0053 #1
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	25 #1
Total Chromium	g/m³	< 0.00053
Total Copper	g/m³	< 0.00053
Total Iron	g/m³	0.40
Total Lead	g/m³	< 0.00011
Total Lithium	g/m³	0.0024 #1
Total Magnesium	g/m³	4.4 #1
Total Manganese	g/m³	0.068
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.04 #1
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	5.8 #1
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000066
Total Zinc	g/m³	< 0.0011

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (up to 200-300% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 31-May-2024 and 11-Jun-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3607374 SPv1
Contact:	Hamish Mclauchlan	**Date Received:**	15-Jun-2024
	C/- Matakanui Gold Limited	**Date Reported:**	24-Jun-2024
	305 Bendigo Loop Road	**Quote No:**	123215
	Bendigo	**Order No:**	
	Cromwell 9383	**Client Reference:**	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

	Sample Name:	MGL RS01 13-Jun-2024
	Lab Number:	3607374.1
Individual Tests		
Turbidity	NTU	1.20
pH	pH Units	7.6
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	78
Electrical Conductivity (EC)	mS/m	18.1
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	< 0.00021
Dissolved Strontium	g/m³	0.34
Total Strontium	g/m³	0.34
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	3.2
Fluoride	g/m³	0.08
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	< 0.002
Nitrate-N + Nitrite-N	g/m³	< 0.002
Total Phosphorus	g/m³	0.009
Reactive Silica	g/m³ as SiO_2	9.9
Silicon	g/m³	4.6
Sulphate	g/m³	7.9
Dissolved Organic Carbon (DOC)	g/m³	2.2 #2
Total Organic Carbon (TOC)	g/m³	1.4 #2
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	85
Dissolved Aluminium	g/m³	< 0.003
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0166
Dissolved Barium	g/m³	0.012
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	0.005
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	26 #1

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		MGL RS01 13-Jun-2024
Lab Number:		3607374.1
Drinking water metals suite, dissolved, trace		
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	< 0.0005
Dissolved Iron	g/m³	0.05
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0023
Dissolved Magnesium	g/m³	4.9 #1
Dissolved Manganese	g/m³	0.0105
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.10 #1
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	6.1 #1
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00006
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.027
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.039
Total Barium	g/m³	0.0136
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	0.0062
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	26 #1
Total Chromium	g/m³	< 0.00053
Total Copper	g/m³	< 0.00053
Total Iron	g/m³	0.55
Total Lead	g/m³	< 0.00011
Total Lithium	g/m³	0.0025
Total Magnesium	g/m³	4.8 #1
Total Manganese	g/m³	0.094
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.07 #1
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	5.6 #1
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000066
Total Zinc	g/m³	< 0.0011

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

#2 It has been noted that in some cases the results for Dissolved Organic Carbon (DOC) were greater than those for Total Organic Carbon (TOC), but within analytical variation for this method. The level of Uncertainty of Measurement (UOM) for the DOC and TOC analyses is significant due to the similar level of Inorganic Carbon relative to Total Carbon present in these samples. TOC is determined by subtracting a result obtained for Total Inorganic Carbon (TIC) from a result obtained for Total Carbon (TC). There may be an uncertainty of measurement of up to ± 10% in each of these measurements (at the 95% confidence level). The uncertainty of these measurements is combined in the calculation of the TOC result, leading to a higher uncertainty than would normally be achieved for samples that contain less Inorganic Carbon relative to Total Carbon. For this reason, the TOC and DOC results reported should be treated with caution.

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (up to 200-300% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m³	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m³	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m³	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m³	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F⁻ C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 15-Jun-2024 and 24-Jun-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3616089 SPv1
Contact:	Hamish Mclauchlan	**Date Received:**	29-Jun-2024
	C/- Matakanui Gold Limited	**Date Reported:**	08-Jul-2024
	305 Bendigo Loop Road	**Quote No:**	123215
	Bendigo	**Order No:**	
	Cromwell 9383	**Client Reference:**	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

Sample Name:		MGL RS01 27-Jun-2024
Lab Number:		3616089.1
Individual Tests		
Turbidity	NTU	2.4
pH	pH Units	7.7
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	80
Electrical Conductivity (EC)	mS/m	17.2
Total Suspended Solids	g/m³	< 3
Total Dissolved Solids (TDS)	g/m³	99
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	< 0.00021
Dissolved Strontium	g/m³	0.31
Total Strontium	g/m³	0.33
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	3.1
Fluoride	g/m³	0.08
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	0.003
Nitrate-N + Nitrite-N	g/m³	0.003
Total Phosphorus	g/m³	0.010
Reactive Silica	g/m³ as SiO_2	9.9
Silicon	g/m³	4.6
Sulphate	g/m³	6.8
Dissolved Organic Carbon (DOC)	g/m³	1.9
Total Organic Carbon (TOC)	g/m³	3.3
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	82
Dissolved Aluminium	g/m³	< 0.003
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0161
Dissolved Barium	g/m³	0.011
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	< 0.005

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The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		MGL RS01 27-Jun-2024
Lab Number:		3616089.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	24 #1
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	< 0.0005
Dissolved Iron	g/m³	0.04
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0025 #1
Dissolved Magnesium	g/m³	5.1 #1
Dissolved Manganese	g/m³	0.0053
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.25 #1
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	5.5
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00006
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.036
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.042
Total Barium	g/m³	0.0142
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	< 0.0053
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	23 #1
Total Chromium	g/m³	< 0.00053
Total Copper	g/m³	< 0.00053
Total Iron	g/m³	0.60
Total Lead	g/m³	< 0.00011
Total Lithium	g/m³	0.0023 #1
Total Magnesium	g/m³	4.5 #1
Total Manganese	g/m³	0.087
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.19 #1
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	5.6
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000084
Total Zinc	g/m³	< 0.0011

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (up to 100-200% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 01-Jul-2024 and 08-Jul-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Ara Heron BSc (Tech)
Client Services Manager - Environmental

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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3625993 SPv1
Contact:	Hamish Mclauchlan	**Date Received:**	12-Jul-2024
	C/- Matakanui Gold Limited	**Date Reported:**	19-Jul-2024
	305 Bendigo Loop Road	**Quote No:**	123215
	Bendigo	**Order No:**	
	Cromwell 9383	**Client Reference:**	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

Sample Name:		RS01 11-Jul-2024
Lab Number:		3625993.1
Individual Tests		
Turbidity	NTU	3.2
pH	pH Units	7.8
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	77
Electrical Conductivity (EC)	mS/m	17.9
Total Suspended Solids	g/m³	4
Total Dissolved Solids (TDS)	g/m³	112
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	< 0.00021
Dissolved Strontium	g/m³	0.32
Total Strontium	g/m³	0.33
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	3.9
Fluoride	g/m³	0.08
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	0.004
Nitrate-N + Nitrite-N	g/m³	0.004
Total Phosphorus	g/m³	0.010
Reactive Silica	g/m³ as SiO_2	10.0
Silicon	g/m³	4.7
Sulphate	g/m³	7.1
Dissolved Organic Carbon (DOC)	g/m³	2.4
Total Organic Carbon (TOC)	g/m³	2.4
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	79
Dissolved Aluminium	g/m³	< 0.003
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0129
Dissolved Barium	g/m³	0.013
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	0.005

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The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		RS01 11-Jul-2024
Lab Number:		3625993.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	24
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	< 0.0005
Dissolved Iron	g/m³	0.05
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0024
Dissolved Magnesium	g/m³	4.7
Dissolved Manganese	g/m³	0.0064
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.32
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	5.6
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00006
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.047
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.039
Total Barium	g/m³	0.0157
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	< 0.0053
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	24
Total Chromium	g/m³	< 0.00053
Total Copper	g/m³	< 0.00053
Total Iron	g/m³	0.63
Total Lead	g/m³	< 0.00011
Total Lithium	g/m³	0.0024
Total Magnesium	g/m³	4.7
Total Manganese	g/m³	0.089
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.33
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	5.4
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000075
Total Zinc	g/m³	< 0.0011

Analyst's Comments

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (up to 100-200% at the 95% confidence level).

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the DOC result is significantly greater than that usually reported for this analyte (up to 100-200% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 12-Jul-2024 and 19-Jul-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Martin Cowell - BSc
Client Services Manager - Environmental

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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3636094 SPv1
Contact:	Hamish Mclauchlan	**Date Received:**	26-Jul-2024
	C/- Matakanui Gold Limited	**Date Reported:**	02-Aug-2024
	305 Bendigo Loop Road	**Quote No:**	123215
	Bendigo	**Order No:**	
	Cromwell 9383	**Client Reference:**	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

Sample Name:		RS01 25-Jul-2024
Lab Number:		3636094.1
Individual Tests		
Turbidity	NTU	3.9
pH	pH Units	7.9
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	73
Electrical Conductivity (EC)	mS/m	16.7
Total Suspended Solids	g/m³	7
Total Dissolved Solids (TDS)	g/m³	98
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	< 0.00021
Dissolved Strontium	g/m³	0.30
Total Strontium	g/m³	0.31
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	2.9
Fluoride	g/m³	0.08
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	0.002
Nitrate-N + Nitrite-N	g/m³	0.003
Total Phosphorus	g/m³	0.019
Reactive Silica	g/m³ as SiO_2	10.0
Silicon	g/m³	4.7
Sulphate	g/m³	6.4
Dissolved Organic Carbon (DOC)	g/m³	2.0
Total Organic Carbon (TOC)	g/m³	3.2
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	71
Dissolved Aluminium	g/m³	< 0.003
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0133
Dissolved Barium	g/m³	0.011
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	< 0.005

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		RS01 25-Jul-2024
Lab Number:		3636094.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	22
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	< 0.0005
Dissolved Iron	g/m³	0.04
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0021
Dissolved Magnesium	g/m³	4.0
Dissolved Manganese	g/m³	0.0091
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.01
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	5.4 #1
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00005
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.060
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.056
Total Barium	g/m³	0.0150
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	< 0.0053
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	22
Total Chromium	g/m³	0.00068
Total Copper	g/m³	< 0.00053
Total Iron	g/m³	1.01
Total Lead	g/m³	0.00013
Total Lithium	g/m³	0.0022
Total Magnesium	g/m³	4.5
Total Manganese	g/m³	0.145
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.04
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	5.3 #1
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000066
Total Zinc	g/m³	0.0016

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (up to 100-200% at the 95% confidence level).

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the DOC result is significantly greater than that usually reported for this analyte (up to 200-300% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 27-Jul-2024 and 02-Aug-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3646501 SPv1
Contact:	Hamish Mclauchlan C/- Matakanui Gold Limited 305 Bendigo Loop Road Bendigo Cromwell 9383	**Date Received:**	10-Aug-2024
		Date Reported:	19-Aug-2024
		Quote No:	123215
		Order No:	
		Client Reference:	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

Sample Name:		MGL RS01 08-Aug-2024
Lab Number:		3646501.1
Individual Tests		
Turbidity	NTU	62
pH	pH Units	7.9
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	72
Electrical Conductivity (EC)	mS/m	16.9
Total Suspended Solids	g/m³	30
Total Dissolved Solids (TDS)	g/m³	111
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	0.00120
Dissolved Strontium	g/m³	0.31
Total Strontium	g/m³	0.31
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	0.037
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	3.4
Fluoride	g/m³	0.07
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	0.002
Nitrate-N	g/m³	0.038
Nitrate-N + Nitrite-N	g/m³	0.040
Total Phosphorus	g/m³	0.101
Reactive Silica	g/m³ as SiO_2	9.2
Silicon	g/m³	4.3
Sulphate	g/m³	6.0
Dissolved Organic Carbon (DOC)	g/m³	2.2
Total Organic Carbon (TOC)	g/m³	4.9
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	74
Dissolved Aluminium	g/m³	0.078
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0138
Dissolved Barium	g/m³	0.012
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	< 0.005

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		MGL RS01 08-Aug-2024
Lab Number:		3646501.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	22
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	0.0006
Dissolved Iron	g/m³	0.11
Dissolved Lead	g/m³	0.00012
Dissolved Lithium	g/m³	0.0022
Dissolved Magnesium	g/m³	4.5
Dissolved Manganese	g/m³	0.0043
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.57
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	5.3
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00008
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	1.93
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.046
Total Barium	g/m³	0.035
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	0.0056
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	23
Total Chromium	g/m³	0.0022
Total Copper	g/m³	0.0027
Total Iron	g/m³	2.7
Total Lead	g/m³	0.0027
Total Lithium	g/m³	0.0054
Total Magnesium	g/m³	4.5
Total Manganese	g/m³	0.123
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	0.00173
Total Potassium	g/m³	2.2
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	5.3
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000153
Total Zinc	g/m³	0.0079

Analyst's Comments

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the DOC result is significantly greater than that usually reported for this analyte (up to 100-200% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 10-Aug-2024 and 19-Aug-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3655938 SPv1
Contact:	Hamish Mclauchlan C/- Matakanui Gold Limited 305 Bendigo Loop Road Bendigo Cromwell 9383	**Date Received:**	23-Aug-2024
		Date Reported:	30-Aug-2024
		Quote No:	123215
		Order No:	
		Client Reference:	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

		Sample Name:	MGL RS01 22-Aug-2024
		Lab Number:	3655938.1
Individual Tests			
Turbidity	NTU		1.21
pH	pH Units		7.9
Acidity (pH 3.7)	g/m³ as $CaCO_3$		< 1.0
Total Alkalinity	g/m³ as $CaCO_3$		73
Electrical Conductivity (EC)	mS/m		16.5
Total Suspended Solids	g/m³		< 3
Total Dissolved Solids (TDS)	g/m³		103
Total Bismuth	g/m³		< 0.00011
Dissolved Cobalt	g/m³		< 0.0002
Total Cobalt	g/m³		< 0.00021
Dissolved Strontium	g/m³		0.30
Total Strontium	g/m³		0.30
Dissolved Thallium	g/m³		< 0.00005
Total Thallium	g/m³		< 0.000053
Dissolved Titanium*	g/m³		< 0.02
Total Titanium*	g/m³		< 0.011
Bromide	g/m³		< 0.05
Total Cyanide	g/m³		< 0.002
Chloride	g/m³		3.1
Fluoride	g/m³		0.07
Total Ammoniacal-N	g/m³		< 0.010
Nitrite-N	g/m³		< 0.002
Nitrate-N	g/m³		0.002
Nitrate-N + Nitrite-N	g/m³		0.003
Total Phosphorus	g/m³		0.006
Reactive Silica	g/m³ as SiO_2		9.2
Silicon	g/m³		4.3
Sulphate	g/m³		5.5
Dissolved Organic Carbon (DOC)	g/m³		1.5
Total Organic Carbon (TOC)	g/m³		3.9
Drinking water metals suite, dissolved, trace			
Total Hardness	g/m³ as $CaCO_3$		74
Dissolved Aluminium	g/m³		< 0.003
Dissolved Antimony	g/m³		< 0.0002
Dissolved Arsenic	g/m³		0.0156
Dissolved Barium	g/m³		0.012
Dissolved Beryllium	g/m³		< 0.00010
Dissolved Boron	g/m³		< 0.005

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The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		MGL RS01 22-Aug-2024
Lab Number:		3655938.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	23 #1
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	< 0.0005
Dissolved Iron	g/m³	0.04
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0021
Dissolved Magnesium	g/m³	4.3
Dissolved Manganese	g/m³	0.0053
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.14
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	5.4
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00007
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.031
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.031
Total Barium	g/m³	0.0126
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	< 0.0053
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	22 #1
Total Chromium	g/m³	0.00054
Total Copper	g/m³	< 0.00053
Total Iron	g/m³	0.37
Total Lead	g/m³	< 0.00011
Total Lithium	g/m³	0.0021
Total Magnesium	g/m³	4.4
Total Manganese	g/m³	0.048
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.15
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	5.5
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000075
Total Zinc	g/m³	< 0.0011

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

Sample 1 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the DOC result is significantly greater than that usually reported for this analyte (up to 200-300% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 26-Aug-2024 and 30-Aug-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3666512 SPv1
Contact:	Hamish Mclauchlan C/- Matakanui Gold Limited 305 Bendigo Loop Road Bendigo Cromwell 9383	**Date Received:**	06-Sep-2024
		Date Reported:	13-Sep-2024
		Quote No:	123215
		Order No:	
		Client Reference:	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

Sample Name:		MGL RS01 05-Sep-2024
Lab Number:		3666512.1
Individual Tests		
Turbidity	NTU	6.8
pH	pH Units	7.9
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	76
Electrical Conductivity (EC)	mS/m	17.0
Total Suspended Solids	g/m³	5
Total Dissolved Solids (TDS)	g/m³	103
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	0.00022
Dissolved Strontium	g/m³	0.31 #1
Total Strontium	g/m³	0.31 #1
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	2.9
Fluoride	g/m³	0.09
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	< 0.002
Nitrate-N + Nitrite-N	g/m³	< 0.002
Total Phosphorus	g/m³	0.013
Reactive Silica	g/m³ as SiO_2	9.4
Silicon	g/m³	4.4
Sulphate	g/m³	4.6
Dissolved Organic Carbon (DOC)	g/m³	6.7
Total Organic Carbon (TOC)	g/m³	7.2
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	82
Dissolved Aluminium	g/m³	0.008
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.021
Dissolved Barium	g/m³	0.012
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	0.006 #1

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Sample Type: Aqueous		
Sample Name:		MGL RS01 05-Sep-2024
Lab Number:		3666512.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	25 #1
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	0.0006
Dissolved Iron	g/m³	0.05
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0023 #1
Dissolved Magnesium	g/m³	4.7 #1
Dissolved Manganese	g/m³	0.0050
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	2.1 #1
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	6.0
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00009
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.076
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.047
Total Barium	g/m³	0.0143
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	< 0.0053 #1
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	23 #1
Total Chromium	g/m³	0.00072
Total Copper	g/m³	0.00086
Total Iron	g/m³	0.68
Total Lead	g/m³	0.00016
Total Lithium	g/m³	0.0022 #1
Total Magnesium	g/m³	4.5 #1
Total Manganese	g/m³	0.085
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	2.0 #1
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	5.4
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000117
Total Zinc	g/m³	< 0.0011

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m³	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m³	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m³	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m³ as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m³	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m³	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m³	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 06-Sep-2024 and 13-Sep-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Ara Heron BSc (Tech)
Client Services Manager - Environmental

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Certificate of Analysis

Client:	Matakanui Gold Limited	**Lab No:**	3676901 SPv1
Contact:	Hamish Mclauchlan	**Date Received:**	21-Sep-2024
	C/- Matakanui Gold Limited	**Date Reported:**	27-Sep-2024
	305 Bendigo Loop Road	**Quote No:**	123215
	Bendigo	**Order No:**	
	Cromwell 9383	**Client Reference:**	
		Submitted By:	Hamish Mclauchlan

Sample Type: Aqueous

Sample Name:		RS01 19-Sep-2024
Lab Number:		3676901.1
Individual Tests		
Turbidity	NTU	2.3
pH	pH Units	7.8
Acidity (pH 3.7)	g/m³ as $CaCO_3$	< 1.0
Total Alkalinity	g/m³ as $CaCO_3$	69
Electrical Conductivity (EC)	mS/m	15.5
Total Suspended Solids	g/m³	< 3
Total Dissolved Solids (TDS)	g/m³	94
Total Bismuth	g/m³	< 0.00011
Dissolved Cobalt	g/m³	< 0.0002
Total Cobalt	g/m³	< 0.00021
Dissolved Strontium	g/m³	0.28 #1
Total Strontium	g/m³	0.27 #1
Dissolved Thallium	g/m³	< 0.00005
Total Thallium	g/m³	< 0.000053
Dissolved Titanium*	g/m³	< 0.02
Total Titanium*	g/m³	< 0.011
Bromide	g/m³	< 0.05
Total Cyanide	g/m³	< 0.002
Chloride	g/m³	2.9
Fluoride	g/m³	0.10
Total Ammoniacal-N	g/m³	< 0.010
Nitrite-N	g/m³	< 0.002
Nitrate-N	g/m³	0.019
Nitrate-N + Nitrite-N	g/m³	0.020
Total Phosphorus	g/m³	0.010
Reactive Silica	g/m³ as SiO_2	8.7
Silicon	g/m³	4.0
Sulphate	g/m³	4.3
Dissolved Organic Carbon (DOC)	g/m³	5.0
Total Organic Carbon (TOC)	g/m³	5.3
Drinking water metals suite, dissolved, trace		
Total Hardness	g/m³ as $CaCO_3$	72
Dissolved Aluminium	g/m³	0.008
Dissolved Antimony	g/m³	< 0.0002
Dissolved Arsenic	g/m³	0.0161
Dissolved Barium	g/m³	0.010
Dissolved Beryllium	g/m³	< 0.00010
Dissolved Boron	g/m³	0.006 #1

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous		
Sample Name:		RS01 19-Sep-2024
Lab Number:		3676901.1
Drinking water metals suite, dissolved, trace		
Dissolved Cadmium	g/m³	< 0.00005
Dissolved Calcium	g/m³	22 #1
Dissolved Chromium	g/m³	< 0.0005
Dissolved Copper	g/m³	0.0010
Dissolved Iron	g/m³	0.08
Dissolved Lead	g/m³	< 0.00010
Dissolved Lithium	g/m³	0.0021 #1
Dissolved Magnesium	g/m³	4.2 #1
Dissolved Manganese	g/m³	0.0048
Dissolved Mercury	g/m³	< 0.00008
Dissolved Molybdenum	g/m³	< 0.0002
Dissolved Nickel	g/m³	< 0.0005
Dissolved Potassium	g/m³	1.65 #1
Dissolved Selenium	g/m³	< 0.0010
Dissolved Silver	g/m³	< 0.00010
Dissolved Sodium	g/m³	5.2 #1
Dissolved Tin	g/m³	< 0.0005
Dissolved Uranium	g/m³	0.00008
Dissolved Zinc	g/m³	< 0.0010
Drinking water metals suite, totals, trace		
Total Aluminium	g/m³	0.045
Total Antimony	g/m³	< 0.00021
Total Arsenic	g/m³	0.029
Total Barium	g/m³	0.0120
Total Beryllium	g/m³	< 0.00011
Total Boron	g/m³	0.0057 #1
Total Cadmium	g/m³	< 0.000053
Total Calcium	g/m³	21 #1
Total Chromium	g/m³	< 0.00053
Total Copper	g/m³	0.00125
Total Iron	g/m³	0.37
Total Lead	g/m³	< 0.00011
Total Lithium	g/m³	0.00196 #1
Total Magnesium	g/m³	3.8 #1
Total Manganese	g/m³	0.041
Total Mercury	g/m³	< 0.00008
Total Molybdenum	g/m³	< 0.00021
Total Nickel	g/m³	< 0.00053
Total Potassium	g/m³	1.62 #1
Total Selenium	g/m³	< 0.0011
Total Silver	g/m³	< 0.00011
Total Sodium	g/m³	5.1 #1
Total Tin	g/m³	< 0.00053
Total Uranium	g/m³	0.000097
Total Zinc	g/m³	0.0031

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total Digestion	Boiling nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H^+ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Acidity (pH 3.7)	Titration to pH 3.7 with standard sodium hydroxide solution, bromophenol blue indicator. APHA 2310 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m^3	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) : Online Edition.	10 g/m^3	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Filtration for dissolved metals analysis - Misc	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1
Total Bismuth	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m^3	1
Dissolved Cobalt	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Total Cobalt	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m^3	1
Dissolved Strontium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Total Strontium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m^3	1
Dissolved Thallium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Total Thallium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m^3	1
Dissolved Titanium*	Filtered sample, ICP-OES. APHA 3120 B : Online Edition.	0.02 g/m^3	1
Total Titanium*	Boiling nitric acid digestion, ICP-OES. APHA 3120 B : Online Edition.	0.005 g/m^3	1
Bromide	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Total Cyanide Trace	On-line distillation, colorimetry, trace level. ISO 14403:2012(E) (modified).	0.002 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m^3	1
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH_4-N = NH_4^+-N + NH_3-N). APHA 4500-NH_3 H (modified) : Online Edition.	0.010 g/m^3	1
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m^3	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m^3	1
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) : Online Edition.	0.002 g/m^3	1
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m^3	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m^3 as SiO_2	1
Silicon	Calculation: from Reactive Silica.	0.05 g/m^3	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m^3	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m^3	1
Drinking water metals suite, dissolved, trace			
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Dissolved Aluminium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.003 g/m^3	1
Dissolved Antimony	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Dissolved Arsenic	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m^3	1
Dissolved Barium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m^3	1
Dissolved Beryllium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m^3	1
Dissolved Boron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m^3	1
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 g/m^3	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m^3	1
Dissolved Chromium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Dissolved Copper	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Dissolved Iron	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m^3	1
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m^3	1
Dissolved Lithium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m^3	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m^3	1
Dissolved Manganese	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Dissolved Mercury	0.45µm filtration, bromine oxidation followed by atomic fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m^3	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Dissolved Molybdenum	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0002 g/m³	1
Dissolved Nickel	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m³	1
Dissolved Selenium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Dissolved Silver	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00010 g/m³	1
Dissolved Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m³	1
Dissolved Tin	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m³	1
Dissolved Uranium	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 g/m³	1
Dissolved Zinc	Filtered sample, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m³	1
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0032 g/m³	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0053 g/m³	1
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m³	1
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00021 g/m³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00021 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m³	1
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m³	1
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m³	1
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000021 g/m³	1

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m^3	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 21-Sep-2024 and 27-Sep-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Certificate of Analysis

Client:	Analytica Laboratories Limited	**Lab No:**	3647614 SPv1
Contact:	Environmental Sample Reception	**Date Received:**	13-Aug-2024
	C/- Analytica Laboratories Limited	**Date Reported:**	15-Aug-2024
	PO Box 3345	**Quote No:**	
	Hamilton 3240	**Order No:**	24-25063
		Client Reference:	24-25063
		Submitted By:	Environmental Sample Reception

Sample Type: Aqueous

Sample Name:		24-25063-1 LBA 08-Aug-2024	24-25063-2 RS01 08-Aug-2024	24-25063-3 RS02 08-Aug-2024	24-25063-4 RS03 08-Aug-2024	24-25063-5 RSA01 08-Aug-2024
Lab Number:		3647614.1	3647614.2	3647614.3	3647614.4	3647614.5
Bromide	g/m³	0.10	< 0.05	< 0.05	< 0.05	< 0.05
Dissolved Organic Carbon (DOC)	g/m³	1.3	1.6	3.2	3.6	2.1
Total Organic Carbon (TOC)	g/m³	1.3	5.5	6.0	4.5	3.2

Sample Name:		24-25063-6 SC01 08-Aug-2024	24-25063-7 RS04 08-Aug-2024	24-25063-8 MDD302 08-Aug-2024
Lab Number:		3647614.6	3647614.7	3647614.8
Bromide	g/m³	< 0.05	< 0.05	< 0.05
Dissolved Organic Carbon (DOC)	g/m³	1.5	3.0	< 0.5
Total Organic Carbon (TOC)	g/m³	2.3	5.4	< 0.5

Analyst's Comments

Samples 1, 6 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (>300% at the 95% confidence level).

Samples 1, 6 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the DOC result is significantly greater than that usually reported for this analyte (>300% at the 95% confidence level).

Sample 2 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the DOC result is significantly greater than that usually reported for this analyte (up to 200-300% at the 95% confidence level).

Samples 3, 5, 7 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the DOC result is significantly greater than that usually reported for this analyte (up to 100-200% at the 95% confidence level).

Sample 5 Comment:
Please note that the level of Uncertainty of Measurement (UOM) for the TOC result is significantly greater than that usually reported for this analyte (up to 100-200% at the 95% confidence level).

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1-8
Bromide	Filtered sample. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m³	1-8
Dissolved Organic Carbon (DOC)	Filtered sample, Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) : Online Edition.	0.5 g/m³	1-8

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC.The uncertainty of the calculated result is a combination of the uncertainties of the two analytical determinands in the subtraction calculation. Where both determinands are similar in magnitude, the calculated result has a significantly higher uncertainty than would normally be achieved if one of the results was significantly less than the other. In such cases, the elevated uncertainty should be kept in mind when interpreting the data. APHA 5310 C (modified) : Online Edition.	0.5 g/m^3	1-8

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 14-Aug-2024 and 15-Aug-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Certificate of Analysis

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Attention: Hamish McLauchlan
Phone: 0275886631
Email: hmclauchlan@santanaminerals.com

Lab Reference: 24-19336
Submitted by:
Date Received: 18/06/2024
Testing Initiated: 18/06/2024
Date Completed: 4/07/2024
Order Number:
Reference:

Sampling Site: Bendigo Ophir Project

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Please note the inorganic carbon content is high relative to organic carbon, which may impact the accuracy of TOC measurements.

Total Phosphorus in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Total Phosphorus	g/m^3	*0.005*	<0.0050	0.39	0.10	0.015	0.0078

Total Phosphorus in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Total Phosphorus	g/m^3	*0.005*	<0.0050	0.0071	<0.0050	0.013	0.055

Total Phosphorus in Water

	Client Sample ID		MDD302	Base_dis
	Date Sampled		13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Total Phosphorus	g/m^3	*0.005*	0.0090	2.75

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	1.67	<	1.67	3.33	<1.00

Water Aggregate Properties

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	5.67	2.33	<5	4.33	<1.00

Water Aggregate Properties

Client Sample ID			MDD302	Base_dis
Date Sampled			13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	5.60	<9

Turbidity

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Turbidity	NTU	*0.05*	0.2	4.5	110	2.9	1.7

Turbidity

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Turbidity	NTU	*0.05*	0.2	0.9	1.5	3.5	15

Turbidity

Client Sample ID			MDD302	Base_dis
Date Sampled			13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Turbidity	NTU	*0.05*	4.3	5469.000

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Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			MDD302	Base_dis
Date Sampled			13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Nitrite-N	g/m^3	*0.001*	<0.0010	0.0012

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10	<0.10	0.24	0.10	<0.10
Total Nitrogen	g/m^3	*0.1*	<0.10	0.20	0.24	0.11	<0.10

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10	<0.10	<0.10	0.75	0.46
Total Nitrogen	g/m^3	*0.1*	<0.10	<0.10	<0.10	0.90	0.46

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			MDD302	Base_dis
Date Sampled			13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10	0.75
Total Nitrogen	g/m^3	*0.1*	<0.10	1.3

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Carbon in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Total Organic Carbon	g/m^3	*0.5*	<0.50	<0.50	<0.50	1.6	1.2
Dissolved Organic Carbon*	g/m^3	*0.5*	1.1	<0.50	<0.50	1.0	0.55

Carbon in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Total Organic Carbon	g/m^3	*0.5*	1.4	0.96	<0.50	<0.50	3.5
Dissolved Organic Carbon*	g/m^3	*0.5*	1.0	<0.50	<0.50	<0.50	1.9

Carbon in Water

	Client Sample ID		MDD302	Base_dis
	Date Sampled		13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Total Organic Carbon	g/m^3	*0.5*	<0.50	2.2
Dissolved Organic Carbon*	g/m^3	*0.5*	<0.50	<0.50

Fluoride in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Fluoride	g/m^3	*0.04*	0.079	0.29	0.15	0.065	0.064

Fluoride in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Fluoride	g/m^3	*0.04*	0.048	0.066	0.088	0.090	0.055

Fluoride in Water

	Client Sample ID		MDD302	Base_dis
	Date Sampled		13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Fluoride	g/m^3	*0.04*	0.14	0.10

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Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Bromide	g/m^3	*0.005*	<0.05	0.070	0.10	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	0.060	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			MDD302	Base_dis
Date Sampled			13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Bromide	g/m^3	*0.005*	<0.05	<0.05

Water Hardness

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	16	210	190	81	68

Water Hardness

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	42	76	280	160	83

Water Hardness

Client Sample ID			MDD302	Base_dis
Date Sampled			13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	260	210

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Cyanide in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

	Client Sample ID		MDD302	Base_dis
	Date Sampled		13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001

Solids in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Total Suspended Solids	g/m^3	*3*	<3	9	160	4	<3
Total Dissolved Solids	g/m^3	*3*	35	250	213	110	82

Solids in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Total Suspended Solids	g/m^3	*3*	<3	<3	4	7	30
Total Dissolved Solids	g/m^3	*3*	57	98	318	171	113

Solids in Water

	Client Sample ID		MDD302	Base_dis
	Date Sampled		13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Total Suspended Solids	g/m^3	*3*	<3	2,196
Total Dissolved Solids	g/m^3	*3*	265	83

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Elements in Water (Total Recoverable)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Arsenic	g/m³	*0.0005*	0.0011	1.46	0.019	0.042	0.0053
Aluminium	g/m³	*0.003*	0.0084	0.037	2.04	0.031	0.041
Barium	g/m³	*0.0001*	0.0051	0.0081	0.253	0.0148	0.0126
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	0.00015	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	0.017	0.036	<0.0050	<0.0050
Calcium	g/m³	*0.05*	4.6	56.0	46.7	25.1	20.7
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000024	0.00025	0.00060	0.00015	0.000086
Chromium	g/m³	*0.0002*	0.00029	0.00028	0.0029	0.00021	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00017	0.00104	<0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00026	0.00034
Iron	g/m³	*0.005*	0.0098	0.963	3.54	0.559	0.099
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00066	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.34	2.0	2.3	1.1	1.1
Lanthanum	g/m³	*0.00001*	0.000034	0.000085	0.00276	0.000031	0.000059
Lithium	g/m³	*0.00001*	0.00084	0.0137	0.0577	0.00249	0.00269
Magnesium	g/m³	*0.01*	1.01	15.9	16.9	4.56	4.00
Manganese	g/m³	*0.0005*	0.00050	0.186	0.0581	0.0863	0.0042
Molybdenum	g/m³	*0.0002*	<0.00020	0.0012	0.00033	<0.00020	<0.00020
Sodium	g/m³	*0.01*	2.44	20.5	43.7	5.79	5.05
Nickel	g/m³	*0.0002*	<0.00020	0.00038	0.0026	<0.00020	0.00025
Phosphorus	g/m³	*0.04*	<0.040	<0.040	0.088	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	0.00027	0.00061	0.000055	0.000083
Rubidium	g/m³	*0.00005*	0.00026	0.0015	0.00683	0.00033	0.00040
Sulfur*	g/m³	*10*	<10	12	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.0540	0.502	7.19	0.355	0.289
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	0.00239	0.0012	0.000046	0.00033
Vanadium	g/m³	*0.0005*	0.00083	<0.00050	0.0029	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	0.00025	0.0026	<0.000050	0.000055
Zinc	g/m³	*0.003*	<0.0030	<0.0030	0.0056	<0.0030	<0.0030

Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Arsenic	g/m³	*0.0005*	0.0079	0.019	0.0017	0.00050	0.0058
Aluminium	g/m³	*0.003*	0.0058	0.011	0.030	0.077	0.12
Barium	g/m³	*0.0001*	0.0071	0.0162	0.0495	0.0382	0.0260
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.038	0.027	<0.0050
Calcium	g/m³	*0.05*	12.7	23.2	72.1	46.9	25.2
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000052	0.00011	0.000088	0.00017	0.00061

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Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	0.00026	0.00033	0.00032
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	0.000018
Copper	g/m³	*0.0002*	<0.00020	0.00024	0.00034	0.00040	0.0011
Iron	g/m³	*0.005*	0.060	0.29	0.056	0.22	1.88
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.54	0.69	1.9	1.3	1.5
Lanthanum	g/m³	*0.00001*	<0.000010	<0.000010	0.000045	0.00010	0.00038
Lithium	g/m³	*0.00001*	0.00139	0.00216	0.00965	0.00455	0.00245
Magnesium	g/m³	*0.01*	2.57	4.33	25.1	11.3	4.73
Manganese	g/m³	*0.0005*	0.013	0.023	0.0030	0.022	0.123
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00051	0.00032	<0.00020
Sodium	g/m³	*0.01*	3.99	5.91	14.5	7.62	6.53
Nickel	g/m³	*0.0002*	0.00020	<0.00020	0.00024	0.00024	0.00093
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	0.057
Lead	g/m³	*0.00005*	<0.000050	<0.000050	0.000078	0.00019	0.00047
Rubidium	g/m³	*0.00005*	0.00018	0.00034	0.00027	0.00042	0.00073
Sulfur*	g/m³	*10*	<10	<10	21	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00017	<0.00010	0.00012
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.162	0.293	1.15	0.757	0.363
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.000032	<0.000030	0.00683	0.00240	0.00031
Vanadium	g/m³	*0.0005*	0.00073	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	<0.000050	0.000065	0.000094	0.00030
Zinc	g/m³	*0.003*	<0.0030	0.0031	<0.0030	<0.0030	0.0045

Elements in Water (Total Recoverable)

Client Sample ID			MDD302	Base_dis
Date Sampled			13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Arsenic	g/m³	*0.0005*	0.0510	3.65
Aluminium	g/m³	*0.003*	0.0044	22.9
Barium	g/m³	*0.0001*	0.148	0.324
Beryllium	g/m³	*0.00001*	0.000026	0.00220
Bismuth	g/m³	*0.0001*	<0.00010	0.00046
Boron	g/m³	*0.005*	0.0063	0.019
Calcium	g/m³	*0.05*	64.6	52.1
Cadmium	g/m³	*0.00002*	<0.000020	0.00012
Cobalt	g/m³	*0.00001*	<0.000010	0.768
Chromium	g/m³	*0.0002*	<0.00020	0.017
Caesium	g/m³	*0.00001*	0.00016	0.00226
Copper	g/m³	*0.0002*	<0.00020	1.95
Iron	g/m³	*0.005*	0.38	62.5
Germanium	g/m³	*0.00005*	0.00013	0.0026
Mercury	g/m³	*0.0001*	<0.00010	<0.00010
Potassium	g/m³	*0.05*	1.4	16.2
Lanthanum	g/m³	*0.00001*	0.000013	0.0410
Lithium	g/m³	*0.00001*	0.00870	0.0304
Magnesium	g/m³	*0.01*	23.0	18.7
Manganese	g/m³	*0.0005*	0.0053	1.12

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Elements in Water (Total Recoverable)

Client Sample ID			MDD302	Base_dis
Date Sampled			13/06/2024	13/06/2024
Molybdenum	g/m³	*0.0002*	0.00031	0.0021
Sodium	g/m³	*0.01*	8.59	12.2
Nickel	g/m³	*0.0002*	<0.00020	0.0270
Phosphorus	g/m³	*0.04*	<0.040	1.2
Lead	g/m³	*0.00005*	<0.000050	0.0402
Rubidium	g/m³	*0.00005*	0.0020	0.0559
Sulfur*	g/m³	*10*	<10	<10
Antimony	g/m³	*0.0001*	0.00015	0.0011
Selenium	g/m³	*0.001*	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	0.0800
Strontium	g/m³	*0.0001*	1.07	0.788
Thallium	g/m³	*0.0001*	<0.00010	0.00033
Uranium	g/m³	*0.00003*	0.00517	0.00566
Vanadium	g/m³	*0.0005*	<0.00050	0.044
Yttrium	g/m³	*0.00005*	0.00043	0.0167
Zinc	g/m³	*0.003*	<0.0030	0.197

Elements in Water (Soluble)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
Silica	g/m³	*0.1*	14.2	26.8	34.1	17.8	19.2
Aluminium	g/m³	*0.003*	0.0043	<0.0030	0.019	<0.0030	0.0040
Arsenic	g/m³	*0.0005*	0.00096	1.12	0.018	0.017	0.0049
Barium	g/m³	*0.0002*	0.0052	0.0056	0.222	0.0124	0.0116
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.017	0.038	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000023	0.000050	0.00015	0.000028	0.000035
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00013	0.00020	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00028	<0.00020	<0.00020	0.00022	0.00032
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00097	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000014	<0.000010	0.000012	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00082	0.0136	0.0518	0.00239	0.00260
Molybdenum	g/m³	*0.0002*	<0.00020	0.00094	0.00050	<0.00020	0.00025
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	0.00035	0.00021	0.00030
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00021	0.00139	0.00199	0.00023	0.00035
Sulfur*	g/m³	*10*	<10	13	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00011	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	0.00097	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0509	0.470	9.80	0.341	0.278
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	0.000020	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.00225	0.00098	0.000061	0.00031
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000024	0.000024	0.00033	<0.000010	0.000016

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Elements in Water (Soluble)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
Silica	g/m³	*0.1*	17.1	17.8	15.8	16.4	19.7
Aluminium	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	0.0038	<0.0030
Arsenic	g/m³	*0.0005*	0.0077	0.012	0.0019	<0.00050	0.00091
Barium	g/m³	*0.0002*	0.0070	0.0149	0.0499	0.0352	0.0181
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.040	0.030	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	0.000030	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000038	0.000051	0.000053	0.000014	0.000085
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	0.00028	0.00021	0.00025
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	<0.00020	0.00028	0.00024	0.00042
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00141	0.00223	0.00983	0.00466	0.00240
Molybdenum	g/m³	*0.0002*	<0.00020	0.00023	0.00043	0.00029	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	0.00029
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00017	0.00028	0.00018	0.00021	0.00044
Sulfur*	g/m³	*10*	<10	<10	21	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00017	0.00015	0.00014
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.159	0.287	1.12	0.746	0.361
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.000065	<0.000030	0.00640	0.00232	0.00032
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000011	<0.000010	0.000038	0.000014	0.000019

Elements in Water (Soluble)

Client Sample ID			MDD302	Base_dis
Date Sampled			13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
Silica	g/m³	*0.1*	39.3	18.4
Aluminium	g/m³	*0.003*	<0.0030	0.089
Arsenic	g/m³	*0.0005*	0.044	0.234
Barium	g/m³	*0.0002*	0.143	0.0072
Beryllium	g/m³	*0.00001*	0.000025	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.013
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010	0.0242
Chromium	g/m³	*0.0002*	<0.00020	0.00033
Caesium	g/m³	*0.00001*	0.00013	0.000041
Copper	g/m³	*0.0002*	0.00073	0.0064
Germanium	g/m³	*0.00005*	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	<0.000010

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Elements in Water (Soluble)

			Client Sample ID	MDD302	Base_dis
			Date Sampled	13/06/2024	13/06/2024
Lithium		g/m³	*0.00001*	0.00877	0.00704
Molybdenum		g/m³	*0.0002*	0.00040	<0.00020
Nickel		g/m³	*0.0002*	<0.00020	0.00029
Phosphorus		g/m³	*0.04*	<0.040	<0.040
Lead		g/m³	*0.00005*	0.000052	<0.000050
Rubidium		g/m³	*0.00002*	0.00218	0.00473
Sulfur*		g/m³	*10*	<10	<10
Antimony		g/m³	*0.0001*	0.00019	0.0013
Selenium		g/m³	*0.0005*	<0.00050	<0.00050
Tin		g/m³	*0.0002*	<0.00020	0.00022
Strontium		g/m³	*0.0001*	1.16	0.257
Thallium		g/m³	*0.00001*	<0.000010	<0.000010
Uranium		g/m³	*0.00003*	0.00467	0.00061
Vanadium		g/m³	*0.0005*	<0.00050	0.0020
Yttrium		g/m³	*0.00001*	0.00016	0.000012

Anion/Cation Suite

			Client Sample ID	CC01	LBA	MDD015	RS01	RS02
			Date Sampled	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte		Unit	*Reporting Limit*	24-19336-1	24-19336-2	24-19336-3	24-19336-4	24-19336-5
pH		pH	*1*	6.6	8.2	8.0	7.5	7.4
Electrical Conductivity		µS/cm	*0.2*	40.0	459	451	188	152
Total Alkalinity (CaCO3)		g $CaCO_3$/m³	*1*	16.3	191	204	77.8	67.9
Chloride		g/m³	*0.5*	<0.50	6.45	8.66	2.32	1.68
Sulfate		g/m³	*0.15*	0.71	27.0	9.00	7.17	2.91
Nitrate-N		g/m³	*0.002*	0.0293	0.196	<0.0020	0.0021	0.0068
Dissolved Reactive Phosphorus (FIA)		g/m³	*0.002*	0.004	0.019	<0.002	<0.002	<0.002
Ammonia as N		g/m³	*0.005*	<0.005	<0.005	0.11	<0.005	<0.005
Sodium		g/m³	*0.01*	2.44	20.2	43.0	5.80	4.95
Potassium		g/m³	*0.05*	0.33	2.0	1.5	1.1	1.1
Calcium		g/m³	*0.05*	4.9	56.2	46.5	26.2	20.5
Magnesium		g/m³	*0.01*	0.99	15.8	16.0	4.76	3.99
Iron		g/m³	*0.005*	<0.0050	<0.0050	<0.0050	0.032	0.0055
Zinc		g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese		g/m³	*0.0005*	<0.00050	0.016	0.0081	0.0090	<0.00050
Sum of Anions*		meq/L	*0.01*	0.34	4.66	4.58	1.78	1.47
Sum of Cations*		meq/L	*0.01*	0.44	5.03	5.55	1.98	1.59
EC/10*		(mS/m)/10	*0.002*	0.40	4.59	4.51	1.88	1.52

Anion/Cation Suite

			Client Sample ID	RS03	RSA01	SC01	SC03	RS04
			Date Sampled	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analyte		Unit	*Reporting Limit*	24-19336-6	24-19336-7	24-19336-8	24-19336-9	24-19336-10
pH		pH	*1*	7.9	7.2	8.1	7.9	7.4
Electrical Conductivity		µS/cm	*0.2*	108	176	577	342	194
Total Alkalinity (CaCO3)		g $CaCO_3$/m³	*1*	47.1	73.3	232	159	82.9
Chloride		g/m³	*0.5*	0.96	1.94	5.35	1.73	2.36

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Anion/Cation Suite

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Sulfate	g/m³	*0.15*	2.22	5.89	48.2	13.3	4.20
Nitrate-N	g/m³	*0.002*	<0.0020	0.0037	0.0839	0.145	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.002	<0.002	0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	0.01	<0.005	<0.005	<0.005
Sodium	g/m³	*0.01*	3.89	5.25	14.5	7.63	6.83
Potassium	g/m³	*0.05*	0.53	0.67	1.9	1.3	1.5
Calcium	g/m³	*0.05*	12.9	23.5	73.5	48.7	27.0
Magnesium	g/m³	*0.01*	2.53	4.26	25.9	11.5	4.95
Iron	g/m³	*0.005*	0.012	0.018	<0.0050	0.0052	0.087
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.0098	0.0056	<0.00050	0.00071	0.0025
Sum of Anions*	meq/L	*0.01*	1.03	1.65	5.87	3.55	1.82
Sum of Cations*	meq/L	*0.01*	1.03	1.77	6.48	3.74	2.10
EC/10*	(mS/m)/10	*0.002*	1.08	1.76	5.77	3.42	1.94

Anion/Cation Suite

	Client Sample ID		MDD302	Base_dis
	Date Sampled		13/06/2024	13/06/2024
Analyte	Unit	*Reporting Limit*	24-19336-11	24-19336-12
pH	pH	*1*	7.9	8.0
Electrical Conductivity	µS/cm	*0.2*	500	149
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	239	81.4
Chloride	g/m³	*0.5*	2.32	2.19
Sulfate	g/m³	*0.15*	8.91	3.99
Nitrate-N	g/m³	*0.002*	<0.0020	0.555
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	<0.002	0.005
Ammonia as N	g/m³	*0.005*	0.05	0.03
Sodium	g/m³	*0.01*	8.92	6.97
Potassium	g/m³	*0.05*	1.7	4.6
Calcium	g/m³	*0.05*	66.7	15.3
Magnesium	g/m³	*0.01*	23.3	4.05
Iron	g/m³	*0.005*	<0.0050	<0.0050
Zinc	g/m³	*0.001*	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.0056	0.020
Sum of Anions*	meq/L	*0.01*	5.08	1.84
Sum of Cations*	meq/L	*0.01*	5.68	1.52
EC/10*	(mS/m)/10	*0.002*	5.00	1.49

Method Summary

Total Phosphorus Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)

Acidity to pH 8.3 Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).

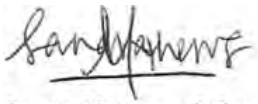
Turbidity Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).

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Method Summary

NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Total Organic Carbon	Samples analysed as received by combustion analysis at 850°C. Organic carbon is calculated through subtraction of inorganic carbon from total carbon (APHA 5310 B - Online edition)
Dissolved Organic Carbon	Samples analysed as received by combustion analysis at 850°C following a filtration step.(APHA 5310 B - Online edition)
Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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Sandra Mathews, B.Eng.
Technologist



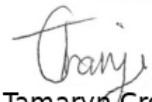
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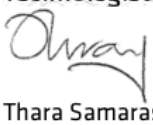
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Certificate of Analysis

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Attention: Hamish McLauchlan
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Lab Reference: 24-20566
Submitted by:
Date Received: 1/07/2024
Testing Initiated: 1/07/2024
Date Completed: 10/07/2024
Order Number:
Reference:

Sampling Site: Bendigo Ophir Project

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

Client Sample ID			CC01	LBA	MDDO15	RS01	RS02
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Total Phosphorus	g/m^3	*0.005*	0.0083	0.32	<0.0050	0.012	<0.0050

Total Phosphorus in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Total Phosphorus	g/m^3	*0.005*	<0.0050	0.11	<0.0050	<0.0050	<0.0050

Total Phosphorus in Water

Client Sample ID			MDD302
Date Sampled			27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Total Phosphorus	g/m^3	*0.005*	<0.0050

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			CC01	LBA	MDDO15	RS01	RS02
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	1.67	<1.00	1.67	1.67	<1.00

Water Aggregate Properties

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	1.67	11.67	<1.00	<1.00	1.67

Water Aggregate Properties

Client Sample ID			MDD302
Date Sampled			27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	6.67

Bromine in Water (Subcontracted - Hill Laboratories)

Client Sample ID			RS01	RSA01	SC03	RS04
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-4	24-20566-7	24-20566-9	24-20566-10
Bromine*	g/m^3	*0.11*	<0.11	<0.11	<0.11	<0.11

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			CC01	LBA	MDDO15	RS01	RS02
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Nitrite-N	g/m^3	*0.001*	<0.0010	0.0010	<0.0010	<0.0010	0.0012

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Nitrite-N	g/m^3	*0.001*	0.0025	<0.0010	0.0034	0.0016	0.0010

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Inorganic Nutrients and Nutrient Species in Water

		Client Sample ID	MDD302
		Date Sampled	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Nitrite-N	g/m^3	*0.001*	<0.0010

Turbidity

		Client Sample ID	CC01	LBA	MDDO15	RS01	RS02
		Date Sampled	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Turbidity	NTU	*0.05*	0.3	1	2.4	4.2	1.1

Turbidity

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Turbidity	NTU	*0.05*	0.3	17	0.8	5.7	1.1

Turbidity

		Client Sample ID	MDD302
		Date Sampled	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Turbidity	NTU	*0.05*	4.0

Total Nitrogen / Kjeldahl Nitrogen in Water

		Client Sample ID	CC01	LBA	MDDO15	RS01	RS02
		Date Sampled	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.13	0.24	0.32	0.16	0.25
Total Nitrogen	g/m^3	*0.1*	0.13	0.43	0.32	0.16	0.26

Total Nitrogen / Kjeldahl Nitrogen in Water

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.13	0.25	0.16	0.27	0.46
Total Nitrogen	g/m^3	*0.1*	0.13	0.25	0.20	0.41	0.46

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Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		MDD302
	Date Sampled		27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10
Total Nitrogen	g/m^3	*0.1*	<0.10

Carbon in Water

	Client Sample ID		CC01	LBA	MDDO15	RS01	RS02
	Date Sampled		27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Total Organic Carbon	g/m^3	*0.5*	2.1	<0.50	<0.50	0.60	<0.50
Dissolved Organic Carbon*	g/m^3	*0.5*	1.7	<0.50	<0.50	1.2	1.3

Carbon in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Total Organic Carbon	g/m^3	*0.5*	1.2	2.4	<0.50	<0.50	2.0
Dissolved Organic Carbon*	g/m^3	*0.5*	1.3	1.3	<0.50	0.67	3.9

Carbon in Water

	Client Sample ID		MDD302
	Date Sampled		27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Total Organic Carbon	g/m^3	*0.5*	<0.50
Dissolved Organic Carbon*	g/m^3	*0.5*	<0.50

Fluoride in Water

	Client Sample ID		CC01	LBA	MDDO15	RS01	RS02
	Date Sampled		27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Fluoride	g/m^3	*0.04*	0.044	0.27	0.15	0.059	0.063

Fluoride in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Fluoride	g/m^3	*0.04*	0.047	0.056	0.082	0.085	0.058

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Fluoride in Water

		Client Sample ID	MDD302
		Date Sampled	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Fluoride	g/m^3	*0.04*	0.14

Bromide in Water (Subcontracted - Hill Laboratories)

		Client Sample ID	CC01	LBA	MDDO15	RS02	RS03
		Date Sampled	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-5	24-20566-6
Bromide	g/m^3	*0.005*	<0.05	0.070	0.10	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

		Client Sample ID	SC01	MDD302
		Date Sampled	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-8	24-20566-11
Bromide	g/m^3	*0.005*	0.050	<0.05

Water Hardness

		Client Sample ID	CC01	LBA	MDDO15	RS01	RS02
		Date Sampled	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	15	200	170	76	70

Water Hardness

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	41	95	280	160	85

Water Hardness

		Client Sample ID	MDD302
		Date Sampled	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	240

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Cyanide in Water

	Client Sample ID		CC01	LBA	MDDO15	RS01	RS02
	Date Sampled		27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

	Client Sample ID		MDD302
	Date Sampled		27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Total Cyanide	g/m^3	*0.001*	<0.001

Solids in Water

	Client Sample ID		CC01	LBA	MDDO15	RS01	RS02
	Date Sampled		27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Total Suspended Solids	g/m^3	*3*	<3	<3	4	6	4
Total Dissolved Solids	g/m^3	*3*	38	256	220	119	90

Solids in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Total Suspended Solids	g/m^3	*3*	<3	25	4	10	<3
Total Dissolved Solids	g/m^3	*3*	53	112	307	178	153

Solids in Water

	Client Sample ID		MDD302
	Date Sampled		27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Total Suspended Solids	g/m^3	*3*	<3
Total Dissolved Solids	g/m^3	*3*	282

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Elements in Water (Total Recoverable)

Client Sample ID			CC01	LBA	MDDO15	RS01	RS02
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Silver*	g/m³	*0.002*	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic	g/m³	*0.0005*	0.0013	1.19	0.019	0.046	0.0056
Aluminium	g/m³	*0.003*	0.011	<0.0030	0.037	0.041	0.043
Barium	g/m³	*0.0001*	0.0050	0.0055	0.239	0.0147	0.0141
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	0.000027	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	0.0061	0.017	0.052	0.0086	0.0088
Calcium	g/m³	*0.05*	4.4	54.4	40.4	23.0	21.1
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000017	0.000079	<0.000010	0.00015	0.000083
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00017	0.00019	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00037	<0.00020	<0.00020	0.00022	0.00053
Iron	g/m³	*0.005*	0.014	0.13	0.12	0.639	0.12
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00081	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.33	2.0	1.4	1.2	1.2
Lanthanum	g/m³	*0.00001*	0.000039	<0.000010	0.00013	0.000039	0.000065
Lithium	g/m³	*0.00001*	0.00083	0.0132	0.0499	0.00244	0.00260
Magnesium	g/m³	*0.01*	0.90	15.6	15.6	4.35	4.25
Manganese	g/m³	*0.0005*	0.00087	0.039	0.0077	0.0930	0.0043
Molybdenum	g/m³	*0.0002*	<0.00020	0.0011	0.00037	<0.00020	<0.00020
Sodium	g/m³	*0.01*	2.64	29.6	44.2	5.98	5.90
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00023	0.00025
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	0.00010	0.000063	0.00013
Rubidium	g/m³	*0.00005*	0.00024	0.0014	0.0021	0.00036	0.00043
Sulfur*	g/m³	*10*	<10	12	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.0528	0.637	10.4	0.347	0.340
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	0.00237	0.0010	0.000054	0.00043
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	0.000057	0.00034	<0.000050	0.000056
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	0.0047

Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Silver*	g/m³	*0.002*	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic	g/m³	*0.0005*	0.0086	0.291	0.0019	0.00053	0.0048
Aluminium	g/m³	*0.003*	0.0049	0.0069	0.021	0.13	0.087
Barium	g/m³	*0.0001*	0.0071	0.0392	0.0552	0.0383	0.0235
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	0.000012	0.000015
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.035	0.031	<0.0050
Calcium	g/m³	*0.05*	12.3	27.2	69.4	45.3	26.0

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Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000039	0.00091	0.000072	0.00018	0.00031
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00026	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	0.000010	0.000025	0.000011
Copper	g/m³	*0.0002*	0.00030	0.00021	0.00040	0.00058	0.0014
Iron	g/m³	*0.005*	0.079	5.40	0.039	0.30	1.35
Germanium	g/m³	*0.00005*	<0.000050	0.00013	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.63	1.0	1.8	1.2	1.7
Lanthanum	g/m³	*0.00001*	<0.000010	0.000017	0.000032	0.00012	0.00021
Lithium	g/m³	*0.00001*	0.00150	0.00236	0.0102	0.00482	0.00252
Magnesium	g/m³	*0.01*	2.45	6.51	25.0	10.9	4.77
Manganese	g/m³	*0.0005*	0.014	0.265	0.0031	0.027	0.0509
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00066	0.00046	<0.00020
Sodium	g/m³	*0.01*	3.89	5.72	13.5	8.13	6.50
Nickel	g/m³	*0.0002*	0.00035	0.00036	0.00028	0.00027	0.00045
Phosphorus	g/m³	*0.04*	<0.040	0.041	<0.040	<0.040	0.042
Lead	g/m³	*0.00005*	0.000069	<0.000050	0.000057	0.00027	0.00040
Rubidium	g/m³	*0.00005*	0.00020	0.00029	0.00030	0.00058	0.00065
Sulfur*	g/m³	*10*	<10	<10	20	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00016	<0.00010	0.00012
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.169	0.317	1.33	0.828	0.407
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.000055	0.000044	0.00673	0.00249	0.00033
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	0.00011	0.00019
Zinc	g/m³	*0.003*	0.0046	<0.0030	<0.0030	0.0054	0.0037

Elements in Water (Total Recoverable)

Client Sample ID			MDD302
Date Sampled			27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Silver*	g/m³	*0.002*	<0.0020
Arsenic	g/m³	*0.0005*	0.0539
Aluminium	g/m³	*0.003*	0.0037
Barium	g/m³	*0.0001*	0.142
Beryllium	g/m³	*0.00001*	0.000023
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.005*	0.025
Calcium	g/m³	*0.05*	61.5
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00016
Copper	g/m³	*0.0002*	<0.00020
Iron	g/m³	*0.005*	0.39
Germanium	g/m³	*0.00005*	0.000054
Mercury	g/m³	*0.0001*	<0.00010
Potassium	g/m³	*0.05*	1.4
Lanthanum	g/m³	*0.00001*	0.000011

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Elements in Water (Total Recoverable)

Client Sample ID			MDD302
Date Sampled			27/06/2024
Lithium	g/m³	*0.00001*	0.00833
Magnesium	g/m³	*0.01*	22.1
Manganese	g/m³	*0.0005*	0.0056
Molybdenum	g/m³	*0.0002*	0.00038
Sodium	g/m³	*0.01*	10.3
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	0.000072
Rubidium	g/m³	*0.00005*	0.0019
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00015
Selenium	g/m³	*0.001*	<0.0010
Tin	g/m³	*0.0005*	<0.00050
Strontium	g/m³	*0.0001*	1.20
Thallium	g/m³	*0.0001*	<0.00010
Uranium	g/m³	*0.00003*	0.00524
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00005*	0.00044
Zinc	g/m³	*0.003*	<0.0030

Elements in Water (Soluble)

Client Sample ID			CC01	LBA	MDDO15	RS01	RS02
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
Silver*	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	0.00011	<0.000080
Silica	g/m³	*0.1*	13.3	29.2	36.2	19.0	21.1
Aluminium	g/m³	*0.003*	0.0057	0.0030	0.0032	<0.0030	<0.0030
Arsenic	g/m³	*0.0005*	0.0010	1.14	0.018	0.018	0.0045
Barium	g/m³	*0.0002*	0.0048	0.0052	0.233	0.0122	0.0126
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.014	0.034	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000041	0.000034	<0.000010	0.000027	0.000031
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00013	0.00016	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00032	<0.00020	<0.00020	0.00031	0.00034
Germanium	g/m³	*0.00005*	<0.000050	0.000065	0.00088	<0.000050	<0.000050
Lanthanum	g/m³	*0.00001*	0.000029	<0.000010	<0.000010	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00075	0.0124	0.0485	0.00229	0.00233
Molybdenum	g/m³	*0.0002*	<0.00020	0.00098	0.00046	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00023	0.00138	0.00206	0.00025	0.00029
Sulfur*	g/m³	*10*	<10	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0454	0.448	9.25	0.298	0.287
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.00208	0.0010	0.000063	0.00036

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Elements in Water (Soluble)

Client Sample ID			CC01	LBA	MDDO15	RS01	RS02
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000028	0.000020	0.00020	<0.000010	0.000017
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080

Elements in Water (Soluble)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
Silver*	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Silica	g/m³	*0.1*	17.1	21.8	15.1	16.6	20.2
Aluminium	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	0.0032	<0.0030
Arsenic	g/m³	*0.0005*	0.0073	0.016	0.0020	<0.00050	0.0014
Barium	g/m³	*0.0002*	0.0071	0.0223	0.0476	0.0345	0.0191
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.029	0.024	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010	0.00068	0.000060	0.000037	0.000074
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00023	<0.00020	0.00049	0.00027	0.00052
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lanthanum	g/m³	*0.00001*	<0.000010	<0.000010	0.000011	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00126	0.00245	0.00897	0.00414	0.00217
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00055	0.00029	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00021	0.00027	0.00019	0.00020	0.00047
Sulfur*	g/m³	*10*	<10	<10	19	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00016	<0.00010	0.00011
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.151	0.299	1.04	0.702	0.343
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.000080	0.000047	0.00629	0.00227	0.00039
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	<0.000010	<0.000010	0.000029	0.000015	0.000017
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080

Elements in Water (Soluble)

Client Sample ID			MDD302
Date Sampled			27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
Silver*	g/m³	*0.00008*	<0.000080
Silica	g/m³	*0.1*	43.6
Aluminium	g/m³	*0.003*	<0.0030
Arsenic	g/m³	*0.0005*	0.048
Barium	g/m³	*0.0002*	0.141

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Elements in Water (Soluble)

Client Sample ID			MDD302
Date Sampled			27/06/2024
Beryllium	g/m³	*0.00001*	0.000019
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.01*	<0.010
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00014
Copper	g/m³	*0.0002*	<0.00020
Germanium	g/m³	*0.00005*	0.00011
Lanthanum	g/m³	*0.00001*	<0.000010
Lithium	g/m³	*0.00001*	0.00836
Molybdenum	g/m³	*0.0002*	0.00030
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050
Rubidium	g/m³	*0.00002*	0.00198
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00016
Selenium	g/m³	*0.0005*	<0.00050
Tin	g/m³	*0.0002*	<0.00020
Strontium	g/m³	*0.0001*	1.06
Thallium	g/m³	*0.00001*	<0.000010
Uranium	g/m³	*0.00003*	0.00479
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00001*	0.00015
Mercury	g/m³	*0.00008*	<0.000080

Anion/Cation Suite

Client Sample ID			CC01	LBA	MDDO15	RS01	RS02
Date Sampled			27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-1	24-20566-2	24-20566-3	24-20566-4	24-20566-5
pH	pH	*1*	7.0	8.2	8.0	7.5	7.5
Electrical Conductivity	µS/cm	*0.2*	40.0	444	419	169	157
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	18.1	195	204	73.4	71.4
Chloride	g/m³	*0.5*	0.75	6.95	9.14	2.59	1.95
Sulfate	g/m³	*0.15*	0.62	26.8	9.28	6.03	3.13
Nitrate-N	g/m³	*0.002*	0.0062	0.197	0.0026	0.0029	0.0111
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.009	0.016	<0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	0.10	<0.005	<0.005
Sodium	g/m³	*0.01*	2.21	18.6	40.2	5.16	4.68
Potassium	g/m³	*0.05*	0.32	1.9	1.4	1.2	1.1
Calcium	g/m³	*0.05*	4.3	53.2	39.2	23.0	21.7
Magnesium	g/m³	*0.01*	0.86	14.7	14.9	4.10	3.96
Iron	g/m³	*0.005*	0.0066	<0.0050	<0.0050	0.027	<0.0050
Zinc	g/m³	*0.001*	0.0017	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	<0.00050	0.033	0.0038	0.0093	<0.00050
Sum of Anions*	meq/L	*0.01*	0.40	4.75	4.59	1.67	1.56
Sum of Cations*	meq/L	*0.01*	0.39	4.72	4.98	1.74	1.64
EC/10*	(mS/m)/10	*0.002*	0.40	4.44	4.19	1.69	1.57

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Anion/Cation Suite

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-6	24-20566-7	24-20566-8	24-20566-9	24-20566-10
pH	pH	*1*	7.2	7.3	8.1	7.9	7.6
Electrical Conductivity	µS/cm	*0.2*	98.3	201	534	324	186
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	42.7	81.6	233	146	85.5
Chloride	g/m^3	*0.5*	1.37	2.55	6.19	2.39	1.85
Sulfate	g/m^3	*0.15*	2.36	6.36	50.6	14.2	5.38
Nitrate-N	g/m^3	*0.002*	<0.0020	<0.0020	0.0370	0.144	0.0062
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	0.002	<0.002	0.003	<0.002	<0.002
Ammonia as N	g/m^3	*0.005*	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	g/m^3	*0.01*	3.62	5.36	13.1	6.93	5.74
Potassium	g/m^3	*0.05*	0.60	0.83	1.7	1.2	1.6
Calcium	g/m^3	*0.05*	12.2	24.9	70.1	46.0	26.5
Magnesium	g/m^3	*0.01*	2.35	4.33	23.4	10.5	4.52
Iron	g/m^3	*0.005*	0.016	0.0098	<0.0050	<0.0050	0.21
Zinc	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	0.0012
Manganese	g/m^3	*0.0005*	0.0083	0.264	<0.00050	0.0029	0.0089
Sum of Anions*	meq/L	*0.01*	0.94	1.84	5.98	3.33	1.88
Sum of Cations*	meq/L	*0.01*	0.98	1.86	6.04	3.49	1.99
EC/10*	(mS/m)/10	*0.002*	0.98	2.01	5.34	3.24	1.86

Anion/Cation Suite

		Client Sample ID	MDD302
		Date Sampled	27/06/2024
Analyte	Unit	*Reporting Limit*	24-20566-11
pH	pH	*1*	7.8
Electrical Conductivity	µS/cm	*0.2*	470
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	251
Chloride	g/m^3	*0.5*	2.81
Sulfate	g/m^3	*0.15*	9.71
Nitrate-N	g/m^3	*0.002*	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	<0.002
Ammonia as N	g/m^3	*0.005*	0.05
Sodium	g/m^3	*0.01*	7.60
Potassium	g/m^3	*0.05*	1.4
Calcium	g/m^3	*0.05*	60.7
Magnesium	g/m^3	*0.01*	20.6
Iron	g/m^3	*0.005*	<0.0050
Zinc	g/m^3	*0.001*	<0.0010
Manganese	g/m^3	*0.0005*	0.0049
Sum of Anions*	meq/L	*0.01*	5.34
Sum of Cations*	meq/L	*0.01*	5.09
EC/10*	(mS/m)/10	*0.002*	4.70

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Method Summary

Total Phosphorus	Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)
Acidity to pH 8.3	Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).
Bromine	Subcontracted to Hill Laboratories. Nitric acid digestion, ICP-MS, screen level. APHA 3125 B 23rd ed. 2017
NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).
Turbidity	Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Total Organic Carbon	Samples analysed as received by combustion analysis at 850°C. Organic carbon is calculated through subtraction of inorganic carbon from total carbon (APHA 5310 B - Online edition)
Dissolved Organic Carbon	Samples analysed as received by combustion analysis at 850°C following a filtration step.(APHA 5310 B - Online edition)
Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).

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Method Summary

Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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Technologist

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Technologist

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Certificate of Analysis

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Attention: Hamish McLauchlan
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Lab Reference: 24-22094
Submitted by:
Date Received: 12/07/2024
Testing Initiated: 12/07/2024
Date Completed: 22/07/2024
Order Number:
Reference:

Sampling Site: Bendigo Ophir Project

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Total Phosphorus	g/m^3	*0.005*	0.0076	0.36	0.013	0.016	0.0083

Total Phosphorus in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Total Phosphorus	g/m^3	*0.005*	<0.0050	0.13	0.0052	0.012	0.011

Total Phosphorus in Water

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Total Phosphorus	g/m^3	*0.005*	0.010

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	1.67	<1.00	<1.00	3.33	1.67

Water Aggregate Properties

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	5.00	1.67	<1.00	5.00	1.67

Water Aggregate Properties

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	6.67

Turbidity

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Turbidity	NTU	*0.05*	0.2	1.2	2.4	4.0	2.5

Turbidity

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Turbidity	NTU	*0.05*	0.3	14	0.8	3.5	1.8

Turbidity

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Turbidity	NTU	*0.05*	3.9

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Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Nitrite-N	g/m^3	*0.001*	0.0018	<0.0010	0.0016	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	0.0013	0.0013	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Nitrite-N	g/m^3	*0.001*	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.10	<0.10	0.17	0.23	0.29
Total Nitrogen	g/m^3	*0.1*	0.13	0.22	0.17	0.23	0.35

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.13	0.35	0.15	0.20	0.29
Total Nitrogen	g/m^3	*0.1*	0.14	0.36	0.32	0.43	0.29

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10
Total Nitrogen	g/m^3	*0.1*	<0.10

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Custom Job

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Custom Job			Complete

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Bromide	g/m^3	*0.005*	<0.05	0.080	0.10	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Bromide	g/m^3	*0.005*	<0.05

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Fluoride in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Fluoride	g/m^3	*0.04*	<0.040	0.32	0.17	0.066	0.071

Fluoride in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Fluoride	g/m^3	*0.04*	0.049	0.061	0.093	0.095	0.065

Fluoride in Water

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Fluoride	g/m^3	*0.04*	0.16

Water Hardness

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	13	180	160	73	75

Water Hardness

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	36	71	240	150	80

Water Hardness

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	220

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Solids in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Total Suspended Solids	g/m^3	*3*	<3	<3	<3	5	4
Total Dissolved Solids	g/m^3	*3*	22	250	220	89	88

Solids in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Total Suspended Solids	g/m^3	*3*	<3	19	<3	6	4
Total Dissolved Solids	g/m^3	*3*	60	101	315	156	116

Solids in Water

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Total Suspended Solids	g/m^3	*3*	<3
Total Dissolved Solids	g/m^3	*3*	283

Cyanide in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Total Cyanide	g/m^3	*0.001*	<0.001

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Anion/Cation Suite

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
pH	pH	*1*	6.8	8.1	8.0	7.4	7.5
Electrical Conductivity	µS/cm	*0.2*	39.5	505	482	202	204
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	14.1	194	201	74.2	96.3
Chloride	g/m^3	*0.5*	<0.50	6.52	8.53	2.96	1.81
Sulfate	g/m^3	*0.15*	0.57	26.3	8.63	6.41	3.90
Nitrate-N	g/m^3	*0.002*	0.0285	0.216	0.0052	0.0024	0.0589
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	0.005	0.016	<0.002	<0.002	<0.002
Ammonia as N	g/m^3	*0.005*	0.01	<0.005	0.11	<0.005	<0.005
Sodium	g/m^3	*0.01*	2.30	20.7	45.7	5.46	5.80
Potassium	g/m^3	*0.05*	0.32	2.0	1.4	1.2	2.5
Calcium	g/m^3	*0.05*	3.9	56.0	47.9	23.9	26.3
Magnesium	g/m^3	*0.01*	0.83	15.6	16.0	4.44	4.79
Iron	g/m^3	*0.005*	0.014	<0.0050	0.0058	0.038	0.033
Zinc	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	0.013
Manganese	g/m^3	*0.0005*	<0.00050	0.037	0.0079	0.011	0.0043
Sum of Anions*	meq/L	*0.01*	0.30	4.70	4.49	1.71	2.07
Sum of Cations*	meq/L	*0.01*	0.37	5.03	5.74	1.83	2.03
EC/10*	(mS/m)/10	*0.002*	0.39	5.05	4.82	2.02	2.04

Anion/Cation Suite

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
pH	pH	*1*	7.2	7.3	8.2	7.9	7.4
Electrical Conductivity	µS/cm	*0.2*	106	199	608	359	214
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	39.9	72.9	225	144	84.9
Chloride	g/m^3	*0.5*	1.26	2.94	5.63	2.05	1.90
Sulfate	g/m^3	*0.15*	2.40	5.90	48.4	14.6	5.30
Nitrate-N	g/m^3	*0.002*	0.0146	0.0130	0.171	0.233	0.0023
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	<0.002	0.002	0.004	<0.002	<0.002
Ammonia as N	g/m^3	*0.005*	0.006	<0.005	0.006	<0.005	<0.005
Sodium	g/m^3	*0.01*	3.86	5.58	14.4	7.39	6.23
Potassium	g/m^3	*0.05*	0.73	1.1	1.8	1.2	1.5
Calcium	g/m^3	*0.05*	12.4	23.9	71.0	45.1	28.5
Magnesium	g/m^3	*0.01*	2.45	4.40	24.2	10.7	5.01
Iron	g/m^3	*0.005*	0.022	0.19	0.0082	0.012	0.0080
Zinc	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	0.0014
Manganese	g/m^3	*0.0005*	0.0091	0.049	0.0022	0.0062	0.0026
Sum of Anions*	meq/L	*0.01*	0.89	1.67	5.76	3.30	1.87
Sum of Cations*	meq/L	*0.01*	1.01	1.83	6.21	3.49	2.14
EC/10*	(mS/m)/10	*0.002*	1.06	1.99	6.08	3.59	2.14

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Anion/Cation Suite

		Client Sample ID	MDD302
		Date Sampled	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
pH	pH	*1*	7.8
Electrical Conductivity	µS/cm	*0.2*	542
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	233
Chloride	g/m^3	*0.5*	2.39
Sulfate	g/m^3	*0.15*	9.03
Nitrate-N	g/m^3	*0.002*	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	<0.002
Ammonia as N	g/m^3	*0.005*	0.05
Sodium	g/m^3	*0.01*	8.48
Potassium	g/m^3	*0.05*	1.4
Calcium	g/m^3	*0.05*	61.3
Magnesium	g/m^3	*0.01*	21.9
Iron	g/m^3	*0.005*	<0.0050
Zinc	g/m^3	*0.001*	<0.0010
Manganese	g/m^3	*0.0005*	0.0050
Sum of Anions*	meq/L	*0.01*	4.96
Sum of Cations*	meq/L	*0.01*	5.27
EC/10*	(mS/m)/10	*0.002*	5.42

Elements in Water (Total Recoverable)

		Client Sample ID	CC01	LBA	MDD015	RS01	RS02
		Date Sampled	11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Arsenic	g/m^3	*0.0005*	0.00089	1.17	0.018	0.042	0.0066
Aluminium	g/m^3	*0.003*	0.021	0.0038	0.016	0.053	0.062
Barium	g/m^3	*0.0001*	0.0051	0.0056	0.245	0.0167	0.0161
Beryllium	g/m^3	*0.00001*	<0.000010	<0.000010	0.000013	0.000013	0.000017
Bismuth	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m^3	*0.005*	<0.0050	0.014	0.036	<0.0050	<0.0050
Calcium	g/m^3	*0.05*	3.8	49.2	40.8	22.2	23.2
Cadmium	g/m^3	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m^3	*0.00001*	0.000048	0.000073	<0.000010	0.00016	0.00013
Chromium	g/m^3	*0.0002*	0.00027	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m^3	*0.00001*	<0.000010	0.00016	0.00019	0.000016	0.000012
Copper	g/m^3	*0.0002*	<0.00020	<0.00020	<0.00020	0.00025	0.00048
Iron	g/m^3	*0.005*	0.025	0.12	0.060	0.669	0.16
Germanium	g/m^3	*0.00005*	<0.000050	<0.000050	0.00087	<0.000050	<0.000050
Mercury	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m^3	*0.05*	0.31	1.8	1.3	1.2	1.1
Lanthanum	g/m^3	*0.00001*	0.000065	0.000015	0.000044	0.000068	0.000088
Lithium	g/m^3	*0.00001*	0.00121	0.0140	0.0557	0.00256	0.00291
Magnesium	g/m^3	*0.01*	0.81	14.1	14.2	4.19	4.12
Manganese	g/m^3	*0.0005*	0.00093	0.039	0.0071	0.0921	0.0061
Molybdenum	g/m^3	*0.0002*	<0.00020	0.0011	0.00028	<0.00020	<0.00020
Sodium	g/m^3	*0.01*	2.10	17.7	38.5	4.88	4.63
Nickel	g/m^3	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	0.00024
Phosphorus	g/m^3	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m^3	*0.00005*	<0.000050	0.000059	<0.000050	0.00010	0.00013

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Elements in Water (Total Recoverable)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Rubidium	g/m³	*0.00005*	0.00028	0.0014	0.0022	0.00038	0.00054
Sulfur*	g/m³	*10*	<10	11	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.0511	0.514	10.5	0.365	0.373
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	0.00229	0.00099	0.000030	0.00044
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.000059	0.000067	0.00031	0.000055	0.000076
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Arsenic	g/m³	*0.0005*	0.0071	0.377	0.0018	0.00051	0.0022
Aluminium	g/m³	*0.003*	0.0096	0.066	0.013	0.062	0.042
Barium	g/m³	*0.0001*	0.0072	0.0245	0.0477	0.0401	0.0236
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.029	0.023	<0.0050
Calcium	g/m³	*0.05*	10.9	21.8	62.8	41.8	25.0
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000075	0.00038	0.000054	0.00025	0.00020
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00049	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00064	0.00045	0.00033	0.0031	0.00062
Iron	g/m³	*0.005*	0.069	5.39	0.024	1.61	0.47
Germanium	g/m³	*0.00005*	<0.000050	0.000086	<0.000050	0.00011	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.61	1.0	1.6	1.1	1.4
Lanthanum	g/m³	*0.00001*	0.000025	0.000097	0.000026	0.000098	0.000092
Lithium	g/m³	*0.00001*	0.00152	0.00249	0.00952	0.00465	0.00257
Magnesium	g/m³	*0.01*	2.13	4.09	21.2	9.89	4.22
Manganese	g/m³	*0.0005*	0.011	0.165	0.0018	0.040	0.029
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00049	0.00048	<0.00020
Sodium	g/m³	*0.01*	3.28	4.86	11.9	6.51	5.15
Nickel	g/m³	*0.0002*	<0.00020	0.00030	0.00021	0.0015	0.00034
Phosphorus	g/m³	*0.04*	<0.040	0.063	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	0.00020	<0.000050	0.0049	0.00010
Rubidium	g/m³	*0.00005*	0.00022	0.00041	0.00022	0.00034	0.00050
Sulfur*	g/m³	*10*	<10	<10	19	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00016	0.00025	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.163	0.332	1.14	0.796	0.416
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	<0.000030	0.00682	0.00281	0.00013
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	0.000097	<0.000050	0.000091	0.000094
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

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Elements in Water (Total Recoverable)

		Client Sample ID	MDD302
		Date Sampled	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Arsenic	g/m³	*0.0005*	0.0573
Aluminium	g/m³	*0.003*	<0.0030
Barium	g/m³	*0.0001*	0.148
Beryllium	g/m³	*0.00001*	0.000026
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.005*	<0.0050
Calcium	g/m³	*0.05*	56.5
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00016
Copper	g/m³	*0.0002*	<0.00020
Iron	g/m³	*0.005*	0.36
Germanium	g/m³	*0.00005*	0.000052
Mercury	g/m³	*0.0001*	<0.00010
Potassium	g/m³	*0.05*	1.2
Lanthanum	g/m³	*0.00001*	0.000012
Lithium	g/m³	*0.00001*	0.00919
Magnesium	g/m³	*0.01*	19.9
Manganese	g/m³	*0.0005*	0.0045
Molybdenum	g/m³	*0.0002*	0.00039
Sodium	g/m³	*0.01*	7.27
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050
Rubidium	g/m³	*0.00005*	0.0021
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00016
Selenium	g/m³	*0.001*	<0.0010
Tin	g/m³	*0.0005*	<0.00050
Strontium	g/m³	*0.0001*	1.18
Thallium	g/m³	*0.0001*	<0.00010
Uranium	g/m³	*0.00003*	0.00528
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00005*	0.00046
Zinc	g/m³	*0.003*	<0.0030

Elements in Water (Soluble)

		Client Sample ID	CC01	LBA	MDD015	RS01	RS02
		Date Sampled	11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-1	24-22094-2	24-22094-3	24-22094-4	24-22094-5
Aluminium	g/m³	*0.003*	0.0095	<0.0030	<0.0030	<0.0030	0.033
Arsenic	g/m³	*0.0005*	0.00093	1.16	0.0547	0.014	0.0061
Barium	g/m³	*0.0002*	0.0039	0.0049	0.206	0.0124	0.0141
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.015	0.041	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000044	0.000063	<0.000010	0.000048	0.000094

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Elements in Water (Soluble)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	0.00032
Caesium	g/m³	*0.00001*	<0.000010	0.00015	0.00020	<0.000010	0.000011
Copper	g/m³	*0.0002*	0.00034	<0.00020	<0.00020	0.00029	0.0012
Germanium	g/m³	*0.00005*	<0.000050	0.000058	0.00096	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000043	<0.000010	0.000011	<0.000010	0.00011
Lithium	g/m³	*0.00001*	0.00074	0.0130	0.0508	0.00237	0.00263
Molybdenum	g/m³	*0.0002*	<0.00020	0.0012	0.00039	<0.00020	0.00025
Nickel	g/m³	*0.0002*	<0.00020	0.00023	<0.00020	<0.00020	0.00042
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	0.53
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00021	0.00143	0.00213	0.00025	0.00237
Sulfur*	g/m³	*10*	<10	12	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	0.00085	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0472	0.523	10.6	0.380	0.394
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.0017	0.00087	<0.000030	0.00033
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000052	0.000033	0.00027	0.000010	0.000057

Elements in Water (Soluble)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-6	24-22094-7	24-22094-8	24-22094-9	24-22094-10
Aluminium	g/m³	*0.003*	0.0051	0.0044	<0.0030	0.0060	<0.0030
Arsenic	g/m³	*0.0005*	0.0063	0.030	0.0027	0.00052	0.00074
Barium	g/m³	*0.0002*	0.0069	0.0155	0.0413	0.0329	0.0212
Beryllium	g/m³	*0.00001*	<0.000010	0.000028	<0.000010	0.000030	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.039	0.031	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	0.000028	<0.000020	0.000031	<0.000020
Cobalt	g/m³	*0.00001*	0.000024	0.00016	0.000078	0.000077	0.000079
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.000033	<0.000010	0.000027	<0.000010
Copper	g/m³	*0.0002*	0.00030	0.00052	0.00044	0.00045	0.00067
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.000089	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000014	0.000056	0.000014	0.000039	0.000013
Lithium	g/m³	*0.00001*	0.00155	0.00238	0.00921	0.00454	0.00264
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00048	0.00041	<0.00020
Nickel	g/m³	*0.0002*	0.00020	0.00039	0.00024	<0.00020	0.00022
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	0.00018	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00034	0.00029	0.00020	0.00022	0.00041
Sulfur*	g/m³	*10*	<10	<10	18	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00012	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	0.00075	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.191	0.333	1.17	0.795	0.462
Thallium	g/m³	*0.00001*	<0.000010	0.000014	<0.000010	<0.000010	<0.000010

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Elements in Water (Soluble)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			11/07/2024	11/07/2024	11/07/2024	11/07/2024	11/07/2024
Uranium	g/m³	*0.00003*	0.000051	0.000036	0.00531	0.00223	0.00028
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000017	0.000049	0.000047	0.000050	0.000028

Elements in Water (Soluble)

Client Sample ID			MDD302
Date Sampled			11/07/2024
Analyte	Unit	*Reporting Limit*	24-22094-11
Aluminium	g/m³	*0.003*	<0.0030
Arsenic	g/m³	*0.0005*	0.050
Barium	g/m³	*0.0002*	0.129
Beryllium	g/m³	*0.00001*	0.000022
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.01*	<0.010
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00018
Copper	g/m³	*0.0002*	<0.00020
Germanium	g/m³	*0.00005*	0.000061
Mercury	g/m³	*0.00008*	<0.000080
Lanthanum	g/m³	*0.00001*	0.000011
Lithium	g/m³	*0.00001*	0.00862
Molybdenum	g/m³	*0.0002*	0.00036
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050
Rubidium	g/m³	*0.00002*	0.00202
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00016
Selenium	g/m³	*0.0005*	<0.00050
Tin	g/m³	*0.0002*	<0.00020
Strontium	g/m³	*0.0001*	1.20
Thallium	g/m³	*0.00001*	<0.000010
Uranium	g/m³	*0.00003*	0.00420
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00001*	0.00018

Method Summary

Total Phosphorus	Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)
Acidity to pH 8.3	Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).
Turbidity	Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).
NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).

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Method Summary

TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.

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Certificate of Analysis

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Attention: Hamish McLauchlan
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Sampling Site: Bendigo Ophir Project

Lab Reference: 24-23696
Submitted by:
Date Received: 29/07/2024
Testing Initiated: 29/07/2024
Date Completed: 7/08/2024
Order Number:
Reference:

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Total Phosphorus	g/m^3	*0.005*	0.0063	0.33	0.0064	0.025	0.049

Total Phosphorus in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Total Phosphorus	g/m^3	*0.005*	<0.0050	0.062	<0.0050	<0.0050	0.024

Total Phosphorus in Water

Client Sample ID			MDD302
Date Sampled			25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Total Phosphorus	g/m^3	*0.005*	0.0052

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	<1.00	<1.00	3.33	3.33

Water Aggregate Properties

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	6.67	10.00	10.00	3.33

Water Aggregate Properties

Client Sample ID			MDD302
Date Sampled			25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	10.00

Turbidity

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Turbidity	NTU	*0.05*	0.3	0.6	3.2	4.8	22

Turbidity

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Turbidity	NTU	*0.05*	0.4	12	0.9	2.3	6.0

Turbidity

Client Sample ID			MDD302
Date Sampled			25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Turbidity	NTU	*0.05*	3.4

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Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	0.0011	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			MDD302
Date Sampled			25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Nitrite-N	g/m^3	*0.001*	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10	0.11	0.18	0.20	0.59
Total Nitrogen	g/m^3	*0.1*	<0.10	0.32	0.18	0.20	0.65

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.29	0.38	0.10	0.13	0.29
Total Nitrogen	g/m^3	*0.1*	0.29	0.38	0.23	0.35	0.29

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			MDD302
Date Sampled			25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10
Total Nitrogen	g/m^3	*0.1*	<0.10

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Custom Job

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			MDD302
Date Sampled			25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Custom Job			Complete

Fluoride in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Fluoride	g/m^3	*0.04*	0.050	0.32	0.17	0.059	0.076

Fluoride in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Fluoride	g/m^3	*0.04*	0.054	0.065	0.079	0.083	0.057

Fluoride in Water

Client Sample ID			MDD302
Date Sampled			25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Fluoride	g/m^3	*0.04*	0.14

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Bromide	g/m^3	*0.005*	<0.05	<0.05	0.10	<0.05	<0.05

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Bromide in Water (Subcontracted - Hill Laboratories)

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

		Client Sample ID	MDD302
		Date Sampled	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Bromide	g/m^3	*0.005*	<0.05

Water Hardness

		Client Sample ID	CC01	LBA	MDD015	RS01	RS02
		Date Sampled	25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	15	200	180	74	75

Water Hardness

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	40	75	280	160	92

Water Hardness

		Client Sample ID	MDD302
		Date Sampled	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	240

Cyanide in Water

		Client Sample ID	CC01	LBA	MDD015	RS01	RS02
		Date Sampled	25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

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Cyanide in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

	Client Sample ID		MDD302
	Date Sampled		25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Total Cyanide	g/m^3	*0.001*	<0.001

Solids in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Total Suspended Solids	g/m^3	*3*	<3	4	8	11	75
Total Dissolved Solids	g/m^3	*3*	17	249	226	92	83

Solids in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Total Suspended Solids	g/m^3	*3*	<3	19	<3	4	13
Total Dissolved Solids	g/m^3	*3*	43	84	310	163	95

Solids in Water

	Client Sample ID		MDD302
	Date Sampled		25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Total Suspended Solids	g/m^3	*3*	<3
Total Dissolved Solids	g/m^3	*3*	248

Elements in Water (Total Recoverable)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Arsenic	g/m^3	*0.0005*	0.00095	1.12	0.019	0.0582	0.015
Aluminium	g/m^3	*0.003*	0.012	0.0033	0.049	0.070	0.520
Barium	g/m^3	*0.0001*	0.0048	0.0057	0.246	0.0166	0.0249
Beryllium	g/m^3	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	0.000049
Bismuth	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m^3	*0.005*	<0.0050	0.0059	0.029	<0.0050	<0.0050
Calcium	g/m^3	*0.05*	4.3	54.4	45.0	22.5	22.8
Cadmium	g/m^3	*0.00002*	<0.000020	<0.000020	0.000023	<0.000020	0.000033

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Elements in Water (Total Recoverable)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Cobalt	g/m³	*0.00001*	0.000036	0.000071	0.000017	0.00019	0.00069
Chromium	g/m³	*0.0002*	<0.00020	0.00030	0.00020	<0.00020	0.00064
Caesium	g/m³	*0.00001*	<0.000010	0.00014	0.00021	<0.000010	0.00010
Copper	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00029	0.0018
Iron	g/m³	*0.005*	0.013	0.11	0.084	0.987	1.22
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00099	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.33	2.0	1.4	1.0	1.2
Lanthanum	g/m³	*0.00001*	0.000039	0.000013	0.000075	0.000068	0.00073
Lithium	g/m³	*0.00001*	0.00082	0.0136	0.0544	0.00240	0.00329
Magnesium	g/m³	*0.01*	0.93	15.9	15.8	4.38	4.40
Manganese	g/m³	*0.0005*	0.00077	0.039	0.0077	0.150	0.049
Molybdenum	g/m³	*0.0002*	<0.00020	0.0011	0.00032	<0.00020	<0.00020
Sodium	g/m³	*0.01*	2.47	20.2	44.4	5.35	4.91
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00022	0.00091
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	0.064
Lead	g/m³	*0.00005*	<0.000050	<0.000050	0.000050	0.00013	0.0014
Rubidium	g/m³	*0.00005*	0.00021	0.0014	0.0021	0.00036	0.0017
Sulfur*	g/m³	*10*	<10	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.0491	0.497	10.1	0.314	0.323
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	0.00216	0.00095	0.000064	0.00063
Vanadium	g/m³	*0.0005*	0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	0.000059	0.00032	0.000053	0.00056
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	0.0033

Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Arsenic	g/m³	*0.0005*	0.0064	0.132	0.0016	<0.00050	0.0026
Aluminium	g/m³	*0.003*	0.0052	0.075	0.028	0.076	0.037
Barium	g/m³	*0.0001*	0.0072	0.0265	0.0514	0.0374	0.0251
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.028	0.017	<0.0050
Calcium	g/m³	*0.05*	12.1	22.9	71.7	45.2	28.8
Cadmium	g/m³	*0.00002*	0.000026	<0.000020	<0.000020	<0.000020	0.000027
Cobalt	g/m³	*0.00001*	0.000038	0.00038	0.00014	0.000089	0.00027
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00026	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.000010	<0.000010	0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	0.00057	0.00040	0.00036	0.00059
Iron	g/m³	*0.005*	0.066	4.29	0.082	0.17	0.644
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00010	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.58	0.86	1.8	1.2	1.4
Lanthanum	g/m³	*0.00001*	0.000011	0.00015	0.000062	0.000064	0.00012
Lithium	g/m³	*0.00001*	0.00147	0.00221	0.0100	0.00451	0.00240
Magnesium	g/m³	*0.01*	2.41	4.34	25.4	11.0	4.81

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Elements in Water (Total Recoverable)

			Client Sample ID	RS03	RSA01	SC01	SC03	RS04
			Date Sampled	25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Manganese	g/m³	*0.0005*		0.011	0.343	0.034	0.017	0.0520
Molybdenum	g/m³	*0.0002*		<0.00020	<0.00020	0.00061	0.00044	<0.00020
Sodium	g/m³	*0.01*		3.80	5.35	14.3	7.33	5.92
Nickel	g/m³	*0.0002*		<0.00020	0.00036	0.00021	<0.00020	0.00029
Phosphorus	g/m³	*0.04*		<0.040	0.043	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*		<0.000050	0.00029	0.00011	0.00012	0.00015
Rubidium	g/m³	*0.00005*		0.00018	0.00034	0.00021	0.00037	0.00044
Sulfur*	g/m³	*10*		<10	<10	21	<10	<10
Antimony	g/m³	*0.0001*		<0.00010	<0.00010	0.00014	<0.00010	<0.00010
Selenium	g/m³	*0.001*		<0.0010	<0.0010	0.0011	<0.0010	<0.0010
Tin	g/m³	*0.0005*		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*		0.159	0.294	1.18	0.754	0.390
Thallium	g/m³	*0.0001*		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*		0.000054	0.000093	0.00696	0.00284	0.00020
Vanadium	g/m³	*0.0005*		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*		<0.000050	0.00014	0.000078	0.000068	0.00013
Zinc	g/m³	*0.003*		<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

		Client Sample ID	MDD302
		Date Sampled	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Arsenic	g/m³	*0.0005*	0.0560
Aluminium	g/m³	*0.003*	<0.0030
Barium	g/m³	*0.0001*	0.142
Beryllium	g/m³	*0.00001*	0.000022
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.005*	<0.0050
Calcium	g/m³	*0.05*	61.5
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00015
Copper	g/m³	*0.0002*	<0.00020
Iron	g/m³	*0.005*	0.34
Germanium	g/m³	*0.00005*	0.00020
Mercury	g/m³	*0.0001*	<0.00010
Potassium	g/m³	*0.05*	1.4
Lanthanum	g/m³	*0.00001*	0.000013
Lithium	g/m³	*0.00001*	0.00875
Magnesium	g/m³	*0.01*	22.0
Manganese	g/m³	*0.0005*	0.0045
Molybdenum	g/m³	*0.0002*	0.00044
Sodium	g/m³	*0.01*	8.17
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050
Rubidium	g/m³	*0.00005*	0.0019
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00016
Selenium	g/m³	*0.001*	<0.0010
Tin	g/m³	*0.0005*	<0.00050

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Elements in Water (Total Recoverable)

Client Sample ID			MDD302
Date Sampled			25/07/2024
Strontium	g/m³	*0.0001*	1.13
Thallium	g/m³	*0.0001*	<0.00010
Uranium	g/m³	*0.00003*	0.00499
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00005*	0.00044
Zinc	g/m³	*0.003*	<0.0030

Elements in Water (Soluble)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
Silica	g/m³	*0.1*	9.06	15.4	19.2	9.48	10.7
Arsenic	g/m³	*0.0005*	0.00098	1.12	0.019	0.015	0.0045
Aluminium	g/m³	*0.003*	0.0065	<0.0030	0.0036	<0.0030	0.0035
Barium	g/m³	*0.0002*	0.0046	0.0056	0.237	0.0122	0.0128
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.028	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000026	0.000065	<0.000010	0.000027	0.000046
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00014	0.00018	0.000013	<0.000010
Copper	g/m³	*0.0002*	0.00021	<0.00020	<0.00020	0.00021	0.00030
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00078	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000023	<0.000010	0.000011	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00080	0.0139	0.0543	0.00210	0.00256
Molybdenum	g/m³	*0.0002*	<0.00020	0.00099	0.00030	<0.00020	0.00021
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00020	0.00133	0.00198	0.00022	0.00026
Sulfur*	g/m³	*10*	<10	12	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	0.00071	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0489	0.496	10.2	0.321	0.317
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.0019	0.00083	0.00013	0.00040
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000032	0.000024	0.00022	<0.000010	0.000015

Elements in Water (Soluble)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
Silica	g/m³	*0.1*	9.61	9.56	7.78	8.17	10.0
Arsenic	g/m³	*0.0005*	0.0060	0.0085	0.0015	<0.00050	0.00058
Aluminium	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	0.0032	<0.0030

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Elements in Water (Soluble)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Barium	g/m³	*0.0002*	0.0067	0.0149	0.0480	0.0344	0.0217
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.030	0.018	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000024	0.000015	0.000047	0.000027	0.000078
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	<0.00020	0.00033	0.00030	0.00051
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	<0.000010	0.000012	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00135	0.00212	0.0101	0.00452	0.00224
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00056	0.00045	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	0.00021
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	0.000053	<0.000050
Rubidium	g/m³	*0.00002*	0.00016	0.00013	0.00017	0.00017	0.00036
Sulfur*	g/m³	*10*	<10	<10	22	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00018	0.00011	0.00011
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	0.00091	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.160	0.291	1.16	0.754	0.390
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.000056	0.000065	0.00621	0.00306	0.00039
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000012	<0.000010	0.000036	0.000018	0.000022

Elements in Water (Soluble)

Client Sample ID			MDD302
Date Sampled			25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
Silica	g/m³	*0.1*	23.3
Arsenic	g/m³	*0.0005*	0.050
Aluminium	g/m³	*0.003*	<0.0030
Barium	g/m³	*0.0002*	0.145
Beryllium	g/m³	*0.00001*	0.000010
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.01*	<0.010
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00014
Copper	g/m³	*0.0002*	<0.00020
Germanium	g/m³	*0.00005*	0.00016
Mercury	g/m³	*0.00008*	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010
Lithium	g/m³	*0.00001*	0.00899
Molybdenum	g/m³	*0.0002*	0.00037
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050

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Elements in Water (Soluble)

	Client Sample ID		MDD302
	Date Sampled		25/07/2024
Rubidium	g/m³	*0.00002*	0.00193
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00016
Selenium	g/m³	*0.0005*	<0.00050
Tin	g/m³	*0.0002*	<0.00020
Strontium	g/m³	*0.0001*	1.17
Thallium	g/m³	*0.00001*	<0.000010
Uranium	g/m³	*0.00003*	0.00429
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00001*	0.00017

Anion/Cation Suite

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-1	24-23696-2	24-23696-3	24-23696-4	24-23696-5
pH	pH	*1*	6.8	8.2	8.1	7.4	7.5
Electrical Conductivity	µS/cm	*0.2*	39.2	459	442	171	164
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	16.7	196	203	72.1	74.4
Chloride	g/m³	*0.5*	<0.50	7.58	7.65	3.25	2.23
Sulfate	g/m³	*0.15*	0.68	27.5	8.02	6.69	3.04
Nitrate-N	g/m³	*0.002*	0.0026	0.210	0.0029	0.0028	0.0538
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.005	0.020	<0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	0.1	<0.005	<0.005
Sodium	g/m³	*0.01*	2.23	19.4	42.5	5.04	4.68
Potassium	g/m³	*0.05*	0.31	1.9	1.4	0.97	0.95
Calcium	g/m³	*0.05*	4.2	53.7	46.4	22.4	21.9
Magnesium	g/m³	*0.01*	0.86	15.1	15.3	4.14	4.07
Iron	g/m³	*0.005*	<0.0050	<0.0050	0.0064	0.025	<0.0050
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	<0.00050	0.031	0.0063	0.0059	<0.00050
Sum of Anions*	meq/L	*0.01*	0.35	4.82	4.51	1.68	1.62
Sum of Cations*	meq/L	*0.01*	0.39	4.82	5.46	1.70	1.65
EC/10*	(mS/m)/10	*0.002*	0.39	4.59	4.42	1.71	1.64

Anion/Cation Suite

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-6	24-23696-7	24-23696-8	24-23696-9	24-23696-10
pH	pH	*1*	7.2	7.5	8.1	8.0	7.4
Electrical Conductivity	µS/cm	*0.2*	95.8	167	567	325	193
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	40.3	71.0	234	143	86.7
Chloride	g/m³	*0.5*	1.31	2.51	5.29	2.91	2.51
Sulfate	g/m³	*0.15*	2.67	4.89	42.5	16.4	4.71
Nitrate-N	g/m³	*0.002*	<0.0020	0.0038	0.130	0.223	0.0046
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	<0.002	<0.002	0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	g/m³	*0.01*	3.62	4.99	13.6	6.95	5.69

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Anion/Cation Suite

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Potassium	g/m³	*0.05*	0.57	0.76	1.7	1.1	1.3
Calcium	g/m³	*0.05*	12.0	21.9	71.7	44.0	26.8
Magnesium	g/m³	*0.01*	2.33	4.03	24.5	10.4	4.45
Iron	g/m³	*0.005*	0.012	0.0091	<0.0050	<0.0050	0.0081
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.0066	0.0024	<0.00050	0.0030	0.0031
Sum of Anions*	meq/L	*0.01*	0.90	1.60	5.81	3.34	1.91
Sum of Cations*	meq/L	*0.01*	0.96	1.66	6.23	3.38	1.98
EC/10*	(mS/m)/10	*0.002*	0.96	1.67	5.67	3.25	1.93

Anion/Cation Suite

	Client Sample ID		MDD302
	Date Sampled		25/07/2024
Analyte	Unit	*Reporting Limit*	24-23696-11
pH	pH	*1*	7.8
Electrical Conductivity	µS/cm	*0.2*	480
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	239
Chloride	g/m³	*0.5*	3.41
Sulfate	g/m³	*0.15*	10.2
Nitrate-N	g/m³	*0.002*	0.0026
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	<0.002
Ammonia as N	g/m³	*0.005*	0.05
Sodium	g/m³	*0.01*	7.93
Potassium	g/m³	*0.05*	1.4
Calcium	g/m³	*0.05*	62.1
Magnesium	g/m³	*0.01*	21.5
Iron	g/m³	*0.005*	<0.0050
Zinc	g/m³	*0.001*	<0.0010
Manganese	g/m³	*0.0005*	0.0047
Sum of Anions*	meq/L	*0.01*	5.13
Sum of Cations*	meq/L	*0.01*	5.25
EC/10*	(mS/m)/10	*0.002*	4.80

Method Summary

Total Phosphorus Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)

Acidity to pH 8.3 Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).

Turbidity Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).

NO2-N Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).

TKN Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).

TN Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).

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Method Summary

Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3^-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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Certificate of Analysis

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Attention: Hamish McLauchlan
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Lab Reference: 24-25063
Submitted by:
Date Received: 12/08/2024
Testing Initiated: 12/08/2024
Date Completed: 19/08/2024
Order Number:
Reference:

Sampling Site: Bendigo Ophir Project

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

	Client Sample ID		LBA	RS01	RS02	RS03	RSA01
	Date Sampled		8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Phosphorus	g/m^3	*0.005*	0.27	0.15	0.032	0.011	0.012

Total Phosphorus in Water

	Client Sample ID		SC01	RS04	MDD302
	Date Sampled		8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Phosphorus	g/m^3	*0.005*	0.022	0.0088	0.020

Water Aggregate Properties

	Client Sample ID		LBA	RS01	RS02	RS03	RSA01
	Date Sampled		8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	<1.00	6.67	3.33	3.33	6.67

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	<1.00	3.33	11.67

Turbidity

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Turbidity	NTU	*0.05*	0.9	73	6.8	1.2	3.4

Turbidity

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Turbidity	NTU	*0.05*	8.2	1.4	3.7

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Nitrite-N	g/m^3	*0.001*	<0.0010	0.0015	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Nitrite-N	g/m^3	*0.001*	0.0014	<0.0010	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.14	0.43	0.37	0.19	0.26
Total Nitrogen	g/m^3	*0.1*	0.35	0.48	0.42	0.19	0.26

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Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.32	0.32	<0.10
Total Nitrogen	g/m^3	*0.1*	0.44	0.32	<0.10

Custom Job

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Custom Job			Complete	Complete	Complete

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Bromide	g/m^3	*0.005*	0.10	<0.05	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05

Fluoride in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Fluoride	g/m^3	*0.04*	0.26	0.043	0.042	<0.040	<0.040

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Fluoride in Water

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Fluoride	g/m^3	*0.04*	0.057	<0.040	0.11

Water Hardness

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	200	75	66	30	67

Water Hardness

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	230	68	240

Cyanide in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001

Solids in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Suspended Solids	g/m^3	*3*	<3	27	11	<3	<3
Total Dissolved Solids	g/m^3	*3*	262	91	73	46	77

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Solids in Water

	Client Sample ID		SC01	RS04	MDD302
	Date Sampled		8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Suspended Solids	g/m³	*3*	10	<3	<3
Total Dissolved Solids	g/m³	*3*	259	82	232

Elements in Water (Total Recoverable)

	Client Sample ID		LBA	RS01	RS02	RS03	RSA01
	Date Sampled		8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Arsenic	g/m³	*0.0005*	1.18	0.039	0.0084	0.0091	0.038
Aluminium	g/m³	*0.003*	0.0032	0.860	0.16	0.019	0.015
Barium	g/m³	*0.0001*	0.0056	0.0309	0.0155	0.0060	0.0155
Beryllium	g/m³	*0.00001*	<0.000010	0.000058	0.000012	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	0.020	0.0070	0.0063	0.0051	0.0071
Calcium	g/m³	*0.05*	53.0	22.8	20.1	9.10	20.5
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000069	0.00102	0.00023	0.000065	0.00013
Chromium	g/m³	*0.0002*	<0.00020	0.00065	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.00014	0.00013	0.000024	<0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	0.0022	0.00084	0.0044	0.00035
Iron	g/m³	*0.005*	0.11	1.76	0.44	0.19	0.945
Germanium	g/m³	*0.00005*	<0.000050	0.00017	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	1.8	1.8	2.0	0.66	1.7
Lanthanum	g/m³	*0.00001*	<0.000010	0.00121	0.00019	0.000043	0.000038
Lithium	g/m³	*0.00001*	0.0148	0.00354	0.00261	0.00120	0.00212
Magnesium	g/m³	*0.01*	15.4	4.51	3.76	1.73	3.92
Manganese	g/m³	*0.0005*	0.040	0.112	0.017	0.016	0.0883
Molybdenum	g/m³	*0.0002*	0.0013	<0.00020	<0.00020	<0.00020	<0.00020
Sodium	g/m³	*0.01*	19.7	5.20	4.41	3.08	4.89
Nickel	g/m³	*0.0002*	<0.00020	0.0012	0.00048	<0.00020	0.00020
Phosphorus	g/m³	*0.04*	<0.040	0.054	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	0.0026	0.00037	0.00019	<0.000050
Rubidium	g/m³	*0.00005*	0.0014	0.0022	0.00099	0.00026	0.00038
Sulfur*	g/m³	*10*	11	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.474	0.299	0.273	0.112	0.262
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00228	0.00014	0.00031	<0.000030	0.000063
Vanadium	g/m³	*0.0005*	<0.00050	0.0012	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.000054	0.00069	0.00014	0.000050	<0.000050
Zinc	g/m³	*0.003*	<0.0030	0.0055	0.0041	0.0035	<0.0030

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Elements in Water (Total Recoverable)

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Arsenic	g/m³	*0.0005*	0.0022	0.0011	0.0588
Aluminium	g/m³	*0.003*	0.16	0.0098	<0.0030
Barium	g/m³	*0.0001*	0.0439	0.0161	0.143
Beryllium	g/m³	*0.00001*	0.000015	<0.000010	0.000034
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	0.036	0.0056	0.010
Calcium	g/m³	*0.05*	58.7	21.4	60.5
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00022	0.000072	<0.000010
Chromium	g/m³	*0.0002*	0.00021	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.000025	<0.000010	0.00016
Copper	g/m³	*0.0002*	0.00082	0.00069	<0.00020
Iron	g/m³	*0.005*	0.29	0.11	0.34
Germanium	g/m³	*0.00005*	0.00014	<0.000050	0.00012
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	2.1	1.5	1.3
Lanthanum	g/m³	*0.00001*	0.00017	0.000028	0.000013
Lithium	g/m³	*0.00001*	0.00855	0.00202	0.00915
Magnesium	g/m³	*0.01*	20.4	3.54	21.4
Manganese	g/m³	*0.0005*	0.014	0.0068	0.0047
Molybdenum	g/m³	*0.0002*	0.00047	<0.00020	0.00059
Sodium	g/m³	*0.01*	11.9	4.78	7.85
Nickel	g/m³	*0.0002*	0.00047	0.00036	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	0.00032	<0.000050	<0.000050
Rubidium	g/m³	*0.00005*	0.00061	0.00038	0.0019
Sulfur*	g/m³	*10*	16	<10	<10
Antimony	g/m³	*0.0001*	0.00018	<0.00010	0.00016
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.901	0.285	1.09
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00572	0.00027	0.00513
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.00014	<0.000050	0.00045
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030

Elements in Water (Soluble)

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Silica	g/m³	*0.1*	18.4	10.7	10.4	10.6	10.5
Arsenic	g/m³	*0.0005*	1.10	0.015	0.0045	0.0064	0.0071
Aluminium	g/m³	*0.003*	<0.0030	0.026	0.0045	0.0083	<0.0030
Barium	g/m³	*0.0002*	0.0053	0.0119	0.0122	0.0055	0.0122
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	0.019	<0.010	<0.010	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000034	0.000080	0.000041	0.000046	0.000042

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Elements in Water (Soluble)

	Client Sample ID		LBA	RS01	RS02	RS03	RSA01
	Date Sampled		8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.00012	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	0.00063	0.00061	0.00036	0.00040
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	0.000033	0.000016	0.000018	<0.000010
Lithium	g/m³	*0.00001*	0.0136	0.00224	0.00226	0.00117	0.00203
Molybdenum	g/m³	*0.0002*	0.0011	<0.00020	<0.00020	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	0.00022	0.00021	0.00026	0.00023	0.00021
Phosphorus	g/m³	*0.04*	0.067	<0.040	0.049	<0.040	<0.040
Lead	g/m³	*0.00005*	0.000059	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00130	0.00033	0.00055	0.00023	0.00034
Sulfur*	g/m³	*10*	12	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.461	0.288	0.268	0.105	0.255
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00219	0.00011	0.00029	0.000035	0.000068
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000024	0.000023	0.000023	0.000033	<0.000010

Elements in Water (Soluble)

	Client Sample ID		SC01	RS04	MDD302
	Date Sampled		8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Silica	g/m³	*0.1*	7.46	8.63	25.1
Arsenic	g/m³	*0.0005*	0.0019	0.00082	0.050
Aluminium	g/m³	*0.003*	0.0036	<0.0030	<0.0030
Barium	g/m³	*0.0002*	0.0397	0.0154	0.140
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	0.000014
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	0.035	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000050	0.00010	0.000013
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	0.00016
Copper	g/m³	*0.0002*	0.00053	0.00065	<0.00020
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.000066
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000016	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00807	0.00201	0.00888
Molybdenum	g/m³	*0.0002*	0.00045	<0.00020	0.00040
Nickel	g/m³	*0.0002*	0.00025	0.00032	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00020	0.00037	0.00184
Sulfur*	g/m³	*10*	16	<10	<10
Antimony	g/m³	*0.0001*	0.00018	<0.00010	0.00017
Selenium	g/m³	*0.0005*	0.00075	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.871	0.279	1.03

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Elements in Water (Soluble)

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00553	0.00033	0.00501
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000035	0.000025	0.00017

Anion/Cation Suite

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
pH	pH	*1*	8.2	7.6	7.6	7.3	7.6
Electrical Conductivity	µS/cm	*0.2*	468	176	155	69.9	163
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	194	67.3	61.3	29.2	64.3
Chloride	g/m³	*0.5*	7.34	3.66	3.51	1.38	4.11
Sulfate	g/m³	*0.15*	28.0	6.22	3.26	1.47	4.86
Nitrate-N	g/m³	*0.002*	0.208	0.0461	0.0541	0.0044	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.019	0.003	0.003	0.004	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	g/m³	*0.01*	19.8	4.98	4.29	2.93	4.93
Potassium	g/m³	*0.05*	1.9	1.4	2.0	0.64	1.8
Calcium	g/m³	*0.05*	53.4	21.7	19.1	8.45	20.4
Magnesium	g/m³	*0.01*	15.6	4.18	3.65	1.66	4.00
Iron	g/m³	*0.005*	<0.0050	0.032	0.018	0.031	0.018
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	0.0012	<0.0010
Manganese	g/m³	*0.0005*	0.028	0.0046	<0.00050	0.0038	0.0087
Sum of Anions*	meq/L	*0.01*	4.78	1.59	1.40	0.65	1.51
Sum of Cations*	meq/L	*0.01*	4.86	1.68	1.49	0.70	1.61
EC/10*	(mS/m)/10	*0.002*	4.68	1.76	1.55	0.70	1.63

Anion/Cation Suite

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
pH	pH	*1*	8.2	7.7	7.8
Electrical Conductivity	µS/cm	*0.2*	491	156	488
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	192	63.0	234
Chloride	g/m³	*0.5*	5.55	3.28	3.06
Sulfate	g/m³	*0.15*	40.2	4.04	9.73
Nitrate-N	g/m³	*0.002*	0.116	<0.0020	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.006	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	0.05
Sodium	g/m³	*0.01*	11.4	4.56	7.97
Potassium	g/m³	*0.05*	2.0	1.5	1.4
Calcium	g/m³	*0.05*	56.8	20.4	61.2
Magnesium	g/m³	*0.01*	20.2	3.42	21.7
Iron	g/m³	*0.005*	0.0070	0.012	<0.0050
Zinc	g/m³	*0.001*	<0.0010	0.0017	<0.0010
Manganese	g/m³	*0.0005*	<0.00050	0.00072	0.0050

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Anion/Cation Suite

	Client Sample ID		SC01	RS04	MDD302
	Date Sampled		8/08/2024	8/08/2024	8/08/2024
Sum of Anions*	meq/L	*0.01*	4.93	1.45	5.01
Sum of Cations*	meq/L	*0.01*	5.05	1.54	5.23
EC/10*	(mS/m)/10	*0.002*	4.91	1.56	4.88

Method Summary

Total Phosphorus	Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)
Acidity to pH 8.3	Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).
Turbidity	Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).
NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)

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Method Summary

Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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Certificate of Analysis

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Attention: Hamish McLauchlan
Phone: 0275886631
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Sampling Site:

Lab Reference: 24-25681
Submitted by:
Date Received: 19/08/2024
Testing Initiated: 20/08/2024
Date Completed: 22/08/2024
Order Number:
Reference:

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Elements in Water (Soluble)

	Client Sample ID		MG37922-WP24-13495.001	MG40061-WP24-13495.002	MG46045-WP24-13495.003	MG19875-WP24-14103.001	MG43524-WP24-14103.002
	Date Sampled		20/03/2024	20/03/2024	20/03/2024	24/07/2024	24/07/2024
Analyte	Unit	*Reporting Limit*	24-25681-1	24-25681-2	24-25681-3	24-25681-4	24-25681-5
Arsenic	g/m³	*0.0005*	0.033	0.160	0.222	0.384	0.450
Aluminium	g/m³	*0.003*	0.429	0.708	0.333	0.264	0.487
Barium	g/m³	*0.0002*	0.0060	0.0048	0.0071	0.0233	0.0172
Beryllium	g/m³	*0.00001*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bismuth	g/m³	*0.0001*	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	g/m³	*0.01*	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium	g/m³	*0.05*	14.3	11.3	12.2	12.8	13.8
Cadmium	g/m³	*0.00002*	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Cobalt	g/m³	*0.00001*	0.00029	<0.0001	0.00043	0.00074	0.00076
Chromium	g/m³	*0.0002*	<0.002	<0.002	<0.002	<0.002	<0.002
Caesium	g/m³	*0.00001*	<0.0001	0.00011	<0.0001	0.00011	<0.0001
Copper	g/m³	*0.0002*	<0.002	<0.002	<0.002	0.0021	0.0042
Iron	g/m³	*0.005*	<0.05	<0.05	<0.05	0.13	0.40
Germanium	g/m³	*0.00005*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Mercury	g/m³	*0.00008*	<0.0008	<0.0008	<0.0008	<0.0008	0.0031
Potassium	g/m³	*0.05*	6.92	7.15	6.24	11.3	10.5
Lanthanum	g/m³	*0.00001*	<0.0001	<0.0001	<0.0001	0.00152	0.00162
Lithium	g/m³	*0.00001*	0.00578	0.00397	0.00305	0.0359	0.0105
Magnesium	g/m³	*0.01*	3.82	3.12	3.70	1.81	1.53
Manganese	g/m³	*0.0005*	0.0821	0.040	0.0697	0.014	0.023
Molybdenum	g/m³	*0.0002*	<0.002	<0.002	<0.002	0.010	0.0300
Sodium	g/m³	*0.01*	1.56	1.63	1.37	28.8	43.8

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Elements in Water (Soluble)

			Client Sample ID	MG37922-WP24-13495.001	MG40061-WP24-13495.002	MG46045-WP24-13495.003	MG19875-WP24-14103.001	MG43524-WP24-14103.002
			Date Sampled	20/03/2024	20/03/2024	20/03/2024	24/07/2024	24/07/2024
Nickel	g/m³	*0.0002*		<0.002	<0.002	<0.002	<0.002	<0.002
Phosphorus	g/m³	*0.04*		<0.4	<0.4	<0.4	<0.4	<0.4
Lead	g/m³	*0.00005*		<0.0005	<0.0005	<0.0005	0.00091	0.0021
Rubidium	g/m³	*0.00002*		0.00392	0.00374	0.00278	0.00631	0.00455
Sulfur*	g/m³	*10*		<100	<100	<100	<100	<100
Antimony	g/m³	*0.0001*		0.0029	0.0031	0.0026	0.0450	0.177
Selenium	g/m³	*0.0005*		<0.005	<0.005	<0.005	0.0060	0.012
Tin	g/m³	*0.0002*		<0.002	<0.002	<0.002	<0.002	<0.002
Strontium	g/m³	*0.0001*		0.868	0.509	0.730	1.26	0.476
Thallium	g/m³	*0.00001*		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium	g/m³	*0.00003*		0.00070	0.00078	0.00043	0.0120	0.0142
Vanadium	g/m³	*0.0005*		<0.005	<0.005	<0.005	<0.005	0.0094
Yttrium	g/m³	*0.00001*		<0.0001	<0.0001	<0.0001	0.00068	0.00094
Zinc	g/m³	*0.001*		<0.01	<0.01	<0.01	<0.01	<0.01

Elements in Water (Soluble)

			Client Sample ID	MG19838-WP24-14183.001	MG46045-WP24-14183.002	MG40061-WP24-14183.003	MG37922-WP24-14183.004
			Date Sampled	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*		24-25681-6	24-25681-7	24-25681-8	24-25681-9
Arsenic	g/m³	*0.0005*		0.050	1.47	0.294	0.547
Aluminium	g/m³	*0.003*		0.055	0.035	0.038	0.037
Barium	g/m³	*0.0002*		0.0086	0.0308	0.0162	0.0179
Beryllium	g/m³	*0.00001*		<0.0001	<0.0001	<0.0001	<0.0001
Bismuth	g/m³	*0.0001*		<0.001	<0.001	<0.001	<0.001
Boron	g/m³	*0.01*		<0.1	<0.1	<0.1	<0.1
Calcium	g/m³	*0.05*		19.7	20.6	17.8	14.8
Cadmium	g/m³	*0.00002*		<0.0002	<0.0002	<0.0002	<0.0002
Cobalt	g/m³	*0.00001*		0.00019	0.00112	0.00118	0.00050
Chromium	g/m³	*0.0002*		<0.002	<0.002	<0.002	<0.002
Caesium	g/m³	*0.00001*		<0.0001	0.00027	0.00037	0.00027
Copper	g/m³	*0.0002*		0.0055	<0.002	<0.002	<0.002
Iron	g/m³	*0.005*		1.67	<0.05	<0.05	<0.05
Germanium	g/m³	*0.00005*		<0.0005	<0.0005	<0.0005	<0.0005
Mercury	g/m³	*0.00008*		<0.0008	<0.0008	<0.0008	<0.0008
Potassium	g/m³	*0.05*		5.35	15.5	20.5	12.0
Lanthanum	g/m³	*0.00001*		0.00022	<0.0001	<0.0001	<0.0001
Lithium	g/m³	*0.00001*		0.0113	0.0108	0.0142	0.0174
Magnesium	g/m³	*0.01*		2.15	12.9	12.2	9.97
Manganese	g/m³	*0.0005*		0.022	<0.005	0.047	<0.005
Molybdenum	g/m³	*0.0002*		0.0040	0.0500	0.0400	0.0300
Sodium	g/m³	*0.01*		4.80	6.78	7.26	5.83
Nickel	g/m³	*0.0002*		0.0023	<0.002	<0.002	<0.002
Phosphorus	g/m³	*0.04*		<0.4	<0.4	<0.4	<0.4
Lead	g/m³	*0.00005*		0.00535	<0.0005	<0.0005	<0.0005
Rubidium	g/m³	*0.00002*		0.00128	0.0107	0.0141	0.00737
Sulfur*	g/m³	*10*		<100	<100	<100	<100
Antimony	g/m³	*0.0001*		0.0062	0.0053	0.0064	0.0075
Selenium	g/m³	*0.0005*		<0.005	<0.005	<0.005	<0.005
Tin	g/m³	*0.0002*		<0.002	<0.002	<0.002	<0.002
Strontium	g/m³	*0.0001*		0.115	2.12	1.19	1.82

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Elements in Water (Soluble)

	Client Sample ID		MG19838-WP24-14183.001	MG46045-WP24-14183.002	MG40061-WP24-14183.003	MG37922-WP24-14183.004
	Date Sampled		8/08/2024	8/08/2024	8/08/2024	8/08/2024
Thallium	g/m^3	*0.00001*	<0.0001	<0.0001	<0.0001	<0.0001
Uranium	g/m^3	*0.00003*	0.00406	0.00091	0.00074	0.00209
Vanadium	g/m^3	*0.0005*	<0.005	<0.005	<0.005	<0.005
Yttrium	g/m^3	*0.00001*	0.00011	<0.0001	<0.0001	<0.0001
Zinc	g/m^3	*0.001*	<0.01	<0.01	<0.01	<0.01

Method Summary

Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.

Prianshu Chawla, B.Tech
Technologist

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Certificate of Analysis

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Phone: 0275886631
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Lab Reference: 24-26351
Submitted by: 23/08/2024
Date Received: 23/08/2024
Testing Initiated: 23/08/2024
Date Completed: 6/09/2024
Order Number:
Reference:

Sampling Site: Bendigo Ophir Project

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Phosphorus	g/m^3	*0.005*	0.011	0.12	0.0090	0.0061	<0.0050

Total Phosphorus in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Phosphorus	g/m^3	*0.005*	<0.0050	0.030	0.0096	<0.0050	<0.0050

Total Phosphorus in Water

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Phosphorus	g/m^3	*0.005*	0.0070

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Water Aggregate Properties

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	<1.00	6.00	4.00	6.67

Water Aggregate Properties

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	5.33	1.33	6.00	2.00

Water Aggregate Properties

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	8.67

Turbidity

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Turbidity	NTU	*0.05*	0.8	1.2	1.3	2.6	2.1

Turbidity

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Turbidity	NTU	*0.05*	0.9	1.6	4.4	1.8	0.5

Turbidity

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Turbidity	NTU	*0.05*	2.4

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Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	0.0015	0.0013	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Nitrite-N	g/m^3	*0.001*	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.25	0.21	0.19	1.53	2.35
Total Nitrogen	g/m^3	*0.1*	0.25	0.43	0.20	1.5	2.4

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.17	0.42	0.21	0.19	0.29
Total Nitrogen	g/m^3	*0.1*	0.17	0.42	0.37	0.39	0.29

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.13
Total Nitrogen	g/m^3	*0.1*	0.13

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Fluoride in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Fluoride	g/m^3	*0.04*	<0.040	0.27	0.14	0.055	0.058

Fluoride in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Fluoride	g/m^3	*0.04*	<0.040	0.051	0.075	0.079	0.054

Fluoride in Water

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Fluoride	g/m^3	*0.04*	0.14

Custom Job

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Custom Job			Complete

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Bromide	g/m^3	*0.005*	<0.05	0.080	0.10	<0.05	<0.05

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Bromide in Water (Subcontracted - Hill Laboratories)

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

		Client Sample ID	MDD302
		Date Sampled	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Bromide	g/m^3	*0.005*	<0.05

Water Hardness

		Client Sample ID	CC01	LBA	MDD015	RS01	RS02
		Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	9.9	210	190	77	73

Water Hardness

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	28	82	290	160	72

Water Hardness

		Client Sample ID	MDD302
		Date Sampled	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	250

Cyanide in Water

		Client Sample ID	CC01	LBA	MDD015	RS01	RS02
		Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

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Cyanide in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Cyanide	g/m^3	*0.001*	<0.001	0.001	<0.001	<0.001	<0.001

Cyanide in Water

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Cyanide	g/m^3	*0.001*	<0.002

Solids in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Suspended Solids	g/m^3	*3*	<3	<3	<3	<3	<3
Total Dissolved Solids	g/m^3	*3*	14	237	217	96	86

Solids in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Suspended Solids	g/m^3	*3*	<3	6	11	5	<3
Total Dissolved Solids	g/m^3	*3*	40	91	301	165	86

Solids in Water

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Suspended Solids	g/m^3	*3*	<3
Total Dissolved Solids	g/m^3	*3*	260

Elements in Water (Total Recoverable)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Arsenic	g/m^3	*0.0005*	0.00093	1.17	0.018	0.032	0.0054
Aluminium	g/m^3	*0.003*	0.036	<0.0030	0.021	0.044	0.045
Barium	g/m^3	*0.0001*	0.0042	0.0058	0.248	0.0140	0.0130
Beryllium	g/m^3	*0.00001*	<0.000010	<0.000010	0.000016	<0.000010	<0.000010
Bismuth	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m^3	*0.005*	<0.0050	0.020	0.042	<0.0050	<0.0050
Calcium	g/m^3	*0.05*	2.9	56.0	49.1	23.4	22.4
Cadmium	g/m^3	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020

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Elements in Water (Total Recoverable)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Cobalt	g/m³	*0.00001*	0.000061	0.000065	<0.000010	0.00011	0.000080
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00015	0.00020	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00053	<0.00020	<0.00020	0.00042	0.00057
Iron	g/m³	*0.005*	0.052	0.11	0.082	0.38	0.11
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00091	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.35	2.0	1.5	1.2	1.1
Lanthanum	g/m³	*0.00001*	0.000097	<0.000010	0.000044	0.000033	0.000050
Lithium	g/m³	*0.00001*	0.00076	0.0145	0.0564	0.00233	0.00254
Magnesium	g/m³	*0.01*	0.63	16.2	16.2	4.46	4.06
Manganese	g/m³	*0.0005*	0.0026	0.037	0.0081	0.045	0.0043
Molybdenum	g/m³	*0.0002*	<0.00020	0.0011	0.00031	<0.00020	<0.00020
Sodium	g/m³	*0.01*	2.03	20.4	45.1	5.60	4.94
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00026	0.00026
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	0.000070	0.000075
Rubidium	g/m³	*0.00005*	0.00025	0.0014	0.0021	0.00036	0.00042
Sulfur*	g/m³	*10*	<10	11	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.0334	0.516	10.4	0.340	0.317
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	0.00232	0.0010	0.000074	0.00040
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.000097	0.000057	0.00031	<0.000050	<0.000050
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Arsenic	g/m³	*0.0005*	0.0065	0.235	0.0023	<0.00050	0.0012
Aluminium	g/m³	*0.003*	0.014	0.011	0.15	0.025	0.024
Barium	g/m³	*0.0001*	0.0056	0.0271	0.0521	0.0376	0.0172
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	0.000012	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.038	0.027	<0.0050
Calcium	g/m³	*0.05*	8.45	25.0	73.1	45.0	22.7
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000056	0.00177	0.00019	0.00010	0.00013
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	0.00027	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	0.000025	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00040	0.00034	0.00072	0.00074	0.00076
Iron	g/m³	*0.005*	0.084	3.61	0.27	0.089	0.21
Germanium	g/m³	*0.00005*	<0.000050	0.00014	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.54	1.0	1.9	1.3	1.1
Lanthanum	g/m³	*0.00001*	0.000026	0.000032	0.00014	0.000045	0.000038
Lithium	g/m³	*0.00001*	0.00110	0.00224	0.0101	0.00439	0.00211
Magnesium	g/m³	*0.01*	1.66	4.83	26.0	10.8	3.61

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Elements in Water (Total Recoverable)

			Client Sample ID	RS03	RSA01	SC01	SC03	RS04
			Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Manganese	g/m³	*0.0005*		0.0092	0.791	0.017	0.018	0.011
Molybdenum	g/m³	*0.0002*		<0.00020	<0.00020	0.00048	0.00041	<0.00020
Sodium	g/m³	*0.01*		2.98	5.78	14.4	7.23	4.98
Nickel	g/m³	*0.0002*		<0.00020	0.00046	0.00047	0.00023	0.00034
Phosphorus	g/m³	*0.04*		<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*		<0.000050	0.000084	0.00025	0.00010	<0.000050
Rubidium	g/m³	*0.00005*		0.00021	0.00021	0.00059	0.00023	0.00035
Sulfur*	g/m³	*10*		<10	<10	21	<10	<10
Antimony	g/m³	*0.0001*		<0.00010	<0.00010	0.00018	0.00010	<0.00010
Selenium	g/m³	*0.001*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*		0.106	0.330	1.17	0.742	0.314
Thallium	g/m³	*0.0001*		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*		0.000036	0.000091	0.00716	0.00279	0.00027
Vanadium	g/m³	*0.0005*		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*		<0.000050	<0.000050	0.00014	0.000055	<0.000050
Zinc	g/m³	*0.003*		<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

		Client Sample ID	MDD302
		Date Sampled	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Arsenic	g/m³	*0.0005*	0.0588
Aluminium	g/m³	*0.003*	0.0039
Barium	g/m³	*0.0001*	0.147
Beryllium	g/m³	*0.00001*	0.000029
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.005*	0.0086
Calcium	g/m³	*0.05*	64.5
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00017
Copper	g/m³	*0.0002*	<0.00020
Iron	g/m³	*0.005*	0.34
Germanium	g/m³	*0.00005*	0.000088
Mercury	g/m³	*0.0001*	<0.00010
Potassium	g/m³	*0.05*	1.4
Lanthanum	g/m³	*0.00001*	0.000014
Lithium	g/m³	*0.00001*	0.00917
Magnesium	g/m³	*0.01*	22.8
Manganese	g/m³	*0.0005*	0.0048
Molybdenum	g/m³	*0.0002*	0.00031
Sodium	g/m³	*0.01*	8.38
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050
Rubidium	g/m³	*0.00005*	0.0020
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00018
Selenium	g/m³	*0.001*	<0.0010
Tin	g/m³	*0.0005*	<0.00050

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Elements in Water (Total Recoverable)

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Strontium	g/m³	*0.0001*	1.19
Thallium	g/m³	*0.0001*	<0.00010
Uranium	g/m³	*0.00003*	0.00531
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00005*	0.00048
Zinc	g/m³	*0.003*	<0.0030

Elements in Water (Soluble)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Silica	g/m³	*0.1*	8.51	15.4	18.9	8.81	9.04
Aluminium	g/m³	*0.003*	0.019	<0.0030	<0.0030	<0.0030	<0.0030
Arsenic	g/m³	*0.0005*	0.00089	1.13	0.018	0.017	0.0043
Barium	g/m³	*0.0002*	0.0035	0.0053	0.235	0.0114	0.0119
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.017	0.039	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000035	0.000057	0.000011	0.000041	0.000062
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00014	0.00019	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00033	<0.00020	<0.00020	0.00057	0.00070
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.0010	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	0.00011	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000056	<0.000010	0.000012	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00071	0.0142	0.0541	0.00221	0.00236
Molybdenum	g/m³	*0.0002*	<0.00020	0.0011	0.00034	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	0.00021	0.00049	0.00044
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	0.00030
Rubidium	g/m³	*0.00002*	0.00020	0.00139	0.00202	0.00022	0.00028
Sulfur*	g/m³	*10*	<10	10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0311	0.496	9.98	0.301	0.304
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.00219	0.00097	0.000069	0.00039
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000067	0.000024	0.00024	0.000010	0.000019

Elements in Water (Soluble)

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Silica	g/m³	*0.1*	8.73	9.83	6.83	7.42	7.44
Aluminium	g/m³	*0.003*	0.0055	<0.0030	<0.0030	<0.0030	0.011
Arsenic	g/m³	*0.0005*	0.0057	0.0649	0.0016	<0.00050	0.00068

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Elements in Water (Soluble)

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Barium	g/m³	*0.0002*	0.0053	0.0238	0.0467	0.0355	0.0163
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.036	0.026	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000040	0.00160	0.000052	0.000063	0.000094
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00039	0.00022	0.00029	0.00035	0.00076
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000014	<0.000010	<0.000010	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00111	0.00233	0.00956	0.00430	0.00212
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00041	0.00033	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	0.00040	<0.00020	<0.00020	0.0014
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00020	0.00019	0.00016	0.00017	0.00029
Sulfur*	g/m³	*10*	<10	<10	21	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00015	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.103	0.314	1.12	0.708	0.307
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.000045	0.000071	0.00693	0.00280	0.00026
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000028	<0.000010	0.000041	0.000017	0.000018

Elements in Water (Soluble)

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Silica	g/m³	*0.1*	22.5
Aluminium	g/m³	*0.003*	<0.0030
Arsenic	g/m³	*0.0005*	0.0508
Barium	g/m³	*0.0002*	0.140
Beryllium	g/m³	*0.00001*	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.01*	<0.010
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00015
Copper	g/m³	*0.0002*	<0.00020
Germanium	g/m³	*0.00005*	0.000051
Mercury	g/m³	*0.00008*	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010
Lithium	g/m³	*0.00001*	0.00891
Molybdenum	g/m³	*0.0002*	0.00038
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050

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Elements in Water (Soluble)

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Rubidium	g/m³	*0.00002*	0.00192
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00018
Selenium	g/m³	*0.0005*	<0.00050
Tin	g/m³	*0.0002*	<0.00020
Strontium	g/m³	*0.0001*	1.13
Thallium	g/m³	*0.00001*	<0.000010
Uranium	g/m³	*0.00003*	0.00503
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00001*	0.00018

Anion/Cation Suite

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
pH	pH	*1*	6.9	8.2	8.0	7.6	7.6
Electrical Conductivity	µS/cm	*0.2*	30.4	526	498	191	178
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	9.5	193	204	71.9	68.3
Chloride	g/m³	*0.5*	0.67	6.91	9.15	2.70	2.07
Sulfate	g/m³	*0.15*	0.45	27.1	9.11	4.97	3.37
Nitrate-N	g/m³	*0.002*	<0.0020	0.217	0.0051	<0.0020	0.0359
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.006	0.021	<0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	0.1	<0.005	<0.005
Sodium	g/m³	*0.01*	1.97	20.2	43.6	5.28	4.68
Potassium	g/m³	*0.05*	0.31	2.0	1.4	1.1	1.1
Calcium	g/m³	*0.05*	2.7	55.0	45.5	22.4	21.5
Magnesium	g/m³	*0.01*	0.60	16.0	15.8	4.26	3.92
Iron	g/m³	*0.005*	0.024	<0.0050	0.011	0.027	0.11
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	<0.00050	0.029	0.0068	0.0081	0.0015
Sum of Anions*	meq/L	*0.01*	0.22	4.72	4.58	1.63	1.51
Sum of Cations*	meq/L	*0.01*	0.28	4.99	5.51	1.73	1.63
EC/10*	(mS/m)/10	*0.002*	0.30	5.26	4.98	1.91	1.78

Anion/Cation Suite

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
pH	pH	*1*	7.2	7.3	8.1	7.9	7.5
Electrical Conductivity	µS/cm	*0.2*	76.9	202	626	359	178
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	28.2	77.2	225	136	65.7
Chloride	g/m³	*0.5*	1.07	2.73	5.88	2.49	2.03
Sulfate	g/m³	*0.15*	1.34	4.85	50.7	14.6	3.86
Nitrate-N	g/m³	*0.002*	<0.0020	0.0067	0.152	0.196	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.003	<0.002	0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	g/m³	*0.01*	2.87	5.62	13.6	7.00	4.75

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Anion/Cation Suite

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Potassium	g/m³	*0.05*	0.52	1.0	1.7	1.2	1.1
Calcium	g/m³	*0.05*	8.04	24.3	69.1	43.4	21.9
Magnesium	g/m³	*0.01*	1.60	4.64	24.8	10.5	3.46
Iron	g/m³	*0.005*	0.029	0.11	<0.0050	0.0074	0.024
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.0058	0.748	0.0012	0.0095	0.0016
Sum of Anions*	meq/L	*0.01*	0.62	1.73	5.81	3.13	1.46
Sum of Cations*	meq/L	*0.01*	0.67	1.90	6.13	3.36	1.61
EC/10*	(mS/m)/10	*0.002*	0.77	2.02	6.26	3.59	1.78

Anion/Cation Suite

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
pH	pH	*1*	7.7
Electrical Conductivity	µS/cm	*0.2*	550
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	235
Chloride	g/m³	*0.5*	2.90
Sulfate	g/m³	*0.15*	9.46
Nitrate-N	g/m³	*0.002*	0.0045
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	<0.002
Ammonia as N	g/m³	*0.005*	0.05
Sodium	g/m³	*0.01*	8.09
Potassium	g/m³	*0.05*	1.4
Calcium	g/m³	*0.05*	62.0
Magnesium	g/m³	*0.01*	21.7
Iron	g/m³	*0.005*	<0.0050
Zinc	g/m³	*0.001*	<0.0010
Manganese	g/m³	*0.0005*	0.0046
Sum of Anions*	meq/L	*0.01*	5.01
Sum of Cations*	meq/L	*0.01*	5.27
EC/10*	(mS/m)/10	*0.002*	5.50

Method Summary

Total Phosphorus Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)

Acidity to pH 8.3 Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).

Turbidity Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).

NO2-N Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).

TKN Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).

TN Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).

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Method Summary

Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3^-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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Certificate of Analysis

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Attention: Hamish McLauchlan
Phone: 0275886631
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Lab Reference: 24-25063
Submitted by:
Date Received: 12/08/2024
Testing Initiated: 12/08/2024
Date Completed: 19/08/2024
Order Number:
Reference:

Sampling Site: Bendigo Ophir Project

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

	Client Sample ID		LBA	RS01	RS02	RS03	RSA01
	Date Sampled		8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Phosphorus	g/m^3	*0.005*	0.27	0.15	0.032	0.011	0.012

Total Phosphorus in Water

	Client Sample ID		SC01	RS04	MDD302
	Date Sampled		8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Phosphorus	g/m^3	*0.005*	0.022	0.0088	0.020

Water Aggregate Properties

	Client Sample ID		LBA	RS01	RS02	RS03	RSA01
	Date Sampled		8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	<1.00	6.67	3.33	3.33	6.67

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	<1.00	3.33	11.67

Turbidity

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Turbidity	NTU	*0.05*	0.9	73	6.8	1.2	3.4

Turbidity

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Turbidity	NTU	*0.05*	8.2	1.4	3.7

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Nitrite-N	g/m^3	*0.001*	<0.0010	0.0015	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Nitrite-N	g/m^3	*0.001*	0.0014	<0.0010	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.14	0.43	0.37	0.19	0.26
Total Nitrogen	g/m^3	*0.1*	0.35	0.48	0.42	0.19	0.26

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Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.32	0.32	<0.10
Total Nitrogen	g/m^3	*0.1*	0.44	0.32	<0.10

Custom Job

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Custom Job			Complete	Complete	Complete

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Bromide	g/m^3	*0.005*	0.10	<0.05	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05

Fluoride in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Fluoride	g/m^3	*0.04*	0.26	0.043	0.042	<0.040	<0.040

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Fluoride in Water

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Fluoride	g/m^3	*0.04*	0.057	<0.040	0.11

Water Hardness

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	200	75	66	30	67

Water Hardness

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	230	68	240

Cyanide in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001

Solids in Water

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Total Suspended Solids	g/m^3	*3*	<3	27	11	<3	<3
Total Dissolved Solids	g/m^3	*3*	262	91	73	46	77

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Solids in Water

	Client Sample ID		SC01	RS04	MDD302
	Date Sampled		8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Total Suspended Solids	g/m³	*3*	10	<3	<3
Total Dissolved Solids	g/m³	*3*	259	82	232

Elements in Water (Total Recoverable)

	Client Sample ID		LBA	RS01	RS02	RS03	RSA01
	Date Sampled		8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Arsenic	g/m³	*0.0005*	1.18	0.039	0.0084	0.0091	0.038
Aluminium	g/m³	*0.003*	0.0032	0.860	0.16	0.019	0.015
Barium	g/m³	*0.0001*	0.0056	0.0309	0.0155	0.0060	0.0155
Beryllium	g/m³	*0.00001*	<0.000010	0.000058	0.000012	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	0.020	0.0070	0.0063	0.0051	0.0071
Calcium	g/m³	*0.05*	53.0	22.8	20.1	9.10	20.5
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000069	0.00102	0.00023	0.000065	0.00013
Chromium	g/m³	*0.0002*	<0.00020	0.00065	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.00014	0.00013	0.000024	<0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	0.0022	0.00084	0.0044	0.00035
Iron	g/m³	*0.005*	0.11	1.76	0.44	0.19	0.945
Germanium	g/m³	*0.00005*	<0.000050	0.00017	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	1.8	1.8	2.0	0.66	1.7
Lanthanum	g/m³	*0.00001*	<0.000010	0.00121	0.00019	0.000043	0.000038
Lithium	g/m³	*0.00001*	0.0148	0.00354	0.00261	0.00120	0.00212
Magnesium	g/m³	*0.01*	15.4	4.51	3.76	1.73	3.92
Manganese	g/m³	*0.0005*	0.040	0.112	0.017	0.016	0.0883
Molybdenum	g/m³	*0.0002*	0.0013	<0.00020	<0.00020	<0.00020	<0.00020
Sodium	g/m³	*0.01*	19.7	5.20	4.41	3.08	4.89
Nickel	g/m³	*0.0002*	<0.00020	0.0012	0.00048	<0.00020	0.00020
Phosphorus	g/m³	*0.04*	<0.040	0.054	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	0.0026	0.00037	0.00019	<0.000050
Rubidium	g/m³	*0.00005*	0.0014	0.0022	0.00099	0.00026	0.00038
Sulfur*	g/m³	*10*	11	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.474	0.299	0.273	0.112	0.262
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00228	0.00014	0.00031	<0.000030	0.000063
Vanadium	g/m³	*0.0005*	<0.00050	0.0012	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.000054	0.00069	0.00014	0.000050	<0.000050
Zinc	g/m³	*0.003*	<0.0030	0.0055	0.0041	0.0035	<0.0030

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Elements in Water (Total Recoverable)

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Arsenic	g/m³	*0.0005*	0.0022	0.0011	0.0588
Aluminium	g/m³	*0.003*	0.16	0.0098	<0.0030
Barium	g/m³	*0.0001*	0.0439	0.0161	0.143
Beryllium	g/m³	*0.00001*	0.000015	<0.000010	0.000034
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	0.036	0.0056	0.010
Calcium	g/m³	*0.05*	58.7	21.4	60.5
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00022	0.000072	<0.000010
Chromium	g/m³	*0.0002*	0.00021	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.000025	<0.000010	0.00016
Copper	g/m³	*0.0002*	0.00082	0.00069	<0.00020
Iron	g/m³	*0.005*	0.29	0.11	0.34
Germanium	g/m³	*0.00005*	0.00014	<0.000050	0.00012
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	2.1	1.5	1.3
Lanthanum	g/m³	*0.00001*	0.00017	0.000028	0.000013
Lithium	g/m³	*0.00001*	0.00855	0.00202	0.00915
Magnesium	g/m³	*0.01*	20.4	3.54	21.4
Manganese	g/m³	*0.0005*	0.014	0.0068	0.0047
Molybdenum	g/m³	*0.0002*	0.00047	<0.00020	0.00059
Sodium	g/m³	*0.01*	11.9	4.78	7.85
Nickel	g/m³	*0.0002*	0.00047	0.00036	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	0.00032	<0.000050	<0.000050
Rubidium	g/m³	*0.00005*	0.00061	0.00038	0.0019
Sulfur*	g/m³	*10*	16	<10	<10
Antimony	g/m³	*0.0001*	0.00018	<0.00010	0.00016
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.901	0.285	1.09
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00572	0.00027	0.00513
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.00014	<0.000050	0.00045
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030

Elements in Water (Soluble)

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
Silica	g/m³	*0.1*	18.4	10.7	10.4	10.6	10.5
Arsenic	g/m³	*0.0005*	1.10	0.015	0.0045	0.0064	0.0071
Aluminium	g/m³	*0.003*	<0.0030	0.026	0.0045	0.0083	<0.0030
Barium	g/m³	*0.0002*	0.0053	0.0119	0.0122	0.0055	0.0122
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	0.019	<0.010	<0.010	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000034	0.000080	0.000041	0.000046	0.000042

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Elements in Water (Soluble)

	Client Sample ID		LBA	RS01	RS02	RS03	RSA01
	Date Sampled		8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.00012	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	0.00063	0.00061	0.00036	0.00040
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	0.000033	0.000016	0.000018	<0.000010
Lithium	g/m³	*0.00001*	0.0136	0.00224	0.00226	0.00117	0.00203
Molybdenum	g/m³	*0.0002*	0.0011	<0.00020	<0.00020	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	0.00022	0.00021	0.00026	0.00023	0.00021
Phosphorus	g/m³	*0.04*	0.067	<0.040	0.049	<0.040	<0.040
Lead	g/m³	*0.00005*	0.000059	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00130	0.00033	0.00055	0.00023	0.00034
Sulfur*	g/m³	*10*	12	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.461	0.288	0.268	0.105	0.255
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00219	0.00011	0.00029	0.000035	0.000068
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000024	0.000023	0.000023	0.000033	<0.000010

Elements in Water (Soluble)

	Client Sample ID		SC01	RS04	MDD302
	Date Sampled		8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
Silica	g/m³	*0.1*	7.46	8.63	25.1
Arsenic	g/m³	*0.0005*	0.0019	0.00082	0.050
Aluminium	g/m³	*0.003*	0.0036	<0.0030	<0.0030
Barium	g/m³	*0.0002*	0.0397	0.0154	0.140
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	0.000014
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	0.035	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000050	0.00010	0.000013
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	0.00016
Copper	g/m³	*0.0002*	0.00053	0.00065	<0.00020
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.000066
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000016	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00807	0.00201	0.00888
Molybdenum	g/m³	*0.0002*	0.00045	<0.00020	0.00040
Nickel	g/m³	*0.0002*	0.00025	0.00032	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00020	0.00037	0.00184
Sulfur*	g/m³	*10*	16	<10	<10
Antimony	g/m³	*0.0001*	0.00018	<0.00010	0.00017
Selenium	g/m³	*0.0005*	0.00075	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.871	0.279	1.03

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Elements in Water (Soluble)

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00553	0.00033	0.00501
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000035	0.000025	0.00017

Anion/Cation Suite

Client Sample ID			LBA	RS01	RS02	RS03	RSA01
Date Sampled			8/08/2024	8/08/2024	8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-1	24-25063-2	24-25063-3	24-25063-4	24-25063-5
pH	pH	*1*	8.2	7.6	7.6	7.3	7.6
Electrical Conductivity	µS/cm	*0.2*	468	176	155	69.9	163
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	194	67.3	61.3	29.2	64.3
Chloride	g/m³	*0.5*	7.34	3.66	3.51	1.38	4.11
Sulfate	g/m³	*0.15*	28.0	6.22	3.26	1.47	4.86
Nitrate-N	g/m³	*0.002*	0.208	0.0461	0.0541	0.0044	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.019	0.003	0.003	0.004	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	g/m³	*0.01*	19.8	4.98	4.29	2.93	4.93
Potassium	g/m³	*0.05*	1.9	1.4	2.0	0.64	1.8
Calcium	g/m³	*0.05*	53.4	21.7	19.1	8.45	20.4
Magnesium	g/m³	*0.01*	15.6	4.18	3.65	1.66	4.00
Iron	g/m³	*0.005*	<0.0050	0.032	0.018	0.031	0.018
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	0.0012	<0.0010
Manganese	g/m³	*0.0005*	0.028	0.0046	<0.00050	0.0038	0.0087
Sum of Anions*	meq/L	*0.01*	4.78	1.59	1.40	0.65	1.51
Sum of Cations*	meq/L	*0.01*	4.86	1.68	1.49	0.70	1.61
EC/10*	(mS/m)/10	*0.002*	4.68	1.76	1.55	0.70	1.63

Anion/Cation Suite

Client Sample ID			SC01	RS04	MDD302
Date Sampled			8/08/2024	8/08/2024	8/08/2024
Analyte	Unit	*Reporting Limit*	24-25063-6	24-25063-7	24-25063-8
pH	pH	*1*	8.2	7.7	7.8
Electrical Conductivity	µS/cm	*0.2*	491	156	488
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	192	63.0	234
Chloride	g/m³	*0.5*	5.55	3.28	3.06
Sulfate	g/m³	*0.15*	40.2	4.04	9.73
Nitrate-N	g/m³	*0.002*	0.116	<0.0020	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.006	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	0.05
Sodium	g/m³	*0.01*	11.4	4.56	7.97
Potassium	g/m³	*0.05*	2.0	1.5	1.4
Calcium	g/m³	*0.05*	56.8	20.4	61.2
Magnesium	g/m³	*0.01*	20.2	3.42	21.7
Iron	g/m³	*0.005*	0.0070	0.012	<0.0050
Zinc	g/m³	*0.001*	<0.0010	0.0017	<0.0010
Manganese	g/m³	*0.0005*	<0.00050	0.00072	0.0050

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Anion/Cation Suite

	Client Sample ID		SC01	RS04	MDD302
	Date Sampled		8/08/2024	8/08/2024	8/08/2024
Sum of Anions*	meq/L	*0.01*	4.93	1.45	5.01
Sum of Cations*	meq/L	*0.01*	5.05	1.54	5.23
EC/10*	(mS/m)/10	*0.002*	4.91	1.56	4.88

Method Summary

Total Phosphorus	Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)
Acidity to pH 8.3	Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).
Turbidity	Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).
NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)

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Method Summary

Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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Certificate of Analysis

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Attention: Hamish McLauchlan
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Lab Reference: 24-26351
Submitted by: 23/08/2024
Date Received: 23/08/2024
Testing Initiated: 23/08/2024
Date Completed: 6/09/2024
Order Number:
Reference:

Sampling Site: Bendigo Ophir Project

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Phosphorus	g/m^3	*0.005*	0.011	0.12	0.0090	0.0061	<0.0050

Total Phosphorus in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Phosphorus	g/m^3	*0.005*	<0.0050	0.030	0.0096	<0.0050	<0.0050

Total Phosphorus in Water

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Phosphorus	g/m^3	*0.005*	0.0070

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	<1.00	6.00	4.00	6.67

Water Aggregate Properties

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	5.33	1.33	6.00	2.00

Water Aggregate Properties

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	8.67

Turbidity

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Turbidity	NTU	*0.05*	0.8	1.2	1.3	2.6	2.1

Turbidity

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Turbidity	NTU	*0.05*	0.9	1.6	4.4	1.8	0.5

Turbidity

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Turbidity	NTU	*0.05*	2.4

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Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	0.0015	0.0013	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Nitrite-N	g/m^3	*0.001*	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.25	0.21	0.19	1.53	2.35
Total Nitrogen	g/m^3	*0.1*	0.25	0.43	0.20	1.5	2.4

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.17	0.42	0.21	0.19	0.29
Total Nitrogen	g/m^3	*0.1*	0.17	0.42	0.37	0.39	0.29

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.13
Total Nitrogen	g/m^3	*0.1*	0.13

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Fluoride in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Fluoride	g/m^3	*0.04*	<0.040	0.27	0.14	0.055	0.058

Fluoride in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Fluoride	g/m^3	*0.04*	<0.040	0.051	0.075	0.079	0.054

Fluoride in Water

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Fluoride	g/m^3	*0.04*	0.14

Custom Job

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			MDD302
Date Sampled			22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Custom Job			Complete

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Bromide	g/m^3	*0.005*	<0.05	0.080	0.10	<0.05	<0.05

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Bromide in Water (Subcontracted - Hill Laboratories)

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

		Client Sample ID	MDD302
		Date Sampled	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Bromide	g/m^3	*0.005*	<0.05

Water Hardness

		Client Sample ID	CC01	LBA	MDD015	RS01	RS02
		Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	9.9	210	190	77	73

Water Hardness

		Client Sample ID	RS03	RSA01	SC01	SC03	RS04
		Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	28	82	290	160	72

Water Hardness

		Client Sample ID	MDD302
		Date Sampled	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	250

Cyanide in Water

		Client Sample ID	CC01	LBA	MDD015	RS01	RS02
		Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

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Cyanide in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Cyanide	g/m^3	*0.001*	<0.001	0.001	<0.001	<0.001	<0.001

Cyanide in Water

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Cyanide	g/m^3	*0.001*	<0.002

Solids in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Total Suspended Solids	g/m^3	*3*	<3	<3	<3	<3	<3
Total Dissolved Solids	g/m^3	*3*	14	237	217	96	86

Solids in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Total Suspended Solids	g/m^3	*3*	<3	6	11	5	<3
Total Dissolved Solids	g/m^3	*3*	40	91	301	165	86

Solids in Water

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Total Suspended Solids	g/m^3	*3*	<3
Total Dissolved Solids	g/m^3	*3*	260

Elements in Water (Total Recoverable)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Arsenic	g/m^3	*0.0005*	0.00093	1.17	0.018	0.032	0.0054
Aluminium	g/m^3	*0.003*	0.036	<0.0030	0.021	0.044	0.045
Barium	g/m^3	*0.0001*	0.0042	0.0058	0.248	0.0140	0.0130
Beryllium	g/m^3	*0.00001*	<0.000010	<0.000010	0.000016	<0.000010	<0.000010
Bismuth	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m^3	*0.005*	<0.0050	0.020	0.042	<0.0050	<0.0050
Calcium	g/m^3	*0.05*	2.9	56.0	49.1	23.4	22.4
Cadmium	g/m^3	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020

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Elements in Water (Total Recoverable)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Cobalt	g/m³	*0.00001*	0.000061	0.000065	<0.000010	0.00011	0.000080
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00015	0.00020	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00053	<0.00020	<0.00020	0.00042	0.00057
Iron	g/m³	*0.005*	0.052	0.11	0.082	0.38	0.11
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00091	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.35	2.0	1.5	1.2	1.1
Lanthanum	g/m³	*0.00001*	0.000097	<0.000010	0.000044	0.000033	0.000050
Lithium	g/m³	*0.00001*	0.00076	0.0145	0.0564	0.00233	0.00254
Magnesium	g/m³	*0.01*	0.63	16.2	16.2	4.46	4.06
Manganese	g/m³	*0.0005*	0.0026	0.037	0.0081	0.045	0.0043
Molybdenum	g/m³	*0.0002*	<0.00020	0.0011	0.00031	<0.00020	<0.00020
Sodium	g/m³	*0.01*	2.03	20.4	45.1	5.60	4.94
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00026	0.00026
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	0.000070	0.000075
Rubidium	g/m³	*0.00005*	0.00025	0.0014	0.0021	0.00036	0.00042
Sulfur*	g/m³	*10*	<10	11	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.0334	0.516	10.4	0.340	0.317
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	0.00232	0.0010	0.000074	0.00040
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.000097	0.000057	0.00031	<0.000050	<0.000050
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Arsenic	g/m³	*0.0005*	0.0065	0.235	0.0023	<0.00050	0.0012
Aluminium	g/m³	*0.003*	0.014	0.011	0.15	0.025	0.024
Barium	g/m³	*0.0001*	0.0056	0.0271	0.0521	0.0376	0.0172
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	0.000012	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.038	0.027	<0.0050
Calcium	g/m³	*0.05*	8.45	25.0	73.1	45.0	22.7
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000056	0.00177	0.00019	0.00010	0.00013
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	0.00027	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	0.000025	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00040	0.00034	0.00072	0.00074	0.00076
Iron	g/m³	*0.005*	0.084	3.61	0.27	0.089	0.21
Germanium	g/m³	*0.00005*	<0.000050	0.00014	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.54	1.0	1.9	1.3	1.1
Lanthanum	g/m³	*0.00001*	0.000026	0.000032	0.00014	0.000045	0.000038
Lithium	g/m³	*0.00001*	0.00110	0.00224	0.0101	0.00439	0.00211
Magnesium	g/m³	*0.01*	1.66	4.83	26.0	10.8	3.61

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Elements in Water (Total Recoverable)

			Client Sample ID	RS03	RSA01	SC01	SC03	RS04
			Date Sampled	22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Manganese	g/m³	*0.0005*		0.0092	0.791	0.017	0.018	0.011
Molybdenum	g/m³	*0.0002*		<0.00020	<0.00020	0.00048	0.00041	<0.00020
Sodium	g/m³	*0.01*		2.98	5.78	14.4	7.23	4.98
Nickel	g/m³	*0.0002*		<0.00020	0.00046	0.00047	0.00023	0.00034
Phosphorus	g/m³	*0.04*		<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*		<0.000050	0.000084	0.00025	0.00010	<0.000050
Rubidium	g/m³	*0.00005*		0.00021	0.00021	0.00059	0.00023	0.00035
Sulfur*	g/m³	*10*		<10	<10	21	<10	<10
Antimony	g/m³	*0.0001*		<0.00010	<0.00010	0.00018	0.00010	<0.00010
Selenium	g/m³	*0.001*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*		0.106	0.330	1.17	0.742	0.314
Thallium	g/m³	*0.0001*		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*		0.000036	0.000091	0.00716	0.00279	0.00027
Vanadium	g/m³	*0.0005*		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*		<0.000050	<0.000050	0.00014	0.000055	<0.000050
Zinc	g/m³	*0.003*		<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

		Client Sample ID	MDD302
		Date Sampled	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Arsenic	g/m³	*0.0005*	0.0588
Aluminium	g/m³	*0.003*	0.0039
Barium	g/m³	*0.0001*	0.147
Beryllium	g/m³	*0.00001*	0.000029
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.005*	0.0086
Calcium	g/m³	*0.05*	64.5
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00017
Copper	g/m³	*0.0002*	<0.00020
Iron	g/m³	*0.005*	0.34
Germanium	g/m³	*0.00005*	0.000088
Mercury	g/m³	*0.0001*	<0.00010
Potassium	g/m³	*0.05*	1.4
Lanthanum	g/m³	*0.00001*	0.000014
Lithium	g/m³	*0.00001*	0.00917
Magnesium	g/m³	*0.01*	22.8
Manganese	g/m³	*0.0005*	0.0048
Molybdenum	g/m³	*0.0002*	0.00031
Sodium	g/m³	*0.01*	8.38
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050
Rubidium	g/m³	*0.00005*	0.0020
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00018
Selenium	g/m³	*0.001*	<0.0010
Tin	g/m³	*0.0005*	<0.00050

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Elements in Water (Total Recoverable)

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Strontium	g/m³	*0.0001*	1.19
Thallium	g/m³	*0.0001*	<0.00010
Uranium	g/m³	*0.00003*	0.00531
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00005*	0.00048
Zinc	g/m³	*0.003*	<0.0030

Elements in Water (Soluble)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
Silica	g/m³	*0.1*	8.51	15.4	18.9	8.81	9.04
Aluminium	g/m³	*0.003*	0.019	<0.0030	<0.0030	<0.0030	<0.0030
Arsenic	g/m³	*0.0005*	0.00089	1.13	0.018	0.017	0.0043
Barium	g/m³	*0.0002*	0.0035	0.0053	0.235	0.0114	0.0119
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.017	0.039	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000035	0.000057	0.000011	0.000041	0.000062
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00014	0.00019	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00033	<0.00020	<0.00020	0.00057	0.00070
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.0010	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	0.00011	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000056	<0.000010	0.000012	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00071	0.0142	0.0541	0.00221	0.00236
Molybdenum	g/m³	*0.0002*	<0.00020	0.0011	0.00034	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	0.00021	0.00049	0.00044
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	0.00030
Rubidium	g/m³	*0.00002*	0.00020	0.00139	0.00202	0.00022	0.00028
Sulfur*	g/m³	*10*	<10	10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0311	0.496	9.98	0.301	0.304
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.00219	0.00097	0.000069	0.00039
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000067	0.000024	0.00024	0.000010	0.000019

Elements in Water (Soluble)

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
Silica	g/m³	*0.1*	8.73	9.83	6.83	7.42	7.44
Aluminium	g/m³	*0.003*	0.0055	<0.0030	<0.0030	<0.0030	0.011
Arsenic	g/m³	*0.0005*	0.0057	0.0649	0.0016	<0.00050	0.00068

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Elements in Water (Soluble)

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Barium	g/m³	*0.0002*	0.0053	0.0238	0.0467	0.0355	0.0163
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.036	0.026	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000040	0.00160	0.000052	0.000063	0.000094
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00039	0.00022	0.00029	0.00035	0.00076
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000014	<0.000010	<0.000010	<0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00111	0.00233	0.00956	0.00430	0.00212
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00041	0.00033	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	0.00040	<0.00020	<0.00020	0.0014
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00020	0.00019	0.00016	0.00017	0.00029
Sulfur*	g/m³	*10*	<10	<10	21	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00015	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.103	0.314	1.12	0.708	0.307
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.000045	0.000071	0.00693	0.00280	0.00026
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000028	<0.000010	0.000041	0.000017	0.000018

Elements in Water (Soluble)

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
Silica	g/m³	*0.1*	22.5
Aluminium	g/m³	*0.003*	<0.0030
Arsenic	g/m³	*0.0005*	0.0508
Barium	g/m³	*0.0002*	0.140
Beryllium	g/m³	*0.00001*	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.01*	<0.010
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00015
Copper	g/m³	*0.0002*	<0.00020
Germanium	g/m³	*0.00005*	0.000051
Mercury	g/m³	*0.00008*	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010
Lithium	g/m³	*0.00001*	0.00891
Molybdenum	g/m³	*0.0002*	0.00038
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050

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Elements in Water (Soluble)

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Rubidium	g/m³	*0.00002*	0.00192
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00018
Selenium	g/m³	*0.0005*	<0.00050
Tin	g/m³	*0.0002*	<0.00020
Strontium	g/m³	*0.0001*	1.13
Thallium	g/m³	*0.00001*	<0.000010
Uranium	g/m³	*0.00003*	0.00503
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00001*	0.00018

Anion/Cation Suite

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-1	24-26351-2	24-26351-3	24-26351-4	24-26351-5
pH	pH	*1*	6.9	8.2	8.0	7.6	7.6
Electrical Conductivity	µS/cm	*0.2*	30.4	526	498	191	178
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	9.5	193	204	71.9	68.3
Chloride	g/m³	*0.5*	0.67	6.91	9.15	2.70	2.07
Sulfate	g/m³	*0.15*	0.45	27.1	9.11	4.97	3.37
Nitrate-N	g/m³	*0.002*	<0.0020	0.217	0.0051	<0.0020	0.0359
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.006	0.021	<0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	0.1	<0.005	<0.005
Sodium	g/m³	*0.01*	1.97	20.2	43.6	5.28	4.68
Potassium	g/m³	*0.05*	0.31	2.0	1.4	1.1	1.1
Calcium	g/m³	*0.05*	2.7	55.0	45.5	22.4	21.5
Magnesium	g/m³	*0.01*	0.60	16.0	15.8	4.26	3.92
Iron	g/m³	*0.005*	0.024	<0.0050	0.011	0.027	0.11
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	<0.00050	0.029	0.0068	0.0081	0.0015
Sum of Anions*	meq/L	*0.01*	0.22	4.72	4.58	1.63	1.51
Sum of Cations*	meq/L	*0.01*	0.28	4.99	5.51	1.73	1.63
EC/10*	(mS/m)/10	*0.002*	0.30	5.26	4.98	1.91	1.78

Anion/Cation Suite

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-6	24-26351-7	24-26351-8	24-26351-9	24-26351-10
pH	pH	*1*	7.2	7.3	8.1	7.9	7.5
Electrical Conductivity	µS/cm	*0.2*	76.9	202	626	359	178
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	28.2	77.2	225	136	65.7
Chloride	g/m³	*0.5*	1.07	2.73	5.88	2.49	2.03
Sulfate	g/m³	*0.15*	1.34	4.85	50.7	14.6	3.86
Nitrate-N	g/m³	*0.002*	<0.0020	0.0067	0.152	0.196	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.003	<0.002	0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	g/m³	*0.01*	2.87	5.62	13.6	7.00	4.75

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Anion/Cation Suite

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		22/08/2024	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Potassium	g/m³	*0.05*	0.52	1.0	1.7	1.2	1.1
Calcium	g/m³	*0.05*	8.04	24.3	69.1	43.4	21.9
Magnesium	g/m³	*0.01*	1.60	4.64	24.8	10.5	3.46
Iron	g/m³	*0.005*	0.029	0.11	<0.0050	0.0074	0.024
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.0058	0.748	0.0012	0.0095	0.0016
Sum of Anions*	meq/L	*0.01*	0.62	1.73	5.81	3.13	1.46
Sum of Cations*	meq/L	*0.01*	0.67	1.90	6.13	3.36	1.61
EC/10*	(mS/m)/10	*0.002*	0.77	2.02	6.26	3.59	1.78

Anion/Cation Suite

	Client Sample ID		MDD302
	Date Sampled		22/08/2024
Analyte	Unit	*Reporting Limit*	24-26351-11
pH	pH	*1*	7.7
Electrical Conductivity	µS/cm	*0.2*	550
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	235
Chloride	g/m³	*0.5*	2.90
Sulfate	g/m³	*0.15*	9.46
Nitrate-N	g/m³	*0.002*	0.0045
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	<0.002
Ammonia as N	g/m³	*0.005*	0.05
Sodium	g/m³	*0.01*	8.09
Potassium	g/m³	*0.05*	1.4
Calcium	g/m³	*0.05*	62.0
Magnesium	g/m³	*0.01*	21.7
Iron	g/m³	*0.005*	<0.0050
Zinc	g/m³	*0.001*	<0.0010
Manganese	g/m³	*0.0005*	0.0046
Sum of Anions*	meq/L	*0.01*	5.01
Sum of Cations*	meq/L	*0.01*	5.27
EC/10*	(mS/m)/10	*0.002*	5.50

Method Summary

Total Phosphorus Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)

Acidity to pH 8.3 Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).

Turbidity Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).

NO2-N Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).

TKN Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).

TN Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).

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Method Summary

Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3^-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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Certificate of Analysis

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Attention: Hamish McLauchlan
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Sampling Site: Bendigo Ophir Project

Lab Reference: 24-27733
Submitted by:
Date Received: 6/09/2024
Testing Initiated: 6/09/2024
Date Completed: 17/09/2024
Order Number:
Reference:

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Total Phosphorus	g/m³	*0.005*	0.26	0.47	0.017	0.16	0.011

Total Phosphorus in Water

	Client Sample ID		RSA01	SC01	SC03	RS04	MDD302
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Total Phosphorus	g/m³	*0.005*	0.0073	0.50	0.040	0.012	0.15

Water Aggregate Properties

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Total Acidity to pH 8.3 (CaCO3)	g/m³	*1.0*	<1.00	2.67	3.33	3.33	3.33

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			RSA01	SC01	SC03	RS04	MDD302
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	3.33	3.33	4.67	7.33

Turbidity

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Turbidity	NTU	*0.05*	0.9	0.4	4.1	5.3	1.1

Turbidity

Client Sample ID			RSA01	SC01	SC03	RS04	MDD302
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Turbidity	NTU	*0.05*	0.7	6.5	9.0	0.7	3.2

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RSA01	SC01	SC03	RS04	MDD302
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Nitrite-N	g/m^3	*0.001*	<0.0010	0.0018	0.0014	<0.0010	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10	0.13	0.28	0.41	0.21
Total Nitrogen	g/m^3	*0.1*	0.22	0.13	0.28	0.43	0.21

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Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		RSA01	SC01	SC03	RS04	MDD302
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.15	0.25	0.39	0.44	<0.10
Total Nitrogen	g/m^3	*0.1*	0.17	0.34	0.58	0.44	<0.10

Fluoride in Water

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Fluoride	g/m^3	*0.04*	0.28	0.14	0.061	0.057	<0.040

Fluoride in Water

	Client Sample ID		RSA01	SC01	SC03	RS04	MDD302
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Fluoride	g/m^3	*0.04*	0.051	0.071	0.076	0.051	0.12

Custom Job

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

	Client Sample ID		RSA01	SC01	SC03	RS04	MDD302
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Custom Job			Complete	Complete	Complete	Complete	Complete

Bromide in Water (Subcontracted - Hill Laboratories)

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Bromide	g/m^3	*0.005*	0.080	0.11	<0.05	<0.05	<0.05

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Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			RSA01	SC01	SC03	RS04	MDD302
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Water Hardness

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	200	170	73	67	23

Water Hardness

Client Sample ID			RSA01	SC01	SC03	RS04	MDD302
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	80	210	130	57	240

Cyanide in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			RSA01	SC01	SC03	RS04	MDD302
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Solids in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Total Suspended Solids	g/m^3	*3*	<3	<3	7	12	<3
Total Dissolved Solids	g/m^3	*3*	245	246	87	80	34

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Solids in Water

	Client Sample ID		RSA01	SC01	SC03	RS04	MDD302
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Total Suspended Solids	g/m³	*3*	<3	14	21	<3	<3
Total Dissolved Solids	g/m³	*3*	102	203	158	77	251

Elements in Water (Total Recoverable)

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Arsenic	g/m³	*0.0005*	1.15	0.018	0.045	0.0077	0.0078
Aluminium	g/m³	*0.003*	0.0045	0.0098	0.059	0.11	0.041
Barium	g/m³	*0.0001*	0.0060	0.237	0.0147	0.0157	0.0057
Beryllium	g/m³	*0.00001*	<0.000010	0.000014	<0.000010	0.000018	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	0.016	0.036	<0.0050	<0.0050	<0.0050
Calcium	g/m³	*0.05*	53.5	43.7	22.5	20.9	6.93
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000075	<0.000010	0.00018	0.00022	0.00010
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00025	0.00029
Caesium	g/m³	*0.00001*	0.00013	0.00019	<0.000010	0.000012	<0.000010
Copper	g/m³	*0.0002*	0.00023	<0.00020	0.00085	0.0013	0.00053
Iron	g/m³	*0.005*	0.12	0.059	0.586	0.32	0.15
Germanium	g/m³	*0.00005*	0.000065	0.00090	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	1.9	1.4	2.0	1.3	0.74
Lanthanum	g/m³	*0.00001*	0.000013	0.000028	0.000077	0.00014	0.00010
Lithium	g/m³	*0.00001*	0.0137	0.0545	0.00228	0.00191	0.00099
Magnesium	g/m³	*0.01*	14.9	15.5	4.16	3.57	1.36
Manganese	g/m³	*0.0005*	0.048	0.0076	0.0839	0.015	0.013
Molybdenum	g/m³	*0.0002*	0.0011	0.00026	<0.00020	<0.00020	<0.00020
Sodium	g/m³	*0.01*	19.0	43.2	5.25	4.44	2.66
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	0.00043	0.00060	0.00028
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	0.00011	0.00024	<0.000050
Rubidium	g/m³	*0.00005*	0.0014	0.0020	0.00057	0.00065	0.00034
Sulfur*	g/m³	*10*	10	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.503	10.4	0.316	0.303	0.0890
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00221	0.00097	0.000094	0.00026	0.000037
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.000067	0.00027	0.000064	0.00013	0.00011
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

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Elements in Water (Total Recoverable)

Client Sample ID			RSA01	SC01	SC03	RS04	MDD302
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Arsenic	g/m³	*0.0005*	0.021	0.0023	0.00077	0.0011	0.0567
Aluminium	g/m³	*0.003*	0.0044	0.16	0.090	0.011	<0.0030
Barium	g/m³	*0.0001*	0.0147	0.0423	0.0393	0.0164	0.140
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	0.000024
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	0.032	0.024	<0.0050	0.0052
Calcium	g/m³	*0.05*	24.6	55.1	37.7	18.4	60.5
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00014	0.00021	0.00026	0.00012	<0.000010
Chromium	g/m³	*0.0002*	<0.00020	0.00030	0.00031	0.00053	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.000025	<0.000010	<0.000010	0.00016
Copper	g/m³	*0.0002*	0.00062	0.00088	0.00092	0.0013	<0.00020
Iron	g/m³	*0.005*	0.14	0.27	0.39	0.068	0.33
Germanium	g/m³	*0.00005*	<0.000050	0.000066	<0.000050	<0.000050	0.00010
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	1.9	1.8	1.4	1.0	1.3
Lanthanum	g/m³	*0.00001*	<0.000010	0.00018	0.00024	0.000024	0.000011
Lithium	g/m³	*0.00001*	0.00225	0.00718	0.00372	0.00130	0.00829
Magnesium	g/m³	*0.01*	4.53	17.1	8.51	2.67	21.5
Manganese	g/m³	*0.0005*	0.029	0.017	0.044	0.0031	0.0045
Molybdenum	g/m³	*0.0002*	<0.00020	0.00048	0.00021	<0.00020	0.00029
Sodium	g/m³	*0.01*	5.58	10.4	5.87	3.96	7.96
Nickel	g/m³	*0.0002*	0.00037	0.00039	0.00039	0.00063	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	0.00032	0.00047	<0.000050	<0.000050
Rubidium	g/m³	*0.00005*	0.00047	0.00064	0.00038	0.00030	0.0019
Sulfur*	g/m³	*10*	<10	14	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	0.00016	0.00010	0.00013	0.00016
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.337	0.882	0.633	0.271	1.16
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00010	0.00454	0.00215	0.00017	0.00507
Vanadium	g/m³	*0.0005*	<0.00050	0.00052	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	0.00015	0.00022	0.000053	0.00045
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Soluble)

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
Silica	g/m³	*0.1*	38.9	47.7	25.2	22.8	21.3
Aluminium	g/m³	*0.003*	<0.0030	0.0033	<0.0030	0.0070	0.023
Arsenic	g/m³	*0.0005*	1.10	0.018	0.022	0.0048	0.0061
Barium	g/m³	*0.0002*	0.0057	0.239	0.0123	0.0125	0.0053
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	0.016	0.037	<0.010	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000050	0.000012	0.000081	0.000080	0.000062

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Elements in Water (Soluble)

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.00013	0.00019	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00025	<0.00020	0.00073	0.00099	0.00060
Germanium	g/m³	*0.00005*	0.000056	0.00082	0.00011	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	0.000011	<0.000010	0.000015	0.000055
Lithium	g/m³	*0.00001*	0.0132	0.0520	0.00216	0.00166	0.00090
Molybdenum	g/m³	*0.0002*	0.0011	0.00043	<0.00020	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	0.00020	<0.00020	0.00036	0.00040	0.00025
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00133	0.00194	0.00041	0.00036	0.00028
Sulfur*	g/m³	*10*	13	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	0.00072	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.492	9.95	0.334	0.290	0.0870
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00214	0.0010	0.00011	0.00025	0.000043
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000026	0.00023	0.000018	0.000038	0.000075

Elements in Water (Soluble)

	Client Sample ID		RSA01	SC01	SC03	RS04	MDD302
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*	24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
Silica	g/m³	*0.1*	26.8	17.9	20.3	21.5	53.2
Aluminium	g/m³	*0.003*	<0.0030	0.0049	0.0072	0.0075	<0.0030
Arsenic	g/m³	*0.0005*	0.016	0.0044	0.00076	0.00094	0.0504
Barium	g/m³	*0.0002*	0.0145	0.0389	0.0356	0.0160	0.140
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	0.000021
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.032	0.023	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00014	0.000072	0.000061	0.00011	<0.000010
Chromium	g/m³	*0.0002*	0.00022	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	0.00015
Copper	g/m³	*0.0002*	0.00074	0.00061	0.00070	0.0013	<0.00020
Germanium	g/m³	*0.00005*	0.000069	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	0.000013	0.000014	0.000015	<0.000010
Lithium	g/m³	*0.00001*	0.00218	0.00696	0.00372	0.00131	0.00848
Molybdenum	g/m³	*0.0002*	<0.00020	0.00041	0.00031	<0.00020	0.00033
Nickel	g/m³	*0.0002*	0.00034	0.00025	0.00021	0.00058	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00048	0.00021	0.00024	0.00028	0.00195
Sulfur*	g/m³	*10*	<10	20	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	0.00015	<0.00010	0.00011	0.00015
Selenium	g/m³	*0.0005*	<0.00050	0.00064	0.00066	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.333	0.863	0.632	0.255	1.13

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Elements in Water (Soluble)

			Client Sample ID	RSA01	SC01	SC03	RS04	MDD302
			Date Sampled	5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Thallium	g/m³	*0.00001*		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*		0.00012	0.00453	0.00229	0.00018	0.00494
Vanadium	g/m³	*0.0005*		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*		0.000018	0.000040	0.000029	0.000050	0.00018

Anion/Cation Suite

			Client Sample ID	LBA	MDD015	RS01	RS02	RS03
			Date Sampled	5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*		24-27733-1	24-27733-2	24-27733-3	24-27733-4	24-27733-5
pH	pH	*1*		8.2	8.0	7.7	7.7	7.2
Electrical Conductivity	µS/cm	*0.2*		427	430	167	141	54.2
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*		194	200	73.9	66.7	23.0
Chloride	g/m³	*0.5*		7.13	9.16	3.13	2.27	1.35
Sulfate	g/m³	*0.15*		25.3	8.93	4.13	2.53	0.96
Nitrate-N	g/m³	*0.002*		0.223	<0.0020	<0.0020	0.0256	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*		0.023	<0.002	<0.002	<0.002	0.006
Ammonia as N	g/m³	*0.005*		<0.005	0.11	<0.005	<0.005	<0.005
Sodium	g/m³	*0.01*		19.1	41.0	5.11	4.16	2.59
Potassium	g/m³	*0.05*		1.9	1.3	1.9	1.2	0.71
Calcium	g/m³	*0.05*		51.5	41.6	21.2	19.5	9.29
Magnesium	g/m³	*0.01*		15.0	14.8	3.99	3.35	1.30
Iron	g/m³	*0.005*		<0.0050	0.0077	0.029	0.018	0.046
Zinc	g/m³	*0.001*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*		0.025	0.0078	0.0047	<0.00050	0.0037
Sum of Anions*	meq/L	*0.01*		4.70	4.51	1.66	1.46	0.52
Sum of Cations*	meq/L	*0.01*		4.69	5.13	1.66	1.46	0.70
EC/10*	(mS/m)/10	*0.002*		4.27	4.30	1.67	1.41	0.54

Anion/Cation Suite

			Client Sample ID	RSA01	SC01	SC03	RS04	MDD302
			Date Sampled	5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Analyte	Unit	*Reporting Limit*		24-27733-6	24-27733-7	24-27733-8	24-27733-9	24-27733-10
pH	pH	*1*		7.6	8.1	7.9	7.7	7.8
Electrical Conductivity	µS/cm	*0.2*		183	426	270	127	458
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*		82.7	180	121	58.3	236
Chloride	g/m³	*0.5*		3.24	4.94	2.58	2.00	3.00
Sulfate	g/m³	*0.15*		3.80	31.7	11.3	1.90	9.24
Nitrate-N	g/m³	*0.002*		0.0171	0.0835	0.194	<0.0020	0.0022
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*		<0.002	0.005	0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*		<0.005	<0.005	<0.005	<0.005	0.05
Sodium	g/m³	*0.01*		5.42	9.91	5.82	3.83	7.70
Potassium	g/m³	*0.05*		1.8	1.7	1.3	1.0	1.3
Calcium	g/m³	*0.05*		23.9	51.8	36.4	17.7	60.2
Magnesium	g/m³	*0.01*		4.42	16.4	8.35	2.58	20.9
Iron	g/m³	*0.005*		0.038	0.0084	0.021	0.021	<0.0050
Zinc	g/m³	*0.001*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*		0.021	0.00083	0.0018	0.00063	0.0044

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Anion/Cation Suite

	Client Sample ID		RSA01	SC01	SC03	RS04	MDD302
	Date Sampled		5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024
Sum of Anions*	meq/L	*0.01*	1.83	4.46	2.78	1.27	5.03
Sum of Cations*	meq/L	*0.01*	1.84	4.41	2.79	1.29	5.09
EC/10*	(mS/m)/10	*0.002*	1.83	4.26	2.70	1.27	4.58

Method Summary

Total Phosphorus Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)

Acidity to pH 8.3 Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).

Turbidity Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).

NO2-N Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).

TKN Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).

TN Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).

Fluoride in Water Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.

Bromide in Water Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).

Total Hardness Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)

Total Cyanide (Trace) On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).

Total Suspended Solids Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).

Total Dissolved Solids Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).

Recoverable Trace Elements Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.

Soluble Trace Elements Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.

pH Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).

Electrical Conductivity Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).

Total Alkalinity ($CaCO_3$) Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).

Chloride Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).

Sulfate Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).

NO3-N Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)

Dissolved Reactive Phosphorus Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)

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Method Summary

Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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Certificate of Analysis

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Attention: Alex Nichol
Phone:
Email: anichol@santanaminerals.com

Sampling Site: Bendigo Ophir Project

Lab Reference: 24-29331
Submitted by:
Date Received: 20/09/2024
Testing Initiated: 20/09/2024
Date Completed: 1/10/2024
Order Number:
Reference:

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Total Phosphorus	g/m^3	*0.005*	0.010	0.32	<0.0050	0.011	0.017

Total Phosphorus in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Total Phosphorus	g/m^3	*0.005*	0.0095	0.0091	0.013	0.059	<0.0050

Total Phosphorus in Water

	Client Sample ID		MDD302	JC01
	Date Sampled		19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Total Phosphorus	g/m^3	*0.005*	0.0088	0.011

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	6.67	1.33	3.33	3.33	3.33

Water Aggregate Properties

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	2.67	4.00	2.67	4.00

Water Aggregate Properties

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	6.67	<1.00

Turbidity

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Turbidity	NTU	*0.05*	1	1.6	0.6	2.2	4.5

Turbidity

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Turbidity	NTU	*0.05*	0.9	1.5	6.4	12	1

Turbidity

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Turbidity	NTU	*0.05*	3.1	2.3

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Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	0.0019	0.0013	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Nitrite-N	g/m^3	*0.001*	<0.0010	0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.23	0.11	0.15	0.43	0.59
Total Nitrogen	g/m^3	*0.1*	0.23	0.30	0.15	0.43	0.63

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.29	0.40	0.34	0.52	0.34
Total Nitrogen	g/m^3	*0.1*	0.29	0.40	0.50	0.76	0.34

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.11	0.50
Total Nitrogen	g/m^3	*0.1*	0.12	0.61

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Custom Job

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Custom Job			Complete	Complete

Fluoride in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Fluoride	g/m^3	*0.04*	<0.040	0.25	0.13	0.056	0.052

Fluoride in Water

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Fluoride	g/m^3	*0.04*	<0.040	0.055	0.072	0.076	0.049

Fluoride in Water

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Fluoride	g/m^3	*0.04*	0.12	0.056

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Bromide	g/m^3	*0.005*	<0.05	<0.05	0.11	<0.05	<0.05

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Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Bromide	g/m^3	*0.005*	<0.05	<0.05

Water Hardness

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	8.0	220	210	80	62

Water Hardness

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	31	83	210	140	58

Water Hardness

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	280	280

Cyanide in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

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Cyanide in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

	Client Sample ID		MDD302	JC01
	Date Sampled		19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001

Solids in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Total Dissolved Solids	g/m^3	*3*	27	257	250	91	62
Total Suspended Solids	g/m^3	*3*	<3	<3	<3	<3	9

Solids in Water

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Total Dissolved Solids	g/m^3	*3*	44	81	187	120	65
Total Suspended Solids	g/m^3	*3*	<3	<3	15	31	<3

Solids in Water

	Client Sample ID		MDD302	JC01
	Date Sampled		19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Total Dissolved Solids	g/m^3	*3*	253	277
Total Suspended Solids	g/m^3	*3*	<3	7

Elements in Water (Total Recoverable)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Silver*	g/m^3	*0.002*	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Aluminium	g/m^3	*0.003*	0.075	0.0072	0.014	0.039	0.14
Antimony	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	g/m^3	*0.0005*	0.00078	1.22	0.017	0.028	0.0075
Barium	g/m^3	*0.0001*	0.0039	0.0066	0.240	0.0128	0.0144
Beryllium	g/m^3	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Boron	g/m^3	*0.005*	<0.0050	0.015	0.034	<0.0050	<0.0050
Cadmium	g/m^3	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020

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Elements in Water (Total Recoverable)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Calcium	g/m³	*0.05*	2.3	62.3	56.8	25.0	19.9
Caesium	g/m³	*0.00001*	<0.000010	0.00013	0.00019	<0.000010	0.000019
Chromium	g/m³	*0.0002*	0.00031	<0.00020	<0.00020	0.00026	<0.00020
Cobalt	g/m³	*0.00001*	0.000084	0.000094	0.000016	0.00015	0.00022
Copper	g/m³	*0.0002*	0.00061	0.00023	0.00035	0.0012	0.0014
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00090	<0.000050	<0.000050
Iron	g/m³	*0.005*	0.079	0.21	0.076	0.33	0.35
Lanthanum	g/m³	*0.00001*	0.00020	0.000026	0.000030	0.000065	0.00016
Lead	g/m³	*0.00005*	<0.000050	<0.000050	0.00015	0.000073	0.00023
Lithium	g/m³	*0.00001*	0.00068	0.0133	0.0533	0.00212	0.00182
Magnesium	g/m³	*0.01*	0.52	16.1	16.6	4.22	2.98
Manganese	g/m³	*0.0005*	0.0036	0.0592	0.0078	0.039	0.014
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum	g/m³	*0.0002*	<0.00020	0.0011	0.00035	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	0.00031	0.00024	<0.00020	0.00051	0.00066
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Potassium	g/m³	*0.05*	0.41	2.2	1.5	1.7	1.1
Rubidium	g/m³	*0.00005*	0.00028	0.0014	0.0021	0.00044	0.00068
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Sodium	g/m³	*0.01*	2.01	20.9	45.7	5.46	4.29
Strontium	g/m³	*0.0001*	0.0230	0.516	10.6	0.314	0.256
Sulfur*	g/m³	*10*	<10	11	<10	<10	<10
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	g/m³	*0.002*	0.0021	<0.0020	<0.0020	0.0023	0.0080
Tungsten	g/m³	*0.0003*	<0.00030	<0.00030	0.0894	<0.00030	<0.00030
Uranium	g/m³	*0.00003*	<0.000030	0.00221	0.0010	0.000086	0.00016
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.00019	0.000094	0.00030	0.000072	0.00014
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	0.0036	<0.0030

Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Silver*	g/m³	*0.002*	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Aluminium	g/m³	*0.003*	0.055	0.0094	0.25	0.412	0.022
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00018	0.00013	<0.00010
Arsenic	g/m³	*0.0005*	0.0092	0.038	0.0020	0.00088	0.0015
Barium	g/m³	*0.0001*	0.0065	0.0141	0.0420	0.0454	0.0171
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	0.000019	0.000032	<0.000010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.027	0.023	<0.0050
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Calcium	g/m³	*0.05*	9.65	25.9	58.4	40.9	19.0
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	0.000044	0.000083	<0.000010
Chromium	g/m³	*0.0002*	<0.00020	0.00020	0.00051	0.00057	<0.00020
Cobalt	g/m³	*0.00001*	0.00013	0.00026	0.00028	0.00046	0.00016
Copper	g/m³	*0.0002*	0.00067	0.0011	0.0011	0.0014	0.0014
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.000063	<0.000050	<0.000050
Iron	g/m³	*0.005*	0.18	0.38	0.41	0.900	0.12
Lanthanum	g/m³	*0.00001*	0.00012	0.000018	0.00022	0.00038	0.000044
Lead	g/m³	*0.00005*	0.000086	<0.000050	0.00039	0.00071	<0.000050

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Elements in Water (Total Recoverable)

	Client Sample ID		RS03	RSA01	SC01	SC03	RS04
	Date Sampled		19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Lithium	g/m³	*0.00001*	0.00109	0.00207	0.00668	0.00423	0.00131
Magnesium	g/m³	*0.01*	1.75	4.37	15.9	8.47	2.46
Manganese	g/m³	*0.0005*	0.016	0.0509	0.018	0.0501	0.0054
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00041	0.00021	<0.00020
Nickel	g/m³	*0.0002*	0.00035	0.00046	0.00055	0.00067	0.00050
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	0.046	<0.040
Potassium	g/m³	*0.05*	0.80	1.7	1.9	1.6	1.1
Rubidium	g/m³	*0.00005*	0.00033	0.00039	0.00088	0.0013	0.00032
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Sodium	g/m³	*0.01*	3.17	5.47	10.0	5.75	3.97
Strontium	g/m³	*0.0001*	0.109	0.312	0.845	0.604	0.236
Sulfur*	g/m³	*10*	<10	<10	12	<10	<10
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	g/m³	*0.002*	<0.0020	0.0027	0.0049	0.0085	0.0021
Tungsten	g/m³	*0.0003*	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium	g/m³	*0.00003*	0.000050	0.00012	0.00434	0.00205	0.00016
Vanadium	g/m³	*0.0005*	0.00063	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.00012	<0.000050	0.00017	0.00034	0.000084
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

	Client Sample ID		MDD302	JC01
	Date Sampled		19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Silver*	g/m³	*0.002*	<0.0020	<0.0020
Aluminium	g/m³	*0.003*	0.0036	0.084
Antimony	g/m³	*0.0001*	0.00020	0.00055
Arsenic	g/m³	*0.0005*	0.0600	0.00068
Barium	g/m³	*0.0001*	0.141	0.0361
Beryllium	g/m³	*0.00001*	0.000023	<0.000010
Boron	g/m³	*0.005*	<0.0050	0.033
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020
Calcium	g/m³	*0.05*	72.1	78.3
Caesium	g/m³	*0.00001*	0.00016	<0.000010
Chromium	g/m³	*0.0002*	<0.00020	0.00020
Cobalt	g/m³	*0.00001*	<0.000010	0.00022
Copper	g/m³	*0.0002*	<0.00020	0.0015
Germanium	g/m³	*0.00005*	0.00013	0.000064
Iron	g/m³	*0.005*	0.34	0.16
Lanthanum	g/m³	*0.00001*	0.000011	0.000065
Lead	g/m³	*0.00005*	<0.000050	0.00017
Lithium	g/m³	*0.00001*	0.00873	0.00917
Magnesium	g/m³	*0.01*	23.1	19.4
Manganese	g/m³	*0.0005*	0.0046	0.0061
Mercury	g/m³	*0.0001*	<0.00010	<0.00010
Molybdenum	g/m³	*0.0002*	0.00038	0.0012
Nickel	g/m³	*0.0002*	<0.00020	0.00045
Phosphorus	g/m³	*0.04*	<0.040	<0.040
Potassium	g/m³	*0.05*	1.5	2.2
Rubidium	g/m³	*0.00005*	0.0021	0.00037

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Elements in Water (Total Recoverable)

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Selenium	g/m³	*0.001*	<0.0010	0.0011
Sodium	g/m³	*0.01*	8.49	20.8
Strontium	g/m³	*0.0001*	1.20	0.942
Sulfur*	g/m³	*10*	<10	10
Tin	g/m³	*0.0005*	<0.00050	<0.00050
Thallium	g/m³	*0.0001*	<0.00010	<0.00010
Titanium	g/m³	*0.002*	<0.0020	0.0036
Tungsten	g/m³	*0.0003*	0.0013	0.00049
Uranium	g/m³	*0.00003*	0.00545	0.00760
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.00048	0.000076
Zinc	g/m³	*0.003*	<0.0030	<0.0030

Elements in Water (Soluble)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
Silica	g/m³	*0.1*	9.09	16.2	20.6	8.80	8.52
Aluminium	g/m³	*0.003*	0.049	0.0054	0.0050	0.0095	0.010
Arsenic	g/m³	*0.0005*	0.00081	1.11	0.018	0.017	0.0044
Barium	g/m³	*0.0002*	0.0034	0.0057	0.229	0.0104	0.0112
Beryllium	g/m³	*0.00001*	0.000015	0.000014	<0.000010	0.000023	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.014	0.032	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000078	0.000085	0.000011	0.00014	0.00011
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.00019	0.00017	0.00019	0.000013	<0.000010
Copper	g/m³	*0.0002*	0.00057	0.00034	<0.00020	0.0012	0.0012
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00085	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.00015	0.000024	0.000011	0.000030	0.000024
Lithium	g/m³	*0.00001*	0.00079	0.0131	0.0524	0.00192	0.00158
Molybdenum	g/m³	*0.0002*	<0.00020	0.0011	0.00037	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	0.00029	0.00026	<0.00020	0.00041	0.00041
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00035	0.00139	0.00202	0.00036	0.00030
Sulfur*	g/m³	*10*	<10	11	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	0.00066	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0221	0.502	10.3	0.285	0.249
Thallium	g/m³	*0.00001*	<0.000010	0.000015	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.00205	0.00093	0.000097	0.00013
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.00016	0.000050	0.00024	0.000050	0.000050

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Elements in Water (Soluble)

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
Silica	g/m³	*0.1*	8.97	9.07	6.45	7.45	6.97
Aluminium	g/m³	*0.003*	0.023	0.0037	0.0075	0.0096	0.0074
Arsenic	g/m³	*0.0005*	0.0067	0.023	0.0017	<0.00050	0.0012
Barium	g/m³	*0.0002*	0.0056	0.0129	0.0361	0.0332	0.0160
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.026	0.020	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000084	0.00020	0.000061	0.000092	0.00012
Chromium	g/m³	*0.0002*	0.00025	0.00023	<0.00020	0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00073	0.0012	0.00066	0.00075	0.0015
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000055	0.000012	0.000021	0.000017	0.000018
Lithium	g/m³	*0.00001*	0.0010	0.00203	0.00612	0.00362	0.00126
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00041	0.00025	<0.00020
Nickel	g/m³	*0.0002*	0.00031	0.00043	0.00023	0.00024	0.00061
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00026	0.00037	0.00020	0.00022	0.00029
Sulfur*	g/m³	*10*	<10	<10	11	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00015	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	0.00055	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.105	0.304	0.815	0.577	0.230
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.000049	0.00012	0.00389	0.0018	0.00017
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000075	0.000028	0.000047	0.000029	0.000062

Elements in Water (Soluble)

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
Silica	g/m³	*0.1*	23.4	6.99
Aluminium	g/m³	*0.003*	<0.0030	0.0032
Arsenic	g/m³	*0.0005*	0.0516	0.00066
Barium	g/m³	*0.0002*	0.134	0.0339
Beryllium	g/m³	*0.00001*	0.000021	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.031
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010	0.00013
Chromium	g/m³	*0.0002*	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.00015	<0.000010
Copper	g/m³	*0.0002*	<0.00020	0.0014
Germanium	g/m³	*0.00005*	0.000085	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	<0.000010

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Elements in Water (Soluble)

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Lithium	g/m³	*0.00001*	0.00836	0.00876
Molybdenum	g/m³	*0.0002*	0.00039	0.0011
Nickel	g/m³	*0.0002*	<0.00020	0.00026
Phosphorus	g/m³	*0.04*	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00201	0.00021
Sulfur*	g/m³	*10*	<10	<10
Antimony	g/m³	*0.0001*	0.00019	0.00052
Selenium	g/m³	*0.0005*	<0.00050	0.00085
Tin	g/m³	*0.0002*	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	1.17	0.914
Thallium	g/m³	*0.00001*	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00488	0.00679
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.00019	0.000029

Anion/Cation Suite

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-1	24-29331-2	24-29331-3	24-29331-4	24-29331-5
pH	pH	*1*	7.0	6.0	8.1	7.6	7.6
Electrical Conductivity	µS/cm	*0.2*	22.6	449	441	159	128
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	7.4	198	202	65.4	53.8
Chloride	g/m³	*0.5*	0.71	7.00	9.05	2.40	2.03
Sulfate	g/m³	*0.15*	0.23	26.0	8.73	3.57	1.67
Nitrate-N	g/m³	*0.002*	0.0046	0.196	<0.0020	<0.0020	0.0340
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.008	0.029	<0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	0.005	<0.005	0.11	<0.005	<0.005
Sodium	g/m³	*0.01*	1.91	19.2	43.0	5.09	4.11
Potassium	g/m³	*0.05*	0.38	2.2	1.5	1.7	1.0
Calcium	g/m³	*0.05*	2.3	60.9	57.7	23.9	19.4
Magnesium	g/m³	*0.01*	0.49	15.3	15.7	4.01	2.87
Iron	g/m³	*0.005*	0.042	0.0098	0.016	0.062	0.031
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.00086	0.025	0.0073	0.0095	0.00084
Sum of Anions*	meq/L	*0.01*	0.17	4.71	4.56	1.46	1.18
Sum of Cations*	meq/L	*0.01*	0.25	5.19	6.09	1.79	1.41
EC/10*	(mS/m)/10	*0.002*	0.23	4.49	4.41	1.59	1.28

Anion/Cation Suite

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-6	24-29331-7	24-29331-8	24-29331-9	24-29331-10
pH	pH	*1*	7.3	7.6	8.1	8.0	7.5
Electrical Conductivity	µS/cm	*0.2*	69.0	175	403	253	117
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	28.0	74.2	162	124	51.7
Chloride	g/m³	*0.5*	1.28	2.28	4.34	2.70	2.15

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Anion/Cation Suite

Client Sample ID			RS03	RSA01	SC01	SC03	RS04
Date Sampled			19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Sulfate	g/m³	*0.15*	1.18	2.87	27.3	9.84	1.06
Nitrate-N	g/m³	*0.002*	<0.0020	<0.0020	0.165	0.240	0.0043
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.005	<0.002	0.003	0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	<0.005	<0.005	0.006
Sodium	g/m³	*0.01*	2.94	5.09	9.30	5.41	3.84
Potassium	g/m³	*0.05*	0.79	1.6	1.7	1.4	1.1
Calcium	g/m³	*0.05*	9.38	25.3	57.2	38.2	18.8
Magnesium	g/m³	*0.01*	1.64	4.12	15.0	7.90	2.39
Iron	g/m³	*0.005*	0.047	0.14	0.016	0.025	0.029
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.0044	0.043	0.0033	0.0044	0.00090
Sum of Anions*	meq/L	*0.01*	0.62	1.62	3.99	2.81	1.12
Sum of Cations*	meq/L	*0.01*	0.75	1.87	4.54	2.83	1.33
EC/10*	(mS/m)/10	*0.002*	0.69	1.75	4.03	2.53	1.17

Anion/Cation Suite

Client Sample ID			MDD302	JC01
Date Sampled			19/09/2024	19/09/2024
Analyte	Unit	*Reporting Limit*	24-29331-11	24-29331-12
pH	pH	*1*	7.8	8.3
Electrical Conductivity	µS/cm	*0.2*	482	530
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	237	241
Chloride	g/m³	*0.5*	2.95	5.64
Sulfate	g/m³	*0.15*	8.14	22.2
Nitrate-N	g/m³	*0.002*	0.0030	0.107
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	<0.002	0.007
Ammonia as N	g/m³	*0.005*	0.05	<0.005
Sodium	g/m³	*0.01*	8.05	19.3
Potassium	g/m³	*0.05*	1.5	2.1
Calcium	g/m³	*0.05*	71.2	75.3
Magnesium	g/m³	*0.01*	22.1	17.9
Iron	g/m³	*0.005*	<0.0050	<0.0050
Zinc	g/m³	*0.001*	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.0041	0.00068
Sum of Anions*	meq/L	*0.01*	5.03	5.57
Sum of Cations*	meq/L	*0.01*	5.77	6.12
EC/10*	(mS/m)/10	*0.002*	4.82	5.30

Method Summary

Total Phosphorus Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)

Acidity to pH 8.3 Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).

Turbidity Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).

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Method Summary

NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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Certificate of Analysis

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Sampling Site: Bendigo Ophir Project

Lab Reference: 24-30758
Submitted by:
Date Received: 4/10/2024
Testing Initiated: 4/10/2024
Date Completed: 10/10/2024
Order Number:
Reference:

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Total Phosphorus in Water

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Total Phosphorus	g/m^3	*0.005*	0.20	0.0057	0.060	0.12	0.020

Total Phosphorus in Water

	Client Sample ID		RSA01	SC01	RS04	MDD302
	Date Sampled		3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Total Phosphorus	g/m^3	*0.005*	0.027	0.15	0.070	0.0059

Water Aggregate Properties

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	<1.00	3.33	3.33	3.33	2.00

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	1.33	3.33	6.67

Turbidity

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Turbidity	NTU	*0.05*	0.7	1.5	16	47	3.1

Turbidity

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Turbidity	NTU	*0.05*	7.6	57	16	3.2

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Nitrite-N	g/m^3	*0.001*	0.0010	<0.0010	<0.0010	0.0019	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Nitrite-N	g/m^3	*0.001*	0.0010	0.0018	0.0018	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.12	0.13	0.45	1.01	0.39
Total Nitrogen	g/m^3	*0.1*	0.33	0.13	0.46	1.1	0.39

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Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.50	1.10	0.97	<0.10
Total Nitrogen	g/m^3	*0.1*	0.53	1.3	0.97	<0.10

Custom Job

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Custom Job			Complete	Complete	Complete	Complete	Complete

Custom Job

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Custom Job			Complete	Complete	Complete	Complete

Fluoride in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Fluoride	g/m^3	*0.04*	0.31	0.15	0.064	0.049	<0.040

Fluoride in Water

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Fluoride	g/m^3	*0.04*	0.055	0.077	0.052	0.14

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Bromide	g/m^3	*0.005*	0.050	0.060	<0.05	<0.05	<0.05

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Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05

Water Hardness

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	200	190	70	48	32

Water Hardness

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	68	180	42	250

Cyanide in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001

Solids in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Total Suspended Solids	g/m^3	*3*	<3	<3	18	52	6
Total Dissolved Solids	g/m^3	*3*	260	226	86	68	54

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Solids in Water

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Total Suspended Solids	g/m^3	*3*	7	122	24	<3
Total Dissolved Solids	g/m^3	*3*	87	186	75	262

Elements in Water (Soluble)

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Silica	g/m^3	*0.1*	16.2	19.3	8.68	6.72	8.47
Arsenic	g/m^3	*0.0005*	1.09	0.016	0.016	0.0052	0.0082
Aluminium	g/m^3	*0.003*	<0.0030	0.0044	0.0085	0.027	0.028
Barium	g/m^3	*0.0002*	0.0054	0.218	0.0120	0.0099	0.0066
Beryllium	g/m^3	*0.00001*	<0.000010	0.000011	<0.000010	<0.000010	0.000014
Bismuth	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m^3	*0.01*	<0.010	0.027	<0.010	<0.010	<0.010
Cadmium	g/m^3	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	0.000021
Cobalt	g/m^3	*0.00001*	0.000064	0.000018	0.00017	0.00017	0.000086
Chromium	g/m^3	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m^3	*0.00001*	0.00013	0.00018	<0.000010	<0.000010	<0.000010
Copper	g/m^3	*0.0002*	0.00022	<0.00020	0.0011	0.0016	0.00070
Germanium	g/m^3	*0.00005*	<0.000050	0.00091	<0.000050	<0.000050	<0.000050
Mercury	g/m^3	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m^3	*0.00001*	<0.000010	0.000011	0.000037	0.000067	0.000079
Lithium	g/m^3	*0.00001*	0.0134	0.0500	0.00186	0.00117	0.00111
Molybdenum	g/m^3	*0.0002*	0.00097	0.00033	<0.00020	<0.00020	<0.00020
Nickel	g/m^3	*0.0002*	<0.00020	<0.00020	0.00054	0.00058	0.00027
Phosphorus	g/m^3	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m^3	*0.00005*	<0.000050	<0.000050	0.000069	<0.000050	<0.000050
Rubidium	g/m^3	*0.00002*	0.00134	0.00184	0.00043	0.00050	0.00038
Sulfur*	g/m^3	*10*	<10	<10	<10	<10	<10
Antimony	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m^3	*0.0005*	0.00075	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m^3	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m^3	*0.0001*	0.492	9.48	0.274	0.180	0.122
Thallium	g/m^3	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m^3	*0.00003*	0.00208	0.00092	0.000089	0.000098	0.000079
Vanadium	g/m^3	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m^3	*0.00001*	0.000019	0.00020	0.000039	0.000095	0.00010

Elements in Water (Soluble)

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Silica	g/m^3	*0.1*	8.58	6.82	6.10	22.8
Arsenic	g/m^3	*0.0005*	0.018	0.0019	0.0019	0.0518
Aluminium	g/m^3	*0.003*	0.0052	0.0072	0.031	<0.0030
Barium	g/m^3	*0.0002*	0.0116	0.0324	0.0123	0.133
Beryllium	g/m^3	*0.00001*	<0.000010	<0.000010	<0.000010	0.000014
Bismuth	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010

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Elements in Water (Soluble)

Client Sample ID			RSA01	SC01	RS04	MDD302
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024
Boron	g/m³	*0.01*	<0.010	0.023	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00013	0.00011	0.00017	<0.000010
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	0.00016
Copper	g/m³	*0.0002*	0.0011	0.00067	0.0017	<0.00020
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	0.000070
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000018	0.000021	0.00010	<0.000010
Lithium	g/m³	*0.00001*	0.00181	0.00553	0.00086	0.00854
Molybdenum	g/m³	*0.0002*	<0.00020	0.00040	<0.00020	0.00037
Nickel	g/m³	*0.0002*	0.00048	0.00024	0.00063	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	0.000063	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00053	0.00021	0.00037	0.00194
Sulfur*	g/m³	*10*	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	0.00014	<0.00010	0.00019
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.265	0.679	0.162	1.13
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00011	0.00338	0.00012	0.00489
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000032	0.000036	0.00015	0.00019

Elements in Water (Total Recoverable)

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
Arsenic	g/m³	*0.0005*	1.13	0.020	0.0695	0.017	0.013
Aluminium	g/m³	*0.003*	0.0050	0.031	0.325	0.978	0.083
Barium	g/m³	*0.0001*	0.0057	0.225	0.0198	0.0256	0.0081
Beryllium	g/m³	*0.00001*	<0.000010	0.000021	0.000024	0.000048	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	0.010	0.028	<0.0050	<0.0050	<0.0050
Calcium	g/m³	*0.05*	53.7	50.3	21.3	14.6	9.61
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000075	0.000028	0.00049	0.00087	0.00017
Chromium	g/m³	*0.0002*	0.00025	<0.00020	0.00067	0.00079	0.00024
Caesium	g/m³	*0.00001*	0.00015	0.00019	0.000045	0.00016	<0.000010
Copper	g/m³	*0.0002*	<0.00020	<0.00020	0.0014	0.0027	0.00087
Iron	g/m³	*0.005*	0.18	0.085	1.60	1.78	0.30
Germanium	g/m³	*0.00005*	<0.000050	0.0010	0.000076	0.00013	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	2.0	1.4	2.1	2.0	1.0
Lanthanum	g/m³	*0.00001*	0.000015	0.000064	0.00033	0.00077	0.00021
Lithium	g/m³	*0.00001*	0.0138	0.0522	0.00244	0.00229	0.00117
Magnesium	g/m³	*0.01*	15.4	15.0	4.09	2.73	1.90
Manganese	g/m³	*0.0005*	0.042	0.0077	0.177	0.0617	0.029
Molybdenum	g/m³	*0.0002*	0.0011	0.00037	<0.00020	<0.00020	<0.00020
Sodium	g/m³	*0.01*	18.8	38.5	4.64	3.07	3.01
Nickel	g/m³	*0.0002*	0.00026	<0.00020	0.00066	0.0014	0.00032

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Elements in Water (Total Recoverable)

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Phosphorus	g/m³	*0.04*	<0.040	<0.040	0.045	0.089	<0.040
Lead	g/m³	*0.00005*	0.00018	0.000066	0.00065	0.0018	0.00014
Rubidium	g/m³	*0.00005*	0.0014	0.0019	0.0012	0.0029	0.00047
Sulfur*	g/m³	*10*	11	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.493	9.66	0.310	0.196	0.123
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00218	0.00096	0.00012	0.00023	0.000092
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	0.0013	<0.00050
Yttrium	g/m³	*0.00005*	0.000059	0.00029	0.00022	0.00060	0.00018
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	0.0061	<0.0030

Elements in Water (Total Recoverable)

	Client Sample ID		RSA01	SC01	RS04	MDD302
	Date Sampled		3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*	24-30758-6	24-30758-7	24-30758-8	24-30758-9
Arsenic	g/m³	*0.0005*	0.045	0.0050	0.0052	0.0588
Aluminium	g/m³	*0.003*	0.10	1.34	0.475	0.0098
Barium	g/m³	*0.0001*	0.0142	0.0607	0.0203	0.138
Beryllium	g/m³	*0.00001*	<0.000010	0.000077	0.000028	0.000029
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	0.060	<0.0050	<0.0050
Calcium	g/m³	*0.05*	20.4	47.6	13.3	63.3
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00021	0.00176	0.00053	<0.000010
Chromium	g/m³	*0.0002*	0.00027	0.0015	0.00059	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00024	0.000078	0.00015
Copper	g/m³	*0.0002*	0.0012	0.0037	0.0025	<0.00020
Iron	g/m³	*0.005*	0.891	2.45	1.15	0.33
Germanium	g/m³	*0.00005*	<0.000050	0.00020	0.000051	0.000091
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	2.1	3.2	1.8	1.4
Lanthanum	g/m³	*0.00001*	0.00013	0.00136	0.00047	0.000016
Lithium	g/m³	*0.00001*	0.00192	0.00789	0.00147	0.00857
Magnesium	g/m³	*0.01*	4.10	13.8	2.09	21.8
Manganese	g/m³	*0.0005*	0.049	0.234	0.043	0.0047
Molybdenum	g/m³	*0.0002*	<0.00020	0.00026	<0.00020	0.00040
Sodium	g/m³	*0.01*	4.48	8.03	2.85	7.62
Nickel	g/m³	*0.0002*	0.00052	0.0021	0.0011	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	0.21	0.078	<0.040
Lead	g/m³	*0.00005*	0.00020	0.0028	0.00082	<0.000050
Rubidium	g/m³	*0.00005*	0.00075	0.0033	0.0014	0.0020
Sulfur*	g/m³	*10*	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	0.00018	0.00011	0.00018
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.270	0.724	0.177	1.15
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00012	0.00316	0.00023	0.00511
Vanadium	g/m³	*0.0005*	<0.00050	0.0019	0.00053	<0.00050

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Elements in Water (Total Recoverable)

			Client Sample ID	RSA01	SC01	RS04	MDD302
			Date Sampled	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Yttrium	g/m³	*0.00005*		0.00012	0.00097	0.00047	0.00048
Zinc	g/m³	*0.003*		<0.0030	0.0083	<0.0030	<0.0030

Anion/Cation Suite

			Client Sample ID	LBA	MDD015	RS01	RS02	RS03
			Date Sampled	3/10/2024	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*		24-30758-1	24-30758-2	24-30758-3	24-30758-4	24-30758-5
pH	pH	*1*		8.2	8.1	7.7	7.5	7.3
Electrical Conductivity	µS/cm	*0.2*		458	422	156	103	76.5
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*		194	198	68.9	44.2	35.3
Chloride	g/m³	*0.5*		7.45	9.02	2.41	1.58	1.58
Sulfate	g/m³	*0.15*		28.7	8.97	2.39	0.78	1.08
Nitrate-N	g/m³	*0.002*		0.211	0.0045	0.0098	0.0437	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*		0.020	<0.002	<0.002	0.003	0.007
Ammonia as N	g/m³	*0.005*		<0.005	0.09	<0.005	<0.005	<0.005
Sodium	g/m³	*0.01*		19.6	40.1	4.78	3.15	3.21
Potassium	g/m³	*0.05*		2.0	1.4	2.1	1.7	1.1
Calcium	g/m³	*0.05*		56.1	48.3	21.7	14.3	9.96
Magnesium	g/m³	*0.01*		15.5	14.8	3.99	2.50	1.94
Iron	g/m³	*0.005*		0.012	0.0088	0.096	0.093	0.061
Zinc	g/m³	*0.001*		<0.0010	<0.0010	0.0013	<0.0010	<0.0010
Manganese	g/m³	*0.0005*		0.036	0.0066	0.033	0.0054	0.0044
Sum of Anions*	meq/L	*0.01*		4.79	4.47	1.51	0.95	0.78
Sum of Cations*	meq/L	*0.01*		4.98	5.41	1.68	1.10	0.83
EC/10*	(mS/m)/10	*0.002*		4.58	4.22	1.56	1.03	0.76

Anion/Cation Suite

			Client Sample ID	RSA01	SC01	RS04	MDD302
			Date Sampled	3/10/2024	3/10/2024	3/10/2024	3/10/2024
Analyte	Unit	*Reporting Limit*		24-30758-6	24-30758-7	24-30758-8	24-30758-9
pH	pH	*1*		7.6	8.0	7.4	7.7
Electrical Conductivity	µS/cm	*0.2*		149	342	90.4	471
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*		67.6	145	41.9	235
Chloride	g/m³	*0.5*		2.24	3.63	1.45	3.10
Sulfate	g/m³	*0.15*		2.00	21.8	0.43	9.50
Nitrate-N	g/m³	*0.002*		0.0329	0.149	<0.0020	0.0085
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*		<0.002	0.003	0.004	<0.002
Ammonia as N	g/m³	*0.005*		<0.005	<0.005	<0.005	0.05
Sodium	g/m³	*0.01*		4.59	8.16	2.87	7.86
Potassium	g/m³	*0.05*		2.1	1.9	1.7	1.4
Calcium	g/m³	*0.05*		20.6	45.7	13.3	64.1
Magnesium	g/m³	*0.01*		4.03	12.9	1.95	21.6
Iron	g/m³	*0.005*		0.10	0.027	0.12	<0.0050
Zinc	g/m³	*0.001*		<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*		0.022	0.0035	0.0036	0.0047
Sum of Anions*	meq/L	*0.01*		1.47	3.50	0.89	5.03
Sum of Cations*	meq/L	*0.01*		1.62	3.75	1.00	5.35

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Anion/Cation Suite

	Client Sample ID		RSA01	SC01	RS04	MDD302
	Date Sampled		3/10/2024	3/10/2024	3/10/2024	3/10/2024
EC/10*	(mS/m)/10	*0.002*	1.49	3.42	0.90	4.71

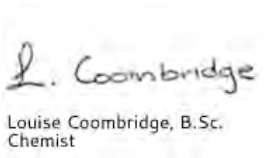
Method Summary

Total Phosphorus	Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)
Acidity to pH 8.3	Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).
Turbidity	Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).
NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.

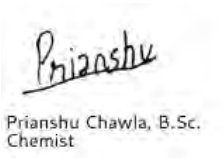
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Method Summary

Sum of Cations Sum of milliequivalents/Litre of measured Cations.



Louise Coombridge, B.Sc.
Chemist



Prianshu Chawla, B.Sc.
Chemist



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Environmental Lab Manager



Tamaryn Cronje
Customer Service

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CERTIFICATE OF ANALYSIS

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Attention: Alex Nichol
Phone: 0275886631
Email: anichol@santanaminerals.com

Sampling Site: Bendigo Ophir Project

Lab Reference: 24-32269
Submitted by:
Date Received: 18/10/2024
Testing Initiated: 18/10/2024
Date Completed: 25/10/2024
Order Number:
Reference:

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at ALS NZ (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Total Phosphorus in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Total Phosphorus	g/m^3	*0.005*	0.014	0.28	0.0071	0.0089	0.0059

Total Phosphorus in Water

	Client Sample ID		RS03	RSA1	SC01	RS04	MDD302
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Total Phosphorus	g/m^3	*0.005*	0.0093	0.0092	0.013	<0.0050	0.010

Water Aggregate Properties

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	<1.00	4.00	2.67	2.67

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			RS03	RSA1	SC01	RS04	MDD302
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	3.33	2.67	2.67	5.33

Turbidity

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Turbidity	NTU	*0.05*	0.4	1	0.3	1.3	2.3

Turbidity

Client Sample ID			RS03	RSA1	SC01	RS04	MDD302
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Turbidity	NTU	*0.05*	2.8	0.8	2.2	0.4	4.2

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RS03	RSA1	SC01	RS04	MDD302
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	0.0028	<0.0010	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.12	0.45	0.17	0.47	0.41
Total Nitrogen	g/m^3	*0.1*	0.12	0.70	0.17	0.47	0.43

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Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		RS03	RSA1	SC01	RS04	MDD302
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.24	0.41	1.29	0.39	0.12
Total Nitrogen	g/m^3	*0.1*	0.24	0.42	1.4	0.39	0.12

Fluoride in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Fluoride	g/m^3	*0.04*	<0.040	0.28	0.15	0.078	0.053

Fluoride in Water

	Client Sample ID		RS03	RSA1	SC01	RS04	MDD302
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Fluoride	g/m^3	*0.04*	<0.040	0.072	0.090	0.062	0.14

Bromide in Water (Subcontracted - Hill Laboratories)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

	Client Sample ID		RS03	RSA1	SC01	RS04	MDD302
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Water Hardness

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	7.1	210	190	75	61

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Water Hardness

Client Sample ID			RS03	RSA1	SC01	RS04	MDD302
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	30	76	210	67	250

Cyanide in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			RS03	RSA1	SC01	RS04	MDD302
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Solids in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Total Suspended Solids	g/m^3	*3*	<3	<3	4	<3	5
Total Dissolved Solids	g/m^3	*3*	19	250	247	66	65

Solids in Water

Client Sample ID			RS03	RSA1	SC01	RS04	MDD302
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Total Suspended Solids	g/m^3	*3*	5	<3	7	<3	<3
Total Dissolved Solids	g/m^3	*3*	45	95	226	87	252

Elements in Water (Total Recoverable)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Arsenic	g/m^3	*0.0005*	0.00072	1.10	0.020	0.024	0.0070
Aluminium	g/m^3	*0.003*	0.043	<0.0030	0.0098	0.013	0.066
Barium	g/m^3	*0.0001*	0.0035	0.0056	0.231	0.0127	0.0125
Beryllium	g/m^3	*0.00001*	<0.000010	<0.000010	0.000011	<0.000010	<0.000010
Bismuth	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m^3	*0.005*	<0.0050	<0.0050	0.021	<0.0050	<0.0050
Calcium	g/m^3	*0.05*	2.1	57.6	49.7	23.3	19.1
Cadmium	g/m^3	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020

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Elements in Water (Total Recoverable)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Cobalt	g/m³	*0.00001*	0.000041	0.000039	<0.000010	0.00011	0.00012
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00013	0.00020	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00031	<0.00020	<0.00020	0.00080	0.00099
Iron	g/m³	*0.005*	0.042	0.16	0.063	0.15	0.14
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00081	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.29	2.0	1.4	1.2	0.91
Lanthanum	g/m³	*0.00001*	0.00012	0.000011	0.000026	0.000019	0.000084
Lithium	g/m³	*0.00001*	0.00053	0.0144	0.0542	0.00218	0.00212
Magnesium	g/m³	*0.01*	0.47	16.2	15.9	4.18	3.24
Manganese	g/m³	*0.0005*	0.0019	0.037	0.0070	0.024	0.0059
Molybdenum	g/m³	*0.0002*	<0.00020	0.0010	0.00021	<0.00020	<0.00020
Sodium	g/m³	*0.01*	1.75	20.4	42.7	5.21	4.53
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00035	0.00041
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	0.000090
Rubidium	g/m³	*0.00005*	0.00022	0.0013	0.0019	0.00029	0.00040
Sulfur*	g/m³	*10*	<10	11	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.0212	0.494	9.71	0.312	0.250
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	0.00215	0.00096	0.00010	0.00025
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.00011	0.000066	0.00027	<0.000050	0.000080
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

	Client Sample ID		RS03	RSA1	SC01	RS04	MDD302
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Arsenic	g/m³	*0.0005*	0.0078	0.032	0.0023	0.0010	0.0606
Aluminium	g/m³	*0.003*	0.027	0.0052	0.11	0.012	0.0068
Barium	g/m³	*0.0001*	0.0062	0.0139	0.0441	0.0176	0.135
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	0.000030
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.020	<0.0050	<0.0050
Calcium	g/m³	*0.05*	9.25	23.6	56.9	21.7	65.7
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000088	0.00017	0.00020	0.00013	0.000011
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	0.00023	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	0.000016	<0.000010	0.00015
Copper	g/m³	*0.0002*	0.00060	0.00079	0.00087	0.00098	<0.00020
Iron	g/m³	*0.005*	0.17	0.37	0.19	0.037	0.32
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	0.00013
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.59	1.2	1.9	0.86	1.4
Lanthanum	g/m³	*0.00001*	0.000062	<0.000010	0.00012	0.000023	0.000022
Lithium	g/m³	*0.00001*	0.00106	0.00209	0.00734	0.00169	0.00880
Magnesium	g/m³	*0.01*	1.70	4.23	16.8	3.13	22.0

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Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA1	SC01	RS04	MDD302
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Manganese	g/m³	*0.0005*	0.012	0.0551	0.016	0.0035	0.0053
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00023	<0.00020	0.00029
Sodium	g/m³	*0.01*	3.03	5.22	10.1	4.31	8.31
Nickel	g/m³	*0.0002*	0.00034	0.00034	0.00040	0.00048	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	0.00025	<0.000050	0.00019	<0.000050	<0.000050
Rubidium	g/m³	*0.00005*	0.00023	0.00025	0.00047	0.00022	0.0020
Sulfur*	g/m³	*10*	<10	<10	12	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00017	<0.00010	0.00019
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.107	0.298	0.857	0.275	1.11
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.000043	0.000099	0.00442	0.00030	0.00488
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.000069	<0.000050	0.00011	<0.000050	0.00048
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	0.0035

Elements in Water (Soluble)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
Silica	g/m³	*0.1*	7.83	16.1	19.6	8.59	8.57
Aluminium	g/m³	*0.003*	0.028	<0.0030	0.0032	<0.0030	0.0073
Arsenic	g/m³	*0.0005*	0.00062	1.02	0.018	0.020	0.0062
Barium	g/m³	*0.0002*	0.0032	0.0052	0.230	0.0127	0.0116
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.022	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000034	0.000053	<0.000010	0.000092	0.000070
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00014	0.00020	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00036	<0.00020	<0.00020	0.00088	0.00073
Germanium	g/m³	*0.00005*	0.000067	0.000098	0.00081	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000082	<0.000010	<0.000010	<0.000010	0.000014
Lithium	g/m³	*0.00001*	0.00054	0.0137	0.0521	0.00218	0.00199
Molybdenum	g/m³	*0.0002*	<0.00020	0.00089	0.00028	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00075	0.00032
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00018	0.00132	0.00187	0.00028	0.00021
Sulfur*	g/m³	*10*	<10	12	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	0.00076	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0204	0.480	9.55	0.321	0.245
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.00213	0.00095	0.00012	0.00023
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000082	0.000019	0.00022	0.000019	0.000032

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Elements in Water (Soluble)

	Client Sample ID		RS03	RSA1	SC01	RS04	MDD302
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
Silica	g/m³	*0.1*	8.12	8.71	6.29	6.29	22.9
Aluminium	g/m³	*0.003*	0.015	<0.0030	0.0075	0.0051	<0.0030
Arsenic	g/m³	*0.0005*	0.0065	0.028	0.0020	0.00094	0.0523
Barium	g/m³	*0.0002*	0.0057	0.0138	0.0418	0.0174	0.134
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	0.000027
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.018	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000077	0.00015	0.000070	0.00010	<0.000010
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	0.00015
Copper	g/m³	*0.0002*	0.00055	0.00077	0.00063	0.0011	<0.00020
Germanium	g/m³	*0.00005*	<0.000050	0.00011	<0.000050	<0.000050	0.000064
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000036	<0.000010	0.000014	0.000014	<0.000010
Lithium	g/m³	*0.00001*	0.00098	0.00208	0.00677	0.00153	0.00816
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00036	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	0.00032	0.00023	0.00041	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00019	0.00025	0.00022	0.00021	0.00189
Sulfur*	g/m³	*10*	<10	<10	12	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00020	<0.00010	0.00020
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	0.00068	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.104	0.295	0.844	0.278	1.11
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.000052	0.00010	0.00437	0.00033	0.00486
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000055	0.000024	0.000043	0.000041	0.00018

Anion/Cation Suite

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-1	24-32269-2	24-32269-3	24-32269-4	24-32269-5
pH	pH	*1*	6.8	8.3	8.2	7.6	7.5
Electrical Conductivity	µS/cm	*0.2*	21.8	510	486	179	146
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	7.4	197	202	73.6	60.9
Chloride	g/m³	*0.5*	0.67	7.46	9.27	2.00	2.02
Sulfate	g/m³	*0.15*	0.26	28.8	9.10	2.22	1.33
Nitrate-N	g/m³	*0.002*	0.0031	0.242	0.0033	0.0066	0.0228
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.008	0.018	<0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	0.10	<0.005	<0.005
Sodium	g/m³	*0.01*	1.76	20.2	43.1	5.12	4.29
Potassium	g/m³	*0.05*	0.28	2.0	1.4	1.2	0.86
Calcium	g/m³	*0.05*	2.0	58.0	50.8	23.1	19.2
Magnesium	g/m³	*0.01*	0.46	15.8	15.8	3.99	3.15
Iron	g/m³	*0.005*	0.025	<0.0050	0.0061	0.042	0.015

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Anion/Cation Suite

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.00055	0.011	0.0066	0.0093	0.00081
Sum of Anions*	meq/L	*0.01*	0.17	4.88	4.58	1.58	1.31
Sum of Cations*	meq/L	*0.01*	0.22	5.13	5.75	1.74	1.43
EC/10*	(mS/m)/10	*0.002*	0.22	5.10	4.86	1.79	1.46

Anion/Cation Suite

	Client Sample ID		RS03	RSA1	SC01	RS04	MDD302
	Date Sampled		16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Analyte	Unit	*Reporting Limit*	24-32269-6	24-32269-7	24-32269-8	24-32269-9	24-32269-10
pH	pH	*1*	7.2	7.6	8.2	7.5	7.8
Electrical Conductivity	µS/cm	*0.2*	73.8	180	456	156	529
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	29.2	74.9	185	66.1	236
Chloride	g/m³	*0.5*	1.10	2.07	4.42	2.00	2.96
Sulfate	g/m³	*0.15*	0.89	1.89	30.1	0.90	9.49
Nitrate-N	g/m³	*0.002*	<0.0020	0.0037	0.148	0.0024	0.0046
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.005	<0.002	<0.002	<0.002	<0.002
Ammonia as N	g/m³	*0.005*	<0.005	<0.005	0.008	<0.005	0.05
Sodium	g/m³	*0.01*	2.90	5.07	10.1	4.39	7.92
Potassium	g/m³	*0.05*	0.60	1.1	1.8	0.89	1.4
Calcium	g/m³	*0.05*	9.08	23.8	56.6	22.0	65.2
Magnesium	g/m³	*0.01*	1.67	4.03	16.3	3.11	21.6
Iron	g/m³	*0.005*	0.042	0.27	0.0083	0.016	<0.0050
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.0067	0.0509	0.0051	0.0021	0.0041
Sum of Anions*	meq/L	*0.01*	0.63	1.61	4.53	1.40	5.03
Sum of Cations*	meq/L	*0.01*	0.73	1.78	4.65	1.57	5.41
EC/10*	(mS/m)/10	*0.002*	0.74	1.80	4.56	1.56	5.29

Method Summary

Total Phosphorus	Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)
Acidity to pH 8.3	Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).
Turbidity	Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).
NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)

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Method Summary

Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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CERTIFICATE OF ANALYSIS

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Sampling Site: Bendigo Ophir Project

Lab Reference: 24-33929
Submitted by:
Date Received: 4/11/2024
Testing Initiated: 4/11/2024
Date Completed: 7/11/2024
Order Number:
Reference: CW

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at ALS NZ (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Total Phosphorus in Water

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Total Phosphorus	g/m^3	*0.005*	0.24	<0.0050	0.0082	0.012	0.092

Total Phosphorus in Water

	Client Sample ID		RSA1	SC01	RS04	MDD302	Base
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Total Phosphorus	g/m^3	*0.005*	0.011	0.012	<0.0050	0.0099	<0.0050

Water Aggregate Properties

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	<1.00	3.33	3.33	3.33	2.67

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			RSA1	SC01	RS04	MDD302	Base
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	4.00	<1.00	3.33	6.67	6.67

Turbidity

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Turbidity	NTU	*0.05*	1.3	1.2	1.4	4.9	0.8

Turbidity

Client Sample ID			RSA1	SC01	RS04	MDD302	Base
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Turbidity	NTU	*0.05*	1.7	6.8	1.5	3.3	0.9

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

Client Sample ID			RSA1	SC01	RS04	MDD302	Base
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Nitrite-N	g/m^3	*0.001*	<0.0010	0.0041	<0.0010	<0.0010	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10	0.21	0.32	0.35	0.22
Total Nitrogen	g/m^3	*0.1*	0.22	0.21	0.32	0.36	0.22

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Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		RSA1	SC01	RS04	MDD302	Base
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.40	0.39	0.38	<0.10	<0.10
Total Nitrogen	g/m^3	*0.1*	0.40	0.48	0.38	<0.10	0.51

Fluoride in Water

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Fluoride	g/m^3	*0.04*	0.31	0.16	0.070	0.074	0.043

Fluoride in Water

	Client Sample ID		RSA1	SC01	RS04	MDD302	Base
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Fluoride	g/m^3	*0.04*	0.081	0.095	0.058	0.15	0.054

Bromide in Water (Subcontracted - Hill Laboratories)

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Bromide	g/m^3	*0.005*	0.080	0.10	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

	Client Sample ID		RSA1	SC01	RS04	MDD302	Base
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Water Hardness

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	200	190	85	69	31

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Water Hardness

Client Sample ID			RSA1	SC01	RS04	MDD302	Base
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	82	200	71	250	39

Cyanide in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			RSA1	SC01	RS04	MDD302	Base
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Solids in Water

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Total Suspended Solids	g/m^3	*3*	<3	5	<3	9	<3
Total Dissolved Solids	g/m^3	*3*	252	216	82	76	13

Solids in Water

Client Sample ID			RSA1	SC01	RS04	MDD302	Base
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
Total Suspended Solids	g/m^3	*3*	<3	17	<3	<3	<3
Total Dissolved Solids	g/m^3	*3*	96	206	47	260	71

Elements in Water (Total Recoverable)

Client Sample ID			LBA	MDD015	RS01	RS02	RS03
Date Sampled			31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Arsenic	g/m^3	*0.0005*	1.15	0.019	0.030	0.0083	0.0088
Aluminium	g/m^3	*0.003*	0.0032	0.014	0.021	0.088	0.035
Barium	g/m^3	*0.0001*	0.0056	0.230	0.0131	0.0133	0.0062
Beryllium	g/m^3	*0.00001*	<0.000010	0.000015	<0.000010	<0.000010	<0.000010
Bismuth	g/m^3	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m^3	*0.005*	<0.0050	0.016	<0.0050	<0.0050	<0.0050
Calcium	g/m^3	*0.05*	56.4	47.6	26.4	21.8	9.52
Cadmium	g/m^3	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020

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Elements in Water (Total Recoverable)

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Cobalt	g/m³	*0.00001*	0.000034	0.000013	0.00013	0.00017	0.000081
Chromium	g/m³	*0.0002*	0.00021	<0.00020	0.00024	0.00030	0.00034
Caesium	g/m³	*0.00001*	0.00014	0.00021	<0.000010	0.000015	<0.000010
Copper	g/m³	*0.0002*	0.00021	<0.00020	0.00072	0.00099	0.00051
Iron	g/m³	*0.005*	0.28	0.079	0.23	0.17	0.11
Germanium	g/m³	*0.00005*	<0.000050	0.00094	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	2.0	1.5	1.2	0.87	0.55
Lanthanum	g/m³	*0.00001*	0.000013	0.000038	0.000024	0.000073	0.000081
Lithium	g/m³	*0.00001*	0.0141	0.0551	0.00231	0.00206	0.00108
Magnesium	g/m³	*0.01*	15.5	16.5	4.63	3.49	1.76
Manganese	g/m³	*0.0005*	0.032	0.0067	0.039	0.0058	0.0099
Molybdenum	g/m³	*0.0002*	0.0010	0.00023	<0.00020	<0.00020	<0.00020
Sodium	g/m³	*0.01*	20.7	46.4	5.47	4.59	3.00
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	0.00042	0.00056	0.00033
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	0.00011	<0.000050
Rubidium	g/m³	*0.00005*	0.0015	0.0022	0.00035	0.00049	0.00026
Sulfur*	g/m³	*10*	11	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.531	10.7	0.398	0.311	0.120
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00227	0.00099	0.00014	0.00027	0.000057
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.000097	0.00029	<0.000050	0.000089	0.00010
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

	Client Sample ID		RSA1	SC01	RS04	MDD302	RSB
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-10
Arsenic	g/m³	*0.0005*	0.024	0.0028	0.0017	0.0633	0.164
Aluminium	g/m³	*0.003*	0.0063	0.20	0.020	0.0054	0.021
Barium	g/m³	*0.0001*	0.0138	0.0421	0.0165	0.132	0.0261
Beryllium	g/m³	*0.00001*	<0.000010	0.000013	<0.000010	0.000013	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	0.013	<0.0050	<0.0050	<0.0050
Calcium	g/m³	*0.05*	25.6	54.4	23.0	64.7	29.6
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00012	0.00030	0.00016	<0.000010	0.00131
Chromium	g/m³	*0.0002*	<0.00020	0.00030	0.00021	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.000034	<0.000010	0.00016	<0.000010
Copper	g/m³	*0.0002*	0.00074	0.0011	0.0011	<0.00020	0.00059
Iron	g/m³	*0.005*	0.17	0.32	0.10	0.32	2.10
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	1.2	1.8	0.75	1.4	1.4
Lanthanum	g/m³	*0.00001*	<0.000010	0.00018	0.000032	0.000012	0.000035
Lithium	g/m³	*0.00001*	0.00218	0.00720	0.00156	0.00873	0.00227
Magnesium	g/m³	*0.01*	4.41	15.7	3.20	21.8	5.15

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Elements in Water (Total Recoverable)

	Client Sample ID		RSA1	SC01	RS04	MDD302	RSB
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Manganese	g/m³	*0.0005*	0.024	0.020	0.0085	0.0043	0.670
Molybdenum	g/m³	*0.0002*	<0.00020	0.00039	<0.00020	0.00031	<0.00020
Sodium	g/m³	*0.01*	5.25	9.78	4.50	8.21	5.49
Nickel	g/m³	*0.0002*	0.00043	0.00051	0.00062	<0.00020	0.0011
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	0.00035	<0.000050	<0.000050	0.00026
Rubidium	g/m³	*0.00005*	0.00032	0.00079	0.00025	0.0021	0.00041
Sulfur*	g/m³	*10*	<10	12	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	0.00018	<0.00010	0.00017	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.363	0.877	0.326	1.18	0.417
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00013	0.00416	0.00034	0.00494	0.00012
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	0.00016	0.000059	0.00050	<0.000050
Zinc	g/m³	*0.003*	0.0035	<0.0030	<0.0030	<0.0030	0.0046

Elements in Water (Total Recoverable)

	Client Sample ID		Base
	Date Sampled		31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-11
Arsenic	g/m³	*0.0005*	<0.00050
Aluminium	g/m³	*0.003*	<0.0030
Barium	g/m³	*0.0001*	0.0080
Beryllium	g/m³	*0.00001*	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.005*	<0.0050
Calcium	g/m³	*0.05*	11.3
Cadmium	g/m³	*0.00002*	0.000048
Cobalt	g/m³	*0.00001*	0.000036
Chromium	g/m³	*0.0002*	0.00023
Caesium	g/m³	*0.00001*	<0.000010
Copper	g/m³	*0.0002*	0.151
Iron	g/m³	*0.005*	<0.0050
Germanium	g/m³	*0.00005*	<0.000050
Mercury	g/m³	*0.0001*	<0.00010
Potassium	g/m³	*0.05*	0.89
Lanthanum	g/m³	*0.00001*	0.000012
Lithium	g/m³	*0.00001*	0.00033
Magnesium	g/m³	*0.01*	2.64
Manganese	g/m³	*0.0005*	<0.00050
Molybdenum	g/m³	*0.0002*	<0.00020
Sodium	g/m³	*0.01*	5.34
Nickel	g/m³	*0.0002*	0.0017
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	0.00807
Rubidium	g/m³	*0.00005*	<0.000050
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	<0.00010
Selenium	g/m³	*0.001*	<0.0010
Tin	g/m³	*0.0005*	<0.00050

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Elements in Water (Total Recoverable)

	Client Sample ID		Base
	Date Sampled		31/10/2024
Strontium	g/m³	*0.0001*	0.112
Thallium	g/m³	*0.0001*	<0.00010
Uranium	g/m³	*0.00003*	<0.000030
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050
Zinc	g/m³	*0.003*	1.00

Elements in Water (Soluble)

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
Silica	g/m³	*0.1*	20.3	25.5	11.9	10.9	10.9
Aluminium	g/m³	*0.003*	<0.0030	0.0033	<0.0030	0.0069	0.020
Arsenic	g/m³	*0.0005*	0.995	0.017	0.022	0.0071	0.0078
Barium	g/m³	*0.0002*	0.0051	0.235	0.0129	0.0120	0.0057
Beryllium	g/m³	*0.00001*	<0.000010	0.000012	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.017	<0.010	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000045	<0.000010	0.000080	0.000080	0.000064
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	0.00013	0.00021	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	<0.00020	<0.00020	0.00058	0.00072	0.00049
Germanium	g/m³	*0.00005*	<0.000050	0.00097	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	0.000017	0.000047
Lithium	g/m³	*0.00001*	0.0152	0.0578	0.00255	0.00210	0.00116
Molybdenum	g/m³	*0.0002*	0.0011	0.00040	<0.00020	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	0.00048	0.00048	0.00026
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00137	0.00203	0.00029	0.00024	0.00021
Sulfur*	g/m³	*10*	12	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	0.00097	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.512	10.5	0.388	0.289	0.117
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00229	0.00098	0.00014	0.00027	0.000057
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000019	0.00020	0.000019	0.000041	0.000078

Elements in Water (Soluble)

	Client Sample ID		RSA1	SC01	RS04	MDD302	RSB
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-10
Silica	g/m³	*0.1*	12.1	9.69	8.91	29.3	13.3
Aluminium	g/m³	*0.003*	<0.0030	0.0099	0.0053	0.012	<0.0030
Arsenic	g/m³	*0.0005*	0.018	0.0022	0.0013	0.0555	0.034

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Elements in Water (Soluble)

	Client Sample ID		RSA1	SC01	RS04	MDD302	RSB
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Barium	g/m³	*0.0002*	0.0138	0.0386	0.0166	0.135	0.0198
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	0.000025	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.012	<0.010	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00011	0.00013	0.00011	<0.000010	0.00011
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	0.00016	<0.000010
Copper	g/m³	*0.0002*	0.00068	0.00073	0.00099	<0.00020	0.00045
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	0.000059	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010	0.000024	0.000015	0.000015	<0.000010
Lithium	g/m³	*0.00001*	0.00237	0.00721	0.00180	0.00948	0.00243
Molybdenum	g/m³	*0.0002*	<0.00020	0.00064	<0.00020	0.00030	<0.00020
Nickel	g/m³	*0.0002*	0.00042	0.00036	0.00055	<0.00020	0.00068
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00030	0.00022	0.00020	0.00199	0.00030
Sulfur*	g/m³	*10*	<10	<10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	0.00019	<0.00010	0.00021	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.352	0.837	0.306	1.20	0.389
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00013	0.00400	0.00035	0.00486	0.00014
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000018	0.000041	0.000046	0.00019	0.000022

Elements in Water (Soluble)

	Client Sample ID		Base
	Date Sampled		31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-11
Silica	g/m³	*0.1*	15.6
Aluminium	g/m³	*0.003*	<0.0030
Arsenic	g/m³	*0.0005*	0.00083
Barium	g/m³	*0.0002*	0.0082
Beryllium	g/m³	*0.00001*	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.01*	<0.010
Cadmium	g/m³	*0.00002*	0.00010
Cobalt	g/m³	*0.00001*	0.000030
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	<0.000010
Copper	g/m³	*0.0002*	0.154
Germanium	g/m³	*0.00005*	<0.000050
Mercury	g/m³	*0.00008*	<0.000080
Lanthanum	g/m³	*0.00001*	0.000014
Lithium	g/m³	*0.00001*	0.00040
Molybdenum	g/m³	*0.0002*	<0.00020
Nickel	g/m³	*0.0002*	0.0013
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	0.0180

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Elements in Water (Soluble)

	Client Sample ID		Base
	Date Sampled		31/10/2024
Rubidium	g/m³	*0.00002*	0.000053
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	<0.00010
Selenium	g/m³	*0.0005*	<0.00050
Tin	g/m³	*0.0002*	<0.00020
Strontium	g/m³	*0.0001*	0.109
Thallium	g/m³	*0.00001*	<0.000010
Uranium	g/m³	*0.00003*	<0.000030
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00001*	0.000011

Anion/Cation Suite

	Client Sample ID		LBA	MDD015	RS01	RS02	RS03
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-1	24-33929-2	24-33929-3	24-33929-4	24-33929-5
pH	pH	*1*	8.1	8.0	7.5	7.4	7.0
Electrical Conductivity	µS/cm	*0.2*	464	439	175	146	80.7
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	194	202	83.6	67.2	32.1
Chloride	g/m³	*0.5*	7.70	9.59	1.60	1.50	0.90
Sulfate	g/m³	*0.15*	27.8	9.29	1.34	1.03	0.53
Nitrate-N	g/m³	*0.002*	0.225	<0.0020	<0.0020	0.0045	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	0.017	<0.002	<0.002	<0.002	0.005
Ammonia as N	g/m³	*0.005*	0.005	0.1	<0.005	<0.005	<0.005
Sodium	g/m³	*0.01*	19.7	43.6	5.23	4.31	2.81
Potassium	g/m³	*0.05*	1.9	1.4	1.1	0.77	0.52
Calcium	g/m³	*0.05*	55.2	43.6	25.7	21.0	9.05
Magnesium	g/m³	*0.01*	15.2	15.6	4.47	3.34	1.66
Iron	g/m³	*0.005*	<0.0050	0.013	0.040	0.016	0.050
Zinc	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	g/m³	*0.0005*	0.0048	0.0059	0.013	<0.00050	0.0051
Sum of Anions*	meq/L	*0.01*	4.77	4.57	1.75	1.41	0.68
Sum of Cations*	meq/L	*0.01*	4.91	5.40	1.91	1.53	0.73
EC/10*	(mS/m)/10	*0.002*	4.64	4.39	1.75	1.46	0.81

Anion/Cation Suite

	Client Sample ID		RSA1	SC01	RS04	MDD302	Base
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Analyte	Unit	*Reporting Limit*	24-33929-6	24-33929-7	24-33929-8	24-33929-9	24-33929-11
pH	pH	*1*	7.2	8.0	7.4	7.7	6.8
Electrical Conductivity	µS/cm	*0.2*	196	388	147	481	106
Total Alkalinity (CaCO3)	g $CaCO_3$/m³	*1*	91.5	168	69.4	234	36.0
Chloride	g/m³	*0.5*	1.73	3.76	1.20	3.18	2.45
Sulfate	g/m³	*0.15*	1.42	24.5	0.54	10.1	4.10
Nitrate-N	g/m³	*0.002*	0.0023	0.0887	<0.0020	0.0023	0.508
Dissolved Reactive Phosphorus (FIA)	g/m³	*0.002*	<0.002	0.004	<0.002	<0.002	0.005
Ammonia as N	g/m³	*0.005*	0.02	0.01	<0.005	0.05	<0.005
Sodium	g/m³	*0.01*	5.13	9.04	4.29	7.93	5.07

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Anion/Cation Suite

	Client Sample ID		RSA1	SC01	RS04	MDD302	Base
	Date Sampled		31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Potassium	g/m³	*0.05*	1.2	1.6	0.69	1.4	0.88
Calcium	g/m³	*0.05*	25.3	50.7	22.4	63.5	11.0
Magnesium	g/m³	*0.01*	4.36	14.4	3.06	21.6	2.57
Iron	g/m³	*0.005*	0.055	0.019	0.023	<0.0050	<0.0050
Zinc	g/m³	*0.001*	0.0025	<0.0010	<0.0010	<0.0010	0.468
Manganese	g/m³	*0.0005*	0.017	0.0014	0.0026	0.0040	<0.00050
Sum of Anions*	meq/L	*0.01*	1.91	4.04	1.44	5.00	0.91
Sum of Cations*	meq/L	*0.01*	1.88	4.15	1.58	5.33	1.02
EC/10*	(mS/m)/10	*0.002*	1.96	3.88	1.47	4.81	1.06

Method Summary

Total Phosphorus Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)

Acidity to pH 8.3 Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).

Turbidity Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).

NO2-N Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).

TKN Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).

TN Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).

Fluoride in Water Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.

Bromide in Water Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).

Total Hardness Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)

Total Cyanide (Trace) On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).

Total Suspended Solids Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).

Total Dissolved Solids Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).

Recoverable Trace Elements Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.

Soluble Trace Elements Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.

pH Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).

Electrical Conductivity Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).

Total Alkalinity ($CaCO_3$) Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).

Chloride Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).

Sulfate Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).

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Method Summary

NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3^-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammonia-N	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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CERTIFICATE OF ANALYSIS

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Attention: Alex Nichol
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Sampling Site: Bendigo Ophir Project

Lab Reference: 24-35305
Submitted by:
Date Received: 15/11/2024
Testing Initiated: 15/11/2024
Date Completed: 26/11/2024
Order Number:
Reference: MGL_2024_WD02

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at ALS NZ (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Total Phosphorus in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Total Phosphorus	g/m^3	*0.005*	0.016	0.30	0.0077	0.0095	0.015

Total Phosphorus in Water

	Client Sample ID		RS03	RSA1	SC01	SC03	JC01
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Total Phosphorus	g/m^3	*0.005*	0.013	0.011	0.022	0.038	0.052

Total Phosphorus in Water

	Client Sample ID		RS04	MDD302
	Date Sampled		14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Total Phosphorus	g/m^3	*0.005*	0.0099	0.010

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	<1.00	<1.00	3.33	3.33

Water Aggregate Properties

Client Sample ID			RS03	RSA1	SC01	SC03	JC01
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	2.67	<1.00	<1.00	<1.00

Water Aggregate Properties

Client Sample ID			RS04	MDD302
Date Sampled			14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	4.67

Turbidity

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Turbidity	NTU	*0.05*	0.7	1.4	0.9	1.4	4.8

Turbidity

Client Sample ID			RS03	RSA1	SC01	SC03	JC01
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Turbidity	NTU	*0.05*	0.4	1.8	3.6	11	7.8

Turbidity

Client Sample ID			RS04	MDD302
Date Sampled			14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Turbidity	NTU	*0.05*	1.6	2.9

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Inorganic Nutrients and Nutrient Species in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

	Client Sample ID		RS03	RSA1	SC01	SC03	JC01
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	0.0028	0.0040	0.0011

Inorganic Nutrients and Nutrient Species in Water

	Client Sample ID		RS04	MDD302
	Date Sampled		14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.16	<0.10	0.12	0.28	0.23
Total Nitrogen	g/m^3	*0.1*	0.16	0.23	0.12	0.28	0.23

Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		RS03	RSA1	SC01	SC03	JC01
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.14	0.24	0.27	0.72	0.37
Total Nitrogen	g/m^3	*0.1*	0.16	0.24	0.30	0.82	0.38

Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		RS04	MDD302
	Date Sampled		14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.29	<0.10
Total Nitrogen	g/m^3	*0.1*	0.29	<0.10

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Fluoride in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Fluoride	g/m^3	*0.04*	<0.040	0.22	0.12	0.065	0.051

Fluoride in Water

Client Sample ID			RS03	RSA1	SC01	SC03	JC01
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Fluoride	g/m^3	*0.04*	<0.040	0.062	0.073	0.077	0.055

Fluoride in Water

Client Sample ID			RS04	MDD302
Date Sampled			14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Fluoride	g/m^3	*0.04*	0.046	0.12

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Bromide	g/m^3	*0.005*	<0.05	0.090	0.11	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			RS03	RSA1	SC01	SC03	JC01
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	0.070

Bromide in Water (Subcontracted - Hill Laboratories)

Client Sample ID			RS04	MDD302
Date Sampled			14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Bromide	g/m^3	*0.005*	<0.05	<0.05

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Water Hardness

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	10	210	180	98	73

Water Hardness

Client Sample ID			RS03	RSA1	SC01	SC03	JC01
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	45	100	230	150	260

Water Hardness

Client Sample ID			RS04	MDD302
Date Sampled			14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	85	240

Cyanide in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			RS03	RSA1	SC01	SC03	JC01
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			RS04	MDD302
Date Sampled			14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001

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Solids in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Total Suspended Solids	g/m³	*3*	<3	<3	<3	<3	12
Total Dissolved Solids	g/m³	*3*	15	254	234	90	77

Solids in Water

Client Sample ID			RS03	RSA1	SC01	SC03	JC01
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Total Suspended Solids	g/m³	*3*	<3	<3	9	42	9
Total Dissolved Solids	g/m³	*3*	42	111	236	152	278

Solids in Water

Client Sample ID			RS04	MDD302
Date Sampled			14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Total Suspended Solids	g/m³	*3*	<3	<3
Total Dissolved Solids	g/m³	*3*	92	260

Elements in Water (Soluble)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Silica	g/m³	*0.1*	8.86	16.3	20.4	9.52	10.0
Aluminium	g/m³	*0.003*	0.023	<0.0030	0.0060	0.0038	0.0070
Arsenic	g/m³	*0.0005*	0.0011	1.05	0.018	0.022	0.0070
Barium	g/m³	*0.0002*	0.0043	0.0051	0.228	0.0142	0.0116
Beryllium	g/m³	*0.00001*	0.000014	0.000047	0.000046	<0.000010	0.000023
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	0.000025	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000028	0.000043	0.000014	0.000094	0.000073
Chromium	g/m³	*0.0002*	0.00023	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00012	0.00021	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00036	<0.00020	<0.00020	0.00035	0.00042
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00068	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000068	<0.000010	<0.000010	<0.000010	0.000013
Lithium	g/m³	*0.00001*	0.00080	0.0135	0.0530	0.00244	0.00250
Molybdenum	g/m³	*0.0002*	<0.00020	0.0012	0.00035	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	0.00020	<0.00020	<0.00020	0.00037	0.00032
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00020	0.00132	0.00198	0.00027	0.00018
Sulfur*	g/m³	*10*	<10	10	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	0.0014	<0.00050	<0.00050	<0.00050

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Elements in Water (Soluble)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0331	0.503	10.3	0.447	0.319
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.00221	0.0010	0.00015	0.00031
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000075	0.000023	0.00022	0.000015	0.000025

Elements in Water (Soluble)

	Client Sample ID		RS03	RSA1	SC01	SC03	JC01
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Silica	g/m³	*0.1*	9.36	10.0	6.41	6.74	7.78
Aluminium	g/m³	*0.003*	0.0092	<0.0030	0.0068	0.012	0.010
Arsenic	g/m³	*0.0005*	0.011	0.016	0.0026	0.00063	0.00074
Barium	g/m³	*0.0002*	0.0076	0.0163	0.0403	0.0380	0.0339
Beryllium	g/m³	*0.00001*	<0.000010	0.000023	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	<0.010	<0.010	0.017
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000046	0.00011	0.00010	0.000064	0.000092
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00022	0.00031	0.00056	0.00040	0.0012
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000017	<0.000010	0.000016	0.000015	0.000013
Lithium	g/m³	*0.00001*	0.00140	0.00245	0.00820	0.00461	0.0115
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00044	0.00035	0.0013
Nickel	g/m³	*0.0002*	0.00022	0.00045	0.00027	<0.00020	0.00029
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00022	0.00023	0.00021	0.00030	0.00019
Sulfur*	g/m³	*10*	<10	<10	12	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00017	0.00012	0.00050
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.164	0.413	0.964	0.710	0.979
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.000087	0.00014	0.00473	0.00260	0.00691
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000027	0.000015	0.000043	0.000030	0.000037

Elements in Water (Soluble)

	Client Sample ID		RS04	MDD302
	Date Sampled		14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Silica	g/m³	*0.1*	8.70	24.1
Aluminium	g/m³	*0.003*	0.0044	0.0037
Arsenic	g/m³	*0.0005*	0.0011	0.0584

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Elements in Water (Soluble)

	Client Sample ID		RS04	MDD302
	Date Sampled		14/11/2024	14/11/2024
Barium	g/m³	*0.0002*	0.0185	0.132
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000099	<0.000010
Chromium	g/m³	*0.0002*	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00015
Copper	g/m³	*0.0002*	0.00059	<0.00020
Germanium	g/m³	*0.00005*	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000010	<0.000010
Lithium	g/m³	*0.00001*	0.00231	0.00884
Molybdenum	g/m³	*0.0002*	<0.00020	0.00032
Nickel	g/m³	*0.0002*	0.00042	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00013	0.00201
Sulfur*	g/m³	*10*	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	0.00019
Selenium	g/m³	*0.0005*	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.395	1.18
Thallium	g/m³	*0.00001*	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.00043	0.00495
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000034	0.00021

Elements in Water (Total Recoverable)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
Arsenic	g/m³	*0.0005*	0.0012	1.14	0.018	0.027	0.0096
Aluminium	g/m³	*0.003*	0.036	<0.0030	0.0086	0.011	0.15
Barium	g/m³	*0.0001*	0.0044	0.0055	0.234	0.0148	0.0148
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.011	<0.0050	<0.0050
Calcium	g/m³	*0.05*	3.0	56.5	47.0	30.4	22.8
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000065	0.000031	<0.000010	0.00011	0.00020
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00013	0.00021	<0.000010	0.000024
Copper	g/m³	*0.0002*	0.00026	<0.00020	<0.00020	0.00040	0.00052
Iron	g/m³	*0.005*	0.059	0.20	0.070	0.16	0.33
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00062	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	0.00012	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.27	2.0	1.5	1.0	0.61
Lanthanum	g/m³	*0.00001*	0.00011	<0.000010	0.000022	0.000010	0.00012
Lithium	g/m³	*0.00001*	0.00072	0.0130	0.0525	0.00239	0.00264
Magnesium	g/m³	*0.01*	0.68	15.9	16.3	5.29	3.91
Manganese	g/m³	*0.0005*	0.0030	0.024	0.0068	0.0525	0.015

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Elements in Water (Total Recoverable)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Molybdenum	g/m³	*0.0002*	<0.00020	0.0012	0.00029	<0.00020	<0.00020
Sodium	g/m³	*0.01*	2.14	20.5	46.1	5.80	4.55
Nickel	g/m³	*0.0002*	0.00021	<0.00020	<0.00020	0.00037	0.00045
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	0.00021
Rubidium	g/m³	*0.00005*	0.00026	0.0014	0.0020	0.00028	0.00067
Sulfur*	g/m³	*10*	<10	11	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	0.0012	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.0343	0.508	10.3	0.442	0.312
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	0.00222	0.0010	0.00013	0.00032
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.00010	0.000067	0.00026	<0.000050	0.00011
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

	Client Sample ID		RS03	RSA1	SC01	SC03	JC01
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
Arsenic	g/m³	*0.0005*	0.011	0.023	0.0028	0.0010	0.00068
Aluminium	g/m³	*0.003*	0.013	0.0079	0.087	0.387	0.031
Barium	g/m³	*0.0001*	0.0082	0.0170	0.0444	0.0476	0.0350
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	0.000014	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050	0.011	<0.0050	0.024
Calcium	g/m³	*0.05*	13.8	32.3	60.1	43.4	72.7
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000089	0.00014	0.00020	0.00041	0.00013
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00065	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	0.000011	0.000070	<0.000010
Copper	g/m³	*0.0002*	0.0013	0.00060	0.00083	0.0012	0.0011
Iron	g/m³	*0.005*	0.079	0.25	0.16	0.893	0.041
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.57	1.1	1.5	1.9	1.8
Lanthanum	g/m³	*0.00001*	0.000032	0.000014	0.00010	0.00037	0.000036
Lithium	g/m³	*0.00001*	0.00131	0.00231	0.00779	0.00498	0.0110
Magnesium	g/m³	*0.01*	2.51	5.36	18.6	9.93	19.4
Manganese	g/m³	*0.0005*	0.014	0.0737	0.016	0.046	0.0021
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00050	0.00038	0.0012
Sodium	g/m³	*0.01*	3.65	6.05	11.5	6.42	20.3
Nickel	g/m³	*0.0002*	0.00029	0.00047	0.00042	0.00061	0.00028
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	0.051	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	0.00019	0.00071	<0.000050
Rubidium	g/m³	*0.00005*	0.00025	0.00027	0.00044	0.0012	0.00025
Sulfur*	g/m³	*10*	<10	<10	12	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00016	0.00011	0.00048
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.166	0.408	0.946	0.703	0.956

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Elements in Water (Total Recoverable)

	Client Sample ID		RS03	RSA1	SC01	SC03	JC01
	Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.000089	0.00013	0.00472	0.00263	0.00701
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	<0.000050	0.000096	0.00030	0.000055
Zinc	g/m³	*0.003*	0.0040	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

	Client Sample ID		RS04	MDD302
	Date Sampled		14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
Arsenic	g/m³	*0.0005*	0.0012	0.0662
Aluminium	g/m³	*0.003*	0.0059	0.0032
Barium	g/m³	*0.0001*	0.0189	0.132
Beryllium	g/m³	*0.00001*	<0.000010	0.000031
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	<0.0050
Calcium	g/m³	*0.05*	27.5	61.5
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.00015	<0.000010
Chromium	g/m³	*0.0002*	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00015
Copper	g/m³	*0.0002*	0.00051	<0.00020
Iron	g/m³	*0.005*	0.091	0.31
Germanium	g/m³	*0.00005*	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.40	1.4
Lanthanum	g/m³	*0.00001*	0.000011	0.000013
Lithium	g/m³	*0.00001*	0.00211	0.00792
Magnesium	g/m³	*0.01*	4.03	21.2
Manganese	g/m³	*0.0005*	0.019	0.0041
Molybdenum	g/m³	*0.0002*	<0.00020	0.00039
Sodium	g/m³	*0.01*	4.94	7.74
Nickel	g/m³	*0.0002*	0.00050	<0.00020
Phosphorus	g/m³	*0.04*	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050
Rubidium	g/m³	*0.00005*	0.00013	0.0019
Sulfur*	g/m³	*10*	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	0.00018
Selenium	g/m³	*0.001*	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.375	1.12
Thallium	g/m³	*0.0001*	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.00034	0.00504
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	0.00047
Zinc	g/m³	*0.003*	<0.0030	<0.0030

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Anion/Cation Suite

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-1	24-35305-2	24-35305-3	24-35305-4	24-35305-5
pH	pH	*1*	6.8	8.1	8.0	7.6	7.4
Electrical Conductivity	µS/cm	*0.2*	28.6	442	428	197	151
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	10.8	196	205	101	74.0
Chloride	g/m^3	*0.5*	<0.50	7.50	9.34	1.10	1.19
Sulfate	g/m^3	*0.15*	0.34	29.1	9.52	0.58	0.94
Nitrate-N	g/m^3	*0.002*	0.0030	0.229	<0.0020	<0.0020	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	0.008	0.017	<0.002	<0.002	0.002
Ammoniacal-N	g/m^3	*0.005*	<0.005	<0.005	0.10	<0.005	<0.005
Sodium	g/m^3	*0.01*	2.07	20.0	43.1	5.39	4.34
Potassium	g/m^3	*0.05*	0.26	1.9	1.4	0.99	0.51
Calcium	g/m^3	*0.05*	2.9	55.6	45.3	29.0	22.1
Magnesium	g/m^3	*0.01*	0.64	15.4	15.4	4.95	3.68
Iron	g/m^3	*0.005*	0.030	<0.0050	0.015	0.030	0.0097
Zinc	g/m^3	*0.001*	0.0031	<0.0010	0.0032	<0.0010	<0.0010
Manganese	g/m^3	*0.0005*	0.00079	0.014	0.0064	0.038	0.0016
Sum of Anions*	meq/L	*0.01*	0.22	4.81	4.62	2.07	1.54
Sum of Cations*	meq/L	*0.01*	0.30	4.96	5.44	2.12	1.61
EC/10*	(mS/m)/10	*0.002*	0.29	4.42	4.28	1.97	1.51

Anion/Cation Suite

Client Sample ID			RS03	RSA1	SC01	SC03	JC01
Date Sampled			14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-6	24-35305-7	24-35305-8	24-35305-9	24-35305-10
pH	pH	*1*	7.3	7.5	8.0	7.9	8.2
Electrical Conductivity	µS/cm	*0.2*	93.0	223	471	310	560
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	43.8	102	193	132	261
Chloride	g/m^3	*0.5*	0.77	1.17	3.92	2.03	4.05
Sulfate	g/m^3	*0.15*	0.52	0.54	30.1	9.53	12.8
Nitrate-N	g/m^3	*0.002*	0.0197	0.0055	0.0272	0.0946	0.0110
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	0.004	<0.002	0.004	0.002	0.008
Ammoniacal-N	g/m^3	*0.005*	<0.005	<0.005	0.01	0.03	<0.005
Sodium	g/m^3	*0.01*	3.36	5.41	10.8	5.98	19.5
Potassium	g/m^3	*0.05*	0.52	1.0	1.4	1.6	1.8
Calcium	g/m^3	*0.05*	12.6	29.6	57.5	40.9	70.9
Magnesium	g/m^3	*0.01*	2.30	5.04	17.6	9.13	18.6
Iron	g/m^3	*0.005*	0.031	0.088	0.014	0.037	<0.0050
Zinc	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	0.0018
Manganese	g/m^3	*0.0005*	0.010	0.0696	0.0050	0.0076	0.0010
Sum of Anions*	meq/L	*0.01*	0.91	2.09	4.66	2.94	5.73
Sum of Cations*	meq/L	*0.01*	0.98	2.16	4.82	3.10	5.96
EC/10*	(mS/m)/10	*0.002*	0.93	2.23	4.71	3.10	5.60

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Anion/Cation Suite

	Client Sample ID		RS04	MDD302
	Date Sampled		14/11/2024	14/11/2024
Analyte	Unit	*Reporting Limit*	24-35305-11	24-35305-12
pH	pH	*1*	7.5	7.7
Electrical Conductivity	µS/cm	*0.2*	190	506
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	86.8	232
Chloride	g/m^3	*0.5*	0.87	2.93
Sulfate	g/m^3	*0.15*	0.54	10.3
Nitrate-N	g/m^3	*0.002*	<0.0020	0.0039
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	<0.002	<0.002
Ammoniacal-N	g/m^3	*0.005*	<0.005	0.05
Sodium	g/m^3	*0.01*	4.94	7.85
Potassium	g/m^3	*0.05*	0.40	1.4
Calcium	g/m^3	*0.05*	27.7	63.6
Magnesium	g/m^3	*0.01*	3.93	21.4
Iron	g/m^3	*0.005*	0.043	<0.0050
Zinc	g/m^3	*0.001*	0.0016	<0.0010
Manganese	g/m^3	*0.0005*	0.018	0.0044
Sum of Anions*	meq/L	*0.01*	1.78	4.98
Sum of Cations*	meq/L	*0.01*	1.93	5.32
EC/10*	(mS/m)/10	*0.002*	1.90	5.06

Method Summary

Total Phosphorus	Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)
Acidity to pH 8.3	Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).
Turbidity	Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).
NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Fluoride in Water	Determined by Ion-Selective Electrode. APHA 4500-F-C - Modified - online edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.

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Method Summary

Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammoniacal-N	Samples are filtered and measured colourimetrically by flow injection analysis. Results represent total ammonical nitrogen (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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CERTIFICATE OF ANALYSIS

Matakanui Gold/Cuffs Limited
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Attention: Alex Nichol
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Sampling Site: Bendigo Ophir Project

Lab Reference: 24-36747
Submitted by:
Date Received: 29/11/2024
Testing Initiated: 29/11/2024
Date Completed: 9/12/2024
Order Number:
Reference: MGL_2024_WD03

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at ALS NZ (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

Total Phosphorus in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Total Phosphorus	g/m^3	*0.005*	0.015	0.16	0.0076	0.0086	0.017

Total Phosphorus in Water

	Client Sample ID		RS03	RSA1	SC01	SC03	RS04
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Total Phosphorus	g/m^3	*0.005*	0.0079	0.011	0.026	0.10	0.031

Total Phosphorus in Water

	Client Sample ID		MDD302
	Date Sampled		28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Total Phosphorus	g/m^3	*0.005*	0.0077

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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Water Aggregate Properties

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	3.33	<1.00	<1.00	1.67	1.67

Water Aggregate Properties

Client Sample ID			RS03	RSA1	SC01	SC03	RS04
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	1.67	1.67	1.67	1.67	6.67

Water Aggregate Properties

Client Sample ID			MDD302
Date Sampled			28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Total Acidity to pH 8.3 (CaCO3)	g/m^3	*1.0*	16.67

Turbidity

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Turbidity	NTU	*0.05*	0.4	1.2	4.6	1.3	4.3

Turbidity

Client Sample ID			RS03	RSA1	SC01	SC03	RS04
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Turbidity	NTU	*0.05*	0.4	2.7	4.4	32	11

Turbidity

Client Sample ID			MDD302
Date Sampled			28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Turbidity	NTU	*0.05*	3.3

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Inorganic Nutrients and Nutrient Species in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Inorganic Nutrients and Nutrient Species in Water

	Client Sample ID		RS03	RSA1	SC01	SC03	RS04
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Nitrite-N	g/m^3	*0.001*	<0.0010	<0.0010	0.00525	0.0014	<0.0010

Inorganic Nutrients and Nutrient Species in Water

	Client Sample ID		MDD302
	Date Sampled		28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Nitrite-N	g/m^3	*0.001*	<0.0010

Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.10	<0.10	0.13	0.25	0.27
Total Nitrogen	g/m^3	*0.1*	0.11	0.23	0.13	0.25	0.27

Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		RS03	RSA1	SC01	SC03	RS04
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Total Kjeldahl Nitrogen	g/m^3	*0.1*	0.18	0.24	0.28	0.65	0.46
Total Nitrogen	g/m^3	*0.1*	0.18	0.25	0.36	0.75	0.46

Total Nitrogen / Kjeldahl Nitrogen in Water

	Client Sample ID		MDD302
	Date Sampled		28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Total Kjeldahl Nitrogen	g/m^3	*0.1*	<0.10
Total Nitrogen	g/m^3	*0.1*	<0.10

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Fluoride in Water (Hill Labs)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Fluoride in Water (Hill Labs)	g/m^3	*0.05*	<0.05	0.33	0.18	0.11	0.09

Fluoride in Water (Hill Labs)

	Client Sample ID		RS03	RSA1	SC01	SC03	RS04
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Fluoride in Water (Hill Labs)	g/m^3	*0.05*	0.07	0.11	0.12	0.13	0.09

Fluoride in Water (Hill Labs)

	Client Sample ID		MDD302
	Date Sampled		28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Fluoride in Water (Hill Labs)	g/m^3	*0.05*	0.18

Bromide in Water (Subcontracted - Hill Laboratories)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Bromide	g/m^3	*0.005*	<0.05	0.080	0.10	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

	Client Sample ID		RS03	RSA1	SC01	SC03	RS04
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Bromide	g/m^3	*0.005*	<0.05	<0.05	<0.05	<0.05	<0.05

Bromide in Water (Subcontracted - Hill Laboratories)

	Client Sample ID		MDD302
	Date Sampled		28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Bromide	g/m^3	*0.005*	<0.05

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Water Hardness

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	11	210	200	100	75

Water Hardness

Client Sample ID			RS03	RSA1	SC01	SC03	RS04
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	46	100	240	160	98

Water Hardness

Client Sample ID			MDD302
Date Sampled			28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Total Hardness	g eqv. $CaCO_3/m^3$	*0.05*	250

Cyanide in Water

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	0.002	<0.001

Cyanide in Water

Client Sample ID			RS03	RSA1	SC01	SC03	RS04
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Total Cyanide	g/m^3	*0.001*	<0.001	<0.001	<0.001	<0.001	<0.001

Cyanide in Water

Client Sample ID			MDD302
Date Sampled			28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Total Cyanide	g/m^3	*0.001*	<0.001

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Solids in Water

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Total Suspended Solids	g/m³	*3*	<3	<3	9	4	12
Total Dissolved Solids	g/m³	*3*	23	263	241	111	93

Solids in Water

	Client Sample ID		RS03	RSA1	SC01	SC03	RS04
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Total Suspended Solids	g/m³	*3*	<3	4	8	54	23
Total Dissolved Solids	g/m³	*3*	61	119	265	168	113

Solids in Water

	Client Sample ID		MDD302
	Date Sampled		28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Total Suspended Solids	g/m³	*3*	<3
Total Dissolved Solids	g/m³	*3*	264

Elements in Water (Total Recoverable)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Arsenic	g/m³	*0.0005*	0.0012	1.13	0.019	0.033	0.0099
Aluminium	g/m³	*0.003*	0.025	<0.0030	0.059	0.016	0.14
Barium	g/m³	*0.0001*	0.0047	0.0056	0.235	0.0146	0.0155
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	0.000022	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	0.019	0.037	0.0057	<0.0050
Calcium	g/m³	*0.05*	3.3	56.1	51.6	31.7	23.5
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000053	0.000044	0.000036	0.00011	0.00021
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00021	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00013	0.00024	<0.000010	0.000026
Copper	g/m³	*0.0002*	0.00023	<0.00020	<0.00020	0.00046	0.00063
Iron	g/m³	*0.005*	0.040	0.21	0.18	0.28	0.34
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00089	<0.000050	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.26	2.0	1.5	0.76	0.72
Lanthanum	g/m³	*0.00001*	0.000078	<0.000010	0.00016	0.000017	0.00013
Lithium	g/m³	*0.00001*	0.00087	0.0137	0.0533	0.00254	0.00295
Magnesium	g/m³	*0.01*	0.72	15.8	16.1	5.39	4.02
Manganese	g/m³	*0.0005*	0.0021	0.028	0.0081	0.0662	0.015
Molybdenum	g/m³	*0.0002*	<0.00020	0.0012	0.00021	<0.00020	<0.00020
Sodium	g/m³	*0.01*	2.14	20.7	43.5	5.62	4.56
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00039	0.00047
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	<0.040	<0.040

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Elements in Water (Total Recoverable)

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Lead	g/m³	*0.00005*	<0.000050	<0.000050	0.000098	<0.000050	0.00024
Rubidium	g/m³	*0.00005*	0.00028	0.0014	0.0021	0.00024	0.00068
Sulfur*	g/m³	*10*	<10	11	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.0374	0.487	10.0	0.438	0.311
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	<0.000030	0.00212	0.00097	0.00012	0.00032
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00005*	0.000078	0.000074	0.00034	<0.000050	0.00011
Zinc	g/m³	*0.003*	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Elements in Water (Total Recoverable)

Client Sample ID			RS03	RSA1	SC01	SC03	RS04
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Arsenic	g/m³	*0.0005*	0.012	0.0629	0.0035	0.0017	0.0034
Aluminium	g/m³	*0.003*	0.012	0.013	0.12	1.12	0.092
Barium	g/m³	*0.0001*	0.0086	0.0199	0.0476	0.0630	0.0270
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	0.000066	0.000015
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.005*	<0.0050	0.0065	0.044	0.034	<0.0050
Calcium	g/m³	*0.05*	14.1	32.4	63.2	45.4	31.7
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	0.000026	<0.000020
Cobalt	g/m³	*0.00001*	0.000067	0.00026	0.00024	0.00103	0.00042
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.0015	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	0.000018	0.00024	0.000013
Copper	g/m³	*0.0002*	0.00050	0.00036	0.00086	0.0024	0.00076
Iron	g/m³	*0.005*	0.079	1.17	0.23	2.14	0.744
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	0.00011	<0.000050
Mercury	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	g/m³	*0.05*	0.55	0.74	1.7	1.6	1.0
Lanthanum	g/m³	*0.00001*	0.000032	0.000016	0.00015	0.00086	0.00015
Lithium	g/m³	*0.00001*	0.00153	0.00240	0.00919	0.00671	0.00265
Magnesium	g/m³	*0.01*	2.54	5.42	20.2	10.5	4.65
Manganese	g/m³	*0.0005*	0.013	0.165	0.020	0.107	0.0828
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00054	0.00028	<0.00020
Sodium	g/m³	*0.01*	3.65	5.46	12.0	6.59	5.33
Nickel	g/m³	*0.0002*	0.00028	0.00035	0.00049	0.0014	0.00067
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	0.094	<0.040
Lead	g/m³	*0.00005*	0.000097	<0.000050	0.00027	0.0016	0.00019
Rubidium	g/m³	*0.00005*	0.00028	0.00023	0.00056	0.0034	0.00052
Sulfur*	g/m³	*10*	<10	<10	13	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00018	0.00013	<0.00010
Selenium	g/m³	*0.001*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tin	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium	g/m³	*0.0001*	0.177	0.406	1.01	0.732	0.418
Thallium	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	g/m³	*0.00003*	0.000087	0.00011	0.00501	0.00248	0.00051
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	0.0013	<0.00050
Yttrium	g/m³	*0.00005*	<0.000050	<0.000050	0.00012	0.00067	0.00015

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Elements in Water (Total Recoverable)

	Client Sample ID		RS03	RSA1	SC01	SC03	RS04
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Zinc	g/m³	*0.003*	0.0051	<0.0030	<0.0030	0.0051	<0.0030

Elements in Water (Total Recoverable)

	Client Sample ID		MDD302
	Date Sampled		28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Arsenic	g/m³	*0.0005*	0.0668
Aluminium	g/m³	*0.003*	0.0040
Barium	g/m³	*0.0001*	0.131
Beryllium	g/m³	*0.00001*	0.000038
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.005*	0.0084
Calcium	g/m³	*0.05*	64.5
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00015
Copper	g/m³	*0.0002*	<0.00020
Iron	g/m³	*0.005*	0.32
Germanium	g/m³	*0.00005*	<0.000050
Mercury	g/m³	*0.0001*	<0.00010
Potassium	g/m³	*0.05*	1.4
Lanthanum	g/m³	*0.00001*	0.000012
Lithium	g/m³	*0.00001*	0.00832
Magnesium	g/m³	*0.01*	21.8
Manganese	g/m³	*0.0005*	0.0045
Molybdenum	g/m³	*0.0002*	0.00035
Sodium	g/m³	*0.01*	7.89
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050
Rubidium	g/m³	*0.00005*	0.0019
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00018
Selenium	g/m³	*0.001*	<0.0010
Tin	g/m³	*0.0005*	<0.00050
Strontium	g/m³	*0.0001*	1.10
Thallium	g/m³	*0.0001*	<0.00010
Uranium	g/m³	*0.00003*	0.00485
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00005*	0.00046
Zinc	g/m³	*0.003*	<0.0030

Elements in Water (Soluble)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
Silica	g/m³	*0.1*	8.50	15.3	18.8	9.08	9.34
Arsenic	g/m³	*0.0005*	0.0011	1.01	0.017	0.021	0.0068

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Elements in Water (Soluble)

	Client Sample ID		CC01	LBA	MDD015	RS01	RS02
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Aluminium	g/m³	*0.003*	0.012	<0.0030	0.0048	<0.0030	0.0033
Barium	g/m³	*0.0002*	0.0045	0.0050	0.228	0.0138	0.0122
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	0.014	0.030	<0.010	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000043	0.000044	<0.000010	0.000084	0.000066
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	0.00012	0.00021	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00030	<0.00020	0.00020	0.00039	0.00042
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	0.00079	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	0.000087	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000053	<0.000010	0.000016	<0.000010	0.000012
Lithium	g/m³	*0.00001*	0.00083	0.0125	0.0484	0.00233	0.00244
Molybdenum	g/m³	*0.0002*	0.00049	0.0011	0.00039	<0.00020	<0.00020
Nickel	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	0.00025	0.00021
Phosphorus	g/m³	*0.04*	<0.040	<0.040	0.53	<0.040	<0.040
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00023	0.00131	0.00281	0.00022	0.00021
Sulfur*	g/m³	*10*	<10	12	<10	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	0.0010	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.0368	0.478	9.96	0.445	0.308
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	<0.000030	0.0020	0.00094	0.00014	0.00029
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000063	0.000021	0.00020	0.000014	0.000023

Elements in Water (Soluble)

	Client Sample ID		RS03	RSA1	SC01	SC03	RS04
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
Silica	g/m³	*0.1*	9.02	9.64	6.80	6.89	8.64
Arsenic	g/m³	*0.0005*	0.011	0.028	0.0030	0.00078	0.0013
Aluminium	g/m³	*0.003*	0.0068	<0.0030	0.0051	0.011	0.0064
Barium	g/m³	*0.0002*	0.0088	0.0172	0.0429	0.0374	0.0226
Beryllium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth	g/m³	*0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	g/m³	*0.01*	<0.010	<0.010	0.032	0.025	<0.010
Cadmium	g/m³	*0.00002*	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Cobalt	g/m³	*0.00001*	0.000062	0.00021	0.00011	0.000062	0.00019
Chromium	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Caesium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Copper	g/m³	*0.0002*	0.00074	0.00030	0.00068	0.00060	0.00066
Germanium	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury	g/m³	*0.00008*	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Lanthanum	g/m³	*0.00001*	0.000020	<0.000010	0.000021	0.000019	0.000020
Lithium	g/m³	*0.00001*	0.00141	0.00224	0.00806	0.00433	0.00236
Molybdenum	g/m³	*0.0002*	<0.00020	<0.00020	0.00061	0.00041	<0.00020
Nickel	g/m³	*0.0002*	0.00027	0.00023	0.00023	<0.00020	0.00051
Phosphorus	g/m³	*0.04*	<0.040	<0.040	<0.040	0.11	<0.040

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Elements in Water (Soluble)

	Client Sample ID		RS03	RSA1	SC01	SC03	RS04
	Date Sampled		28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Lead	g/m³	*0.00005*	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Rubidium	g/m³	*0.00002*	0.00039	0.00019	0.00024	0.00035	0.00029
Sulfur*	g/m³	*10*	<10	<10	14	<10	<10
Antimony	g/m³	*0.0001*	<0.00010	<0.00010	0.00018	<0.00010	<0.00010
Selenium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Tin	g/m³	*0.0002*	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	g/m³	*0.0001*	0.179	0.411	0.968	0.716	0.406
Thallium	g/m³	*0.00001*	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium	g/m³	*0.00003*	0.000082	0.00011	0.00466	0.00225	0.00042
Vanadium	g/m³	*0.0005*	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Yttrium	g/m³	*0.00001*	0.000028	0.000015	0.000039	0.000028	0.000039

Elements in Water (Soluble)

	Client Sample ID		MDD302
	Date Sampled		28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
Silica	g/m³	*0.1*	21.7
Arsenic	g/m³	*0.0005*	0.0575
Aluminium	g/m³	*0.003*	<0.0030
Barium	g/m³	*0.0002*	0.128
Beryllium	g/m³	*0.00001*	0.000013
Bismuth	g/m³	*0.0001*	<0.00010
Boron	g/m³	*0.01*	<0.010
Cadmium	g/m³	*0.00002*	<0.000020
Cobalt	g/m³	*0.00001*	<0.000010
Chromium	g/m³	*0.0002*	<0.00020
Caesium	g/m³	*0.00001*	0.00015
Copper	g/m³	*0.0002*	<0.00020
Germanium	g/m³	*0.00005*	0.000055
Mercury	g/m³	*0.00008*	<0.000080
Lanthanum	g/m³	*0.00001*	<0.000010
Lithium	g/m³	*0.00001*	0.00776
Molybdenum	g/m³	*0.0002*	0.00036
Nickel	g/m³	*0.0002*	<0.00020
Phosphorus	g/m³	*0.04*	<0.040
Lead	g/m³	*0.00005*	<0.000050
Rubidium	g/m³	*0.00002*	0.00182
Sulfur*	g/m³	*10*	<10
Antimony	g/m³	*0.0001*	0.00018
Selenium	g/m³	*0.0005*	<0.00050
Tin	g/m³	*0.0002*	<0.00020
Strontium	g/m³	*0.0001*	1.05
Thallium	g/m³	*0.00001*	<0.000010
Uranium	g/m³	*0.00003*	0.00461
Vanadium	g/m³	*0.0005*	<0.00050
Yttrium	g/m³	*0.00001*	0.00018

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Anion/Cation Suite

Client Sample ID			CC01	LBA	MDD015	RS01	RS02
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-1	24-36747-2	24-36747-3	24-36747-4	24-36747-5
pH	pH	*1*	6.9	8.1	8.1	7.6	7.5
Electrical Conductivity	µS/cm	*0.2*	35.3	476	466	212	167
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	13.3	193	208	105	78.1
Chloride	g/m^3	*0.5*	0.56	7.54	9.46	0.83	1.12
Sulfate	g/m^3	*0.15*	0.43	28.8	9.56	0.45	0.86
Nitrate-N	g/m^3	*0.002*	0.0099	0.225	0.0028	<0.0020	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	0.007	0.018	<0.002	<0.002	<0.002
Ammoniacal-N	g/m^3	*0.005*	<0.005	<0.005	0.1	<0.005	<0.005
Sodium	g/m^3	*0.01*	2.42	20.9	44.9	5.83	4.67
Potassium	g/m^3	*0.05*	0.26	1.9	2.4	0.71	0.61
Calcium	g/m^3	*0.05*	3.3	52.9	49.5	30.9	22.7
Magnesium	g/m^3	*0.01*	0.80	15.9	16.3	5.43	4.00
Iron	g/m^3	*0.005*	0.022	<0.0050	0.0058	0.028	0.013
Zinc	g/m^3	*0.001*	<0.0010	<0.0010	0.0020	<0.0010	<0.0010
Manganese	g/m^3	*0.0005*	0.0011	0.013	0.0066	0.040	0.0014
Sum of Anions*	meq/L	*0.01*	0.29	4.75	4.70	2.15	1.62
Sum of Cations*	meq/L	*0.01*	0.34	4.91	5.83	2.26	1.68
EC/10*	(mS/m)/10	*0.002*	0.35	4.76	4.66	2.12	1.67

Anion/Cation Suite

Client Sample ID			RS03	RSA1	SC01	SC03	RS04
Date Sampled			28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-6	24-36747-7	24-36747-8	24-36747-9	24-36747-10
pH	pH	*1*	7.2	7.5	8.1	8.1	7.5
Electrical Conductivity	µS/cm	*0.2*	105	223	498	321	213
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	47.9	106	205	145	99.6
Chloride	g/m^3	*0.5*	0.70	0.84	4.28	1.87	0.96
Sulfate	g/m^3	*0.15*	0.49	0.38	33.5	9.83	0.50
Nitrate-N	g/m^3	*0.002*	<0.0020	0.0102	0.0745	0.0944	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	0.003	<0.002	0.007	0.003	<0.002
Ammoniacal-N	g/m^3	*0.005*	<0.005	<0.005	0.01	<0.005	<0.005
Sodium	g/m^3	*0.01*	3.92	5.64	12.1	6.86	5.89
Potassium	g/m^3	*0.05*	0.66	0.69	1.6	1.2	0.98
Calcium	g/m^3	*0.05*	14.5	30.6	60.1	42.4	32.5
Magnesium	g/m^3	*0.01*	2.57	5.44	19.9	9.95	4.64
Iron	g/m^3	*0.005*	0.033	0.30	0.014	0.034	0.063
Zinc	g/m^3	*0.001*	0.013	<0.0010	<0.0010	<0.0010	0.0044
Manganese	g/m^3	*0.0005*	0.011	0.120	0.0065	0.0049	0.030
Sum of Anions*	meq/L	*0.01*	0.99	2.17	5.00	3.20	2.04
Sum of Cations*	meq/L	*0.01*	1.12	2.25	5.20	3.27	2.29
EC/10*	(mS/m)/10	*0.002*	1.05	2.23	4.98	3.21	2.13

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Anion/Cation Suite

		Client Sample ID	MDD302
		Date Sampled	28/11/2024
Analyte	Unit	*Reporting Limit*	24-36747-11
pH	pH	*1*	7.8
Electrical Conductivity	µS/cm	*0.2*	504
Total Alkalinity (CaCO3)	g $CaCO_3/m^3$	*1*	236
Chloride	g/m^3	*0.5*	2.91
Sulfate	g/m^3	*0.15*	10.3
Nitrate-N	g/m^3	*0.002*	<0.0020
Dissolved Reactive Phosphorus (FIA)	g/m^3	*0.002*	<0.002
Ammoniacal-N	g/m^3	*0.005*	0.05
Sodium	g/m^3	*0.01*	7.89
Potassium	g/m^3	*0.05*	1.3
Calcium	g/m^3	*0.05*	59.5
Magnesium	g/m^3	*0.01*	20.9
Iron	g/m^3	*0.005*	<0.0050
Zinc	g/m^3	*0.001*	<0.0010
Manganese	g/m^3	*0.0005*	0.0040
Sum of Anions*	meq/L	*0.01*	5.06
Sum of Cations*	meq/L	*0.01*	5.07
EC/10*	(mS/m)/10	*0.002*	5.04

Method Summary

Total Phosphorus	Samples analysed colourimetrically following an acid digestion. (APHA 4500 P H - Modified - Discrete Analyser - Online edition)
Acidity to pH 8.3	Samples analysed as received by manual titration to pH endpoint 8.3. (APHA 2310 B - Online edition).
Turbidity	Samples analysed as received using a conventional turbidimeter. (APHA 2130 B Online edition - Modified).
NO2-N	Samples analysed colourimetrically by flow injection analysis following filtration. (APHA 4500-NO_3 I. Online edition).
TKN	Samples analysed colourimetrically following an acid digestion. (APHA 4500-N_{Org} D - Modified - Discrete Analyser - Online edition).
TN	Sum of Total Kjeldahl Nitrogen (APHA 4500 N_{org} - Modified - Online edition), Nitrate-N and Nitrite-N (APHA 4500 NO_3 I - Online edition). (APHA 4500-N A - Online Edition).
Fluoride	Subcontracted to Hill Laboratories Limited - Direct measurement, ion selective electrode. APHA 4500-F- C : Online Edition.
Bromide in Water	Subcontracted to Hill Laboratories.Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).
Total Hardness	Result calculated from Total Magnesium and Calcium. (APHA 2340B - Online edition)
Total Cyanide (Trace)	On-line distillation and colourmetric determination using Segmented Flow Analysis. In-house based on Skalar Method I295-004 and ISO Method ISO 14403:2012(E) (modified).
Total Suspended Solids	Measured gravimetrically following filtration through glass micro-fibre filters. (APHA 2540 D - Modified - Online edition).
Total Dissolved Solids	Filtration folllowed by complete drying at 180°C. (APHA 2540 C - Online edition).

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Method Summary

Recoverable Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following an acid digestion. In house procedure based on US EPA method 200.8.
Soluble Trace Elements	Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.
pH	Samples measured as received using a conventional pH electrode. (APHA 4500 H^+ B. Online edition).
Electrical Conductivity	Samples analysed as received using a conventional conductivity electrode. (APHA 2510 B - Modified - Auto-titrator - Online edition).
Total Alkalinity ($CaCO_3$)	Samples analysed as received by potentiometric titration. (APHA 2320 B Online edition).
Chloride	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110 B - Online edition).
Sulfate	Analysis by Ion exchange chromatography following sample filtration. (APHA 4110B - Online edition).
NO3-N	Calculated from oxidised nitrogen and Nitrite-N, measured colourimetrically by flow injection analysis. (APHA NO_{3-} I. Online edition)
Dissolved Reactive Phosphorus	Samples filtered and measured colourimetrically by flow injection analysis. (APHA 4500-P G - Modified - Online edition)
Ammoniacal-N	Samples are filtered and measured colourimetrically by flow injection analysis. Results represent total ammonical nitrogen (APHA 4500-NH_3 H - Modified - Online edition).
Sum of Anions	Sum of milliequivalents/Litre of measured Anions.
Sum of Cations	Sum of milliequivalents/Litre of measured Cations.

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APPENDIX D DATA ANALYSES

Baseline Water Quality Report: Shepherds Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_SC01_22-Sep-2022	W_SC01_23-Mar-2023	W_SC01_5-Jul-2023	W_SC01_10-Oct-2023	W_SC01_20-Dec-2023	W_SC01_4-Feb-2024
LABJOBNO	22-35194	WP23-11797	AR-23-NC-017979-01	AR-23-NC-028806-01	AR-24-NC-000295-01	AR-24-NC-003109-01
WaterLabID	Analytica	SGS	Eurofins	Eurofins	Eurofins	Eurofins
WaterSiteID	SC01	SC01	SC01	SC01	SC01	SC01
LabSampleID	22-35194-7	WP23-11797.004	817-2023-00068114	817-2023-00110961	817-2023-00141592	817-2024-00015362
WaterSampDate	2022-09-22	2023-03-23	2023-07-05	2023-10-10	2023-12-20	2024-02-04
SampBy	Van Walt/ E3	HM	HM	HM	HM	HM
W_Acidity4_mgl		5	1	1	1	1
W_Acidity5_mgl		5				
W_Acidity7_mgl		5	1	1	1	1
W_Acidity8_mgl	2		3	1	6	1
W_Alkalinity_mgl	181	250	191	187	247	241
W_AmmoniaN_mgl	0.005	0.02	0.01	0.01	0.01	0.03
W_An_Bromide_mgl		0.23	0.03	0.03	0.07	0.07
W_An_Chloride_mgl	5.61	8.1	5.24	4.7	7.83	7.09
W_An_Fluoride_mgl		0.23	0.13	0.11	0.12	0.13
W_An_Nitrate-N_mgl	0.124	0.005	0.230	0.060	0.310	0.010
W_An_Nitrite-N_mgl		0.003	0.010	0.010	0.010	0.010
W_An_Sulphate_mgl	34	51	33.4	33	44.9	49.5
W_BiCarbAlk_mgl						
W_CarbAlk_mgl						
W_Density_gcm3						
W_DOC_mgl	3.7	2.7	2.3	1.7	3.4	2.5
W_DRP_mgl	0.004					
W_DSi_mgl		4.77	7.95	3.61	8.47	9.24
W_EC_mSm	41		43.1	42.5	56.3	57
W_EC_uScm	408	570				
W_EColi_cfuml						
W_pH	8.3	7.7	8.1	8.5	8	8
W_pH_1311_hcl						
W_pH_1311_initial						
W_pH_1311_leachate						
W_pH_1311_off						
W_Total_Ag_mgl		0.001	0.001	0.001		
W_Total_Al_mgl	0.047	0.015	0.041	0.054		
W_Total_As_mgl	0.0011	0.003	0.002	0.002		
W_Total_B_mgl	0.034	0.05	0.05	0.05		
W_Total_Ba_mgl	0.0384	0.049	0.035	0.034		
W_Total_Be_mgl	0.00001	0.005	0.005	0.005		
W_Total_Bi_mgl	0.0001	0.005	0.005	0.005		
W_Total_Ca_mgl	55.2	78.2	79.3	46.1		62.5
W_Total_Cd_mgl	0.00002	0.001	0.001	0.001		
W_Total_Co_mgl	0.0001	0.002	0.002	0.002		
W_Total_Cr_mgl	0.00034	0.001	0.001	0.001		
W_Total_Cs_mgl	0.00001					
W_Total_Cu_mgl	0.0043	0.005	0.003	0.002		
W_Total_Fe_mgl	0.057	0.1	0.1	0.1		
W_Total_Ge_mgl	0.00005					
W_Total_Hg_mgl	0.0001	0.001	0.001	0.001		
W_Total_K_mgl	1.5	3.2	1.2	1.1		
W_Total_La_mgl	0.000047					
W_Total_Li_mgl	0.00751	0.019	0.006	0.006		
W_Total_Mg_mgl	17.5	26.5	15.7	15.5		23.9
W_Total_Mn_mgl	0.0025	0.002	0.002	0.003		
W_Total_Mo_mgl	0.00045	0.001	0.001	0.001		
W_Total_Na_mgl	11.1	15.3	10	101		
W_Total_Ni_mgl	0.00029	0.001	0.001	0.001		
W_Total_P_mgl	0.04					
W_Total_Pb_mgl	0.000073	0.001	0.001	0.001		
W_Total_Rb_mgl	0.0004					
W_Total_S_mgl	10					
W_Total_Sb_mgl	0.00018	0.002	0.002	0.006		
W_Total_Se_mgl	0.001	0.005	0.005	0.005		
W_Total_Sn_mgl	0.0005	0.001	0.001	0.001		
W_Total_Sr_mgl	0.98	1.34	0.778	0.794		
W_Total_Ti_mgl		0.007	0.002	0.002		
W_Total_Tl_mgl	0.0001	0.001	0.001	0.001		
W_Total_U_mgl	0.0031	0.006	0.004	0.003		
W_Total_V_mgl	0.0005	0.005	0.001	0.001		
W_Total_Y_mgl	0.000052					
W_Total_Zn_mgl	0.003	0.005	0.005	0.005		
W_Dissolved_Ag_mgl		0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Al_mgl	0.003	0.004	0.004	0.002	0.008	0.003
W_Dissolved_As_mgl	0.00074	0.002	0.001	0.001	0.006	0.003
W_Dissolved_B_mgl	0.029	0.06	0.04	0.03	0.04	0.04
W_Dissolved_Ba_mgl	0.029	0.039	0.029	0.002	0.045	0.046
W_Dissolved_Be_mgl	0.00001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Bi_mgl	0.0001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Ca_mgl	57.1	72.1	59.2	4.6	66.3	68.3
W_Dissolved_Cd_mgl	0.00002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Co_mgl	0.000057	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Cr_mgl	0.0002	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Cs_mgl	0.00001					
W_Dissolved_Cu_mgl	0.001	0.0005	0.0005	0.0005	0.0006	0.0005
W_Dissolved_Fe_mgl	0.005	0.01	0.01	0.01	0.04	0.01
W_Dissolved_Ge_mgl	0.00005					
W_Dissolved_Hg_mgl	0.00008	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_K_mgl	1.5	2.88	1.85	1.25	3.97	1.57
W_Dissolved_La_mgl	0.00001					
W_Dissolved_Li_mgl	0.00756	0.013	0.009	0.005	0.01	0.01
W_Dissolved_Mg_mgl	17.9	23.8	21.6	1.17	25.1	27.6
W_Dissolved_Mn_mgl	0.0005	0.0009	0.0006	0.0005	0.0067	0.0011
W_Dissolved_Mo_mgl	0.00046	0.0005	0.0005	0.0007	0.0007	0.0005
W_Dissolved_Na_mgl	10.9	13.8	14.2	198	15.4	16.5
W_Dissolved_Ni_mgl	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_P_mgl	0.12					
W_Dissolved_Pb_mgl	0.00005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Rb_mgl	0.0002					
W_Dissolved_S_mgl	13					
W_Dissolved_Sb_mgl	0.00012	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Se_mgl	0.00057	0.005	0.005	0.005	0.005	0.005
W_Dissolved_Sn_mgl	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sr_mgl	0.968	0.975	0.685	0.167	1.08	1.08
W_Dissolved_Ti_mgl		0.0005	0.0006	0.0005	0.0005	0.0005
W_Dissolved_Tl_mgl	0.00001	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_U_mgl	0.00492	0.0055	0.0032	0.0009	0.0058	0.0047
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.00003		0.002	0.002	0.002	0.002
W_Dissolved_Zn_mgl	0.001	0.002	0.002	0.002	0.002	0.002
W_SumAnions_meql	4.59					
W_SumCations_meql	4.84					
W_TCN_mgl	0.001	0.005	0.005	0.005	0.005	0.005
W_TColi_cfuml						
W_TDS_mgl	286	380	211	208	276	279
W_TDSalts_gm3						
W_Thard_gCaCO3m3	210	280	7	16	269	255
W_TKN_mgl	0.22					
W_TN_mgl		0.22	0.42	0.26	0.43	0.22
W_TOC_mgl	3.6	2.8	2.4	1.7	3.2	3.1
W_TP_mgl	0.0064	0.019	0.011	0.005	0.034	0.038
W_TSi_mgl		4.23	3.5	2.58		
W_TSS_BDC_mgl		2.5				
W_TSS_mgl		3	6	5	12	5
W_Turbidity_NTU		1.1	0.17	0.62	1.95	0.79
W_Volume_ml						
WF_DO_mgl	10.9			12.73		
WF_DO_pct	107.3		95.3	117		
WF_EC_mScm	410.1		418.9	409.2		
WF_ORP_mV	11.7		157.3	184.5		
WF_pH	8.44		9.04	8.3		
WF_temp_degC	13.2		2.6	9.9		
WF_turbidity_NTU			0.2			
WF_colour	clear				clear	
WF_level	medium baseflow				low	
WF_odour	odourless				none	

Blanks cells infer no available data

Baseline Water Quality Report: Shepherds Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	**W_SC01_5-Mar-2024**	**W_SC01_20-Mar-2024**	**W_SC01_4-Apr-2024**	**W_SC01_17-Apr-2024**	**W_SC01_1-May-2024**	**W_SC01_16-May-2024**	**W_SC01_13-Jun-2024**
LABJOBNO	**AR-24-NC-008972-01**	**AR-24-NC-010966-01**	**AR-24-NC-011976-01**	**AR-24-NC-013497-01**	**AR-24-NC-015251-01**	**0**	**24-19336**
WaterLabID	**Eurofins**	**Eurofins**	**Eurofins**	**Eurofins**	**Eurofins**	**Eurofins**	**Analytica**
WaterSiteID	**SC01**	**SC01**	**SC01**	**SC01**	**SC01**	**SC01**	**SC01**
LabSampleID	**817-2024-00029412**	**817-2024-00035195**	**817-2024-00041159**	**817-2024-00047511**	**817-2024-00052693**		**24-19336-8**
WaterSampDate	**2024-03-05**	**2024-03-20**	**2024-04-04**	**2024-04-17**	**2024-05-02**	**2024-05-16**	**2024-06-13**
SampBy	**HM**	**HM**	**MB**	**MB**	**MB**	**MB**	**MB**
W_Acidity4_mgl	1	1	1	1	1	1	
W_Acidity5_mgl							
W_Acidity7_mgl	1	1	1	1	1	1	
W_Acidity8_mgl	11	11	12	6	4	1	5
W_Alkalinity_mgl	244	264	273	251	243	236	232
W_AmmoniaN_mgl	0.04	0.01	0.01	0.01	0.01	0.01	0.005
W_An_Bromide_mgl	0.08	0.08	0.1	0.08	0.08	0.08	0.06
W_An_Chloride_mgl	8.65	8.73	9.3	7.85	7.4	7.38	5.35
W_An_Fluoride_mgl	0.13	0.1	0.09	0.11	0.13	0.14	0.088
W_An_Nitrate-N_mgl	0.010	0.010	0.010	0.010	0.010	0.010	0.084
W_An_Nitrite-N_mgl	0.010	0.010	0.010	0.010	0.010	0.010	0.001
W_An_Sulphate_mgl	56.4	63.5	59.3	52	53.7	0.02	48.2
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	3.6	1.8	2.1	2.1	1.7	1.5	0.5
W_DRP_mgl							0.002
W_DSi_mgl	10	10.4	10.2	8.7	7.97	9.46	
W_EC_mSm	57.8	62.9	63.9	58.1	57.1	56.2	
W_EC_uScm							577
W_EColi_cfuml							
W_pH	8.1	8	8.1	8.1	8.2	8.3	8.1
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl	0.001	0.001	0.001	0.001	0.001		
W_Total_Al_mgl	0.035	0.015	0.182	0.067	0.04		0.03
W_Total_As_mgl	0.003	0.002	0.004	0.004	0.003		0.0017
W_Total_B_mgl	0.05	0.05	0.05	0.05	0.05		0.038
W_Total_Ba_mgl	0.045	0.05	0.055	0.047	0.048		0.0495
W_Total_Be_mgl	0.005	0.005	0.005	0.005	0.005		0.00001
W_Total_Bi_mgl	0.005	0.005	0.005	0.005	0.005		0.0001
W_Total_Ca_mgl	59.8	64.1	82.3	64.7	62.2	67.5	72.1
W_Total_Cd_mgl	0.001	0.001	0.001	0.001	0.001		0.00002
W_Total_Co_mgl	0.002	0.002	0.002	0.002	0.002		0.000088
W_Total_Cr_mgl	0.001	0.001	0.001	0.001	0.001		0.00026
W_Total_Cs_mgl							0.00001
W_Total_Cu_mgl	0.002	0.002	0.002	0.002	0.002		0.00034
W_Total_Fe_mgl	0.1	0.1	0.2	0.1	0.1		0.056
W_Total_Ge_mgl							0.00005
W_Total_Hg_mgl	0.001	0.001	0.001	0.001	0.001		0.0001
W_Total_K_mgl	2.6	1.1	3.9	2.5	1.7		1.9
W_Total_La_mgl							0.000045
W_Total_Li_mgl	0.011	0.009	0.012	0.009	0.008		0.00965
W_Total_Mg_mgl	23.8	25.1	30.6	26.9	24	24.2	25.1
W_Total_Mn_mgl	0.002	0.001	0.012	0.006	0.003		0.003
W_Total_Mo_mgl	0.001	0.037	0.001	0.001	0.001		0.00051
W_Total_Na_mgl	13.9	12.7	16.8	15.4	12.7		14.5
W_Total_Ni_mgl	0.001	0.001	0.001	0.001	0.001		0.00024
W_Total_P_mgl							0.04
W_Total_Pb_mgl	0.001	0.001	0.001	0.001	0.001		0.000078
W_Total_Rb_mgl							0.00027
W_Total_S_mgl							21
W_Total_Sb_mgl	0.002	0.002	0.002	0.002	0.002		0.00017
W_Total_Se_mgl	0.005	0.005	0.005	0.005	0.005		0.001
W_Total_Sn_mgl	0.001	0.001	0.001	0.001	0.001		0.0005
W_Total_Sr_mgl	0.919	1.19	1.3	1.16	0.965		1.15
W_Total_Ti_mgl	0.001	0.001	0.005	0.002	0.002		
W_Total_Tl_mgl	0.001	0.001	0.001	0.001	0.001		0.0001
W_Total_U_mgl	0.005	0.006	0.007	0.006	0.006		0.00683
W_Total_V_mgl	0.001	0.001	0.001	0.001	0.001		0.0005
W_Total_Y_mgl							0.000065
W_Total_Zn_mgl	0.005	0.005	0.005	0.005	0.005		0.003
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	
W_Dissolved_Al_mgl	0.002	0.002	0.005	0.002	0.003	0.008	0.003
W_Dissolved_As_mgl	0.003	0.002	0.004	0.003	0.003	0.002	0.0019
W_Dissolved_B_mgl	0.03	0.03	0.05	0.04	0.04	0.04	0.04
W_Dissolved_Ba_mgl	0.046	0.047	0.049	0.037	0.042	0.046	0.0499
W_Dissolved_Be_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.00001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.0001
W_Dissolved_Ca_mgl	55.4	70.8	72.6	59.7	66.5	74.7	73.5
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.00003
W_Dissolved_Co_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.000053
W_Dissolved_Cr_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.00028
W_Dissolved_Cs_mgl							0.00001
W_Dissolved_Cu_mgl	0.0006	0.0005	0.0005	0.0005	0.0006	0.0005	0.00028
W_Dissolved_Fe_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.005
W_Dissolved_Ge_mgl							0.00005
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00008
W_Dissolved_K_mgl	2.89	1.77	3.4	2.37	1.85	2.36	1.9
W_Dissolved_La_mgl							0.00001
W_Dissolved_Li_mgl	0.007	0.008	0.016	0.01	0.01	0.011	0.00983
W_Dissolved_Mg_mgl	24.6	30	25.9	25.3	25.1	28.6	25.9
W_Dissolved_Mn_mgl	0.0011	0.0007	0.0041	0.0028	0.0016	0.0007	0.0005
W_Dissolved_Mo_mgl	0.0005	0.0005	0.0008	0.0005	0.0005	0.0005	0.00043
W_Dissolved_Na_mgl	13.4	16.4	12.7	14.9	14.2	16.3	14.5
W_Dissolved_Ni_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002
W_Dissolved_P_mgl							0.04
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00005
W_Dissolved_Rb_mgl							0.00018
W_Dissolved_S_mgl							21
W_Dissolved_Sb_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.00017
W_Dissolved_Se_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.0005
W_Dissolved_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002
W_Dissolved_Sr_mgl	1.03	1.25	1.11	0.752	1.01	1.07	1.12
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00001
W_Dissolved_U_mgl	0.0052	0.006	0.0069	0.0052	0.0061	0.0069	0.0064
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl							0.000038
W_Dissolved_Zn_mgl	0.003	0.002	0.002	0.002	0.008	0.002	0.001
W_SumAnions_meql							5.87
W_SumCations_meql							6.48
W_TCN_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.001
W_TColi_cfuml							
W_TDS_mgl	283	308	313	284	280	275	318
W_TDSalts_gm3							
W_Thard_gCaCO3m3	240	264	332	254	270	304	280
W_TKN_mgl							0.1
W_TN_mgl	0.25	0.134	0.17	0.164	0.296	0.1	0.1
W_TOC_mgl	3.6	1.9	2.1	2.1	1.7	1.5	0.5
W_TP_mgl	0.014	0.005	0.013	0.015	0.012	0.009	0.005
W_TSi_mgl	3.89	3.96	4.66	3.77	3.56		
W_TSS_BDC_mgl							
W_TSS_mgl	5	4	6	6	4	6	4
W_Turbidity_NTU	0.49	0.39	2.72	0.92	1.02	0.58	1.5
W_Volume_ml							
WF_DO_mgl	11.47	2202	11.21	13.37	15.31	11.11	11.83
WF_DO_pct	105.8	98.9	105.7	117.3	129.8	96.9	95.5
WF_EC_mScm		618.8	627.4	552.7	513.2	537	546
WF_ORP_mV	82.1	196.7	328.1	202.7	111.6	42.7	145.8
WF_pH	8.08	7.47	8.04	8.08	8.19	8.29	7.96
WF_temp_degC	11.6	9	10.2	7.7	5.9	7.5	4.1
WF_turbidity_NTU						-0.15	0.91
WF_colour				clear	clear	clear	clear
WF_level				low	low	low	low
WF_odour				odourless	odourless	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Shepherds Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_SC01_27-Jun-2024	W_SC01_25-Jul-2024	W_SC01_8-Aug-2024	W_SC01_4-Sep-2024	W_SC01_19-Sep-2024	W_SC01_3-Oct-2024	W_SC01_16-Oct-2024
LABJOBNO	24-20566	24-23696	24-25063	24-27733-7	24-29331-8	24-30758-7	24-32269-8-8
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	SC01	SC01	SC01	SC01	SC01	SC01	SC01
LabSampleID	24-20566-8	24-23696-8	24-25063-6	24-27733-7	24-29331-8	24-30758-7	24-32269-8-8
WaterSampDate	2024-06-27	2024-07-25	2024-08-08	2024-09-04	2024-09-19	2024-10-03	2024-10-16
SampBy	MB	MB	MB	MB	MB	MB	MB
W_Acidity4_mgl							
W_Acidity5_mgl							
W_Acidity7_mgl							
W_Acidity8_mgl	1	10	1	3.33	4	1.33	2.67
W_Alkalinity_mgl	233	234	192	180	162	145	185
W_AmmoniaN_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.008
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	6.19	5.29	5.55	4.94	4.34	3.63	4.42
W_An_Fluoride_mgl	0.082	0.079	0.057	0.071	0.072	0.077	0.09
W_An_Nitrate-N_mgl	0.037	0.130	0.116	0.0835	0.165	0.149	0.148
W_An_Nitrite-N_mgl	0.003	0.001	0.001	0.0018	0.0019	0.0018	0.0028
W_An_Sulphate_mgl	50.6	42.5	40.2	31.7	27.3	21.8	30.1
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	0.5						
W_DRP_mgl	0.003	0.002	0.006	0.005	0.003	0.003	0.002
W_DSi_mgl							
W_EC_mSm							
W_EC_uScm	534	567	491	426	403	342	456
W_EColi_cfuml							
W_pH	8.1	8.1	8.2	8.1	8.1	8	8.2
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl	0.002				0.002		
W_Total_Al_mgl	0.021	0.028	0.16	0.16	0.25	1.34	0.11
W_Total_As_mgl	0.0019	0.0016	0.0022	0.0023	0.002	0.005	0.0023
W_Total_B_mgl	0.035	0.028	0.036	0.032	0.027	0.06	0.02
W_Total_Ba_mgl	0.0552	0.0514	0.0439	0.0423	0.042	0.0607	0.0441
W_Total_Be_mgl	0.00001	0.00001	0.000015	0.00001	0.000019	0.000077	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001		0.0001	0.0001
W_Total_Ca_mgl	69.4	71.7	58.7	55.1	58.4	47.6	56.9
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.000072	0.00014	0.00022	0.00021	0.00028	0.00176	0.0002
W_Total_Cr_mgl	0.0002	0.0002	0.00021	0.0003	0.00051	0.0015	0.00023
W_Total_Cs_mgl	0.00001	0.00001	0.000025	0.000025	0.000044	0.00024	0.000016
W_Total_Cu_mgl	0.0004	0.0004	0.00082	0.00088	0.0011	0.0037	0.00087
W_Total_Fe_mgl	0.039	0.082	0.29	0.27	0.41	2.45	0.19
W_Total_Ge_mgl	0.00005	0.0001	0.00014	0.000066	0.000063	0.0002	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	1.8	1.8	2.1	1.8	1.9	3.2	1.9
W_Total_La_mgl	0.000032	0.000062	0.00017	0.00018	0.00022	0.00136	0.00012
W_Total_Li_mgl	0.0102	0.01	0.00855	0.00718	0.00668	0.00789	0.00734
W_Total_Mg_mgl	25	25.4	20.4	17.1	15.9	13.8	16.8
W_Total_Mn_mgl	0.0031	0.034	0.014	0.017	0.018	0.234	0.016
W_Total_Mo_mgl	0.00066	0.00061	0.00047	0.00048	0.00041	0.00026	0.00023
W_Total_Na_mgl	13.5	14.3	11.9	10.4	10	8.03	10.1
W_Total_Ni_mgl	0.00028	0.00021	0.00047	0.00039	0.00055	0.0021	0.0004
W_Total_P_mgl	0.04	0.04	0.04	0.04	0.04	0.21	0.04
W_Total_Pb_mgl	0.000057	0.00011	0.00032	0.00032	0.00039	0.0028	0.00019
W_Total_Rb_mgl	0.0003	0.00021	0.00061	0.00064	0.00088	0.0033	0.00047
W_Total_S_mgl	20	21	16	14	12	10	12
W_Total_Sb_mgl	0.00016	0.00014	0.00018	0.00016	0.00018	0.00018	0.00017
W_Total_Se_mgl	0.001	0.0011	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	1.33	1.18	0.901	0.882	0.845	0.724	0.857
W_Total_Ti_mgl					0.0049		
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00673	0.00696	0.00572	0.00454	0.00434	0.00316	0.00442
W_Total_V_mgl	0.0005	0.0005	0.0005	0.00052	0.0005	0.0019	0.0005
W_Total_Y_mgl	0.00005	0.000078	0.00014	0.00015	0.00017	0.00097	0.00011
W_Total_Zn_mgl	0.003	0.003	0.003	0.003	0.003	0.0083	0.003
W_Dissolved_Ag_mgl	0.00008						
W_Dissolved_Al_mgl	0.003	0.003	0.0036	0.0049	0.0075	0.0072	0.0075
W_Dissolved_As_mgl	0.002	0.0015	0.0019	0.0044	0.0017	0.0019	0.002
W_Dissolved_B_mgl	0.029	0.03	0.035	0.032	0.026	0.023	0.018
W_Dissolved_Ba_mgl	0.0476	0.048	0.0397	0.0389	0.0361	0.0324	0.0418
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	70.1	71.7	56.8	51.8	57.2	45.7	56.6
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.00006	0.000047	0.00005	0.000072	0.000061	0.00011	0.00007
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.00049	0.00033	0.00053	0.00061	0.00066	0.00067	0.00063
W_Dissolved_Fe_mgl	0.005	0.005	0.007	0.0084	0.016	0.027	0.0083
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.7	1.7	2	1.7	1.7	1.9	1.8
W_Dissolved_La_mgl	0.000011	0.000012	0.000016	0.000013	0.000021	0.000021	0.000014
W_Dissolved_Li_mgl	0.00897	0.0101	0.00807	0.00696	0.00612	0.00553	0.00677
W_Dissolved_Mg_mgl	23.4	24.5	20.2	16.4	15	12.9	16.3
W_Dissolved_Mn_mgl	0.0005	0.0005	0.0005	0.00083	0.0033	0.0035	0.0051
W_Dissolved_Mo_mgl	0.00055	0.00056	0.00045	0.00041	0.00041	0.0004	0.00036
W_Dissolved_Na_mgl	13.1	13.6	11.4	9.91	9.3	8.16	10.1
W_Dissolved_Ni_mgl	0.0002	0.0002	0.00025	0.00025	0.00023	0.00024	0.00023
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00019	0.00017	0.0002	0.00021	0.0002	0.00021	0.00022
W_Dissolved_S_mgl	19	22	16	20	11	10	12
W_Dissolved_Sb_mgl	0.00016	0.00018	0.00018	0.00015	0.00015	0.00014	0.0002
W_Dissolved_Se_mgl	0.0005	0.00091	0.00075	0.00064	0.00055	0.0005	0.00068
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	1.04	1.16	0.871	0.863	0.815	0.679	0.844
W_Dissolved_Ti_mgl							
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00629	0.00621	0.00553	0.00453	0.00389	0.00338	0.00437
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000029	0.000036	0.000035	0.00004	0.000047	0.000036	0.000043
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_SumAnions_meql	5.98	5.81	4.93	4.46	3.99	3.5	4.53
W_SumCations_meql	6.04	6.23	5.05	4.41	4.54	3.75	4.65
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml							
W_TDS_mgl	307	310	259	203	187	186	226
W_TDSalts_gm3				203	187	186	226
W_Thard_gCaCO3m3	280	280	230	210	210	180	210
W_TKN_mgl	0.16	0.1	0.32	0.25	0.34	1.1	1.29
W_TN_mgl	0.2	0.23	0.44	0.34	0.5	1.3	1.4
W_TOC_mgl	0.5						
W_TP_mgl	0.005	0.005	0.022	0.5	0.013	0.15	0.013
W_TSi_mgl							
W_TSS_BDC_mgl							
W_TSS_mgl	4	3	10	14	15	122	7
W_Turbidity_NTU	0.8	0.9	8.2	6.5	6.4	57	2.2
W_Volume_ml							
WF_DO_mgl	18.25	14.93	13.83	0.02	11.69	13.77	10.47
WF_DO_pct	150.6	115.4	118.2	0.1	109.5	121.6	105.7
WF_EC_mScm	527.6	543.5	441.2	417.3	372	334.5	397.7
WF_ORP_mV	163.7	159.5	60.6	121.2	69	8.2	45.4
WF_pH	8.34	8.23	8.37	8.28	8.23	8.26	8.32
WF_temp_degC	5.4	2.9	5.9	10.6	9.2	7.4	14.2
WF_turbidity_NTU							3.89
WF_colour	clear	clear	clear	clear	clear	low	clear
WF_level	low	low	high	high	high	high	low
WF_odour	nil	nil	nil	nil	nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Shepherds Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	**W_SC01_31-Oct-2024**	**W_SC01_14-Nov-2024**	**W_SC01_28-Nov-2024**
LABJOBNO	**24-33929-7**	**24-35305-8**	**24-36747-8**
WaterLabID	**Analytica**	**Analytica**	**Analytica**
WaterSiteID	**SC01**	**SC01**	**SC01**
LabSampleID	**24-33929-7**	**24-35305-8**	**24-36747-8**
WaterSampDate	**2024-10-31**	**2024-11-14**	**2024-11-28**
SampBy	**MB/GM**	**MB**	**MB**
W_Acidity4_mgl			
W_Acidity5_mgl			
W_Acidity7_mgl			
W_Acidity8_mgl	1	1	1.67
W_Alkalinity_mgl	168	193	205
W_AmmoniaN_mgl	0.01	0.01	0.01
W_An_Bromide_mgl	0.05	0.05	0.05
W_An_Chloride_mgl	3.76	3.92	4.28
W_An_Fluoride_mgl	0.095	0.073	0.12
W_An_Nitrate-N_mgl	0.0887	0.0272	0.0745
W_An_Nitrite-N_mgl	0.0041	0.0028	0.00525
W_An_Sulphate_mgl	24.5	30.1	33.5
W_BiCarbAlk_mgl			
W_CarbAlk_mgl			
W_Density_gcm3			
W_DOC_mgl			
W_DRP_mgl	0.004	0.004	0.007
W_DSi_mgl			
W_EC_mSm			
W_EC_uScm	388	471	498
W_EColi_cfuml			
W_pH	8	8	8.1
W_pH_1311_hcl			
W_pH_1311_initial			
W_pH_1311_leachate			
W_pH_1311_off			
W_Total_Ag_mgl			
W_Total_Al_mgl	0.2	0.087	0.12
W_Total_As_mgl	0.0028	0.0028	0.0035
W_Total_B_mgl	0.013	0.011	0.044
W_Total_Ba_mgl	0.0421	0.0444	0.0476
W_Total_Be_mgl	0.000013	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001
W_Total_Ca_mgl	54.4	60.1	63.2
W_Total_Cd_mgl	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.0003	0.0002	0.00024
W_Total_Cr_mgl	0.0003	0.0002	0.0002
W_Total_Cs_mgl	0.000034	0.000011	0.000018
W_Total_Cu_mgl	0.0011	0.00083	0.00086
W_Total_Fe_mgl	0.32	0.16	0.23
W_Total_Ge_mgl	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001
W_Total_K_mgl	1.8	1.5	1.7
W_Total_La_mgl	0.00018	0.0001	0.00015
W_Total_Li_mgl	0.0072	0.00779	0.00919
W_Total_Mg_mgl	15.7	18.6	20.2
W_Total_Mn_mgl	0.02	0.016	0.02
W_Total_Mo_mgl	0.00039	0.0005	0.00054
W_Total_Na_mgl	9.78	11.5	12
W_Total_Ni_mgl	0.00051	0.00042	0.00049
W_Total_P_mgl	0.04	0.04	0.04
W_Total_Pb_mgl	0.00035	0.00019	0.00027
W_Total_Rb_mgl	0.00079	0.00044	0.00056
W_Total_S_mgl	12	12	13
W_Total_Sb_mgl	0.00018	0.00016	0.00018
W_Total_Se_mgl	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.877	0.946	1.01
W_Total_Ti_mgl			
W_Total_Tl_mgl	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00416	0.00472	0.00501
W_Total_V_mgl	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.00016	0.000096	0.00012
W_Total_Zn_mgl	0.003	0.003	0.003
W_Dissolved_Ag_mgl			
W_Dissolved_Al_mgl	0.0099	0.0068	0.0051
W_Dissolved_As_mgl	0.0022	0.0026	0.003
W_Dissolved_B_mgl	0.012	0.01	0.032
W_Dissolved_Ba_mgl	0.0386	0.0403	0.0429
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	50.7	57.5	60.1
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.00013	0.0001	0.00011
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.00073	0.00056	0.00068
W_Dissolved_Fe_mgl	0.019	0.014	0.014
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.6	1.4	1.6
W_Dissolved_La_mgl	0.000024	0.000016	0.000021
W_Dissolved_Li_mgl	0.00721	0.0082	0.00806
W_Dissolved_Mg_mgl	14.4	17.6	19.9
W_Dissolved_Mn_mgl	0.0014	0.005	0.0065
W_Dissolved_Mo_mgl	0.00064	0.00044	0.00061
W_Dissolved_Na_mgl	9.04	10.8	12.1
W_Dissolved_Ni_mgl	0.00036	0.00027	0.00023
W_Dissolved_P_mgl	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00022	0.00021	0.00024
W_Dissolved_S_mgl	10	12	14
W_Dissolved_Sb_mgl	0.00019	0.00017	0.00018
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.837	0.964	0.968
W_Dissolved_Ti_mgl			
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.004	0.00473	0.00466
W_Dissolved_V_mgl	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000041	0.000043	0.000039
W_Dissolved_Zn_mgl	0.001	0.001	0.001
W_SumAnions_meql	4.04	4.66	5
W_SumCations_meql	4.15	4.82	5.2
W_TCN_mgl	0.001	0.001	0.001
W_TColi_cfuml			
W_TDS_mgl	206	236	265
W_TDSalts_gm3	206	236	265
W_Thard_gCaCO3m3	200	230	240
W_TKN_mgl	0.39	0.27	0.28
W_TN_mgl	0.48	0.3	0.36
W_TOC_mgl			
W_TP_mgl	0.012	0.022	0.026
W_TSi_mgl			
W_TSS_BDC_mgl			
W_TSS_mgl	17	9	8
W_Turbidity_NTU	6.8	3.6	4.4
W_Volume_ml			
WF_DO_mgl	10.17	10.41	9.48
WF_DO_pct	110	108.8	101.9
WF_EC_mScm	373.5	415.2	455
WF_ORP_mV	-0.7	98.2	55.3
WF_pH	8.4	8.31	8.16
WF_temp_degC	16.6	14.9	16.2
WF_turbidity_NTU			
WF_colour	clear	clear	clear
WF_level	low	low	low
WF_odour	nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Shepherds Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_SC03_22-Sep-2022	W_SC03_23-Mar-2023	W_SC03_5-Jul-2023	W_SC03_10-Oct-2023	W_SC03_20-Dec-2023	W_SC03_4-Feb-2024	W_SC03_5-Mar-2024
LABJOBNO	22-35194	WP23-11797	AR-23-NC-017979-01	AR-23-NC-028806-01	AR-24-NC-000295-01	AR-24-NC-003109-01	AR-24-NC-008972-01
WaterLabID	Analytica	SGS	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins
WaterSiteID	SC03	SC03	SC03	SC03	SC03	SC03	SC03
LabSampleID	22-35194-6	WP23-11797.005	817-2023-00068115	817-2023-00110962	817-2023-00141593	817-2024-0001536	817-2024-00029413
WaterSampDate	2022-09-22	2023-03-23	2023-07-05	2023-10-10	2023-12-20	2024-02-04	2024-03-05
SampBy	Van Walt/ E3	HM	HM	HM	HM	HM	HM
W_Acidity4_mgl		5	1	1	1	1	1
W_Acidity5_mgl		5					
W_Acidity7_mgl		5	1	1	1	1	1
W_Acidity8_mgl	2		1	1	4	1	4
W_Alkalinity_mgl	147	160	129	125	145	149	149
W_AmmoniaN_mgl	0.005	0.01	0.02	0.01	0.01	0.01	0.04
W_An_Bromide_mgl		0.01	0.02	0.02	0.02	0.02	0.02
W_An_Chloride_mgl	3.94	3.5	3.07	2.72	2.02	3.25	3.55
W_An_Fluoride_mgl		0.29	0.09	0.13	0.13	0.14	0.16
W_An_Nitrate-N_mgl	0.144	0.067741935	0.32	0.19	0.03	0.31	0.05
W_An_Nitrite-N_mgl		0.006086957	0.01	0.01	0.01	0.04	0.01
W_An_Sulphate_mgl	18.6	16	14.9	13.2	14.1	16.9	16.8
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	3.2	2.7	2.1	2.4	2.1	3	2.3
W_DRP_mgl	0.002						
W_DSi_mgl		4.22	7.17	7.27	6.11	8.14	6.79
W_EC_mSm	32		27.7	27.2	31	33.6	32.7
W_EC_uScm	318	350					
W_EColi_cfuml							
W_pH	8.2	7.8	7.9	8.1	8.1	8	8
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl		0.001	0.001	0.001			0.001
W_Total_Al_mgl	0.26	0.063	0.408	0.464			0.238
W_Total_As_mgl	0.0006	0.002	0.002	0.002			0.002
W_Total_B_mgl	0.034	0.05	0.05	0.05			0.05
W_Total_Ba_mgl	0.038	0.035	0.038	0.038			0.045
W_Total_Be_mgl	0.000011	0.005	0.005	0.005			0.005
W_Total_Bi_mgl	0.0001	0.005	0.005	0.005			0.005
W_Total_Ca_mgl	45.9	47.8	48.9	32.9		39.4	54.4
W_Total_Cd_mgl	0.00002	0.001	0.001	0.001			0.001
W_Total_Co_mgl	0.00021	0.002	0.002	0.002			0.002
W_Total_Cr_mgl	0.00041	0.001	0.003	0.001			0.001
W_Total_Cs_mgl	0.000047						
W_Total_Cu_mgl	0.00084	0.002	0.005	0.002			0.002
W_Total_Fe_mgl	0.35	0.1	0.7	0.6			0.3
W_Total_Ge_mgl	0.00005						
W_Total_Hg_mgl	0.0001	0.001	0.001	0.001			0.001
W_Total_K_mgl	1.4	1.7	1.1	1.3			2.2
W_Total_La_mgl	0.00017						
W_Total_Li_mgl	0.00605	0.005	0.004	0.005			0.005
W_Total_Mg_mgl	12.5	10.4	7.8	8.3		9.7	14.2
W_Total_Mn_mgl	0.016	0.011	0.033	0.036			0.018
W_Total_Mo_mgl	0.00046	0.001	0.001	0.001			0.001
W_Total_Na_mgl	9.19	7	294	131			165
W_Total_Ni_mgl	0.0004	0.001	0.002	0.001			0.001
W_Total_P_mgl	0.04						
W_Total_Pb_mgl	0.00028	0.001	0.001	0.001			0.001
W_Total_Rb_mgl	0.001						
W_Total_S_mgl	10						
W_Total_Sb_mgl	0.00019	0.002	0.008	0.002			0.002
W_Total_Se_mgl	0.001	0.005	0.005	0.005			0.005
W_Total_Sn_mgl	0.0005	0.001	0.003	0.001			0.001
W_Total_Sr_mgl	0.793	0.907	0.564	0.544			0.919
W_Total_Ti_mgl		0.002	0.012	0.007			0.004
W_Total_Tl_mgl	0.0001	0.001	0.001	0.001			0.001
W_Total_U_mgl	0.0022	0.002	0.002	0.002			0.003
W_Total_V_mgl	0.0005	0.001	0.001	0.001			0.001
W_Total_Y_mgl	0.00013						
W_Total_Zn_mgl	0.003	0.005	0.01	0.005			0.005
W_Dissolved_Ag_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Al_mgl	0.0041	0.005	0.002	0.016	0.01	0.007	0.005
W_Dissolved_As_mgl	0.0005	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_B_mgl	0.024	0.04	0.04	0.03	0.03	0.03	0.03
W_Dissolved_Ba_mgl	0.0258	0.027	0.005	0.033	0.032	0.038	0.029
W_Dissolved_Be_mgl	0.00001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Bi_mgl	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Ca_mgl	45.4	47.6	11.6	37.5	42.7	43.5	40.3
W_Dissolved_Cd_mgl	0.00002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Co_mgl	0.000065	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Cr_mgl	0.0002	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Cs_mgl	0.00001						
W_Dissolved_Cu_mgl	0.001	0.0005	0.0005	0.0005	0.0006	0.0005	0.0011
W_Dissolved_Fe_mgl	0.0065	0.02	0.01	0.07	0.03	0.03	0.02
W_Dissolved_Ge_mgl	0.00005						
W_Dissolved_Hg_mgl	0.00008	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_K_mgl	1.3	1.5	1.72	1.16	0.64	3.87	1.98
W_Dissolved_La_mgl	0.00001						
W_Dissolved_Li_mgl	0.0057	0.006	0.007	0.003	0.005	0.005	0.004
W_Dissolved_Mg_mgl	12.3	11.2	0.15	9.9	10.7	12	9.71
W_Dissolved_Mn_mgl	0.0012	0.0034	0.0005	0.0114	0.0028	0.0038	0.0026
W_Dissolved_Mo_mgl	0.00044	0.0005	0.0005	0.0005	0.0005	0.0005	0.0008
W_Dissolved_Na_mgl	9.15	7.7	471	22.2	7.51	8.17	134
W_Dissolved_Ni_mgl	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_P_mgl	0.14						
W_Dissolved_Pb_mgl	0.00005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Rb_mgl	0.00021						
W_Dissolved_S_mgl	10						
W_Dissolved_Sb_mgl	0.00011	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Se_mgl	0.0005	0.005	0.005	0.005	0.005	0.005	0.005
W_Dissolved_Sn_mgl	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sr_mgl	0.755	0.682	0.228	0.618	0.716	0.724	0.619
W_Dissolved_Ti_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Tl_mgl	0.00001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_U_mgl	0.00336	0.0021	0.0004	0.0022	0.0018	0.0018	0.002
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000023		0.002	0.002	0.002	0.002	
W_Dissolved_Zn_mgl	0.001	0.002	0.002	0.002	0.002	0.002	0.002
W_SumAnions_meql	3.53						
W_SumCations_meql	3.71						
W_TCN_mgl	0.001	0.005	0.005	0.005	0.005	0.005	0.005
W_TColi_cfuml							
W_TDS_mgl	212	200	136	133	152	165	160
W_TDSalts_gm3							
W_Thard_gCaCO3m3	170	160	7	134	151	138	195
W_TKN_mgl	0.21						
W_TN_mgl		0.55	0.46	0.74	0.24	0.94	0.28
W_TOC_mgl	3.2	2.7	2.1	2.4	1.7	3.4	3.8
W_TP_mgl	0.0088	0.016	0.034	0.038	0.02	0.018	0.008
W_TSi_mgl		3.6	4	3.41			4.59
W_TSS_BDC_mgl		3					
W_TSS_mgl		3	16	18	6	17	6
W_Turbidity_NTU		1.4	5.01	7.99	1.36	4.79	1.96
W_Volume_ml							
WF_DO_mgl	10.63			11.98			16.75
WF_DO_pct	100.2		94.7	109.6			164.5
WF_EC_mScm	268.7		73.4	267.2			
WF_ORP_mV	-0.2		175.2	169.7			155.8
WF_pH	8.2		7.84	8.12			8.03
WF_temp_degC	10.3		1.4	8.1			11.1
WF_turbidity_NTU			6.62				
WF_colour	clear				clear		
WF_level	medium baseflow				low		
WF_odour	odourless				nil		

Blanks cells infer no available data

Baseline Water Quality Report: Shepherds Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_SC03_20-Mar-2024	W_SC03_4-Apr-2024	W_SC03_17-Apr-2024	W_SC03_1-May-2024	W_SC03_16-May-2024	W_SC03_29-May-2024	W_SC03_13-Jun-2024	W_SC03_27-Jun-2024
LABJOBNO	AR-24-NC-010966-01	AR-24-NC-011976-01	AR-24-NC-013497-01	AR-24-NC-015251-01		24-17710	24-19336	24-20566
WaterLabID	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Analytica	Analytica	Analytica
WaterSiteID	SC03	SC03	SC03	SC03	SC03	SC03	SC03	SC03
LabSampleID	817-2024-00035196	817-2024-00041160	817-2024-00047512	817-2024-00052694		24-17710-9	24-19336-9	24-20566-9
WaterSampDate	2024-03-20	2024-04-04	2024-04-17	2024-05-02	2024-05-16	2024-05-29	2024-06-13	2024-06-27
SampBy	HM	MB	MB	MB	MB		MB	MB
W_Acidity4_mgl	1	1	1	1	1			
W_Acidity5_mgl								
W_Acidity7_mgl	1	1	1	1	1			
W_Acidity8_mgl	7	10	4	4	4	5	4.33	1
W_Alkalinity_mgl	151	152	2	152	146	148	159	146
W_AmmoniaN_mgl	0.03	0.01	0.01	0.01	0.01	0.005	0.005	0.005
W_An_Bromide_mgl	0.02	0.02	0.02	0.02	0.02	0.05	0.05	
W_An_Chloride_mgl	2.95	2.84	3	2.85	2.77	2.4	1.73	2.39
W_An_Fluoride_mgl	0.13	0.11	0.12	0.15	0.15	0.085	0.09	0.085
W_An_Nitrate-N_mgl	0.14	0.04	0.08	0.07	0.06	0.0961	0.145	0.144
W_An_Nitrite-N_mgl	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.0016
W_An_Sulphate_mgl	16.6	15.1	14.6	15	16.7	14.5	13.3	14.2
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl	1.8	1.6	1.9	1.5	1.5	1.2	0.5	0.67
W_DRP_mgl						0.002	0.002	0.002
W_DSi_mgl	7.98	10.4	7.93	8.43	7.79			
W_EC_mSm	33.2	33.1	34	33.1	32.3	33.8		
W_EC_uScm						338	342	324
W_EColi_cfuml								
W_pH	8	8.1	5.4	8	8.1	8.1	7.9	7.9
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl	0.001	0.001	0.001	0.001				0.002
W_Total_Al_mgl	0.135	0.163	0.148	0.138		0.21	0.077	0.13
W_Total_As_mgl	0.002	0.002	0.002	0.002		0.0016	0.0005	0.00053
W_Total_B_mgl	0.05	0.05	0.05	0.05		0.035	0.027	0.031
W_Total_Ba_mgl	0.036	0.034	0.036	0.035		0.0408	0.0382	0.0383
W_Total_Be_mgl	0.005	0.005	0.005	0.005		0.00001	0.00001	0.000012
W_Total_Bi_mgl	0.005	0.005	0.005	0.005		0.0001	0.0001	0.0001
W_Total_Ca_mgl	37.8	43	41.8	37.2	41.7	43.4	46.9	45.3
W_Total_Cd_mgl	0.001	0.001	0.001	0.001		0.00002	0.00002	0.00002
W_Total_Co_mgl	0.002	0.002	0.002	0.002		0.00026	0.00017	0.00018
W_Total_Cr_mgl	0.001	0.001	0.001	0.001		0.00028	0.00033	0.00026
W_Total_Cs_mgl						0.000012	0.00001	0.000025
W_Total_Cu_mgl	0.002	0.002	0.002	0.002		0.00061	0.0004	0.00058
W_Total_Fe_mgl	0.2	0.2	0.2	0.2		0.46	0.22	0.3
W_Total_Ge_mgl						0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_K_mgl	0.9	1.4	1.3	1		1.1	1.3	1.2
W_Total_La_mgl						0.00018	0.0001	0.00012
W_Total_Li_mgl	0.004	0.005	0.004	0.003		0.00519	0.00455	0.00482
W_Total_Mg_mgl	9.8	11.7	11.7	9.7	10.2	10.2	11.3	10.9
W_Total_Mn_mgl	0.01	0.011	0.011	0.01		0.039	0.022	0.027
W_Total_Mo_mgl	0.038	0.001	0.001	0.001		0.00041	0.00032	0.00046
W_Total_Na_mgl	6.2	8	7.9	6.1		7.01	7.62	8.13
W_Total_Ni_mgl	0.001	0.001	0.001	0.001		0.0003	0.00024	0.00027
W_Total_P_mgl						0.04	0.04	0.04
W_Total_Pb_mgl	0.001	0.001	0.001	0.001		0.00027	0.00019	0.00027
W_Total_Rb_mgl						0.00076	0.00042	0.00058
W_Total_S_mgl						10	10	10
W_Total_Sb_mgl	0.002	0.002	0.002	0.002		0.0001	0.0001	0.0001
W_Total_Se_mgl	0.005	0.005	0.005	0.005		0.001	0.001	0.001
W_Total_Sn_mgl	0.001	0.001	0.001	0.001		0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.76	0.741	0.814	0.654		0.8	0.757	0.828
W_Total_Ti_mgl	0.005	0.005	0.002	0.003		0.0053		
W_Total_Tl_mgl	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_U_mgl	0.002	0.002	0.002	0.002		0.00226	0.0024	0.00249
W_Total_V_mgl	0.001	0.001	0.001	0.001		0.0005	0.0005	0.0005
W_Total_Y_mgl						0.00014	0.000094	0.00011
W_Total_Zn_mgl	0.005	0.005	0.005	0.005		0.003	0.003	0.0054
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005	0.0005			0.00008
W_Dissolved_Al_mgl	0.007	0.009	0.005	0.002	0.006	0.0032	0.0038	0.0032
W_Dissolved_As_mgl	0.001	0.001	0.001	0.001	0.001	0.0005	0.0005	0.0005
W_Dissolved_B_mgl	0.03	0.04	0.03	0.03	0.03	0.029	0.03	0.024
W_Dissolved_Ba_mgl	0.031	0.03	0.026	0.027	0.032	0.034	0.0352	0.0345
W_Dissolved_Be_mgl	0.001	0.001	0.001	0.001	0.001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	44.1	39.3	37.7	39.1	45.6	45.1	48.7	46
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.000036	0.000014	0.000037
W_Dissolved_Cr_mgl	0.001	0.001	0.001	0.001	0.001	0.0002	0.00021	0.0002
W_Dissolved_Cs_mgl							0.00001	0.00001
W_Dissolved_Cu_mgl	0.0007	0.0007	0.0005	0.0005	0.0005	0.00037	0.00024	0.00027
W_Dissolved_Fe_mgl	0.03	0.03	0.02	0.02	0.02	0.005	0.0052	0.005
W_Dissolved_Ge_mgl						0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.45	1.21	1.25	1.22	1.4	1.1	1.3	1.2
W_Dissolved_La_mgl						0.00001	0.00001	0.00001
W_Dissolved_Li_mgl	0.004	0.007	0.004	0.005	0.005	0.00448	0.00466	0.00414
W_Dissolved_Mg_mgl	12.1	11.9	11	11.7	12.1	10.8	11.5	10.5
W_Dissolved_Mn_mgl	0.0026	0.0014	0.0032	0.0038	0.0024	0.001	0.00071	0.0029
W_Dissolved_Mo_mgl	0.0005	0.0006	0.0005	0.0005	0.0005	0.00026	0.00029	0.00029
W_Dissolved_Na_mgl	8.36	8.53	7.51	7.98	8.32	7.18	7.63	6.93
W_Dissolved_Ni_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
W_Dissolved_P_mgl						0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl						0.0002	0.00021	0.0002
W_Dissolved_S_mgl						10	10	10
W_Dissolved_Sb_mgl	0.001	0.001	0.001	0.001	0.001	0.00011	0.00015	0.0001
W_Dissolved_Se_mgl	0.005	0.005	0.005	0.005	0.005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.782	0.592	0.705	0.695	0.709	0.796	0.746	0.702
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.002		
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.0021	0.002	0.0019	0.0019	0.0024	0.00232	0.00232	0.00227
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl						0.000017	0.000014	0.000015
W_Dissolved_Zn_mgl	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001
W_SumAnions_meql						3.39	3.55	3.33
W_SumCations_meql						3.48	3.74	3.49
W_TCN_mgl	0.005	0.005	0.005	0.005	0.005		0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	163	162	167	162	158	192	171	178
W_TDSalts_gm3								
W_Thard_gCaCO3m3	135	156	140	133	164	150	160	160
W_TKN_mgl						0.23	0.75	0.27
W_TN_mgl	0.215	0.182	0.205	0.195	0.171	0.33	0.9	0.41
W_TOC_mgl	1.8	1.8	1.9	1.6	1.7	0.98	0.5	0.5
W_TP_mgl	0.007	0.009	0.009	0.01	0.009	0.021	0.013	0.005
W_TSi_mgl	3.27	3.48	3.54	3.27				
W_TSS_BDC_mgl								
W_TSS_mgl	4	6	6	5	8	11	7	10
W_Turbidity_NTU	1.33	2.39	2.03	1.92	3.46	4.6	3.5	5.7
W_Volume_ml								
WF_DO_mgl	14.51	11.87	14.01	14.67	10.83		12.26	13.25
WF_DO_pct	125.5	110.3	121.4	120.9	92.3		97.1	102.8
WF_EC_mScm	328	328.4	325.8	303.8	312.4		320	315.1
WF_ORP_mV	180.8	313.4	209.6	105	14.1		122.7	122.1
WF_pH	7.97	8.05	8.03	8.1	8.11		7.92	8.13
WF_temp_degC	6.3	9.7	5.9	4.2	5.7		2.6	2.4
WF_turbidity_NTU					2.55		3.5	
WF_colour			clear	clear	clear		clear	clear
WF_level			low	low	low		low	low
WF_odour			odourless	odourless	nil		nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Shepherds Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_SC03_25-Jul-2024	W_SC03_22-Aug-2024	W_SC03_4-Sep-2024	W_SC03_19-Sep-2024	W_SC03_14-Nov-2024	W_SC03_28-Nov-2024
LABJOBNO	24-23696	24-26351	24-27733-8	24-29331-9	24-35305-9	24-36747-9
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	SC03	SC03	SC03	SC03	SC03	SC03
LabSampleID	24-23696-9	24-26351-9	24-27733-8	24-29331-9	24-35305-9	24-36747-9
WaterSampDate	2024-07-25	22-08-2024	2024-09-04	2024-09-19	2024-11-14	2024-11-28
SampBy	MB	MB	MB	MB	MB	MB
W_Acidity4_mgl						
W_Acidity5_mgl						
W_Acidity7_mgl						
W_Acidity8_mgl	10	6	3.33	2.67	1	1.67
W_Alkalinity_mgl	143	136	121	124	132	145
W_AmmoniaN_mgl	0.005	0.005	0.005	0.005	0.03	0.005
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	2.91	2.49	2.58	2.7	2.03	1.87
W_An_Fluoride_mgl	0.083	0.079	0.076	0.076	0.077	0.13
W_An_Nitrate-N_mgl	0.223	0.196	0.194	0.24	0.0946	0.0944
W_An_Nitrite-N_mgl	0.0011	0.001	0.0014	0.0013	0.004	0.0014
W_An_Sulphate_mgl	16.4	14.6	11.3	9.84	9.53	9.83
W_BiCarbAlk_mgl						
W_CarbAlk_mgl						
W_Density_gcm3						
W_DOC_mgl						
W_DRP_mgl	0.002	0.002	0.002	0.002	0.002	0.003
W_DSi_mgl						
W_EC_mSm						
W_EC_uScm	325	359	270	253	310	321
W_EColi_cfuml						
W_pH	8	7.9	7.9	8	7.9	8.1
W_pH_1311_hcl						
W_pH_1311_initial						
W_pH_1311_leachate						
W_pH_1311_off						
W_Total_Ag_mgl				0.002		
W_Total_Al_mgl	0.076	0.025	0.09	0.412	0.387	1.12
W_Total_As_mgl	0.0005	0.0005	0.00077	0.00088	0.001	0.0017
W_Total_B_mgl	0.017	0.027	0.024	0.023	0.005	0.034
W_Total_Ba_mgl	0.0374	0.0376	0.0393	0.0454	0.0476	0.063
W_Total_Be_mgl	0.00001	0.00001	0.00001	0.000032	0.000014	0.000066
W_Total_Bi_mgl	0.0001	0.0001	0.0001		0.0001	0.0001
W_Total_Ca_mgl	45.2	45	37.7	40.9	43.4	45.4
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.000026
W_Total_Co_mgl	0.000089	0.0001	0.00026	0.00046	0.00041	0.00103
W_Total_Cr_mgl	0.00026	0.0002	0.00031	0.00057	0.00065	0.0015
W_Total_Cs_mgl	0.00001	0.00001	0.00001	0.000083	0.00007	0.00024
W_Total_Cu_mgl	0.00036	0.00074	0.00092	0.0014	0.0012	0.0024
W_Total_Fe_mgl	0.17	0.089	0.39	0.9	0.893	2.14
W_Total_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00011
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	1.2	1.3	1.4	1.6	1.9	1.6
W_Total_La_mgl	0.000064	0.000045	0.00024	0.00038	0.00037	0.00086
W_Total_Li_mgl	0.00451	0.00439	0.00372	0.00423	0.00498	0.00671
W_Total_Mg_mgl	11	10.8	8.51	8.47	9.93	10.5
W_Total_Mn_mgl	0.017	0.018	0.044	0.0501	0.046	0.107
W_Total_Mo_mgl	0.00044	0.00041	0.00021	0.00021	0.00038	0.00028
W_Total_Na_mgl	7.33	7.23	5.87	5.75	6.42	6.59
W_Total_Ni_mgl	0.0002	0.00023	0.00039	0.00067	0.00061	0.0014
W_Total_P_mgl	0.04	0.04	0.04	0.046	0.051	0.094
W_Total_Pb_mgl	0.00012	0.0001	0.00047	0.00071	0.00071	0.0016
W_Total_Rb_mgl	0.00037	0.00023	0.00038	0.0013	0.0012	0.0034
W_Total_S_mgl	10	10	10	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001	0.00013	0.00011	0.00013
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.754	0.742	0.633	0.604	0.703	0.732
W_Total_Ti_mgl				0.0085		
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00284	0.00279	0.00215	0.00205	0.00263	0.00248
W_Total_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0013
W_Total_Y_mgl	0.000068	0.000055	0.00022	0.00034	0.0003	0.00067
W_Total_Zn_mgl	0.003	0.003	0.003	0.003	0.003	0.0051
W_Dissolved_Ag_mgl						
W_Dissolved_Al_mgl	0.0032	0.003	0.0072	0.0096	0.012	0.011
W_Dissolved_As_mgl	0.0005	0.0005	0.00076	0.0005	0.00063	0.00078
W_Dissolved_B_mgl	0.018	0.026	0.023	0.02	0.01	0.025
W_Dissolved_Ba_mgl	0.0344	0.0355	0.0356	0.0332	0.038	0.0374
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	44	43.4	36.4	38.2	40.9	42.4
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.000027	0.000063	0.000061	0.000092	0.000064	0.000062
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.0003	0.00035	0.0007	0.00075	0.0004	0.0006
W_Dissolved_Fe_mgl	0.005	0.0074	0.021	0.025	0.037	0.034
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.1	1.2	1.3	1.4	1.6	1.2
W_Dissolved_La_mgl	0.00001	0.00001	0.000014	0.000017	0.000015	0.000019
W_Dissolved_Li_mgl	0.00452	0.0043	0.00372	0.00362	0.00461	0.00433
W_Dissolved_Mg_mgl	10.4	10.5	8.35	7.9	9.13	9.95
W_Dissolved_Mn_mgl	0.003	0.0095	0.0018	0.0044	0.0076	0.0049
W_Dissolved_Mo_mgl	0.00045	0.00033	0.00031	0.00025	0.00035	0.00041
W_Dissolved_Na_mgl	6.95	7	5.82	5.41	5.98	6.86
W_Dissolved_Ni_mgl	0.0002	0.0002	0.00021	0.00024	0.0002	0.0002
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04	0.11
W_Dissolved_Pb_mgl	0.000053	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00017	0.00017	0.00024	0.00022	0.0003	0.00035
W_Dissolved_S_mgl	10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.00011	0.0001	0.0001	0.0001	0.00012	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.00066	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.754	0.708	0.632	0.577	0.71	0.716
W_Dissolved_Ti_mgl						
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00306	0.0028	0.00229	0.0018	0.0026	0.00225
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000018	0.000017	0.000029	0.000029	0.00003	0.000028
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001	0.001	0.001
W_SumAnions_meql	3.34	3.13	2.78	2.81	2.94	3.2
W_SumCations_meql	3.38	3.36	2.79	2.83	3.1	3.27
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml						
W_TDS_mgl	163	165	158	120	152	168
W_TDSalts_gm3			158	120	152	168
W_Thard_gCaCO3m3	160	160	130	140	150	160
W_TKN_mgl	0.13	0.19	0.39	0.52	0.72	0.65
W_TN_mgl	0.35	0.39	0.58	0.76	0.82	0.75
W_TOC_mgl						
W_TP_mgl	0.005	0.005	0.04	0.059	0.038	0.1
W_TSi_mgl						
W_TSS_BDC_mgl						
W_TSS_mgl	4	5	21	31	42	54
W_Turbidity_NTU	2.3	1.8	9	12	11	32
W_Volume_ml						
WF_DO_mgl	15.15		12.9	15.33	10.32	9.62
WF_DO_pct	113.3		118.2	130.4	105.5	103.2
WF_EC_mScm	311.2		269.2	66.5	276.8	295.3
WF_ORP_mV	129.1		44.4	123	84.2	18
WF_pH	8.13		8.18	7.53	8.12	8.18
WF_temp_degC	0.5		8.6	4.5	13.2	15.2
WF_turbidity_NTU						
WF_colour	clear		clear	clear	clear	clear
WF_level	low		high	high	low	low
WF_odour	nil		nil	nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Shepherds Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_JC01_22-Sep-2022	W_JC01_5-Jul-2023	W_JC01_10-Oct-2023	W_JC01_20-Dec-2023	W_JC01_19-Sep-2024	W_JC01_14-Nov-2024
LABJOBNO	22-35194	AR-23-NC-017979-01	AR-23-NC-028806-01	AR-24-NC-000295-01	24-29331-12	24-35305-10
WaterLabID	Analytica	Eurofins	Eurofins	Eurofins	Analytica	Analytica
WaterSiteID	JC01	JC01	JC01	JC01	JC01	JC01
LabSampleID	22-35194-5	817-2023-00068116	817-2023-00110963	817-2023-00141594	24-29331-12	24-35305-10
SampBy	Van Walt/ E3	HM	HM	HM	MB	MB
W_Acidity4_mgl		1	1	1		
W_Acidity5_mgl						
W_Acidity7_mgl		1	1	1		
W_Acidity8_mgl	2	1	1	1	1	1
W_Alkalinity_mgl	207	249	235	285	241	261
W_AmmoniaN_mgl	0.005	0.01	0.01	0.01	0.005	0.005
W_An_Bromide_mgl		0.05	0.04	0.09	0.05	0.07
W_An_Chloride_mgl	6.58	5.93	4.03	7.04	5.64	4.05
W_An_Fluoride_mgl		0.08	0.09	0.1	0.056	0.055
W_An_Nitrate-N_mgl	0.016	0.150	0.050	0.040	0.107	0.011
W_An_Nitrite-N_mgl		0.010	0.010	0.010	0.001	0.0011
W_An_Sulphate_mgl	12.9	26.4	14.7	22.2	22.2	12.8
W_BiCarbAlk_mgl						
W_CarbAlk_mgl						
W_Density_gcm3						
W_DOC_mgl	6.2	4	3.9	3.9		
W_DRP_mgl	0.002				0.007	0.008
W_DSi_mgl		6.68	6.53	8.36		
W_EC_mSm	40	52.1	46.8	57.2		
W_EC_uScm	404				530	560
W_EColi_cfuml						
W_pH	8.4	8.2	8.3	8.4	8.3	8.2
W_pH_1311_hcl						
W_pH_1311_initial						
W_pH_1311_leachate						
W_pH_1311_off						
W_Total_Ag_mgl		0.001	0.001		0.002	
W_Total_Al_mgl	0.026	0.324	0.974		0.084	0.031
W_Total_As_mgl	0.00086	0.002	0.002		0.00068	0.00068
W_Total_B_mgl	0.031	0.05	0.05		0.033	0.024
W_Total_Ba_mgl	0.0337	0.035	0.044		0.0361	0.035
W_Total_Be_mgl	0.00001	0.005	0.005		0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.005	0.005			0.0001
W_Total_Ca_mgl	58.3	97.5	55.6	73.1	78.3	72.7
W_Total_Cd_mgl	0.00002	0.001	0.001		0.00002	0.00002
W_Total_Co_mgl	0.00015	0.002	0.002		0.00022	0.00013
W_Total_Cr_mgl	0.0002	0.001	0.001		0.0002	0.0002
W_Total_Cs_mgl	0.00001				0.00001	0.00001
W_Total_Cu_mgl	0.0014	0.004	0.002		0.0015	0.0011
W_Total_Fe_mgl	0.028	0.3	0.9		0.16	0.041
W_Total_Ge_mgl	0.00005				0.000064	0.00005
W_Total_Hg_mgl	0.0001	0.001	0.001		0.0001	0.0001
W_Total_K_mgl	2	1.5	1.9		2.2	1.8
W_Total_La_mgl	0.000027				0.000065	0.000036
W_Total_Li_mgl	0.00747	0.007	0.009		0.00917	0.011
W_Total_Mg_mgl	15.9	17.6	16	22.6	19.4	19.4
W_Total_Mn_mgl	0.0016	0.011	0.028		0.0061	0.0021
W_Total_Mo_mgl	0.00097	0.001	0.001		0.0012	0.0012
W_Total_Na_mgl	13.8	181	105		20.8	20.3
W_Total_Ni_mgl	0.00025	0.001	0.001		0.00045	0.00028
W_Total_P_mgl	0.04				0.04	0.04
W_Total_Pb_mgl	0.00005	0.001	0.001		0.00017	0.00005
W_Total_Rb_mgl	0.0003				0.00037	0.00025
W_Total_S_mgl	10				10	10
W_Total_Sb_mgl	0.0005	0.002	0.002		0.00055	0.00048
W_Total_Se_mgl	0.001	0.005	0.005		0.0011	0.001
W_Total_Sn_mgl	0.0005	0.001	0.001		0.0005	0.0005
W_Total_Sr_mgl	0.847	0.791	0.722		0.942	0.956
W_Total_Ti_mgl		0.01	0.018		0.0036	
W_Total_Tl_mgl	0.0001	0.001	0.001		0.0001	0.0001
W_Total_U_mgl	0.00351	0.007	0.004		0.0076	0.00701
W_Total_V_mgl	0.0005	0.001	0.002		0.0005	0.0005
W_Total_Y_mgl	0.00005				0.000076	0.000055
W_Total_Zn_mgl	0.003	0.005	0.006		0.003	0.003
W_Dissolved_Ag_mgl		0.0005	0.0005	0.0005		
W_Dissolved_Al_mgl	0.0039	0.004	0.009	0.012	0.0032	0.01
W_Dissolved_As_mgl	0.00069	0.001	0.001	0.001	0.00066	0.00074
W_Dissolved_B_mgl	0.024	0.04	0.04	0.05	0.031	0.017
W_Dissolved_Ba_mgl	0.0258	0.003	0.015	0.033	0.0339	0.0339
W_Dissolved_Be_mgl	0.00001	0.001	0.001	0.001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.001	0.001	0.001	0.0001	0.0001
W_Dissolved_Ca_mgl	58.2	16.8	27.1	71.4	75.3	70.9
W_Dissolved_Cd_mgl	0.00002	0.0002	0.0002	0.0002	0.00002	0.00002
W_Dissolved_Co_mgl	0.00012	0.0005	0.0005	0.0005	0.00013	0.000092
W_Dissolved_Cr_mgl	0.0002	0.001	0.001	0.001	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001				0.00001	0.00001
W_Dissolved_Cu_mgl	0.003	0.0008	0.001	0.0012	0.0014	0.0012
W_Dissolved_Fe_mgl	0.005	0.01	0.01	0.01	0.005	0.005
W_Dissolved_Ge_mgl	0.00005				0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.0005	0.0005	0.0005	0.00008	0.00008
W_Dissolved_K_mgl	2	2.3	1.34	2.36	2.1	1.8
W_Dissolved_La_mgl	0.00001				0.00001	0.000013
W_Dissolved_Li_mgl	0.00785	0.013	0.006	0.013	0.00876	0.0115
W_Dissolved_Mg_mgl	15.6	21.4	16.7	30.5	17.9	18.6
W_Dissolved_Mn_mgl	0.00095	0.0006	0.0011	0.0019	0.00068	0.001
W_Dissolved_Mo_mgl	0.00096	0.0011	0.001	0.0014	0.0011	0.0013
W_Dissolved_Na_mgl	13.3	196	83.6	22.5	19.3	19.5
W_Dissolved_Ni_mgl	0.0003	0.0005	0.0005	0.0005	0.00026	0.00029
W_Dissolved_P_mgl	0.16				0.04	0.04
W_Dissolved_Pb_mgl	0.00044	0.0005	0.0005	0.0005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00022				0.00021	0.00019
W_Dissolved_S_mgl	10				10	10
W_Dissolved_Sb_mgl	0.00037	0.001	0.001	0.001	0.00052	0.0005
W_Dissolved_Se_mgl	0.0005	0.005	0.005	0.005	0.00085	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0005	0.0005	0.0005	0.0002	0.0002
W_Dissolved_Sr_mgl	0.835	0.24	0.385	0.957	0.914	0.979
W_Dissolved_Ti_mgl		0.0005	0.0005	0.0007		
W_Dissolved_Tl_mgl	0.00001	0.0005	0.0005	0.0005	0.00001	0.00001
W_Dissolved_U_mgl	0.0055	0.0056	0.0053	0.0065	0.00679	0.00691
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0006	0.0005	0.0005
W_Dissolved_Y_mgl	0.000029	0.002	0.004	0.002	0.000029	0.000037
W_Dissolved_Zn_mgl	0.0041	0.002	0.004	0.002	0.001	0.0018
W_SumAnions_meql	4.73				5.57	5.73
W_SumCations_meql	4.82				6.12	5.96
W_TCN_mgl	0.001	0.005	0.005		0.001	0.001
W_TColi_cfuml						
W_TDS_mgl	272	255	230	280	277	278
W_TDSalts_gm3						
W_Thard_gCaCO3m3	210	7	137	276	280	260
W_TKN_mgl	0.26				0.5	0.37
W_TN_mgl		0.43	0.52	0.35	0.61	0.38
W_TOC_mgl	6.3	4.1	3.9	3.3		
W_TP_mgl	0.005	0.027	0.042	0.036	0.011	0.052
W_TSi_mgl		3.55	3.88			
W_TSS_BDC_mgl						
W_TSS_mgl		13	42	6	7	9
W_Turbidity_NTU		0.73	9.06	0.62	2.3	7.8
WF_DO_mgl	10.7		12.26		12.14	16.23
WF_DO_pct	99.1	98.1	109.8		109.3	167.7
WF_EC_mScm	412.2	506	448.2		485.6	479.6
WF_ORP_mV	18.2	193.5	173.9		43.9	66.7
WF_pH	8.56	8.27	8.42		8.46	8.53
WF_temp_degC	9.8	3.1	7.2		6.9	11.6
WF_turbidity_NTU		5.31				
WF_colour	clear				clear	clear
WF_level	medium baseflow				low	low
WF_odour	odourless				nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RSA1_22-Sep-2022	W_RSA1_23-Mar-2023	W_RSA1_5-Jul-2023	W_RSA1_10-Oct-2023	W_RSA1_20-Dec-2023	W_RSA1_4-Feb-2024	W_RSA1_5-Mar-2024
LABJOBNO	22-35194	WP23-11797	AR-23-NC-017979-01	AR-23-NC-028806-01	AR-24-NC-000295-01	AR-24-NC-003109-01	AR-24-NC-008972-01
WaterLabID	Analytica	SGS	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins
WaterSiteID	RSA1	RSA1	RSA1	RSA1	RSA1	RSA1	RSA1
LabSampleID	22-35194-3	WP23-11797.006	817-2023-00068118	817-2023-00110965	817-2023-00141596	817-2024-00015365	817-2024-00029415
WaterSampDate	2022-09-22	2023-03-23	2023-07-05	2023-10-10	2023-12-20	2024-02-04	2024-03-05
SampBy	Van Walt/ E3	HM	HM	HM	HM	HM	HM
W_Acidity4_mgl		5	1	1	1	1	1
W_Acidity5_mgl		5					
W_Acidity7_mgl		5	26	1	1	1	1
W_Acidity8_mgl	6		1	28	53	48	37
W_Alkalinity_mgl	235	140	186	242	112	134	119
W_AmmoniaN_mgl	0.005	0.01	0.01	0.05	0.13	0.13	0.05
W_An_Bromide_mgl		0.01	0.02	0.02	0.02	0.02	0.03
W_An_Chloride_mgl	7.91	2.6	4.19	6.09	0.43	0.44	2.54
W_An_Fluoride_mgl		0.24	0.11	0.2	0.12	0.13	0.15
W_An_Nitrate-N_mgl	0.002	0.004516129	0.01	0.14	0.01	0.03	0.04
W_An_Nitrite-N_mgl		0.003043478	0.01	0.01	0.01	0.01	0.01
W_An_Sulphate_mgl	17.5	4.3	7.71	18.4	0.06	1.15	0.85
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	7.1	4.1	3.3	5	3.2	4	3.2
W_DRP_mgl	0.002						
W_DSi_mgl		5.75	8.57	9.94	16.4	15.4	12.3
W_EC_mSm	48		38.7	49.5	22.8	27	24.2
W_EC_uScm	481	270					
W_EColi_cfuml							
W_pH	8	7.4	7.8	7.3	6.7	7.6	6.9
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl		0.001	0.001	0.001			0.001
W_Total_Al_mgl	0.0074	0.046	0.023	0.1			0.453
W_Total_As_mgl	0.243	0.122	0.233	0.113			0.812
W_Total_B_mgl	0.01	0.05	0.05	0.05			0.05
W_Total_Ba_mgl	0.0263	0.022	0.019	0.03			0.056
W_Total_Be_mgl	0.00001	0.005	0.005	0.005			0.005
W_Total_Bi_mgl	0.0001	0.005	0.005	0.005			0.005
W_Total_Ca_mgl	71.2	41.4	60.6	59.5		33.7	33.9
W_Total_Cd_mgl	0.00002	0.001	0.001	0.001			0.001
W_Total_Co_mgl	0.00024	0.002	0.002	0.002			0.002
W_Total_Cr_mgl	0.0002	0.001	0.001	0.002			0.001
W_Total_Cs_mgl	0.00001						
W_Total_Cu_mgl	0.00035	0.002	0.006	0.002			0.002
W_Total_Fe_mgl	0.913	0.8	1.2	0.8			11.3
W_Total_Ge_mgl	0.00005						
W_Total_Hg_mgl	0.0001	0.001	0.001	0.001			0.001
W_Total_K_mgl	1.3	1.3	0.7	1.4			0.6
W_Total_La_mgl	0.000012						
W_Total_Li_mgl	0.00592	0.003	0.003	0.009			0.003
W_Total_Mg_mgl	18.8	6.3	7.8	15.5		5.9	6.2
W_Total_Mn_mgl	0.051	0.05	0.033	0.161			0.593
W_Total_Mo_mgl	0.0003	0.001	0.001	0.001			0.001
W_Total_Na_mgl	15.8	6.4	73	895			6.9
W_Total_Ni_mgl	0.00028	0.001	0.002	0.004			0.001
W_Total_P_mgl	0.084						
W_Total_Pb_mgl	0.00005	0.001	0.001	0.001			0.001
W_Total_Rb_mgl	0.00056						
W_Total_S_mgl	10						
W_Total_Sb_mgl	0.00014	0.002	0.002	0.002			0.002
W_Total_Se_mgl	0.001	0.005	0.005	0.005			0.005
W_Total_Sn_mgl	0.0005	0.001	0.001	0.001			0.001
W_Total_Sr_mgl	1.38	0.619	0.535	0.873			0.495
W_Total_Ti_mgl		0.003	0.002	0.004			0.01
W_Total_Tl_mgl	0.0001	0.001	0.001	0.001			0.001
W_Total_U_mgl	0.0014	0.001	0.002	0.003			0.001
W_Total_V_mgl	0.0005	0.001	0.001	0.002			0.001
W_Total_Y_mgl	0.00005						
W_Total_Zn_mgl	0.003	0.005	0.005	0.005			0.005
W_Dissolved_Ag_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Al_mgl	0.0042	0.002	0.002	0.002	0.002	0.003	0.002
W_Dissolved_As_mgl	0.0761	0.047	0.065	0.035	0.06	0.038	0.043
W_Dissolved_B_mgl	0.01	0.03	0.03	0.03	0.03	0.03	0.03
W_Dissolved_Ba_mgl	0.0189	0.017	0.004	0.003	0.036	0.03	0.033
W_Dissolved_Be_mgl	0.00001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Bi_mgl	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Ca_mgl	69.6	45	15.1	5	31.9	39.9	34.4
W_Dissolved_Cd_mgl	0.00002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Co_mgl	0.00019	0.0005	0.0005	0.0005	0.0014	0.0005	0.0005
W_Dissolved_Cr_mgl	0.00073	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Cs_mgl	0.00001						
W_Dissolved_Cu_mgl	0.0002	0.0005	0.0005	0.0007	0.0005	0.0005	0.0005
W_Dissolved_Fe_mgl	0.08	0.06	0.01	0.01	1.07	0.07	0.37
W_Dissolved_Ge_mgl	0.000082						
W_Dissolved_Hg_mgl	0.00008	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_K_mgl	1.3	1.23	1.45	1.12	0.14	0.34	0.55
W_Dissolved_La_mgl	0.00001						
W_Dissolved_Li_mgl	0.00646	0.004	0.005	0.005	0.003	0.003	0.003
W_Dissolved_Mg_mgl	18.6	7.49	0.17	0.18	5.68	7.64	6.04
W_Dissolved_Mn_mgl	0.035	0.0325	0.0006	0.002	0.69	0.0115	0.169
W_Dissolved_Mo_mgl	0.00031	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Na_mgl	15.5	7.72	648	512	7.75	7.43	7.48
W_Dissolved_Ni_mgl	0.00041	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_P_mgl	0.13						
W_Dissolved_Pb_mgl	0.00005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Rb_mgl	0.00047						
W_Dissolved_S_mgl	10						
W_Dissolved_Sb_mgl	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Se_mgl	0.0005	0.005	0.005	0.005	0.005	0.005	0.005
W_Dissolved_Sn_mgl	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sr_mgl	1.34	0.503	0.211	0.145	0.563	0.536	0.398
W_Dissolved_Ti_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Tl_mgl	0.00001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_U_mgl	0.00219	0.0002	0.0002	0.0008	0.0002	0.0002	0.0002
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000014		0.002	0.002	0.003	0.005	
W_Dissolved_Zn_mgl	0.0012	0.002	0.002	0.002	0.003	0.005	0.002
W_SumAnions_meql	5.35						
W_SumCations_meql	5.71						
W_TCN_mgl	0.001	0.005	0.005	0.005	0.005	0.005	0.005
W_TColi_cfuml							
W_TDS_mgl	310	200	190	243	112	133	118
W_TDSalts_gm3							
W_Thard_gCaCO3m3	260	140	7	13	103	108	110
W_TKN_mgl	2.33						
W_TN_mgl		0.34	0.25	0.41	0.48	1.83	0.28
W_TOC_mgl	7.1	4.3	4.4	5.1	6.6	10.4	5
W_TP_mgl	0.42	0.017	0.024	0.014	0.016	0.188	0.009
W_TSi_mgl		4.94	4.34	5.83			6.01
W_TSS_BDC_mgl		87					
W_TSS_mgl		87	31	7	87	69	37
W_Turbidity_NTU		10	10.3	5.71	60.5	30.5	26.4
W_Volume_ml							
WF_DO_mgl	2.69			1.33			6.13
WF_DO_pct	27.4		70.2	13			59.3
WF_EC_mScm	505		411.9	795			
WF_ORP_mV	-75.3		172.9	-133.7			27.9
WF_pH	7.15		6.76	7.53			7.01
WF_temp_degC	12.7		1.8	9.8			10.3
WF_turbidity_NTU			7.55				
WF_colour	red- orange						
WF_level	medium baseflow						
WF_odour	odourless						

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RSA1_20-Mar-2024	W_RSA1_4-Apr-2024	W_RSA1_17-Apr-2024	W_RSA1_1-May-2024	W_RSA1_16-May-2024	W_RSA1_29-May-2024	W_RSA1_13-Jun-2024	W_RSA1_27-Jun-2024
LABJOBNO	AR-24-NC-010966-01	AR-24-NC-011976-01	AR-24-NC-013497-01	AR-24-NC-015251-01		24-17710	24-19336	24-20566
WaterLabID	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Analytica	Analytica	Analytica
WaterSiteID	RSA1	RSA1	RSA1	RSA1	RSA1	RSA1	RSA1	RSA1
LabSampleID	817-2024-00035198	817-2024-00041162	817-2024-00047514	817-2024-00052696		24-17710-7	24-19336-7	24-20566-7
WaterSampDate	2024-03-20	2024-04-04	2024-04-17	2024-05-01	2024-05-16	2024-05-29	2024-06-13	2024-06-27
SampBy	HM	MB	MB	MB	MB		MB	MB
W_Acidity4_mgl	1	1	1	1	1			
W_Acidity5_mgl								
W_Acidity7_mgl	1	1	1	1	3			
W_Acidity8_mgl	49	44	36	27	33	16.67	2.33	11.67
W_Alkalinity_mgl	106	103	104	90	78	80.1	73.3	81.6
W_AmmoniaN_mgl	0.02	0.01			0.01	0.005	0.01	0.005
W_An_Bromide_mgl	0.02	0.02	0.02	0.02	0.02	0.05	0.05	
W_An_Chloride_mgl	0.85	0.96	2.72	3.41	2.35	1.96	1.94	2.55
W_An_Fluoride_mgl	0.12	0.1	0.1	0.11	0.1	0.048	0.066	0.056
W_An_Nitrate-N_mgl	0.01	0.01	0.01	0.01	0.01	0.0038	0.0037	0.002
W_An_Nitrite-N_mgl	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001
W_An_Sulphate_mgl	0.72	1	2.8	4.09	6.77	7.79	5.89	6.36
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl	2	1.8	2.5	1.8	1.7	1.6	0.5	1.3
W_DRP_mgl						0.002	0.002	0.002
W_DSi_mgl	12.2	9.08	12.7	11.3	7.84			
W_EC_mSm	21.9	21	22.1	20	17.7	18.7		
W_EC_uScm						187	176	201
W_EColi_cfuml								
W_pH	6.8	7	6.9	6.8	6.7	7.6	7.2	7.3
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl	0.001	0.001	0.001	0.001				0.002
W_Total_Al_mgl	0.022	0.049	0.007	0.005		0.15	0.011	0.0069
W_Total_As_mgl	0.476	0.337	0.128	0.454		1.05	0.019	0.291
W_Total_B_mgl	0.05	0.05	0.05	0.05		0.008	0.005	0.005
W_Total_Ba_mgl	0.035	0.029	0.027	0.03		0.0492	0.0162	0.0392
W_Total_Be_mgl	0.005	0.005	0.005	0.005		0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.005	0.005	0.005	0.005		0.0001	0.0001	0.0001
W_Total_Ca_mgl	26.6	27.3	26.5	22	23	26	23.2	27.2
W_Total_Cd_mgl	0.001	0.001	0.001	0.001		0.00002	0.00002	0.00002
W_Total_Co_mgl	0.002	0.002	0.002	0.002		0.00283	0.00011	0.00091
W_Total_Cr_mgl	0.001	0.001	0.001	0.001		0.0002	0.0002	0.0002
W_Total_Cs_mgl						0.00001	0.00001	0.00001
W_Total_Cu_mgl	0.002	0.002	0.002	0.002		0.00089	0.00024	0.00021
W_Total_Fe_mgl	9.4	5.7	1.6	6.9		15.4	0.29	5.4
W_Total_Ge_mgl						0.00021	0.00005	0.00013
W_Total_Hg_mgl	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_K_mgl	0.1	0.3	0.7	0.7		0.57	0.69	1
W_Total_La_mgl						0.00015	0.00001	0.000017
W_Total_Li_mgl	0.002	0.002	0.002	0.002		0.00274	0.00216	0.00236
W_Total_Mg_mgl	5.1	5.2	5.4	4.1		4.53	4.33	6.51
W_Total_Mn_mgl	0.457	0.243	0.094	0.205		0.768	0.023	0.265
W_Total_Mo_mgl	0.001	0.001	0.001	0.001		0.0002	0.0002	0.0002
W_Total_Na_mgl	6.3	6.4	6.8	4.9		5.6	5.91	5.72
W_Total_Ni_mgl	0.001	0.001	0.001	0.001		0.00074	0.0002	0.00036
W_Total_P_mgl						0.15	0.04	0.041
W_Total_Pb_mgl	0.001	0.001	0.001	0.001		0.00034	0.00005	0.00005
W_Total_Rb_mgl						0.00079	0.00034	0.00029
W_Total_S_mgl						10	10	10
W_Total_Sb_mgl	0.002	0.002	0.002	0.002		0.0001	0.0001	0.0001
W_Total_Se_mgl	0.005	0.005	0.005	0.005		0.001	0.001	0.001
W_Total_Sn_mgl	0.001	0.001	0.001	0.001		0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.401	0.361	0.411	0.341		0.379	0.293	0.317
W_Total_Ti_mgl	0.001	0.002	0.001	0.001		0.0044		
W_Total_Tl_mgl	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_U_mgl	0.001	0.001	0.001	0.001		0.000047	0.00003	0.000044
W_Total_V_mgl	0.001	0.001	0.001	0.001		0.0005	0.0005	0.0005
W_Total_Y_mgl						0.00014	0.00005	0.00005
W_Total_Zn_mgl	0.005	0.005	0.005	0.005		0.0051	0.0031	0.003
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005	0.0005			0.00008
W_Dissolved_Al_mgl	0.002	0.002	0.002	0.005	0.002	0.003	0.003	0.003
W_Dissolved_As_mgl	0.055	0.061	0.053	0.13	0.04	0.0056	0.012	0.016
W_Dissolved_B_mgl	0.03	0.03	0.03	0.03	0.03	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.028	0.026	0.025	0.027	0.021	0.0307	0.0149	0.0223
W_Dissolved_Be_mgl	0.001	0.001	0.001	0.001	0.001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	35.9	29.6	27.9	37	25.1	26.1	23.5	24.9
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.0007	0.0006	0.0005	0.0018	0.0008	0.00131	0.000051	0.00068
W_Dissolved_Cr_mgl	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl							0.00001	0.00001
W_Dissolved_Cu_mgl	0.0005	0.0005	0.0006	0.0341	0.0005	0.00023	0.0002	0.0002
W_Dissolved_Fe_mgl	0.86	0.73	0.32	0.17	0.2	0.013	0.018	0.0098
W_Dissolved_Ge_mgl						0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	0.18	0.23	0.99	2.79	0.65	0.41	0.67	0.83
W_Dissolved_La_mgl						0.00001	0.00001	0.00001
W_Dissolved_Li_mgl	0.003	0.004	0.003	0.003	0.003	0.00245	0.00223	0.00245
W_Dissolved_Mg_mgl	6.31	5.76	5.96	4.65	4.82	4.51	4.26	4.33
W_Dissolved_Mn_mgl	0.426	0.205	0.102	0.273	0.253	0.464	0.0056	0.264
W_Dissolved_Mo_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.00023	0.0002
W_Dissolved_Na_mgl	7.56	7.51	8.2	9.27	6.62	5.5	5.25	5.36
W_Dissolved_Ni_mgl	0.0005	0.0006	0.0005	0.0026	0.0005	0.0002	0.0002	0.0002
W_Dissolved_P_mgl						0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl						0.0002	0.00028	0.00027
W_Dissolved_S_mgl						10	10	10
W_Dissolved_Sb_mgl	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.005	0.005	0.005	0.005	0.005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.371	0.365	0.356	0.274	0.297	0.34	0.287	0.299
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.002		
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.00003	0.00003	0.000047
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl						0.00001	0.00001	0.00001
W_Dissolved_Zn_mgl	0.002	0.002	0.003	0.072	0.005	0.0017	0.001	0.001
W_SumAnions_meql						1.83	1.65	1.84
W_SumCations_meql						1.94	1.77	1.86
W_TCN_mgl	0.005	0.005	0.005	0.005	0.005		0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	107	103	108	98	87	124	98	112
W_TDSalts_gm3								
W_Thard_gCaCO3m3	88	89	94	72	82	84	76	95
W_TKN_mgl						0.62	0.1	0.25
W_TN_mgl	0.161	0.065	0.21	0.144	0.187	0.62	0.1	0.25
W_TOC_mgl	2.1	1.9	2.7	2.6	3.2	1.9	0.96	2.4
W_TP_mgl	0.009	0.012	0.011	0.005	0.014	0.25	0.0071	0.11
W_TSi_mgl	5.29	4.98	5.15	4.66				
W_TSS_BDC_mgl								
W_TSS_mgl	22	17	6	20	16	32	3	25
W_Turbidity_NTU	29.9	21.2	3.05	13.8	14.7	35	0.9	17
W_Volume_ml								
WF_DO_mgl	3	4.58	5.28	8.63	8.75		7.45	9.74
WF_DO_pct	29.5	87.3	50.1	79.6	70.4		59.4	79.9
WF_EC_mScm	241.2	0.2	231.6	217.3	185.1		185.2	211.5
WF_ORP_mV	-16.1	37.5	7.1	62.1	11.6		-8.1	31
WF_pH	6.75	7.01	6.59	6.82	6.72		6.45	6.62
WF_temp_degC	8.5	10.4	8.9	8	2.8		1.8	3.4
WF_turbidity_NTU					73.65		52.2	
WF_colour								
WF_level								
WF_odour								

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RSA1_25-Jul-2024	W_RSA1_8-Aug-2024	W_RSA1_22-Aug-2024	W_RSA1_4-Sep-2024	W_RSA1_19-Sep-2024	W_RSA1_3-Oct-2024	W_RSA1_16-Oct-2024	W_RSA1_31-Oct-2024
LABJOBNO	24-23696	24-25063	24-26351					
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	RSA1	RSA1	RSA1	RSA1	RSA1	RSA1	RSA1	RSA1
LabSampleID	24-23696-7	24-25063-5	24-26351-7	24-27733-6	24-29331-7	24-30758-6	24-32269-7-7	24-33929-6
WaterSampDate	2024-07-25	2024-08-08	2024-08-22	2024-09-04	2024-09-19	2024-10-03	2024-10-16	2024-10-31
SampBy	MB	MB		MB	MB	MB	MB	MB
W_Acidity4_mgl								
W_Acidity5_mgl								
W_Acidity7_mgl								
W_Acidity8_mgl	6.67	6.67	5.33	3.33	3	3	3	4
W_Alkalinity_mgl	71	64.3	77.2	82.7	74	68	75	92
W_AmmoniaN_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.020
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	2.51	4.11	2.73	3.24	2.28	2.24	2.07	1.73
W_An_Fluoride_mgl	0.065	0.04	0.051	0.051	0.06	0.06	0.07	0.08
W_An_Nitrate-N_mgl	0.0038	0.002	0.0067	0.0171	0.002	0.033	0.004	0.002
W_An_Nitrite-N_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	4.89	4.86	4.85	3.8	2.87	2	1.89	1.42
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl								
W_DRP_mgl	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
W_DSi_mgl								
W_EC_mSm								
W_EC_uScm	167	163	202	183	175	149	180	196
W_EColi_cfuml								
W_pH	7.5	7.6	7.3	7.6	7.6	7.6	7.6	7.2
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl					0.002			
W_Total_Al_mgl	0.075	0.015	0.011	0.0044	0.0094	0.1	0.0052	0.0063
W_Total_As_mgl	0.132	0.038	0.235	0.021	0.038	0.045	0.032	0.024
W_Total_B_mgl	0.005	0.0071	0.005	0.005	0.005	0.005	0.005	0.005
W_Total_Ba_mgl	0.0265	0.0155	0.0271	0.0147	0.0141	0.0142	0.0139	0.0138
W_Total_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001		0.0001	0.0001	0.0001
W_Total_Ca_mgl	22.9	20.5	25	24.6	25.9	20.4	23.6	25.6
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.00038	0.00013	0.00177	0.00014	0.00026	0.00021	0.00017	0.00012
W_Total_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.00027	0.0002	0.0002
W_Total_Cs_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Total_Cu_mgl	0.00057	0.00035	0.00034	0.00062	0.0011	0.0012	0.00079	0.00074
W_Total_Fe_mgl	4.29	0.945	3.61	0.14	0.4	0.9	0.4	0.2
W_Total_Ge_mgl	0.00005	0.00005	0.00014	0.00005	0.00005	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	0.86	1.7	1	1.9	1.7	2.1	1.2	1.2
W_Total_La_mgl	0.00015	0.000038	0.000032	0.00001	0.000018	0.000130	0.000010	0.000010
W_Total_Li_mgl	0.00221	0.00212	0.00224	0.00225	0.00207	0.00192	0.00209	0.00218
W_Total_Mg_mgl	4.34	3.92	4.83	4.53	4.37	4.1	4.23	4.41
W_Total_Mn_mgl	0.343	0.0883	0.791	0.029	0.051	0.049	0.055	0.024
W_Total_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Na_mgl	5.35	4.89	5.78	5.58	5.47	4.48	5.22	5.25
W_Total_Ni_mgl	0.00036	0.0002	0.00046	0.00037	0.00046	0.00052	0.00034	0.00043
W_Total_P_mgl	0.043	0.04	0.04	0.04	0.040	0.040	0.040	0.040
W_Total_Pb_mgl	0.00029	0.00005	0.000084	0.00005	0.00005	0.00020	0.00005	0.00005
W_Total_Rb_mgl	0.00034	0.00038	0.00021	0.00047	0.00039	0.00075	0.00025	0.00032
W_Total_S_mgl	10	10	10	10	10	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.294	0.262	0.33	0.337	0.312	0.270	0.298	0.363
W_Total_Ti_mgl					0.0027			
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.000093	0.000063	0.000091	0.0001	0.000120	0.000120	0.000099	0.000130
W_Total_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.00014	0.00005	0.00005	0.00005	0.00005	0.00012	0.00005	0.00005
W_Total_Zn_mgl	0.003	0.003	0.003	0.003	0.0030	0.0030	0.0030	0.0035
W_Dissolved_Ag_mgl								
W_Dissolved_Al_mgl	0.003	0.003	0.003	0.003	0.0037	0.0052	0.003	0.003
W_Dissolved_As_mgl	0.0085	0.0071	0.0649	0.016	0.0230	0.0180	0.0280	0.0180
W_Dissolved_B_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.0149	0.0122	0.0238	0.0145	0.0129	0.0116	0.0138	0.0138
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	21.9	20.4	24.3	23.9	25.3	20.6	23.8	25.3
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.000015	0.000042	0.0016	0.00014	0.0002	0.00013	0.00015	0.00011
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.00022	0.00023	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.0002	0.0004	0.00022	0.00074	0.00120	0.00110	0.00077	0.00068
W_Dissolved_Fe_mgl	0.0091	0.018	0.11	0.038	0.1400	0.1000	0.2700	0.0550
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005	0.000069	0.00005	0.00005	0.00011	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	0.76	1.8	1	1.8	1.60	2.10	1.10	1.20
W_Dissolved_La_mgl	0.00001	0.00001	0.00001	0.00001	0.000012	0.000018	0.00001	0.00001
W_Dissolved_Li_mgl	0.00212	0.00203	0.00233	0.00218	0.00203	0.00181	0.00208	0.00237
W_Dissolved_Mg_mgl	4.03	4	4.64	4.42	4.12	4.03	4.03	4.36
W_Dissolved_Mn_mgl	0.0024	0.0087	0.748	0.021	0.0430	0.0220	0.0509	0.0170
W_Dissolved_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.00020	0.00020	0.00020	0.00020
W_Dissolved_Na_mgl	4.99	4.93	5.62	5.42	5.09	4.59	5.07	5.13
W_Dissolved_Ni_mgl	0.0002	0.00021	0.0004	0.00034	0.00043	0.00048	0.00032	0.00042
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.000063	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00013	0.00034	0.00019	0.00048	0.00037	0.00053	0.00025	0.00030
W_Dissolved_S_mgl	10	10	10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.291	0.255	0.314	0.333	0.304	0.265	0.295	0.352
W_Dissolved_Ti_mgl								
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.000065	0.000068	0.000071	0.00012	0.000120	0.000110	0.000100	0.000130
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.00001	0.00001	0.00001	0.000018	0.000028	0.000032	0.000024	0.000018
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0025
W_SumAnions_meql	1.6	1.51	1.73	1.83	1.62	1.47	1.61	1.91
W_SumCations_meql	1.66	1.61	1.9	1.84	1.87	1.62	1.78	1.88
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	84	77	91	102	81	87	95	96
W_TDSalts_gm3								
W_Thard_gCaCO3m3	75	67	82	80	83	68	76	82
W_TKN_mgl	0.38	0.26	0.42	0.15	0.40	0.50	0.41	0.40
W_TN_mgl	0.38	0.26	0.42	0.17	0.40	0.53	0.42	0.40
W_TOC_mgl								
W_TP_mgl	0.062	0.012	0.03	0.0073	0.009	0.027	0.009	0.011
W_TSi_mgl								
W_TSS_BDC_mgl								
W_TSS_mgl	19	3	6	3	3	7	3	3
W_Turbidity_NTU	12	3.4	1.6	0.7	1.5	7.6	0.8	1.7
W_Volume_ml								
WF_DO_mgl	7.37	8.97		12.58	8.15	11.68	10.25	7.81
WF_DO_pct	56.6	70.5		114.4	75.9	100	97.9	79.7
WF_EC_mScm	208.7	298.3		252.4	207.5	164.5	157.7	173.7
WF_ORP_mV	44.1	5.7		72.4	-2.9	38.7	28.7	15.7
WF_pH	6.9	7.04		7.34	7.08	7.38	7.53	7.6
WF_temp_degC	1.1	1.8		7.1	7.3	5.1	10.1	11.40
WF_turbidity_NTU							-0.45	
WF_colour				low	low	low	low	low
WF_level				high	high	high	low	low
WF_odour				nil	nil	nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RSA1_14-Nov-2024	W_RSA1_28-Nov-2024
LABJOBNO		
WaterLabID	Analytica	Analytica
WaterSiteID	RSA1	RSA1
LabSampleID	24-35305-7	24-36747-7
WaterSampDate	2024-11-14	2024-11-28
SampBy	MB	MB
W_Acidity4_mgl		
W_Acidity5_mgl		
W_Acidity7_mgl		
W_Acidity8_mgl	3	2
W_Alkalinity_mgl	102	106
W_AmmoniaN_mgl	0.005	0.005
W_An_Bromide_mgl	0.05	0.05
W_An_Chloride_mgl	1.17	0.84
W_An_Fluoride_mgl	0.06	0.11
W_An_Nitrate-N_mgl	0.006	0.010
W_An_Nitrite-N_mgl	0.001	0.001
W_An_Sulphate_mgl	0.54	0.38
W_BiCarbAlk_mgl		
W_CarbAlk_mgl		
W_Density_gcm3		
W_DOC_mgl		
W_DRP_mgl	0.002	0.002
W_DSi_mgl		
W_EC_mSm		
W_EC_uScm	223	223
W_EColi_cfuml		
W_pH	7.5	7.5
W_pH_1311_hcl		
W_pH_1311_initial		
W_pH_1311_leachate		
W_pH_1311_off		
W_Total_Ag_mgl		
W_Total_Al_mgl	0.0079	0.013
W_Total_As_mgl	0.023	0.0629
W_Total_B_mgl	0.005	0.0065
W_Total_Ba_mgl	0.017	0.0199
W_Total_Be_mgl	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001
W_Total_Ca_mgl	32.3	32.4
W_Total_Cd_mgl	0.00002	0.00002
W_Total_Co_mgl	0.00014	0.00026
W_Total_Cr_mgl	0.0002	0.0002
W_Total_Cs_mgl	0.00001	0.00001
W_Total_Cu_mgl	0.0006	0.00036
W_Total_Fe_mgl	0.3	1.2
W_Total_Ge_mgl	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001
W_Total_K_mgl	1.1	0.7
W_Total_La_mgl	0.000014	0.000016
W_Total_Li_mgl	0.00231	0.0024
W_Total_Mg_mgl	5.36	5.42
W_Total_Mn_mgl	0.074	0.165
W_Total_Mo_mgl	0.0002	0.0002
W_Total_Na_mgl	6.05	5.46
W_Total_Ni_mgl	0.00047	0.00035
W_Total_P_mgl	0.040	0.040
W_Total_Pb_mgl	0.00005	0.00005
W_Total_Rb_mgl	0.00027	0.00023
W_Total_S_mgl	10	10
W_Total_Sb_mgl	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005
W_Total_Sr_mgl	0.408	0.406
W_Total_Ti_mgl		
W_Total_Tl_mgl	0.0001	0.0001
W_Total_U_mgl	0.000130	0.000110
W_Total_V_mgl	0.0005	0.0005
W_Total_Y_mgl	0.00005	0.00005
W_Total_Zn_mgl	0.0030	0.0030
W_Dissolved_Ag_mgl		
W_Dissolved_Al_mgl	0.003	0.003
W_Dissolved_As_mgl	0.0160	0.0280
W_Dissolved_B_mgl	0.01	0.01
W_Dissolved_Ba_mgl	0.0163	0.0172
W_Dissolved_Be_mgl	0.000023	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001
W_Dissolved_Ca_mgl	29.6	30.6
W_Dissolved_Cd_mgl	0.00002	0.00002
W_Dissolved_Co_mgl	0.00011	0.00021
W_Dissolved_Cr_mgl	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001
W_Dissolved_Cu_mgl	0.00031	0.00030
W_Dissolved_Fe_mgl	0.0880	0.3000
W_Dissolved_Ge_mgl	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008
W_Dissolved_K_mgl	1.00	0.69
W_Dissolved_La_mgl	0.00001	0.00001
W_Dissolved_Li_mgl	0.00245	0.00224
W_Dissolved_Mg_mgl	5.04	5.44
W_Dissolved_Mn_mgl	0.0696	0.1200
W_Dissolved_Mo_mgl	0.00020	0.00020
W_Dissolved_Na_mgl	5.41	5.64
W_Dissolved_Ni_mgl	0.00045	0.00023
W_Dissolved_P_mgl	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00023	0.00019
W_Dissolved_S_mgl	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002
W_Dissolved_Sr_mgl	0.413	0.411
W_Dissolved_Ti_mgl		
W_Dissolved_Tl_mgl	0.00001	0.00001
W_Dissolved_U_mgl	0.000140	0.000110
W_Dissolved_V_mgl	0.0005	0.0005
W_Dissolved_Y_mgl	0.000015	0.000015
W_Dissolved_Zn_mgl	0.001	0.001
W_SumAnions_meql	2.09	2.17
W_SumCations_meql	2.16	2.25
W_TCN_mgl	0.001	0.001
W_TColi_cfuml		
W_TDS_mgl	111	119
W_TDSalts_gm3		
W_Thard_gCaCO3m3	100	100
W_TKN_mgl	0.24	0.24
W_TN_mgl	0.24	0.25
W_TOC_mgl		
W_TP_mgl	0.011	0.011
W_TSi_mgl		
W_TSS_BDC_mgl		
W_TSS_mgl	3	4
W_Turbidity_NTU	1.8	2.7
W_Volume_ml		
WF_DO_mgl	3.22	3.1
WF_DO_pct	33.2	32.7
WF_EC_mScm	460.5	515.3
WF_ORP_mV	-41.1	-50
WF_pH	6.8	6.7
WF_temp_degC	12.10	13.00
WF_turbidity_NTU		
WF_colour	low	low
WF_level	low	low
WF_odour	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS01_22-Sep-2022	W_RS01_23-Mar-2023	W_RS01_5-Jul-2023	W_RS01_10-Oct-2023	W_RS01_20-Dec-2023	W_RS01_4-Feb-2024	W_RS01_5-Mar-2024
LABJOBNO	22-35194	WP23-11797	AR-23-NC-017979-01	AR-23-NC-028806-01	AR-24-NC-000295-01	AR-24-NC-003109-01	AR-24-NC-008972-01
WaterLabID	Analytica	SGS	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins
WaterSiteID	RS01	RS01	RS01	RS01	RS01	RS01	RS01
LabSampleID	22-35194-1	WP23-11797.001	817-2023-00068113	817-2023-00110960	817-2023-00141591	817-2024-00015361	817-2024-00029411
WaterSampDate	2022-09-22	2023-03-23	2023-07-05	2023-10-10	2023-12-20	2024-02-04	2024-03-05
SampBy	Van Walt/ E3	HM	HM	HM	HM	HM	HM
W_Acidity4_mgl		5	1	1	1	1	1
W_Acidity5_mgl		5					
W_Acidity7_mgl		5	1	1	1	1	1
W_Acidity8_mgl	4		2	1	3	4	6
W_Alkalinity_mgl	99.4	110	71	81	125	124	117
W_AmmoniaN_mgl	0.005	0.01	0.01	0.01	0.01	0.05	0.02
W_An_Bromide_mgl		0.01	0.02	0.02	0.02	0.02	0.02
W_An_Chloride_mgl	3.14	2.4	2.18	1.42	1	1.05	3.32
W_An_Fluoride_mgl		0.19	0.1	0.1	0.11	0.12	0.14
W_An_Nitrate-N_mgl	0.002	0.029354839	0.05	0.13	0.01	0.07	0.01
W_An_Nitrite-N_mgl		0.003043478	0.01	0.01	0.01	0.01	0.01
W_An_Sulphate_mgl	2.74	11	4.33	2.64	0.36	0.7	10.8
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	3.6	3.1	3.5	3.4	3.5	3.4	3.3
W_DRP_mgl	0.002						
W_DSi_mgl		4.68	7.85	7.37	8.88	9.55	9.91
W_EC_mSm	16		14.9	17.1	24.4	24.9	26.1
W_EC_uScm	160	210					
W_EColi_cfuml							
W_pH	7.8	7.1	7.6	7.9	7.7	7.9	7.7
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl		0.001	0.001	0.001			0.001
W_Total_Al_mgl	0.037	5.69	0.042	0.084			0.017
W_Total_As_mgl	0.038	3.19	0.028	0.046			0.031
W_Total_B_mgl	0.005	0.05	0.05	0.05			0.05
W_Total_Ba_mgl	0.0131	0.245	0.01	0.013			0.012
W_Total_Be_mgl	0.00001	0.005	0.005	0.005			0.005
W_Total_Bi_mgl	0.0001	0.005	0.005	0.005			0.005
W_Total_Ca_mgl	23.4	33.9	16.7	19.3		31.2	29.2
W_Total_Cd_mgl	0.00002	0.001	0.001	0.001			0.001
W_Total_Co_mgl	0.00015	0.009	0.002	0.002			0.002
W_Total_Cr_mgl	0.0002	0.005	0.001	0.001			0.001
W_Total_Cs_mgl	0.00001						
W_Total_Cu_mgl	0.00055	0.008	0.003	0.002			0.002
W_Total_Fe_mgl	0.543	76.9	0.4	0.7			0.4
W_Total_Ge_mgl	0.00005						
W_Total_Hg_mgl	0.0001	0.001	0.001	0.001			0.001
W_Total_K_mgl	1.3	3.7	0.6	0.6			1
W_Total_La_mgl	0.000047						
W_Total_Li_mgl	0.00219	0.01	0.001	0.002			0.003
W_Total_Mg_mgl	4.45	6.2	3.2	3.7		5.4	5.1
W_Total_Mn_mgl	0.0538	8.15	0.042	0.071			0.068
W_Total_Mo_mgl	0.0002	0.001	0.001	0.001			0.001
W_Total_Na_mgl	5.48	5.6	4	38.6			5.7
W_Total_Ni_mgl	0.00036	0.006	0.001	0.001			0.001
W_Total_P_mgl	0.04						
W_Total_Pb_mgl	0.000095	0.006	0.001	0.001			0.001
W_Total_Rb_mgl	0.0004						
W_Total_S_mgl	10						
W_Total_Sb_mgl	0.0001	0.002	0.002	0.002			0.002
W_Total_Se_mgl	0.001	0.005	0.005	0.005			0.005
W_Total_Sn_mgl	0.0005	0.001	0.001	0.001			0.001
W_Total_Sr_mgl	0.349	0.569	0.216	0.276			0.369
W_Total_Ti_mgl		0.115	0.002	0.003			0.001
W_Total_Tl_mgl	0.0001	0.001	0.001	0.001			0.001
W_Total_U_mgl	0.0001	0.001	0.001	0.001			0.001
W_Total_V_mgl	0.0005	0.008	0.001	0.001			0.001
W_Total_Y_mgl	0.00005						
W_Total_Zn_mgl	0.003	0.022	0.005	0.005			0.005
W_Dissolved_Ag_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Al_mgl	0.003	0.004	0.005	0.002	0.002	0.002	0.002
W_Dissolved_As_mgl	0.028	0.035	0.011	0.015	0.021	0.024	0.024
W_Dissolved_B_mgl	0.01	0.03	0.03	0.03	0.03	0.03	0.03
W_Dissolved_Ba_mgl	0.0106	0.011	0.007	0.011	0.014	0.013	0.013
W_Dissolved_Be_mgl	0.00001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Bi_mgl	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Ca_mgl	23.8	31.4	19.5	22.1	35.2	35.3	35.8
W_Dissolved_Cd_mgl	0.00002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Co_mgl	0.000094	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Cr_mgl	0.0002	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Cs_mgl	0.00001						
W_Dissolved_Cu_mgl	0.0002	0.0005	0.0006	0.0005	0.0005	0.0005	0.0006
W_Dissolved_Fe_mgl	0.066	0.23	0.07	0.01	0.05	0.09	0.11
W_Dissolved_Ge_mgl	0.00014						
W_Dissolved_Hg_mgl	0.00008	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_K_mgl	1.3	1.17	1.13	0.74	0.1	0.57	1.25
W_Dissolved_La_mgl	0.00001						
W_Dissolved_Li_mgl	0.00228	0.003	0.003	0.002	0.002	0.002	0.003
W_Dissolved_Mg_mgl	4.61	5.54	4.8	1.23	6.74	6.46	6.53
W_Dissolved_Mn_mgl	0.0059	0.0146	0.0067	0.0005	0.0357	0.0613	0.047
W_Dissolved_Mo_mgl	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0008
W_Dissolved_Na_mgl	5.57	6.46	6.48	122	6.37	7.08	7.27
W_Dissolved_Ni_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_P_mgl	0.04						
W_Dissolved_Pb_mgl	0.00005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Rb_mgl	0.00026						
W_Dissolved_S_mgl	10						
W_Dissolved_Sb_mgl	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Se_mgl	0.0005	0.005	0.005	0.005	0.005	0.005	0.005
W_Dissolved_Sn_mgl	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sr_mgl	0.302	0.347	0.193	0.244	0.516	0.511	0.458
W_Dissolved_Ti_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Tl_mgl	0.00001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_U_mgl	0.00011	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000016		0.002	0.002	0.002	0.007	
W_Dissolved_Zn_mgl	0.001	0.002	0.002	0.002	0.002	0.007	0.004
W_SumAnions_meql	2.15						
W_SumCations_meql	1.85						
W_TCN_mgl	0.001	0.005	0.005	0.005	0.005	0.005	0.005
W_TColi_cfuml							
W_TDS_mgl	116	130	73	84	120	122	128
W_TDSalts_gm3							
W_Thard_gCaCO3m3	77	100	7	60	116	100	94
W_TKN_mgl	0.24						
W_TN_mgl		1.71	0.25	0.26	0.27	0.24	0.22
W_TOC_mgl	3.1	7.8	3.7	3.5	3.1	3.9	3.3
W_TP_mgl	0.008	0.861	0.011	0.011	0.007	0.012	0.005
W_TSi_mgl		13.8	3.26	3.19			3.6
W_TSS_BDC_mgl		1200					
W_TSS_mgl		1200	5	5	6	9	3
W_Turbidity_NTU		750	1.49	4.59	0.68	8.93	1.21
W_Volume_ml							
WF_DO_mgl	9.85						15.61
WF_DO_pct	95.4		96.2				153.4
WF_EC_mScm	164.4		124				
WF_ORP_mV	121.3		181.6				15.8
WF_pH	7.57		7.5				7.6
WF_temp_degC	10.8		0.06				10.5
WF_turbidity_NTU			3.36				
WF_colour	clear				clear		
WF_level	medium baseflow				low		
WF_odour	odourless				nill		

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS01_20-Mar-2024	W_RS01_4-Apr-2024	W_RS01_17-Apr-2024	W_RS01_1-May-2024	W_RS01_16-May-2024	W_RS01_29-May-2024	W_RS01_13-Jun-2024	W_RS01_27-Jun-2024
LABJOBNO	AR-24-NC-010966-01	AR-24-NC-011976-01	AR-24-NC-013497-01	AR-24-NC-015251-01		24-17710	24-19336	24-20566
WaterLabID	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Analytica	Analytica	Analytica
WaterSiteID	RS01	RS01	RS01	RS01	RS01	RS01	RS01	RS01
LabSampleID	817-2024-00035194	817-2024-00041158	817-2024-00047510	817-2024-00052692		24-17710-4	24-19336-4	24-20566-4
WaterSampDate	2024-03-20	2024-04-04	2024-04-17	2024-05-01	2024-05-16	2024-05-29	2024-06-13	2024-06-27
SampBy	HM	MB	MB	MB	MB		MB	MB
W_Acidity4_mgl	1	1	1	1	1			
W_Acidity5_mgl								
W_Acidity7_mgl	1	1	1	1	1			
W_Acidity8_mgl	8	13	7	4	6	3.33	3.33	1.67
W_Alkalinity_mgl	104	101	93	86	78	78	77.8	73.4
W_AmmoniaN_mgl	0.03	0.01	0.01	0.01	0.01	0.005	0.005	0.005
W_An_Bromide_mgl	0.02	0.02	0.02	0.02	0.02	0.05	0.05	
W_An_Chloride_mgl	1.15	1.42	3.9	4.18	2.84	2.81	2.32	2.59
W_An_Fluoride_mgl	0.09	0.08	0.1	0.11	0.1	0.059	0.065	0.059
W_An_Nitrate-N_mgl	0.01	0.01	0.01	0.01	0.01	0.008850821	0.0021	0.0029
W_An_Nitrite-N_mgl	0.01	0.01	0.01	0.01	0.01	0.003284083	0.001	0.001
W_An_Sulphate_mgl	1.14	14.9	7.92	5.71	11.2	7.72	7.17	6.03
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl	2.3	2	2.2	1.7	1.8	0.5	1	1.2
W_DRP_mgl						0.002	0.002	0.002
W_DSi_mgl	9.44	7.38	8.7	9.92	18.4			
W_EC_mSm	21.4	23.4	21.4	19.5	19.1	19.7		
W_EC_uScm						197	188	169
W_EColi_cfuml								
W_pH	7.7	7.7	7.6	7.6	7.5	7.7	7.5	7.5
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl	0.001	0.001	0.001	0.001				0.002
W_Total_Al_mgl	0.01	0.018	0.014	0.01		0.021	0.031	0.041
W_Total_As_mgl	0.031	0.034	0.026	0.029		0.036	0.042	0.046
W_Total_B_mgl	0.05	0.05	0.05	0.05		0.019	0.005	0.0086
W_Total_Ba_mgl	0.011	0.014	0.014	0.015		0.0152	0.0148	0.0147
W_Total_Be_mgl	0.005	0.005	0.005	0.005		0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.005	0.005	0.005	0.005		0.0001	0.0001	0.0001
W_Total_Ca_mgl	22.5	31.3	25.3	21.2	23.4	24	25.1	23
W_Total_Cd_mgl	0.001	0.001	0.001	0.001		0.00002	0.00002	0.00002
W_Total_Co_mgl	0.002	0.002	0.002	0.002		0.00017	0.00015	0.00015
W_Total_Cr_mgl	0.001	0.001	0.001	0.001		0.0002	0.00021	0.0002
W_Total_Cs_mgl						0.00001	0.00001	0.00001
W_Total_Cu_mgl	0.002	0.002	0.002	0.002		0.00033	0.00026	0.00022
W_Total_Fe_mgl	0.4	0.5	0.2	0.3		0.42	0.559	0.639
W_Total_Ge_mgl						0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_K_mgl	0.4	0.4	1.6	1.2		1	1.1	1.2
W_Total_La_mgl						0.000027	0.000031	0.000039
W_Total_Li_mgl	0.002	0.003	0.002	0.002		0.00275	0.00249	0.00244
W_Total_Mg_mgl	4.4	6	5.2	4	4.3	4.3	4.56	4.35
W_Total_Mn_mgl	0.077	0.087	0.037	0.04		0.0766	0.0863	0.093
W_Total_Mo_mgl	0.001	0.001	0.001	0.001		0.0002	0.0002	0.0002
W_Total_Na_mgl	5.1	6.8	6.4	4.7		5.47	5.79	5.98
W_Total_Ni_mgl	0.001	0.001	0.001	0.001		0.0002	0.0002	0.00023
W_Total_P_mgl						0.04	0.04	0.04
W_Total_Pb_mgl	0.001	0.001	0.001	0.001		0.00005	0.000055	0.000063
W_Total_Rb_mgl						0.0003	0.00033	0.00036
W_Total_S_mgl						10	10	10
W_Total_Sb_mgl	0.002	0.002	0.002	0.002		0.0001	0.0001	0.0001
W_Total_Se_mgl	0.005	0.005	0.005	0.005		0.001	0.001	0.001
W_Total_Sn_mgl	0.001	0.001	0.001	0.001		0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.345	0.514	0.402	0.348		0.36	0.355	0.347
W_Total_Ti_mgl	0.001	0.001	0.001	0.001		0.0022		
W_Total_Tl_mgl	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_U_mgl	0.001	0.001	0.001	0.001		0.00003	0.000046	0.000054
W_Total_V_mgl	0.001	0.001	0.001	0.001		0.0005	0.0005	0.0005
W_Total_Y_mgl						0.00005	0.00005	0.00005
W_Total_Zn_mgl	0.005	0.005	0.005	0.005		0.003	0.003	0.003
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005	0.0005			0.00011
W_Dissolved_Al_mgl	0.002	0.002	0.002	0.002	0.002	0.0046	0.003	0.003
W_Dissolved_As_mgl	0.018	0.018	0.02	0.019	0.018	0.016	0.017	0.018
W_Dissolved_B_mgl	0.03	0.03	0.03	0.03	0.03	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.01	0.013	0.013	0.011	0.012	0.0131	0.0124	0.0122
W_Dissolved_Be_mgl	0.001	0.001	0.001	0.001	0.001	0.00018	0.00001	0.00001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	29.1	28.5	33.3	22.2	27.2	25.7	26.2	23
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.00016	0.00002	0.00002
W_Dissolved_Co_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00016	0.000028	0.000027
W_Dissolved_Cr_mgl	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl							0.00001	0.00001
W_Dissolved_Cu_mgl	0.0005	0.0006	0.0015	0.0005	0.0005	0.00039	0.00022	0.00031
W_Dissolved_Fe_mgl	0.11	0.09	0.06	0.07	0.09	0.042	0.032	0.027
W_Dissolved_Ge_mgl						0.000096	0.00005	0.00005
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	0.27	0.34	2	1.59	1.28	1.1	1.1	1.2
W_Dissolved_La_mgl						0.00013	0.00001	0.00001
W_Dissolved_Li_mgl	0.001	0.005	0.004	0.003	0.003	0.00257	0.00239	0.00229
W_Dissolved_Mg_mgl	5.73	6.61	5.85	4.86	5.1	4.66	4.76	4.1
W_Dissolved_Mn_mgl	0.0451	0.0517	0.0201	0.0188	0.0285	0.017	0.009	0.0093
W_Dissolved_Mo_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	6.7	7.72	8.01	6.29	6.68	5.71	5.8	5.16
W_Dissolved_Ni_mgl	0.0011	0.0005	0.0005	0.0005	0.0005	0.00027	0.00021	0.0002
W_Dissolved_P_mgl						0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00016	0.00005	0.00005
W_Dissolved_Rb_mgl						0.00038	0.00023	0.00025
W_Dissolved_S_mgl						10	10	10
W_Dissolved_Sb_mgl	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.005	0.005	0.005	0.005	0.005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.444	0.408	0.394	0.34	0.358	0.368	0.341	0.298
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.002		
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.00016	0.000061	0.000063
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl						0.00013	0.00001	0.00001
W_Dissolved_Zn_mgl	0.002	0.002	0.002	0.002	0.002	0.0022	0.001	0.001
W_SumAnions_meql						1.81	1.78	1.67
W_SumCations_meql						1.95	1.98	1.74
W_TCN_mgl	0.005	0.005	0.005	0.005	0.005		0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	105	115	105	96	94	130	110	119
W_TDSalts_gm3								
W_Thard_gCaCO3m3	74	103	107	70	89	78	81	76
W_TKN_mgl						0.16	0.1	0.16
W_TN_mgl	0.14	0.143	0.141	0.12	0.106	0.16	0.11	0.16
W_TOC_mgl	2.3	2.2	2.2	1.7	1.8	0.72	1.6	0.6
W_TP_mgl	0.005	0.005	0.006	0.007	0.005	0.0097	0.015	0.012
W_TSi_mgl	3.57	4.13	3.87	3.72				
W_TSS_BDC_mgl								
W_TSS_mgl	4	6	6	4	7	3	4	6
W_Turbidity_NTU	1.23	1.2	1.01	1.16	3.55	0.2	2.9	4.2
W_Volume_ml								
WF_DO_mgl	10.32	10.21	11.7	9.9	10.27		10.79	12.21
WF_DO_pct	90.4	96.9	105.9	90.1	85		89.2	98.9
WF_EC_mScm	211.8	233.4	204.9	184.5	186.7		180	167.8
WF_ORP_mV	-12.2	10.8	19.2	46.1	8.7		-13.8	32
WF_pH	7.63	7.47	7.61	7.59	7.46		7.45	7.59
WF_temp_degC	6.8	9	7.2	7.5	4		3.5	3.3
WF_turbidity_NTU					2.85		2.16	
WF_colour								
WF_level								
WF_odour								

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS01_11-Jul-2024	W_RS01_25-Jul-2024	W_RS01_8-Aug-2024	W_RS01_22-Aug-2024	W_RS01_4-Sep-2024	W_RS01_19-Sep-2024	W_RS01_3-Oct-2024	W_RS01_16-Oct-2024
LABJOBNO	24-22094	24-23696	24-25063	24-26351				
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	RS01	RS01	RS01	RS01	RS01	RS01	RS01	RS01
LabSampleID	24-22094-4	24-23696-4	24-25063-2	24-26351-4	24-27733-3	24-29331-4	24-30758-3	24-32269-4-4
WaterSampDate	2024-07-11	2024-07-25	2024-08-08	22-Aug-24	2024-09-04	19-Sep-24	03-Oct-24	16-Oct-24
SampBy		MB	MB		MB	MB	MB	MB
W_Acidity4_mgl								
W_Acidity5_mgl								
W_Acidity7_mgl								
W_Acidity8_mgl	3.33	3.33	6.67	4	3.33	3.33	3.33	2.67
W_Alkalinity_mgl	74.2	72.1	67.3	71.9	73.9	65.4	68.9	73.6
W_AmmoniaN_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	2.96	3.25	3.66	2.7	3.13	2.4	2.41	2
W_An_Fluoride_mgl	0.066	0.059	0.043	0.055	0.061	0.056	0.064	0.078
W_An_Nitrate-N_mgl	0.0024	0.0028	0.0461	0.002	0.002	0.002	0.0098	0.0066
W_An_Nitrite-N_mgl	0.001	0.001	0.0015	0.001	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	6.41	6.69	6.22	4.97	4.13	3.57	2.39	2.22
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl								
W_DRP_mgl	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.002
W_DSi_mgl								
W_EC_mSm								
W_EC_uScm	202	171	176	191	167	159	156	179
W_EColi_cfuml								
W_pH	7.4	7.4	7.6	7.6	7.7	7.6	7.7	7.6
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl						0.002		
W_Total_Al_mgl	0.053	0.07	0.86	0.044	0.059	0.039	0.325	0.013
W_Total_As_mgl	0.042	0.0582	0.039	0.032	0.045	0.028	0.0695	0.024
W_Total_B_mgl	0.005	0.005	0.007	0.005	0.005	0.005	0.005	0.005
W_Total_Ba_mgl	0.0167	0.0166	0.0309	0.014	0.0147	0.0128	0.0198	0.0127
W_Total_Be_mgl	0.000013	0.00001	0.000058	0.00001	0.00001	0.00001	0.000024	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001		0.0001	0.0001
W_Total_Ca_mgl	22.2	22.5	22.8	23.4	22.5	25	21.3	23.3
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.00016	0.00019	0.00102	0.00011	0.00018	0.00015	0.00049	0.00011
W_Total_Cr_mgl	0.0002	0.0002	0.00065	0.0002	0.0002	0.00026	0.00067	0.0002
W_Total_Cs_mgl	0.000016	0.00001	0.00013	0.00001	0.00001	0.00001	0.000045	0.00001
W_Total_Cu_mgl	0.00025	0.00029	0.0022	0.00042	0.00085	0.0012	0.0014	0.0008
W_Total_Fe_mgl	0.669	0.987	1.76	0.38	0.586	0.33	1.6	0.15
W_Total_Ge_mgl	0.00005	0.00005	0.00017	0.00005	0.00005	0.00005	0.000076	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	1.2	1	1.8	1.2	2	1.7	2.1	1.2
W_Total_La_mgl	0.000068	0.000068	0.00121	0.000033	0.000077	0.000065	0.00033	0.000019
W_Total_Li_mgl	0.00256	0.0024	0.00354	0.00233	0.00228	0.00212	0.00244	0.00218
W_Total_Mg_mgl	4.19	4.38	4.51	4.46	4.16	4.22	4.09	4.18
W_Total_Mn_mgl	0.0921	0.15	0.112	0.045	0.0839	0.039	0.177	0.024
W_Total_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Na_mgl	4.88	5.35	5.2	5.6	5.25	5.46	4.64	5.21
W_Total_Ni_mgl	0.0002	0.00022	0.0012	0.00026	0.00043	0.00051	0.00066	0.00035
W_Total_P_mgl	0.04	0.04	0.054	0.04	0.04	0.04	0.045	0.04
W_Total_Pb_mgl	0.0001	0.00013	0.0026	0.00007	0.00011	0.000073	0.00065	0.00005
W_Total_Rb_mgl	0.00038	0.00036	0.0022	0.00036	0.00057	0.00044	0.0012	0.00029
W_Total_S_mgl	10	10	10	10	10	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.365	0.314	0.299	0.34	0.316	0.314	0.31	0.312
W_Total_Ti_mgl						0.0023		
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00003	0.000064	0.00014	0.000074	0.000094	0.000086	0.00012	0.0001
W_Total_V_mgl	0.0005	0.0005	0.0012	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.000055	0.000053	0.00069	0.00005	0.000064	0.000072	0.00022	0.00005
W_Total_Zn_mgl	0.003	0.003	0.0055	0.003	0.003	0.0036	0.003	0.003
W_Dissolved_Ag_mgl								
W_Dissolved_Al_mgl	0.003	0.003	0.026	0.003	0.003	0.0095	0.0085	0.003
W_Dissolved_As_mgl	0.014	0.015	0.015	0.017	0.022	0.017	0.016	0.02
W_Dissolved_B_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.0124	0.0122	0.0119	0.0114	0.0123	0.0104	0.012	0.0127
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.000023	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	23.9	22.4	21.7	22.4	21.2	23.9	21.7	23.1
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.000048	0.000027	0.00008	0.000041	0.000081	0.00014	0.00017	0.000092
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.000013	0.00001	0.00001	0.00001	0.000013	0.00001	0.00001
W_Dissolved_Cu_mgl	0.00029	0.00021	0.00063	0.00057	0.00073	0.0012	0.0011	0.00088
W_Dissolved_Fe_mgl	0.038	0.025	0.032	0.027	0.029	0.062	0.096	0.042
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00011	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.2	0.97	1.4	1.1	1.9	1.7	2.1	1.2
W_Dissolved_La_mgl	0.00001	0.00001	0.000033	0.00001	0.00001	0.00003	0.000037	0.00001
W_Dissolved_Li_mgl	0.00237	0.0021	0.00224	0.00221	0.00216	0.00192	0.00186	0.00218
W_Dissolved_Mg_mgl	4.44	4.14	4.18	4.26	3.99	4.01	3.99	3.99
W_Dissolved_Mn_mgl	0.011	0.0059	0.0046	0.0081	0.0047	0.0095	0.033	0.0093
W_Dissolved_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	5.46	5.04	4.98	5.28	5.11	5.09	4.78	5.12
W_Dissolved_Ni_mgl	0.0002	0.0002	0.00021	0.00049	0.00036	0.00041	0.00054	0.00075
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000069	0.00005
W_Dissolved_Rb_mgl	0.00025	0.00022	0.00033	0.00022	0.00041	0.00036	0.00043	0.00028
W_Dissolved_S_mgl	10	10	10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.38	0.321	0.288	0.301	0.334	0.285	0.274	0.321
W_Dissolved_Ti_mgl								
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00003	0.00013	0.00011	0.000069	0.00011	0.000097	0.000089	0.00012
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.00001	0.00001	0.000023	0.00001	0.000018	0.00005	0.000039	0.000019
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.0013	0.001
W_SumAnions_meql	1.71	1.68	1.59	1.63	1.66	1.46	1.51	1.58
W_SumCations_meql	1.83	1.7	1.68	1.73	1.66	1.79	1.68	1.74
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	89	92	91	96	87	91	86	66
W_TDSalts_gm3								
W_Thard_gCaCO3m3	73	74	75	77	73	80	70	75
W_TKN_mgl	0.23	0.2	0.43	1.53	0.28	0.43	0.45	0.47
W_TN_mgl	0.23	0.2	0.48	1.5	0.28	0.43	0.46	0.47
W_TOC_mgl								
W_TP_mgl	0.016	0.025	0.15	0.0061	0.017	0.011	0.06	0.0089
W_TSi_mgl								
W_TSS_BDC_mgl								
W_TSS_mgl	5	11	27	3	7	3	18	3
W_Turbidity_NTU	4	4.8	73	2.6	4.1	2.2	16	1.3
W_Volume_ml								
WF_DO_mgl		12.46	12.52		12.61	11.25	13.24	20.24
WF_DO_pct		94.7	99.3		117.7	101.7	114	98.3
WF_EC_mScm		159.9	162.5		170.6	151.5	154.6	157.1
WF_ORP_mV		41.4	17		57.7	46.9	78.6	37.4
WF_pH		7.47	7.63		7.7	7.71	7.77	7.62
WF_temp_degC		0.5	2.1		8.6	6.3	5	12.1
WF_turbidity_NTU								0.1
WF_colour					low	low	low	clear
WF_level					high	high	high	low
WF_odour					nil	nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	**W_RS01_31-Oct-2024**	**W_RS01_14-Nov-2024**	**W_RS01_28-Nov-2024**
LABJOBNO			
WaterLabID	**Analytica**	**Analytica**	**Analytica**
WaterSiteID	**RS01**	**RS01**	**RS01**
LabSampleID	**24-33929-3**	**24-35305-4**	**24-36747-4**
WaterSampDate	**31-Oct-24**	**14-Nov-24**	**28-Nov-24**
SampBy	**MB**	**MB**	**MB**
W_Acidity4_mgl			
W_Acidity5_mgl			
W_Acidity7_mgl			
W_Acidity8_mgl	3.33	3.33	1.67
W_Alkalinity_mgl	83.6	101	105
W_AmmoniaN_mgl	0.005	0.005	0.005
W_An_Bromide_mgl	0.05	0.05	0.05
W_An_Chloride_mgl	1.6	1.1	0.83
W_An_Fluoride_mgl	0.07	0.065	0.11
W_An_Nitrate-N_mgl	0.002	0.002	0.002
W_An_Nitrite-N_mgl	0.001	0.001	0.001
W_An_Sulphate_mgl	1.34	0.58	0.45
W_BiCarbAlk_mgl			
W_CarbAlk_mgl			
W_Density_gcm3			
W_DOC_mgl			
W_DRP_mgl	0.002	0.002	0.002
W_DSi_mgl			
W_EC_mSm			
W_EC_uScm	175	197	212
W_EColi_cfuml			
W_pH	7.5	7.6	7.6
W_pH_1311_hcl			
W_pH_1311_initial			
W_pH_1311_leachate			
W_pH_1311_off			
W_Total_Ag_mgl			
W_Total_Al_mgl	0.021	0.011	0.016
W_Total_As_mgl	0.03	0.027	0.033
W_Total_B_mgl	0.005	0.005	0.0057
W_Total_Ba_mgl	0.0131	0.0148	0.0146
W_Total_Be_mgl	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001
W_Total_Ca_mgl	26.4	30.4	31.7
W_Total_Cd_mgl	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.00013	0.00011	0.00011
W_Total_Cr_mgl	0.00024	0.0002	0.00021
W_Total_Cs_mgl	0.00001	0.00001	0.00001
W_Total_Cu_mgl	0.00072	0.0004	0.00046
W_Total_Fe_mgl	0.23	0.16	0.28
W_Total_Ge_mgl	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001
W_Total_K_mgl	1.2	1	0.76
W_Total_La_mgl	0.000024	0.00001	0.000017
W_Total_Li_mgl	0.00231	0.00239	0.00254
W_Total_Mg_mgl	4.63	5.29	5.39
W_Total_Mn_mgl	0.039	0.0525	0.0662
W_Total_Mo_mgl	0.0002	0.0002	0.0002
W_Total_Na_mgl	5.47	5.8	5.62
W_Total_Ni_mgl	0.00042	0.00037	0.00039
W_Total_P_mgl	0.04	0.04	0.04
W_Total_Pb_mgl	0.00005	0.00005	0.00005
W_Total_Rb_mgl	0.00035	0.00028	0.00024
W_Total_S_mgl	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.398	0.442	0.438
W_Total_Ti_mgl			
W_Total_Tl_mgl	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00014	0.00013	0.00012
W_Total_V_mgl	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.00005	0.00005	0.00005
W_Total_Zn_mgl	0.003	0.003	0.003
W_Dissolved_Ag_mgl			
W_Dissolved_Al_mgl	0.003	0.0038	0.003
W_Dissolved_As_mgl	0.022	0.022	0.021
W_Dissolved_B_mgl	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.0129	0.0142	0.0138
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	25.7	29	30.9
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.00008	0.000094	0.000084
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.00058	0.00035	0.00039
W_Dissolved_Fe_mgl	0.04	0.03	0.028
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.1	0.99	0.71
W_Dissolved_La_mgl	0.00001	0.00001	0.00001
W_Dissolved_Li_mgl	0.00255	0.00244	0.00233
W_Dissolved_Mg_mgl	4.47	4.95	5.43
W_Dissolved_Mn_mgl	0.013	0.038	0.04
W_Dissolved_Mo_mgl	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	5.23	5.39	5.83
W_Dissolved_Ni_mgl	0.00048	0.00037	0.00025
W_Dissolved_P_mgl	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00029	0.00027	0.00022
W_Dissolved_S_mgl	10	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.388	0.447	0.445
W_Dissolved_Ti_mgl			
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00014	0.00015	0.00014
W_Dissolved_V_mgl	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000019	0.000015	0.000014
W_Dissolved_Zn_mgl	0.001	0.001	0.001
W_SumAnions_meql	1.75	2.07	2.15
W_SumCations_meql	1.91	2.12	2.26
W_TCN_mgl	0.001	0.001	0.002
W_TColi_cfuml			
W_TDS_mgl	82	90	111
W_TDSalts_gm3			
W_Thard_gCaCO3m3	85	98	100
W_TKN_mgl	0.32	0.28	0.25
W_TN_mgl	0.32	0.28	0.25
W_TOC_mgl			
W_TP_mgl	0.0082	0.0095	0.0086
W_TSi_mgl			
W_TSS_BDC_mgl			
W_TSS_mgl	3	3	4
W_Turbidity_NTU	1.4	1.4	1.3
W_Volume_ml			
WF_DO_mgl	9.75	7.99	7.78
WF_DO_pct	103.3	83.4	83.8
WF_EC_mScm	172.1	193.3	203.4
WF_ORP_mV	4.8	8.8	-5.7
WF_pH	7.82	7.55	7.52
WF_temp_degC	13.5	13.7	14.6
WF_turbidity_NTU			
WF_colour	clear	clear	clear
WF_level	low	low	low
WF_odour	nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS02_22-Sep-2022	W_RS02_23-Mar-2023	W_RS02_5-Jul-2023	W_RS02_10-Oct-2023	W_RS02_20-Dec-2023	W_RS02_4-Feb-2024	W_RS02_5-Mar-2024
LABJOBNO	22-35194	WP23-11797	AR-23-NC-017979-01	AR-23-NC-028806-01	AR-24-NC-000295-01	AR-24-NC-003109-01	AR-24-NC-008972-01
WaterLabID	Analytica	SGS	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins
WaterSiteID	RS02	RS02	RS02	RS02	RS02	RS02	RS02
LabSampleID	22-35194-2	WP23-11797.002	817-2023-00068117	817-2023-00110964	817-2023-00141595	817-2024-00015364	817-2024-00029414
WaterSampDate	2022-09-22	2023-03-23	2023-07-05	2023-10-10	2023-12-20	2024-02-04	2024-03-05
SampBy	Van Walt/ E3	HM	HM	HM	HM	HM	HM
W_Acidity4_mgl		5	1	1	1	1	1
W_Acidity5_mgl		5					
W_Acidity7_mgl		5	1	1	1	1	1
W_Acidity8_mgl	2		2	1	3	1	6
W_Alkalinity_mgl	68.8	68	62	61	67	58	60
W_AmmoniaN_mgl	0.005	0.01	0.01	0.01	0.01	0.1	0.01
W_An_Bromide_mgl		0.06	0.02	0.02	0.02	0.02	0.02
W_An_Chloride_mgl	2.17	2	2.08	1.68	1.32	1.52	2.98
W_An_Fluoride_mgl		0.25	0.09	0.09	0.1	0.09	0.11
W_An_Nitrate-N_mgl	0.0092	0.004516129	0.11	0.01	0.01	0.01	0.23
W_An_Nitrite-N_mgl		0.003043478	0.01	0.01	0.01	0.01	0.01
W_An_Sulphate_mgl	1.77	6.3	2.39	1.38	1	1.49	7.31
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	2.5	2.7	3.6	2.7	2	1.8	2.2
W_DRP_mgl	0.002						
W_DSi_mgl		4.91	8.26	8.08	8.91	10.3	10.2
W_EC_mSm	13		12.6	13.2	14	13	13.7
W_EC_uScm	134	150					
W_EColi_cfuml							
W_pH	7.7	6.9	7.5	7.9	7.7	7.6	7.7
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl		0.001	0.001	0.001			0.001
W_Total_Al_mgl	0.38	0.304	0.251	0.129			0.144
W_Total_As_mgl	0.012	0.006	0.006	0.007			0.005
W_Total_B_mgl	0.005	0.05	0.05	0.05			0.05
W_Total_Ba_mgl	0.0183	0.015	0.013	0.013			0.012
W_Total_Be_mgl	0.000024	0.005	0.005	0.005			0.005
W_Total_Bi_mgl	0.0001	0.005	0.005	0.005			0.005
W_Total_Ca_mgl	20.1	21.2	14.8	15.9		15	16.1
W_Total_Cd_mgl	0.00002	0.001	0.001	0.001			0.001
W_Total_Co_mgl	0.00032	0.002	0.002	0.002			0.002
W_Total_Cr_mgl	0.00029	0.002	0.001	0.001			0.001
W_Total_Cs_mgl	0.000068						
W_Total_Cu_mgl	0.0013	0.005	0.003	0.002			0.002
W_Total_Fe_mgl	0.78	0.4	0.4	0.2			0.3
W_Total_Ge_mgl	0.00005						
W_Total_Hg_mgl	0.0001	0.001	0.001	0.001			0.001
W_Total_K_mgl	1.2	0.9	0.6	0.5			1
W_Total_La_mgl	0.00034						
W_Total_Li_mgl	0.00286	0.01	0.002	0.003			0.003
W_Total_Mg_mgl	3.71	3.7	2.6	3		2.8	3.3
W_Total_Mn_mgl	0.028	0.012	0.01	0.006			0.008
W_Total_Mo_mgl	0.0002	0.001	0.001	0.001			0.001
W_Total_Na_mgl	4.76	4.9	3.5	44.5			4.3
W_Total_Ni_mgl	0.00061	0.001	0.001	0.001			0.001
W_Total_P_mgl	0.04						
W_Total_Pb_mgl	0.00064	0.001	0.001	0.001			0.001
W_Total_Rb_mgl	0.0016						
W_Total_S_mgl	10						
W_Total_Sb_mgl	0.00011	0.002	0.002	0.002			0.002
W_Total_Se_mgl	0.001	0.005	0.005	0.005			0.005
W_Total_Sn_mgl	0.0005	0.001	0.001	0.001			0.001
W_Total_Sr_mgl	0.306	0.26	0.198	0.246			0.239
W_Total_Ti_mgl		0.016	0.01	0.004			0.005
W_Total_Tl_mgl	0.0001	0.001	0.001	0.001			0.001
W_Total_U_mgl	0.00028	0.001	0.001	0.001			0.001
W_Total_V_mgl	0.0005	0.006	0.001	0.001			0.001
W_Total_Y_mgl	0.0002						
W_Total_Zn_mgl	0.0052	0.006	0.005	0.005			0.005
W_Dissolved_Ag_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Al_mgl	0.011	0.011	0.012	0.005	0.007	0.004	0.006
W_Dissolved_As_mgl	0.0059	0.004	0.003	0.005	0.006	0.004	0.004
W_Dissolved_B_mgl	0.01	0.03	0.03	0.03	0.03	0.03	0.03
W_Dissolved_Ba_mgl	0.0095	0.009	0.008	0.011	0.011	0.009	0.01
W_Dissolved_Be_mgl	0.00001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Bi_mgl	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Ca_mgl	19.9	20.6	22	17.3	19	17.2	14.9
W_Dissolved_Cd_mgl	0.00002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Co_mgl	0.000077	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Cr_mgl	0.0002	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Cs_mgl	0.00001						
W_Dissolved_Cu_mgl	0.0002	0.0005	0.0007	0.0007	0.0005	0.0005	0.0006
W_Dissolved_Fe_mgl	0.015	0.03	0.02	0.01	0.03	0.02	0.03
W_Dissolved_Ge_mgl	0.00005						
W_Dissolved_Hg_mgl	0.00008	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_K_mgl	1	0.65	0.93	0.55	0.49	0.5	1.06
W_Dissolved_La_mgl	0.00001						
W_Dissolved_Li_mgl	0.00275	0.003	0.002	0.002	0.003	0.003	0.002
W_Dissolved_Mg_mgl	3.68	3.83	3.78	2.72	3.52	3.23	3.3
W_Dissolved_Mn_mgl	0.00062	0.0009	0.0009	0.0005	0.0009	0.0006	0.0013
W_Dissolved_Mo_mgl	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Na_mgl	4.6	5.05	5.5	63.1	4.34	4.65	3.94
W_Dissolved_Ni_mgl	0.00029	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_P_mgl	0.04						
W_Dissolved_Pb_mgl	0.00005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Rb_mgl	0.00028						
W_Dissolved_S_mgl	10						
W_Dissolved_Sb_mgl	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Se_mgl	0.0005	0.005	0.005	0.005	0.005	0.005	0.005
W_Dissolved_Sn_mgl	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sr_mgl	0.304	0.247	0.182	0.19	0.277	0.238	0.229
W_Dissolved_Ti_mgl		0.0005	0.001	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Tl_mgl	0.00001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_U_mgl	0.00037	0.0002	0.0002	0.0003	0.0002	0.0002	0.0002
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.00002		0.002	0.002	0.002	0.002	
W_Dissolved_Zn_mgl	0.001	0.002	0.002	0.002	0.002	0.002	0.006
W_SumAnions_meql	1.48						
W_SumCations_meql	1.53						
W_TCN_mgl	0.001	0.005	0.005	0.005	0.005	0.005	0.005
W_TColi_cfuml							
W_TDS_mgl	102	120	62	65	68	64	67
W_TDSalts_gm3							
W_Thard_gCaCO3m3	66	67	7	54	62	49	51
W_TKN_mgl	0.35						
W_TN_mgl		0.26	0.3	0.21	0.16	0.18	0.15
W_TOC_mgl	2.5	3	3.6	2.7	1.8	2.3	2.2
W_TP_mgl	0.048	0.024	0.009	0.012	0.009	0.009	0.008
W_TSi_mgl		4.79	3.76	3.45			4.37
W_TSS_BDC_mgl		13					
W_TSS_mgl		13	6	6	6	6	7
W_Turbidity_NTU		5.9	3.3	2.4	1.5	3.56	2.33
W_Volume_ml							
WF_DO_mgl	9.42			10.56			9.26
WF_DO_pct	98.6		92.3	109.8			89.1
WF_EC_mScm	135.5		144.5	129.3			
WF_ORP_mV	124.5		159.9	172.7			27.3
WF_pH	7.77		7.72	7.85			7.69
WF_temp_degC	13.9		1.8	12.6			9.4
WF_turbidity_NTU			1.4				
WF_colour	clear				clear		
WF_level	medium baseflow				low		
WF_odour	odourless				nil		

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS02_20-Mar-2024	W_RS02_4-Apr-2024	W_RS02_17-Apr-2024	W_RS02_1-May-2024	W_RS02_16-May-2024	W_RS02_29-May-2024	W_RS02_13-Jun-2024	W_RS02_27-Jun-2024
LABJOBNO	AR-24-NC-010966-01	AR-24-NC-011976-01	AR-24-NC-013497-01	AR-24-NC-015251-01		24-17710	24-19336	24-20566
WaterLabID	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Analytica	Analytica	Analytica
WaterSiteID	RS02	RS02	RS02	RS02	RS02	RS02	RS02	RS02
LabSampleID	817-2024-00035197	817-2024-00041161	817-2024-00047513	817-2024-00052695		24-17710-5	24-19336-5	24-20566-5
WaterSampDate	2024-03-20	2024-04-04	2024-04-17	2024-05-01	2024-05-16	2024-05-29	2024-06-13	2024-06-27
SampBy	HM	MB	MB	MB	MB		MB	MB
W_Acidity4_mgl	1	1	1	1	1			
W_Acidity5_mgl								
W_Acidity7_mgl	1	1	1	1	1			
W_Acidity8_mgl	6	4	4	2	2	3.33	1	1
W_Alkalinity_mgl	56	65	72	67	60	60.8	67.9	71.4
W_AmmoniaN_mgl	0.02	0.04	0.01	0.01	0.01	0.005	0.005	0.005
W_An_Bromide_mgl	0.02	0.02	0.02	0.02	0.02	0.05	0.05	0.05
W_An_Chloride_mgl	1.65	1.91	2.85	3.35	3.08	2.28	1.68	1.95
W_An_Fluoride_mgl	0.1	0.05	0.09	0.11	0.11	0.061	0.064	0.063
W_An_Nitrate-N_mgl	0.01	0.01	0.01	0.01	0.01	0.0116	0.0068	0.0111
W_An_Nitrite-N_mgl	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.0012
W_An_Sulphate_mgl	2.32	4.46	2.77	3.24	4.44	3.18	2.91	3.13
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl	1.2	1.5	1.9	2.2	2.5	2.9	0.55	1.3
W_DRP_mgl						0.002	0.002	0.002
W_DSi_mgl	10.7	8.18	10.5	10.1	10.8			
W_EC_mSm	12.4	14.2	15.7	15.4	14.1	14.6		
W_EC_uScm						146	152	157
W_EColi_cfuml								
W_pH	7.6	7.7	7.6	7.8	7.7	7.6	7.4	7.5
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl	0.001	0.001	0.001	0.001				0.002
W_Total_Al_mgl	0.219	0.103	0.067	0.299		0.45	0.041	0.043
W_Total_As_mgl	0.004	0.004	0.005	0.007		0.012	0.0053	0.0056
W_Total_B_mgl	0.05	0.05	0.05	0.05		0.042	0.005	0.0088
W_Total_Ba_mgl	0.012	0.013	0.013	0.017		0.0247	0.0126	0.0141
W_Total_Be_mgl	0.005	0.005	0.005	0.005		0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.005	0.005	0.005	0.005		0.0001	0.0001	0.0001
W_Total_Ca_mgl	13.5	17.9	20.3	16.2	17.6	18.8	20.7	21.1
W_Total_Cd_mgl	0.001	0.001	0.001	0.001		0.00002	0.00002	0.00002
W_Total_Co_mgl	0.002	0.002	0.002	0.002		0.00058	0.000086	0.000083
W_Total_Cr_mgl	0.001	0.001	0.001	0.001		0.0003	0.0002	0.0002
W_Total_Cs_mgl						0.000054	0.00001	0.00001
W_Total_Cu_mgl	0.002	0.002	0.004	0.002		0.0014	0.00034	0.00053
W_Total_Fe_mgl	0.3	0.1	0.1	0.4		1.04	0.099	0.12
W_Total_Ge_mgl						0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_K_mgl	0.4	1.1	1.4	1.4		1.2	1.1	1.2
W_Total_La_mgl						0.00058	0.000059	0.000065
W_Total_Li_mgl	0.002	0.003	0.003	0.002		0.00433	0.00269	0.0026
W_Total_Mg_mgl	2.9	3.8	4.2	3.3	3.4	3.58	4	4.25
W_Total_Mn_mgl	0.008	0.004	0.005	0.01		0.049	0.0042	0.0043
W_Total_Mo_mgl	0.04	0.001	0.001	0.001		0.0002	0.0002	0.0002
W_Total_Na_mgl	3.5	4.5	5.2	3.9		6.51	5.05	5.9
W_Total_Ni_mgl	0.001	0.001	0.001	0.001		0.00071	0.00025	0.00025
W_Total_P_mgl						0.041	0.04	0.04
W_Total_Pb_mgl	0.001	0.001	0.001	0.001		0.00095	0.000083	0.00013
W_Total_Rb_mgl						0.0017	0.0004	0.00043
W_Total_S_mgl						10	10	10
W_Total_Sb_mgl	0.002	0.002	0.002	0.002		0.0001	0.0001	0.0001
W_Total_Se_mgl	0.005	0.005	0.005	0.005		0.001	0.001	0.001
W_Total_Sn_mgl	0.001	0.001	0.001	0.001		0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.196	0.259	0.272	0.275		0.308	0.289	0.34
W_Total_Ti_mgl	0.008	0.002	0.003	0.009		0.014		
W_Total_Tl_mgl	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_U_mgl	0.001	0.001	0.001	0.001		0.0005	0.00033	0.00043
W_Total_V_mgl	0.001	0.001	0.001	0.001		0.00066	0.0005	0.0005
W_Total_Y_mgl						0.00044	0.000055	0.000056
W_Total_Zn_mgl	0.005	0.005	0.005	0.005		0.003	0.003	0.0047
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005	0.0005			0.00008
W_Dissolved_Al_mgl	0.006	0.007	0.006	0.007	0.007	0.0047	0.004	0.003
W_Dissolved_As_mgl	0.003	0.004	0.004	0.005	0.004	0.0044	0.0049	0.0045
W_Dissolved_B_mgl	0.03	0.03	0.03	0.03	0.03	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.009	0.011	0.011	0.011	0.01	0.0117	0.0116	0.0126
W_Dissolved_Be_mgl	0.001	0.001	0.001	0.001	0.001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	15.6	19.9	18.2	19.3	18.5	19.4	20.5	21.7
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.000045	0.000035	0.000031
W_Dissolved_Cr_mgl	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl							0.00001	0.00001
W_Dissolved_Cu_mgl	0.0005	0.0006	0.0005	0.0005	0.0006	0.0005	0.00032	0.00034
W_Dissolved_Fe_mgl	0.03	0.02	0.02	0.02	0.01	0.0095	0.0055	0.005
W_Dissolved_Ge_mgl						0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	0.62	1.11	1.34	1.4	1.54	1.1	1.1	1.1
W_Dissolved_La_mgl						0.000017	0.00001	0.00001
W_Dissolved_Li_mgl	0.002	0.005	0.002	0.003	0.003	0.00243	0.0026	0.00233
W_Dissolved_Mg_mgl	3.35	4.09	3.96	3.49	3.79	3.79	3.99	3.96
W_Dissolved_Mn_mgl	0.0007	0.0005	0.0007	0.0005	0.0005	0.00074	0.0005	0.0005
W_Dissolved_Mo_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.00025	0.0002
W_Dissolved_Na_mgl	4.58	4.93	4.89	4.69	5.29	4.85	4.95	4.68
W_Dissolved_Ni_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00021	0.0003	0.0002
W_Dissolved_P_mgl						0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl						0.00029	0.00035	0.00029
W_Dissolved_S_mgl						10	10	10
W_Dissolved_Sb_mgl	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.005	0.005	0.005	0.005	0.005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.234	0.249	0.253	0.253	0.243	0.277	0.278	0.287
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.002		
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.0002	0.0002	0.0003	0.0003	0.0002	0.00025	0.00031	0.00036
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl						0.000031	0.000016	0.000017
W_Dissolved_Zn_mgl	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001
W_SumAnions_meql						1.35	1.47	1.56
W_SumCations_meql						1.52	1.59	1.64
W_TCN_mgl	0.005	0.005	0.005	0.005	0.005		0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	61	70	77	75	69	101	82	90
W_TDSalts_gm3								
W_Thard_gCaCO3m3	46	60	62	63	62	62	68	70
W_TKN_mgl						0.41	0.1	0.25
W_TN_mgl	0.095	0.134	0.128	0.131	0.164	0.42	0.1	0.26
W_TOC_mgl	1.3	1.5	1.9	2.4	2.6	1.9	1.2	0.5
W_TP_mgl	0.007	0.009	0.009	0.012	0.011	0.01	0.0078	0.005
W_TSi_mgl	4.61	4.65	4.37	4.65				
W_TSS_BDC_mgl								
W_TSS_mgl	7	6	6	10	6	10	3	4
W_Turbidity_NTU	2	1.95	1.81	5.92	1	13	1.7	1.1
W_Volume_ml								
WF_DO_mgl	124.8	8.99	11.42	17.33	11.68		12.44	15.2
WF_DO_pct	111.3	84.1	98.8	160.3	91.9		97.7	114.8
WF_EC_mScm	68.4	39.6	149.9	149.8	138.1		146.9	156.3
WF_ORP_mV	88.2	198.5	241.2	235.5	110.6		-3.2	16.4
WF_pH	7.51	7.66	7.7	7.17	7.53		7.75	7.86
WF_temp_degC	6.8	8.6	5.4	7.4	1.8		1.4	0.2
WF_turbidity_NTU					0.77		1.2	
WF_colour				clear				
WF_level				low				
WF_odour				odourless				

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS02_11-Jul-2024	W_RS02_25-Jul-2024	W_RS02_8-Aug-2024	W_RS02_22-Aug-2024	W_RS02_22-Aug-2024	W_RS02_4-Sep-2024	W_RS02_19-Sep-2024	W_RS02_3-Oct-2024
LABJOBNO	24-22094	24-23696	24-25063	24-26351	24-26351			
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	RS02	RS02	RS02	RS02	RS02	RS02	RS02	RS02
LabSampleID	24-22094-5	24-23696-5	24-25063-3	24-26351-5	24-26351-5	24-27733-4	24-29331-5	24-30758-4
WaterSampDate	2024-07-11	2024-07-25	2024-08-08	2024-08-22	22-Aug-24	2024-09-04	19-Sep-24	03-Oct-24
SampBy		MB	MB			MB	MB	MB
W_Acidity4_mgl								
W_Acidity5_mgl								
W_Acidity7_mgl								
W_Acidity8_mgl	1.67	3.33	3.33	6.67	6.67	3.33	3.33	3.33
W_Alkalinity_mgl	96.3	74.4	61.3	68.3	68.3	66.7	53.8	44.2
W_AmmoniaN_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	1.81	2.23	3.51	2.07	2.07	2.27	2.03	1.58
W_An_Fluoride_mgl	0.071	0.076	0.042	0.058	0.058	0.057	0.052	0.049
W_An_Nitrate-N_mgl	0.0589	0.0538	0.0541	0.0359	0.036	0.0256	0.034	0.0437
W_An_Nitrite-N_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0019
W_An_Sulphate_mgl	3.9	3.04	3.26	3.37	3.37	2.53	1.67	0.78
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl								
W_DRP_mgl	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.003
W_DSi_mgl								
W_EC_mSm								
W_EC_uScm	204	164	155	178	178	141	128	103
W_EColi_cfuml								
W_pH	7.5	7.5	7.6	7.6	7.6	7.7	7.6	7.5
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl							0.002	
W_Total_Al_mgl	0.062	0.52	0.16	0.045	0.045	0.11	0.14	0.978
W_Total_As_mgl	0.0066	0.015	0.0084	0.0054	0.0054	0.0077	0.0075	0.017
W_Total_B_mgl	0.005	0.005	0.0063	0.005	0.005	0.005	0.005	0.005
W_Total_Ba_mgl	0.0161	0.0249	0.0155	0.013	0.013	0.0157	0.0144	0.0256
W_Total_Be_mgl	0.000017	0.000049	0.000012	0.00001	0.00001	0.000018	0.00001	0.000048
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		0.0001
W_Total_Ca_mgl	23.2	22.8	20.1	22.4	22.4	20.9	19.9	14.6
W_Total_Cd_mgl	0.00002	0.000033	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.00013	0.00069	0.00023	0.00008	0.00008	0.00022	0.00022	0.00087
W_Total_Cr_mgl	0.0002	0.00064	0.0002	0.0002	0.0002	0.00025	0.0002	0.00079
W_Total_Cs_mgl	0.000012	0.0001	0.000024	0.00001	0.00001	0.000012	0.000019	0.00016
W_Total_Cu_mgl	0.00048	0.0018	0.00084	0.00057	0.00057	0.0013	0.0014	0.0027
W_Total_Fe_mgl	0.16	1.22	0.44	0.11	0.11	0.32	0.35	1.78
W_Total_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00013
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	1.1	1.2	2	1.1	1.1	1.3	1.1	2
W_Total_La_mgl	0.000088	0.00073	0.00019	0.00005	0.00005	0.00014	0.00016	0.00077
W_Total_Li_mgl	0.00291	0.00329	0.00261	0.00254	0.00254	0.00191	0.00182	0.00229
W_Total_Mg_mgl	4.12	4.4	3.76	4.06	4.06	3.57	2.98	2.73
W_Total_Mn_mgl	0.0061	0.049	0.017	0.0043	0.0043	0.015	0.014	0.0617
W_Total_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Na_mgl	4.63	4.91	4.41	4.94	4.94	4.44	4.29	3.07
W_Total_Ni_mgl	0.00024	0.00091	0.00048	0.00026	0.00026	0.0006	0.00066	0.0014
W_Total_P_mgl	0.04	0.064	0.04	0.04	0.04	0.04	0.04	0.089
W_Total_Pb_mgl	0.00013	0.0014	0.00037	0.000075	0.000075	0.00024	0.00023	0.0018
W_Total_Rb_mgl	0.00054	0.0017	0.00099	0.00042	0.00042	0.00065	0.00068	0.0029
W_Total_S_mgl	10	10	10	10	10	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.373	0.323	0.273	0.317	0.317	0.303	0.256	0.196
W_Total_Ti_mgl							0.008	
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00044	0.00063	0.00031	0.0004	0.0004	0.00026	0.00016	0.00023
W_Total_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0013
W_Total_Y_mgl	0.000076	0.00056	0.00014	0.00005	0.00005	0.00013	0.00014	0.0006
W_Total_Zn_mgl	0.003	0.0033	0.0041	0.003	0.003	0.003	0.003	0.0061
W_Dissolved_Ag_mgl								
W_Dissolved_Al_mgl	0.033	0.0035	0.0045	0.003	0.003	0.007	0.01	0.027
W_Dissolved_As_mgl	0.0061	0.0045	0.0045	0.0043	0.0043	0.0048	0.0044	0.0052
W_Dissolved_B_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.0141	0.0128	0.0122	0.0119	0.0119	0.0125	0.0112	0.0099
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	26.3	21.9	19.1	21.5	21.5	19.5	19.4	14.3
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.000094	0.000046	0.000041	0.000062	0.000062	0.00008	0.00011	0.00017
W_Dissolved_Cr_mgl	0.00032	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.000011	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.0012	0.0003	0.00061	0.0007	0.0007	0.00099	0.0012	0.0016
W_Dissolved_Fe_mgl	0.033	0.005	0.018	0.11	0.11	0.018	0.031	0.093
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	2.5	0.95	2	1.1	1.1	1.2	1	1.7
W_Dissolved_La_mgl	0.00011	0.00001	0.000016	0.00001	0.00001	0.000015	0.000024	0.000067
W_Dissolved_Li_mgl	0.00263	0.00256	0.00226	0.00236	0.00236	0.00166	0.00158	0.00117
W_Dissolved_Mg_mgl	4.79	4.07	3.65	3.92	3.92	3.35	2.87	2.5
W_Dissolved_Mn_mgl	0.0043	0.0005	0.0005	0.0015	0.0015	0.0005	0.00084	0.0054
W_Dissolved_Mo_mgl	0.00025	0.00021	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	5.8	4.68	4.29	4.68	4.68	4.16	4.11	3.15
W_Dissolved_Ni_mgl	0.00042	0.0002	0.00026	0.00044	0.00044	0.0004	0.00041	0.00058
W_Dissolved_P_mgl	0.53	0.04	0.049	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.0003	0.0003	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00237	0.00026	0.00055	0.00028	0.00028	0.00036	0.0003	0.0005
W_Dissolved_S_mgl	10	10	10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.394	0.317	0.268	0.304	0.304	0.29	0.249	0.18
W_Dissolved_Ti_mgl								
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00033	0.0004	0.00029	0.00039	0.00039	0.00025	0.00013	0.000098
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000057	0.000015	0.000023	0.000019	0.000019	0.000038	0.00005	0.000095
W_Dissolved_Zn_mgl	0.013	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_SumAnions_meql	2.07	1.62	1.4	1.51	1.51	1.46	1.18	0.95
W_SumCations_meql	2.03	1.65	1.49	1.63	1.63	1.46	1.41	1.1
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	88	83	73	86	86	80	62	68
W_TDSalts_gm3								
W_Thard_gCaCO3m3	75	75	66	73	73	67	62	48
W_TKN_mgl	0.29	0.59	0.37	2.35	2.35	0.41	0.59	1.01
W_TN_mgl	0.35	0.65	0.42	2.4	2.4	0.43	0.63	1.1
W_TOC_mgl								
W_TP_mgl	0.0083	0.049	0.032	0.005	0.005	0.16	0.017	0.12
W_TSi_mgl								
W_TSS_BDC_mgl								
W_TSS_mgl	4	75	11	3	3	12	9	52
W_Turbidity_NTU	2.5	22	6.8	2.1	2.1	5.3	4.5	47
W_Volume_ml								
WF_DO_mgl		12.33	15.54			14.63	11.08	13.54
WF_DO_pct		91.6	117.8			129.3	103.5	114.3
WF_EC_mScm		160.1	146			147.9	122.4	103.6
WF_ORP_mV		31.7	17.6			71.1	60.2	97.6
WF_pH		7.61	7.67			7.75	7.51	7.64
WF_temp_degC		-0.1	0.1			6	7.3	4.4
WF_turbidity_NTU								
WF_colour						clear	clear	low
WF_level						high	high	high
WF_odour						nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	**W_RS02_16-Oct-2024**	**W_RS02_31-Oct-2024**	**W_RS02_14-Nov-2024**	**W_RS02_28-Nov-2024**
LABJOBNO				
WaterLabID	**Analytica**	**Analytica**	**Analytica**	**Analytica**
WaterSiteID	**RS02**	**RS02**	**RS02**	**RS02**
LabSampleID	**24-32269-5-5**	**24-33929-4**	**24-35305-5**	**24-36747-5**
WaterSampDate	**16-Oct-24**	**31-Oct-24**	**14-Nov-24**	**28-Nov-24**
SampBy	**MB**	**MB/GM**	**MB**	**MB**
W_Acidity4_mgl				
W_Acidity5_mgl				
W_Acidity7_mgl				
W_Acidity8_mgl	2.67	3.33	3.33	1.67
W_Alkalinity_mgl	60.9	67.2	74	78.1
W_AmmoniaN_mgl	0.005	0.005	0.005	0.005
W_An_Bromide_mgl	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	2.02	1.5	1.19	1.12
W_An_Fluoride_mgl	0.053	0.074	0.051	0.09
W_An_Nitrate-N_mgl	0.0228	0.0045	0.002	0.002
W_An_Nitrite-N_mgl	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	1.33	1.03	0.94	0.86
W_BiCarbAlk_mgl				
W_CarbAlk_mgl				
W_Density_gcm3				
W_DOC_mgl				
W_DRP_mgl	0.002	0.002	0.002	0.002
W_DSi_mgl				
W_EC_mSm				
W_EC_uScm	146	146	151	167
W_EColi_cfuml				
W_pH	7.5	7.4	7.4	7.5
W_pH_1311_hcl				
W_pH_1311_initial				
W_pH_1311_leachate				
W_pH_1311_off				
W_Total_Ag_mgl				
W_Total_Al_mgl	0.066	0.088	0.15	0.14
W_Total_As_mgl	0.007	0.0083	0.0096	0.0099
W_Total_B_mgl	0.005	0.005	0.005	0.005
W_Total_Ba_mgl	0.0125	0.0133	0.0148	0.0155
W_Total_Be_mgl	0.00001	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001
W_Total_Ca_mgl	19.1	21.8	22.8	23.5
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.00012	0.00017	0.0002	0.00021
W_Total_Cr_mgl	0.0002	0.0003	0.0002	0.0002
W_Total_Cs_mgl	0.00001	0.000015	0.000024	0.000026
W_Total_Cu_mgl	0.00099	0.00099	0.00052	0.00063
W_Total_Fe_mgl	0.14	0.17	0.33	0.34
W_Total_Ge_mgl	0.00005	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	0.91	0.87	0.61	0.72
W_Total_La_mgl	0.000084	0.000073	0.00012	0.00013
W_Total_Li_mgl	0.00212	0.00206	0.00264	0.00295
W_Total_Mg_mgl	3.24	3.49	3.91	4.02
W_Total_Mn_mgl	0.0059	0.0058	0.015	0.015
W_Total_Mo_mgl	0.0002	0.0002	0.0002	0.0002
W_Total_Na_mgl	4.53	4.59	4.55	4.56
W_Total_Ni_mgl	0.00041	0.00056	0.00045	0.00047
W_Total_P_mgl	0.04	0.04	0.04	0.04
W_Total_Pb_mgl	0.00009	0.00011	0.00021	0.00024
W_Total_Rb_mgl	0.0004	0.00049	0.00067	0.00068
W_Total_S_mgl	10	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.25	0.311	0.312	0.311
W_Total_Ti_mgl				
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00025	0.00027	0.00032	0.00032
W_Total_V_mgl	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.00008	0.000089	0.00011	0.00011
W_Total_Zn_mgl	0.003	0.003	0.003	0.003
W_Dissolved_Ag_mgl				
W_Dissolved_Al_mgl	0.0073	0.0069	0.007	0.0033
W_Dissolved_As_mgl	0.0062	0.0071	0.007	0.0068
W_Dissolved_B_mgl	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.0116	0.012	0.0116	0.0122
W_Dissolved_Be_mgl	0.00001	0.00001	0.000023	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	19.2	21	22.1	22.7
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.00007	0.00008	0.000073	0.000066
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.00073	0.00072	0.00042	0.00042
W_Dissolved_Fe_mgl	0.015	0.016	0.0097	0.013
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	0.86	0.77	0.51	0.61
W_Dissolved_La_mgl	0.000014	0.000017	0.000013	0.000012
W_Dissolved_Li_mgl	0.00199	0.0021	0.0025	0.00244
W_Dissolved_Mg_mgl	3.15	3.34	3.68	4
W_Dissolved_Mn_mgl	0.00081	0.0005	0.0016	0.0014
W_Dissolved_Mo_mgl	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	4.29	4.31	4.34	4.67
W_Dissolved_Ni_mgl	0.00032	0.00048	0.00032	0.00021
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00021	0.00024	0.00018	0.00021
W_Dissolved_S_mgl	10	10	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.245	0.289	0.319	0.308
W_Dissolved_Ti_mgl				
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00023	0.00027	0.00031	0.00029
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000032	0.000041	0.000025	0.000023
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001
W_SumAnions_meql	1.31	1.41	1.54	1.62
W_SumCations_meql	1.43	1.53	1.61	1.68
W_TCN_mgl	0.001	0.001	0.001	0.001
W_TColi_cfuml				
W_TDS_mgl	65	76	77	93
W_TDSalts_gm3				
W_Thard_gCaCO3m3	61	69	73	75
W_TKN_mgl	0.41	0.35	0.23	0.27
W_TN_mgl	0.43	0.36	0.23	0.27
W_TOC_mgl				
W_TP_mgl	0.0059	0.012	0.015	0.017
W_TSi_mgl				
W_TSS_BDC_mgl				
W_TSS_mgl	5	9	12	12
W_Turbidity_NTU	2.3	4.9	4.8	4.3
W_Volume_ml				
WF_DO_mgl	11.07	9.48	10.42	9.26
WF_DO_pct	100.8	98.7	101.2	94.7
WF_EC_mScm	128.8	140.3	148.1	154.6
WF_ORP_mV	140.6	25.8	21.7	-1.3
WF_pH	7.62	7.72	7.56	7.59
WF_temp_degC	8	12.3	10.2	12
WF_turbidity_NTU	1.77			
WF_colour	clear	clear	clear	clear
WF_level	low	low	low	low
WF_odour	nil	nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS03_24-Apr-2023	W_RS03_5-Jul-2023	W_RS03_10-Oct-2023	W_RS03_20-Dec-2023	W_RS03_4-Feb-2024	W_RS03_5-Mar-2024	W_RS03_20-Mar-2024
LABJOBNO	AR-23-NC-010499-01	AR-23-NC-017979-01	AR-23-NC-028806-01	AR-24-NC-000295-01	AR-24-NC-003109-01	AR-24-NC-008972-01	AR-24-NC-010966-01
WaterLabID	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins
WaterSiteID	RS03	RS03	RS03	RS03	RS03	RS03	RS03
LabSampleID	817-2023-00038809	817-2023-00068119	817-2023-00110966	817-2023-00141597	817-2024-00015366	817-2024-00029416	817-2024-00035199
WaterSampDate	2023-04-24	2023-07-05	2023-10-10	2023-12-20	2024-02-04	2024-03-05	2024-03-20
SampBy	HM	HM	HM	HM	HM	HM	HM
W_Acidity4_mgl	1	1	1	1	1	1	1
W_Acidity5_mgl							
W_Acidity7_mgl	1	1	1	1	1	1	1
W_Acidity8_mgl	1	1	1	2	1	3	5
W_Alkalinity_mgl	36	31	38	43	58	44	42
W_AmmoniaN_mgl	0.02	0.02	0.01	0.01	0.01	0.03	0.02
W_An_Bromide_mgl	0.02	0.02	0.02	0.02	0.02	0.02	0.02
W_An_Chloride_mgl	1.47	1.37	1.11	0.9	1.08	2.28	1.29
W_An_Fluoride_mgl	0.07	0.04	0.07	0.08	0.06	0.09	0.07
W_An_Nitrate-N_mgl	0.01	0.01	0.01	0.01	0.01	0.02	0.05
W_An_Nitrite-N_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.01
W_An_Sulphate_mgl	1.07	0.95	1.17	0.63	0.66	4.05	1.13
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	2.1	2.9	2.5	1.9	1.6	2.1	1.2
W_DRP_mgl							
W_DSi_mgl	9.82	8.44	8.7	8.65	8.79	8.91	9.43
W_EC_mSm	7.1	6.7	8.4	9.1	12.1	10.8	9.3
W_EC_uScm							
W_EColi_cfuml							
W_pH	7.4	7.2	7.6	7.5	9.3	7.5	7.4
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_Al_mgl	0.012	0.033	0.019			0.043	0.005
W_Total_As_mgl	0.011	0.008	0.01			0.019	0.012
W_Total_B_mgl	0.05	0.05	0.05			0.05	0.05
W_Total_Ba_mgl	0.005	0.005	0.007			0.007	0.006
W_Total_Be_mgl	0.005	0.005	0.005			0.005	0.005
W_Total_Bi_mgl	0.005	0.005	0.005			0.005	0.005
W_Total_Ca_mgl	8.2	7	9.1		11.2	10.8	9.4
W_Total_Cd_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_Co_mgl	0.002	0.002	0.002			0.002	0.002
W_Total_Cr_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_Cs_mgl							
W_Total_Cu_mgl	0.002	0.006	0.002			0.002	0.002
W_Total_Fe_mgl	0.1	0.1	0.1			0.4	0.2
W_Total_Ge_mgl							
W_Total_Hg_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_K_mgl	0.5	0.4	0.4			0.4	0.1
W_Total_La_mgl							
W_Total_Li_mgl	0.001	0.001	0.001			0.002	0.001
W_Total_Mg_mgl	1.7	1.4	1.9		2.1	2.2	1.9
W_Total_Mn_mgl	0.019	0.011	0.013			0.057	0.035
W_Total_Mo_mgl	0.001	0.001	0.001			0.001	0.033
W_Total_Na_mgl	3	408	20			3.4	2.9
W_Total_Ni_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_P_mgl							
W_Total_Pb_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_Rb_mgl							
W_Total_S_mgl							
W_Total_Sb_mgl	0.002	0.002	0.002			0.002	0.002
W_Total_Se_mgl	0.005	0.005	0.005			0.005	0.005
W_Total_Sn_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_Sr_mgl	0.071	0.095	0.128			0.149	0.13
W_Total_Ti_mgl	0.001	0.002	0.001			0.001	0.001
W_Total_Tl_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_U_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_V_mgl	0.001	0.001	0.001			0.001	0.001
W_Total_Y_mgl							
W_Total_Zn_mgl	0.005	0.005	0.005			0.005	0.005
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Al_mgl	0.006	0.002	0.005	0.005	0.002	0.002	0.002
W_Dissolved_As_mgl	0.009	0.005	0.008	0.013	0.008	0.014	0.011
W_Dissolved_B_mgl	0.03	0.03	0.03	0.03	0.03	0.03	0.03
W_Dissolved_Ba_mgl	0.006	0.004	0.006	0.006	0.007	0.006	0.005
W_Dissolved_Be_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Ca_mgl	8.7	13.5	11	11.6	13.3	10.2	10.3
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Co_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Cr_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Cs_mgl							
W_Dissolved_Cu_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Fe_mgl	0.07	0.01	0.02	0.05	0.01	0.08	0.06
W_Dissolved_Ge_mgl							
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_K_mgl	0.51	0.79	0.45	0.27	0.43	0.48	0.22
W_Dissolved_La_mgl							
W_Dissolved_Li_mgl	0.001	0.002	0.001	0.001	0.002	0.001	0.001
W_Dissolved_Mg_mgl	1.9	0.07	1.92	2.31	0.09	2.45	2.26
W_Dissolved_Mn_mgl	0.017	0.0005	0.0033	0.0057	0.0005	0.023	0.0246
W_Dissolved_Mo_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Na_mgl	4.58	620	56	3.61	233	3.28	3.84
W_Dissolved_Ni_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_P_mgl							
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Rb_mgl							
W_Dissolved_S_mgl							
W_Dissolved_Sb_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Dissolved_Se_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.005
W_Dissolved_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sr_mgl	0.105	0.0942	0.114	0.15	0.136	0.157	0.143
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_U_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.002	0.002	0.002	0.002	0.011		
W_Dissolved_Zn_mgl	0.002	0.002	0.002	0.002	0.011	0.002	0.002
W_SumAnions_meql							
W_SumCations_meql							
W_TCN_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.005
W_TColi_cfuml							
W_TDS_mgl	35	33	41	44	59	53	45
W_TDSalts_gm3							
W_Thard_gCaCO3m3	7	7	35	38	36	36	31
W_TKN_mgl							
W_TN_mgl	0.12	0.15	0.17	0.1	0.12	0.1	0.078
W_TOC_mgl	2.2	2.9	2.6	1.6	2.3	2.2	1.3
W_TP_mgl	0.016	0.013	0.01	0.015	0.014	0.01	0.009
W_TSi_mgl	3.64	3.69	3.51			3.63	3.6
W_TSS_BDC_mgl							
W_TSS_mgl	6	6	5	6	5	4	4
W_Turbidity_NTU	0.31	0.59	0.56	0.49	0.75	0.57	0.43
W_Volume_ml							
WF_DO_mgl			11.37			11.47	10.24
WF_DO_pct		95.5	100.3			105.8	90.6
WF_EC_mScm		64	81.9				91.1
WF_ORP_mV		149.2	25.2			-7.3	23.2
WF_pH		7.56	7.47			7.52	7.35
WF_temp_degC		2.2	6.9			8.8	7.8
WF_turbidity_NTU		2.55					
WF_colour							
WF_level							
WF_odour							

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS03_4-Apr-2024	W_RS03_17-Apr-2024	W_RS03_1-May-2024	W_RS03_16-May-2024	W_RS03_29-May-2024	W_RS03_13-Jun-2024	W_RS03_27-Jun-2024	W_RS03_11-Jul-2024
LABJOBNO	AR-24-NC-011976-01	AR-24-NC-013497-01	AR-24-NC-015251-01		24-17710	24-19336	24-20566	24-22094
WaterLabID	Eurofins	Eurofins	Eurofins	Eurofins	Analytica	Analytica	Analytica	Analytica
WaterSiteID	RS03	RS03	RS03	RS03	RS03	RS03	RS03	RS03
LabSampleID	817-2024-00041163	817-2024-00047515	817-2024-00052697		24-17710-6	24-19336-6	24-20566-6	24-22094-6
WaterSampDate	2024-04-04	2024-04-17	2024-05-01	2024-05-16	2024-05-29	2024-06-13	2024-06-27	2024-07-11
SampBy	MB	MB	MB	MB		MB	MB	
W_Acidity4_mgl	1	1	1	1				
W_Acidity5_mgl								
W_Acidity7_mgl	1	1	1	1				
W_Acidity8_mgl	4	6	3	2	3.33	5.67	1.67	5
W_Alkalinity_mgl	43	48	43	40	44.1	47.1	42.7	39.9
W_AmmoniaN_mgl	0.01	0.01	0.01	0.01	0.005	0.005	0.005	0.006
W_An_Bromide_mgl	0.02	0.02	0.02	0.02	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	1.37	2.44	1.91	1.59	1.47	0.96	1.37	1.26
W_An_Fluoride_mgl	0.07	0.07	0.09	0.09	0.043	0.048	0.047	0.049
W_An_Nitrate-N_mgl	0.01	0.01	0.01	0.01	0.002	0.002	0.002	0.0146
W_An_Nitrite-N_mgl	0.01	0.01	0.01	0.01	0.001	0.001	0.0025	0.001
W_An_Sulphate_mgl	0.79	3.03	2.08	2.92	2.68	2.22	2.36	2.4
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl	1.3	2	1.3	1.1	1.4	1	1.3	
W_DRP_mgl					0.003	0.002	0.002	0.002
W_DSi_mgl	14.8	8.85	9.33	9.42				
W_EC_mSm	9.6	11.2	10.1	9.4	10.3			
W_EC_uScm					103	108	98.3	106
W_EColi_cfuml								
W_pH	7.5	7.4	7.4	7.4	7.4	7.9	7.2	7.2
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl	0.001	0.001	0.001				0.002	
W_Total_Al_mgl	0.055	0.005	0.03		0.003	0.0058	0.0049	0.0096
W_Total_As_mgl	0.026	0.012	0.012		0.0081	0.0079	0.0086	0.0071
W_Total_B_mgl	0.05	0.05	0.05		0.0065	0.005	0.005	0.005
W_Total_Ba_mgl	0.009	0.008	0.008		0.0262	0.0071	0.0071	0.0072
W_Total_Be_mgl	0.005	0.005	0.005		0.00016	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.005	0.005	0.005		0.0001	0.0001	0.0001	0.0001
W_Total_Ca_mgl	11.6	13.5	10.5	11.1	12.4	12.7	12.3	10.9
W_Total_Cd_mgl	0.001	0.001	0.001		0.000083	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.002	0.002	0.002		0.000029	0.000052	0.000039	0.000075
W_Total_Cr_mgl	0.002	0.001	0.001		0.0002	0.0002	0.0002	0.0002
W_Total_Cs_mgl					0.00011	0.00001	0.00001	0.00001
W_Total_Cu_mgl	0.002	0.002	0.002		0.0002	0.0002	0.0003	0.00064
W_Total_Fe_mgl	0.8	0.1	0.2		0.057	0.06	0.079	0.069
W_Total_Ge_mgl					0.00012	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.001	0.001	0.001		0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	0.5	0.8	0.5		0.52	0.54	0.63	0.61
W_Total_La_mgl					0.00014	0.00001	0.00001	0.000025
W_Total_Li_mgl	0.002	0.001	0.001		0.00596	0.00139	0.0015	0.00152
W_Total_Mg_mgl	2.4	2.9	2.2	2.2	2.7	2.57	2.45	2.13
W_Total_Mn_mgl	0.081	0.029	0.025		0.014	0.013	0.014	0.011
W_Total_Mo_mgl	0.001	0.001	0.001		0.0002	0.0002	0.0002	0.0002
W_Total_Na_mgl	4	4.7	3.1		4.7	3.99	3.89	3.28
W_Total_Ni_mgl	0.001	0.001	0.001		0.0002	0.0002	0.00035	0.0002
W_Total_P_mgl					0.04	0.04	0.04	0.04
W_Total_Pb_mgl	0.001	0.001	0.001		0.000097	0.00005	0.000069	0.00005
W_Total_Rb_mgl					0.00044	0.00018	0.0002	0.00022
W_Total_S_mgl					10	10	10	10
W_Total_Sb_mgl	0.002	0.002	0.002		0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.005	0.005	0.005		0.0012	0.001	0.001	0.001
W_Total_Sn_mgl	0.001	0.001	0.001		0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.155	0.182	0.162		1.03	0.162	0.169	0.163
W_Total_Ti_mgl	0.001	0.001	0.002		0.002			
W_Total_Tl_mgl	0.001	0.001	0.001		0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.001	0.001	0.001		0.00021	0.000032	0.000055	0.00003
W_Total_V_mgl	0.001	0.001	0.001		0.0005	0.00073	0.0005	0.0005
W_Total_Y_mgl					0.00016	0.00005	0.00005	0.00005
W_Total_Zn_mgl	0.005	0.005	0.005		0.003	0.003	0.0046	0.003
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005			0.00008	
W_Dissolved_Al_mgl	0.003	0.002	0.002	0.002	0.003	0.003	0.003	0.0051
W_Dissolved_As_mgl	0.013	0.01	0.01	0.008	0.0069	0.0077	0.0073	0.0063
W_Dissolved_B_mgl	0.03	0.03	0.03	0.03	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.007	0.006	0.006	0.006	0.0075	0.007	0.0071	0.0069
W_Dissolved_Be_mgl	0.001	0.001	0.001	0.001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	12.4	11.4	10.3	12.1	12.9	12.9	12.2	12.4
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.0005	0.0005	0.0005	0.0005	0.000014	0.000038	0.00001	0.000024
W_Dissolved_Cr_mgl	0.002	0.001	0.001	0.001	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl						0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.0006	0.0005	0.0005	0.0005	0.00022	0.0002	0.00023	0.0003
W_Dissolved_Fe_mgl	0.1	0.04	0.03	0.02	0.015	0.012	0.016	0.022
W_Dissolved_Ge_mgl					0.00005	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	0.42	0.68	0.69	0.52	0.5	0.53	0.6	0.73
W_Dissolved_La_mgl					0.00001	0.00001	0.00001	0.000014
W_Dissolved_Li_mgl	0.003	0.001	0.002	0.002	0.00144	0.00141	0.00126	0.00155
W_Dissolved_Mg_mgl	2.53	2.6	2.55	2.58	2.55	2.53	2.35	2.45
W_Dissolved_Mn_mgl	0.0143	0.0172	0.0155	0.0151	0.012	0.0098	0.0083	0.0091
W_Dissolved_Mo_mgl	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	4.29	4.06	4.09	4.29	3.9	3.89	3.62	3.86
W_Dissolved_Ni_mgl	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002	0.0002
W_Dissolved_P_mgl					0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl					0.00014	0.00017	0.00021	0.00034
W_Dissolved_S_mgl					10	10	10	10
W_Dissolved_Sb_mgl	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.005	0.005	0.005	0.005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.137	0.157	0.154	0.143	0.173	0.159	0.151	0.191
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.002			
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0005	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.0002	0.0002	0.0002	0.0002	0.000035	0.000065	0.00008	0.000051
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl					0.00001	0.000011	0.00001	0.000017
W_Dissolved_Zn_mgl	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001
W_SumAnions_meql					0.98	1.03	0.94	0.89
W_SumCations_meql					1.04	1.03	0.98	1.01
W_TCN_mgl	0.005	0.005	0.005	0.005		0.001	0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	47	55	49	46	83	57	53	60
W_TDSalts_gm3								
W_Thard_gCaCO3m3	39	39	35	41	42	42	41	36
W_TKN_mgl					0.1	0.1	0.13	0.13
W_TN_mgl	0.152	0.101	0.071	0.053	0.1	0.1	0.13	0.14
W_TOC_mgl	1.3	2	1.4	1.2	0.89	1.4	1.2	
W_TP_mgl	0.006	0.014	0.011	0.007	0.0061	0.005	0.005	0.005
W_TSi_mgl	3.98	3.75	3.54					
W_TSS_BDC_mgl								
W_TSS_mgl	6	6	8	6	3	3	3	3
W_Turbidity_NTU	0.82	0.33	1.42	0.27	0.3	0.2	0.3	0.3
W_Volume_ml								
WF_DO_mgl	9.62	9.07	10.75	10.52		11.65	13.92	
WF_DO_pct	92.5	83.5	96.7	87.6		94.7	113.3	
WF_EC_mScm	94.7	107.4	96.5	91.8		67.2	96.2	
WF_ORP_mV	27.4	43.5	50.7	30.3		-20.4	38.2	
WF_pH	7.37	7.44	7.48	7.4		7.39	7.56	
WF_temp_degC	10.7	9.1	7.8	5		3.6	3.9	
WF_turbidity_NTU				-53		0.05		
WF_colour								
WF_level								
WF_odour								

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS03_25-Jul-2024	W_RS03_8-Aug-2024	W_RS03_22-Aug-2024	W_RS03_22-Aug-2024	W_RS03_4-Sep-2024	W_RS03_19-Sep-2024	W_RS03_3-Oct-2024	W_RS03_16-Oct-2024
LABJOBNO	24-23696	24-25063	24-26351	24-26351				
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	RS03	RS03	RS03	RS03	RS03	RS03	RS03	RS03
LabSampleID	24-23696-6	24-25063-4	24-26351-6	24-26351-6	24-27733-5	24-29331-6	24-30758-5	24-32269-6-6
WaterSampDate	2024-07-25	2024-08-08	2024-08-22	22-Aug-24	2024-09-04	19-Sep-24	03-Oct-24	16-Oct-24
SampBy	MB	MB			MB	MB	MB	MB
W_Acidity4_mgl								
W_Acidity5_mgl								
W_Acidity7_mgl								
W_Acidity8_mgl	3.33	3.33	3.33	3.33	3.33	3.33	2	3.33
W_Alkalinity_mgl	40.3	29.2	28.2	28.2	23	28	35.3	29.2
W_AmmoniaN_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	1.31	1.38	1.07	1.07	1.35	1.28	1.58	1.1
W_An_Fluoride_mgl	0.054	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_An_Nitrate-N_mgl	0.002	0.0044	0.002	0.002	0.002	0.002	0.002	0.002
W_An_Nitrite-N_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	2.67	1.47	1.34	1.34	0.96	1.18	1.08	0.89
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl								
W_DRP_mgl	0.002	0.004	0.003	0.003	0.006	0.005	0.007	0.005
W_DSi_mgl								
W_EC_mSm								
W_EC_uScm	95.8	69.9	76.9	76.9	54.2	69	76.5	73.8
W_EColi_cfuml								
W_pH	7.2	7.3	7.2	7.2	7.2	7.3	7.3	7.2
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl						0.002		
W_Total_Al_mgl	0.0052	0.019	0.014	0.014		0.055	0.083	0.027
W_Total_As_mgl	0.0064	0.0091	0.0065	0.0065	0.0078	0.0092	0.013	0.0078
W_Total_B_mgl	0.005	0.0051	0.005	0.005	0.005	0.005	0.005	0.005
W_Total_Ba_mgl	0.0072	0.006	0.0056	0.0056	0.0057	0.0065	0.0081	0.0062
W_Total_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001		0.0001	0.0001
W_Total_Ca_mgl	12.1	9.1	8.45	8.45	6.93	9.65	9.61	9.25
W_Total_Cd_mgl	0.000026	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.000038	0.000065	0.000056	0.000056	0.0001	0.00013	0.00017	0.000088
W_Total_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.00029	0.0002	0.00024	0.0002
W_Total_Cs_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Total_Cu_mgl	0.0002	0.0044	0.0004	0.0004	0.00053	0.00067	0.00087	0.0006
W_Total_Fe_mgl	0.066	0.19	0.084	0.084	0.15	0.18	0.3	0.17
W_Total_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	0.58	0.66	0.54	0.54	0.74	0.8	1	0.59
W_Total_La_mgl	0.000011	0.000043	0.000026	0.000026	0.0001	0.00012	0.00021	0.000062
W_Total_Li_mgl	0.00147	0.0012	0.0011	0.0011	0.00099	0.00109	0.00117	0.00106
W_Total_Mg_mgl	2.41	1.73	1.66	1.66	1.36	1.75	1.9	1.7
W_Total_Mn_mgl	0.011	0.016	0.0092	0.0092	0.013	0.016	0.029	0.012
W_Total_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Na_mgl	3.8	3.08	2.98	2.98	2.66	3.17	3.01	3.03
W_Total_Ni_mgl	0.0002	0.0002	0.0002	0.0002	0.00028	0.00035	0.00032	0.00034
W_Total_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Total_Pb_mgl	0.00005	0.00019	0.00005	0.00005	0.00005	0.000086	0.00014	0.00025
W_Total_Rb_mgl	0.00018	0.00026	0.00021	0.00021	0.00034	0.00033	0.00047	0.00023
W_Total_S_mgl	10	10	10	10	10	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.159	0.112	0.106	0.106	0.089	0.109	0.123	0.107
W_Total_Ti_mgl						0.002		
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.000054	0.00003	0.000036	0.000036	0.000037	0.00005	0.000092	0.000043
W_Total_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.00063	0.0005	0.0005
W_Total_Y_mgl	0.00005	0.00005	0.00005	0.00005	0.00011	0.00012	0.00018	0.000069
W_Total_Zn_mgl	0.003	0.0035	0.003	0.003	0.003	0.003	0.003	0.003
W_Dissolved_Ag_mgl								
W_Dissolved_Al_mgl	0.003	0.0083	0.0055	0.0055	0.023	0.023	0.028	0.015
W_Dissolved_As_mgl	0.006	0.0064	0.0057	0.0057	0.0061	0.0067	0.0082	0.0065
W_Dissolved_B_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.0067	0.0055	0.0053	0.0053	0.0053	0.0056	0.0066	0.0057
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000014	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	12	8.45	8.04	8.04	9.29	9.38	9.96	9.08
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.000021	0.00002
W_Dissolved_Co_mgl	0.000024	0.000046	0.00004	0.00004	0.000062	0.000084	0.000086	0.000077
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.00025	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.0002	0.00036	0.00039	0.00039	0.0006	0.00073	0.0007	0.00055
W_Dissolved_Fe_mgl	0.012	0.031	0.029	0.029	0.046	0.047	0.061	0.042
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	0.57	0.64	0.52	0.52	0.71	0.79	1.1	0.6
W_Dissolved_La_mgl	0.00001	0.000018	0.000014	0.000014	0.000055	0.000055	0.000079	0.000036
W_Dissolved_Li_mgl	0.00135	0.00117	0.00111	0.00111	0.0009	0.001	0.00111	0.00098
W_Dissolved_Mg_mgl	2.33	1.66	1.6	1.6	1.3	1.64	1.94	1.67
W_Dissolved_Mn_mgl	0.0066	0.0038	0.0058	0.0058	0.0037	0.0044	0.0044	0.0067
W_Dissolved_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	3.62	2.93	2.87	2.87	2.59	2.94	3.21	2.9
W_Dissolved_Ni_mgl	0.0002	0.00023	0.0002	0.0002	0.00025	0.00031	0.00027	0.0002
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00016	0.00023	0.0002	0.0002	0.00028	0.00026	0.00038	0.00019
W_Dissolved_S_mgl	10	10	10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.16	0.105	0.103	0.103	0.087	0.105	0.122	0.104
W_Dissolved_Ti_mgl								
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.000056	0.000035	0.000045	0.000045	0.000043	0.000049	0.000079	0.000052
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000012	0.000033	0.000028	0.000028	0.000075	0.000075	0.0001	0.000055
W_Dissolved_Zn_mgl	0.001	0.0012	0.001	0.001	0.001	0.001	0.001	0.001
W_SumAnions_meql	0.9	0.65	0.62	0.62	0.52	0.62	0.78	0.63
W_SumCations_meql	0.96	0.7	0.67	0.67	0.7	0.75	0.83	0.73
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	43	46	40	40	34	44	54	45
W_TDSalts_gm3								
W_Thard_gCaCO3m3	40	30	28	28	23	31	32	30
W_TKN_mgl	0.29	0.19	0.17	0.17	0.21	0.29	0.39	0.24
W_TN_mgl	0.29	0.19	0.17	0.17	0.21	0.29	0.39	0.24
W_TOC_mgl								
W_TP_mgl	0.005	0.011	0.005	0.005	0.011	0.0095	0.02	0.0093
W_TSi_mgl								
W_TSS_BDC_mgl								
W_TSS_mgl	3	3	3	3	3	3	6	5
W_Turbidity_NTU	0.4	1.2	0.9	0.9	1.1	0.9	3.1	2.8
W_Volume_ml								
WF_DO_mgl	12.42	25.87			16.38	11.51	15.85	12.19
WF_DO_pct	98.2	205.7			135.5	106.9	132.5	99.6
WF_EC_mScm	93.1	67.5			58.4	241.1	77.6	66.7
WF_ORP_mV	52	23.8			88.6	54.8	166.1	92.7
WF_pH	7.56	7.44			7.32	8.06	7.55	7.38
WF_temp_degC	3.3	2.8			4.6	7.9	4.6	4.7
WF_turbidity_NTU								-0.17
WF_colour					clear	low	low	clear
WF_level					high	high	high	low
WF_odour					nil	nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS03_31-Oct-2024	W_RS03_14-Nov-2024	W_RS03_28-Nov-2024
LABJOBNO			
WaterLabID	Analytica	Analytica	Analytica
WaterSiteID	RS03	RS03	RS03
LabSampleID	24-33929-5	24-35305-6	24-36747-6
WaterSampDate	31-Oct-24	14-Nov-24	28-Nov-24
SampBy	MB	MB	MB
W_Acidity4_mgl			
W_Acidity5_mgl			
W_Acidity7_mgl			
W_Acidity8_mgl	2.67	3.33	1.67
W_Alkalinity_mgl	32.1	43.8	47.9
W_AmmoniaN_mgl	0.005	0.005	0.005
W_An_Bromide_mgl	0.05	0.05	0.05
W_An_Chloride_mgl	0.9	0.77	0.7
W_An_Fluoride_mgl	0.043	0.04	0.07
W_An_Nitrate-N_mgl	0.002	0.0197	0.002
W_An_Nitrite-N_mgl	0.001	0.001	0.001
W_An_Sulphate_mgl	0.53	0.52	0.49
W_BiCarbAlk_mgl			
W_CarbAlk_mgl			
W_Density_gcm3			
W_DOC_mgl			
W_DRP_mgl	0.005	0.004	0.003
W_DSi_mgl			
W_EC_mSm			
W_EC_uScm	80.7	93	105
W_EColi_cfuml			
W_pH	7	7.3	7.2
W_pH_1311_hcl			
W_pH_1311_initial			
W_pH_1311_leachate			
W_pH_1311_off			
W_Total_Ag_mgl			
W_Total_Al_mgl	0.035	0.013	0.012
W_Total_As_mgl	0.0088	0.011	0.012
W_Total_B_mgl	0.005	0.005	0.005
W_Total_Ba_mgl	0.0062	0.0082	0.0086
W_Total_Be_mgl	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001
W_Total_Ca_mgl	9.52	13.8	14.1
W_Total_Cd_mgl	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.000081	0.000089	0.000067
W_Total_Cr_mgl	0.00034	0.0002	0.0002
W_Total_Cs_mgl	0.00001	0.00001	0.00001
W_Total_Cu_mgl	0.00051	0.0013	0.0005
W_Total_Fe_mgl	0.11	0.079	0.079
W_Total_Ge_mgl	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001
W_Total_K_mgl	0.55	0.57	0.55
W_Total_La_mgl	0.000081	0.000032	0.000032
W_Total_Li_mgl	0.00108	0.00131	0.00153
W_Total_Mg_mgl	1.76	2.51	2.54
W_Total_Mn_mgl	0.0099	0.014	0.013
W_Total_Mo_mgl	0.0002	0.0002	0.0002
W_Total_Na_mgl	3	3.65	3.65
W_Total_Ni_mgl	0.00033	0.00029	0.00028
W_Total_P_mgl	0.04	0.04	0.04
W_Total_Pb_mgl	0.00005	0.00005	0.000097
W_Total_Rb_mgl	0.00026	0.00025	0.00028
W_Total_S_mgl	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.12	0.166	0.177
W_Total_Ti_mgl			
W_Total_Tl_mgl	0.0001	0.0001	0.0001
W_Total_U_mgl	0.000057	0.000089	0.000087
W_Total_V_mgl	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.0001	0.00005	0.00005
W_Total_Zn_mgl	0.003	0.004	0.0051
W_Dissolved_Ag_mgl			
W_Dissolved_Al_mgl	0.02	0.0092	0.0068
W_Dissolved_As_mgl	0.0078	0.011	0.011
W_Dissolved_B_mgl	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.0057	0.0076	0.0088
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	9.05	12.6	14.5
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.000064	0.000046	0.000062
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.00049	0.00022	0.00074
W_Dissolved_Fe_mgl	0.05	0.031	0.033
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	0.52	0.52	0.66
W_Dissolved_La_mgl	0.000047	0.000017	0.00002
W_Dissolved_Li_mgl	0.00116	0.0014	0.00141
W_Dissolved_Mg_mgl	1.66	2.3	2.57
W_Dissolved_Mn_mgl	0.0051	0.01	0.011
W_Dissolved_Mo_mgl	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	2.81	3.36	3.92
W_Dissolved_Ni_mgl	0.00026	0.00022	0.00027
W_Dissolved_P_mgl	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00021	0.00022	0.00039
W_Dissolved_S_mgl	10	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.117	0.164	0.179
W_Dissolved_Ti_mgl			
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.000057	0.000087	0.000082
W_Dissolved_V_mgl	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000078	0.000027	0.000028
W_Dissolved_Zn_mgl	0.001	0.001	0.013
W_SumAnions_meql	0.68	0.91	0.99
W_SumCations_meql	0.73	0.98	1.12
W_TCN_mgl	0.001	0.001	0.001
W_TColi_cfuml			
W_TDS_mgl	13	42	61
W_TDSalts_gm3			
W_Thard_gCaCO3m3	31	45	46
W_TKN_mgl	0.22	0.14	0.18
W_TN_mgl	0.22	0.16	0.18
W_TOC_mgl			
W_TP_mgl	0.092	0.013	0.0079
W_TSi_mgl			
W_TSS_BDC_mgl			
W_TSS_mgl	3	3	3
W_Turbidity_NTU	0.8	0.4	0.4
W_Volume_ml			
WF_DO_mgl	11.53	13.53	10
WF_DO_pct	106.2	126.7	98.3
WF_EC_mScm	65.2	92.5	97.7
WF_ORP_mV	79.6	12.7	64.7
WF_pH	7.71	7.53	7.56
WF_temp_degC	8.4	9.6	11.8
WF_turbidity_NTU			
WF_colour	clear	clear	clear
WF_level	low	low	low
WF_odour	nil	nil	nil

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS04_16-May-2024	W_RS04_29-May-2024	W_RS04_13-Jun-2024	W_RS04_27-Jun-2024	W_RS04_25-Jul-2024	W_RS04_8-Aug-2024	W_RS04_22-Aug-2024
LABJOBNO	AR-24-NC-016767-01	24-17710	24-19336	24-20566	24-23696	24-25063	24-26351
WaterLabID	Eurofins	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	RS04	RS04	RS04	RS04	RS04	RS04	RS04
LabSampleID	817-2024-00059267	24-17710-10	24-19336-10	24-20566-10	24-23696-10	24-25063-7	24-26351-10
WaterSampDate	2024-05-16	2024-05-29	2024-06-13	2024-06-27	2024-07-25	2024-08-08	2024-08-22
SampBy	MB		MB	MB	MB	MB	
W_Acidity4_mgl	1						
W_Acidity5_mgl							
W_Acidity7_mgl	1						
W_Acidity8_mgl	9	1.67	1	1.67	3.33	3.33	2
W_Alkalinity_mgl	76	84.9	82.9	85.5	86.7	63	65.7
W_AmmoniaN_mgl	0.11	0.005	0.005	0.005	0.005	0.005	0.005
W_An_Bromide_mgl	0.02	0.05	0.05		0.05	0.05	0.05
W_An_Chloride_mgl	2.77	2	2.36	1.85	2.51	3.28	2.03
W_An_Fluoride_mgl	0.1	0.05	0.055	0.058	0.057	0.04	0.054
W_An_Nitrate-N_mgl	0.01	0.002	0.002	0.0062	0.0046	0.002	0.002
W_An_Nitrite-N_mgl	0.01	0.001	0.001	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	6.44	4.66	4.2	5.38	4.71	4.04	3.86
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	2.7	3.2	1.9	3.9			
W_DRP_mgl		0.002	0.002	0.002	0.002	0.002	0.002
W_DSi_mgl	0.02						
W_EC_mSm	17.6	19.7					
W_EC_uScm		197	194	186	193	156	178
W_EColi_cfuml							
W_pH	7.4	7.7	7.4	7.6	7.4	7.7	7.5
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl				0.002			
W_Total_Al_mgl		0.512	0.12	0.087	0.037	0.0098	0.024
W_Total_As_mgl		0.014	0.0058	0.0048	0.0026	0.0011	0.0012
W_Total_B_mgl		0.019	0.005	0.005	0.005	0.0056	0.005
W_Total_Ba_mgl		0.0383	0.026	0.0235	0.0251	0.0161	0.0172
W_Total_Be_mgl		0.000024	0.00001	0.000015	0.00001	0.00001	0.00001
W_Total_Bi_mgl		0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Ca_mgl	20.9	26.7	25.2	26	28.8	21.4	22.7
W_Total_Cd_mgl		0.000029	0.00002	0.00002	0.000027	0.00002	0.00002
W_Total_Co_mgl		0.00101	0.00061	0.00031	0.00027	0.000072	0.00013
W_Total_Cr_mgl		0.0007	0.00032	0.0002	0.0002	0.0002	0.0002
W_Total_Cs_mgl		0.00008	0.000018	0.000011	0.00001	0.00001	0.00001
W_Total_Cu_mgl		0.0021	0.0011	0.0014	0.00059	0.00069	0.00076
W_Total_Fe_mgl		4.82	1.88	1.35	0.644	0.11	0.21
W_Total_Ge_mgl		0.000091	0.00005	0.00005	0.00005	0.00005	0.00005
W_Total_Hg_mgl		0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl		1.5	1.5	1.7	1.4	1.5	1.1
W_Total_La_mgl		0.00126	0.00038	0.00021	0.00012	0.000028	0.000038
W_Total_Li_mgl		0.00382	0.00245	0.00252	0.0024	0.00202	0.00211
W_Total_Mg_mgl	4.3	4.98	4.73	4.77	4.81	3.54	3.61
W_Total_Mn_mgl		0.202	0.123	0.0509	0.052	0.0068	0.011
W_Total_Mo_mgl		0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Na_mgl		7.21	6.53	6.5	5.92	4.78	4.98
W_Total_Ni_mgl		0.0014	0.00093	0.00045	0.00029	0.00036	0.00034
W_Total_P_mgl		0.093	0.057	0.042	0.04	0.04	0.04
W_Total_Pb_mgl		0.0013	0.00047	0.0004	0.00015	0.00005	0.00005
W_Total_Rb_mgl		0.0017	0.00073	0.00065	0.00044	0.00038	0.00035
W_Total_S_mgl		10	10	10	10	10	10
W_Total_Sb_mgl		0.0001	0.00012	0.00012	0.0001	0.0001	0.0001
W_Total_Se_mgl		0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl		0.405	0.363	0.407	0.39	0.285	0.314
W_Total_Ti_mgl		0.0087					
W_Total_Tl_mgl		0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl		0.00038	0.00031	0.00033	0.0002	0.00027	0.00027
W_Total_V_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl		0.0012	0.0003	0.00019	0.00013	0.00005	0.00005
W_Total_Zn_mgl		0.0033	0.0045	0.0037	0.003	0.003	0.003
W_Dissolved_Ag_mgl	0.0005			0.00008			
W_Dissolved_Al_mgl	0.003	0.003	0.003	0.003	0.003	0.003	0.011
W_Dissolved_As_mgl	0.001	0.00077	0.00091	0.0014	0.00058	0.00082	0.00068
W_Dissolved_B_mgl	0.03	0.01	0.01	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.015	0.0186	0.0181	0.0191	0.0217	0.0154	0.0163
W_Dissolved_Be_mgl	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	23.1	26.3	27	26.5	26.8	20.4	21.9
W_Dissolved_Cd_mgl	0.0002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.0005	0.00005	0.000085	0.000074	0.000078	0.0001	0.000094
W_Dissolved_Cr_mgl	0.001	0.0002	0.00025	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl			0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.0005	0.00046	0.00042	0.00052	0.00051	0.00065	0.00076
W_Dissolved_Fe_mgl	0.2	0.091	0.087	0.21	0.0081	0.012	0.024
W_Dissolved_Ge_mgl		0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.0005	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.59	1.2	1.5	1.6	1.3	1.5	1.1
W_Dissolved_La_mgl		0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Li_mgl	0.002	0.00267	0.0024	0.00217	0.00224	0.00201	0.00212
W_Dissolved_Mg_mgl	4.74	5.13	4.95	4.52	4.45	3.42	3.46
W_Dissolved_Mn_mgl	0.0082	0.0025	0.0025	0.0089	0.0031	0.00072	0.0016
W_Dissolved_Mo_mgl	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	7.72	6.75	6.83	5.74	5.69	4.56	4.75
W_Dissolved_Ni_mgl	0.0005	0.0002	0.00029	0.0002	0.00021	0.00032	0.0014
W_Dissolved_P_mgl		0.04	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl		0.00037	0.00044	0.00047	0.00036	0.00037	0.00029
W_Dissolved_S_mgl		10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.001	0.0001	0.00014	0.00011	0.00011	0.0001	0.0001
W_Dissolved_Se_mgl	0.005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.309	0.389	0.361	0.343	0.39	0.279	0.307
W_Dissolved_Ti_mgl	0.0005	0.002					
W_Dissolved_Tl_mgl	0.0005	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.0002	0.00032	0.00032	0.00039	0.00039	0.00033	0.00026
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl		0.000014	0.000019	0.000017	0.000022	0.000025	0.000018
W_Dissolved_Zn_mgl	0.002	0.001	0.001	0.0012	0.001	0.0017	0.001
W_SumAnions_meql		1.86	1.82	1.88	1.91	1.45	1.46
W_SumCations_meql		2.06	2.1	1.99	1.98	1.54	1.61
W_TCN_mgl	0.005		0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml							
W_TDS_mgl	86	120	113	153	95	82	86
W_TDSalts_gm3							
W_Thard_gCaCO3m3	77	87	83	85	92	68	72
W_TKN_mgl		0.95	0.46	0.46	0.29	0.32	0.29
W_TN_mgl	1.47	0.95	0.46	0.46	0.29	0.32	0.29
W_TOC_mgl	3.1	2.4	3.5	2			
W_TP_mgl	0.063	0.029	0.055	0.005	0.024	0.0088	0.005
W_TSi_mgl							
W_TSS_BDC_mgl							
W_TSS_mgl	25	56	30	3	13	3	3
W_Turbidity_NTU	6.64	26	15	1.1	6	1.4	0.5
W_Volume_ml							
WF_DO_mgl	11.3		12.06	9.87	8.93	19.92	
WF_DO_pct	89.7		92.1	79.6	66.6	154.5	
WF_EC_mScm	173.7		187.5	221.1	186.4	147.2	
WF_ORP_mV	70.2		20.9	11.4	58.2	68.9	
WF_pH	6.8		7.29	6.73	7.12	7.54	
WF_temp_degC	1.9		0.6	2.5	0	0.6	
WF_turbidity_NTU	6.7		0.55				

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_RS04_4-Sep-2024	W_RS04_19-Sep-2024	W_RS04_3-Oct-2024	W_RS04_16-Oct-2024	W_RS04_31-Oct-2024	W_RS04_14-Nov-2024	W_RS04_28-Nov-2024
LABJOBNO							
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	RS04	RS04	RS04	RS04	RS04	RS04	RS04
LabSampleID	24-27733-9	24-29331-10	24-30758-8	24-32269-9-9	24-33929-8	24-35305-11	24-36747-10
WaterSampDate	2024-09-04	19-Sep-24	03-Oct-24	16-Oct-24	31-Oct-24	14-Nov-24	28-Nov-24
SampBy	MB	MB	MB	MB	MB/GM	MB	MB
W_Acidity4_mgl							
W_Acidity5_mgl							
W_Acidity7_mgl							
W_Acidity8_mgl	4.67	4	3.33	2.67	3.33	3.33	6.67
W_Alkalinity_mgl	58.3	51.7	41.9	66.1	69.4	86.8	99.6
W_AmmoniaN_mgl	0.005	0.006	0.005	0.005	0.005	0.005	0.005
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	2	2.15	1.45	2	1.2	0.87	0.96
W_An_Fluoride_mgl	0.051	0.049	0.052	0.062	0.058	0.046	0.09
W_An_Nitrate-N_mgl	0.002	0.0043	0.002	0.0024	0.002	0.002	0.002
W_An_Nitrite-N_mgl	0.001	0.001	0.0018	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	1.9	1.06	0.43	0.9	0.54	0.54	0.5
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl							
W_DRP_mgl	0.002	0.002	0.004	0.002	0.002	0.002	0.002
W_DSi_mgl							
W_EC_mSm							
W_EC_uScm	127	117	90.4	156	147	190	213
W_EColi_cfuml							
W_pH	7.7	7.5	7.4	7.5	7.4	7.5	7.5
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl		0.002					
W_Total_Al_mgl	0.011	0.022	0.475	0.012	0.02	0.0059	0.092
W_Total_As_mgl	0.0011	0.0015	0.0052	0.001	0.0017	0.0012	0.0034
W_Total_B_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.005
W_Total_Ba_mgl	0.0164	0.0171	0.0203	0.0176	0.0165	0.0189	0.027
W_Total_Be_mgl	0.00001	0.00001	0.000028	0.00001	0.00001	0.00001	0.000015
W_Total_Bi_mgl	0.0001		0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Ca_mgl	18.4	19	13.3	21.7	23	27.5	31.7
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.00012	0.00016	0.00053	0.00013	0.00016	0.00015	0.00042
W_Total_Cr_mgl	0.00053	0.0002	0.00059	0.0002	0.00021	0.0002	0.0002
W_Total_Cs_mgl	0.00001	0.00001	0.000078	0.00001	0.00001	0.00001	0.000013
W_Total_Cu_mgl	0.0013	0.0014	0.0025	0.00098	0.0011	0.00051	0.00076
W_Total_Fe_mgl	0.068	0.12	1.15	0.037	0.1	0.091	0.744
W_Total_Ge_mgl	0.00005	0.00005	0.000051	0.00005	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	1	1.1	1.8	0.86	0.75	0.4	1
W_Total_La_mgl	0.000024	0.000044	0.00047	0.000023	0.000032	0.000011	0.00015
W_Total_Li_mgl	0.0013	0.00131	0.00147	0.00169	0.00156	0.00211	0.00265
W_Total_Mg_mgl	2.67	2.46	2.09	3.13	3.2	4.03	4.65
W_Total_Mn_mgl	0.0031	0.0054	0.043	0.0035	0.0085	0.019	0.0828
W_Total_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Na_mgl	3.96	3.97	2.85	4.31	4.5	4.94	5.33
W_Total_Ni_mgl	0.00063	0.0005	0.0011	0.00048	0.00062	0.0005	0.00067
W_Total_P_mgl	0.04	0.04	0.078	0.04	0.04	0.04	0.04
W_Total_Pb_mgl	0.00005	0.00005	0.00082	0.00005	0.00005	0.00005	0.00019
W_Total_Rb_mgl	0.0003	0.00032	0.0014	0.00022	0.00025	0.00013	0.00052
W_Total_S_mgl	10	10	10	10	10	10	10
W_Total_Sb_mgl	0.00013	0.0001	0.00011	0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.271	0.236	0.177	0.275	0.326	0.375	0.418
W_Total_Ti_mgl		0.0021					
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00017	0.00016	0.00023	0.0003	0.00034	0.00034	0.00051
W_Total_V_mgl	0.0005	0.0005	0.00053	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.000053	0.000084	0.00047	0.00005	0.000059	0.00005	0.00015
W_Total_Zn_mgl	0.003	0.003	0.003	0.003	0.003	0.003	0.003
W_Dissolved_Ag_mgl							
W_Dissolved_Al_mgl	0.0075	0.0074	0.031	0.0051	0.0053	0.0044	0.0064
W_Dissolved_As_mgl	0.00094	0.0012	0.0019	0.00094	0.0013	0.0011	0.0013
W_Dissolved_B_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.016	0.016	0.0123	0.0174	0.0166	0.0185	0.0226
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	17.7	18.8	13.3	22	22.4	27.7	32.5
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.00011	0.00012	0.00017	0.0001	0.00011	0.000099	0.00019
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Cu_mgl	0.0013	0.0015	0.0017	0.0011	0.00099	0.00059	0.00066
W_Dissolved_Fe_mgl	0.021	0.029	0.12	0.016	0.023	0.043	0.063
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1	1.1	1.7	0.89	0.69	0.4	0.98
W_Dissolved_La_mgl	0.000015	0.000018	0.0001	0.000014	0.000015	0.00001	0.00002
W_Dissolved_Li_mgl	0.00131	0.00126	0.00086	0.00153	0.0018	0.00231	0.00236
W_Dissolved_Mg_mgl	2.58	2.39	1.95	3.11	3.06	3.93	4.64
W_Dissolved_Mn_mgl	0.00063	0.0009	0.0036	0.0021	0.0026	0.018	0.03
W_Dissolved_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	3.83	3.84	2.87	4.39	4.29	4.94	5.89
W_Dissolved_Ni_mgl	0.00058	0.00061	0.00063	0.00041	0.00055	0.00042	0.00051
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00028	0.00029	0.00037	0.00021	0.0002	0.00013	0.00029
W_Dissolved_S_mgl	10	10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.00011	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.255	0.23	0.162	0.278	0.306	0.395	0.406
W_Dissolved_Ti_mgl							
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00018	0.00017	0.00012	0.00033	0.00035	0.00043	0.00042
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.00005	0.000062	0.00015	0.000041	0.000046	0.000034	0.000039
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001	0.001	0.0016	0.0044
W_SumAnions_meql	1.27	1.12	0.89	1.4	1.44	1.78	2.04
W_SumCations_meql	1.29	1.33	1	1.57	1.58	1.93	2.29
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml							
W_TDS_mgl	77	65	75	87	47	92	113
W_TDSalts_gm3							
W_Thard_gCaCO3m3	57	58	42	67	71	85	98
W_TKN_mgl	0.44	0.34	0.97	0.39	0.38	0.29	0.46
W_TN_mgl	0.44	0.34	0.97	0.39	0.38	0.29	0.46
W_TOC_mgl							
W_TP_mgl	0.012	0.005	0.07	0.005	0.005	0.0099	0.031
W_TSi_mgl							
W_TSS_BDC_mgl							
W_TSS_mgl	3	3	24	3	3	3	23
W_Turbidity_NTU	0.7	1	16	0.4	1.5	1.6	11
W_Volume_ml							
WF_DO_mgl	13	11.31	14.19	10.98	9.47	10.84	7.92
WF_DO_pct	122.8	109.8	119.6	101	101.7	105.9	81
WF_EC_mScm	131.6	113.6	75.8	136	143.3	170.5	195.7
WF_ORP_mV	78.6	117.5	115.4	91.7	53.6	54.2	62
WF_pH	7.72	7.59	7.55	7.41	7.73	7.39	7.38
WF_temp_degC	8.7	8.8	4.2	8.2	13.8	10.3	12.1
WF_turbidity_NTU				9.33			

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	817-2023-00038808	W_RSB_31-Oct-2024
LABJOBNO	BOGP	24-33929-10
WaterLabID	Eurofins	Analytica
WaterSiteID	RSB	RSB
LabSampleID		
WaterSampDate	2023-04-27	2024-10-31
SampBy	HM	
W_Total_Ag_mgl	0.001	
W_Total_Al_mgl	1.17	0.021
W_Total_As_mgl	5.29	0.164
W_Total_B_mgl	0.05	0.005
W_Total_Ba_mgl	0.13	0.0261
W_Total_Be_mgl	0.005	0.00001
W_Total_Bi_mgl	0.005	0.0001
W_Total_Ca_mgl	29.6	29.6
W_Total_Cd_mgl	0.001	0.00002
W_Total_Co_mgl	0.006	0.00131
W_Total_Cr_mgl	0.001	0.0002
W_Total_Cs_mgl		0.00001
W_Total_Cu_mgl	0.002	0.00059
W_Total_Fe_mgl	86.5	2.1
W_Total_Ge_mgl		0.00005
W_Total_Hg_mgl	0.001	0.0001
W_Total_K_mgl	2.7	1.4
W_Total_La_mgl		0.000035
W_Total_Li_mgl	0.003	0.00227
W_Total_Mg_mgl	5.3	5.15
W_Total_Mn_mgl	4.4	0.67
W_Total_Mo_mgl	0.001	0.0002
W_Total_Na_mgl	7	5.49
W_Total_Ni_mgl	0.004	0.0011
W_Total_P_mgl		0.04
W_Total_Pb_mgl	0.003	0.00026
W_Total_Rb_mgl		0.00041
W_Total_S_mgl		10
W_Total_Sb_mgl	0.002	0.0001
W_Total_Se_mgl	0.005	0.001
W_Total_Sn_mgl	0.001	0.0005
W_Total_Sr_mgl	0.414	0.417
W_Total_Ti_mgl	0.02	
W_Total_Tl_mgl	0.001	0.0001
W_Total_U_mgl	0.001	0.00012
W_Total_V_mgl	0.002	0.0005
W_Total_Y_mgl		0.00005
W_Total_Zn_mgl	0.079	0.0046
W_Dissolved_Ag_mgl		
W_Dissolved_Al_mgl		0.003
W_Dissolved_As_mgl		0.034
W_Dissolved_B_mgl		0.01
W_Dissolved_Ba_mgl		0.0198
W_Dissolved_Be_mgl		0.00001
W_Dissolved_Bi_mgl		0.0001
W_Dissolved_Ca_mgl		
W_Dissolved_Cd_mgl		0.00002
W_Dissolved_Co_mgl		0.00011
W_Dissolved_Cr_mgl		0.0002
W_Dissolved_Cs_mgl		0.00001
W_Dissolved_Cu_mgl		0.00045
W_Dissolved_Fe_mgl		
W_Dissolved_Ge_mgl		0.00005
W_Dissolved_Hg_mgl		0.00008
W_Dissolved_K_mgl		
W_Dissolved_La_mgl		0.00001
W_Dissolved_Li_mgl		0.00243
W_Dissolved_Mg_mgl		
W_Dissolved_Mn_mgl		
W_Dissolved_Mo_mgl		0.0002
W_Dissolved_Na_mgl		
W_Dissolved_Ni_mgl		0.00068
W_Dissolved_P_mgl		0.04
W_Dissolved_Pb_mgl		0.00005
W_Dissolved_Rb_mgl		0.0003
W_Dissolved_S_mgl		10
W_Dissolved_Sb_mgl		0.0001
W_Dissolved_Se_mgl		0.0005
W_Dissolved_Sn_mgl		0.0002
W_Dissolved_Sr_mgl		0.389
W_Dissolved_Ti_mgl		
W_Dissolved_Tl_mgl	0.0005	0.00001
W_Dissolved_U_mgl	0.0002	0.00014
W_Dissolved_V_mgl		0.0005
W_Dissolved_Y_mgl		0.000022
W_Dissolved_Zn_mgl	6.49	

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_CC01_5-Mar-2024	W_CC01_20-Mar-2024	W_CC01_4-Apr-2024	W_CC01_17-Apr-2024	W_CC01_1-May-2024	W_CC01_16-May-2024	W_CC01_29-May-2024
LABJOBNO	AR-24-NC-008972-01	AR-24-NC-010966-01	AR-24-NC-011976-01	AR-24-NC-013497-01	AR-24-NC-015251-01		24-17710
WaterLabID	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Analytica
WaterSiteID	CC01	CC01	CC01	CC01	CC01	CC01	CC01
LabSampleID	817-2024-00029417	817-2024-00035200	817-2024-00041164	817-2024-00047516	817-2024-00052698	0	24-17710-1
WaterSampDate	2024-03-05	2024-03-20	2024-04-04	2024-04-17	2024-05-01	2024-05-16	2024-05-29
SampBy	HM	HM	MB	MB	MB	MB	
W_Acidity4_mgl	1	1	1	1	1	1	
W_Acidity5_mgl							
W_Acidity7_mgl	1	1	1	1	1	1	
W_Acidity8_mgl	1	3	4	3	1	2	3.33
W_Alkalinity_mgl	17	18	18	18	17	16	17.8
W_AmmoniaN_mgl	0.03	0.01	0.01	0.01	0.01	0.01	0.007
W_An_Bromide_mgl	0.02	0.02	0.02	0.02	0.02	0.02	0.05
W_An_Chloride_mgl	1.61	0.9	0.91	1.33	1.01	0.89	0.69
W_An_Fluoride_mgl	0.08	0.08	0.06	0.06	0.07	0.07	0.041
W_An_Nitrate-N_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.0042
W_An_Nitrite-N_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.001
W_An_Sulphate_mgl	4	0.67	0.68	0.96	0.95	1.04	0.89
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	2	0.9	0.9	1.7	1.1	0.9	3.2
W_DRP_mgl							0.004
W_DSi_mgl	8.19	8.65	11.2	8.77	8.53	8.62	
W_EC_mSm	4.3	4.3	4.3	4.4	4.2	4.2	4.23
W_EC_uScm							42.3
W_EColi_cfuml							
W_pH	7.3	7.3	7.4	7.2	7.3	7.3	7
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl	0.001	0.001	0.001	0.001	0.001		
W_Total_Al_mgl	0.018	0.012	0.019	0.005	0.005		0.0077
W_Total_As_mgl	0.002	0.002	0.002	0.002	0.002		0.00084
W_Total_B_mgl	0.05	0.05	0.05	0.05	0.05		0.005
W_Total_Ba_mgl	0.005	0.005	0.005	0.005	0.005		0.0064
W_Total_Be_mgl	0.005	0.005	0.005	0.005	0.005		0.00001
W_Total_Bi_mgl	0.005	0.005	0.005	0.005	0.005		0.0001
W_Total_Ca_mgl	4.1	4	4.3	4.7	3.7	4.3	4.9
W_Total_Cd_mgl	0.001	0.001	0.001	0.001	0.001		0.00002
W_Total_Co_mgl	0.002	0.002	0.002	0.002	0.002		0.00012
W_Total_Cr_mgl	0.001	0.001	0.001	0.001	0.001		0.0002
W_Total_Cs_mgl							0.00001
W_Total_Cu_mgl	0.002	0.002	0.002	0.002	0.002		0.00026
W_Total_Fe_mgl	0.1	0.1	0.1	0.1	0.1		0.0053
W_Total_Ge_mgl							0.00005
W_Total_Hg_mgl	0.001	0.001	0.001	0.001	0.001		0.0001
W_Total_K_mgl	0.3	0.2	0.3	0.4	0.3		0.35
W_Total_La_mgl							0.000067
W_Total_Li_mgl	0.001	0.001	0.001	0.001	0.001		0.00083
W_Total_Mg_mgl	0.9	0.9	1	1	0.8	0.9	1.1
W_Total_Mn_mgl	0.002	0.001	0.002	0.001	0.001		0.00068
W_Total_Mo_mgl	0.001	0.001	0.001	0.001	0.001		0.0002
W_Total_Na_mgl	2.2	2.3	2.5	2.6	1.9		2.85
W_Total_Ni_mgl	0.001	0.001	0.001	0.001	0.001		0.0002
W_Total_P_mgl							0.04
W_Total_Pb_mgl	0.001	0.001	0.001	0.001	0.001		0.00005
W_Total_Rb_mgl							0.00023
W_Total_S_mgl							10
W_Total_Sb_mgl	0.002	0.002	0.002	0.002	0.002		0.0001
W_Total_Se_mgl	0.005	0.005	0.005	0.005	0.005		0.001
W_Total_Sn_mgl	0.001	0.001	0.001	0.001	0.001		0.0005
W_Total_Sr_mgl	0.049	0.052	0.051	0.05	0.052		0.0624
W_Total_Ti_mgl	0.001	0.001	0.001	0.001	0.001		0.002
W_Total_Tl_mgl	0.001	0.001	0.001	0.001	0.001	0	0.0001
W_Total_U_mgl	0.001	0.001	0.001	0.001	0.001		0.00003
W_Total_V_mgl	0.001	0.001	0.001	0.001	0.001		0.0005
W_Total_Y_mgl							0.000083
W_Total_Zn_mgl	0.005	0.005	0.005	0.005	0.005		0.003
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	
W_Dissolved_Al_mgl	0.006	0.004	0.007	0.006	0.005	0.007	0.0049
W_Dissolved_As_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.00091
W_Dissolved_B_mgl	0.03	0.03	0.03	0.03	0.03	0.03	0.01
W_Dissolved_Ba_mgl	0.005	0.004	0.005	0.004	0.005	0.005	0.005
W_Dissolved_Be_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.00001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.0001
W_Dissolved_Ca_mgl	3.6	5.3	4.7	3.9	4.5	4.9	4.7
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.00002
W_Dissolved_Co_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.000018
W_Dissolved_Cr_mgl	0.001	0.001	0.001	0.001	0.001	0.002	0.0002
W_Dissolved_Cs_mgl							
W_Dissolved_Cu_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0009	0.00033
W_Dissolved_Fe_mgl	0.01	0.01	0.01	0.01	0.01	0.24	0.005
W_Dissolved_Ge_mgl							0.00005
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00008
W_Dissolved_K_mgl	0.4	0.31	0.3	0.46	0.34	0.44	0.34
W_Dissolved_La_mgl							0.000016
W_Dissolved_Li_mgl	0.001	0.001	0.002	0.001	0.001	0.001	0.00079
W_Dissolved_Mg_mgl	0.93	1.12	1.05	0.95	0.87	1.06	1
W_Dissolved_Mn_mgl	0.0009	0.0006	0.0005	0.0005	0.0005	0.0045	0.0005
W_Dissolved_Mo_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002
W_Dissolved_Na_mgl	2.75	2.92	2.64	2.51	2.3	2.64	2.45
W_Dissolved_Ni_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0044	0.0002
W_Dissolved_P_mgl							0.04
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00005
W_Dissolved_Rb_mgl							0.0002
W_Dissolved_S_mgl							10
W_Dissolved_Sb_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.0001
W_Dissolved_Se_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.0005
W_Dissolved_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002
W_Dissolved_Sr_mgl	0.0435	0.0433	0.0502	0.0481	0.0446	0.0537	0.0507
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.002
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00001
W_Dissolved_U_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.00003
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl							0.000017
W_Dissolved_Zn_mgl	0.002	0.002	0.002	0.002	0.002	0.003	0.001
W_SumAnions_meql							0.4
W_SumCations_meql							0.43
W_TCN_mgl	0.005	0.005	0.005	0.005	0.005	0.005	
W_TColi_cfuml							
W_TDS_mgl	21	21	21	21	21	21	45
W_TDSalts_gm3							
W_Thard_gCaCO3m3	13	14	15	14	15	17	17
W_TKN_mgl							0.1
W_TN_mgl	0.14	0.064	0.047	0.077	0.053	0.073	0.1
W_TOC_mgl	2.1	1	1	1.8	1.1	1	0.5
W_TP_mgl	0.014	0.012	0.01	0.014	0.012	0.01	0.005
W_TSi_mgl	3.33	3.42	3.42	3.54	3.29		
W_TSS_BDC_mgl							
W_TSS_mgl	3	4	6	6	5	6	3
W_Turbidity_NTU	0.23	0.2	0.45	0.28	0.2	0.28	0.3
W_Volume_ml							
WF_DO_mgl	17.2	12.62	10.01	9.62	14.21	11.35	
WF_DO_pct	162	114.3	95.3	87.4	127.1	94.5	
WF_EC_mScm		41.3	42.9	42.2	41.8	41.4	
WF_ORP_mV	105.1	30	205.9	241.8	199	146.5	
WF_pH	7.66	7.63	7.68	7.39	7.52	7.58	
WF_temp_degC	8.5	7.8	9	7.4	6.7	3.9	
WF_turbidity_NTU						0.61	

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_CC01_13-Jun-2024	W_CC01_27-Jun-2024	W_CC01_11-Jul-2024	W_CC01_25-Jul-2024	W_CC01_22-Aug-2024	W_CC01_22-Aug-2024	W_CC01_19-Sep-2024	W_CC01_16-Oct-2024
LABJOBNO	24-19336	24-20566	24-22094	24-23696	24-26351	24-26351		
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	CC01	CC01	CC01	CC01	CC01	CC01	CC01	CC01
LabSampleID	24-19336-1	24-20566-1	24-22094-1	24-23696-1	24-26351-1	24-26351-1	24-29331-1	24-32269-1-1
WaterSampDate	2024-06-13	2024-06-27	2024-07-11	2024-07-25	2024-08-22	22-Aug-24	2024-09-19	16-Oct-24
SampBy	MB	MB		MB			MB	MB
W_Acidity4_mgl								
W_Acidity5_mgl								
W_Acidity7_mgl								
W_Acidity8_mgl	1.67	1.67	1.67	3.33	3.33	3.33	6.67	3.33
W_Alkalinity_mgl	16.3	18.1	14.1	16.7	9.5	9.5	7.4	7.4
W_AmmoniaN_mgl	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	0.5	0.75	0.5	0.5	0.67	0.67	0.71	0.67
W_An_Fluoride_mgl	0.079	0.044	0.04	0.05	0.04	0.04	0.04	0.04
W_An_Nitrate-N_mgl	0.0293	0.0062	0.0285	0.0026	0.002	0.002	0.0046	0.003
W_An_Nitrite-N_mgl	0.001	0.001	0.0018	0.001	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	0.71	0.62	0.57	0.68	0.45	0.45	0.23	0.26
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl	1.1	1.7						
W_DRP_mgl	0.004	0.009	0.005	0.005	0.006	0.006	0.008	0.008
W_DSi_mgl								
W_EC_mSm								
W_EC_uScm	40	40	39.5	39.2	30.4	30.4	22.6	21.8
W_EColi_cfuml								
W_pH	6.6	7	6.8	6.8	6.9	6.9	7	6.8
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl		0.002					0.002	
W_Total_Al_mgl	0.0084	0.011	0.021	0.012	0.036	0.036	0.075	0.043
W_Total_As_mgl	0.0011	0.0013	0.00089	0.00095	0.00093	0.00093	0.00078	0.00072
W_Total_B_mgl	0.005	0.0061	0.005	0.005	0.005	0.005	0.005	0.005
W_Total_Ba_mgl	0.0051	0.005	0.0051	0.0048	0.0042	0.0042	0.0039	0.0035
W_Total_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		0.0001
W_Total_Ca_mgl	4.6	4.4	3.8	4.3	2.9	2.9	2.3	2.1
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.000024	0.000017	0.000048	0.000036	0.000061	0.000061	0.000084	0.000041
W_Total_Cr_mgl	0.00029	0.0002	0.00027	0.0002	0.0002	0.0002	0.00031	0.0002
W_Total_Cs_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Total_Cu_mgl	0.0002	0.00037	0.0002	0.0002	0.00053	0.00053	0.00061	0.00031
W_Total_Fe_mgl	0.0098	0.014	0.025	0.013	0.052	0.052	0.079	0.042
W_Total_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	0.34	0.33	0.31	0.33	0.35	0.35	0.41	0.29
W_Total_La_mgl	0.000034	0.000039	0.000065	0.000039	0.000097	0.000097	0.0002	0.00012
W_Total_Li_mgl	0.00084	0.00083	0.00121	0.00082	0.00076	0.00076	0.00068	0.00053
W_Total_Mg_mgl	1.01	0.9	0.81	0.93	0.63	0.63	0.52	0.47
W_Total_Mn_mgl	0.0005	0.00087	0.00093	0.00077	0.0026	0.0026	0.0036	0.0019
W_Total_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Na_mgl	2.44	2.64	2.1	2.47	2.03	2.03	2.01	1.75
W_Total_Ni_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.00031	0.0002
W_Total_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Total_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Total_Rb_mgl	0.00026	0.00024	0.00028	0.00021	0.00025	0.00025	0.00028	0.00022
W_Total_S_mgl	10	10	10	10	10	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.054	0.0528	0.0511	0.0491	0.0334	0.0334	0.023	0.0212
W_Total_Ti_mgl							0.0021	
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003
W_Total_V_mgl	0.00083	0.0005	0.0005	0.001	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.00005	0.00005	0.000059	0.00005	0.000097	0.000097	0.00019	0.00011
W_Total_Zn_mgl	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
W_Dissolved_Ag_mgl		0.00008						
W_Dissolved_Al_mgl	0.0043	0.0057	0.0095	0.0065	0.019	0.019	0.049	0.028
W_Dissolved_As_mgl	0.00096	0.001	0.00093	0.00098	0.00089	0.00089	0.00081	0.00062
W_Dissolved_B_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.0052	0.0048	0.0039	0.0046	0.0035	0.0035	0.0034	0.0032
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000015	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	4.9	4.3	3.9	4.2	2.7	2.7	2.3	2
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.000023	0.000041	0.000044	0.000026	0.000035	0.000035	0.000078	0.000034
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00019	0.00001
W_Dissolved_Cu_mgl	0.00028	0.00032	0.00034	0.00021	0.00033	0.00033	0.00057	0.00036
W_Dissolved_Fe_mgl	0.005	0.0066	0.014	0.005	0.024	0.024	0.042	0.025
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000067
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	0.33	0.32	0.32	0.31	0.31	0.31	0.38	0.28
W_Dissolved_La_mgl	0.000014	0.000029	0.000043	0.000023	0.000056	0.000056	0.00015	0.000082
W_Dissolved_Li_mgl	0.00082	0.00075	0.00074	0.0008	0.00071	0.00071	0.00079	0.00054
W_Dissolved_Mg_mgl	0.99	0.86	0.83	0.86	0.6	0.6	0.49	0.46
W_Dissolved_Mn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00086	0.00055
W_Dissolved_Mo_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Na_mgl	2.44	2.21	2.3	2.23	1.97	1.97	1.91	1.76
W_Dissolved_Ni_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.00029	0.0002
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00021	0.00023	0.00021	0.0002	0.0002	0.0002	0.00035	0.00018
W_Dissolved_S_mgl	10	10	10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.0509	0.0454	0.0472	0.0489	0.0311	0.0311	0.0221	0.0204
W_Dissolved_Ti_mgl								
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000024	0.000028	0.000052	0.000032	0.000067	0.000067	0.00016	0.000082
W_Dissolved_Zn_mgl	0.001	0.0017	0.001	0.001	0.001	0.001	0.001	0.001
W_SumAnions_meql	0.34	0.4	0.3	0.35	0.22	0.22	0.17	0.17
W_SumCations_meql	0.44	0.39	0.37	0.39	0.28	0.28	0.25	0.22
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	35	38	22	17	14	14	27	19
W_TDSalts_gm3								
W_Thard_gCaCO3m3	16	15	13	15	9.9	9.9	8	7.1
W_TKN_mgl	0.1	0.13	0.1	0.1	0.25	0.25	0.23	0.12
W_TN_mgl	0.1	0.13	0.13	0.1	0.25	0.25	0.23	0.12
W_TOC_mgl	0.5	2.1						
W_TP_mgl	0.005	0.0083	0.0076	0.0063	0.011	0.011	0.01	0.014
W_TSi_mgl								
W_TSS_BDC_mgl								
W_TSS_mgl	3	3	3	3	3	3	3	3
W_Turbidity_NTU	0.2	0.3	0.2	0.3	0.8	0.8	1	0.4
W_Volume_ml								
WF_DO_mgl	12.3	13.78		14.21			13.68	11.94
WF_DO_pct	100	110.7		112.7			117	100
WF_EC_mScm	42	38.3		38.5			22.2	21
WF_ORP_mV	-2.1	12.6		134			138.5	164
WF_pH	7.43	7.69		7.48			7	7.13
WF_temp_degC	2.7	2.8		2.1			3.9	4.6
WF_turbidity_NTU	0.12							-0.27

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_CC01_14-Nov-2024	W_CC01_28-Nov-2024
LABJOBNO		
WaterLabID	Analytica	Analytica
WaterSiteID	CC01	CC01
LabSampleID	24-35305-1	24-36747-1
WaterSampDate	14-Nov-24	28-Nov-24
SampBy	MB	MB
W_Acidity4_mgl		
W_Acidity5_mgl		
W_Acidity7_mgl		
W_Acidity8_mgl	3.33	3.33
W_Alkalinity_mgl	10.8	13.3
W_AmmoniaN_mgl	0.005	0.005
W_An_Bromide_mgl	0.05	0.05
W_An_Chloride_mgl	0.5	0.56
W_An_Fluoride_mgl	0.04	0.05
W_An_Nitrate-N_mgl	0.003	0.010
W_An_Nitrite-N_mgl	0.001	0.001
W_An_Sulphate_mgl	0.34	0.43
W_BiCarbAlk_mgl		
W_CarbAlk_mgl		
W_Density_gcm3		
W_DOC_mgl		
W_DRP_mgl	0.008	0.007
W_DSi_mgl		
W_EC_mSm		
W_EC_uScm	28.6	35.3
W_EColi_cfuml		
W_pH	6.8	6.9
W_pH_1311_hcl		
W_pH_1311_initial		
W_pH_1311_leachate		
W_pH_1311_off		
W_Total_Ag_mgl		
W_Total_Al_mgl	0.036	0.025
W_Total_As_mgl	0.0012	0.0012
W_Total_B_mgl	0.005	0.005
W_Total_Ba_mgl	0.0044	0.0047
W_Total_Be_mgl	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001
W_Total_Ca_mgl	3	3.3
W_Total_Cd_mgl	0.00002	0.00002
W_Total_Co_mgl	0.000065	0.000053
W_Total_Cr_mgl	0.0002	0.0002
W_Total_Cs_mgl	0.00001	0.00001
W_Total_Cu_mgl	0.00026	0.00023
W_Total_Fe_mgl	0.059	0.04
W_Total_Ge_mgl	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001
W_Total_K_mgl	0.27	0.26
W_Total_La_mgl	0.00011	0.000078
W_Total_Li_mgl	0.00072	0.00087
W_Total_Mg_mgl	0.68	0.72
W_Total_Mn_mgl	0.003	0.0021
W_Total_Mo_mgl	0.0002	0.0002
W_Total_Na_mgl	2.14	2.14
W_Total_Ni_mgl	0.00021	0.0002
W_Total_P_mgl	0.04	0.04
W_Total_Pb_mgl	0.00005	0.00005
W_Total_Rb_mgl	0.00026	0.00028
W_Total_S_mgl	10	10
W_Total_Sb_mgl	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005
W_Total_Sr_mgl	0.0343	0.0374
W_Total_Ti_mgl		
W_Total_Tl_mgl	0.0001	0.0001
W_Total_U_mgl	0.00003	0.00003
W_Total_V_mgl	0.0005	0.0005
W_Total_Y_mgl	0.0001	0.000078
W_Total_Zn_mgl	0.003	0.003
W_Dissolved_Ag_mgl		
W_Dissolved_Al_mgl	0.023	0.012
W_Dissolved_As_mgl	0.0011	0.0011
W_Dissolved_B_mgl	0.01	0.01
W_Dissolved_Ba_mgl	0.0043	0.0045
W_Dissolved_Be_mgl	0.000014	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001
W_Dissolved_Ca_mgl	2.9	3.3
W_Dissolved_Cd_mgl	0.00002	0.00002
W_Dissolved_Co_mgl	0.000028	0.000043
W_Dissolved_Cr_mgl	0.00023	0.0002
W_Dissolved_Cs_mgl	0.00001	0.00001
W_Dissolved_Cu_mgl	0.00036	0.0003
W_Dissolved_Fe_mgl	0.03	0.022
W_Dissolved_Ge_mgl	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008
W_Dissolved_K_mgl	0.26	0.26
W_Dissolved_La_mgl	0.000068	0.000053
W_Dissolved_Li_mgl	0.0008	0.00083
W_Dissolved_Mg_mgl	0.64	0.8
W_Dissolved_Mn_mgl	0.00079	0.0011
W_Dissolved_Mo_mgl	0.0002	0.00049
W_Dissolved_Na_mgl	2.07	2.42
W_Dissolved_Ni_mgl	0.0002	0.0002
W_Dissolved_P_mgl	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005
W_Dissolved_Rb_mgl	0.0002	0.00023
W_Dissolved_S_mgl	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002
W_Dissolved_Sr_mgl	0.0331	0.0368
W_Dissolved_Ti_mgl		
W_Dissolved_Tl_mgl	0.00001	0.00001
W_Dissolved_U_mgl	0.00003	0.00003
W_Dissolved_V_mgl	0.0005	0.0005
W_Dissolved_Y_mgl	0.000075	0.000063
W_Dissolved_Zn_mgl	0.0031	0.001
W_SumAnions_meql	0.22	0.29
W_SumCations_meql	0.3	0.34
W_TCN_mgl	0.001	0.001
W_TColi_cfuml		
W_TDS_mgl	15	23
W_TDSalts_gm3		
W_Thard_gCaCO3m3	10	11
W_TKN_mgl	0.16	0.1
W_TN_mgl	0.16	0.11
W_TOC_mgl		
W_TP_mgl	0.016	0.015
W_TSi_mgl		
W_TSS_BDC_mgl		
W_TSS_mgl	3	3
W_Turbidity_NTU	0.7	0.4
W_Volume_ml		
WF_DO_mgl	11.79	10.68
WF_DO_pct	112	106.7
WF_EC_mScm	25.2	30.8
WF_ORP_mV	61	84.7
WF_pH	7.18	7.3
WF_temp_degC	9.2	11.1
WF_turbidity_NTU		

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_LBA_10-Oct-2023	W_LBA_4-Apr-2024	W_LBA_17-Apr-2024	W_LBA_1-May-2024	W_LBA_29-May-2024	W_LBA_13-Jun-2024	W_LBA_27-Jun-2024
LABJOBNO	AR-23-NC-028806-01	AR-24-NC-011976-01	AR-24-NC-013497-01	AR-24-NC-015251-01	24-17710	24-19336	24-20566
WaterLabID	Eurofins	Eurofins	Eurofins	Eurofins	Analytica	Analytica	Analytica
WaterSiteID	LBA	LBA	LBA	LBA	LBA	LBA	LBA
LabSampleID	817-2023-00111382	817-2024-00041165	817-2024-00047517	817-2024-00052699	24-17710-2	24-19336-2	24-20566-2
WaterSampDate	2023-10-10	2024-04-04	2024-04-17	2024-05-02	2024-05-29	2024-06-13	2024-06-27
SampBy	HM	MB	MB	MB		MB	MB
W_Acidity4_mgl	1	1	1	1			
W_Acidity5_mgl							
W_Acidity7_mgl	1	1	1	1			
W_Acidity8_mgl	1	4	1	1	1.67		1
W_Alkalinity_mgl	181	181	183	182	189	191	195
W_AmmoniaN_mgl	0.01	0.01	0.01	0.01	0.005	0.005	0.005
W_An_Bromide_mgl	0.08	0.08	0.08	0.08	0.08	0.07	0.07
W_An_Chloride_mgl	5.05	8.06	7.85	7.72	7.29	6.45	6.95
W_An_Fluoride_mgl	0.35	0.27	0.32	0.33	0.28	0.29	0.27
W_An_Nitrate-N_mgl	0.22	0.18	0.26	0.2	0.198	0.196	0.197
W_An_Nitrite-N_mgl	0.01	0.01	0.01	0.01	0.001	0.001	0.001
W_An_Sulphate_mgl	16.3	30.4	34.1	30.9	27.8	27	26.8
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	2.2	1.7	1.7	1.5	3.1	0.5	0.5
W_DRP_mgl					0.024	0.019	0.016
W_DSi_mgl	15.6	17.8	14.7	15.3			
W_EC_mSm	42.6	43	43.7	44	46		
W_EC_uScm					460	459	444
W_EColi_cfuml							
W_pH	8.2	8.2	8.2	8.1	8.2	8.2	8.2
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl	0.001	0.001	0.001	0.001			0.002
W_Total_Al_mgl	0.073	0.017	0.005	0.106	0.003	0.037	0.003
W_Total_As_mgl	2.21	1.05	1	1.24	1.08	1.46	1.19
W_Total_B_mgl	0.05	0.05	0.05	0.05	0.018	0.017	0.017
W_Total_Ba_mgl	0.008	0.005	0.005	0.008	0.0053	0.0081	0.0055
W_Total_Be_mgl	0.005	0.005	0.005	0.005	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.005	0.005	0.005	0.005	0.0001	0.0001	0.0001
W_Total_Ca_mgl	53.5	48.4	42.8	45	47.1	56	54.4
W_Total_Cd_mgl	0.001	0.001	0.001	0.001	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.002	0.002	0.002	0.002	0.000064	0.00025	0.000079
W_Total_Cr_mgl	0.001	0.001	0.001	0.001	0.0002	0.00028	0.0002
W_Total_Cs_mgl					0.00011	0.00017	0.00017
W_Total_Cu_mgl	0.002	0.002	0.002	0.002	0.0002	0.0002	0.0002
W_Total_Fe_mgl	3.1	0.4	0.2	1	0.16	0.963	0.13
W_Total_Ge_mgl					0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Total_K_mgl	2	2.1	1.8	1.6	1.7	2	2
W_Total_La_mgl					0.000014	0.000085	0.00001
W_Total_Li_mgl	0.016	0.013	0.012	0.009	0.0129	0.0137	0.0132
W_Total_Mg_mgl	14.4	15.4	15.6	13.2	13.2	15.9	15.6
W_Total_Mn_mgl	0.115	0.037	0.026	0.121	0.027	0.186	0.039
W_Total_Mo_mgl	0.002	0.001	0.001	0.001	0.0011	0.0012	0.0011
W_Total_Na_mgl	19.1	19.8	20.6	15.8	17.4	20.5	29.6
W_Total_Ni_mgl	0.001	0.001	0.001	0.001	0.0002	0.00038	0.0002
W_Total_P_mgl					0.04	0.04	0.04
W_Total_Pb_mgl	0.001	0.001	0.001	0.001	0.00005	0.00027	0.00005
W_Total_Rb_mgl					0.0014	0.0015	0.0014
W_Total_S_mgl					10	12	12
W_Total_Sb_mgl	0.002	0.002	0.002	0.002	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.005	0.005	0.005	0.005	0.001	0.001	0.001
W_Total_Sn_mgl	0.001	0.001	0.001	0.001	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.467	0.447	0.449	0.419	0.467	0.502	0.637
W_Total_Ti_mgl	0.003	0.001	0.001	0.004	0.002		
W_Total_Tl_mgl	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.003	0.002	0.002	0.002	0.00215	0.00239	0.00237
W_Total_V_mgl	0.002	0.001	0.001	0.001	0.0005	0.0005	0.0005
W_Total_Y_mgl					0.000056	0.00025	0.000057
W_Total_Zn_mgl	0.005	0.005	0.005	0.007	0.003	0.003	0.003
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005			0.00008
W_Dissolved_Al_mgl	0.005	0.002	0.002	0.002	0.0068	0.003	0.003
W_Dissolved_As_mgl	1.05	0.91	0.873	0.95	1.02	1.12	1.14
W_Dissolved_B_mgl	0.03	0.03	0.03	0.03	0.019	0.017	0.014
W_Dissolved_Ba_mgl	0.004	0.004	0.004	0.004	0.0054	0.0056	0.0052
W_Dissolved_Be_mgl	0.001	0.001	0.001	0.001	0.00028	0.00001	0.00001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	49.2	50.7	41.7	42.8	53	56.2	53.2
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.00028	0.00002	0.00002
W_Dissolved_Co_mgl	0.0005	0.0005	0.0005	0.0005	0.00025	0.00005	0.000034
W_Dissolved_Cr_mgl	0.001	0.002	0.001	0.001	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl						0.00013	0.00013
W_Dissolved_Cu_mgl	0.0005	0.0005	0.0005	0.0005	0.00034	0.0002	0.0002
W_Dissolved_Fe_mgl	0.41	0.15	0.07	0.1	0.007	0.005	0.005
W_Dissolved_Ge_mgl					0.00005	0.00005	0.000065
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.66	1.93	1.83	1.93	2	2	1.9
W_Dissolved_La_mgl					0.00019	0.00001	0.00001
W_Dissolved_Li_mgl	0.01	0.019	0.009	0.013	0.0134	0.0136	0.0124
W_Dissolved_Mg_mgl	14.8	16.6	14.5	14.9	15.1	15.8	14.7
W_Dissolved_Mn_mgl	0.0281	0.0111	0.02	0.0334	0.024	0.016	0.033
W_Dissolved_Mo_mgl	0.0015	0.0011	0.0009	0.0008	0.0012	0.00094	0.00098
W_Dissolved_Na_mgl	19.1	23.1	18.9	19.5	19.2	20.2	18.6
W_Dissolved_Ni_mgl	0.0005	0.0005	0.0005	0.0005	0.00034	0.0002	0.0002
W_Dissolved_P_mgl					0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.00022	0.00005	0.00005
W_Dissolved_Rb_mgl					0.00154	0.00139	0.00138
W_Dissolved_S_mgl					10	13	10
W_Dissolved_Sb_mgl	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.005	0.005	0.005	0.005	0.0012	0.00097	0.0005
W_Dissolved_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.358	0.422	0.403	0.413	0.473	0.47	0.448
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.002		
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0005	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.0027	0.0021	0.0019	0.0018	0.00232	0.00225	0.00208
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl					0.00021	0.000024	0.00002
W_Dissolved_Zn_mgl	0.002	0.002	0.002	0.002	0.0036	0.001	0.001
W_SumAnions_meql					4.68	4.66	4.75
W_SumCations_meql					4.77	5.03	4.72
W_TCN_mgl	0.005	0.005	0.005	0.005		0.001	0.001
W_TColi_cfuml							
W_TDS_mgl	209	211	214	216	271	250	256
W_TDSalts_gm3							
W_Thard_gCaCO3m3	184	184	164	167	170	210	200
W_TKN_mgl					0.1	0.1	0.24
W_TN_mgl	0.57	0.275	0.27	0.302	0.2	0.2	0.43
W_TOC_mgl	2.3	1.7	1.7	1.6	1.5	0.5	0.5
W_TP_mgl	0.091	0.03	0.027	0.014	0.33	0.39	0.32
W_TSi_mgl	6.8	6.66	6.16	5.99			
W_TSS_BDC_mgl							
W_TSS_mgl	22	6	6	9	7	9	3
W_Turbidity_NTU	28.1	1.26	1.28	3.72	0.7	4.5	1
W_Volume_ml							
WF_DO_mgl	8.41	10.32	10.78	9.36		9.96	10.02
WF_DO_pct	82	102.4	104.1	89.4		93.7	93.9
WF_EC_mScm	392.5	431.4	418.4	408.1		434.2	422.9
WF_ORP_mV	66.1	281.9	214.3	52.5		20.3	61
WF_pH	8.36	8.12	8.23	8.39		8.28	8.36
WF_temp_degC	11.7	12.4	11.5	10.7		10.2	10.3
WF_turbidity_NTU						5.8	

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_LBA_11-Jul-2024	W_LBA_25-Jul-2024	W_LBA_8-Aug-2024	W_LBA_22-Aug-2024	W_LBA_4-Sep-2024	W_LBA_19-Sep-2024	W_LBA_3-Oct-2024	W_LBA_16-Oct-2024
LABJOBNO	24-22094	24-23696	24-25063	24-26351				
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	LBA	LBA	LBA	LBA	LBA	LBA	LBA	LBA
LabSampleID	24-22094-2	24-23696-2	24-25063-1	24-26351-2	24-27733-1	24-29331-2	24-30758-1	24-32269-2-2
WaterSampDate	2024-07-11	2024-07-25	2024-08-08	2024-08-22	45539	19-Sep-24	03-Oct-24	16-Oct-24
SampBy		MB	MB		MB	MB	MB	MB
W_Acidity4_mgl								
W_Acidity5_mgl								
W_Acidity7_mgl								
W_Acidity8_mgl	1	1	1	1	1	1.33	1	1
W_Alkalinity_mgl	194	196	194	193	194	198	194	197
W_AmmoniaN_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
W_An_Bromide_mgl	0.08	0.05	0.1	0.08	0.08	0.05	0.05	0.05
W_An_Chloride_mgl	6.52	7.58	7.34	6.91	7.13	7	7.45	7.46
W_An_Fluoride_mgl	0.32	0.32	0.26	0.27	0.28	0.25	0.31	0.28
W_An_Nitrate-N_mgl	0.216	0.21	0.208	0.217	0.223	0.196	0.211	0.242
W_An_Nitrite-N_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	26.3	27.5	28	27.1	25.3	26	28.7	28.8
W_BiCarbAlk_mgl								
W_CarbAlk_mgl								
W_Density_gcm3								
W_DOC_mgl								
W_DRP_mgl	0.016	0.02	0.019	0.021	0.023	0.029	0.02	0.018
W_DSi_mgl								
W_EC_mSm								
W_EC_uScm	505	459	468	526	427	449	458	510
W_EColi_cfuml								
W_pH	8.1	8.2	8.2	8.2	8.2	6	8.2	8.3
W_pH_1311_hcl								
W_pH_1311_initial								
W_pH_1311_leachate								
W_pH_1311_off								
W_Total_Ag_mgl						0.002		
W_Total_Al_mgl	0.0038	0.0033	0.0032	0.003	0.0045	0.0072	0.005	0.003
W_Total_As_mgl	1.17	1.12	1.18	1.17	1.15	1.22	1.13	1.1
W_Total_B_mgl	0.014	0.0059	0.02	0.02	0.016	0.015	0.01	0.005
W_Total_Ba_mgl	0.0056	0.0057	0.0056	0.0058	0.006	0.0066	0.0057	0.0056
W_Total_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001		0.0001	0.0001
W_Total_Ca_mgl	49.2	54.4	53	56	53.5	62.3	53.7	57.6
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.000073	0.000071	0.000069	0.000065	0.000075	0.000094	0.000075	0.000039
W_Total_Cr_mgl	0.0002	0.0003	0.0002	0.0002	0.0002	0.0002	0.00025	0.0002
W_Total_Cs_mgl	0.00016	0.00014	0.00014	0.00015	0.00013	0.00013	0.00015	0.00013
W_Total_Cu_mgl	0.0002	0.0002	0.0002	0.0002	0.00023	0.00023	0.0002	0.0002
W_Total_Fe_mgl	0.12	0.11	0.11	0.11	0.12	0.21	0.18	0.16
W_Total_Ge_mgl	0.00005	0.00005	0.00005	0.00005	0.000065	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	1.8	2	1.8	2	1.9	2.2	2	2
W_Total_La_mgl	0.000015	0.000013	0.00001	0.00001	0.000013	0.000026	0.000015	0.000011
W_Total_Li_mgl	0.014	0.0136	0.0148	0.0145	0.0137	0.0133	0.0138	0.0144
W_Total_Mg_mgl	14.1	15.9	15.4	16.2	14.9	16.1	15.4	16.2
W_Total_Mn_mgl	0.039	0.039	0.04	0.037	0.048	0.0592	0.042	0.037
W_Total_Mo_mgl	0.0011	0.0011	0.0013	0.0011	0.0011	0.0011	0.0011	0.001
W_Total_Na_mgl	17.7	20.2	19.7	20.4	19	20.9	18.8	20.4
W_Total_Ni_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.00024	0.00026	0.0002
W_Total_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Total_Pb_mgl	0.000059	0.00005	0.00005	0.00005	0.00005	0.00005	0.00018	0.00005
W_Total_Rb_mgl	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0013
W_Total_S_mgl	11	10	11	11	10	11	11	11
W_Total_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.514	0.497	0.474	0.516	0.503	0.516	0.493	0.494
W_Total_Ti_mgl						0.002		
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00229	0.00216	0.00228	0.00232	0.00221	0.00221	0.00218	0.00215
W_Total_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.000067	0.000059	0.000054	0.000057	0.000067	0.000094	0.000059	0.000066
W_Total_Zn_mgl	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
W_Dissolved_Ag_mgl								
W_Dissolved_Al_mgl	0.003	0.003	0.003	0.003	0.003	0.0054	0.003	0.003
W_Dissolved_As_mgl	1.16	1.12	1.1	1.13	1.1	1.11	1.09	1.02
W_Dissolved_B_mgl	0.015	0.01	0.019	0.017	0.016	0.014	0.01	0.01
W_Dissolved_Ba_mgl	0.0049	0.0056	0.0053	0.0053	0.0057	0.0057	0.0054	0.0052
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.000014	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	56	53.7	53.4	55	51.5	60.9	56.1	58
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.000063	0.000065	0.000034	0.000057	0.00005	0.000085	0.000064	0.000053
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00015	0.00014	0.00012	0.00014	0.00013	0.00017	0.00013	0.00014
W_Dissolved_Cu_mgl	0.0002	0.0002	0.0002	0.0002	0.00025	0.00034	0.00022	0.0002
W_Dissolved_Fe_mgl	0.005	0.005	0.005	0.005	0.005	0.0098	0.012	0.005
W_Dissolved_Ge_mgl	0.000058	0.00005	0.00005	0.00005	0.000056	0.00005	0.00005	0.000098
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	2	1.9	1.9	2	1.9	2.2	2	2
W_Dissolved_La_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.000024	0.00001	0.00001
W_Dissolved_Li_mgl	0.013	0.0139	0.0136	0.0142	0.0132	0.0131	0.0134	0.0137
W_Dissolved_Mg_mgl	15.6	15.1	15.6	16	15	15.3	15.5	15.8
W_Dissolved_Mn_mgl	0.037	0.031	0.028	0.029	0.025	0.025	0.036	0.011
W_Dissolved_Mo_mgl	0.0012	0.00099	0.0011	0.0011	0.0011	0.0011	0.00097	0.00089
W_Dissolved_Na_mgl	20.7	19.4	19.8	20.2	19.1	19.2	19.6	20.2
W_Dissolved_Ni_mgl	0.00023	0.0002	0.00022	0.0002	0.0002	0.00026	0.0002	0.0002
W_Dissolved_P_mgl	0.04	0.04	0.067	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.000059	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00143	0.00133	0.0013	0.00139	0.00133	0.00139	0.00134	0.00132
W_Dissolved_S_mgl	12	12	12	10	13	11	10	12
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.00085	0.00071	0.0005	0.0005	0.00072	0.00066	0.00075	0.00076
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.523	0.496	0.461	0.496	0.492	0.502	0.492	0.48
W_Dissolved_Ti_mgl								
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.000015	0.00001	0.00001
W_Dissolved_U_mgl	0.0017	0.0019	0.00219	0.00219	0.00214	0.00205	0.00208	0.00213
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000033	0.000024	0.000024	0.000024	0.000026	0.00005	0.000019	0.000019
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_SumAnions_meql	4.7	4.82	4.78	4.72	4.7	4.71	4.79	4.88
W_SumCations_meql	5.03	4.82	4.86	4.99	4.69	5.19	4.98	5.13
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml								
W_TDS_mgl	250	249	262	237	245	257	260	250
W_TDSalts_gm3								
W_Thard_gCaCO3m3	180	200	200	210	200	220	200	210
W_TKN_mgl	0.1	0.11	0.14	0.21	0.1	0.11	0.12	0.45
W_TN_mgl	0.22	0.32	0.35	0.43	0.22	0.3	0.33	0.7
W_TOC_mgl								
W_TP_mgl	0.36	0.33	0.27	0.12	0.26	0.32	0.2	0.28
W_TSi_mgl								
W_TSS_BDC_mgl								
W_TSS_mgl	3	4	3	3	3	3	3	3
W_Turbidity_NTU	1.2	0.6	0.9	1.2	0.9	1.6	0.7	1
W_Volume_ml								
WF_DO_mgl		9.2	10.51		10.33	8.79	9.24	10.28
WF_DO_pct		85.3	97.8		98.6	85.6	87	96.1
WF_EC_mScm		428.5	422.8		383.3	130.8	434.9	437.8
WF_ORP_mV		68.9	73.7		102.2	74.4	-61.7	63.7
WF_pH		8.3	8.44		8.33	8.42	8.3	8.4
WF_temp_degC		10	10.2		10.9	10.8	10.5	10.8
WF_turbidity_NTU								-0.18

Blanks cells infer no available data

Baseline Water Quality Report: Bendigo Creek

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_LBA_31-Oct-2024	W_LBA_14-Nov-2024	W_LBA_28-Nov-2024
LABJOBNO			
WaterLabID	Analytica	Analytica	Analytica
WaterSiteID	LBA	LBA	LBA
LabSampleID	24-33929-1	24-35305-2	24-36747-2
WaterSampDate	31-Oct-24	14-Nov-24	28-Nov-24
SampBy	MB	MB	MB
W_Acidity4_mgl			
W_Acidity5_mgl			
W_Acidity7_mgl			
W_Acidity8_mgl	1	1	1
W_Alkalinity_mgl	194	196	193
W_AmmoniaN_mgl	0.005	0.005	0.005
W_An_Bromide_mgl	0.08	0.09	0.08
W_An_Chloride_mgl	7.7	7.5	7.54
W_An_Fluoride_mgl	0.31	0.22	0.33
W_An_Nitrate-N_mgl	0.225	0.229	0.225
W_An_Nitrite-N_mgl	0.001	0.001	0.001
W_An_Sulphate_mgl	27.8	29.1	28.8
W_BiCarbAlk_mgl			
W_CarbAlk_mgl			
W_Density_gcm3			
W_DOC_mgl			
W_DRP_mgl	0.017	0.017	0.018
W_DSi_mgl			
W_EC_mSm			
W_EC_uScm	464	442	476
W_EColi_cfuml			
W_pH	8.1	8.1	8.1
W_pH_1311_hcl			
W_pH_1311_initial			
W_pH_1311_leachate			
W_pH_1311_off			
W_Total_Ag_mgl			
W_Total_Al_mgl	0.0032	0.003	0.003
W_Total_As_mgl	1.15	1.14	1.13
W_Total_B_mgl	0.005	0.005	0.019
W_Total_Ba_mgl	0.0056	0.0055	0.0056
W_Total_Be_mgl	0.00001	0.00001	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001
W_Total_Ca_mgl	56.4	56.5	56.1
W_Total_Cd_mgl	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.000034	0.000031	0.000044
W_Total_Cr_mgl	0.00021	0.0002	0.0002
W_Total_Cs_mgl	0.00014	0.00013	0.00013
W_Total_Cu_mgl	0.00021	0.0002	0.0002
W_Total_Fe_mgl	0.28	0.2	0.21
W_Total_Ge_mgl	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001
W_Total_K_mgl	2	2	2
W_Total_La_mgl	0.000013	0.00001	0.00001
W_Total_Li_mgl	0.0141	0.013	0.0137
W_Total_Mg_mgl	15.5	15.9	15.8
W_Total_Mn_mgl	0.032	0.024	0.028
W_Total_Mo_mgl	0.001	0.0012	0.0012
W_Total_Na_mgl	20.7	20.5	20.7
W_Total_Ni_mgl	0.0002	0.0002	0.0002
W_Total_P_mgl	0.04	0.04	0.04
W_Total_Pb_mgl	0.00005	0.00005	0.00005
W_Total_Rb_mgl	0.0015	0.0014	0.0014
W_Total_S_mgl	11	11	11
W_Total_Sb_mgl	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.0012	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005
W_Total_Sr_mgl	0.531	0.508	0.487
W_Total_Ti_mgl			
W_Total_Tl_mgl	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00227	0.00222	0.00212
W_Total_V_mgl	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.000097	0.000067	0.000074
W_Total_Zn_mgl	0.003	0.003	0.003
W_Dissolved_Ag_mgl			
W_Dissolved_Al_mgl	0.003	0.003	0.003
W_Dissolved_As_mgl	0.995	1.05	1.01
W_Dissolved_B_mgl	0.01	0.01	0.014
W_Dissolved_Ba_mgl	0.0051	0.0051	0.005
W_Dissolved_Be_mgl	0.00001	0.000047	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	55.2	55.6	52.9
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.000045	0.000043	0.000044
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00013	0.00012	0.00012
W_Dissolved_Cu_mgl	0.0002	0.0002	0.0002
W_Dissolved_Fe_mgl	0.005	0.005	0.005
W_Dissolved_Ge_mgl	0.00005	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.9	1.9	1.9
W_Dissolved_La_mgl	0.00001	0.00001	0.00001
W_Dissolved_Li_mgl	0.0152	0.0135	0.0125
W_Dissolved_Mg_mgl	15.2	15.4	15.9
W_Dissolved_Mn_mgl	0.0048	0.014	0.013
W_Dissolved_Mo_mgl	0.0011	0.0012	0.0011
W_Dissolved_Na_mgl	19.7	20	20.9
W_Dissolved_Ni_mgl	0.0002	0.0002	0.0002
W_Dissolved_P_mgl	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00137	0.00132	0.00131
W_Dissolved_S_mgl	12	10	12
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.00097	0.0014	0.001
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	0.512	0.503	0.478
W_Dissolved_Ti_mgl			
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00229	0.00221	0.002
W_Dissolved_V_mgl	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.000019	0.000023	0.000021
W_Dissolved_Zn_mgl	0.001	0.001	0.001
W_SumAnions_meql	4.77	4.81	4.75
W_SumCations_meql	4.91	4.96	4.91
W_TCN_mgl	0.001	0.001	0.001
W_TColi_cfuml			
W_TDS_mgl	252	254	263
W_TDSalts_gm3			
W_Thard_gCaCO3m3	200	210	210
W_TKN_mgl	0.1	0.1	0.1
W_TN_mgl	0.22	0.23	0.23
W_TOC_mgl			
W_TP_mgl	0.24	0.3	0.16
W_TSi_mgl			
W_TSS_BDC_mgl			
W_TSS_mgl	3	3	3
W_Turbidity_NTU	1.3	1.4	1.2
W_Volume_ml			
WF_DO_mgl	9.19	8.1	8.86
WF_DO_pct	91.7	80.3	87.7
WF_EC_mScm	437.6	429.8	445.4
WF_ORP_mV	36.1	105.6	76.3
WF_pH	8.37	8.23	8.22
WF_temp_degC	12.3	12.1	12.4
WF_turbidity_NTU			

Blanks cells infer no available data

Baseline Water Quality Report: Groundwater

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_MDD015_22-Oct-2022	W_MDD015_24-Apr-2023	W_MDD015_4-Apr-2024	W_MDD015_17-Apr-2024	W_MDD015_1-May-2024	W_MDD015_16-May-2024	W_MDD015_29-May-2024	W_MDD015_13-Jun-2024	W_MDD015_27-Jun-2024
LABJOBNO	WP22-11185	AR-23-NC-010499-01	AR-24-NC-011976-01	AR-24-NC-013497-01	AR-24-NC-015251-01		24-17710	24-19336	24-20566
WaterLabID	SGS	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Analytica	Analytica	Analytica
WaterSiteID	MDD015	MDD015	MDD015	MDD015	MDD015	MDD015	MDD015	MDD015	MDD015
LabSampleID	WP22-11185.003	817-2023-00038807	817-2024-00041166	817-2024-00047518	817-2024-00052700		24-17710-3	24-19336-3	24-20566-3
WaterSampDate	2022-10-25	2023-04-24	2024-04-04	2024-04-17	2024-05-01	2024-05-16	2024-05-29	2024-06-13	2024-06-27
SampBy	HM	HM	MB	MB	MB	MB		MB	MB
W_Acidity4_mgl		1	1	1	1	1			
W_Acidity5_mgl									
W_Acidity7_mgl		1	1	1	1	1			
W_Acidity8_mgl		1	6	6	3	6	3.33	1.67	1.67
W_Alkalinity_mgl	200	195	201	201	202	201	203	204	204
W_AmmoniaN_mgl		0.2	0.11	0.13	0.07	0.11	0.1	0.11	0.1
W_An_Bromide_mgl		0.09	0.11	0.1	0.11	0.12	0.1	0.1	0.1
W_An_Chloride_mgl	9.9	10.1	10.5	10.2	10.2	10.6	9.54	8.66	9.14
W_An_Fluoride_mgl		0.19	0.15	0.18	0.22	0.23	0.15	0.15	0.15
W_An_Nitrate-N_mgl		0.01	0.01	0.01	0.01	0.01	0.0039	0.002	0.0026
W_An_Nitrite-N_mgl		0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001
W_An_Sulphate_mgl	17	16.5	9.29	11.6	11.7	11.5	9.21	9	9.28
W_BiCarbAlk_mgl	240								
W_CarbAlk_mgl	5								
W_Density_gcm3	0.998								
W_DOC_mgl		0.1	0.2	0.2	0.1	0.2	0.5	0.5	0.5
W_DRP_mgl							0.002	0.002	0.002
W_DSi_mgl		18.8	18.4	17.9	18.9	11.9			
W_EC_mSm		42.1	43.1	43.7	43.5	43.7	45.6		
W_EC_uScm	410						456	451	419
W_EColi_cfuml									
W_pH	8.7	8.2	8.1	8	8.1	8	8.2	8	8
W_pH_1311_hcl									
W_pH_1311_initial									
W_pH_1311_leachate									
W_pH_1311_off									
W_Total_Ag_mgl	0.001	0.001	0.001	0.001	0.001				0.002
W_Total_Al_mgl	0.128	0.193	0.336	0.005	0.005		0.0055	2.04	0.037
W_Total_As_mgl	0.039	0.035	0.019	0.018	0.018		0.02	0.019	0.019
W_Total_B_mgl		0.1	0.05	0.05	0.05		0.041	0.036	0.052
W_Total_Ba_mgl	0.128	0.146	0.19	0.192	0.21		0.224	0.253	0.239
W_Total_Be_mgl		0.005	0.005	0.005	0.005		0.000036	0.00015	0.000027
W_Total_Bi_mgl	0.005	0.005	0.005	0.005	0.005		0.0001	0.0001	0.0001
W_Total_Ca_mgl	15.7	31.5	21.9	23.6	16.2	15.5	40.5	46.7	40.4
W_Total_Cd_mgl	0.001	0.001	0.001	0.001	0.001		0.00002	0.00002	0.00002
W_Total_Co_mgl	0.002	0.002	0.002	0.002	0.002		0.00013	0.0006	0.00001
W_Total_Cr_mgl	0.001	0.001	0.001	0.001	0.001		0.0002	0.0029	0.0002
W_Total_Cs_mgl							0.00022	0.00104	0.00019
W_Total_Cu_mgl	0.002	0.002	0.002	0.002	0.002		0.0002	0.0002	0.0002
W_Total_Fe_mgl	0.2	0.3	0.3	0.1	0.1		0.045	3.54	0.12
W_Total_Ge_mgl							0.00063	0.00066	0.00081
W_Total_Hg_mgl	0.001	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_K_mgl	1.4	1.4	1.7	1.3	1.1		1.3	2.3	1.4
W_Total_La_mgl							0.000067	0.00276	0.00013
W_Total_Li_mgl	0.049	0.055	0.051	0.046	0.036		0.0522	0.0577	0.0499
W_Total_Mg_mgl	15	17.7	16	15.9	13.8	14.7	14.8	16.9	15.6
W_Total_Mn_mgl	0.009	0.009	0.011	0.007	0.006		0.0075	0.0581	0.0077
W_Total_Mo_mgl	0.001	0.001	0.001	0.001	0.001		0.00031	0.00033	0.00037
W_Total_Na_mgl	41.4	43.3	42.2	43.5	35.3		40.1	43.7	44.2
W_Total_Ni_mgl	0.001	0.001	0.001	0.001	0.001		0.0002	0.0026	0.0002
W_Total_P_mgl	0.025						0.04	0.088	0.04
W_Total_Pb_mgl	0.001	0.001	0.001	0.001	0.001		0.0021	0.00061	0.0001
W_Total_Rb_mgl							0.0522	0.00683	0.0021
W_Total_S_mgl							10	10	10
W_Total_Sb_mgl		0.002	0.002	0.002	0.002		0.0001	0.0001	0.0001
W_Total_Se_mgl		0.005	0.005	0.005	0.005		0.0005	0.001	0.001
W_Total_Sn_mgl		0.001	0.001	0.001	0.001		0.0005	0.0005	0.0005
W_Total_Sr_mgl	8.75	8.97	8.98	9.54	8.93		9.95	7.19	10.4
W_Total_Ti_mgl	0.006	0.004	0.009	0.001	0.001		0.002		
W_Total_Tl_mgl	0.001	0.001	0.001	0.001	0.001		0.0001	0.0001	0.0001
W_Total_U_mgl		0.001	0.001	0.001	0.001		0.00099	0.0012	0.001
W_Total_V_mgl	0.001	0.001	0.001	0.001	0.001		0.0005	0.0029	0.0005
W_Total_Y_mgl							0.00028	0.0026	0.00034
W_Total_Zn_mgl	0.009	0.005	0.005	0.005	0.005		0.003	0.0056	0.003
W_Dissolved_Ag_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005			0.00008
W_Dissolved_Al_mgl	0.015	0.003	0.018	0.003	0.002	0.007	0.0041	0.019	0.0032
W_Dissolved_As_mgl	0.038	0.036	0.02	0.018	0.017	0.019	0.05	0.018	0.018
W_Dissolved_B_mgl		0.04	0.06	0.03	0.03	0.04	0.038	0.038	0.034
W_Dissolved_Ba_mgl	0.12	0.124	0.188	0.185	0.18	0.215	0.222	0.222	0.233
W_Dissolved_Be_mgl		0.001	0.001	0.001	0.001	0.001	0.000023	0.00001	0.00001
W_Dissolved_Bi_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	17.6	30.2	22.1	25.3	24.8	23.4	43.7	46.5	39.2
W_Dissolved_Cd_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00018	0.00015	0.00001
W_Dissolved_Cr_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl								0.0002	0.00016
W_Dissolved_Cu_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
W_Dissolved_Fe_mgl	0.03	0.01	0.04	0.03	0.02	0.02	0.014	0.005	0.005
W_Dissolved_Ge_mgl							0.00092	0.00097	0.00088
W_Dissolved_Hg_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00005	0.00008	0.00008
W_Dissolved_K_mgl	1.42	1.58	1.27	1.39	1.44	1.88	1.5	1.5	1.4
W_Dissolved_La_mgl							0.000015	0.000012	0.00001
W_Dissolved_Li_mgl	0.046	0.049	0.09	0.037	0.051	0.059	0.0535	0.0518	0.0485
W_Dissolved_Mg_mgl	15.7	16.7	21.5	15.8	16.3	18.4	16.7	16	14.9
W_Dissolved_Mn_mgl	0.005	0.0064	0.0085	0.0067	0.0064	0.008	0.0077	0.0081	0.0038
W_Dissolved_Mo_mgl	0.0005	0.0007	0.0005	0.0005	0.0005	0.0005	0.00027	0.0005	0.00046
W_Dissolved_Na_mgl	42	36.8	59.6	39.6	44.2	47.8	45.8	43	40.2
W_Dissolved_Ni_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.00035	0.0002
W_Dissolved_P_mgl	0.01						0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl							0.00203	0.00199	0.00206
W_Dissolved_S_mgl							10	10	10
W_Dissolved_Sb_mgl		0.001	0.001	0.001	0.001	0.001	0.0001	0.00011	0.0001
W_Dissolved_Se_mgl		0.005	0.005	0.005	0.005	0.005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl		0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	9	8.45	10.2	10.5	8.93	8.38	10.3	9.8	9.25
W_Dissolved_Ti_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.002		
W_Dissolved_Tl_mgl	0.0005	0.0005	0.0005	0.0033	0.0005	0.0005	0.00001	0.00002	0.00001
W_Dissolved_U_mgl		0.0012	0.0009	0.0009	0.0008	0.001	0.001	0.00098	0.001
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl		0.002					0.00022	0.00033	0.0002
W_Dissolved_Zn_mgl	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001
W_SumAnions_meql							4.61	4.58	4.59
W_SumCations_meql							5.59	5.55	4.98
W_TCN_mgl		0.005	0.005	0.005	0.005	0.005		0.001	0.001
W_TColi_cfuml									
W_TDS_mgl	260	206	211	214	213	214	252	213	220
W_TDSalts_gm3	280								
W_Thard_gCaCO3m3		7	120	128	97	134	160	190	170
W_TKN_mgl							0.1	0.24	0.32
W_TN_mgl		0.15	0.122	0.12	0.11	0.107	0.11	0.24	0.32
W_TOC_mgl		0.1	0.2	0.2	0.2	0.2	0.5	0.5	0.5
W_TP_mgl		0.01	0.005	0.008	0.005	0.006	0.005	0.1	0.005
W_TSi_mgl		7.43	8.38	7.37	6.91				
W_TSS_BDC_mgl									
W_TSS_mgl		10	6	6	4	6	3	160	4
W_Turbidity_NTU		0.44	1.46	0.17	0.18	0.26	0.2	110	2.4
W_Volume_ml									
WF_DO_mgl			1.48	8.73	8.95	7.91		8.14	11.12
WF_DO_pct			148	88.7	88.5	77.5		77.9	108.3
WF_EC_mScm			425.1	411.6	391.4	422.1		426.7	413
WF_ORP_mV			191.8	-123.5	20.8	-74.6		33.8	6.2
WF_pH			8.03	8.18	8.21	8.24		8.07	8.23
WF_temp_degC			11.7	12.1	10.3	11		9.4	9.8
WF_turbidity_NTU						0.69			

Blanks cells infer no available data

Baseline Water Quality Report: Groundwater

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_MDD015_11-Jul-2024	W_MDD015_25-Jul-2024	W_MDD015_22-Aug-2024	W_MDD015_4-Sep-2024	W_MDD015_19-Sep-2024	W_MDD015_3-Oct-2024	W_MDD015_16-Oct-2024	W_MDD015_31-Oct-2024	W_MDD015_14-Nov-2024
LABJOBNO	24-22094	24-23696	24-26351	24-27733-2	24-29331-3	24-30758-2	24-32269-3-3	24-33929-2	24-35305-3
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	MDD015	MDD015	MDD015	MDD015	MDD015	MDD015	MDD015	MDD015	MDD015
LabSampleID	24-22094-3	24-23696-3	24-26351-3	24-27733-2	24-29331-3	24-30758-2	24-32269-3-3	24-33929-2	24-35305-3
WaterSampDate	2024-07-11	2024-07-25	2024-08-22	2024-09-04	2024-09-19	2024-10-03	2024-10-16	2024-10-31	2024-11-14
SampBy		MB		MB	MB	MB	MB	MB	MB
W_Acidity4_mgl									
W_Acidity5_mgl									
W_Acidity7_mgl									
W_Acidity8_mgl	1	1	6	2.67	3.33	3.33	4	3.33	1
W_Alkalinity_mgl	201	203	204	200	202	198	202	202	205
W_AmmoniaN_mgl	0.11	0.1	0.1	0.11	0.11	0.09	0.1	0.1	0.1
W_An_Bromide_mgl	0.1	0.1	0.1	0.11	0.11	0.06	0.05	0.1	0.11
W_An_Chloride_mgl	8.53	7.65	9.15	9.16	9.05	9.02	9.27	9.59	9.34
W_An_Fluoride_mgl	0.17	0.17	0.14	0.14	0.13	0.15	0.15	0.16	0.12
W_An_Nitrate-N_mgl	0.0052	0.0029	0.0051	0.002	0.002	0.0045	0.0033	0.002	0.002
W_An_Nitrite-N_mgl	0.0016	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	8.63	8.02	9.11	8.93	8.73	8.97	9.1	9.29	9.52
W_BiCarbAlk_mgl									
W_CarbAlk_mgl									
W_Density_gcm3									
W_DOC_mgl									
W_DRP_mgl	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
W_DSi_mgl									
W_EC_mSm									
W_EC_uScm	482	442	498	430	441	422	486	439	428
W_EColi_cfuml									
W_pH	8	8.1	8	8	8.1	8.1	8.2	8	8
W_pH_1311_hcl									
W_pH_1311_initial									
W_pH_1311_leachate									
W_pH_1311_off									
W_Total_Ag_mgl					0.002				
W_Total_Al_mgl	0.016	0.049	0.021	0.0098	0.014	0.031	0.0098	0.014	0.0086
W_Total_As_mgl	0.018	0.019	0.018	0.018	0.017	0.02	0.02	0.019	0.018
W_Total_B_mgl	0.036	0.029	0.042	0.036	0.034	0.028	0.021	0.016	0.011
W_Total_Ba_mgl	0.245	0.246	0.248	0.237	0.24	0.225	0.231	0.23	0.234
W_Total_Be_mgl	0.000013	0.00001	0.000016	0.000014	0.00001	0.000021	0.000011	0.000015	0.00001
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001		0.0001	0.0001	0.0001	0.0001
W_Total_Ca_mgl	40.8	45	49.1	43.7	56.8	50.3	49.7	47.6	47
W_Total_Cd_mgl	0.00002	0.000023	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.00001	0.000017	0.00001	0.00001	0.000016	0.000028	0.00001	0.000013	0.00001
W_Total_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Cs_mgl	0.00019	0.00021	0.0002	0.00019	0.00019	0.00019	0.0002	0.00021	0.00021
W_Total_Cu_mgl	0.0002	0.0002	0.0002	0.0002	0.00035	0.0002	0.0002	0.0002	0.0002
W_Total_Fe_mgl	0.06	0.084	0.082	0.059	0.076	0.085	0.063	0.079	0.07
W_Total_Ge_mgl	0.00087	0.00099	0.00091	0.0009	0.0009	0.001	0.00081	0.00094	0.00062
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00012
W_Total_K_mgl	1.3	1.4	1.5	1.4	1.5	1.4	1.4	1.5	1.5
W_Total_La_mgl	0.000044	0.000075	0.000044	0.000028	0.00003	0.000064	0.000026	0.000038	0.000022
W_Total_Li_mgl	0.0557	0.0544	0.0564	0.0545	0.0533	0.0522	0.0542	0.0551	0.0525
W_Total_Mg_mgl	14.2	15.8	16.2	15.5	16.6	15	15.9	16.5	16.3
W_Total_Mn_mgl	0.0071	0.0077	0.0081	0.0076	0.0078	0.0077	0.007	0.0067	0.0068
W_Total_Mo_mgl	0.00028	0.00032	0.00031	0.00026	0.00035	0.00037	0.00021	0.00023	0.00029
W_Total_Na_mgl	38.5	44.4	45.1	43.2	45.7	38.5	42.7	46.4	46.1
W_Total_Ni_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Total_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00015	0.000066	0.00005	0.00005	0.00005
W_Total_Rb_mgl	0.0022	0.0021	0.0021	0.002	0.0021	0.0019	0.0019	0.0022	0.002
W_Total_S_mgl	10	10	10	10	10	10	10	10	10
W_Total_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	10.5	10.1	10.4	10.4	10.6	9.66	9.71	10.7	10.3
W_Total_Ti_mgl				0	0.002	0	0	0	0
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00099	0.00095	0.001	0.00097	0.001	0.00096	0.00096	0.00099	0.001
W_Total_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.00031	0.00032	0.00031	0.00027	0.0003	0.00029	0.00027	0.00029	0.00026
W_Total_Zn_mgl	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
W_Dissolved_Ag_mgl				0	0	0	0	0	0
W_Dissolved_Al_mgl	0.003	0.0036	0.003	0.0033	0.005	0.0044	0.0032	0.0033	0.006
W_Dissolved_As_mgl	0.0547	0.019	0.018	0.018	0.018	0.016	0.018	0.017	0.018
W_Dissolved_B_mgl	0.041	0.028	0.039	0.037	0.032	0.027	0.022	0.017	0.01
W_Dissolved_Ba_mgl	0.206	0.237	0.235	0.239	0.229	0.218	0.23	0.235	0.228
W_Dissolved_Be_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.000011	0.00001	0.000012	0.000046
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	47.9	46.4	45.5	41.6	57.7	48.3	50.8	43.6	45.3
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.000025
W_Dissolved_Co_mgl	0.00001	0.00001	0.000011	0.000012	0.000011	0.000018	0.00001	0.00001	0.000014
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.0002	0.00018	0.00019	0.00019	0.00019	0.00018	0.0002	0.00021	0.00021
W_Dissolved_Cu_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Fe_mgl	0.0058	0.0064	0.011	0.0077	0.016	0.0088	0.0061	0.013	0.015
W_Dissolved_Ge_mgl	0.00096	0.00078	0.001	0.00082	0.00085	0.00091	0.00081	0.00097	0.00068
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00011	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.4	1.4	1.4	1.3	1.5	1.4	1.4	1.4	1.4
W_Dissolved_La_mgl	0.000011	0.000011	0.000012	0.000011	0.000011	0.000011	0.00001	0.00001	0.00001
W_Dissolved_Li_mgl	0.0508	0.0543	0.0541	0.052	0.0524	0.05	0.0521	0.0578	0.053
W_Dissolved_Mg_mgl	16	15.3	15.8	14.8	15.7	14.8	15.8	15.6	15.4
W_Dissolved_Mn_mgl	0.0079	0.0063	0.0068	0.0078	0.0073	0.0066	0.0066	0.0059	0.0064
W_Dissolved_Mo_mgl	0.00039	0.0003	0.00034	0.00043	0.00037	0.00033	0.00028	0.0004	0.00035
W_Dissolved_Na_mgl	45.7	42.5	43.6	41	43	40.1	43.1	43.6	43.1
W_Dissolved_Ni_mgl	0.0002	0.0002	0.00021	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00213	0.00198	0.00202	0.00194	0.00202	0.00184	0.00187	0.00203	0.00198
W_Dissolved_S_mgl	10	10	10	10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	10.6	10.2	9.98	9.95	10.3	9.48	9.55	10.5	10.3
W_Dissolved_Ti_mgl									
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00087	0.00083	0.00097	0.001	0.00093	0.00092	0.00095	0.00098	0.001
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.00027	0.00022	0.00024	0.00023	0.00024	0.0002	0.00022	0.0002	0.00022
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0032
W_SumAnions_meql	4.49	4.51	4.58	4.51	4.56	4.47	4.58	4.57	4.62
W_SumCations_meql	5.74	5.46	5.51	5.13	6.09	5.41	5.75	5.4	5.44
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml									
W_TDS_mgl	220	226	217	246	250	226	247	216	234
W_TDSalts_gm3									
W_Thard_gCaCO3m3	160	180	190	170	210	190	190	190	180
W_TKN_mgl	0.17	0.18	0.19	0.13	0.15	0.13	0.17	0.21	0.12
W_TN_mgl	0.17	0.18	0.2	0.13	0.15	0.13	0.17	0.21	0.12
W_TOC_mgl									
W_TP_mgl	0.013	0.0064	0.009	0.47	0.005	0.0057	0.0071	0.005	0.0077
W_TSi_mgl									
W_TSS_BDC_mgl									
W_TSS_mgl	3	8	3	3	3	3	4	5	3
W_Turbidity_NTU	2.4	3.2	1.3	0.4	0.6	1.5	0.3	1.2	0.9
W_Volume_ml									
WF_DO_mgl		9.31		12.81	7.65	10.98	9.03	7.82	7.2
WF_DO_pct		88.4		127.1	73.6	102.7	88.5	80.5	72.4
WF_EC_mScm		417.9		421.6	416.5	409.8	417.6	422.8	411.7
WF_ORP_mV		-111.1		-72.1	-73.5	-36	-55.3	-5.1	-41.4
WF_pH		8.26		8.22	8.27	8.29	8.24	8.29	8.28
WF_temp_degC		10		10.2	8.9	8.5	11.4	12.1	12.1
WF_turbidity_NTU							1.24		

Blanks cells infer no available data

Baseline Water Quality Report: Groundwater

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_MDD302_13-Jun-2024	W_MDD302_27-Jun-2024	W_MDD302_25-Jul-2024	W_MDD302_8-Aug-2024	W_MDD302_22-Aug-2024	W_MDD302_4-Sep-2024	W_MDD302_19-Sep-2024
LABJOBNO	24-19336	24-20566	24-23696	24-25063	24-26351	24-27733-10	24-29331-11
WaterLabID	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica	Analytica
WaterSiteID	MDD302	MDD302	MDD302	MDD302	MDD302	MDD302	MDD302
LabSampleID	24-19336-11	24-20566-11	24-23696-11	24-25063-8	24-26351-11	24-27733-10	24-29331-11
WaterSampDate	2024-06-13	2024-06-27	2024-07-25	2024-08-08	2024-08-22	2024-09-04	2024-09-19
SampBy	MB	MB	MB	MB		MB	MB
W_Acidity4_mgl							
W_Acidity5_mgl							
W_Acidity7_mgl							
W_Acidity8_mgl	5.6	6.67	10	11.67	8.67	7.33	6.67
W_Alkalinity_mgl	239	251	239	234	235	236	237
W_AmmoniaN_mgl	0.05	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	2.32	2.81	3.41	3.06	2.9	3	2.95
W_An_Fluoride_mgl	0.14	0.14	0.14	0.11	0.14	0.12	0.12
W_An_Nitrate-N_mgl	0.002	0.002	0.0026	0.002	0.0045	0.0022	0.003
W_An_Nitrite-N_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	8.91	9.71	10.2	9.73	9.46	9.24	8.14
W_BiCarbAlk_mgl							
W_CarbAlk_mgl							
W_Density_gcm3							
W_DOC_mgl	0.5	0.5					
W_DRP_mgl	0.002	0.002	0.002	0.002	0.002	0.002	0.002
W_DSi_mgl							
W_EC_mSm							
W_EC_uScm	500	470	480	488	550	458	482
W_EColi_cfuml							
W_pH	7.9	7.8	7.8	7.8	7.7	7.8	7.8
W_pH_1311_hcl							
W_pH_1311_initial							
W_pH_1311_leachate							
W_pH_1311_off							
W_Total_Ag_mgl		0.002					0.002
W_Total_Al_mgl	0.0044	0.0037	0.003	0.003	0.0039	0.003	0.0036
W_Total_As_mgl	0.051	0.0539	0.056	0.0588	0.0588	0.0567	0.06
W_Total_B_mgl	0.0063	0.025	0.005	0.01	0.0086	0.0052	0.005
W_Total_Ba_mgl	0.148	0.142	0.142	0.143	0.147	0.14	0.141
W_Total_Be_mgl	0.000026	0.000023	0.000022	0.000034	0.000029	0.000024	0.000023
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	
W_Total_Ca_mgl	64.6	61.5	61.5	60.5	64.5	60.5	72.1
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Total_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Cs_mgl	0.00016	0.00016	0.00015	0.00016	0.00017	0.00016	0.00016
W_Total_Cu_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Fe_mgl	0.38	0.39	0.34	0.34	0.34	0.33	0.34
W_Total_Ge_mgl	0.00013	0.000054	0.0002	0.00012	0.000088	0.0001	0.00013
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	1.4	1.4	1.4	1.3	1.4	1.3	1.5
W_Total_La_mgl	0.000013	0.000011	0.000013	0.000013	0.000014	0.000011	0.000011
W_Total_Li_mgl	0.0087	0.00833	0.00875	0.00915	0.00917	0.00829	0.00873
W_Total_Mg_mgl	23	22.1	22	21.4	22.8	21.5	23.1
W_Total_Mn_mgl	0.0053	0.0056	0.0045	0.0047	0.0048	0.0045	0.0046
W_Total_Mo_mgl	0.00031	0.00038	0.00044	0.00059	0.00031	0.00029	0.00038
W_Total_Na_mgl	8.59	10.3	8.17	7.85	8.38	7.96	8.49
W_Total_Ni_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Total_Pb_mgl	0.00005	0.000072	0.00005	0.00005	0.00005	0.00005	0.00005
W_Total_Rb_mgl	0.002	0.0019	0.0019	0.0019	0.002	0.0019	0.0021
W_Total_S_mgl	10	10	10	10	10	10	10
W_Total_Sb_mgl	0.00015	0.00015	0.00016	0.00016	0.00018	0.00016	0.0002
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	1.07	1.2	1.13	1.09	1.19	1.16	1.2
W_Total_Ti_mgl							0.002
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00517	0.00524	0.00499	0.00513	0.00531	0.00507	0.00545
W_Total_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.00043	0.00044	0.00044	0.00045	0.00048	0.00045	0.00048
W_Total_Zn_mgl	0.003	0.003	0.003	0.003	0.003	0.003	0.003
W_Dissolved_Ag_mgl		0.00008					
W_Dissolved_Al_mgl	0.003	0.003	0.003	0.003	0.003	0.003	0.003
W_Dissolved_As_mgl	0.044	0.048	0.05	0.05	0.0508	0.0504	0.0516
W_Dissolved_B_mgl	0.01	0.01	0.01	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.143	0.141	0.145	0.14	0.14	0.14	0.134
W_Dissolved_Be_mgl	0.000025	0.000019	0.00001	0.000014	0.00001	0.000021	0.000021
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	66.7	60.7	62.1	61.2	62	60.2	71.2
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.00001	0.00001	0.00001	0.000013	0.00001	0.00001	0.00001
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00013	0.00014	0.00014	0.00016	0.00015	0.00015	0.00015
W_Dissolved_Cu_mgl	0.00073	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Fe_mgl	0.005	0.005	0.005	0.005	0.005	0.005	0.005
W_Dissolved_Ge_mgl	0.00005	0.00011	0.00016	0.000066	0.000051	0.00005	0.000085
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.7	1.4	1.4	1.4	1.4	1.3	1.5
W_Dissolved_La_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Li_mgl	0.00877	0.00836	0.00899	0.00888	0.00891	0.00848	0.00836
W_Dissolved_Mg_mgl	23.3	20.6	21.5	21.7	21.7	20.9	22.1
W_Dissolved_Mn_mgl	0.0056	0.0049	0.0047	0.005	0.0046	0.0044	0.0041
W_Dissolved_Mo_mgl	0.0004	0.0003	0.00037	0.0004	0.00038	0.00033	0.00039
W_Dissolved_Na_mgl	8.92	7.6	7.93	7.97	8.09	7.7	8.05
W_Dissolved_Ni_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.000052	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00218	0.00198	0.00193	0.00184	0.00192	0.00195	0.00201
W_Dissolved_S_mgl	10	10	10	10	10	10	10
W_Dissolved_Sb_mgl	0.00019	0.00016	0.00016	0.00017	0.00018	0.00015	0.00019
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	1.16	1.06	1.17	1.03	1.13	1.13	1.17
W_Dissolved_Ti_mgl							
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00467	0.00479	0.00429	0.00501	0.00503	0.00494	0.00488
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.00016	0.00015	0.00017	0.00017	0.00018	0.00018	0.00019
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
W_SumAnions_meql	5.08	5.34	5.13	5.01	5.01	5.03	5.03
W_SumCations_meql	5.68	5.09	5.25	5.23	5.27	5.09	5.77
W_TCN_mgl	0.001	0.001	0.001	0.001	0.002	0.001	0.001
W_TColi_cfuml							
W_TDS_mgl	265	282	248	232	260	251	253
W_TDSalts_gm3							
W_Thard_gCaCO3m3	260	240	240	240	250	240	280
W_TKN_mgl	0.1	0.1	0.1	0.1	0.13	0.1	0.11
W_TN_mgl	0.1	0.1	0.1	0.1	0.13	0.1	0.12
W_TOC_mgl	0.5	0.5					
W_TP_mgl	0.009	0.005	0.0052	0.02	0.007	0.15	0.0088
W_TSi_mgl							
W_TSS_BDC_mgl							
W_TSS_mgl	3	3	3	3	3	3	3
W_Turbidity_NTU	4.3	4	3.4	3.7	2.4	3.2	3.1
W_Volume_ml							
WF_DO_mgl	3.75	4.64	3.52	8.27		7.16	3.34
WF_DO_pct	36.6	45.5	33.8	84.6		70	33.3
WF_EC_mScm	467.6	451.9	434.4	442.8		466.1	457.5
WF_ORP_mV	-2.4	5.8	-25.6	-17.7		-8	-9.3
WF_pH	7.42	7.5	7.51	7.49		7.64	7.49
WF_temp_degC	9.3	9.5	9.7	8.3		10	9.7
WF_turbidity_NTU							

Blanks cells infer no available data

Baseline Water Quality Report: Groundwater

HOLEID	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	**W_MDD302_3-Oct-2024**	**W_MDD302_16-Oct-2024**	**W_MDD302_31-Oct-2024**	**W_MDD302_14-Nov-2024**	**W_MDD302_28-Nov-2024**
LABJOBNO	**24-30758-9**	**24-32269-10-10**	**24-33929-9**	**24-35305-12**	**24-36747-11**
WaterLabID	**Analytica**	**Analytica**	**Analytica**	**Analytica**	**Analytica**
WaterSiteID	**MDD302**	**MDD302**	**MDD302**	**MDD302**	**MDD302**
LabSampleID	**24-30758-9**	**24-32269-10-10**	**24-33929-9**	**24-35305-12**	**24-36747-11**
WaterSampDate	**2024-10-03**	**2024-10-16**	**2024-10-31**	**2024-11-14**	**2024-11-28**
SampBy	**MB**	**MB**	**MB**	**MB**	**MB**
W_Acidity4_mgl					
W_Acidity5_mgl					
W_Acidity7_mgl					
W_Acidity8_mgl	6.67	5.33	6.67	4.67	16.67
W_Alkalinity_mgl	235	236	234	232	236
W_AmmoniaN_mgl	0.05	0.05	0.05	0.05	0.05
W_An_Bromide_mgl	0.05	0.05	0.05	0.05	0.05
W_An_Chloride_mgl	3.1	2.96	3.18	2.93	2.91
W_An_Fluoride_mgl	0.14	0.14	0.15	0.12	0.18
W_An_Nitrate-N_mgl	0.0085	0.0046	0.0023	0.0039	0.002
W_An_Nitrite-N_mgl	0.001	0.001	0.001	0.001	0.001
W_An_Sulphate_mgl	9.5	9.49	10.1	10.3	10.3
W_BiCarbAlk_mgl					
W_CarbAlk_mgl					
W_Density_gcm3					
W_DOC_mgl					
W_DRP_mgl	0.002	0.002	0.002	0.002	0.002
W_DSi_mgl					
W_EC_mSm					
W_EC_uScm	471	529	481	506	504
W_EColi_cfuml					
W_pH	7.7	7.8	7.7	7.7	7.8
W_pH_1311_hcl					
W_pH_1311_initial					
W_pH_1311_leachate					
W_pH_1311_off					
W_Total_Ag_mgl					
W_Total_Al_mgl	0.0098	0.0068	0.0054	0.0032	0.004
W_Total_As_mgl	0.0588	0.0606	0.0633	0.0662	0.0668
W_Total_B_mgl	0.005	0.005	0.005	0.005	0.0084
W_Total_Ba_mgl	0.138	0.135	0.132	0.132	0.131
W_Total_Be_mgl	0.000029	0.00003	0.000013	0.000031	0.000038
W_Total_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_Ca_mgl	63.3	65.7	64.7	61.5	64.5
W_Total_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002
W_Total_Co_mgl	0.00001	0.000011	0.00001	0.00001	0.00001
W_Total_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Cs_mgl	0.00015	0.00015	0.00016	0.00015	0.00015
W_Total_Cu_mgl	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_Fe_mgl	0.33	0.32	0.32	0.31	0.32
W_Total_Ge_mgl	0.000091	0.00013	0.00005	0.00005	0.00005
W_Total_Hg_mgl	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_K_mgl	1.4	1.4	1.4	1.4	1.4
W_Total_La_mgl	0.000016	0.000022	0.000012	0.000013	0.000012
W_Total_Li_mgl	0.00857	0.0088	0.00873	0.00792	0.00832
W_Total_Mg_mgl	21.8	22	21.8	21.2	21.8
W_Total_Mn_mgl	0.0047	0.0053	0.0043	0.0041	0.0045
W_Total_Mo_mgl	0.0004	0.00029	0.00031	0.00039	0.00035
W_Total_Na_mgl	7.62	8.31	8.21	7.74	7.89
W_Total_Ni_mgl	0.0002	0.0002	0.0002	0.0002	0.0002
W_Total_P_mgl	0.04	0.04	0.04	0.04	0.04
W_Total_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005
W_Total_Rb_mgl	0.002	0.002	0.0021	0.0019	0.0019
W_Total_S_mgl	10	10	10	10	10
W_Total_Sb_mgl	0.00018	0.00019	0.00017	0.00018	0.00018
W_Total_Se_mgl	0.001	0.001	0.001	0.001	0.001
W_Total_Sn_mgl	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Sr_mgl	1.15	1.11	1.18	1.12	1.1
W_Total_Ti_mgl					
W_Total_Tl_mgl	0.0001	0.0001	0.0001	0.0001	0.0001
W_Total_U_mgl	0.00511	0.00488	0.00494	0.00504	0.00485
W_Total_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005
W_Total_Y_mgl	0.00048	0.00048	0.0005	0.00047	0.00046
W_Total_Zn_mgl	0.003	0.0035	0.003	0.003	0.003
W_Dissolved_Ag_mgl					
W_Dissolved_Al_mgl	0.003	0.003	0.012	0.0037	0.003
W_Dissolved_As_mgl	0.0518	0.0523	0.0555	0.0584	0.0575
W_Dissolved_B_mgl	0.01	0.01	0.01	0.01	0.01
W_Dissolved_Ba_mgl	0.133	0.134	0.135	0.132	0.128
W_Dissolved_Be_mgl	0.000014	0.000027	0.000025	0.00001	0.000013
W_Dissolved_Bi_mgl	0.0001	0.0001	0.0001	0.0001	0.0001
W_Dissolved_Ca_mgl	64.1	65.2	63.5	63.6	59.5
W_Dissolved_Cd_mgl	0.00002	0.00002	0.00002	0.00002	0.00002
W_Dissolved_Co_mgl	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_Cr_mgl	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Cs_mgl	0.00016	0.00015	0.00016	0.00015	0.00015
W_Dissolved_Cu_mgl	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Fe_mgl	0.005	0.005	0.005	0.005	0.005
W_Dissolved_Ge_mgl	0.00007	0.000064	0.000059	0.00005	0.000055
W_Dissolved_Hg_mgl	0.00008	0.00008	0.00008	0.00008	0.00008
W_Dissolved_K_mgl	1.4	1.4	1.4	1.4	1.3
W_Dissolved_La_mgl	0.00001	0.00001	0.000015	0.00001	0.00001
W_Dissolved_Li_mgl	0.00854	0.00816	0.00948	0.00884	0.00776
W_Dissolved_Mg_mgl	21.6	21.6	21.6	21.4	20.9
W_Dissolved_Mn_mgl	0.0047	0.0041	0.004	0.0044	0.004
W_Dissolved_Mo_mgl	0.00037	0.0002	0.0003	0.00032	0.00036
W_Dissolved_Na_mgl	7.86	7.92	7.93	7.85	7.89
W_Dissolved_Ni_mgl	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_P_mgl	0.04	0.04	0.04	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.00005	0.00005	0.00005	0.00005
W_Dissolved_Rb_mgl	0.00194	0.00189	0.00199	0.00201	0.00182
W_Dissolved_S_mgl	10	10	10	10	10
W_Dissolved_Sb_mgl	0.00019	0.0002	0.00021	0.00019	0.00018
W_Dissolved_Se_mgl	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Sn_mgl	0.0002	0.0002	0.0002	0.0002	0.0002
W_Dissolved_Sr_mgl	1.13	1.11	1.2	1.18	1.05
W_Dissolved_Ti_mgl					
W_Dissolved_Tl_mgl	0.00001	0.00001	0.00001	0.00001	0.00001
W_Dissolved_U_mgl	0.00489	0.00486	0.00486	0.00495	0.00461
W_Dissolved_V_mgl	0.0005	0.0005	0.0005	0.0005	0.0005
W_Dissolved_Y_mgl	0.00019	0.00018	0.00019	0.00021	0.00018
W_Dissolved_Zn_mgl	0.001	0.001	0.001	0.001	0.001
W_SumAnions_meql	5.03	5.03	5	4.98	5.06
W_SumCations_meql	5.35	5.41	5.33	5.32	5.07
W_TCN_mgl	0.001	0.001	0.001	0.001	0.001
W_TColi_cfuml					
W_TDS_mgl	262	252	260	260	264
W_TDSalts_gm3					
W_Thard_gCaCO3m3	250	250	250	240	250
W_TKN_mgl	0.1	0.12	0.1	0.1	0.1
W_TN_mgl	0.1	0.12	0.1	0.1	0.1
W_TOC_mgl					
W_TP_mgl	0.0059	0.01	0.0099	0.01	0.0077
W_TSi_mgl					
W_TSS_BDC_mgl					
W_TSS_mgl	3	3	3	3	3
W_Turbidity_NTU	3.2	4.2	3.3	2.9	3.3
W_Volume_ml					
WF_DO_mgl	0	5.45	3.65	4.3	2.82
WF_DO_pct	112.5	53.3	37	42.2	28.3
WF_EC_mScm	421.3	452.2	455.4	434.2	462.7
WF_ORP_mV	21.1	-2.3	18.9	8.7	-9.5
WF_pH	7.53	7.39	7.57	7.5	7.52
WF_temp_degC	8.6	10.3	11	10.3	10.8
WF_turbidity_NTU		-0.21			

Blanks cells infer no available data

Baseline Water Quality Report: Groundwater

HOLEID	**MGL_WaterSamples**
SAMPLEID	**WP22-11185.002**
LABJOBNO	**BOGP**
WaterLabID	**SGS**
WaterSiteID	**MRC002**
LabSampleID	
WaterSampDate	**2022-10-25**
SampBy	**HM**
W_Acidity4_mgl	
W_Acidity5_mgl	
W_Acidity7_mgl	
W_Acidity8_mgl	
W_Alkalinity_mgl	110
W_AmmoniaN_mgl	
W_An_Bromide_mgl	
W_An_Chloride_mgl	3.5
W_An_Fluoride_mgl	
W_An_Nitrate-N_mgl	
W_An_Nitrite-N_mgl	
W_An_Sulphate_mgl	5.4
W_BiCarbAlk_mgl	130
W_CarbAlk_mgl	5
W_Density_gcm3	0.998
W_DOC_mgl	
W_DRP_mgl	
W_DSi_mgl	
W_EC_mSm	
W_EC_uScm	250
W_EColi_cfuml	
W_pH	8
W_pH_1311_hcl	
W_pH_1311_initial	
W_pH_1311_leachate	
W_pH_1311_off	
W_Total_Ag_mgl	0.001
W_Total_Al_mgl	0.545
W_Total_As_mgl	0.021
W_Total_B_mgl	
W_Total_Ba_mgl	0.308
W_Total_Be_mgl	
W_Total_Bi_mgl	0.005
W_Total_Ca_mgl	14.4
W_Total_Cd_mgl	0.001
W_Total_Co_mgl	0.002
W_Total_Cr_mgl	0.002
W_Total_Cs_mgl	
W_Total_Cu_mgl	0.004
W_Total_Fe_mgl	2
W_Total_Ge_mgl	
W_Total_Hg_mgl	0.001
W_Total_K_mgl	2.1
W_Total_La_mgl	
W_Total_Li_mgl	0.019
W_Total_Mg_mgl	6.7
W_Total_Mn_mgl	0.033
W_Total_Mo_mgl	0.001
W_Total_Na_mgl	27.9
W_Total_Ni_mgl	0.001
W_Total_P_mgl	0.07
W_Total_Pb_mgl	0.001
W_Total_Rb_mgl	
W_Total_S_mgl	
W_Total_Sb_mgl	
W_Total_Se_mgl	
W_Total_Sn_mgl	
W_Total_Sr_mgl	3.66
W_Total_Ti_mgl	0.016
W_Total_Tl_mgl	0.001
W_Total_U_mgl	
W_Total_V_mgl	0.001
W_Total_Y_mgl	
W_Total_Zn_mgl	0.135
W_Dissolved_Ag_mgl	0.0005
W_Dissolved_Al_mgl	0.006
W_Dissolved_As_mgl	0.011
W_Dissolved_B_mgl	
W_Dissolved_Ba_mgl	0.26
W_Dissolved_Be_mgl	
W_Dissolved_Bi_mgl	0.001
W_Dissolved_Ca_mgl	14.8
W_Dissolved_Cd_mgl	0.0002
W_Dissolved_Co_mgl	0.0005
W_Dissolved_Cr_mgl	0.001
W_Dissolved_Cs_mgl	
W_Dissolved_Cu_mgl	0.002
W_Dissolved_Fe_mgl	0.09
W_Dissolved_Ge_mgl	
W_Dissolved_Hg_mgl	0.0005
W_Dissolved_K_mgl	1.88
W_Dissolved_La_mgl	
W_Dissolved_Li_mgl	0.017
W_Dissolved_Mg_mgl	6.61
W_Dissolved_Mn_mgl	0.0034
W_Dissolved_Mo_mgl	0.0009
W_Dissolved_Na_mgl	27
W_Dissolved_Ni_mgl	0.0005
W_Dissolved_P_mgl	0.01
W_Dissolved_Pb_mgl	0.0005
W_Dissolved_Rb_mgl	
W_Dissolved_S_mgl	
W_Dissolved_Sb_mgl	
W_Dissolved_Se_mgl	
W_Dissolved_Sn_mgl	
W_Dissolved_Sr_mgl	3.57
W_Dissolved_Ti_mgl	0.0005
W_Dissolved_Tl_mgl	0.0005
W_Dissolved_U_mgl	
W_Dissolved_V_mgl	0.0005
W_Dissolved_Y_mgl	
W_Dissolved_Zn_mgl	0.094
W_SumAnions_meql	
W_SumCations_meql	
W_TCN_mgl	
W_TColi_cfuml	
W_TDS_mgl	170
W_TDSalts_gm3	170
W_Thard_gCaCO3m3	
W_TKN_mgl	
W_TN_mgl	
W_TOC_mgl	
W_TP_mgl	
W_TSi_mgl	
W_TSS_BDC_mgl	
W_TSS_mgl	
W_Turbidity_NTU	
W_Volume_ml	
WF_DO_mgl	
WF_DO_pct	
WF_EC_mScm	
WF_ORP_mV	
WF_pH	
WF_temp_degC	
WF_turbidity_NTU	

Blanks cells infer no available data

Baseline Water Quality Report: Groundwater

HOLEID	MGL_WaterSamples	MGL_WaterSamples
SAMPLEID	W_Base_dis_13-Jun-2024	W_Base_31-Oct-2024
LABJOBNO	24-19336	
WaterLabID	Analytica	Analytica
WaterSiteID	Base_dis	Base
LabSampleID	24-19336-12	24-33929-11
WaterSampDate	2024-06-13	2024-10-31
SampBy	MB	MB
W_Acidity4_mgl		
W_Acidity5_mgl		
W_Acidity7_mgl		
W_Acidity8_mgl	9	6.67
W_Alkalinity_mgl	81.4	36
W_AmmoniaN_mgl	0.03	0.005
W_An_Bromide_mgl	0.05	0.05
W_An_Chloride_mgl	2.19	2.45
W_An_Fluoride_mgl	0.1	0.054
W_An_Nitrate-N_mgl	0.555	0.508
W_An_Nitrite-N_mgl	0.0012	0.001
W_An_Sulphate_mgl	3.99	4.1
W_BiCarbAlk_mgl		
W_CarbAlk_mgl		
W_Density_gcm3		
W_DOC_mgl	0.5	
W_DRP_mgl	0.005	0.005
W_DSi_mgl		
W_EC_mSm		
W_EC_uScm	149	106
W_EColi_cfuml		
W_pH	8	6.8
W_pH_1311_hcl		
W_pH_1311_initial		
W_pH_1311_leachate		
W_pH_1311_off		
W_Total_Ag_mgl		
W_Total_Al_mgl	22.9	0.003
W_Total_As_mgl	3.65	0.0005
W_Total_B_mgl	0.019	0.005
W_Total_Ba_mgl	0.324	0.008
W_Total_Be_mgl	0.0022	0.00001
W_Total_Bi_mgl	0.00046	0.0001
W_Total_Ca_mgl	52.1	11.3
W_Total_Cd_mgl	0.00012	0.000048
W_Total_Co_mgl	0.768	0.000036
W_Total_Cr_mgl	0.017	0.00023
W_Total_Cs_mgl	0.00226	0.00001
W_Total_Cu_mgl	1.95	0.151
W_Total_Fe_mgl	62.5	0.005
W_Total_Ge_mgl	0.0026	0.00005
W_Total_Hg_mgl	0.0001	0.0001
W_Total_K_mgl	16.2	0.89
W_Total_La_mgl	0.041	0.000012
W_Total_Li_mgl	0.0304	0.00033
W_Total_Mg_mgl	18.7	2.64
W_Total_Mn_mgl	1.12	0.0005
W_Total_Mo_mgl	0.0021	0.0002
W_Total_Na_mgl	12.2	5.34
W_Total_Ni_mgl	0.027	0.0017
W_Total_P_mgl	1.2	0.04
W_Total_Pb_mgl	0.0402	0.00807
W_Total_Rb_mgl	0.0559	0.00005
W_Total_S_mgl	10	10
W_Total_Sb_mgl	0.0011	0.0001
W_Total_Se_mgl	0.001	0.001
W_Total_Sn_mgl	0.08	0.0005
W_Total_Sr_mgl	0.788	0.112
W_Total_Ti_mgl		
W_Total_Tl_mgl	0.00033	0.0001
W_Total_U_mgl	0.00566	0.00003
W_Total_V_mgl	0.044	0.0005
W_Total_Y_mgl	0.0167	0.00005
W_Total_Zn_mgl	0.197	1
W_Dissolved_Ag_mgl		
W_Dissolved_Al_mgl	0.089	0.003
W_Dissolved_As_mgl	0.234	0.00083
W_Dissolved_B_mgl	0.013	0.01
W_Dissolved_Ba_mgl	0.0072	0.0082
W_Dissolved_Be_mgl	0.00001	0.00001
W_Dissolved_Bi_mgl	0.0001	0.0001
W_Dissolved_Ca_mgl	15.3	11
W_Dissolved_Cd_mgl	0.00002	0.0001
W_Dissolved_Co_mgl	0.0242	0.00003
W_Dissolved_Cr_mgl	0.00033	0.0002
W_Dissolved_Cs_mgl	0.000041	0.00001
W_Dissolved_Cu_mgl	0.0064	0.154
W_Dissolved_Fe_mgl	0.005	0.005
W_Dissolved_Ge_mgl	0.00005	0.00005
W_Dissolved_Hg_mgl	0.00008	0.00008
W_Dissolved_K_mgl	4.6	0.88
W_Dissolved_La_mgl	0.00001	0.000014
W_Dissolved_Li_mgl	0.00704	0.0004
W_Dissolved_Mg_mgl	4.05	2.57
W_Dissolved_Mn_mgl	0.02	0.0005
W_Dissolved_Mo_mgl	0.0002	0.0002
W_Dissolved_Na_mgl	6.97	5.07
W_Dissolved_Ni_mgl	0.00029	0.0013
W_Dissolved_P_mgl	0.04	0.04
W_Dissolved_Pb_mgl	0.00005	0.018
W_Dissolved_Rb_mgl	0.00473	0.000053
W_Dissolved_S_mgl	10	10
W_Dissolved_Sb_mgl	0.0013	0.0001
W_Dissolved_Se_mgl	0.0005	0.0005
W_Dissolved_Sn_mgl	0.00022	0.0002
W_Dissolved_Sr_mgl	0.257	0.109
W_Dissolved_Ti_mgl		
W_Dissolved_Tl_mgl	0.00001	0.00001
W_Dissolved_U_mgl	0.00061	0.00003
W_Dissolved_V_mgl	0.002	0.0005
W_Dissolved_Y_mgl	0.000012	0.000011
W_Dissolved_Zn_mgl	0.001	0.468
W_SumAnions_meql	1.84	0.91
W_SumCations_meql	1.52	1.02
W_TCN_mgl	0.001	0.001
W_TColi_cfuml		
W_TDS_mgl	83	71
W_TDSalts_gm3		
W_Thard_gCaCO3m3	210	39
W_TKN_mgl	0.75	0.1
W_TN_mgl	1.3	0.51
W_TOC_mgl	2.2	
W_TP_mgl	2.75	0.005
W_TSi_mgl		
W_TSS_BDC_mgl		
W_TSS_mgl	2196	3
W_Turbidity_NTU	5469	0.9
W_Volume_ml		
WF_DO_mgl	10.92	
WF_DO_pct	91.9	
WF_EC_mScm	126.2	
WF_ORP_mV	37	
WF_pH	8.85	
WF_temp_degC	6.4	
WF_turbidity_NTU		

Blanks cells infer no available data

Baseline Water Quality Report: Groundwater

HOLEID	**MGL_WaterSamples**
SAMPLEID	**WP22-11185.001**
PROJECTCODE	**BOGP**
WaterLabID	**SGS**
WaterSiteID	**Office/Base supply**
LabSampleID	
WaterSampDate	**2022-10-25**
WaterSampTime	
SampBy	**HM**
W_Acidity4_mgl	
W_Acidity5_mgl	
W_Acidity7_mgl	
W_Acidity8_mgl	
W_Alkalinity_mgl	150
W_AmmoniaN_mgl	
W_An_Bromide_mgl	
W_An_Chloride_mgl	6
W_An_Fluoride_mgl	
W_An_Nitrate-N_mgl	
W_An_Nitrite-N_mgl	
W_An_Sulphate_mgl	24
W_BiCarbAlk_mgl	180
W_CarbAlk_mgl	5
W_Density_gcm3	0.998
W_DOC_mgl	
W_DRP_mgl	
W_DSi_mgl	
W_EC_mSm	
W_EC_uScm	360
W_EColi_cfuml	
W_pH	8
W_pH_1311_hcl	
W_pH_1311_initial	
W_pH_1311_leachate	
W_pH_1311_off	
W_Total_Ag_mgl	0.001
W_Total_Al_mgl	0.007
W_Total_As_mgl	0.002
W_Total_B_mgl	
W_Total_Ba_mgl	0.016
W_Total_Be_mgl	
W_Total_Bi_mgl	0.005
W_Total_Ca_mgl	41.9
W_Total_Cd_mgl	0.001
W_Total_Co_mgl	0.002
W_Total_Cr_mgl	0.002
W_Total_Cs_mgl	
W_Total_Cu_mgl	0.004
W_Total_Fe_mgl	0.1
W_Total_Ge_mgl	
W_Total_Hg_mgl	0.001
W_Total_K_mgl	1.3
W_Total_La_mgl	
W_Total_Li_mgl	0.003
W_Total_Mg_mgl	11.4
W_Total_Mn_mgl	0.001
W_Total_Mo_mgl	0.001
W_Total_Na_mgl	16.3
W_Total_Ni_mgl	0.001
W_Total_P_mgl	0.025
W_Total_Pb_mgl	0.007
W_Total_Rb_mgl	
W_Total_S_mgl	
W_Total_Sb_mgl	
W_Total_Se_mgl	
W_Total_Sn_mgl	
W_Total_Sr_mgl	0.492
W_Total_Ti_mgl	0.001
W_Total_Tl_mgl	0.001
W_Total_U_mgl	
W_Total_V_mgl	0.001
W_Total_Y_mgl	
W_Total_Zn_mgl	0.06
W_Dissolved_Ag_mgl	0.0005
W_Dissolved_Al_mgl	0.002
W_Dissolved_As_mgl	0.001
W_Dissolved_B_mgl	
W_Dissolved_Ba_mgl	0.01
W_Dissolved_Be_mgl	
W_Dissolved_Bi_mgl	0.001
W_Dissolved_Ca_mgl	44.3
W_Dissolved_Cd_mgl	0.0002
W_Dissolved_Co_mgl	0.0005
W_Dissolved_Cr_mgl	0.001
W_Dissolved_Cs_mgl	
W_Dissolved_Cu_mgl	0.004
W_Dissolved_Fe_mgl	0.01
W_Dissolved_Ge_mgl	
W_Dissolved_Hg_mgl	0.0005
W_Dissolved_K_mgl	1.36
W_Dissolved_La_mgl	
W_Dissolved_Li_mgl	0.002
W_Dissolved_Mg_mgl	12.1
W_Dissolved_Mn_mgl	0.0005
W_Dissolved_Mo_mgl	0.0005
W_Dissolved_Na_mgl	16.7
W_Dissolved_Ni_mgl	0.0007
W_Dissolved_P_mgl	0.01
W_Dissolved_Pb_mgl	0.0005
W_Dissolved_Rb_mgl	
W_Dissolved_S_mgl	
W_Dissolved_Sb_mgl	
W_Dissolved_Se_mgl	
W_Dissolved_Sn_mgl	
W_Dissolved_Sr_mgl	0.443
W_Dissolved_Ti_mgl	0.0005
W_Dissolved_Tl_mgl	0.0005
W_Dissolved_U_mgl	
W_Dissolved_V_mgl	0.0005
W_Dissolved_Y_mgl	
W_Dissolved_Zn_mgl	0.057
W_SumAnions_meql	
W_SumCations_meql	
W_TCN_mgl	
W_TColi_cfuml	
W_TDS_mgl	200
W_TDSalts_gm3	240
W_Thard_gCaCO3m3	
W_TKN_mgl	
W_TN_mgl	
W_TOC_mgl	
W_TP_mgl	
W_TSi_mgl	
W_TSS_BDC_mgl	
W_TSS_mgl	
W_Turbidity_NTU	
W_Volume_ml	
WF_DO_mgl	
WF_DO_pct	
WF_EC_mScm	
WF_ORP_mV	
WF_pH	
WF_temp_degC	
WF_turbidity_NTU	

Blanks cells infer no available data

APPENDIX E QUALITY ASSURANCE AND QUALITY CONTROL

Parameter	RS01 (July 2023)			RS01 (October 2023)			RS01 (Feb 2024)			RS01 (Mar 2024)			RS01 (April 2024)			RS01 (May 2024)		
	Eurofins	Hill	RPD	Eurofins	Hill	RPD	Eurofins	Hill	RPD	Eurofins	Hill	RPD	Eurofins	Hill	RPD	Eurofins	Hill	RPD
Acidity4 (mg $CaCO_3$/L)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Acidity7 (mg $CaCO_3$/L)	1.00	-	-	1.00	-	-	1.00	-	-	1.00	-	-	1.00	-	-	1.00	-	-
Acidity8 (mg $CaCO_3$/L)	2.00	-	-	1.00	-	-	4.00	-	-	8.00	-	-	7.00	-	-	4.00	-	-
Alkalinity (mg $CaCO_3$/L)	71.0	67.0	5.80	81.0	82.0	1.23	124	129	3.95	104	109	4.69	93.0	94.0	1.07	86	88	2.30
Ammonia-N	0.010	0.010	0.00	0.010	0.010	0.00	0.050	0.010	133	0.030	0.010	100	0.010	0.010	0.00	0.010	0.01	0.00
Bromide	0.020	0.050	85.7	0.020	0.050	85.7	0.020	0.050	85.7	0.020	0.050	85.7	0.020	0.050	85.7	0.020	0.05	85.7
Chloride	2.18	1.90	13.7	1.42	1.20	16.8	1.05	1.00	4.88	1.15	1.30	12.2	3.90	3.60	8.00	4.18	3.70	12.2
Fluoride	0.100	0.100	0.000	0.100	0.100	0.000	0.120	0.110	8.70	0.090	0.100	10.5	0.100	0.090	10.5	0.110	0.100	9.52
Nitrate-N	0.05	0.007	151	0.130	0.002	194	0.070	0.002	189	0.01	0.002	133	0.01	0.002	133	0.010	0.002	133.3
Nitrite-N	0.01	0.002	133	0.010	0.002	133	0.010	0.002	133	0.01	0.002	133	0.01	0.002	133	0.010	0.002	133.3
Sulfate	4.33	4.30	0.695	2.64	2.80	5.88	0.700	0.700	-	1.14	1.40	20.5	7.92	7.00	12.3	5.71	4.80	17.3
DOC	3.50	3.50	0.00	3.40	4.40	25.6	3.40	4.00	16.2	2.30	1.20	62.9	2.20	0.500	126	1.70	1.00	51.9
DSi	7.85	3.80	69.5	7.37	3.70	66.3	9.55	4.70	68.1	9.44	4.40	72.8	8.70	4.60	61.7	9.92	4.50	75.2
EC mSm	14.9	14.5	2.72	17.1	16.9	1.18	24.9	24.8	0.402	21.4	21.1	1.41	21.4	20.7	3.33	19.5	19.1	2.07
pH	7.60	7.90	3.87	7.90	8.10	2.50	7.90	7.90	0.00	7.70	8.00	3.82	7.60	8.00	5.13	7.60	8.00	5.13
Ag (total)	0.001	0.00011	160	0.001	0.00011	160	-	0.00011	-	0.001	0.00011	160	0.001	0.00011	160	0.001	0.00011	160.4
Al (total)	0.042	0.027	43.5	0.084	0.039	73.2	-	0.012	-	0.01	0.0067	39.5	0.014	0.0044	104	0.010	0.0067	39.5
As (total)	0.028	0.028	-	0.046	0.039	16.5	-	0.049	-	0.031	0.029	6.67	0.026	0.027	3.77	0.029	0.028	3.51
B (total)	0.05	0.0053	162	0.05	0.0053	162	-	0.0053	-	0.050	0.0053	162	0.050	0.0053	162	0.050	0.0055	160
Ba (total)	0.01	0.0097	3.0	0.013	0.0121	7.2	-	0.015	-	0.011	0.011	0.00	0.014	0.0134	4.38	0.015	0.0138	8.33
Be (total)	0.005	0.00011	191	0.005	0.00011	191	-	0.00011	-	0.005	0.00011	191	0.005	0.00011	191	0.005	0.00011	191
Bi (total)	0.005	0.00011	191	0.005	0.00011	191	-	0.00011	-	0.005	0.00011	191	0.005	0.00011	191	0.005	0.00011	191
Ca (total)	16.7	19.5	15.5	19.3	24.0	21.7	-	37.0	-	22.5	31.0	31.8	25.3	27.0	6.50	21.2	26.0	20.3
Cd (total)	0.001	0.000053	180	0.001	0.000053	180	-	0.0001	-	0.001	0.000053	180	0.001	0.000053	180	0.001	0.000053	180
Co (total)	0.002	0.00021	162	0.002	0.00021	162	-	0.0002	-	0.002	0.00021	162	0.002	0.00021	162	0.002	0.00021	162
Cr (total)	0.001	0.00053	61.4	0.001	0.00053	61.4	-	0.0005	-	0.001	0.00053	61.4	0.001	0.00053	61.4	0.001	0.00053	61.4
Cu (total)	0.003	0.00075	120	0.002	0.00053	116	-	0.0005	-	0.002	0.00053	116	0.002	0.00053	116	0.002	0.00053	116
Fe (total)	0.400	0.410	2.47	0.700	0.520	29.5	-	0.560	-	0.400	0.370	7.79	0.200	0.210	4.88	0.300	0.250	18.2
Hg (total)	0.001	0.00008	170	0.001	0.00008	170	-	0.0001	-	0.001	0.00008	170	0.001	0.00008	170	0.001	0.00008	170
K (total)	0.600	0.900	40.0	0.600	0.770	24.8	-	0.560	-	0.400	0.280	35.3	1.60	1.58	1.26	1.20	1.53	24.2
Li (total)	0.001	0.00168	50.7	0.002	0.0021	4.9	-	0.0026	-	0.002	0.0023	14.0	0.002	0.0025	22.2	0.002	0.0026	26.1
Mg (total)	3.20	3.60	11.8	3.70	4.20	12.7	5.40	5.90	8.85	4.40	5.40	20.4	5.20	4.40	16.7	4.00	4.70	16.1
Mn (total)	0.042	0.048	13.3	0.071	0.053	29.0	-	0.118	-	0.077	0.068	12.4	0.037	0.035	5.56	0.040	0.045	11.8
Mo (total)	0.001	0.00021	131	0.001	0.00021	131	-	0.000	-	0.001	0.00021	131	0.001	0.00021	131	0.001	0.00021	131
Na (total)	4.00	4.70	16.1	38.6	5.10	153.3	-	6.500	-	5.10	6.70	27.1	6.40	6.30	1.57	4.70	6.00	24.3
Ni (total)	0.001	0.00053	61.4	0.001	0.00053	61.4	-	0.001	-	0.001	0.00053	61.4	0.001	0.00053	61.4	0.001	0.00053	61.4
P (total)	-	-	-	-	0.008	-	-	0.00	-	-	-	-	-	-	-	-	-	-
Pb (total)	0.001	0.00011	160	0.001	0.00011	160	-	0.0001	-	0.001	0.00011	160	0.001	0.00011	160	0.001	0.00011	160
Sb (total)	0.002	0.00021	162	0.002	0.00021	162	-	0.0002	-	0.002	0.00021	162	0.002	0.00021	162	0.002	0.00021	162
Se (total)	0.005	0.0011	128	0.005	0.0011	128	-	0.0011	-	0.005	0.0011	128	0.005	0.0011	128	0.005	0.0011	128
Sn (total)	0.001	0.00053	61.4	0.001	0.00053	61.4	-	0.0005	-	0.001	0.00053	61.4	0.001	0.00053	61.4	0.001	0.00053	61.4
Sr (total)	0.216	0.250	14.6	0.276	0.31	11.6	-	0.520	-	0.345	0.410	17.2	0.402	0.410	1.97	0.348	0.390	11.4
Ti (total)	0.002	0.011	138	0.003	0.011	114	-	0.0110	-	0.001	0.011	167	0.001	0.011	167	0.001	0.011	167
Tl (total)	0.001	0.000053	180	0.001	0.000053	180	-	0.00005	-	0.001	0.000053	180	0.001	0.000053	180	0.001	0.000053	180
U (total)	0.001	0.00009	167	0.001	0.000117	158	-	0.00012	-	0.001	0.000082	170	0.001	0.000068	175	0.001	0.000057	178
V (total)	0.001	-	-	0.001	-	-	-	-	-	0.001	-	-	0.001	0.000	200	0.001	0.00000	200
Zn (total)	0.005	0.0011	128	0.005	0.0011	128	-	0.0011	-	0.005	0.0011	128	0.005	0.0011	128	0.005	0.0011	128
Ag (dissolved)	0.0005	0.0001	133	0.0005	0.0001	133	0.0005	0.0001	133	0.0005	0.0001	133	0.0005	0.0001	133	0.0005	0.0001	133
Al (dissolved)	0.005	0.003	50.0	0.002	0.003	40.0	0.002	0.003	40.0	0.002	0.003	40.0	0.002	0.003	40.0	0.002	0.003	40.0
As (dissolved)	0.011	0.0116	5.3	0.015	0.021	33.3	0.024	0.024	0.00	0.018	0.0168	6.90	0.020	0.0183	8.88	0.019	0.0187	1.59
B (dissolved)	0.03	0.005	143	0.03	0.005	143	0.03	0.0050	143	0.030	0.005	143	0.030	0.005	143	0.030	0.006	133
Ba (dissolved)	0.007	0.009	25.0	0.011	0.011	0.0	0.013	0.014	7.41	0.010	0.011	9.52	0.013	0.013	0.00	0.011	0.013	16.7
Be (dissolved)	0.001	0.0001	164	0.001	0.0001	164	0.001	0.0001	164	0.001	0.0001	164	0.001	0.0001	164	0.001	0.0001	164
Bi (dissolved)	0.001	-	-	0.001	-	-	0.001	-	-	0.001	-	-	0.001	0.00	200	0.001	0	200
Ca (dissolved)	19.5	20.0	2.53	22.1	24	8.2	35.3	39.0	10.0	29.1	32.0	9.49	33.3	31.0	7.15	22.2	28.0	23.1
Cd (dissolved)	0.0002	0.00005	120	0.0002	0.00005	120	0.0002	0.00005	120	0.0002	0.00005	120	0.0002	0.00005	120	0.0002	0.00005	120
Co (dissolved)	0.0005	0.0002	85.7	0.0005	0.0002	85.7	0.0005	0.0002	85.7	0.0005	0.0002	85.7	0.0005	0.0002	85.7	0.0005	0.0002	85.7
Cr (dissolved)	0.001	0.0005	66.7	0.001	0.0005	66.7	0.001	0.0005	66.7	0.001	0.0005	66.7	0.001	0.0005	66.7	0.001	0.0005	66.7
Cu (dissolved)	0.0006	0.0006	-	0.0005	0.0005	0	0.0005	0.0005	0.00	0.0005	0.0005	0.00	0.0015	0.0005	100	0.0005	0.0005	0
Fe (dissolved)	0.070	0.060	15.4	0.010	0.070	150	0.090	0.060	40.0	0.110	0.080	31.6	0.060	0.060	0.00	0.070	0.060	15
Hg (dissolved)	0.0005	0.00008	145	0.0005	0.00008	145	0.0005	0.00008	145	0.0005	0.00008	145	0.0005	0.00008	145	0.0005	0.00008	145
K (dissolved)	1.13	0.900	22.7	0.740	0.800	7.79	0.570	0.570	0.00	0.270	0.280	3.64	2.00	1.63	20.4	1.59	1.63	2.5
Li (dissolved)	0.003	0.0018	50.0	0.002	0.0021	4.88	0.002	0.0028	33.3	0.001	0.0024	82.4	0.004	0.0028	35.3	0.003	0.0026	14.3
Mg (dissolved)	4.80	4.00	18.2	1.23	4.40	113	6.46	7.00	8.02	5.73	5.90	2.92	5.85	5.20	11.8	4.86	4.90	0.820
Mn (dissolved)	0.0067	0.0034	65.3	0.0005	0.0055	167	0.0613	0.082	28.9	0.0451	0.048	6.23	0.0201	0.0171	16.1	0.0188	0.0169	10.6
Mo (dissolved)	0.0005	0.0002	85.7	0.0005	0.0002	85.7	0.0005	0.0002	85.7	0.0005	0.0002	85.7	0.0005	0.0002	85.7	0.0005	0.0002	85.7
Na (dissolved)	6.48	4.90	27.8	122	5.50	183	7.08	6.60	7.02	6.70	6.90	2.94	8.01	6.40	22.3	6.29	6.20	1.44
Ni (dissolved)	0.0005	0.0005	-	0.0005	0.0005	0.00	0.0005	0.0005	0.00	0.0011	0.0005	75.0	0.0005	0.0005	0.00	0.0005	0.0005	0.00
Pb (dissolved)	0.0005	0.0001	133	0.0005	0.0001	133	0.0005	0.0001	133	0.0005	0.0001	133	0.0005	0.0001	133	0.0005	0.0001	133
Sb (dissolved)	0.001	0.0002	133	0.001	0.0002	133	0.001	0.0002	133	0.001	0.0002	133	0.001	0.0002	133	0.001	0.0002	133
Se (dissolved)	0.005	0.001	133	0.005	0.001	133	0.005	0.001	133	0.005	0.001	133	0.005	0.001	133	0.005	0.001	133
Sn (dissolved)	0.0005	0.0005	-	0.0005	0.0005	0.00	0.0005	0.0005	0.00	0.0005	0.0005	0.00	0.0005	0.0005	0.00	0.0005	0.0005	0.00
Sr (dissolved)	0.193	0.240	21.7	0.244	0.320	27.0	0.511	0.560	9.15	0.444	0.420	5.56	0.394	0.39	1.02	0.340	0.400	16.2
Ti (dissolved)	0.0005	0.020	190	0.0005	0.020	190	0.0005	0.020	190	0.0005	0.020	190	0.0005	0.020	190	0.0005	0.02	190
Tl (dissolved)	0.0005	0.00005	164	0.0005	0.00005	164	0.0005	0.00005	164	0.0005	0.00005	164	0.0005	0.00005	164	0.0005	0.00005	164
U (dissolved)	0.0002	0.0001	96.3	0.0002	0.0001	66.7	0.0002	0.00011	58.1	0.0002	0.00008	85.7	0.0002	0.00006	108	0.0002	0.00005	120
V (dissolved)	0.0005	-	-	0.0005	-	-	0.0005	-	-	0.0005	-	-	0.0005	0.00	200	0.0005	0.000	200
Y (dissolved)	0.002	-	-	0.002	-	-	-	-	-	-	-	-	0.00	0.00	-	0	0	-
Zn (dissolved)	0.002	0.001	66.7	0.002	0.001	66.7	0.007	0.001	150	0.002	0.001	66.7	0.002	0.001	66.7	0.002	0.001	66.7
TCN	0.005	0.002	85.7	0.005	0.002	85.7	0.005	0.002	85.7	0.005	0.002	85.7	0.005	0.002	85.7	0.005	0.004	22.2
TDS	73.0	88.0	18.6	84.0	105	22.2	122	149	19.9	105	127	19.0	105	127	19.0	96.0	111	14.5
Thard (mg $CaCO_3$/L)	7.00	67.0	162	60.0	77.0	24.8	100	127	23.8	74.0	105	34.6	107	98.0	8.78	70.0	89.0	23.9
TN	0.25	0.008	188	0.26	-	-	0.240	0.002	197	0.14	0.002	194	0.141	0.002	194	0.120	0.002	193
TOC	3.70	4.30	15.0	3.50	1.90	59.3	3.90	2.90	29.4	2.30	3.80	49.2	2.20	3.70	50.8	1.70	2.00	16.2
TP	0.011	0.008	31.6	0.011	-	-	0.012	0.010	18.2	0.005	0.005	0.00	0.006	0.004	40.0	0.007	0.006	15.4
TSi	-	8.00	-	-	8.00	-	-	10.0	-	3.57	9.40	89.9	3.87	9.80	86.8	3.72	9.50	87.4
TSS	5.00	3.00	50.0	5.00	3.00	50.0	9.00	3.00	100.0	4.00	3.00	28.6	6.00	3.00	66.7	4.00	3.00	28.6
Turbidity (NTU)	1.49	2.5	50.6	4.59	1.34	110	8.93	1.32	148	1.23	1.22	0.816	1.01	0.560	57.3	1.16	1.13	2.62

Blue text indicates the LOR for a parameter. Green text indicates that the RPD is influenced by the LOR and therefore not representative of a high RPD. Red text indicates that the RPD value is above 20%.

All parameters are presented in mg/L unless otherwise specified.

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MINE WASTE
MANAGEMENT
GREENROAD GROUP

APPENDIX E SAMPLING ANALYSIS PLAN FOR GEOCHEMICAL CHARACTERISATION

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MEMORANDUM

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From:	Paul Weber – Mine Waste Management
Date:	25 September 2023
Cc:	Hamish McLauchlan – Santana Minerals; Ryan Burgess – Hydro Geochem Group; Rachel Rait – Mine Waste Management
Document Number:	J-NZ0233-002-M-Rev0
Document Title:	Sampling and Analysis Plan for Geochemical Characterisation

Mine Waste Management Ltd (MWM) has been engaged by Santana Minerals Limited (Santana) to undertake an assessment of environmental geochemistry effects for the proposed Bendigo-Ophir Gold Project (the Project). As part of the assessment, it is proposed that laboratory testing will be undertaken on materials that will be generated by the Project such as waste rock, ore, low grade ore (LGO), tailings, and legacy materials.

The purpose of the work is to understand the environmental geochemistry risks for waste rock and tailings including:

- Quantify the acidity generating characteristics and likely geochemical nature of the waste rock, LGO, ore, and tailings, and any geological and/or geochemical variations within these materials; and
- Determine the likely seepage/surface water quality that could be generated by these materials.

This memorandum describes the sample and analysis programme (SAP) that is required to provide data to understand the potential environmental geochemistry risks and to provide an explanation / justification of how samples were selected for the proposed analysis program.

BACKGROUND

Bendigo-Ophir mineral resource covers 251 square kilometres in the Central Otago goldfields and has a resource estimate of 3 Moz gold @ 1.9g/t (0.25 g/t Au lower cut-off grade, no top-cut), which is based on drill results to December 2022. The Bendigo-Ophir resources occur in 4 deposits (Come in Time (CIT), Rise and Shine (RAS), Shreks (SHR), Shreks SE (SRE) that are inferred to extend in a northerly direction within the Rise and Shine Shear Zone (RSSZ), which hosts gold mineralisation over a recognised strike length of >20 km (Figure 1).

Mine Plan

The mine plan for the Project, focusing on RAS is still advancing. For the purposes of this assessment, it is assumed to include the following components:

- An open pit, targeting the Rise and Shine deposit.

- A waste rock storage facility (WRS) / engineered landform (ELF) with an associated seepage/run-off water retention pond.
- Plant and processing area, where cyanide heap leaching may be used as part of the ore recovery process.
- A tailings storage facility (TSF) with an associated seepage collection system.
- A LGO stockpile area that is likely to be a long-term facility.
- An ore stockpile area.
- And other ancillary support services / structures (e.g., roads, water management infrastructure, etc)

Additional deposits (i.e., Come in Time, Shreks, Shreks SE) may be developed as part of future mine plans. A final decision has not been made on whether to proceed with these as part of the proposed mine plan. This SAP focuses on RAS.

Geology

The regional geology of Central Otago goldfields surrounding the Project consists of chlorite and biotite schists. RSSZ, a late metamorphic deformation zone (Cox et al., 2006), runs through the project area. The RSSZ occurs only in the footwall TZ4[1] schist in close association with the Thomsons Gorge Fault TGF), which cuts and truncates the Rise & Shine Shear Zone against the unmineralised TZ3[2] schist (Cox et al., 2006). There is no mineralisation associated with the TGF itself, and Au mineralisation had ceased by the time of formation of the TGF (c. 100 Ma) (Cox et al., 2006).

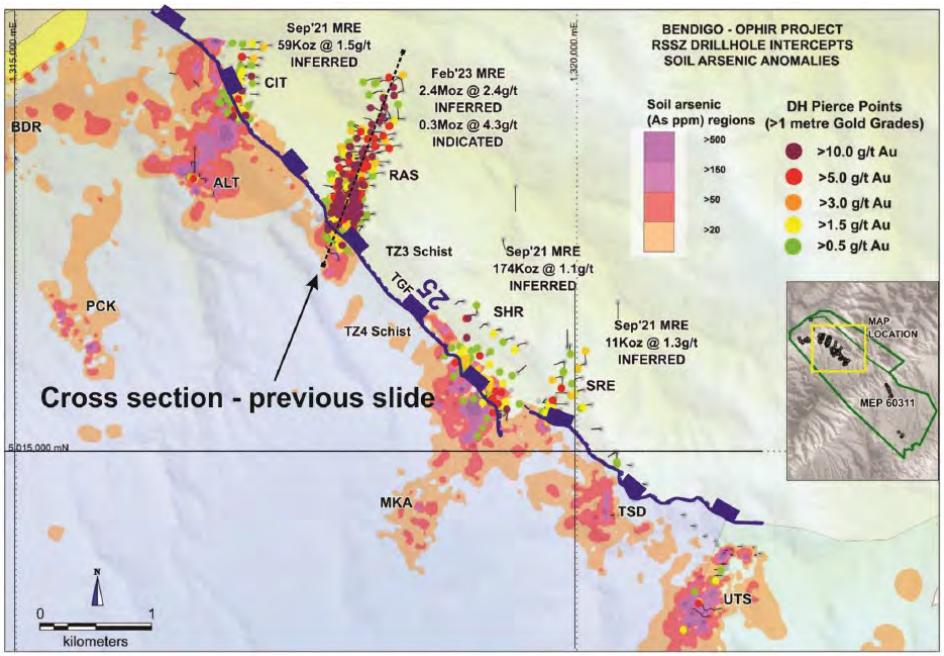


Figure 1. Plain view of the Bendigo-Ophir mineral deposits.

Source: Allibone (2023)

[1] *TZ4 = Textural Zone 4*

[2] *TZ3 = Textural Zone 3*

The hanging wall consists of the TZ3 chlorite zone greenschist facies schist, and the footwall is the TZ4 garnet-biotite-albite greenschist facies schist (Mortimer, 2000; Turnbull, 2000). Previous studies in the project area indicated most mineralisation was identified in the TZ4 zone, including pyrite, arsenopyrite, and gold (Cox et al., 2006). TZ3 schist has low or zero mineralisation. Field observations by Santana note that the fault zone is a visual boundary in core samples indicated by significant lithological changes in the RSSZ above TZ4.

Santana noted that TZ3 is higher in carbon compared to TZ4. Allibone (2023) notes the presence of ankerite and siderite alteration within the RSSZ as well as arsenopyrite, galena, and sphalerite where:

- Fe-bearing carbonates can compromise ANC tests and generate Fe-rich drainage from NAF materials; and
- The identified sulfide minerals could contribute to the risk of neutral metalliferous drainage (NMD) elevated in As, Fe, Pb, and Zn.

Such issues need to be considered as part of the SAP and additional testing is recommended to understand these hazards.

SAMPLE AND ANALYSIS PLAN

Sample Analysis

The following environmental geochemistry laboratory testing will be undertaken:

Table 1: Proposed analyses for the samples

PHASE	TEST DESCRIPTION	NUMBER OF SAMPLES						
		ORE	LOW-GRADE ORE[1]	WASTE ROCK	TAILINGS	CRM	HISTORIC MATERIAL	TOTAL
PHASE 1	Paste pH/EC (1:2)	5	5	37[3]	5	3	5	60
	Rinse pH/EC (1:5)[4]	5	5	37	5	3	5	60
	ANC	5	5	37[3]	5	3	5	60
	Total Sulfur / Total C	5	5	37[3]	5	3	5	60
	NAG (pH and acidity)	5	5	37[3]	5	-	5	60
	pXRF[2]	5	5	37[3]	5	-	5	60
PHASE 2	Shake Flask Extraction	1	1	10	3	-	5	20
	Column Leach (12 months)	-	1	3	2	-	-	6
	Detailed Mineralogy	1	1	5	3	-	2	12

1. Where LGO is defined as 0.25 – <0.5 g/t.

2. pXRF will be completed by Santana (on sample pulps).

3. Thirteen samples are from Drillhole MDD145, which has already been analysed by SGS Westport (total C pending).

4. Rinse pH to be undertaken on primary crush material rather than pulps.

Phase 1 Analysis Program

The Phase 1 program is designed to provide supporting geochemical data to understand the geochemical nature of the materials (e.g., PAF[3] or NAF[4]).

Acid base accounting (ABA) and NAG testing: It is proposed that a comprehensive suite of tests be undertaken in Phase 1. This will include paste pH/EC, and rinse pH/EC, ANC, total S, NAG pH, and NAG acidity as detailed by AMIRA (2002).

It is understood that pXRF testing is being undertaken on sample pulps by Santana. pXRF should be undertaken on all samples tested as part of this scope of works, but it is not included in this SAP This data should be assessed to determine the geochemical abundance index (GAI) to understand potential elevated metals (e.g., Forstner et al., 1993). This is a general approach used to understand source hazard risk, where the hazards are assessed by column leach testing / shake flask testing to understand mobility.

All samples should be characterised by these methods, which is in alignment with other projects in the region. The samples that are proposed to be analysed are shown in Attachment A. The sample numbers are provided as a preliminary number until mine plans /geological models are finalised. Further testing might be proposed at a later date to ensure sufficient sample numbers and also spatial distribution.

The ore and tailing analysis plan should:

- Use the same sample interval for testing of the ore and the tailings.
- However, the tailings sample used should correspond to the portion of rock that has undergone a BLEG analysis (Bulk Leachate Extractable Gold), thus being the best representation of the tailings' composition.

The collection of historic materials is pending, and these samples need to be assessed at a later date.

QA/QC: The laboratory is expected to conduct its own quality assurance and quality control (QA/QC) procedures. In addition to this, we will include three Certified Reference Materials (CRM) in the analysis for ABA tests to ensure accuracy of the laboratory data. See Attachment C for further information.

Phase 1 results will be reviewed to select samples for Phase 2 testing, to support an informed analysis approach for the more complex and costly testing procedures.

Phase 2 Analysis Program

Shake flask testing: It is proposed to undertake shake flask testing (deionised water) to confirm what contaminants are mobile from materials. This will provide an analogue source term that can used in the water model, with application to ore, LGO, waste rock, tailings, and historic materials. The testing programme proposed is provided in Table 1.

[3] *PAF = Potentially acid forming*
[4] *NAF = Non-acid forming*

Oxic shake-flask testing is proposed. Anoxic testing is also proposed on tailings samples to understand any mobility of arsenic under reducing conditions. It may be better to do these tests at a bespoke laboratory.

Column leach testing (Phase 2): it is proposed that 6 column leach tests (AMIRA, 2002) will be undertaken (12 months) to understand water quality trends. The waste rock samples will be obtained from the footwall, hanging wall, and RSSZ materials that are available.

Detailed mineralogy will be undertaken on a total of 12 samples as shown in Table 1. This will include analysis by XRD and mineral composition using SEM EDS. Such testing will confirm the proportions of minerals and also their composition (e.g., Fe content in ankerite).

Sample Selection Rationale

Santana has supplied a drillhole database containing samples available for geochemical characterisation. These samples, listed in a spreadsheet (MATGOL storage 15.6.23.xlsx), are part of a QA/QC program and are specifically derived from the mineralized zone, encompassing the RSSZ and TZ4 geological units. For sample selection purposes, it is assumed that previously tested samples from HoleID MDD145 are also accessible, as these represent the only samples from the hanging wall (TZ3). The following criteria was considered to determine the selection of samples:

- Spatial distribution of the samples.
- Arsenic and sulfur contents where available.
- Geological units.
- Au concentration and range classification for: ore, low-grade ore, and waste rock.

A representative cross section of the RAS project is depicted in Figure 2. Here, the hanging wall consists of the TZ3 geological unit situated above the mineralised area (TZ4 and the RSSZ). Depending on the mining method employed, particularly in the case of an open-pit mining approach, the TZ3 geological unit is expected to constitute a significant portion of the waste rock.

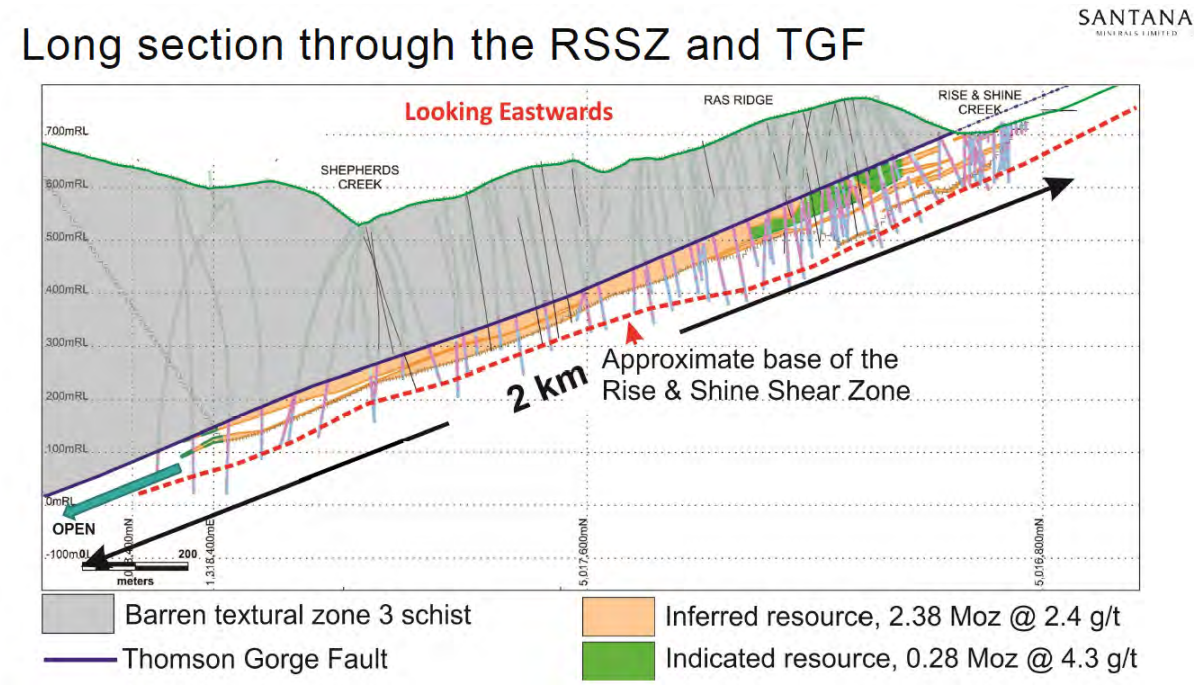


Figure 2. Cross section of the RAS mineral deposit.

Source: Allibone (2023)

Some of the samples that are available were additionally analysed using pXRF (136 samples) and Total Sulfur by LECO (33 samples), revealing a positive correlation between Arsenic (As) and Sulfur (S) in the RSSZ rocks (Figure 3). Based on the sample population available, samples for geochemical testing were selected based on:

- As and S contents within the rock. The distribution of As and S, as well as the corresponding classification, is presented in Attachment B.
- Spatial distribution of samples was also considered (Figure 5, Figure 5).

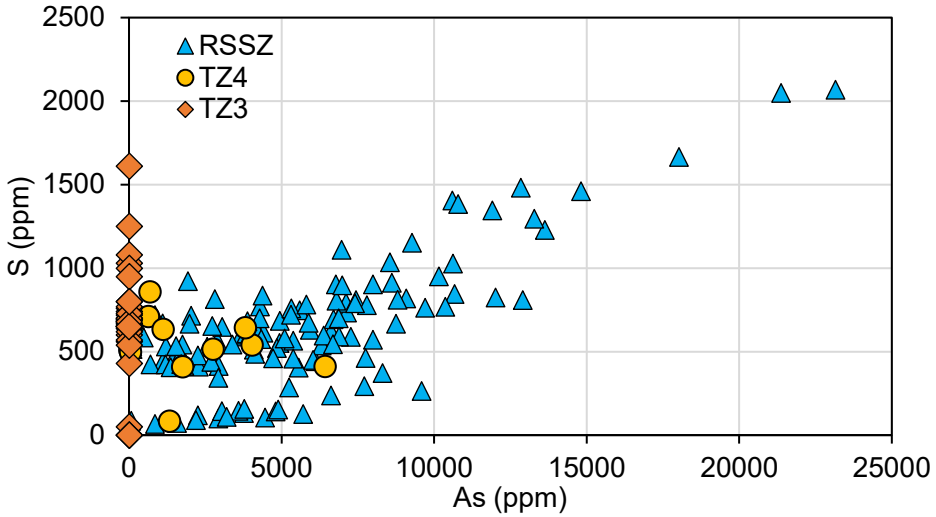


Figure 3. Arsenic and sulfur relationships.

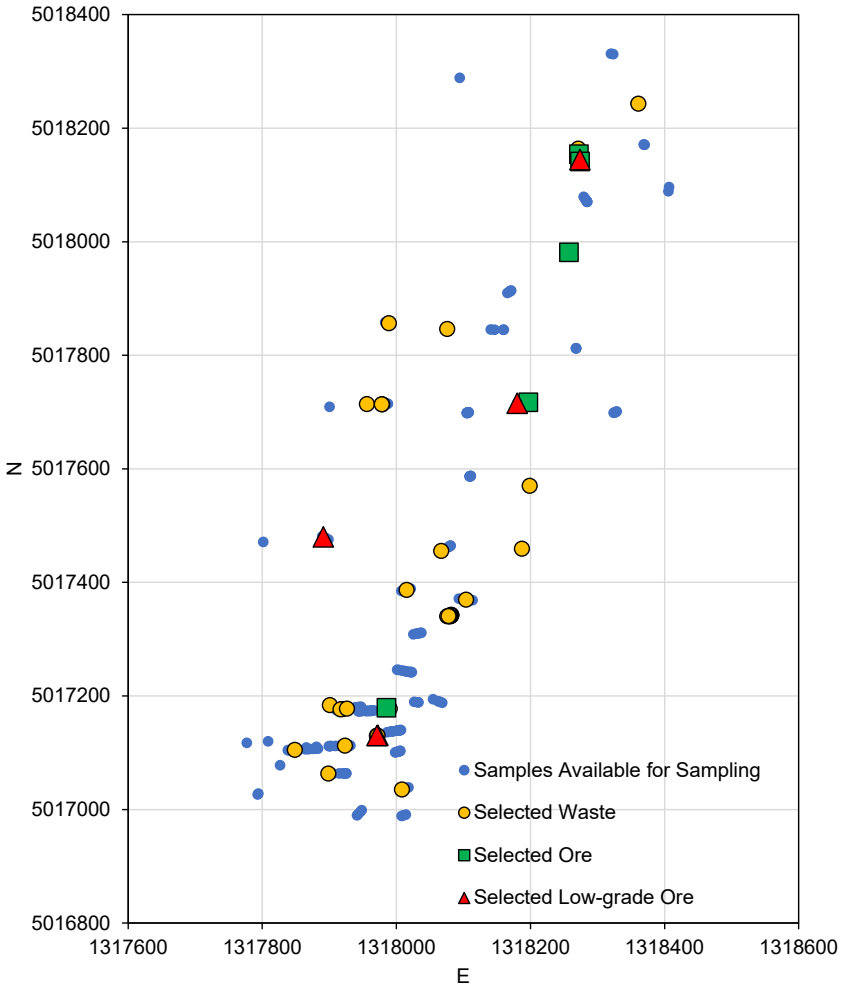


Figure 4. Plan view of the selected samples

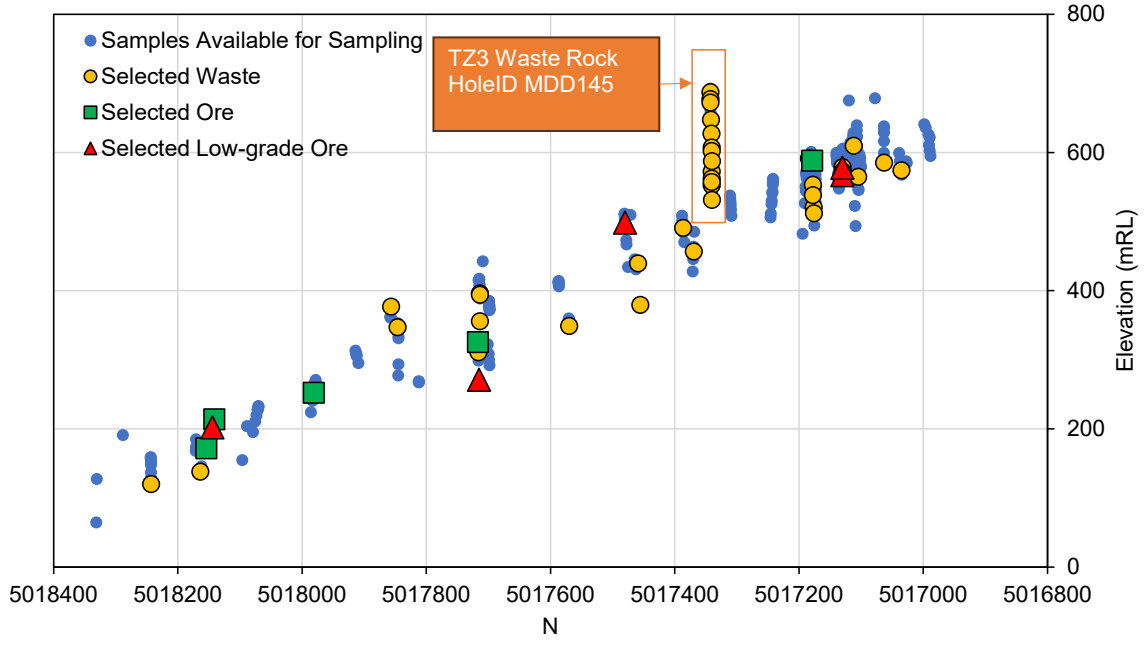


Figure 5. Lateral view of the selected samples

SUMMARY

The samples proposed for testing are provided in Attachment A. Attachment B provides an explanation of arsenic and sulfur distribution and how this was used to developed categories (high to low concentrations) for sample selection.

CLOSING REMARKS

Please do not hesitate to contact Paul Weber. at 027 294 5181 or paul.weber@minewaste.com.au should you wish to discuss this memorandum in greater detail.

Attachments: Attachment A – List of selected samples for testing
Attachment B – Arsenic and sulfur contents and categories
Attachment C – Certified Reference Materials for acid base accounting

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Allibone, A., 2023. Mineralisation at the Rise and Shine Gold deposit, Bendigo District. Presentation for the Australasian Institute of Mining and Metallurgy (AusIMM) 2023 New Zealand Branch Conference, August 2023, Christchurch, New Zealand. 19 pp. https://santanaminerals.com/investors/reports.

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ATTACHMENT A –SELECTED SAMPLES FOR GEOCHEMICAL TESTING

n	SAMPLEID	HOLEID	FROM	TO	Au_pref_ppm	As_pref_ppm	TOTAL S (ppm)	CLASSIFICATION	GeolUnit	S CATEGORY[2]	As CATEGORY[2]
1	MG20754	MDD081	211	212	0.44	885		Low-grade Ore	RSSZ	NA	As2
2	MG20740	MDD081	200	201	0.47	2,396		Low-grade Ore	RSSZ	NA	As3
3	MG12535	MDD044	369	370	0.37	1,818	414	Low-grade Ore	RSSZ	S2	As3
4	MG15521	MDD048R	219	220	0.42	185		Low-grade Ore	TZ4	NA	As2
5	MG11578	MDD021R	355	356	0.45	678	860	Low-grade Ore	TZ4	S3	As2
6	MG16760	MDD080	184	185	2.69	3,762	133	Ore/Tailings	RSSZ	S1	As3
7	MG12577	MDD044	401	402	2.78	233	648	Ore/Tailings	RSSZ	S2	As2
8	MG12518	MDD044	357	358	28.46	7,443	809	Ore/Tailings	RSSZ	S3	As3
9	MG12196	MDD031	301	302	2.49	23,154	2069	Ore/Tailings	RSSZ	S4	As4
10	MG11512	MDD021R	298	299	1.09	2,750	516	Ore/Tailings	TZ4	S2	As3
11	MG13343	MDD028	213	214	0.06	11		Waste	RSSZ	NA	As1
12	MG13584	MDD034	222	223	0.07	370		Waste	RSSZ	NA	As2
13	MG14410	MDD061	176	177	0.2	965		Waste	RSSZ	NA	As2
14	MG15086	MDD034R	269	270	0.2	2,681		Waste	RSSZ	NA	As3
15	MG16971	MDD083	239	240	0.01	75	88	Waste	RSSZ	S1	As1
16	MG18148	MDD082	177	178	0.09	851	67	Waste	RSSZ	S1	As2
17	MG16810	MDD080	219	220	0.18	1,569	73	Waste	RSSZ	S1	As3
18	MG20739	MDD081	199	200	0.14	2,317		Waste	RSSZ	NA	As3
19	MG20748	MDD081	205	206	0.21	3,477		Waste	RSSZ	NA	As3
20	MG16985	MDD083	248	249	0.24	4,802	143	Waste	RSSZ	S1	As3
21	MG27052	MDD084	202	203	0.19	3,043	144	Waste	RSSZ	S1	As3
22	MG12618	MDD044	436	437	0.22	226	673	Waste	RSSZ	S2	As2
23	MG17008	MDD050	267	268	0.03	117	517	Waste	RSSZ	S2	As2
24	MG11792	MDD023R	334	335	0.22	1,097	438	Waste	RSSZ	S2	As3
25	MG13610	MDD033	253	254	0.12	1,200	425	Waste	RSSZ	S2	As3
26	MG13586	MDD034	224	225	0.2	3,391	543	Waste	RSSZ	S2	As3
27	MG15307	MDD042	201	202	0.17	2,812	816	Waste	RSSZ	S3	As3
28	MG19793	MDD145	5	6		9	<50	Waste	TZ3	NA	As1
29	MG19795	MDD145	15	16		10	<50	Waste	TZ3	NA	As1
30	MG19796	MDD145	20	21		8	430	Waste	TZ3	S2	As1
31	MG19801	MDD145	45	46		7	690	Waste	TZ3	S2	As1

n	SAMPLEID	HOLEID	FROM	TO	Au_pref_ppm	As_pref_ppm	TOTAL S (ppm)	CLASSIFICATION	GeolUnit	S CATEGORY[2]	As CATEGORY[2]
32	MG19805	MDD145	65	66		11	570	Waste	TZ3	S2	As1
33	MG19810	MDD145	85	86		11	690	Waste	TZ3	S2	As1
34	MG19817	MDD145	120	121		10	730	Waste	TZ3	S2	As1
35	MG19811	MDD145	90	91		10	800	Waste	TZ3	S3	As1
36	MG19814	MDD145	105	106		11	1250	Waste	TZ3	S3	As1
37	MG19819	MDD145	130	131		11	1080	Waste	TZ3	S3	As1
38	MG19821	MDD145	140	141		10	1000	Waste	TZ3	S3	As1
39	MG19825	MDD145	161	162		6	800	Waste	TZ3	S3	As1
40	MG19820	MDD145	135	136		11	1610	Waste	TZ3	S4	As1
41	MG11251	MDD019R	222	223	0.1	18		Waste	TZ4	NA	As1
42	MG11454	MDD020	274	275	0.24	78		Waste	TZ4	NA	As1
43	MG11527	MDD021R	313	314	0.23	448		Waste	TZ4	NA	As2
44	MG16057	MDD056	228	229	0.21	433		Waste	TZ4	NA	As2
45	MG16948	MDD083	220	221	0.18	205		Waste	TZ4	NA	As2
46	MG17636	MDD066	520	521	0.1	19	513	Waste	TZ4	S2	As1
47	MG20383	MDD072	216	217	0.01	40	499	Waste	TZ4	S2	As1

1. – Note: Ore samples are also used as samples for the assessment of tailings (e.g., n= 47 + 5 = 52); historic materials (n=5) and the CRM (n=3) are not included in this table.

2. – Sulfur and arsenic categories are explained in Attachment B.

ATTACHMENT B – ARSENIC AND SULFUR CONTENTS AND CATEGORIES

Data Analysis: pXRF

According to arsenic pXRF analysis of the samples provided, the following can be drawn for each relevant geological unit:

- TZ3: from a group of 360 samples, 98.9 % are below 42 ppm and only 3 are above 100 ppm. (117 – 1,333 ppm).
- TZ4: from a group of 8,008 samples, 36% of the samples are above 100 ppm, 5.5% are above 1,000 ppm and 3 samples are above 10,000 ppm up to 21,000 ppm
- RSSZ: from a group 6,583 samples, 84% are above 100 ppm, almost half of the samples (49%) are above 1,000 ppm and 181 samples (2.75%) are above 10,000 ppm up to 54,417 ppm.

In summary TZ3 is generally low As (<50 ppm) relative to the mineralised geological units (TZ4 and RSSZ). Arsenic content (as measured by pXRF) are shown as a Log_{10} plot in Figure 6. However, this geological unit is under sampled (given that it does not have any mineralisation) compared to the other two geological units. Further testing is recommended.

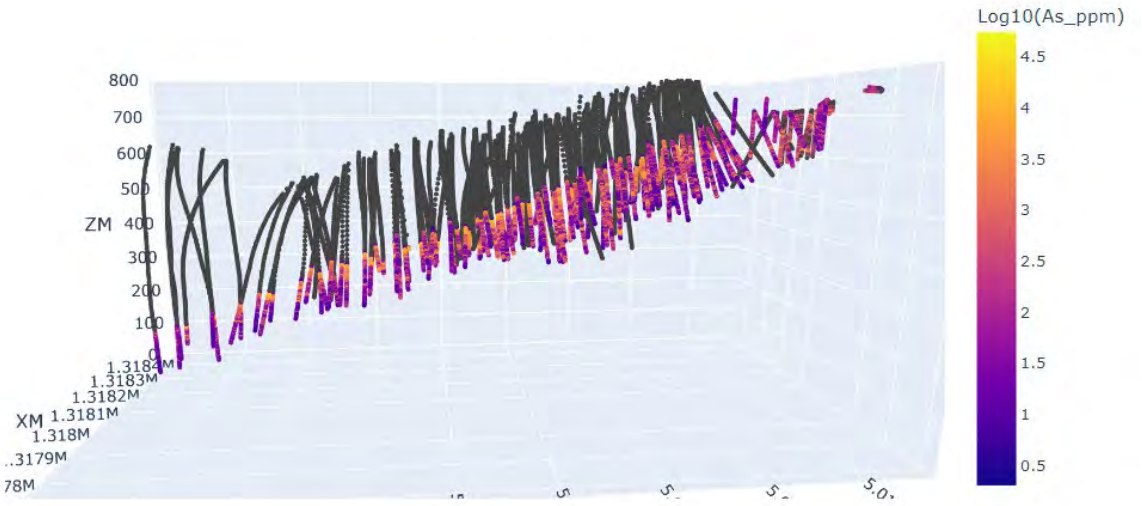


Figure 6. As concentrations Log_{10} for the RAS mineral deposit. (grey colour indicates no data available)

An analysis was undertaken based on the arsenic (As) and sulfur (S) contents to understand the cumulative distributions (Figure 7). This analysis supported the selection of samples for various material types.

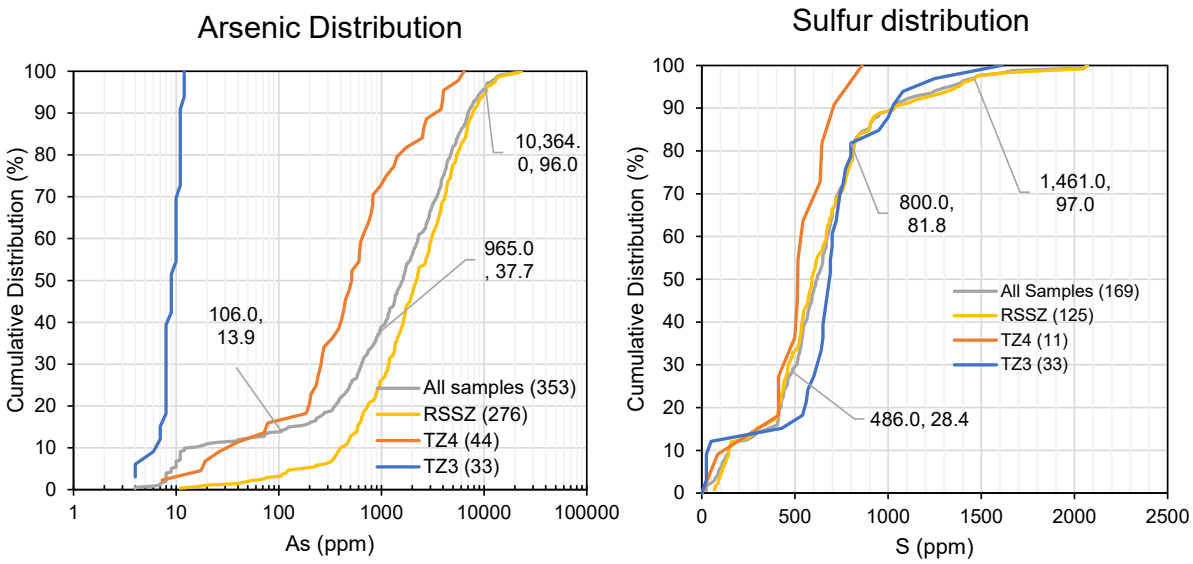


Figure 7. Arsenic and sulfur cumulative distributions.

Based on the total sample population, approximately 14% of the samples have arsenic (As) levels below 100 ppm, about 40% are below 1,000 ppm, and a significant proportion (96%) are below 10,000 ppm.

In regard to sulfur distribution, roughly 25% of the samples have sulfur levels below 400 ppm, while 85.9% are below 860 ppm, and a substantial proportion (97.4%) are below 1,483 ppm.

Arsenic and sulfur categories have been developed and are outlined in Table 2.

Table 2. Arsenic and sulfur categories

CATEGORY LEVEL	ARSENIC RANGE (ppm)	SULFUR RANGE (ppm)
1 – Low	0 - 100	0 - 400
2 – Moderate	100 - 1,000	400 - 800
3 – High	1,000 - 10,000	800 - 1,400
4 – Very High	>10,000	>1,400

where the prefix As-1 refers to category 1 for arsenic; S-1 refers to category 1 for sulfur, etc

Sample Selection for Geochemical Testwork

The categories are used to assess the different material types for the samples selected as part of this SAP development (Table 3). In instances where no sulfur concentration information was available, 'NA[5]' was used instead.

Key observations include:

- RSSZ:
    - RSSZ rocks are mostly classified as ore.

[5] *Not available*

  - The most prevalent ore types are RSSZ-S2-As3 and RSSZ-NA-As3 (although no sulfur concentrations available).
  - Waste rock from the RSSZ typically ranges from As3 to As2, suggesting the potential for waste rock from RSSZ to have concentrations typically exceeding 100 and 1,000 ppm As.
  - As4 was only identified in ore samples in RSSZ, indicating that tailings could potentially exhibit high arsenic concentrations.

- TZ3:
  - The most common waste rock is TZ3-S2-As1 (n = 21).
  - All the TZ3 samples are classified as As1, however, it is recommended to have more samples tested from this unit, since the TZ3 represents a significant amount of waste rock, and the current sample set are only from one drillhole (MDD145).
- TZ4:
  - The majority of the TZ4 samples are classified as As2 (n =25) followed by As3 (n =12) and As1 (n=7).
  - Most of the samples are classified as S2 (n=9) and 1 sample as S1 and 1 as S3.

It's important to note that the analysed samples are a subset of samples selected for QA/QC purposes for determining ore resources (excluding MDD145). Therefore, the samples may not be representative of the overall composition of the RAS mineral deposit. Consequently, caution is advised when interpreting results, as they specifically relate to this subset of samples.

Table 3. Material Categories for As and S.

GEOLOGICAL UNIT – AS CATEGORY – S CATEGORY	LOW-GRADE ORE	ORE	WASTE	GRAND TOTAL
RSSZ-NA-As1	2	1	3	6
RSSZ-NA-As2	9	37	10	56
RSSZ-NA-As3	17	62	11	90
RSSZ-S1-As1			1	1
RSSZ-S1-As2			1	1
RSSZ-S1-As3	2	13	3	18
RSSZ-S2-As1		1		1
RSSZ-S2-As2		5	2	7
RSSZ-S2-As3	9	50	7	66
RSSZ-S2-As4		1		1
RSSZ-S3-As3		13	1	14
RSSZ-S3-As4		9		9
RSSZ-S4-As4		6		6
TZ3-NA-As1			3	3
TZ3-S1-As1			1	1
TZ3-S2-As1			21	21

GEOLOGICAL UNIT – AS CATEGORY – S CATEGORY	LOW-GRADE ORE	ORE	WASTE	GRAND TOTAL
TZ3-S3-As1			7	7
TZ3-S4-As1			1	1
TZ4-NA-As1	1	1	3	5
TZ4-NA-As2	6	10	7	23
TZ4-NA-As3		5		5
TZ4-S1-As3	1			1
TZ4-S2-As1			2	2
TZ4-S2-As2		1		1
TZ4-S2-As3	2	4		6
TZ4-S3-As2	1			1
Grand Total	**50**	**219**	**84**	**353**

ATTACHMENT C – CERTIFIED REFERENCE MATERIALS FOR ACID BASE ACCOUNTING

MINE WASTE MANAGEMENT
GREENROAD GROUP

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MEMORANDUM

Document Title:	Certified Reference Materials for acid base accounting
Document Rev:	Rev0
Date	18 September 2023

The potential hazard for acid metalliferous drainage (AMD) typically involves laboratory based static geochemical testing, which includes acid base accounting (ABA) analyses such as acid neutralisation capacity (ANC), maximum potential acidity (MPA) and net acid generating (NAG) tests. These tests are regularly carried out by both mine sites and commercial laboratories. Such testing should include the use of certified reference materials (CRM) as one aspect of the quality assurance / quality control (QA/QC) programme.

CRM are one tool for assessing the accuracy of analyses conducted by laboratories. However, there is an acknowledgment that the development of certified reference materials requires careful consideration to ensure material homogeneity and material stability (Bleeze et al., 2022).

This memorandum provides background information on the use of certified reference materials for QA/QC purposes.

GEOSTATS REFERENCE MATERIAL

Geostats Pty Ltd (Geostats) (Perth, Western Australia) provides a range of CRM. The CRM possess a nominal 40-micron particle size and are blended to achieve maximum homogeneity within the specific sample matrix. All CRM are tested thoroughly in the Geostats bi-annual laboratory survey, which involves assaying by multiple laboratories. Results are compiled into a comprehensive statistical report for each CRM. Table 1 provides a list of the CRM that has been supplied by Geostats and the referenced parameters.

Table 1. Certified reference materials.

PRODUCT CODE	REFERENCED PARAMETER (%)	
GS310-10	Total S	Total C
GS320-10	Total S	Total C
GS917-4	Total S	Total C
GS922-8	Total S	Total C

Source: Geostats Pty Ltd List of certified reference materials (2023).

Table 3 summarises the analysis data for the CRM samples shown in Table 1 as provided by Geostats. Certification can be found in Attachment A.

Interlaboratory Testing

A study conducted by Bleeze et al. (2022) assessed the suitability of six Geostats CRM for ANC and NAG analysis (this work can be found in Attachment B). Two interlaboratory test rounds were conducted on the following CRM: GS312-8, GS310-10, GS918-6, GS911-8, GS917-4, and GS312-3.

The first round of interlaboratory testing requested laboratories to use their usual methods. A second round of testing using the same set of samples, required the participating laboratories to use supplied standardised methods (Bleeze et al., 2022). Results indicated that irrespective of whether participating laboratories used their in-house methods, or the standardised methods, the mean ANC and NAGpH values were the same for both rounds of interlaboratory testing.

Table 2 shows the certification outcomes for ANC and NAGpH. Samples included ores, low-grade ores, and other mine materials covering a range of ANC (11.6 – 516 kg H_2SO_4/t) and NAGpH (3.4 – 8.3) values.

Overall, the results showed that interlaboratory reproducibility was favourable, allowing for certified ANC or NAGpH values to be developed. Hence, these materials can provide confidence in laboratory methodologies, which is essential for informed decision making processes in regards to the potential for AMD.

Table 2. ANC and NAGpH reference material properties.

SAMPLE CODE	REFERENCED PARAMETER	UNITS	REFERENCE VALUE	CERTIFICATION LEVEL
GS312-8	ANC	kg H_2SO_4/t	11.6	Reference Value
GS310-10	ANC	kg H_2SO_4/t	77.8	Certified Value
GS918-6	ANC	kg H_2SO_4/t	516	Certified Value
GS911-8	NAGpH	pH unit	8.29	Certified Value
GS917-4	NAGpH	pH unit	3.43	Certified Value
GS312-3	NAGpH	pH unit	4.48	Certified Value

Source: Bleeze et al. (2022).

Blue samples have been included in the summary table below, which were used for this project.

Summary

For reporting purposes, the Geostats data and Bleeze et al. (2022) data are presented in Table 3.

Table 3. Reference material properties - summary

SAMPLE CODE	SULFUR (MEAN)	CARBON (MEAN)	ANC	NAGpH
	wt%	wt%	kg H_2SO_4/t	pH units
GS310-10	0.27	1.08	77.8	-
GS320-10	0.27	0.59	-	-
GS917-4	0.36	0.05	-	3.43
GS922-8	0.08	0.45	-	-

Table 4. Certified reference material.

PRODUCT CODE	SULFUR STATISTICS (%)				CARBON STATISTICS (%)				DESCRIPTION OF SOURCE / MATRIX	COLOUR DESIGNATION
	Mean	Stdev	Count	95% CI	Mean	Stdev	Count	95% CI		
GS310-10[1]	0.27	0.03	64	+/- 0.008	1.08	0.06	40	+/- 0.019	Copper gold ore	Very light gray
GS320-10[2]	0.27	0.02	95	+/- 0.004	0.59	0.03	75	+/- 0.007	High grade gold sulfide	Light gray
GS917-4[3]	0.36	0.02	90	+/- 0.004	0.05	0.01	68	+/- 0.004	Low grade transitional ore ex Laos	Yellowish gray
GS922-8[4]	0.08	0.02	80	+/- 0.004	0.45	0.03	69	+/- 0.007	Oxide andesite, Pilbara, WA	Moderate orange pink

Source: Geostats Pty Ltd List of certified reference materials (2023).

Certified certificate date:

1 - April-2010.

2 - April-2020.

3 - October-2017.

4 - October-2022.

CLOSING REMARKS

Please do not hesitate to contact Paul Weber at 027 294 5181 or paul.weber@minewaste.com.au should you wish to discuss this memorandum in greater detail.

Attachments: Attachment A – Certified Reference Material Certificates
Attachment B – Interlaboratory Testing Programme Paper

REFERENCES

Bleeze, B., Qian, G., Romero, S., Stewart, W., and Schumann, R., 2022. Development of Certified Reference Materials for ANC and NAG Test Methods. 12th ICARD. 18-24 September 2022.

Geostats (2023). Information retrieved from http://www.geostats.com.au/. Date accessed: 21 August 2023.

ATTACHMENT A – CERTIFIED REFERENCE MATERIAL CERTIFICATES

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Sulphur and Carbon Reference Material Product Code

GS310-10

Certified Control Values

Sulphur

Sulphur Grade	0.27 %
Standard Deviation	0.03 %
Confidence Interval	+/- 0.008 %

Carbon

Carbon Grade	1.08 %
Standard Deviation	0.06 %
Confidence Interval	+/- 0.019 %



CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the April-2010 round robin. A total of 64 sulphur results and 40 carbon results were used to certify this material.

Material Description

This material is described as a Copper gold ore.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic or foil lined pulp packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

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Phone : +61 8 9314 2566, Fax : +61 8 9314 3699
e-mail : pjh@geostats.com.au, srr@geostats.com.au
Website http://www.geostats.com.au

GS310-10

Geostats Pty Ltd, Certified Sulphur and Carbon Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Sulphur and Carbon Reference Material Product Code

GS320-10

Certified Control Values

Sulphur

Sulphur Grade	0.27 %
Standard Deviation	0.02 %
Confidence Interval	+/- 0.004 %

Carbon

Carbon Grade	0.59 %
Standard Deviation	0.03 %
Confidence Interval	+/- 0.007 %



CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the April-2020 round robin. A total of 95 sulphur results and 75 carbon results were used to certify this material.

Material Description

This material is described as a High grade gold sulphide.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic or foil lined pulp packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

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Website: www.geostats.com.au

GS320-10

Geostats Pty Ltd, Certified Sulphur and Carbon Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Sulphur and Carbon Reference Material Product Code

GS917-4

Certified Control Values

Sulphur

Sulphur Grade	0.36 %
Standard Deviation	0.02 %
Confidence Interval	+/- 0.004 %

Carbon

Carbon Grade	0.05 %
Standard Deviation	0.01 %
Confidence Interval	+/- 0.004 %



CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the October-2017 round robin. A total of 90 sulphur results and 68 carbon results were used to certify this material.

Material Description

This material is described as a Low grade transitional ore ex Laos.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic or foil lined pulp packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

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GS917-4

Geostats Pty Ltd, Certified Sulphur and Carbon Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Sulphur and Carbon Reference Material Product Code

GS922-8

Certified Control Values

Sulphur

Sulphur Grade	0.08 %
Standard Deviation	0.02 %
Confidence Interval	+/- 0.004 %

Carbon

Carbon Grade	0.45 %
Standard Deviation	0.03 %
Confidence Interval	+/- 0.007 %



CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the October-2022 round robin. A total of 80 sulphur results and 69 carbon results were used to certify this material.

Material Description

This material is described as an Oxide andesite, Pilbara, WA.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic or foil lined pulp packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

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Website: www.geostats.com.au

GS922-8

Geostats Pty Ltd, Certified Sulphur and Carbon Reference Material, Product Code:

ATTACHMENT B – INTERLABORATORY TESTING PROGRAMME PAPER

Development of Certified Reference Materials for ANC and NAG Test Methods

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ABSTRACT

Current practice in determining potential liability from acid rock drainage (ARD) usually involves static geochemical testing, which frequently includes acid neutralisation capacity (ANC) and net acid generating (NAG) tests. The tests are routinely conducted by mine site and commercial laboratories providing services to the mining industry and consultants. However, unlike many analytical methods, ANC and NAG tests often lack appropriate quality control (QC) measures, including routine analysis of reference materials.

There have been numerous methods or modifications for the determination of ANC. Each modification to the procedure may result in a different measured ANC value for a particular sample. While it appears there is less variation in the methods used for the NAG test, there are numerous factors which may affect the result and lead to variations between laboratories. These circumstances suggest that reference materials should be developed and routinely used for QC purposes in ANC and NAG testing.

In this study, we examined commercially available reference materials to see if they would be suitable for ANC and NAG analysis. Samples included ores, low-grade ores and other mine materials covering a range of ANC (12 – 516 kg H_2SO_4/t) or NAGpH (3.4 – 8.3) values. Two interlaboratory test programmes were conducted to assess their suitability as reference materials for ANC and NAG analysis. The first round of interlaboratory testing requested laboratories to use their usual methods. A second round of testing using the same set of samples, required the participating laboratories to use supplied "standardised" methods.

The results showed that whether participating laboratories used their in-house methods, or the standardised methods, mean ANC and NAGpH values were the same for both rounds of interlaboratory testing. However, when all laboratories used the same test methods, the variation of results was reduced.

The test programme enabled us to apply certified NAGpH values (3.4, 4.5 and 8.3) and certified ANC values (78 and 516 kg H_2SO_4/t) to five reference materials. Results for a sixth sample gave higher interlaboratory variation in the measured ANC and provided a reference value of 12 kg H2SO4/t as guide, but the variation (RSD 23%) was too high to certify this value.

These certified reference materials (CRM) will be available for laboratories undertaking ANC and NAG tests to improve QC protocols and increase end user confidence in the results from laboratories using these materials.

Keywords: ANC; NAG, interlaboratory testing, certified reference materials

1.0 INTRODUCTION

The development of any mining project will invariably include an assessment of the environmental impact of the project. A major component of this assessment is to determine if any acid rock drainage (ARD) is likely to result from the project and to investigate management options. Current practice in determining ARD liability usually includes static geochemical tests, which essentially assess the balance between potential acid generating processes in materials (waste rock, ore and tailings) handled during the mining/processing operations and the acid neutralising potential of these materials.

A number of static geochemical test methods are routinely used to assess this balance between acid generating and acid neutralising capacity, including acid neutralisation capacity (ANC), or neutralising potential (NP), and the net acid generating (NAG) test. These methods are now widely used by mining operations and consultants for ARD assessment. The tests are routinely conducted by mine site laboratories, and commercial laboratories providing services to the mining industry and consultants. Additionally, regulatory bodies frequently recommend the use of these methods as a part of any ARD assessment, further broadening their use by the industry.

A number of methods have been proposed over the years to assess the ANC of mine rock samples. Unlike the concentration of a particular element in a sample, e.g., total sulphur content, the measured neutralising capacity may vary, depending on how the measurement was conducted. Laboratory analyses of ANC should be viewed as a guide to the magnitude of the effective acid neutralisation potential rather than a precise and accurate measurement. Consequently, there have been numerous methods or modifications of various methods reported in the literature for the determination of ANC. Each modification to the procedure is likely to result in a different measured ANC value for a particular sample. Consequently, laboratories and consultants often make errors in analysis and interpretation of the results. The most common error made in the Sobek or modified Sobek ANC test is the incorrect addition of acid, usually because of improper interpretation of the Fizz test (Price 2009). There may also be problems with the relationship between laboratory ANC measurements and effective neutralising potential if different methods are used for different phases of the ARD programme.

Unlike ANC tests, reported methods for NAG testing appear to be restricted to that specified in the ARD Test Handbook (AMIRA 2002). Despite the uniformity of the method used for evaluation of NAG, several authors have identified areas of concern about the reproducibility of the measurement. Charles et al. 2015 noted that for samples with excess of carbonate, very high pH can be measured post boil often 1.5 – 2 pH units above the pre-boil pH. Results showed that any inconsistency in the timing of pH measurement could change the NAGpH

value for this type of sample. The authors also noted that the change in pH could also impact the solubility of certain elements, potentially affecting results of NAG liquor analysis.

Parbhaker-Fox et al. 2018 examined the NAGpH test using a number of samples from Savage River mine, Tasmania. They examined several variables in the test and how they affect the final NAGpH value. Variables included reaction time, heating time, heating temperature, cooling time and peroxide strength. They noted all these factors can affect the final NAGpH. They also recommended that a standard reference material should be developed and used for QC purposes during NAGpH testing.

These studies suggest that both the ANC and NAG procedures used to obtain any set of reported results need to be described in some detail to enable users to fully interpret results. They also suggest that reference materials covering a range of ANC and NAG values and based on specific and detailed methods, would be useful to enable laboratories to develop appropriate QC procedures which are currently lacking for many ARD methods.

This paper describes results from a research programme designed to develop method specific reference standards for ANC and NAG test methods which cover the range of ANC and NAG values and material types required by laboratories undertaking ARD geochemical analyses.

2.0 METHODOLOGY

2.1 Project Outline

It is generally recognised that important aspects of development of reference materials which should be considered are characterisation of material homogeneity, material stability and determination of reference values, usually through interlaboratory studies (Ellison et al. 2001). To meet these criteria, it was thought prudent to investigate the use of existing reference materials which had demonstrated homogeneity and stability, so that the programme could progress immediately to the interlaboratory study stage. To this end, reference materials available through Geostats Pty Ltd (Perth Western Australia), which had been certified for Total S and Total C content, and which represented relevant matrices for ARD characterisation i.e., mining ores and rock, were selected for use in development of ARD reference materials.

The process of development of reference materials for ANC and NAG testing was undertaken using the following steps:

1. Twelve certified reference materials were selected from the Geostats catalogue based on Total S and C values to cover the range of likely ANC and NAGpH values required. These materials were characterised (ANC, NAG, Quantitative X-ray Diffraction (QXRD), multi-element bulk assay) and from these results, six were selected for interlaboratory testing.
2. Round 1 interlaboratory study using in-house methods.
3. Analysis of Round 1 interlaboratory study including variations in the methods employed.

4. Analysis of parameters in ANC and NAG test methods (sensitivity analysis) to assess sources of variability in Round 1 results.
5. Development of "standardised" methods based on the results of sensitivity analysis.
6. Round 2 interlaboratory study using "standardised" methods.
7. Analysis of results to assign reference values.

2.2 Interlaboratory Test Programme

The interlaboratory test programme consisted of two rounds of testing, with inhouse methods used for the first round and standardised methods in the second. Each laboratory was provided with six different certified reference materials (CRM) supplied by Geostats. 60 samples (3 x 10 replicates for ANC testing and 3 x 10 replicates for NAG testing) were dispatched to each participating laboratory. The sample numbering schema was randomised. The participating laboratories comprised a combination of domestic and international commercial laboratories, all of which were assigned a reference number to ensure confidentiality when reporting results.

Statistical analysis was conducted on the results reported in both rounds of the interlaboratory testing. ANC results were converted to the universal unit of kg H_2SO_4/t prior to statistical analysis. The data was analysed using a one-way ANOVA function in Excel, to test for variation and significance in the data set. Outliers were identified using the inter-quartile range (IQR) with the upper and lower limits and confirmed through a GRUBBS analysis. Analysis included the calculation of the mean, standard deviation, 95% confidence interval (CI) and the relative standard deviation (RSD).

The inhouse methods reported by participating laboratories were used to highlight discrepancies between different methods and the potential impact of these differences on the final result. Round one had twelve laboratories participate, while round two had nine participating laboratories.

3.0 RESULTS AND DISCUSSION

3.1 Test Material Characterisation

Following testing of the 12 Geostats CRMs, 3 samples were selected which covered a range of ANC values (17 - 536 kg H_2SO_4/t) and another 3 samples which covered a range of NAGpH values (3.4 – 8.4) (Table 1). XRD analysis of GS312-8 showed the presence of trace calcite, supported by a total carbon assay of 0.03% (carbonate ANC = 2 kg H_2SO_4/t) suggesting that silicate minerals provide most of neutralising capacity in this material. XRD and carbon analysis indicate the majority of ANC in GS310-10 and GS918-6 is derived from dolomite in these materials. Acid-base analysis results for sample GS911-8 reveals an excess of neutralising capacity, which is supported by NAG test results which gave a high NAGpH indicative of excess carbonate. XRD analysis showed the presence of pyrite, but also significant dolomite and calcite. XRD and sulphur speciation analysis of sample GS917-4 showed that all the sulphur present in this material was present as pyrite. Carbon analysis, supported by XRD indicated a lack of carbonate minerals in this material, consistent with the low ANC and low

NAGpH. Carbon and sulphur analysis together with XRD analysis demonstrated a lack of carbonate minerals in GS312-3, with almost all the total S present as chalcopyrite. The moderately low NAGpH (4.9) of this sample probably reflects the lack of carbonate neutralising minerals and the presence of chalcopyrite rather than pyrite as the dominate sulphide. Oxidative dissolution of chalcopyrite will generate only half the acidity of pyrite to pH 4.5, with the remaining acidity arising from copper hydrolysis when titrated to pH 7 (Stewart et al. 2003).

Table 1. Acid-base analysis and NAG test results for materials used in interlaboratory testing

Sample Code	Acid-Base Analysis				NAG Test		
	Total S (%)	ANC (kg H_2SO_4/t)	NAPP (kg H_2SO_4/t)	ANC/MPA	NAGpH	$NAG_{(pH\ 4.5)}$ (kg H_2SO_4/t)	$NAG_{(pH\ 7.0)}$ (kg H_2SO_4/t)
GS312-8	0.75	17	6	0.7	4.3	0.4	8
GS310-10	0.27	77	-69	9.3	9.6	0	0
GS918-6	0.31	536	-527	57.0	8.9	0	0
GS911-8	1.76	98	-44	1.8	8.4	0	0
GS917-4	0.36	3	8	0.3	3.4	5	10
GS312-3	0.47	11	3	0.8	4.9	0	3

3.2 Round 1 Interlaboratory Test Results

Twelve laboratories participated in the initial interlaboratory study. These included 8 commercial laboratory services with 7 of these located within Australia and one laboratory in Canada. In addition to the commercial laboratories, there was one specialised ARD-laboratory and one University-based laboratory (both Australian), and two mine laboratories (Indonesia and PNG) which also participated in the test programme.

The results for ANC and NAG testing are summarised in Tables 2 and 3 respectively. For ANC testing, the two samples with higher ANC, almost exclusively contributed by carbonates (principally dolomite), provided good interlaboratory reproducibility with 5% RSD in each case. However, for the material with the lowest ANC, principally derived from dissolution of silicate minerals, the interlaboratory reproducibility was significantly poorer (RSD of 27%).

Interlaboratory reproducibility for NAGpH was acceptable (<10%) for the two samples where the final NAGpH was either acidic (3.4) or alkaline (8.4). However, for the material where the final NAGpH was close to 4.5, the RSD increased to 15%, suggesting that where there is a more even balance between the acid-generating and acid-neutralising properties of the sample, it is likely that greater variance in the NAGpH values reported by different laboratories will occur.

Table 2. Results for Round 1 interlaboratory ANC testing

Sample Code	Mean ANC (kg H_2SO_4/t)	Std Dev (kg H_2SO_4/t)	RSD (%)	95% CI (kg H_2SO_4/t)	Ave. Intra-Laboratory RSD (%)	Count[1]
GS312-8	10	2.7	27	0.54	7	103
GS310-10	78	4.2	5	0.83	2	102
GS918-6	519	25	5	4.8	1	108

1. Number of results used in the analysis after exclusion of outliers. A total of 113 results were received for GS312-8 and GS918-6 and 112 results for GS310-10.

Table 3. Results for Round 1 interlaboratory NAG testing

Sample Code	Mean NAGpH	Std Dev	RSD (%)	95% CI	Ave. Intra-Laboratory RSD (%)	Count[1]
GS911-8	8.4	0.6	7	0.11	2	113
GS917-4	3.4	0.3	9	0.06	4	103
GS312-3	4.4	0.6	15	0.13	3	103

1. Number of results used in the analysis after exclusion of outliers. A total of 113 results were received for each sample.

3.3 Sensitivity Analysis and Method Refinement

As a part of the first round interlaboratory test programme, participating laboratories were asked to provide details of the in-house method used for each analysis. Tables 4 and 5 provide summaries of the main test parameters used for ANC and NAG testing respectively. Given the apparent considerable variability in the way the ANC and NAG tests were conducted, the results showed surprisingly good interlaboratory reproducibility. However, for some samples (low silicate-based ANC, NAGpH close to 4.5) interlaboratory reproducibility was not satisfactory. Consequently, testing was conducted whereby certain test parameters were varied, and the effect of these variations on the measured ANC or NAGpH were evaluated. For ANC, these parameters included fizz rating assignment (including the final pH after digest), digestion/heating time, digestion/heating temperature, and the cooling time. For NAG testing, the initial pH of hydrogen peroxide, reaction time, heating temperature and cooling time were examined for their influence on the measured NAGpH.

Tables 6 and 7 show the results of experiments used to investigate the influence of test parameters on the measurement of ANC and NAGpH/NAG values respectively. The results of these tests suggest that for determination of ANC, the amount of acid added (evaluated by the final digest solution pH) and digest temperature appear to have the most influence on the result. The NAG test appears to be more robust, except for specific samples where a NAGpH near to 4.5 can be influenced by initial pH of the peroxide used for the test, or where the sample contains organic substances for which changes in the post-reaction heating temperature and time can significantly alter the result.

Table 4. Test parameters reported for Round 1 interlaboratory ANC testing

Parameter	Range of values
Sample weight	1 – 5 g
HCl used for digest	0.1 – 1 M, 4 – 75 mL
Digest temperature	80 – 140 °C
Digest time	2 minutes – 3 hours
Fizz rating	0 - 4, 1 - 5
Final pH control[1]	0.8 – 1.5, <1.9, <3

1. These represent the pH range or upper limit at which the test result is accepted. If these values are not met, the test is repeated using a different fizz rating.

Table 5. Test parameters reported for Round 1 interlaboratory NAG testing

Parameter	Range of values
Sample weight	1 – 2.5 g
H_2O_2 used for digest	15%, 100 – 250 mL
Digest temperature	Ambient and then 150 – 250 °C
Digest time	Typically, overnight at ambient temperature and then 30 minutes to 2 hours at elevated temperature
Initial peroxide pH control[1]	None, adjust to pH 4.5, 4.6, 4.8 – 5.1, 4.9 – 5.2

1. Hydrogen peroxide is often stabilised by addition of various stabilisers some of which are acidic.

Table 6. Results of sensitivity tests for ANC analysis

Parameter	Range of values evaluated	Result
Final pH	0.8 – 3.3	When the final pH was <2, ANC measurements were similar. Where the final pH was 3 or above, there was a significant decrease in ANC.
Digest time	1 – 3 h	Negligible effect
Digest temperature	80 – 100 °C	The effect seems to be sample dependent. Measured ANC was constant across this temperature range for some samples and increased with temperature for others.
Cooling time	2 – 60 h	Negligible effect

Table 7. Results of sensitivity tests for NAG analysis

Parameter	Range of values evaluated	Result
Peroxide pH	2.8 – 5.5	The effect seems to be sample dependent. For a sample with a NAGpH near 4.5 the low peroxide pH sample gave lower measured NAGpH and slightly higher NAG values
Reaction time	8 – 48 h at ambient temperature	Negligible effect
Post reaction heating temperature	100 °C for 2 h – 250 °C for 2 h	The effect seems to be sample dependent. There was negligible effect on a sample lacking organic C, but for a sample with significant organic C, NAGpH increased and NAG values decreased with temperature likely because of mineralisation of organics by reaction with peroxide.
Cooling time	24 and 48 h	Negligible effect

3.4 Round 2 Interlaboratory Test Results

Participating laboratories from round 1 of the interlaboratory test programme were invited to participate in a second round of testing using "standardised" methods derived from the results of the sensitivity analysis experiments described above. In summary, the ANC methodology used for this round of interlaboratory testing included:

- 2 g of sample digested for 2 h at 80 °C
- The final pH of the digest solution should be ≤2, adjust fizz rating to achieve this as required
- Titrate to pH ≈5, add 2 drops 30% H_2O_2 and then titrate to pH 7

For NAG testing, the method used for this round of interlaboratory testing included:

- 2.5 g of sample reacted with 250 mL of 15% H_2O_2 adjusted to pH 4.6 – 5.5
- React at ambient temperature for a maximum of 24 h
- Heat for 2 h at a gentle simmer/boil
- Cool for a maximum of 16 h and titrate to pH 4.5 and then 7

Nine of the 12 labs that participated in the first round of interlaboratory testing also contributed to the second-round test programme. The results for ANC and NAG testing are summarised in Tables 8 and 9 respectively.

There was little variation observed between the two rounds for low ANC material. The absolute standard deviation is consistent between both rounds, with the RSD 3% smaller in the second round. Despite the small reduction in RSD between the first and second rounds, at 23% RSD, the variation in interlaboratory test results is still significant. Participating laboratories typically reported a limit of detection of 1 kg H_2SO_4/t, although this may overestimate method sensitivity. Nevertheless, a value of 12 kg H_2SO_4/t is sufficiently above the method detection limit, such that measurement reproucibility should be less than 10% RSD. The measured Total C in this sample is 0.03 % and, assuming all of this carbon is present as carbonate C, suggests a carbonate ANC of 2 kg H_2SO_4/t. This indicates that the majority of the ANC of approximately 12 kg H_2SO_4/t is likely to be derived from silicate minerals. Dissolution of silicate minerals, unlike carbonate minerals, is unlikely to be quantitative during the ANC digest procedure. As such, the measured ANC is expected to be relatively sensitive to the method parameters used. Under these circumstances, an absolute standard deviation in interlaboratory results of under 3 kg H_2SO_4/t is reasonable and, in the context of acid base accounting, unlikely to be significant.

For the other two samples, interlaboratory reproduciblity using the “standardised” ANC method was excellent with RSD of 3% for both samples.

Using the “standardised” NAG procedure, the interlaboratory reproducibility for analysis of NAGpH of the three samples examined gave RSD of less than or equal to 6%, indicating excellent reproducibility. The use of hydrogen peroxide in which the pH has been standardised to between 4.6 and 5.5, appears to have resulted in significant improvement in the reproducibility of the NAGpH for sample GS918-6, which gave a NAGpH of 4.5. The result was similar to the round 1 results, but with the RSD reduced from 15% in the first round to 4% in the second round.

Table 8. Results for Round 2 interlaboratory ANC testing

Sample Code	Mean ANC (kg H_2SO_4/t)	Std Dev (kg H_2SO_4/t)	RSD (%)	95% CI (kg H_2SO_4/t)	Ave. Intra-Laboratory RSD (%)	Count[1]
GS312-8	12	2.7	23	0.68	5	66
GS310-10	78	2.7	3	0.61	1	76
GS918-6	516	15	3	3.4	0.5	76

1. Number of results used in the analysis after exclusion of outliers. A total of 76 results were received for each sample.

Table 9. Results for Round 2 interlaboratory NAG testing

Sample Code	Mean NAGpH	Std Dev	RSD (%)	95% CI	Ave. Intra-Laboratory RSD (%)	Count[1]
GS911-8	8.3	0.3	4	0.08	2	76
GS917-4	3.4	0.2	6	0.05	2	76
GS312-3	4.5	0.2	4	0.04	1	76

1. Number of results used in the analysis after exclusion of outliers. A total of 76 results were received for each sample.

3.5 Comparison of Round 1 and 2 Interlaboratory Test Results

Figure 1 shows a comparison between the average ANC values measured during the first and second rounds of interlaboratory testing. The error bars represent the 95% CI calculated from all values obtained for the sample, excluding outliers. This comparison shows minimal difference of the average value and 95% CI obtained for both rounds. These results suggest that the measurement of ANC for these materials is not particularly method dependent, which is important for reference materials and supporting their use in QC for ANC analysis.

Figure 2 shows the average NAGpH values obtained from the Round 1 and Round 2 interlaboratory studies for the three NAG materials tested. The values presented exclude outliers and the error bars represent the 95% CI of the means. These figures show that there was minimal difference in the average NAGpH measured in the two rounds of testing. These results suggest that the NAG test is reasonably robust, so that any minor differences in the way the test was conducted by the various participating laboratories, did not appear to result in significant variation in the measured NAGpH. However, **these results do suggest adjusting the pH of the hydrogen peroxide prior to reaction will likely improve method reproducibility.**

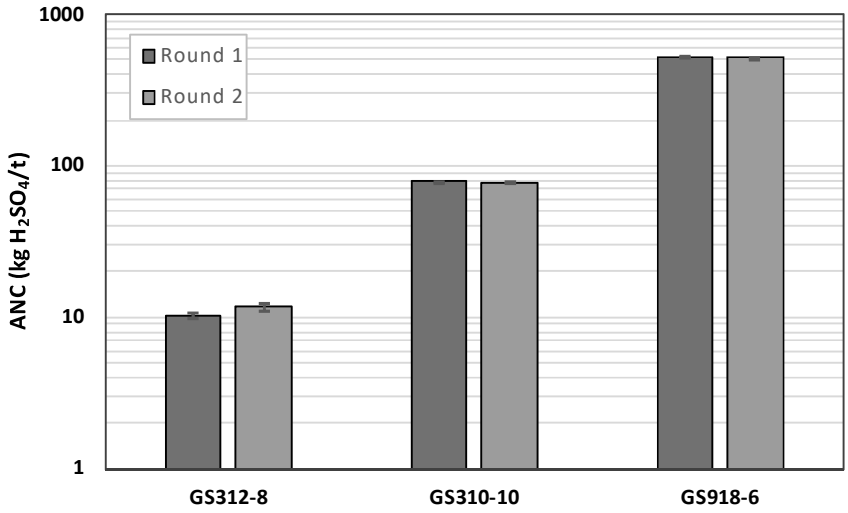


Figure 1. Average ANC values obtained from round one and round two of interlaboratory testing. Error bars show the 95% confidence interval.

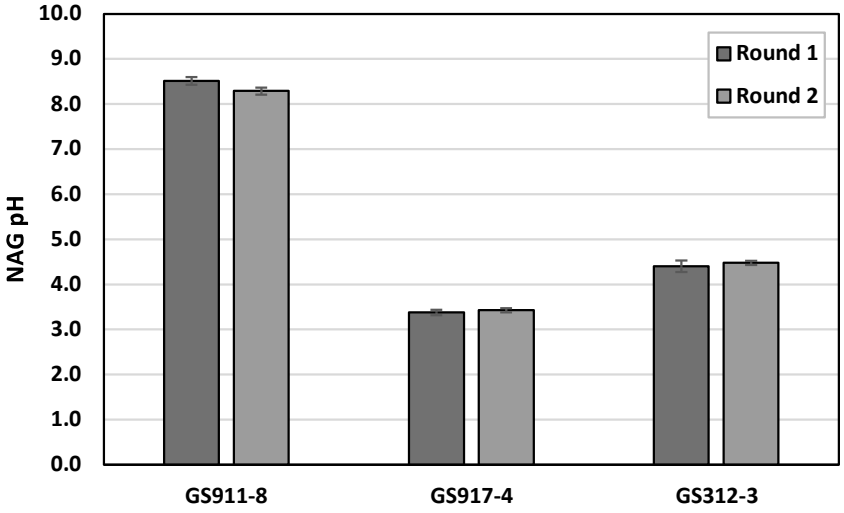


Figure 2. Average NAGpH values obtained from round one and round two of interlaboratory testing. Error bars show the 95% confidence interval.

4.0 CONCLUSIONS

The certification outcomes for the three ANC and three NAG materials tested are shown in Table 10 below. For all but one of the samples evaluated, interlaboratory reproducibility was sufficiently good to provide certified values for ANC or NAGpH. For the lowest ANC sample GS312-8, the interlaboratory variance was such that a certified value was not assigned and for this material a reference value was assigned.

These materials will now be made available to analysts wishing to improve QC protocols for ANC and NAG analyses, and their use should add to the reliability of these measurements which form an important part of ARD risk assessment of mined materials.

Table 10. Properties of reference materials

Sample Code	Referenced Parameter	Units	Reference Value	Certification Level
GS312-8	ANC	(kg H_2SO_4/t)	11.6	Reference Value
GS310-10	ANC	(kg H_2SO_4/t)	77.8	Certified Value
GS918-6	ANC	(kg H_2SO_4/t)	516	Certified Value
GS911-8	NAGpH	pH unit	8.29	Certified Value
GS917-4	NAGpH	pH unit	3.43	Certified Value
GS312-3	NAGpH	pH unit	4.48	Certified Value

5.0 ACKNOWLEDGEMENTS

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APPENDIX F GEOENVIRONMENTAL HAZARDS FACTUAL REPORT

Factual Report: Geoenvironmental Hazards

Bendigo-Ophir Gold Project

6 September 2025

J-NZ0233-008-R-Rev3

MINE WASTE MANAGEMENT
GREENROAD GROUP

MATAKANUI
GOLD LIMITED

Factual Report: Geoenvironmental Hazards

Bendigo-Ophir Gold Project

Document Number: J-NZ0233-008-R-Rev3

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Rev2	01/08/2025	CH	PW
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EXECUTIVE SUMMARY

Mine Waste Management Limited (MWM) has developed this report on geoenvironmental hazards for the Bendigo-Ophir Gold Project (BOGP) for Matakanui Gold Limited (Matakanui) to provide a comprehensive geochemical assessment and characterisation of materials associated with the BOGP.

Objectives of this Study

The objectives of this report are to identify the geoenvironmental hazards for the BOGP, in particular, the risks associated with acid and metalliferous drainage (AMD) and hazards associated with the use of ammonium-nitrate fuel oil (ANFO) based explosives.

Findings

All BOGP materials are classified as non-acid forming (NAF), with circum-neutral pH drainage expected from mine domains that contain the materials. However, neutral metalliferous drainage is likely to occur with elevated levels of arsenic (As), sulfate (SO_4), trace metal, and nitrogenous compounds.

The most significant AMD source hazard for waste rock relates to the TZ4 and RSSZ materials, some of which will be waste rock, and some will be processed (to extract gold) producing tailings.

Data for waste rock indicates that the TZ4 and RSSZ lithologies contain ~95.3% of arsenic and 21.9% of sulfur yet represents only 9.3% of the waste rock that will be disturbed. Hence, appropriate management of TZ4 and RSSZ materials to reduce sulfide mineral oxidation is a critical step to minimise deleterious effects, i.e., management of 9.3% of the waste rock will mitigate 95.3% of the arsenic risk in the engineered landforms (ELFs) that will contain the waste rock.

The following potential constituents of concern (PCOC) are identified in this report:

Based on geochemical composition (and supporting data):

- TZ3 materials are enriched As and cobalt (Co). Antimony (Sb) is possibly elevated.
- RZ4 and RSSZ materials are enriched in As, sulfur (S). Sb is possibly elevated.

Based on static leach testing:

- TZ3 materials were not assessed in this report (see MWM 2025c) for further details.
- TZ4 & RSSZ materials: aluminium (Al), As, and chromium (Cr).
- Soils: Al, As, iron (Fe), Co, copper (Cu), and Zn.

Based on analogue data and general geoenvironmental hazards:

- Nitrogenous compounds (nitrate, nitrite, and ammoniacal nitrogen) are expected due to the use on ammonium-nitrate based explosives and cyanide.
- Sulfate is considered a PCOC based on sulfate being elevated at the Macraes Gold Mine, which has a similar sulfur content.

Based on the information contained in this report, the following source hazard summary is proposed:

Table E1. Summary table of AMD classification and PCOC for the BOGP

GEOLOGICAL UNIT	TYPE OF MATERIAL	AMD CLASSIFICATION	PCOC		
			GEOCHEMICAL COMPOSITION (BASED ON GAI [1])	LEACHATE TESTS	OTHER
TZ3	Waste Rock	NAF	As, Co, Sb	-	N-Compounds, SO_4
TZ4 & RSSZ	Waste Rock / Ore	NAF	As, S, Sb	Al, As, Cr, Zn	N-Compounds, SO_4
Soils	Soils	-	As	Al, As, Co, Cu, Fe, Zn	-

Note: Red PCOC may not be elevated, but current data suggests it cannot be excluded as a PCOC for the BOGP.

Note: Other reports (e.g., MWM 2025b, MWM 205c) identify other PCOC not identified in this report

Baseline Studies

Baseline studies indicate that soils enriched in As that are associated with the BOGP gold mineralisation will require management to avoid deleterious effects where pathways include drainage water and dust generation.

Management

Based on the studies contained in this report the following PCOC should be monitored in mine impacted waters.

- SO_4 – due to elevated sulfur in waste rock and ore.
- As and Fe – due to the presence of As- and Fe- bearing sulfide minerals.
- Sb – due to its relationship with As and sulfur minerals and may be elevated.
- Metals – Al, Co, Cu, Cr, and Zn.

Data indicates that waste rock associated with the TZ4 and RSSZ will be elevated in arsenic and sulfur and should be classified as potentially arsenic generating (PAG). Some TZ3 materials are elevated in As and should also be classified as PAG. PAG materials should be managed appropriately to reduce sulfide mineral oxidation and should be placed within the core of the ELF.

Data presented in this report suggests an As threshold of 30 mg/kg for the TZ3 materials is appropriate for the classification of PAG from non-arsenic generating (NAG) materials to minimise the source hazard risks.

[1] *Geochemical Abundance Index*

General Background

MGL is proposing to establish the BOGP, which comprises gold mining operations, processing operations, ancillary facilities and environmental mitigation measures on Bendigo and Ardgour Stations in the Dunstan Mountains of Central Otago. The project site is located approximately 20 km north of Cromwell and will have a maximum disturbance footprint of 550 hectares.

The total Mineral Resource Estimate for the BOGP using a 0.5 g/t cut-off for open pit and 1.5 g/t for underground is 34.3 Mt at 2.1 g/t for 2.34 M oz (MGL, 2025). The Bendigo-Ophir resources occur in four deposits: Come in Time (CIT), Rise and Shine (RAS), Srex (SRX), Srex East (SRE). The majority of identified mineral resources are located within the RAS deposit. Three primary geological units are recognised at site:

- RSSZ – Rise and Shine Shear Zone
- TZ3 – Lower Greenschist facies Textural Zone 3 rocks of the Otago Schist
- TZ4 – Upper Greenschist facies Textural Zone 4 rocks of the Otago Schist

The resources will be mined by open pit methods at each deposit within the project site, with underground mining methods also proposed to be utilised at RAS to access the deeper gold deposits. The majority of the mining activities, ancillary facilities and associated infrastructure will be located in the Shepherds Valley – which includes a conventional carbon-in-leach (CIL) gold processing plant and water treatment plant, a tailing storage facility, three engineered landforms, internal haul roads, topsoil stockpiles, water pipelines, underground utilities and electrical supply - with non-operational infrastructure located on the adjoining Ardgour Terrace. The BOGP also involves the taking of groundwater from the Bendigo Aquifer for use in mining-related activities and the realignment of Thomson Gorge Road via Ardgour Station.

There are numerous historic mine workings throughout the project area, which can impact baseline water quality. The archaeological survey completed by Lawrence et al. (2019) indicated 59 historic mine archaeological sites were identified within a 16 km^2 survey area. The majority of mine workings were pre-1900 mining activities and included the following key historic workings (Lawrence et al., 2019):

- Stamping batteries and processing areas.
- Underground mine adits.
- Mullock piles and tailings mounds.
- Sluicing areas.

These historical workings have affected the water quality in the area. For instance, arsenic is elevated in the Rise and Shine Creek, a tributary of Bendigo Creek, which is below these historic workings (MWM, 2025a).

Project Description

The proposed BOGP will include the following components:

- Open pits targeting the RAS, SRX, SRE, and CIT deposits.
- An underground mine targeting the RAS deposit.

- Three ex-pit engineered landforms (ELFs) – Shepherds ELF, SRX ELF, and West ELF (WELF).
- Two in-pit landforms (backfill) – CIT and SRE[2].
- Plant and processing area, where CIL extraction technologies will be used as part of the ore recovery process.
- A tailings storage facility (TSF) and TSF Embankment.
- Other ancillary support services / structures (e.g., roads, water management infrastructure, water treatment plants, etc).

Environmental Geochemical Studies

Over 1,600 samples were analysed as part of the geoenvironmental hazard assessment for the BOGP, including acid-base accounting (ABA), compositional and mineralogical studies, and leachate testing. Key findings of these studies indicate that:

- Paste pH and NAG pH[3] are neutral to alkaline indicating that when rocks interact with water (e.g., paste pH) or when oxidation is forced by the use of hydrogen peroxide (H_2O_2) in the NAG test, the samples do not generate acid rock drainage.
- A key driver for severity of the AMD source hazard is the quantity of sulfur present in the rocks that will be disturbed. Representative data are provided in Table E2. LECO total sulfur ABA data indicates that sulfur ranges from <0.005 wt% to 1.38%, although the average sulfur content is close to 0.094 wt% for waste rock (mixed TZ3, TZ4, and RSSZ) and 0.504 wt% for ore (based on 5 samples from the ABA dataset). This average sulfur content represents a maximum potential acidity (MPA) of 2.9 kg H_2SO_4/t for the waste rock, which is considered low risk for AMD (DFAT, 2016). The average MPA for the ore is 15.4 kg H_2SO_4/t.
- Average sulfur is higher in RSSZ and TZ4 waste rock compared to TZ3, which indicates these materials are a higher priority for management with regards to AMD risks.
- The acid neutralisation capacity (ANC) of the rock that will be disturbed ranges from 9 – 95 kg H_2SO_4/t, although the average ANC is 38.5 kg H_2SO_4/t for the waste rock and 75.3 kg H_2SO_4/t for the ore.
- The NAPP[4], where NAPP = MPA – ANC, ranges from -8.85 to -91.67 kg H_2SO_4/t, indicating a significant acid neutralisation capacity. Acid rock drainage is not expected from these materials.
- RSSZ and TZ4 are very similar geochemically, which is particularly apparent in the AMIRA (2002) classification where NAG pH values are higher and NAPP data is more negative than TZ3 data. This is related to the average ANC being 67.5 kg H_2SO_4/t and 65.9 kg H_2SO_4/t in the RSSZ and the TZ4 respectively versus a lower average ANC of 36.5 kg H_2SO_4/t in the TZ3 materials.

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[2] Note: SRE Pit is backfilled by the SRX ELF.

[3] NAG pH = final pH after the net acid generation (NAG) test that uses H_2O_2 to oxidise any sulfides in the rock sample.

[4] Net Acid Producing Potential

Table E2. Sulfur and MPA data for the different geological units based on different test methods

CLASSIFICATION	GEOLOGICAL UNIT	AVERAGE S (wt%)	MPA (kg H_2SO_4/t)	NO. OF SAMPLES	ANALYSIS METHOD
Waste Rock	RSSZ & TZ4	0.236	7.21	231	4-Acid digestion
Waste Rock	TZ3	0.088	2.69	345	ABA - Total sulfur
Waste Rock	TZ3 & TZ4 & RSSZ	0.094	2.88	370	ABA - Total sulfur
Ore	RSSZ & TZ4	0.504	15.42	5	ABA - Total sulfur
Ore	RSSZ & TZ4	0.472	14.45	94	4-Acid digestion

Note: These data are derived from the sample population rather than the actual material volumes.

- Mineralogical analysis (XRD [5]) identified arsenopyrite as the main sulfide mineral and dolomite as the main carbonate mineral, although siderite was also identified in some samples. The oxidation and dissolution of arsenopyrite can release arsenic, sulfate, and iron to solution. The dissolution of dolomite can release calcium, magnesium, and alkalinity, that will neutralise any acidity generation by sulfide mineral oxidation.

Potential Constituents of Concern (PCOC)

The identification of PCOC was conducted by assessment of elemental enrichment of different materials and by the assessment of laboratory leachate tests. Arsenic was identified as the main PCOC, with elevated concentrations across all geological units. Other PCOC identified include:

Based on geochemical composition (and supporting data):

- TZ3 materials are enriched As and Co. Sb is possibly elevated.
- RZ4 and RSSZ materials are enriched in As, S. Sb is possibly elevated.

Based on static leach testing:

- TZ3 materials were not assessed in this report (see MWM 2025c) for further details.
- TZ4 & RSSZ materials: Al, As, Cr, and Zn
- Soils: Al, As, Co, Cu, Fe, and Zn.

Based on analogue data and general geoenvironmental hazards:

- Nitrogenous compounds (nitrate, nitrite, and ammoniacal nitrogen) are expected due to the use on ammonium-nitrate based explosives and cyanide.
- Sulfate is considered a PCOC based on sulfate being elevated at the Macraes Gold Mine, which has a similar sulfur content.

[5] *X-ray Diffraction*

AMD Source Hazards

All BOGP materials are classified as NAF, with circum-neutral pH drainage expected from mine domains that contain the materials. However, neutral metalliferous drainage is likely to occur with elevated levels of As, SO_4, trace metal, and nitrogenous compounds.

At closure, primary mine domains that will influence water quality include the ELFs, TSF, pit voids, and underground workings. A geochemical source hazard assessment indicates that:

- The most significant AMD source hazard for waste rock relates to the TZ4 and RSSZ materials, some of which will be waste rock, and some will be processed (to extract gold) producing tailings.
- Data for waste rock (Table E3) indicates that the TZ4 and RSSZ lithologies contain ~95.3% of arsenic and 21.9% of sulfur yet represents only 9.3% of the waste rock that will be disturbed. Hence, appropriate management of TZ4 and RSSZ rock to reduce sulfide mineral oxidation is a critical step to minimise deleterious effects, i.e., manage 9.3% of the waste rock well to mitigate 95.3% of the arsenic risk in the engineered landform that will contain the waste rock.
- For the total mined materials (ore and waste rock), 69.4% of the total arsenic will be present in the ore, which will be stored in the TSF. The remaining 30.6% is present in the waste rock, which will be placed in the ELFs.
- Tailings will also be elevated in arsenic and sulfur, being derived from RSSZ and TZ4 materials but are generally considered of lower risk for AMD compared to waste rock as they remain in a sub-oxic state and do not oxidise unlike waste rock that can be in an oxic state. For instance, INAP (2020) notes that "*direct and indirect measurements of acidity load from various site domains at more than 40 sites over the past 25 years have revealed that mined sulfidic rock typically contributes to the majority of the total acidity load (60 to 80%) from most mine sites, with a further 20 to 30% of acidity load associated with TSFs, and relatively minor contributions from other sources (e.g., underground mine void wall-rock, open cuts, heap leach facilities and other stockpiles)*". Hence the greatest source hazard for AMD is waste rock rather than tailings.
- TZ3 geological unit contains 78.1% of the sulfur found in the waste rock, while TZ4 and RSSZ hold 21.9%.
- 25.3% of the sulfur is present in the ore, while 74.7% of the sulfur is present in the waste rock.
- TZ3 has a sulfur content of 0.088%, and although its arsenic concentration is low, its sulfur content is significant due to the material quantities.
- Sulfate is likely to be a key contaminant of concern, especially within the TZ3 material, which contains a significant proportion of the sulfur for the BOGP (58.3%).
- Management to minimise the oxidation of sulfides within the ELF and TSF, and management of water in-flow through the ELF and TSF, which will mobilise oxidation products is a critical management requirement (necessary engineering controls) for the project.

Table E3. Summary of estimated loads for arsenic and sulfur at the facilities.

DEPOSIT	ORE (kt)	WASTE ROCK TZ3 (kt)	WASTE ROCK TZ4 (AND RSSZ) (kt)	SOIL (kt)	TOTAL WASTE ROCK (NO SOIL) (kt)
Ras	12,976	179,886	18,089	3,021	197,975
SRX	1,428	4,377	606	625	4,983
cit	700	2,550	850	700	3,400
Total	15,104	186,813	19,545	4,346	206,358
Waste Rock Distribution (%)		88.7	9.3	2.1	100
Arsenic					
As (mg/kg)	8065	13.5	2,618	-	260.2
As (tonnes)	121,814	2,522	51,169	-	175,505
Waste Rock As Distribution (%)	-	4.7	95.3	-	100
Total As Distribution (%)	69.4	1.4	29.2	-	30.6
Sulfur					
S (%)	0.472	0.088	0.236	-	0.137*
S (tonnes)	71,291	164,395	46,126	-	281,813
Waste Rock S Distribution (%)	-	78.1	21.9	-	100
Total S Distribution (%)	25.3	58.3	16.4	-	74.7

Calculated as a weighted average by dividing the total tonnes of As or S by the total tonnes of waste rock.

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1 INTRODUCTION

Mine Waste Management Limited (MWM) has developed this report on geoenvironmental hazards for the Bendigo-Ophir Gold Project (BOGP) for Matakanui Gold Limited (MGL) to provide a comprehensive geochemical assessment and characterisation of materials associated with the BOGP.

1.1 Project Description

MGL is proposing to establish the BOGP, which comprises gold mining operations, processing operations, ancillary facilities, and environmental mitigation measures on Bendigo and Ardgour Stations in the Dunstan Mountains of Central Otago. The project site is located approximately 20 km north of Cromwell and will have a maximum disturbance footprint of 550 hectares.

The total Mineral Resource Estimate for the BOGP using a 0.5 g/t cut-off for open pit and 1.5 g/t for underground is 34.3 Mt at 2.1 g/t for 2.34 M oz (MGL, 2025). The Bendigo-Ophir resources occur in four deposits: Come in Time (CIT), Rise and Shine (RAS), Srex (SRX), Srex East (SRE). The majority of identified mineral resources are located within the RAS deposit. Three primary geological units are recognised at site:

- RSSZ – Rise and Shine Shear Zone
- TZ3 – Lower Greenschist facies Textural Zone 3 rocks of the Otago Schist
- TZ4 – Upper Greenschist facies Textural Zone 4 rocks of the Otago Schist

The resources will be mined by open pit methods at each deposit within the project site with underground mining methods also proposed to be utilised at RAS to access the deeper gold deposits. The majority of the mining activities, ancillary facilities and associated infrastructure will be located in the Shepherds Valley with non-operational infrastructure located on the adjoining Ardgour Terrace. The BOGP also involves the taking of groundwater from the Bendigo Aquifer for use in mining-related activities and the realignment of Thomson Gorge Road via Ardgour Station.

The following mine facilities are proposed and will be emplaced in the catchment of Shepherds and Bendigo creeks (Figure 1):

- Open pits targeting the RAS, SRX, SRE, and CIT deposits.
- An underground mine targeting the RAS deposit.
- Three ex-pit engineered landforms (ELFs) – Shepherds ELF, SRX ELF, and West ELF (WELF).
- Two in-pit landforms (backfill) – CIT and SRE[6]
- Plant and processing area, where includes conventional carbon-in-leach (CIL) extraction technologies will be used as part of the ore recovery process.
- A tailings storage facility (TSF) and TSF Embankment.
- Other ancillary support services/structures (e.g., roads, water management infrastructure, water treatment plants, etc).

[6] *Note: SRE Pit is backfilled by the SRX ELF.*

.

There are numerous historic mine workings throughout the project area, which can impact baseline water quality. The archaeological survey completed by Lawrence et al. (2019) indicated 59 historic mine archaeological sites were identified within a 16 km^2 survey area. The majority of mine workings were pre-1900 mining activities and included the following key historic workings (Lawrence et al., 2019):

- Stamping batteries and processing areas.
- Underground mine adits.
- Mullock piles.
- Tailings mounds.
- Sluicing areas.

These historical workings have affected the water quality in the Rise and Shine Creek, a tributary of Bendigo Creek. For instance, arsenic (As) is elevated in this stream below these historic workings (MWM, 2025a). Understanding baseline water quality (surface and groundwater) is important to enable the establishment of site-specific water quality compliance criteria for any resource consent that may be granted in the future.

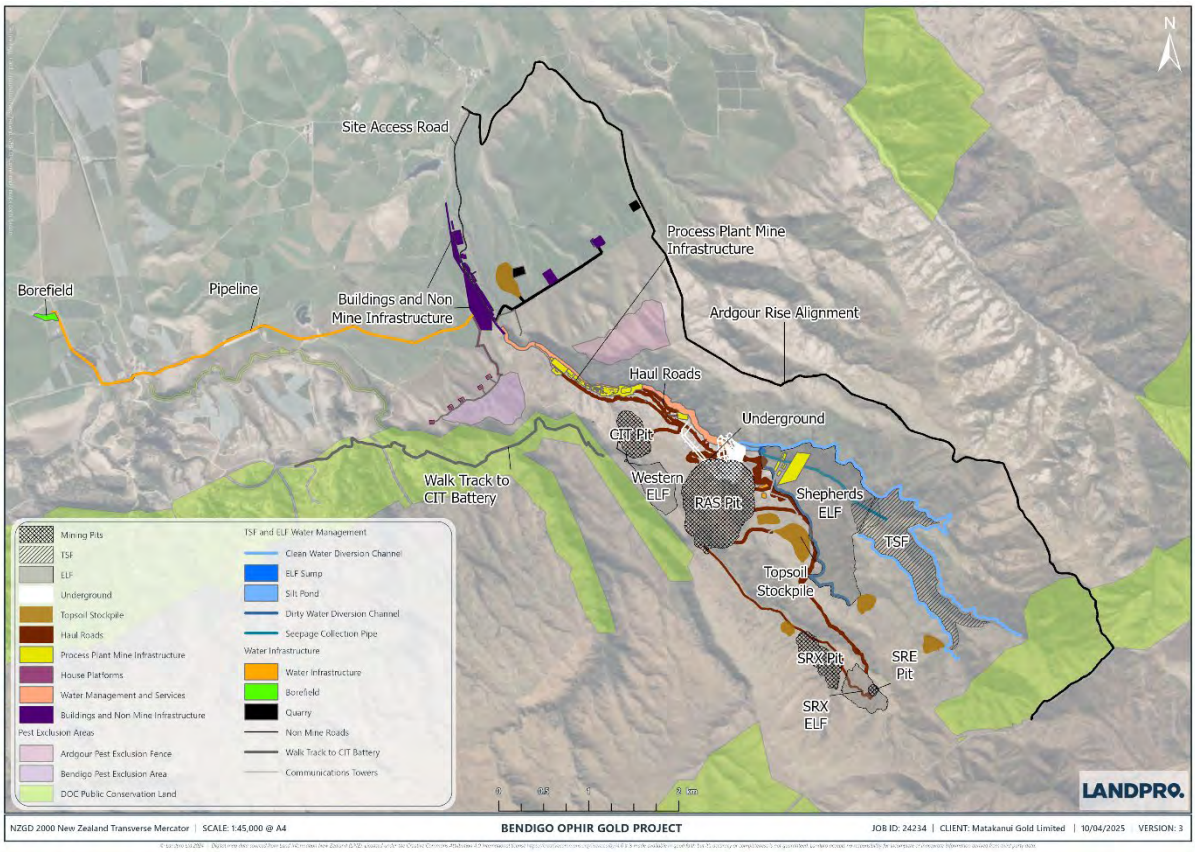


Figure 1. Bendigo-Ophir Gold Project Infrastructure

1.2 Objectives and Scope of Work

The objectives of this report are to identify the geoenvironmental hazards for the BOGP. The following scope of works were undertaken to achieve the report objective:

- **Literature review:** Analysis of the available information and data to understand the potential geoenvironmental source hazards and potential constituents of concern (PCOC).
- **Material testings:** Assessment of the project materials relevant to the BOGP (ore, waste rock, tailings, etc) by laboratory testing.
- **Material classification**: Classification of these materials regarding the potential to generate acid rock drainage, or not.
- **Leachate assessment:** Assessment of the leachate characteristics of the materials
- **Source hazard assessment:** Identification of material source hazards.

1.3 Introduction to Mine Impacted Water

Acid and metalliferous drainage (AMD) is a general term used to describe waters impacted chemically by mining activities and may contain significant quantities of toxic metals, salts, and acidity. AMD is typically generated by the excavation of rocks that contain sulfide minerals such as pyrite. When these minerals are exposed to oxygen and water, they undergo weathering processes and oxidise, generating acidity and releasing potentially toxic concentrations of metals. In the presence of carbonate minerals such as calcite or dolomite, that acidity can be neutralised through the dissolution of the mentioned carbonate, however, elevated sulfate (SO_4) and metal concentrations may remain in solution.

The BOGP area has numerous historic mine workings (Lawrence et al., 2019), which have generated AMD and have impacted the local waterways in places. This is observed in baseline water quality data (MWM, 2025a) that indicates a number of the streams associated with the BOGP have elevated metals; due to historical mining activities and/or natural baseline conditions (e.g., associated with mineralisation).In addition to the elevated concentrations of metals and sulfate, nitrogenous compounds can be leached from the blasted material (waste rock) due to residues from ANFO (Ammonium Nitrate Fuel Oil explosives) and cyanide. Hence, the terminology ‘Mine Impacted Water’ (MIW) may be more appropriate to cover AMD and nitrogenous compounds.

International best practice guidance is available to manage the potential risks of AMD (e.g., International Network for Acid Prevention (INAP), 2014). Such guidance has been used here to assess the potential environmental geochemistry effects of AMD.

2 PROJECT BACKGROUND

The following section summarises the relevant background information for the BOGP as determined by the literature review.

2.1 Introduction

The BOGP sits within MEP60311 as shown in Figure 2. MEP60311 is owned by MGL (NZBN 9429041420614), which is a NZ-registered company and is a fully owned subsidiary of Santana Minerals Limited (ACN 161 946 989) an Australian-registered company and listed on the Australian and New Zealand stock exchanges.

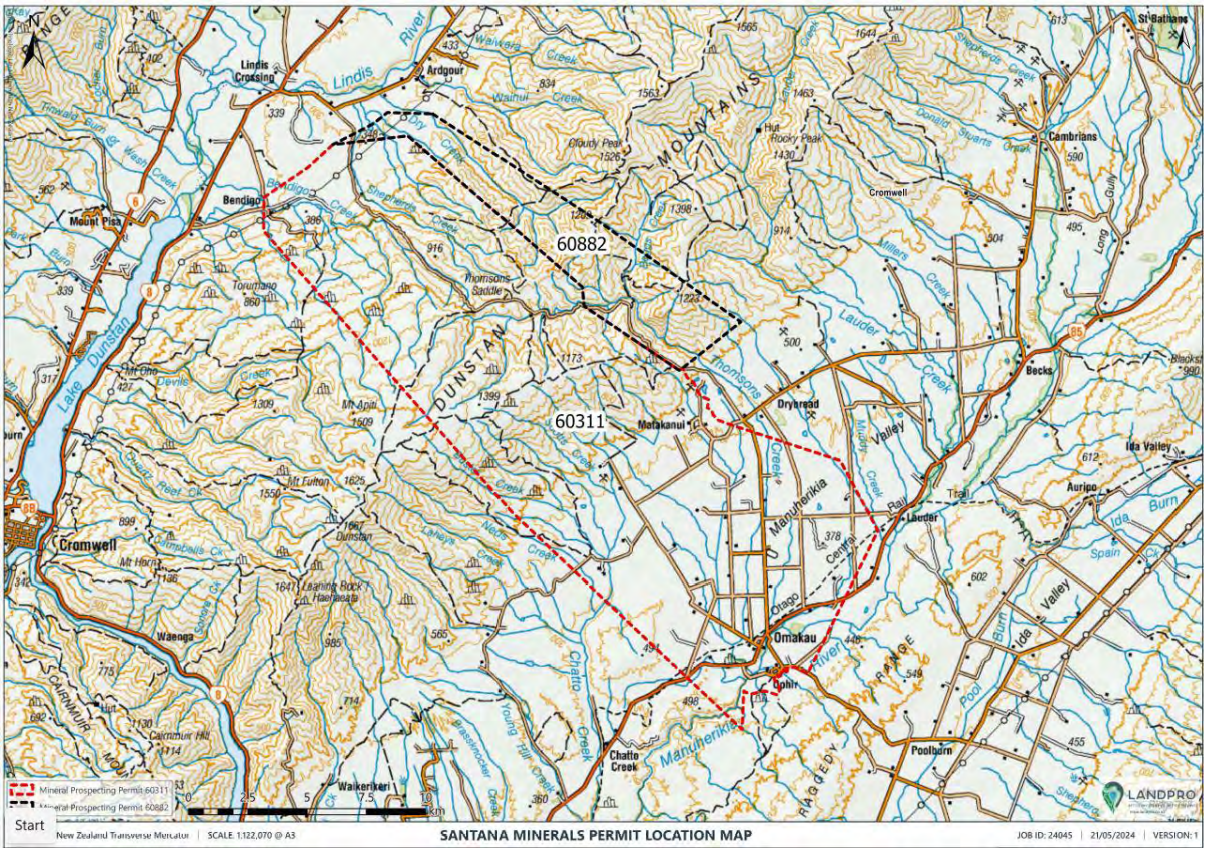


Figure 2. Bendigo-Ophir Gold Project mineral permit boundaries: MEP60311 and PEP60882.

The area has a rich gold endowment with approximately 300,000 ounces of gold produced up to the 1940's from the rich Bendigo lodes of the Bendigo goldfield (grades reported of 1-6 oz/t [30-180 g/t Au]) and from numerous smaller alluvial / workings along the Rise and Shine Creek valley and the Manuherikia Basin at Tinkers / Matakanui and Devonshire goldfields.

The BOGP is sited in the Dunstan Mountains of Central Otago New Zealand within the Central Otago District Council (CODC) and Otago Regional Council (ORC).

The local area is known as Bendigo. The name Bendigo was given to the area in the 1860s by miners coming from the Australian (Bendigo, Victoria) goldfields. The area is most well-known today for the number of recently planted vineyards at the boundary between the base of the Dunstan Mountains and the outwash gravels of the terraces.

At a local scale, the proposed mine sits between two incised valleys. The Rise and Shine Creek valley to the south follows the contact between the unconforming and overlying schist rocks (TZ3 schist) and the underlying TZ4 schist, which is the host to mineralisation. To the northeast the deposit is bisected by the Shepherds Creek valley.

2.2 Surface Water

The BOGP area covers several catchments and sub-catchments (Figure 3), including:

- Shepherds Creek: This creek runs through the project area and runs intermittently towards the Lindis River. An irrigation water-take on Shepherds Creek (RM17.301.15) downstream of SC1 monitoring site takes all available surface water in normal flow conditions, which is supplied to an irrigation dam, so the creek does not flow past this point. There is potential for groundwater to flow past this point via a thin layer of alluvial gravels along the creek bed.
- Jean Creek: This creek is an intermittent tributary to Shepherds Creek.
- Rise and Shine Creek: This creek joins Clearwater Creek just southeast of the Come in Time Battery and flows into Bendigo Creek.
- Clearwater Creek: Flows into Bendigo Creek.
- Bendigo Creek: Several irrigation water-takes are in place on this creek (RM20.079.01 and RM20.079.02).

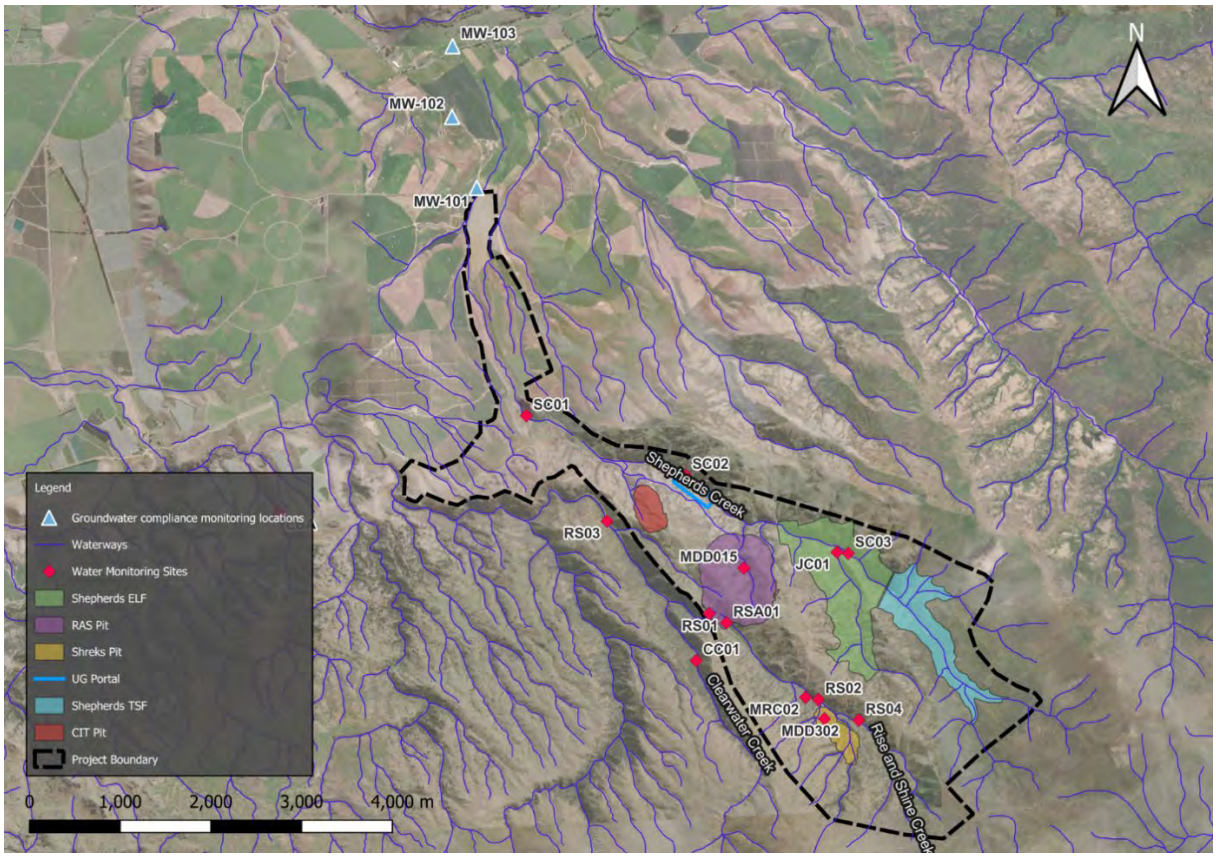


Figure 3. Surface water catchments and monitoring sites.

The water quality data available for the BOGP indicates that there is some impact from the historical works on site (MWM, 2025a).

2.3 Soils

A soil study was conducted on the Rise and Shine Creek to map the distribution of arsenic (As) in the soils as an exploration tool to identify subsurface ore deposits. This study utilised portable X-ray fluorescence (pXRF) and the results are presented in Figure 4.

The average crustal abundance of arsenic is approximately 1.5 ppm (AusIMM, 2011). Therefore, the elevated As concentrations observed in the soil within the Rise and Shine Creek valley are clearly anomalous and are likely associated with the mineralisation that created the gold deposit.

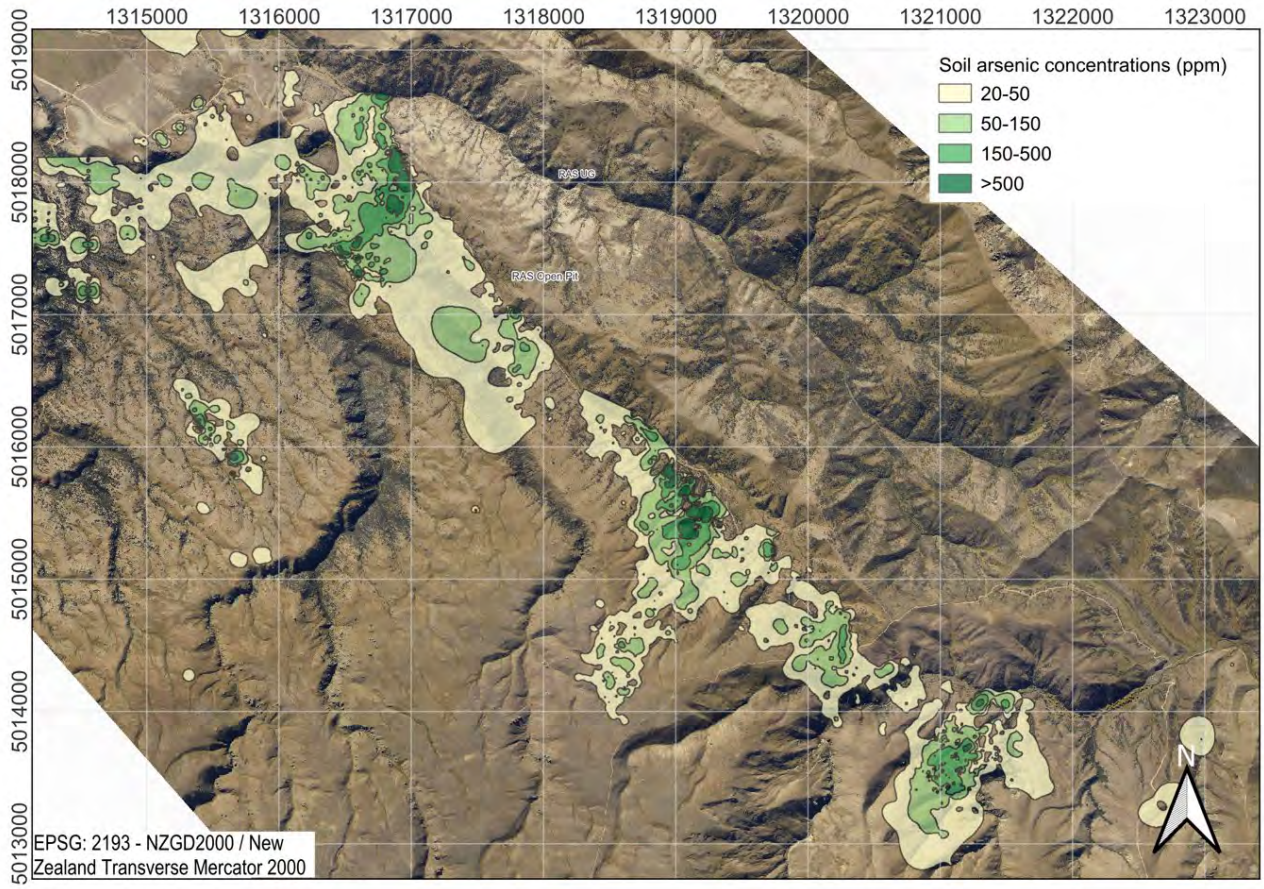


Figure 4. Arsenic concentration in soils in the study area.

Data source: Santana (2024) – GIS Shape Files.

2.4 Geology

2.4.1 Regional Geology

The Dunstan Mountains is an uplifted block of the Otago Schist tilted to the northwest with remnants of a Cretaceous peneplain well preserved on its northern slopes. The Otago Schist is formed from sedimentary and minor intermediate volcanics and volcaniclastics of the Caples and Torlesse tectono-stratigraphic terranes. Greenschist facies rocks of the Otago schist are sub-divided into four textural zones based on mineralogy and mineral textures. Peak metamorphic grades in the Otago Schist

occurred during the Jurassic when the Zealandia micro continent formed the outboard subduction complex of the Gondwana continental margin.

The regional geology of the Central Otago goldfields surrounding the BOGP consists of chlorite and biotite schists. The Rise & Shine Shear Zone (RSSZ), a late metamorphic deformation zone (Cox et al., 2006), runs through the project site dipping at 20-30 degrees northeast. The RSSZ occurs in the Textural Zone 4 (TZ4) schist in close association with the Thomsons Gorge Fault (TGF), which cuts and truncates the RSSZ against the unmineralised TZ3 schist (Cox et al., 2006). There is no mineralisation associated with the TGF itself, and gold mineralisation had ceased by the time of formation of the TGF (c. 100 Ma) (Cox et al., 2006).

2.4.2 BOGP Geology

The project area contains four discrete mineral occurrences:

- Rise and Shine (RAS) deposit
- Come in Time (CIT) deposit
- Srex (SRX) deposit
- Srex East (SRE)

The RSSZ has been traced for 1.7km north-northeast beneath the unconforming TZ3 cover rocks with the bulk of the mineralisation sitting beneath 150-300 m of the lower sulfur cover rock (TZ3). The gently north – northeast lying and flat plunging deposit sits within a zone up to 400 m wide and can be up to 90 m in thickness (typically 30 – 40 m).

The TGF is a post metamorphic, post mineralisation cataclastic fault zone developed more or less along the hanging wall of the RSSZ. It separates chlorite rich, TZ3 schists in the hanging wall from biotite rich TZ4 schists in the shear zone and foot wall.

Gold mineralisation at RAS is associated with silica-siderite/ankerite alteration with minor arsenopyrite sulfides associated with the gold. In some areas a cataclastite (brecciated) network of anastomosing, post-metamorphic quartz, occur with minor sulfide veins in a halo of the core mineralisation. Allibone (2023) identified trace amounts of sphalerite ((Zn,Fe)S) and galena (PbS) at the BOGP.

Locally, a number of splay faults are interpreted coming off the main structure which give a sense of structural control. These are also mineralised and are traceable for tens to hundreds of metres. Gold occurs as free gold particles, typically up to 400 µm but with some coarser visible gold. A minor gold component occurs associated with the arsenopyrite grains, but typically not in solid solution, giving rise to the free milling and highly gravity recoverable components expressed by metallurgical testing.

2.5 Macraes Gold Mine

The Macraes Gold Mine (Macraes), near Macraes Flat, Otago has been operating for over 30 years, and the gold deposit is also associated with the TZ3/TZ4 boundary within the Otago Schist. A large quantity of publicly available information is available on Macraes.

Gold mineralisation is developed within TZ3 Otago Schist within the Hyde - Macraes Shear Zone (HMSZ). The Macraes Gold Project has mined portions of the HMSZ via open pit and underground methods for a period in excess of 30 years (since 1990) and continues to the present day. MWM

considers the geochemistry of mineralised and unmineralised rock at the Macraes operation to be analogous to BOGP. The site therefore provides an appropriate analogue site to consider geoenvironmental hazards.

2.5.1 Maximum Potential Acidity and Acid Neutralisation Capacity

Maximum Potential Acidity (MPA) and Acid Neutralisation Capacity (ANC) data are presented in Figure 5 for Macraes, which shows that the ANC is significantly greater than MPA demonstrating the waste rocks are non-acid forming (NAF) and the neutralisation potential ratio (NPR) (i.e., ANC/MPA is > 1), which also confirms the materials are NAF. MPA data (Weightman, 2020) was converted to wt% S and suggests that waste rock at Macraes is ~ 0.13 wt% S. Data presented by MWM (2024) as part of the MP4 resource consent application (RM24.184) for Macraes indicates that average sulfur for the waste rock samples ranged from 0.11 to 0.16 wt%, which agrees with Weightman (2020).

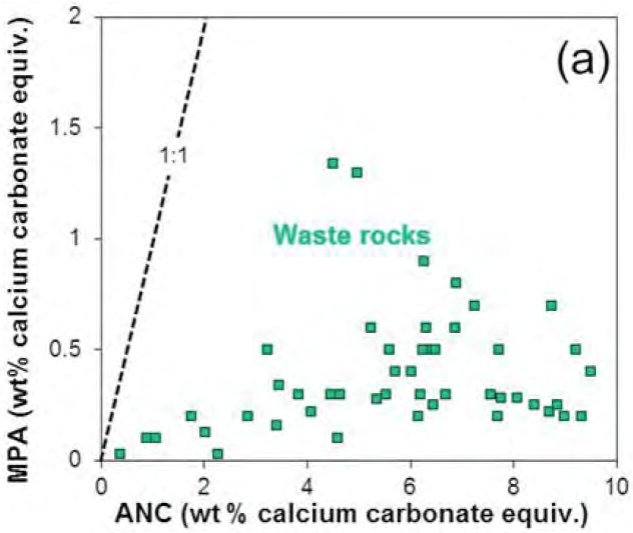


Figure 5. Sulfur content for Macraes Gold Mine waste rock.

Source: Weightman (2020). Note: Where MPA = wt% S x 30.6 (units in kg H_2SO_4/t); wt% S can be determined by conversion from MPA (in wt% $CaCO_3$/t equivalence). Assumption that a MPA of 0.4 wt% $CaCO_3$ is the average of the data provided.

2.5.2 Macraes Waste Rock Stack Seepage Water Quality

Babbage (2019) completed an assessment of waste rock stack (WRS) seepage water quality at Macraes as part of the Oceana Gold (New Zealand) Limited Application RM20.024 to the Otago Regional Council:

https://www.orc.govt.nz/consents-and-compliance/current-notified-applications/oceana-gold-new-zealand-limited-rm20024/

Data are available for calcium (Ca), magnesium (Mg), and SO_4 with SO_4 data being presented in Figure 6. Babbage (2019) assessed various physical parameters of each WRS including WRS footprint, volume of waste rock, and height of the WRS. Analysis indicated there is a direct relationship between average height of the WRS and its age (Figure 7).

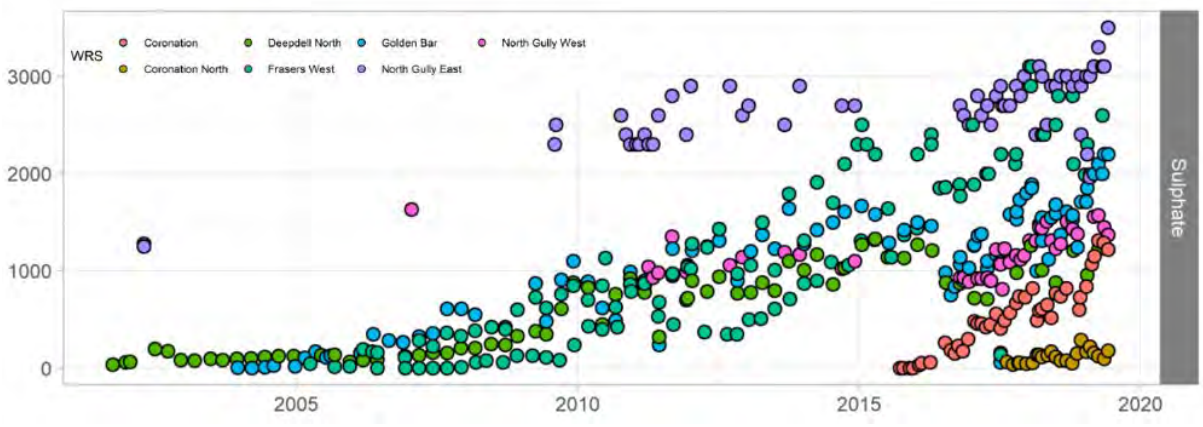


Figure 6. WRS seepage sulfate concentrations, Macraes Gold Mine.

Source: Babbage (2019): Available: https://www.orc.govt.nz/consents-and-compliance/current-notified-applications/oceana-gold-new-zealand-limited-rm20024/

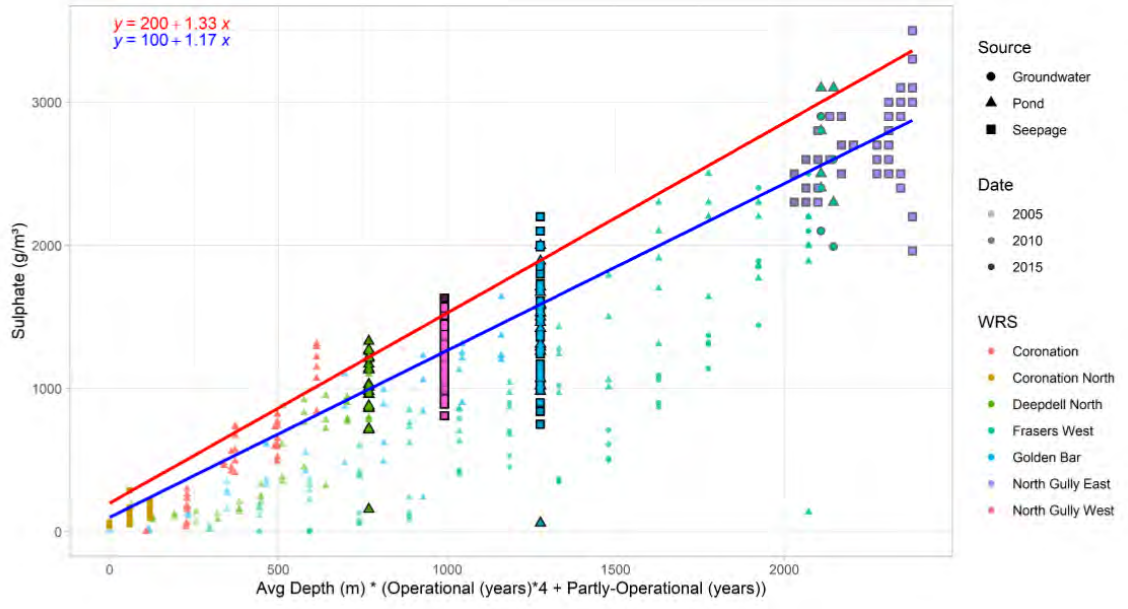


Figure 7. WRS seepage sulfate concentrations as a function of WRS age and WRS height.

Source: Babbage (2019): Available: https://www.orc.govt.nz/consents-and-compliance/current-notified-applications/oceana-gold-new-zealand-limited-rm20024/

Data presented in the Babbage (2019) report indicates that the average height of WRS at Macraes (in 2019) ranged from 15 m to 37 m with higher WRS generating higher sulfate concentrations. WRS at Macraes are mostly built using traditional WRS construction methods (e.g., tipheads > 10-20 m in height that can create grainsize segregation). Recent work by MWM (2024b) demonstrated a relationship between average WRS height and sulfate concentration (Figure 8) using similar data sets to Babbage (2019).

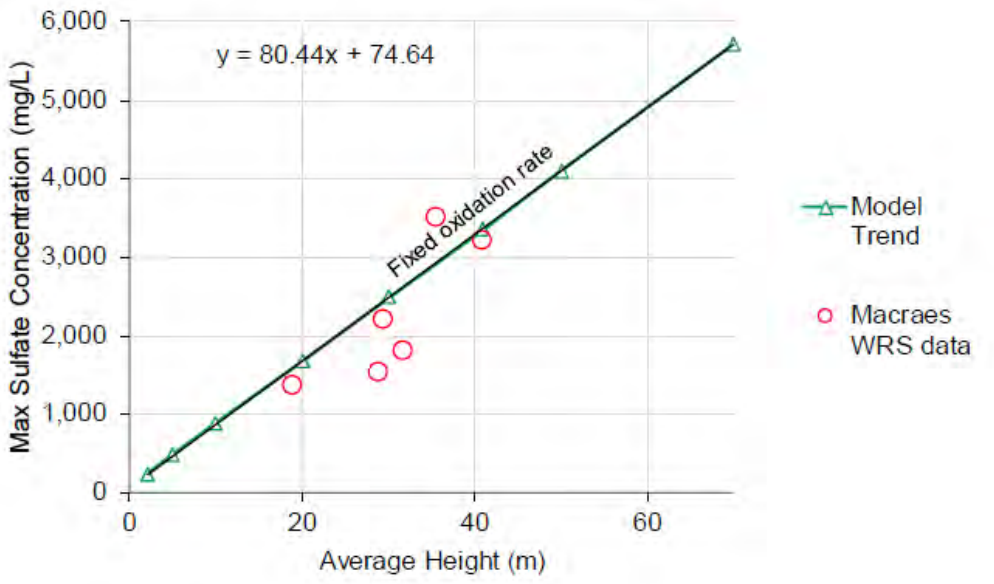


Figure 8. Average WRS height versus maximum sulfate concentrations at Macraes.
Source: Mine Waste Management (2024b): https://www.orc.govt.nz/consents-and-compliance/current-notified-applications/oceana-gold-new-zealand-limited-rm24184/

2.6 Water Quality Screening Objectives

2.6.1 Metal Ecotoxicity Quotient

A metal ecotoxicity quotient (MEQ) is used in this report to identify PCOC that may be elevated with respect to water quality guidelines, compliance limits, or trigger values that manage ecotoxicity risks (Weber and Olds, 2016). For this report, the proposed BOGP water quality compliance limits (Ryder, 2025) are used as a MEQ screening tool to determine whether baseline water quality data were elevated. The approach does not use toxicity modification factors to calculate MEQ and uses conservative data when available (e.g., chronic limits rather than acute limits).

Where no limit was provided by Ryder (2025), other guideline values, together with Ryder (2025), were applied to have a water quality limit (WQ Limit) for assessment purposes. Iron and uranium are not used in the assessment of surface water, instead the groundwater limits for iron and uranium remain applicable and will be used to assess compliance at SC01 and RS03, as well as in test work and baseline studies. The following water quality guidelines have been adopted:

- The 95% ANZG (2018) DGVs:
  - Surface water: Ag, B, Ni, Pb, Se, and V.
  - Groundwater: Ag, B, Ni, and V.
- The 90% ANZG (2018) DGVs:
  - Surface water: Al, Cu, and Zn. For the purposes of this assessment, only Zn is hardness modified.
  - Groundwater: Al, Cu, and Zn. For the purposes of this assessment, only Zn is hardness modified.

- Guidelines from the NPS[7] for Freshwater Management (MfE, 2020) for ammoniacal-N in groundwater of 0.24 mg/L.
- A limit of 2.5 mg/L was applied to Sr in surface and groundwater. This guideline is based on the Canadian Federal Environmental Quality Guidelines (2020), but its noted Ryder (2025) recommends 4 mg/L for groundwater.

The WQ Limits are shown in Table 2 and can serve as a guide to what PCOC could be elevated based on geoenvironmental testing data. It is noted that WQ Limits are only a guide for the assessment of geoenvironmental risks.

Table 1. Water Quality Screening Criteria for geochemical testing.

PARAMETERS	WQ LIMIT (mg/L)
Ag	0.00005 [1]
Al	0.08
As	0.042
B	0.94 [1]
Cd	0.0004
Co	0.001
Cr	0.003
Cu	0.0018
Fe	0.30
Hg	0.0006
Mn	0.4
Mo	0.034
Ni	0.011 [1]
Pb	0.0034 [1]
Sb	0.074
Se	0.011 [1]
Sr	2.5 [3]
Tl	0.00003
U	0.03
V	0.006 [1]
Zn	0.015 [2]
Sulfate	500
Ammoniacal nitrogen	0.400
Nitrate-N	3.5

Source: Ryder (2025) and other guidelines as shown in blue.

1. – ANZG (2018) guidelines for 95% protection of freshwater species.

2. – Zinc guideline is hardness modified.

3. – Canadian Federal Environmental Quality Guidelines (2020) for strontium

3 MATERIAL CHARACTERISATION METHODOLOGY

This section discusses the sample and analysis plan, laboratory methods, and the classification process.

3.1 Sampling and Analysis Plan

3.1.1 Sampling Program

The objective of the sample selection process was to get representative samples from the project to understand the geoenvironmental hazards for the BOGP. The sampling program considered the following:

- Spatial distribution (areal and by depth).
- Geological units.
- Arsenic and sulfur distribution.

A list of the analysed samples is provided in the Appendix D. Data includes HoleID, sampleID, section (From – To), type of analysis, prospect (RAS, SRX, SRE, and CIT) and the geological unit. Figure 9 shows the location of drillholes where sampling was conducted displaying the type of testing.

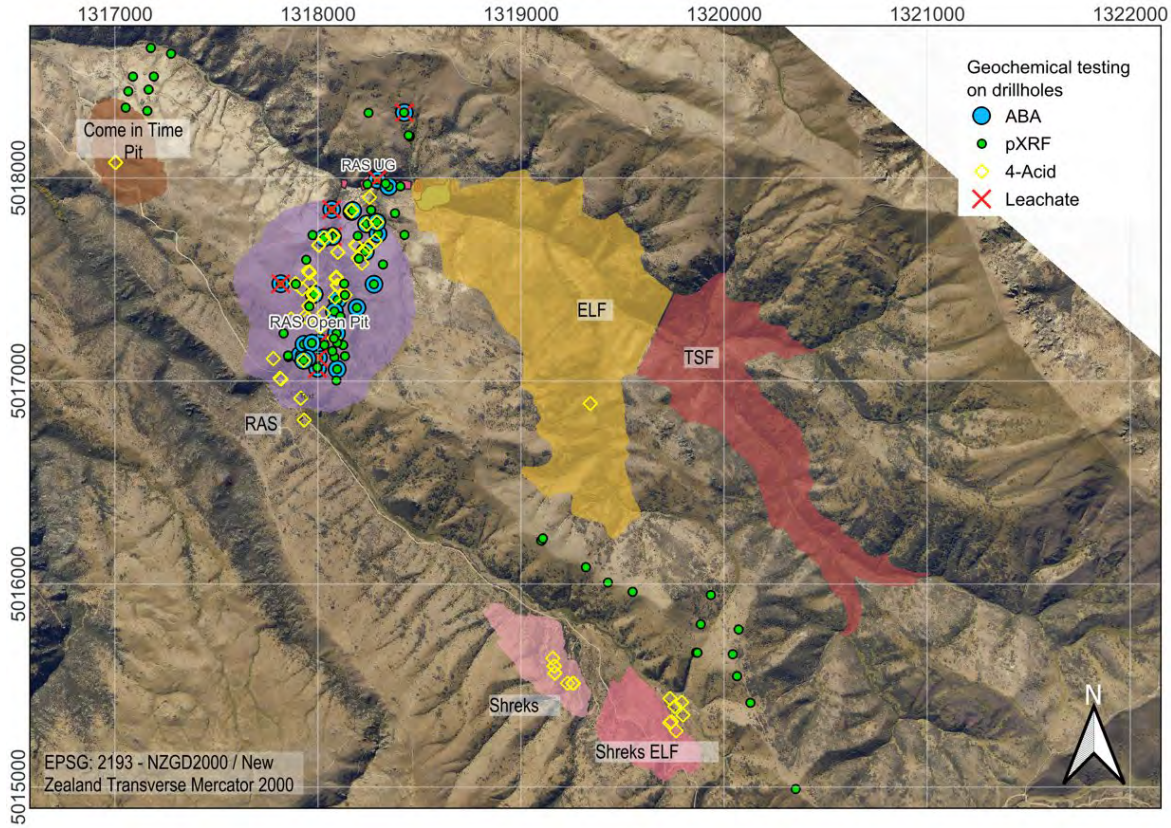


Figure 9. Location of drillholes where sampling was conducted for geochemical testings.

ABA: Acid-base accounting

pXRF: Compositional analysis using portable X Ray Fluorescence

4-Acid: Compositional analysis using 4-Acid digestion and analysed the leachate by ICP-MS

Leachate: Leachate test by interacting a crushed sampled with DI water in a 1:20 solid-to-liquid ratio, for 18 hours.

3.1.2 Analysis Programme

The following analyses were undertaken to characterise the different materials to understand geoenvironmental hazards for the BOGP:

- **Acid Basic Accounting (ABA)**: Testing was undertaken to determine the potential acidic nature of the materials. Details of these tests are provided in AMIRA (2002) and are summarised in Appendix C. Testing included the following:
  - Paste pH / EC (1:2 ratio).
  - Total sulfur (S).
  - Total carbon (C).
  - Acid Neutralising Capacity (ANC).
  - NAG[8] test.

Such tests provide the ABA data to determine the MPA and the Net Acid Producing Potential (NAPP) as well as classify samples as potentially acid forming (PAF) or non-acid forming (NAF). Further details are provided in Appendix C.

- **Elemental Composition**: Testing was undertaken to determine the abundance and enrichment of the elements compared to the average crustal composition for the identification of PCOC. Further details are provided in Appendix D. Tests included:
  - 4-Acid digestion of the samples and then analysis by ICP-MS of the leachate
  - Portable X-Ray Fluorescence (pXRF) analysis.
- **Static Leachate Tests:** Testing was undertaken to determine the availability and mobilisation of PCOC using deionised (DI) water. Further details are provided in Appendix D, the testing included:
  - The Synthetic Precipitation Leaching Procedure (SPLP) – USEPA Method 1312[9]
  - The Australian Standard Leaching Procedure (ASLP).
- **Mineralogy:** Testing was undertaken to determine the mineralogical composition of materials. Further details are provided in Appendix D. Tests included:
  - Quantitative X-Ray diffraction analysis (XRD).

Table 3 provides a summary of the test that have been completed. This included:

- 388 analyses for ABA static testing suite (including 11 QA/QC samples).
- 349 analyses for multi-elemental composition using four-acid digestion (including 32 QA/QC samples).
- 853 analyses for multi-elemental composition using pXRF.

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[8] *Net Acid Generation*

[9] *Available: https://www.epa.gov/sites/default/files/2015-12/documents/1312.pdf*

- 14 leachate tests, including 9 rock samples, and 5 soil samples.
- 3 mineralogy tests by XRD.

Table 2. Sample analysis summary.

DEPOSIT	ABA	4-ACID	pXRF	LEACHATE	XRD	TOTAL
RAS	377	266	774	9	3	1,426
SRX	0	32	20	0	0	52
SRE	0	15	26	0	0	41
CIT	0	4	32	0	0	36
Soil [1]	0	0	0	5	0	5
QA/QC	11	32	0	0	0	43
Total	**388**	**349**	**853**	**14**	**3**	**1,608**

1. *Further data are available in the Preliminary Site Investigation (GRM, 2025).*

3.2 Geoenvironmental Classification

The following geochemical classification schemes are used for the project materials to determine the potential to generate AMD.

3.2.1 AMD Classification

ABA testing is used to determine if a sample is NAF or PAF, which is based on the difference or ratio between acid forming and acid neutralising minerals in the rock. Classification is typically based on either (or both) the AMIRA (2002) or Price (2009) classification schemes until site-specific classification systems are developed.

The AMIRA (2002) classification system (Table 4) uses NAPP and NAG pH to classify samples as PAF, NAF or Uncertain (UC). Where NAPP is positive and NAG pH is less than 4.5, samples are classified as PAF. Where NAPP is negative and NAG pH is greater than 4.5, samples are classified as NAF. Samples with conflicting NAPP and NAG pH are classified as UC. Note that although a sample may be classified as NAF it does not infer low geochemical risk. High sulfide and high carbonate samples may present neutral metalliferous drainage (NMD) or Saline Drainage (SD) risks requiring management.

The Price (2009) Classification system (Table 5) uses the ratio between ANC and MPA to classify samples as PAF, NAF or UC, where the Neutralisation Potential Ratio (NPR) = ANC/MPA. Where NPR is less than 1, samples are classified as PAF. Where NPR is greater than 2, sufficient neutralising capacity is inferred to account for acid production and the samples are classified as NAF. Where ANC/MPA is between 1 and 2, samples are classified as UC.

Table 3. AMIRA (2002) AMD classification system.

CLASSIFICATION	CRITERIA	COMMENTS
Potentially Acid Forming (PAF)	NAPP ≥ 0; NAG pH ≤ 4.5	Sample always has a significant sulfur content, the acid generating potential of which exceeds the inherent acid neutralising capacity of the material.
Non-Acid Forming (NAF)	NAPP < 0; NAG pH > 4.5	Sample may, or may not, have a significant sulfur content but the ANC availability is more than adequate to neutralise the acid that theoretically could be produced.
Uncertain (UC)	NAPP ≥ 0; NAG pH > 4.5 NAPP < 0; NAG pH ≤ 4.5	An uncertain classification is used when there is an apparent conflict between the NAPP and NAG results.

Table 4. Price (2009) AMD classification system.

CLASSIFICATION	CRITERIA	COMMENTS
Potentially Acid Generating (PAF)	ANC/MPA < 1	Potentially acid generating material, unless sulfide minerals are non-reactive, or ANC is preferentially exposed on surfaces.
Non-Acid Forming (NAF)	ANC/MPA > 2	Non-potentially acid generation material, unless ANC is insufficiently reactive, extremely reactive sulfides are present, or preferential exposure of sulfides is found in the material.
Uncertain (UC)	1 ≤ ANC/MPA ≤ 2	Possibly PAF if ANC is insufficiently reactive or is depleted at a faster rate than sulfides.

3.2.2 Elemental Composition: Geochemical Abundance

The Geochemical Abundance Index (GAI) is a method to understand elemental abundances in rocks (Förstner et al., 1993). The GAI quantifies an analysis result for a particular element in terms of the average crustal abundance of that element. The GAI for an element is calculated as follows:

$$GAI = \log_2 [C / (1.5*S)]$$

where C is the concentration of the element in the sample and S is the content for that element in the reference material. The GAI values are truncated to integer increments (0 through to 6, respectively) where a GAI of 0 indicates the element is present at a concentration similar to, or less than, median crustal abundance and a GAI of 6 indicates approximately a 70-fold, or greater, enrichment above median crustal abundance. The actual enrichment ranges for the GAI values are as follows:

- GAI=0 represents <2 times average crustal abundance
- GAI=1 represents 2 to 4 times average crustal abundance
- GAI=2 represents 4 to 8 times average crustal abundance
- GAI=3 represents 8 to 16 times average crustal abundance
- GAI=4 represents 16 to 34 times average crustal abundance
- GAI=5 represents 34 to 68 times average crustal abundance
- GAI=6 represents more than 68 times average crustal abundance

Generally, a GAI of 3 or greater signifies enrichment that warrants further examination such as leachate testing of rock samples. It is also important to note that elemental enrichment is not unexpected in samples from mineralised areas and that enrichment does not necessarily mean that specific elements will be environmentally mobile and bioavailable.

4 RESULTS AND DATA ANALYSIS

In this section, results for the materials characterisation program are presented. Characterisation methodologies are described in Appendix C. Results are attached in Appendix F.

4.1 Acid Base Accounting

This section provides a summary of the acid base accounting (ABA) data for the project.

A summary of the results for ABA and NAG results along with paste pH & EC is provided in Table 6 and Table 7 grouped by geological unit and material type, respectively.

4.1.1 ABA Overview

The following provides an overview of the key ABA results:

- Paste pH and NAG pH are neutral to alkaline indicating that when rocks interact with water (e.g., paste pH) or when oxidation is forced by the use of hydrogen peroxide (H_2O_2) in the NAG test, the samples do not generate acid rock drainage.
- A key driver for severity of the AMD source hazard is the quantity of sulfide sulfur present in the rocks that will be disturbed. ABA data indicate that sulfur ranges from <0.005 wt% to 1.38%, although the average sulfur content is close to 0.094 wt% for waste rock and 0.504 wt% for ore.
- The average sulfur content represents a maximum potential acidity (MPA) of 2.9 kg H_2SO_4/t for the waste rock, which is considered low risk for AMD (DFAT, 2016). The average MPA for the ore is 15.4 kg H_2SO_4/t, which represents a moderate risk for AMD, but this is mitigated by a high ANC that will neutralise any acidity generated.
- The acid neutralisation capacity (ANC) of the rock that will be disturbed ranges from 9 to 95 kg H_2SO_4/t, although the average ANC is 38.5 kg H_2SO_4/t for the waste rock and 75.3 kg H_2SO_4/t for the ore.
- The Net Acid Producing Potential (NAPP), where NAPP = MPA – ANC, ranges from -8.85 to 91.67 kg H_2SO_4/t, indicating a significant acid neutralisation capacity. Acid rock drainage is not expected from these materials

Based on the ABA data, the project materials are classified as non-acid forming (NAF).

4.1.2 RSSZ ABA Data

The following provides an overview of the key ABA results:

- RSSZ materials have the highest sulfur content of all units (average: 0.287 wt%; median: 0.22 wt%; maximum: 1.38 wt%)
- RSSZ materials have the highest ANC values (67.5 kg H_2SO_4/t), and they are comparable to the values observed in TZ4.
- The lowest NPR value (1.71) is observed in this geological unit in the same sample with the highest sulfur content.

4.1.3 TZ3 ABA Data

The following provides an overview of the key ABA results:

- TZ3 materials have the highest NPR values (average of 29.04), and lowest total sulfur (average of 0.088 wt%) and ANC (36.5 kg H_2SO_4/t).
- This means these materials have the lowest AMD risk due to sulfur and the AMD risk is further decreased by the materials have a higher ratio of ANC relative to MPA (i.e., NPR).

4.1.4 TZ4 ABA Data

The following provides an overview of the key ABA results

- TZ4 materials are slightly more elevated in total sulfur compared to TZ3 (average of 0.119 wt%) and have similar ANC values to the RSSZ materials being almost twice as high compared to the TZ3 materials.

4.1.5 Summary

The data suggest that these materials have a similar sulfur content to Macraes, which also has a high NPR and are expected to perform in a similar manner geochemically.

Table 5. Descriptive statistics for ABA data by geological unit. Total number of samples is 375, including waste rock (372) and ore (5) samples.

Geological Unit		S (%)	C (%)	ANC (kg H_2SO_4/t)	NAG pH*	pH (1:2)*	EC @ 25 °C (µS/cm)	MPA (kg H_2SO_4/t)	NAPP (kg H_2SO_4/t)	NPR
RSSZ	n = 21									
	Min	0.060	0.59	46.5	*6.60*	*8.80*	292	1.84	-89.19	1.71
	Max	1.380	1.71	95.0	*10.90*	*9.40*	603	42.23	-30.17	29.19
	Median	0.220	1.13	67.8	*10.60*	*9.10*	373	6.73	-59.26	9.75
	Average	0.287	1.13	67.5	*7.92*	*9.06*	392	8.79	-58.68	10.89
	STD	0.260	0.21	9.1	0.87	0.14	71	7.95	10.78	6.14
TZ3	n = 345									
	Min	<0.005	0.08	9.0	*5.40*	*8.00*	140	0.08	-91.67	5.23
	Max	0.236	2.07	94.0	*10.80*	*9.90*	590	7.22	-8.85	601.31
	Median	0.087	0.44	35.0	*7.20*	*9.40*	270	2.66	-31.92	13.34
	Average	0.088	0.50	36.5	*6.91*	*9.23*	296	2.69	-33.82	29.13
	STD	0.042	0.24	13.7	0.55	0.28	98	1.28	13.23	67.24
TZ4	n = 9									
	Min	0.040	0.62	52.2	*10.20*	*8.70*	248	1.22	-74.53	10.54
	Max	0.230	1.53	78.2	*11.00*	*9.40*	427	7.04	-50.98	42.65
	Median	0.110	1.10	64.9	*10.70*	*9.10*	344	3.37	-61.72	21.21
	Average	0.119	1.08	65.9	*10.57*	*9.05*	349	3.64	-62.26	21.17
	STD	0.049	0.30	8.0	0.27	0.19	58	1.50	7.28	8.68

**pH statistics were estimated on the $[H^+]$ values, being pH = -log10($[H^+]$)*

Table 6. Descriptive statistics for ABA data by material type.

Material Type	S (wt%)	C (wt%)	ANC (kg H_2SO_4/t)	NAG pH[1]	pH[1] (1:2)	EC @ 25 °C (µS/cm)	MPA (kg H_2SO_4/t)	NAPP (kg H_2SO_4/t)	NPR
Waste Rock, n = 370									
Min	0.003	0.08	9.0	5.40	8.00	140	0.08	-91.67	5.23
Max	0.380	2.07	94.0	11.00	9.90	590	11.63	-8.85	601.31
Median	0.089	0.47	36.0	*7.30*	*9.40*	280	2.72	-32.64	13.33
Average	0.094	0.55	38.5	*6.94*	*9.21*	304	2.89	-35.58	28.19
STD	0.052	0.29	15.2	1.00	0.28	95	1.60	14.48	65.06
Ore, n = 5									
Min	0.190	1.09	61.3	6.60	8.80	425	5.81	-89.19	1.71
Max	1.380	1.71	95.0	10.90	9.40	603	42.23	-30.17	16.34
Median	0.260	1.31	73.4	10.50	9.10	441	7.96	-59.32	7.70
Average	0.504	1.34	75.3	*7.30*	*9.07*	486	15.42	-59.84	8.30
STD	0.448	0.20	10.9	1.61	0.21	69	13.70	19.17	4.96

1: pH statistics were estimated on the $[H^+]$ values, being pH = -log10($[H^+]$)

2: Note: The waste rock data are derived from the sample population rather than the actual material volumes.

4.1.6 ABA Quality Assurance / Quality Control

The following quality control protocols were adopted for the laboratory analyses.

- Certified Reference Samples (CRS): 3 CRS samples were included in the set of samples to assess the reliability of the laboratory results (ALS Laboratory). CRS certificates are attached in Appendix E.
- Duplicates: 2 duplicates were included in the set of samples (SGS Laboratory).
- Internal QA/QC certification by the laboratory. (Attached in Appendix H)

No unacceptable anomalies were found during the review of the CRS or duplicates. This means the laboratory results are reliable and suitable to conduct the geoenvironmental hazard assessment. The results of the quality control are shown in Table 8.

The highest difference is found in the Total Carbon for SampleID RASMWM002, where the Lab results is 0.07 wt%, and the CRS value is 0.05%, causing a relative difference of 40%. However, the total C wt% in the CRS is lower than every sample in the dataset, where values vary from 0.08 to 1.53 wt%, hence, the difference is not considered significant.

Table 7. Quality control results for the ABA data set of samples for the CRS and duplicates.

	TOTAL S (wt%)			TOTAL C (wt%)			NAG pH	
SAMPLEID / CRS CODE	ALS LAB RESULT	CRS VALUE	ERROR * (%)	ALS LAB RESULT	CRS VALUE	ERROR * (%)	ALS LAB VALUE	CRS VALUE
RASMWM001/ GS917-4	0.31	0.36	-13.9	0.06	0.05	20	3.7	3.43
RASMWM002/ GS917-4	0.31	0.36	-13.9	0.07	0.05	40	3.5	3.43
RASMWM003/ GS922-8	0.08	0.08	0	0.45	0.45	0	-	-
SAMPLEID / DUPLICATE ID	SGS LAB RESULT	DUP. RESULT	ERROR ** (%)	SGS LAB RESULT	DUP. RESULT	ERROR ** (%)	SGS LAB RESULT	DUP. RESULT
MG19856/*DUP -MG19856	0.077	0.064	20.3	0.28	0.28	0.0	7.2	7
MG19800/*DUP -MG19800	0.056	0.054	3.7	0.39	0.4	-2.5	7.3	7.4

**: Error was calculated using the following formula (Lab_result /CRS_value*100 – 100). A positive value means the result from the lab is higher than the CRS value. If it is negative, then is lower than the CRS value.*

***: Error was calculated using the following formula (Duplicate_result/Original_result*100 – 100). A positive value means that the duplicate is higher than the original result, whilst negative means is lower.*

4.2 Elemental Composition

The elemental composition of the samples was determined by two types of analysis:

- Total composition by 4-Acid digestion analysed by ICP-MS. This represents a total digestion of the sample with a high precision analysis (ICP-MS). A total of 317 samples were tested by this

method (excluding QA/QC samples). Testing was conducted on RSSZ and TZ4 materials as part of geological studies.

- Total composition by portable X-ray Fluorescence (pXRF): These results reflect a fast and reliable field analysis with some limitations in some elements and limits of reportability. A total of 853 samples were tested by this method. Testing was undertaken on TZ3, TZ4, and RSSZ materials.

4.2.1 4-Acid Digestion – RSSZ and TZ4 Materials

From a set of 34 analysed elements and a total of 317 samples, the GAI analysis (Table 9) shows that potentially three (3) elements are enriched with a GAI equal or greater than 3.

In addition, the number of samples with a GAI equal to 6 is also shown in Table 9, which demonstrates, that for all elements that are enriched (GAI ≥ 3) that As is highly enriched with most of the samples having the GAI equal to 6 (or concentrations of As > 136 ppm).

The following observations are made:

- 310 samples of TZ4 and RSSZ samples were analysed, from where 84 samples are classified as Ore.
- Enriched elements (GAI ≥ 3) are As, S, and Sb (GAI ≥ 4).
- From a total of 310 samples, As shows an enrichment that requires further investigations (GAI ≥3) for 308 samples (for RSSZ and TZ4) and found to be enriched with a GAI = 6 for 275 samples which means that 88.7% of the analysed samples are enriched in a 68-fold compared to the average crustal abundance.
- Sulfur (S) was found enriched in 81 samples of the 182 for RSSZ, with a GAI ≥ 3 and in 7 samples of the TZ4. Average crustal S concentration used was 420 ppm (or 0.042 wt%).
- The LOR [10] for Sb represented a GAI = 3, therefore the enrichment was assessed with a GAI ≥ 4 for Sb which exhibited this enrichment in 38 samples (33 from RSSZ), and none with the GAI ≥ 6. The derived GAI for Sb is thus of less reliability due to low analyte concentrations (typically defines as <10x LOR). Further work is required to validate whether Sb is an issue.

Table 8. Count of samples with GAI ≥ 3 & 6 by geological unit for samples analysed by ICP-MS (4-Acid Digestion).

Element	RSSZ (n = 182)		TZ4 (n = 128)		Overall (n = 310)	
	GAI ≥ 3	GAI = 6	GAI ≥ 3	GAI = 6	GAI ≥ 3	GAI = 6
As	182	178	126	97	308	275
S	81	0	7	0	88	0
Sb	33*	0	5*	0	38*	0

**: Count for Sb is considering samples with a GAI ≥ 4 due to limit of reportability limitations.*

[10] *LOR = Limit of Reporting*

Average, minimum, and maximum values for the identified PCOC are shown in Table 10, which also shows the required concentrations for achieving a GAI ≥ 3. The following observations are made:

- The LOR for Sb is 2 ppm, whilst the adopted crustal average value is 0.2 ppm. The required concentration for GAI ≥ 3 is 2 ppm. Therefore, when values are above the LOR, it indicates that the sample is classified as enriched in Sb and requires further investigations.
- Average values for As are above the concentration needed for GAI ≥ 3 (17 ppm), with the adopted crustal average value being 2 ppm.
- RSSZ average S content (0.38%) has a GAI ≥ 3, whereas the average of TZ4 (0.17%) is below this threshold.

Table 9. Descriptive statistics of enriched elements as per the 4-Acid digestion test.

PARAMETER	RSSZ			TZ4			CONC. FOR GAI ≥ 3
	MIN	AVERAGE	MAX	MIN	AVERAGE	MAX	
As (ppm)	34	6,178	32,200	11	1,070	9,180	17
S (%)	0.02	0.38	1.68	0.04	0.17	0.97	0.36
Sb (ppm)	<5	<5	13	<5	<5	6	2

Conc. = concentration

The data indicate that As, S, and Sb are enriched, however further testing is required to confirm whether these contaminants are mobile.

4.2.2 pXRF Analysis – RSSZ, TZ3, and TZ4

A total of 853 samples were tested by pXRF from the 3 geological units. Data counts for GAI ≥ 3 and GAI ≥ 6 are shown in Table 11. The following observations can be made:

- Not all elements were tested by pXRF in every analysis, so the count is not absolute, but serves as a semi-quantitative method to identify elements that are enriched.
- Arsenic enrichment is consistent for geological units TZ4 and RSSZ with more than 97% of the samples showing enrichment (GAI ≥ 3). These results agree with the enrichment identified in the 4-Acid digestion set of samples.
- GAI ≥ 3 for arsenic is observed in 74 samples from 345 for TZ3 with only one sample reporting a GAI = 6. This means that TZ3 is enriched in As (~21% of the samples showed enrichment) but at a lower level compared to TZ4 and RSSZ.
- These data are consistent with the As soil analysis (Figure 4) where enrichment is observed in soil samples mainly within the limits of the TZ4 surface expression.
- Cobalt was identified as being elevated (GAI ≥ 3) in TZ3 materials. This aligns with the mineral Cobaltite that was identified in TZ3 materials (MWM, 2025c).
- Molybdenum (Mo) was identified as enriched in one sample in TZ4 using pXRF; however, only a few analyses were conducted. Conversely, 310 analyses of 4-Acid digestion (ICP-MS) were performed in TZ4 and RSSZ, none of which showed an enrichment in Mo. The maximum values found were 4 ppm in TZ4 and 3 ppm in RSSZ, both below the 17 ppm required for a GAI ≥ 3.

Considering that 4-Acid digestion analysed through ICP-MS is much more reliable than pXRF, Mo is not regarded as a PCOC.

- Lead (Pb) was identified as being elevated in the RSSZ, but not in the other lithologies. Lead was found to be enriched in the GAI analysis in less than 1% of the samples for the RSSZ unit. Other assessments including the column leach test (CLT) of materials (MWM, 2025b) indicate Pb is low, and SPLP testing (MWM, 2025c) also indicate Pb is low (< the LOR) in samples that contain trace Pb sulfide minerals. This demonstrates the limited mobility of Pb. Lead is not considered an issue for the BOGP.

- Selenium (Se) was identified by pXRF as being elevated in all lithologies, however this may be due to the pXRF detection limit (5 ppm). Other assessments including the CLT of materials (MWM, 2025b) indicate Se is low (only 1 datapoint in the CLT was above the WQ Limit), and SPLP testing (MWM, 2025c) also indicate Se is low (< the LOR). This demonstrates the limited mobility of Se and/or that it is present at very low concentrations in the BOGP materials.

- Antimony (Sb) was tested a few times and was found to be enriched in all analyses. However, this may be due to the low concentration (2 ppm) required for a GAI of 3. pXRF analysis is likely to be less reliable close to the LOR (5 ppm [11]) due to background and scatter effects. CLT data indicate that some materials are slightly elevated.

Table 10. Count of elements with GAI ≥ 3 & 6 by geological unit for samples analysed by pXRF.

ELEMENT	TZ3 (N = 345)		TZ4 (N = 107)		RSSZ (N = 405)		OVERALL (N = 853)	
	GAI ≥ 3	GAI ≥ 6	GAI ≥ 3	GAI ≥ 6	GAI ≥ 3	GAI ≥ 6	GAI ≥ 3	GAI ≥ 6
As	74/345	1/345	93/96	69/96	390/392	370/392	557/833	440/833
Co	12/234	0/234	0/45	0/45	0/132	0/132	12/411	0/411
Mo	0/14	0/14	1/2	0/2	0/7	0/7	1/23	0/23
Pb	0/345	0/345	0/97	0/97	3/401	0/401	3/843	0/843
Se	3/3	0/3	12/12	2/12	46/46	21/46	61/61	23/61
Sb	8/8	8/8	1/1	1/1	8/8	8/8	17/17	17/17

Other elements were analysed through pXRF, with GAI values ≥ 3, but were disregarded due to the low concentration in the materials (below LOD [12] or LOQ [13]), and because they are generally unsuitable for reliable detection and measurements [14]. The elements disregarded were Cd, Hg, and Pr.

[11] *Olympus – Vanta Limits of Detection (LoD) specifications*

[12] *Limit of Detection*

[13] *Limit of Quantification*

[14] *Portable XRF Analysis in the Joe Lord and Perth Core Libraries – Methodology and Case Studies. MJ Wawryk and EA Hancock*

Average, minimum, and maximum values for the identified PCOC are shown in Table 12, which also displays the required concentrations for achieving a GAI ≥ 3. The following observations can be made:

- Limit of reporting (LOR) for the pXRF method for the identified PCOC is 5 ppm. Several values for Mo, Se, and Sb are below this LOR. Therefore, pXRF may not be suitable for assessing the enrichment of these elements for the BOGP.
- Average values for As are above the concentration needed for GAI ≥ 3 for the geological units TZ4 and RSSZ, with the used crustal average value being 2 ppm.

Table 11. Descriptive statistics of enriched elements as per the pXRF test.

PARAMETER	RSSZ			TZ3			TZ4			CONC. FOR GAI >=3
	MIN	AVERAGE	MAX	MIN	AVERAGE	MAX	MIN	AVERAGE	MAX	
As (ppm)	11	3,060	23,154	3	13.5	140	7	723	6,425	17
Co (ppm)	0	76.8	143	48	115.5	413	0	80.9	131	213
Mo (ppm)	0	0.6	4	4	4.4	6	0	10.7	122	17
Pb (ppm)	6	24.4	150	9	18.1	28	11	17.9	31	136
Se (ppm)	0	2.1	8	2	2.3	3	0	1.6	5	0.5
Sb (ppm)	0	5.9	35	24	29.6	42	0	13.0	26	2

4.2.3 Summary: Elemental Composition

The 4-acid digest data and the pXRF data was reviewed and the following assessment is provided:

- TZ3 materials are enriched As and Co. Antimony is possibly elevated.
- RZ4 and RSSZ materials are enriched in As, S. Antimony is possibly elevated.

4.3 Static Leach Testing

This section presents the static leachate test results and factual analysis.

4.3.1 Static Leach Testing -TZ4 and RSSZ Samples

Leachate test results are shown in Table 12, which includes a total of 9 samples: 1 ore sample and 8 waste rock samples from TZ4 and RSSZ. The units from the lab are reported in mg/L with a solid to liquid ratio of 1:20. Testing was undertaken by the ASLP method.

Table 12. ASLP test results (mg/L) for the leachate test for ore and waste rock samples.

PARAMETER	MINIMUM (mg/L)	MAXIMUM (mg/L)	AVERAGE (mg/L)	WQ LIMITS (mg/L)	NO. OF SAMPLES EXCEEDING WQ SCREENING CRITERIA
pH (pH units)	8.72	9.43	9.19	-	-
EC @ 25°C (µS/cm)	85.0	135.0	117.4	-	-
Hydroxide Alkalinity ($CaCO_3$)	<1.00	<1.00	<1.00	-	-
Carbonate Alkalinity ($CaCO_3$)	10.0	26.0	17.7	-	-
Bicarbonate Alkalinity ($CaCO_3$)	29.0	46.0	37.7	-	-
Total Alkalinity ($CaCO_3$)	40.0	63.0	55.4	-	-

PARAMETER	MINIMUM (mg/L)	MAXIMUM (mg/L)	AVERAGE (mg/L)	WQ LIMITS (mg/L)	NO. OF SAMPLES EXCEEDING WQ SCREENING CRITERIA
Acidity ($CaCO_3$)	<1.00	<1.00	<1.00	-	-
Hardness ($CaCO_3$)	14.5	37.3	31.5	-	-
Sulfate as SO_4 - Turbidimetric	<1.00	4.00	2.11	500	0
Chloride	<1.00	3.00	1.28	-	-
Calcium	5.00	10.0	8.67	-	-
Magnesium	<1.00	3.00	2.39	-	-
Sodium	3.00	6.00	4.44	-	-
Potassium	13.0	17.0	14.7	-	-
Aluminium	0.270	0.860	0.490	0.08	9
Antimony	<0.001	0.006	0.0026	0.074	0
Arsenic	0.029	1.06	0.340	0.042	8
Barium	0.002	0.084	0.019	-	-
Cadmium	<0.0001	<0.0001	<0.0001	0.00044	0
Chromium	<0.001	0.004	0.0012	0.0033	1
Cobalt	<0.001	<0.001	<0.001	0.001	0
Copper	<0.001	<0.001	<0.001	0.0018	0
Lead	<0.001	<0.001	<0.001	0.0034	0
Manganese	0.001	0.003	0.002	0.40	0
Molybdenum	<0.001	0.001	<0.001	0.034	0
Nickel	<0.001	0.005	0.0011	0.011	0
Selenium	<0.01	<0.01	<0.01	0.011	0
Silver	<0.001	<0.001	<0.001	0.00005	9
Strontium	0.100	0.204	0.154	2.5	0
Thallium	<0.001	<0.001	<0.001	0.00003	9
Tin	<0.001	<0.001	<0.001	-	0
Titanium	<0.01	<0.01	<0.01	-	0
Uranium	<0.001	<0.001	<0.001	0.03	0
Vanadium	<0.01	<0.01	<0.01	0.006	0
Zinc	<0.005	0.008	<0.005	0.015	0
Boron	<0.05	0.06	0.05	0.94	0
Iron	<0.05	<0.05	<0.05	0.30	0
Mercury	<0.0001	<0.0001	<0.0001	0.0006	0
Fluoride	0.200	0.300	0.222	-	-
Nitrite as N	<0.01	0.01	<0.01	-	-
Nitrate as N	0.02	0.03	0.027	-	0
Nitrite + Nitrate as N	0.02	0.04	0.029	-	-
Total Kjeldahl Nitrogen as N	<0.100	0.200	0.161	3.50	0
Total Nitrogen as N	<0.100	0.200	0.161	-	-
Total Phosphorus as P	0.030	0.430	0.157	-	-

Red numbers indicate the parameter exceeds the WQ Limits.

Blue numbers indicate the LOR exceeds the WQ Limits.

Units are expressed as mg/L unless otherwise specified.

The following observations can be drawn from the results presented in Table 13:

- pH is neutral to alkaline between 8.72 to 9.43.

- Aluminium is greater than the WQ Limit, which is unusual at circum-neutral pH values. Possibly these samples contain colloidal Al that is measured by ICP-MS as the dissolved fraction.
- Arsenic concentrations were greater than the WQ Limit, which is in agreement with other geochemical data that demonstrate significant enrichment in the area.
- One sample was greater than the WQ Limit for Cr. CLT data (MWM, 2025b) suggest that only 1 datapoint (for all samples) was greater than the WQ Limit. Cr may not be elevated in MIW.
- Sulfate concentrations are between <1 to 4 mg/L in the leachate.
- The highest values for As from the leachate (1.06 mg/L) is from a waste rock sample (RSSZ) with an As content in the rock (pXRF) of 4,472 ppm and 0.34% of sulfur (quantified in the ABA test).

4.3.2 Static Leach Testing - Soil Samples

Five samples were analysed by leach testing using the SPLP method. A memorandum regarding the testwork conducted by Matakanui is attached in the Appendix G with detailed information of the sampling program. The locations of the soil samples are shown in Figure 10. The arsenic concentrations by pXRF method are shown in Table 14. The descriptive statistics for the leachate tests for the 5 soil samples are shown in Table 15. The data are compared to the WQ Limits (Table 2) to understand if PCOC are elevated.

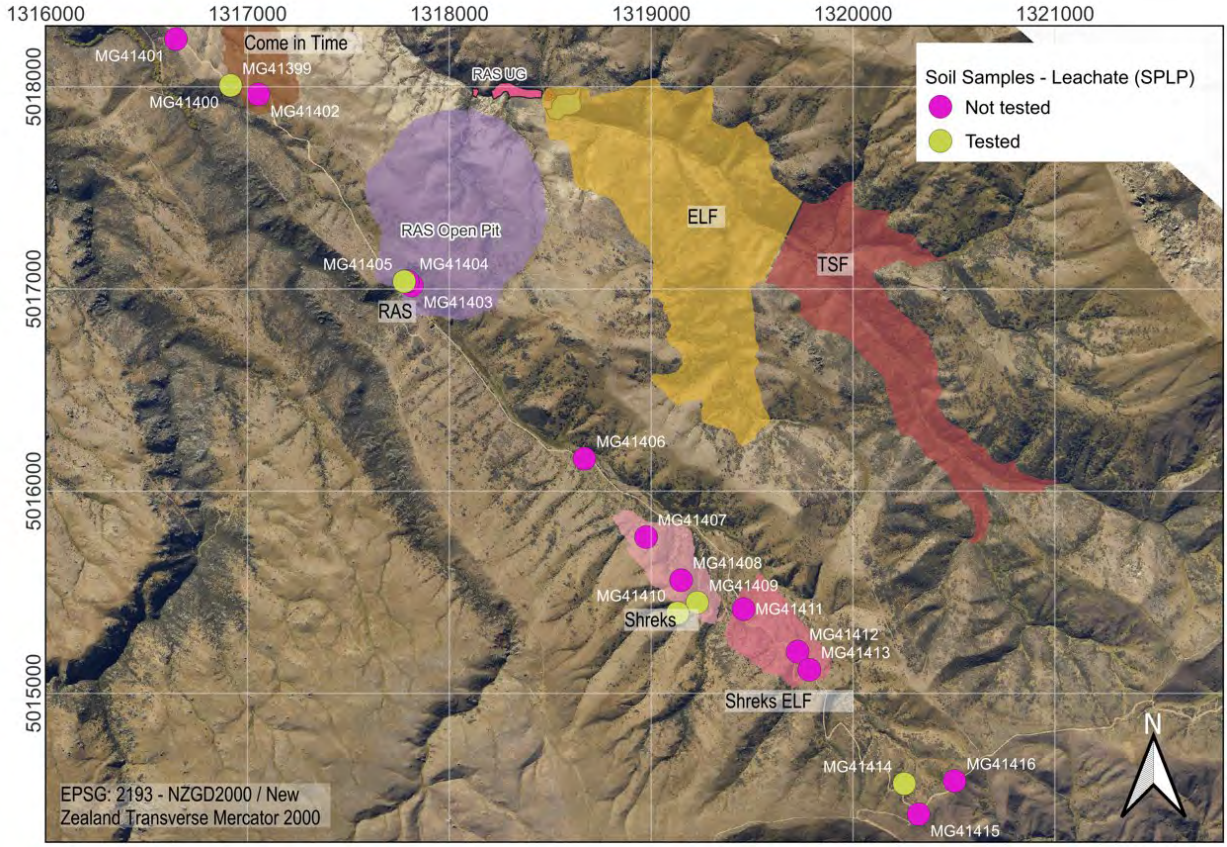


Figure 10. Sampling location for soil samples.

Table 13. Sample ID for soil samples and As concentration as per pXRF.

SAMPLEID	As (ppm)
MG41400	1320.4
MG41405	215.2
MG41409	568.4
MG41410	895.4
MG41414	213.8

Table 14. Results for the SPLP test on soil samples.

PARAMETER	MINIMUM CONC. (mg/L)	MAXIMUM CONC. (mg/L)	AVERAGE CONC. (mg/L)	WQ LIMIT (mg/L)	No OF SAMPLES EXCEEDING ANZG 95% DGV
Calcium	<1.00	1.40	1.10	-	0
Magnesium	<1.00	1.40	1.10	-	0
Sodium	1.50	2.50	1.86	-	0
Potassium	3.70	8.20	5.90	-	0
Aluminium	0.025	1.10	0.467	0.08	4
Antimony	<0.005	<0.005	<0.005	0.074	0
Arsenic	0.020	0.330	0.118	0.042	3
Barium	0.090	0.110	0.096	-	0
Beryllium	<0.001	<0.001	<0.001		0
Cadmium	<0.001	<0.001	<0.001	0.00044	5
Chromium	<0.001	<0.001	<0.001	0.0033	0
Cobalt	0.002	0.008	0.004	0.001	5
Copper	0.004	0.012	0.008	0.0018	5
Lead	<0.001	<0.001	<0.001	0.0034	0
Manganese	0.100	0.360	0.258	0.40	0
Molybdenum	0.0025	0.0025	0.003	0.034	0
Nickel	0.003	0.007	0.004	0.011	0
Selenium	<0.001	<0.001	<0.001	0.011	0
Silicon	9.15	23.4	15.3	-	0
Silver	<0.005	<0.005	<0.005	0.00005	5
Tin	<0.005	0.007	<0.005	-	0
Titanium	0.122	0.332	0.211	-	0
Zinc	0.058	0.088	0.08	0.015	5
Boron	<0.05	<0.05	<0.05	0.94	0
Iron	0.490	1.10	0.670	0.30	5

Red numbers indicate the parameter exceeds the WQ Limit.

Blue numbers indicate the LOR exceeds the WQ Limit.

The following observations can be drawn from the results:

- No pH data were provided for the leach tests.
- Aluminium is greater than the WQ Limit. This is possibly due to colloidal Al that is measured by ICP-MS as the dissolved fraction.
- Arsenic, Co, Cu, Fe, and Zn were higher than the WQ Limit, which agrees with elevated baseline data for Rise and Shine Creek.
- Cadmium and silver concentrations were <LOR, however, the LOR exceeds the WQ Limit.

- The highest value for As is 0.33 mg/L found in the soil sample with 1,320 ppm As.

These soils represent a source hazard that will require management if they are disturbed. The following work is required:

- Confirmation that a cut-off threshold of ~20 ppm As (GAI ≥ 3 = 17 ppm) is suitable as a threshold to define As-rich soils that require management. Additional static leach test studies are required to quantify the Al, As, Co, Cu, Fe, and Zn mobility. Further discussion is provided in Soil Management Plan (MGL, 2025).
- Management of dust derived from soil that may be elevated in PCOC such as arsenic.
- Management of drainage/seepage from any As-rich soil stockpile areas.
- Confirmation of a suitable location for reuse of the soils for rehabilitation purposes within the Rise and Shine Creek Valley (keeping the materials within their geochemical origin).

4.3.3 Static Leach Testing Summary

PCOC identified in the leachate tests are Al, As, Co, Cu, Cr, Fe, and Zn:

- Aluminium and arsenic were consistently higher than the WQ Limits in almost all samples. Elevated aluminium may be due to colloidal Al passing through the filter and being analysed as the dissolved fraction.
- Cr was elevated in one rock sample
- Co, Cu, Fe, and Zn were elevated in the soil samples.

Figure 11 shows the As concentration in the sample versus As in the leachate test. There appears to be a strong correlation (R^2 =0.86) between the As concentration in the rock and the amount of As in the leachate. This indicates that the higher the concentration of As in the sample, the more As that can be mobilised by water.

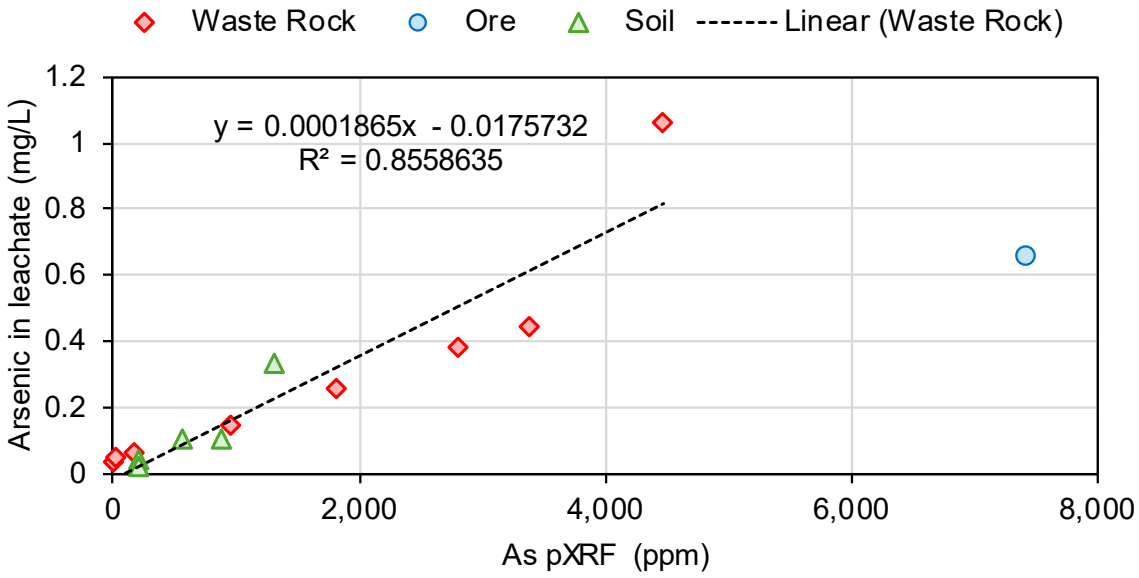


Figure 11. Arsenic ppm (pXRF) versus arsenic (mg/L) in leachate tests.

In addition, there is also a moderate correlation with sulfate release and the sulfur content of samples (data shown in Figure 12).

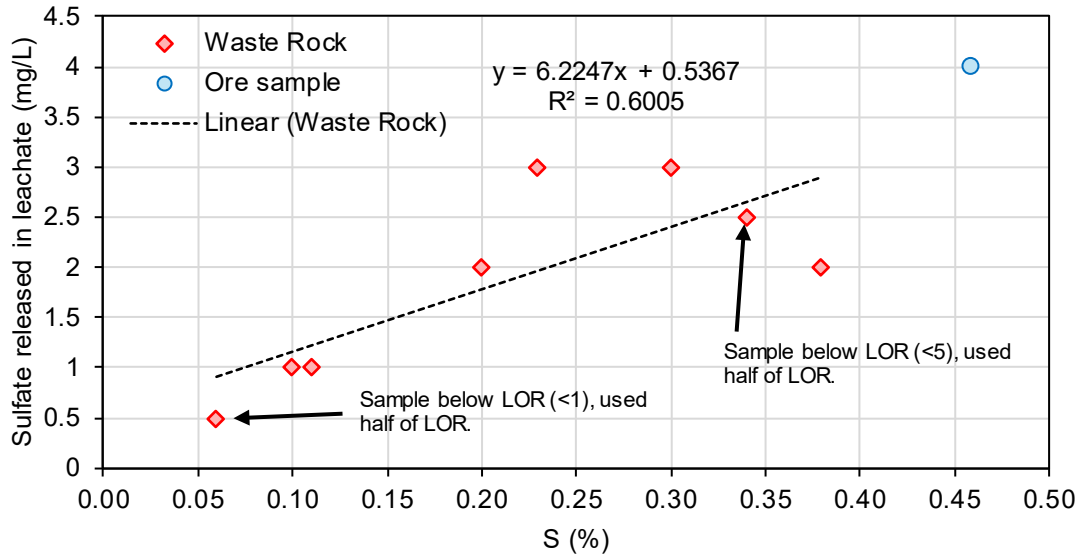


Figure 12. Total sulfur versus sulfate released in the leachate tests for the BOGP.

Assessment of sulfur content versus arsenic and antimony in leachate shows that the concentration of these elements increases with increasing sulfur content (Figure 13). This demonstrates the geoenvironmental hazards for As and Sb are linked to sulfur minerals (e.g., sulfide minerals).

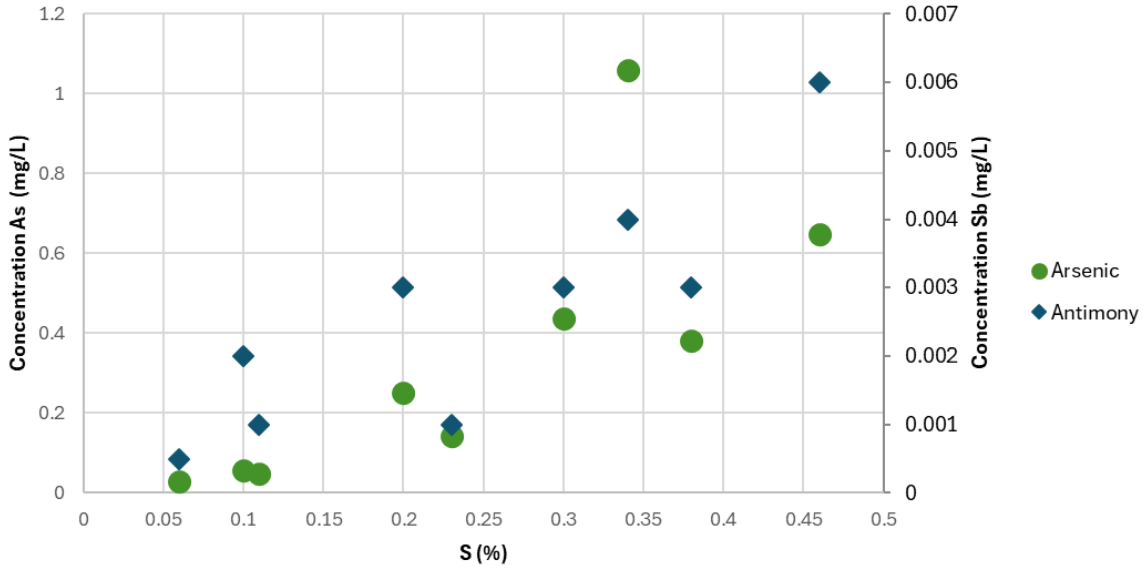


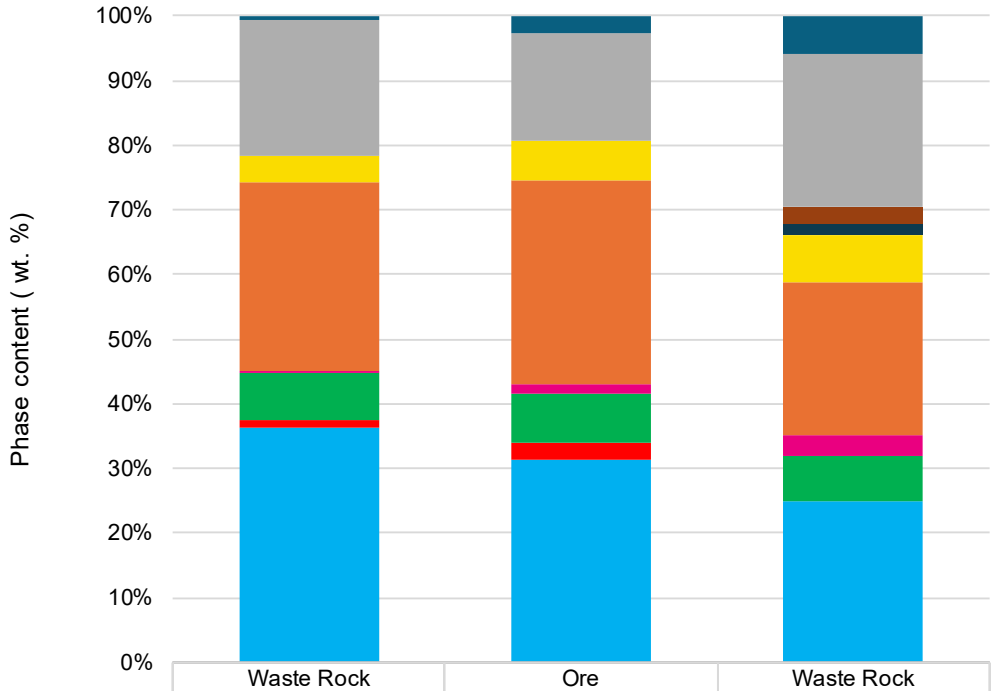
Figure 13. Sulfur content (wt%) of rock samples versus As and Sb concentrations in ASLP test.

4.4 Mineralogy

Mineralogy was analysed by quantitative X-Ray Diffraction (XRD) for 3 samples including 2 waste rock samples (TZ4 and RSSZ) and 1 ore sample (RSSZ). Arsenic concentration is variable for the samples. Results are shown in Figure 14.

Mineralogy results are shown in Table 16 along with other previously analysed properties of the samples such as lithology, Au, As, and S content and the following observations can be made:

- Arsenopyrite was highest in the ore sample with As (7,443 ppm), Au (28.46 ppm) and S (0.46 wt%) at 2.7 wt%.
- The samples show a linear correlation between As and S as shown in Figure 15.
- Arsenopyrite is found in 2 samples with the highest As and S content. It is possible that arsenopyrite is also present in the third sample, but the Limit of Detection (LOD) might not identify the mineral (LOD of XRD is approximately 0.5 – 1 wt% depending on the mineral phase and sample matrix).
- The main phases are plagioclase, quartz, and illite/mica, which is characteristic of schist.
- Dolomite is the predominant carbonate phase (7.1 – 7.6%) but also siderite is present up to 3.2% in one sample.
- Although siderite is a carbonate, it does not contribute to ANC (Weber, et al., 2004) as the Fe(II) will reprecipitate as $Fe(OH)_3$ releasing the same amount of Lewis acidity that the dissolution of the carbonate provided.



	Waste Rock RSSZ MG19250-131	Ore RSSZ MG19238-131	Waste Rock TZ4 MG19110
Amorphous	0.5	2.8	5.8
Illite/mica	21.2	16.5	23.7
Chlorite			2.8
Kaolinite			1.5
K-Feldspar	3.9	6.2	7.5
Plagioclase	29.4	31.6	23.6
Siderite	0.3	1.4	3.2
Dolomite	7.2	7.6	7.1
Arsenopyrite	1.2	2.7	
Quartz	36.3	31.2	24.8

Figure 14. Graphical distribution of the XRD mineralogy for the 3 analysed samples.

Table 15. Mineralogical results and other properties of the samples.

SAMPLE ID	MG19250-131	MG19238-131	MG19110
Lithology	RSSZ	RSSZ	TZ4
Classification	Waste Rock	Ore	Waste Rock
Au	0.37	28.46	0.23
As (pXRF)	1,818	7,443	448
S wt% (ABA)	0.2	0.46	0.11
ANC (kg H_2SO_4/t)	62.6	73.4	74.7
NAPP (kg H_2SO_4/t)	-56.5	-59.3	-71.3
Quartz	36.3	31.2	24.8
Arsenopyrite	1.2	2.7	
Dolomite	7.2	7.6	7.1
Siderite	0.3	1.4	3.2
Plagioclase	29.4	31.6	23.6
K-Feldspar	3.9	6.2	7.5
Kaolinite			1.5
Chlorite			2.8
Illite/mica	21.2	16.5	23.7
Amorphous	0.5	2.8	5.8

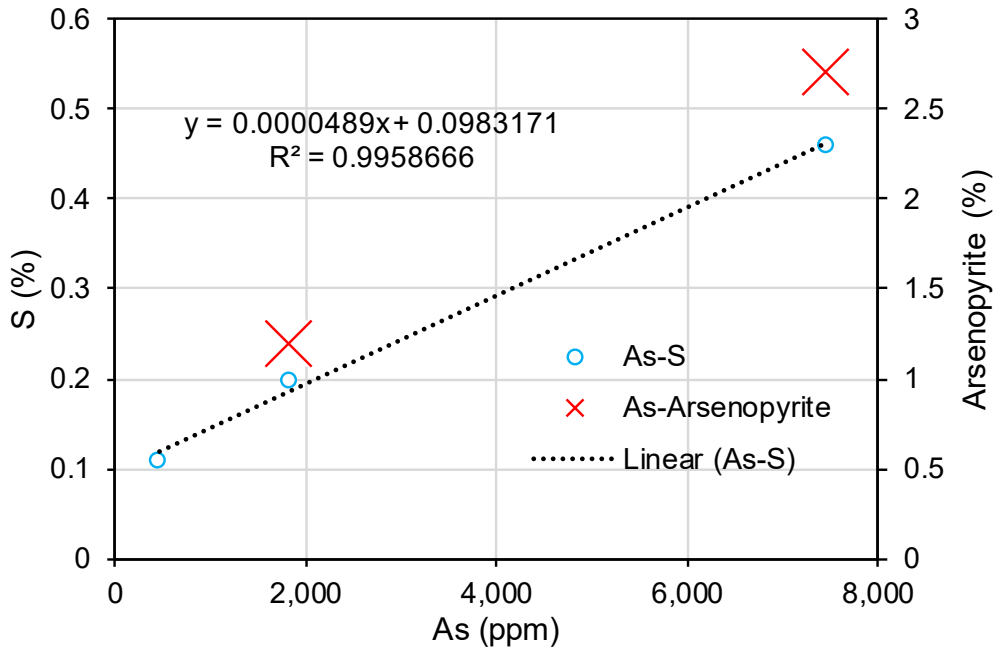


Figure 15. As and S contents in the set of samples analysed for XRD mineralogy.

4.5 Other Potential Constituents of Concern

Other PCOC associated with the mine operation could be nitrogenous compounds associated with the use of ammonium-nitrate based explosives (e.g., ANFO) and cyanide that can release significant amount of ammoniacal- and nitrate- nitrogen. Other potential source of nitrogen include:

- Nitrogen containing chemicals (e.g., nitric acid used during ore processing).
- Weathering of minerals.
- Fertiliser use.
- Nitrogen fixing in soils due to plant growth.
- Animal excreta.

OceanaGold (2020a), in conjunction with GNS conducted preliminary isotopic test work on nitrogen at Macraes, which indicated that sources of nitrogen are from incomplete combustion of explosives and nitrogen found in the host rock.

Key mine domains that can be affected by elevated nitrates due to ANFO and cyanide include domains that contain waste rock and ore and pit voids.

4.6 AMD Classification

Based on the sampling universe (excluding QA/QC samples), all samples are classified as NAF according to the Price (2009) classification, with the exception of one sample identified as Ore from the RSSZ, exhibiting an NPR of 1.71, which would be classified as Uncertain. The graphical representation of the Price (2009) classification is provided in Figure 16 categorised by geological unit and in Figure 17 by type of material type.

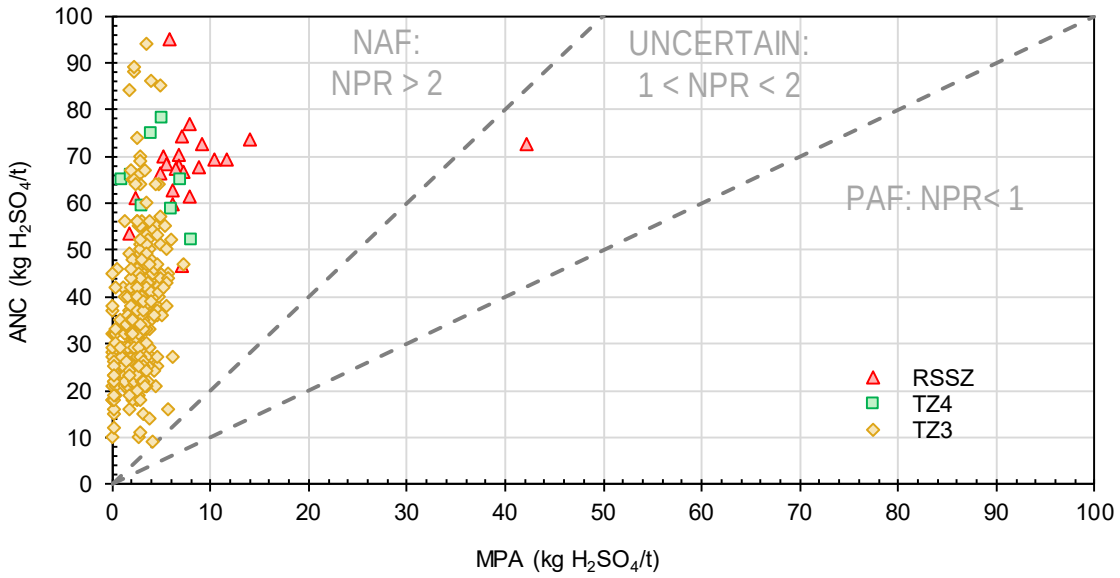


Figure 16. MPA and ANC results by geological unit including Price (2009) Classification.

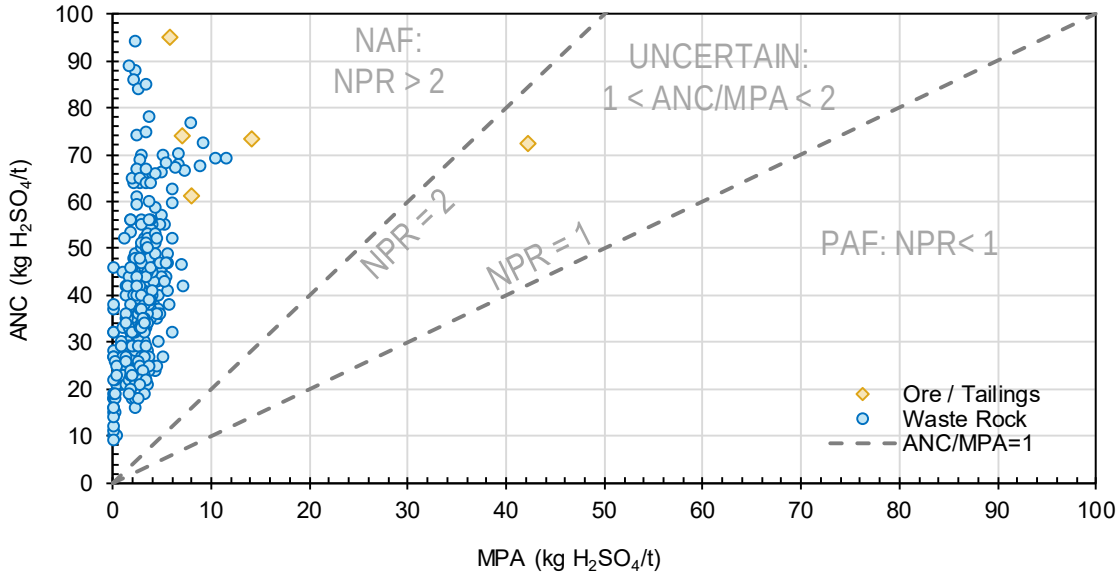


Figure 17. MPA and ANC results by material type including Price (2009) classification.

The waste rock material is classified as NAF, and the majority of ore samples are classified as NAF except for one sample that is of Uncertain classification. Given that the average composition of the ore (and hence the tailings) is likely to be NAF, this uncertain classification is unlikely to lead to acid rock drainage (ARD). For instance, both paste pH and NAG pH are neutral, as depicted in Figure 18 and Figure 19 using the Weber et al (2006) classification methodology, which shows that no time lag to ARD onset is expected.

The TZ3 unit tends to exhibit a neutral NAG pH, whereas TZ4 & RSSZ tend to display a more alkaline NAG pH. All units have a neutral paste pH, thereby disregarding any relevance of stored acidity products in the samples, which is supported by the low concentrations of sulfate resulted in the leachate tests. Moreover, all samples fall within the NAF area on the plot.

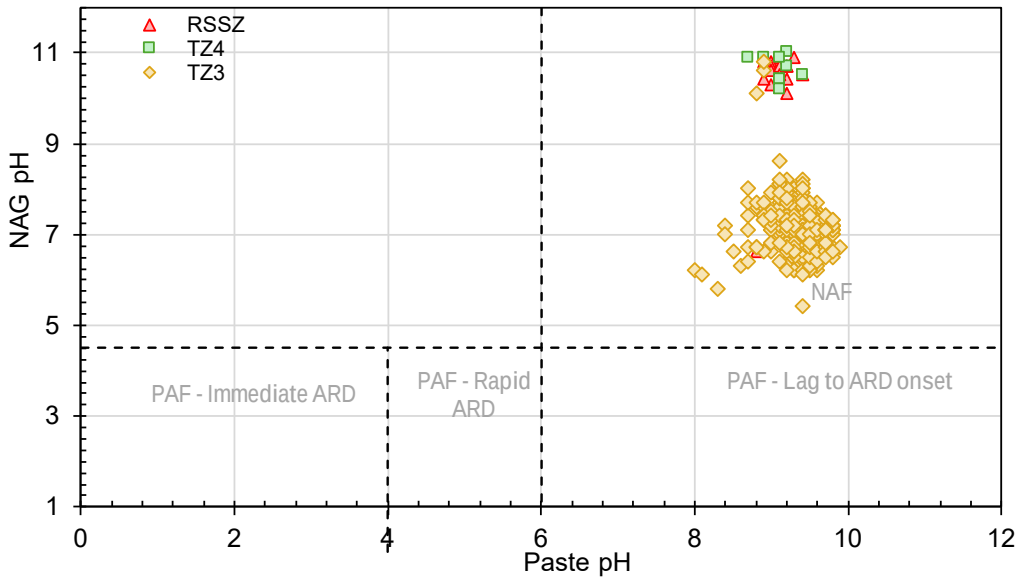


Figure 18. Paste pH and NAG pH results classified by geological unit.

Classification approach from Weber et al. (2006).

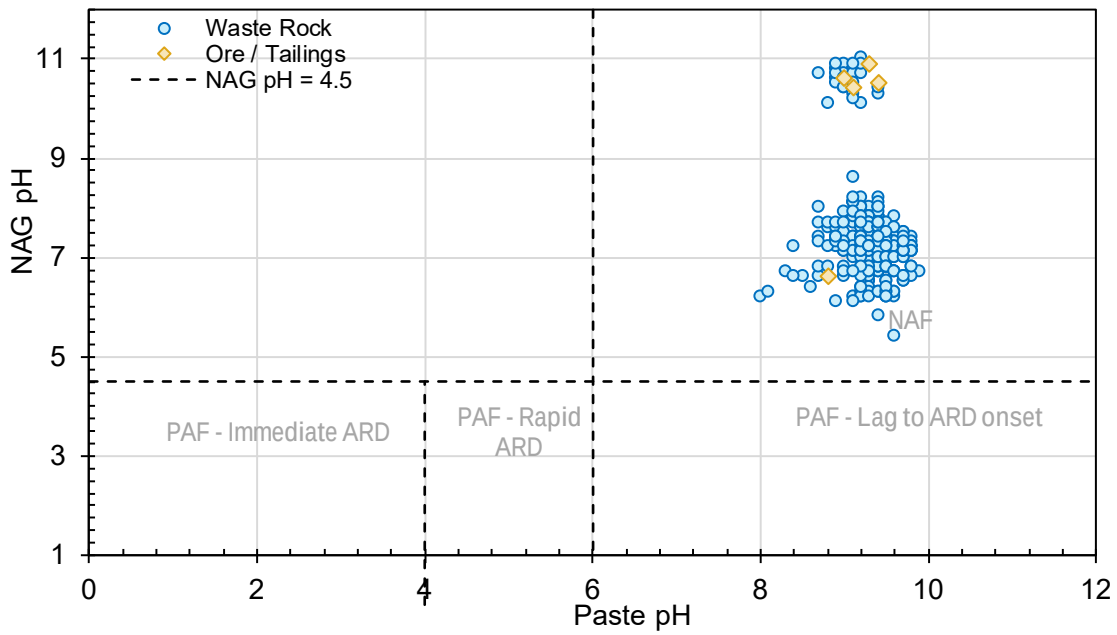


Figure 19. Paste pH and NAG pH results classified by material type.

Classification Approach from Weber et al. (2006).

The ABA data were also used to determine if samples are PAF or NAF based on the AMIRA (2002) classification scheme (as depicted in Figure 20 by geological unit and Figure 21 by material type). Results demonstrate that all materials are classified as NAF.

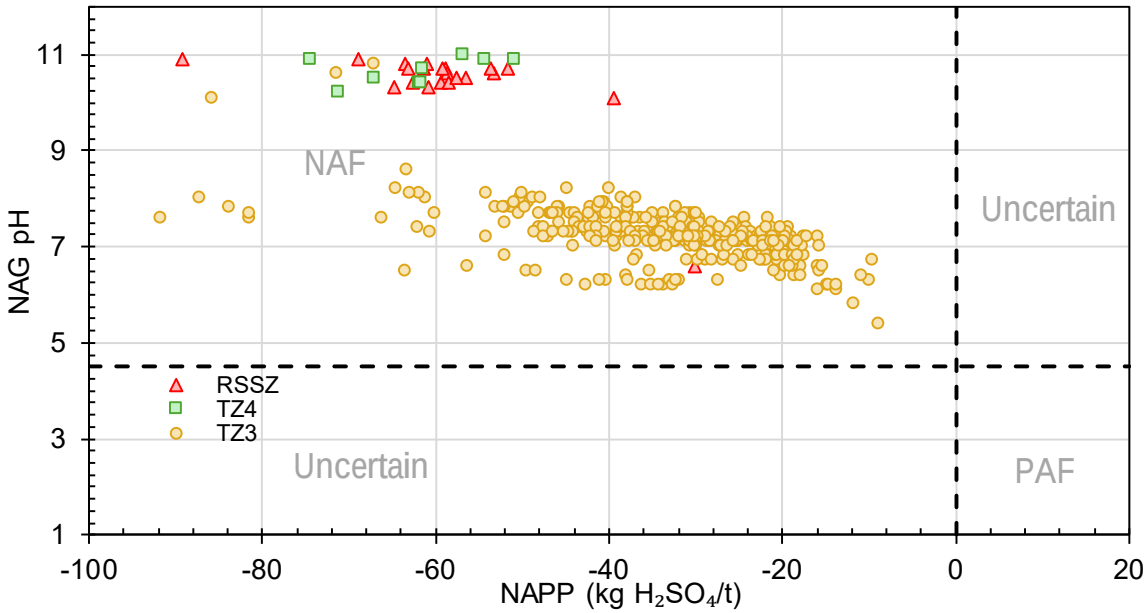


Figure 20. AMIRA (2002) classification (NAPP and NAG pH data) represented by geological unit

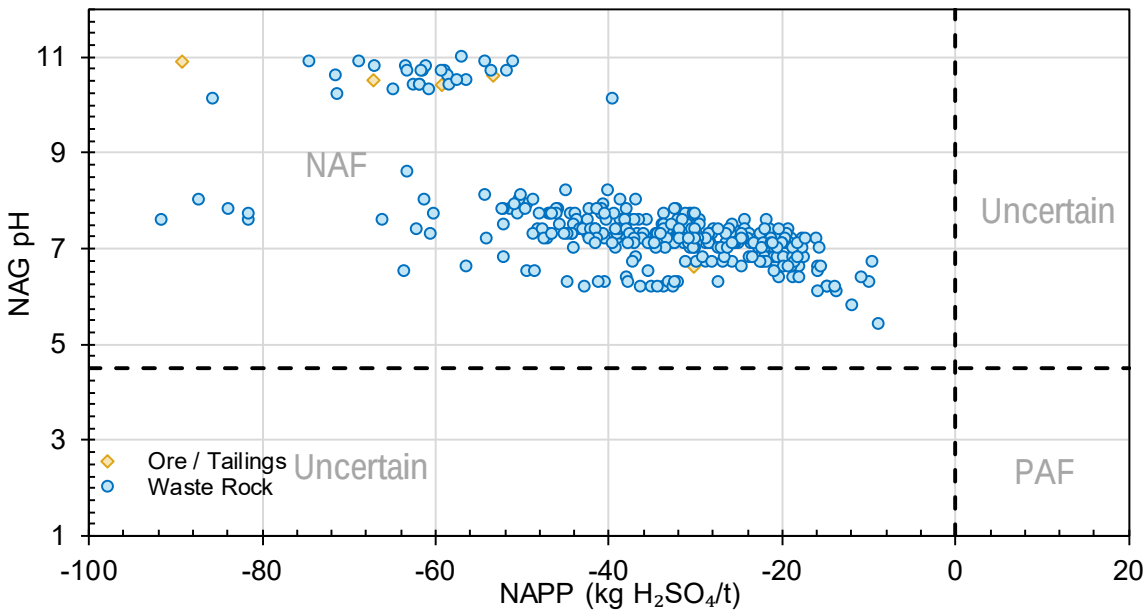


Figure 21. AMIRA (2002) classification (NAPP and NAG pH data) represented by material type.

4.7 Characterisation Summary

In summary:

- All materials, including ore and waste rock, and the three geological units, are classified as NAF (within the exception of one ore sample that was classified as Uncertain by the Price Classification). Acid rock drainage is not expected from these materials.
- RSSZ and TZ4 are very similar geochemically, which is particularly apparent in the AMIRA (2002) classification where NAG pH values are highest and NAPP data is more negative than TZ3 data. This is related to the average ANC being 67.5 kg H_2SO_4/t and 65.9 kg H_2SO_4/t in the RSSZ and the TZ4 respectively versus a lower average ANC of 36.5 kg H_2SO_4/t in the TZ3 materials.
- From the GAI analysis the PCOC that are elevated based on geochemical composition are:
    - TZ3: As, Co, Sb.
    - TZ4 and RSSZ: As, S, Sb.
    - Soil samples: As.
- The leachate test data and the WQ Limits indicated the following PCOC are elevated:
    - TZ4 & RSSZ: Al, As, Cr, and Zn.
    - Soil samples: Al, As, Co, Cu, Fe, and Zn.
- Due to the planned use of ANFO for blasting of rock and cyanide for gold recovery, several nitrogenous compounds are expected to be elevated including ammoniacal-N, nitrate-N, and nitrite-N.

- Sulfate is considered a PCOC based on analogue data from Macraes.

Table 16 presents a summary table of the findings regarding AMD classification and PCOC for the project based on the data presented in this report.

Table 16. Summary table of AMD classification and PCOC for the BOGP.

GEOLOGICAL UNIT	TYPE OF MATERIAL	AMD CLASSIFICATION	PCOC		
			GEOCHEMICAL COMPOSITION (BASED ON GAI [15])	LEACHATE TESTS	OTHER
TZ3	Waste Rock	NAF	As, Co, Sb	-	N-Compounds, SO_4
TZ4 & RSSZ	Waste Rock/ Ore	NAF	As, S, Sb	Al, As, Cr	N-Compounds, SO_4
Soils	Soils	-	As	Al, As, Co, Cu, Fe, Zn	-

Note: Red PCOC may not be elevated, but current data suggests it cannot be ruled out as not being a PCOC for the BOGP.

[15] *Geochemical Abundance Index*

5 SOURCE HAZARD ANALYSIS

This section provides analysis of the available sulfur and arsenic data to understand the geoenvironmental hazards for the BOGP.

5.1 PCOC

The identification of PCOC within different materials was conducted by assessment of the elemental enrichment and the results of leachate tests where:

- Arsenic was identified as the main PCOC for all geological units; and
- Sulfur (present as arsenopyrite and pyrite) is a key indicator of neutral metalliferous mine drainage risk.

Table 18 and Table 19 summarise sulfur and arsenic data for the BOGP, organised by material classification, geological unit, MPA (for sulfur), number of samples, and analysis method used. The tabulated data includes both waste rock and ore samples from geological units RSSZ, TZ3, and TZ4. For the ore material, there are two values for sulfur due to variations in sample numbers and analysis methods, however, the values are comparable.

Table 17. Representative sulfur and MPA data for the different geological units based on different test methods.

CLASSIFICATION	GEOLOGICAL UNIT	AVERAGE S (wt%)	MPA (kg H_2SO_4/t)	NO. OF SAMPLES	ANALYSIS METHOD
Waste Rock	RSSZ & TZ4	0.236	7.21	231	4-Acid digestion
Waste Rock	TZ3	0.088	2.69	345	ABA - Total sulfur
Waste Rock	TZ3 & TZ4 & RSSZ	0.094	2.88	370	ABA - Total sulfur
Ore	RSSZ & TZ4	0.504	15.42	5	ABA - Total sulfur
Ore	RSSZ & TZ4	0.472	14.45	94	4-Acid digestion

The data are derived from a sample population rather than the actual material volumes, so it may not accurately represent the overall quantities.

Table 18. Arsenic concentration for different geological unit based on different test methods.

CLASSIFICATION	GEOLOGICAL UNIT	AVERAGE (PPM)	NO. OF SAMPLES	METHOD
Waste Rock	RSSZ & TZ4	2618.1	231	4-Acid digestion
Waste Rock	TZ3	13.5	345	pXRF
Ore	RSSZ & TZ4	8,065	94	4-Acid digestion

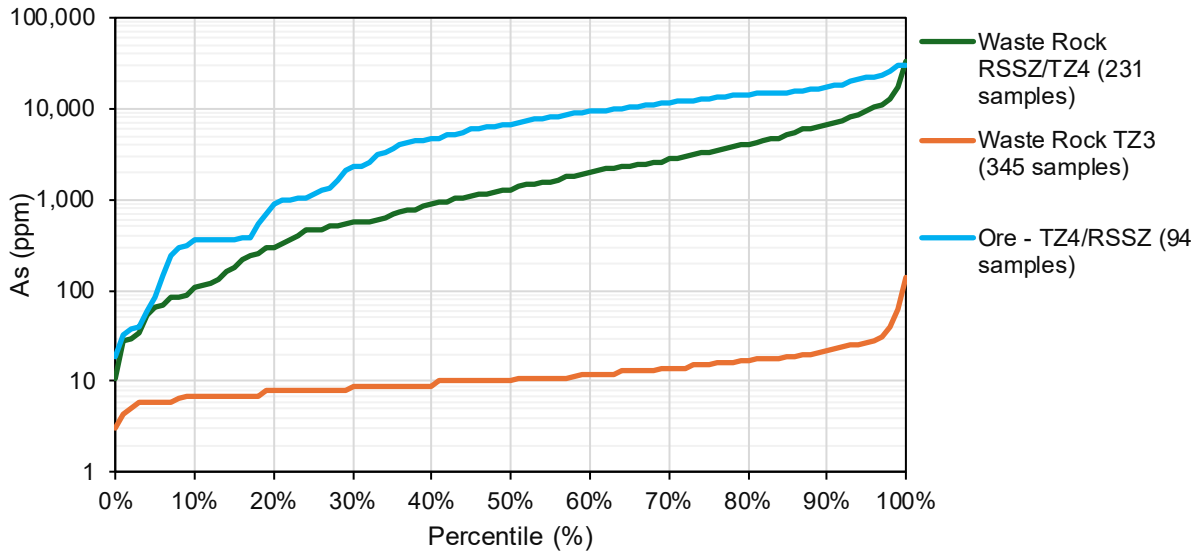


Figure 22. Arsenic distribution of different material types.

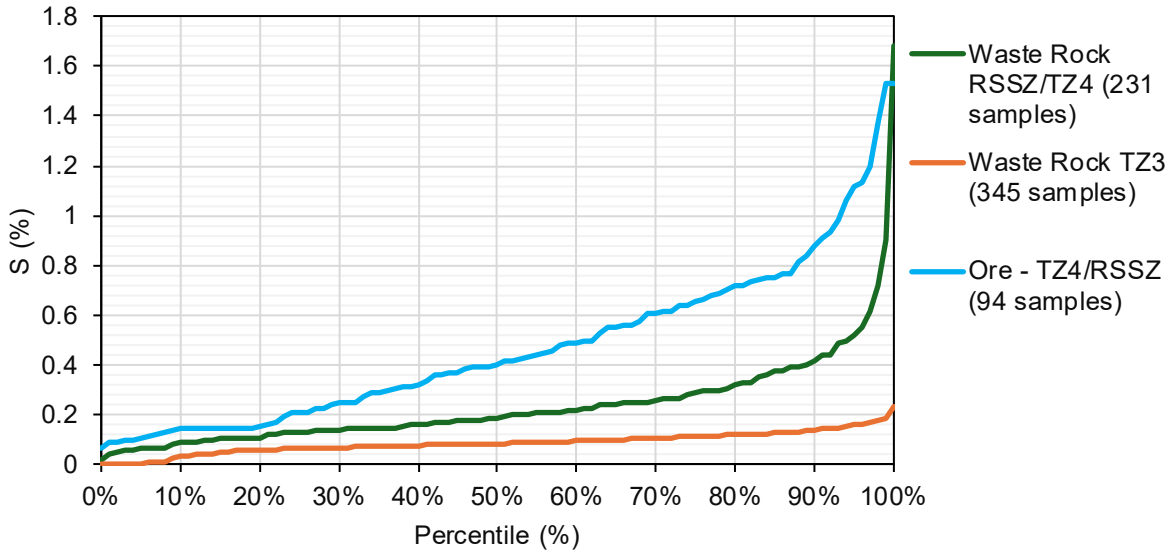


Figure 23. Sulfur distribution of different material types.

Data indicate that the majority of the arsenic is present in the TZ4/ RSSZ and ore materials. Analysis of the waste rock data indicates that:

- The TZ4 and RSSZ materials contain 97.7% of the arsenic that will be disturbed as waste rock;
- 37.2% of the sulfur in waste rock is present in the TZ4 and RSSZ materials; and
- As shown in Figure 23, the sulfur content of the TZ3 materials is significantly lower compared to other materials. Some TZ3 materials can be elevated in arsenic and should be managed like RSSZ and TZ4 materials.

5.2 Management Implications

Drillhole data for TZ3 materials were reviewed to understand what TZ3 materials were elevated in As. MGL provided data for drillhole depth versus pXRF As content (Figure 24). Results indicate that most samples had <30 mg/kg. Two drillholes (MDD207 and MDD206) had As content >30 mg/kg at about a

depth of 150 m below ground surface. Further work is required to understand why these materials are elevated in As. Waste rock characterisation will be required using pXRF to ensure the source hazard associated with these high As materials (i.e., > 30 mg/kg) is minimised.

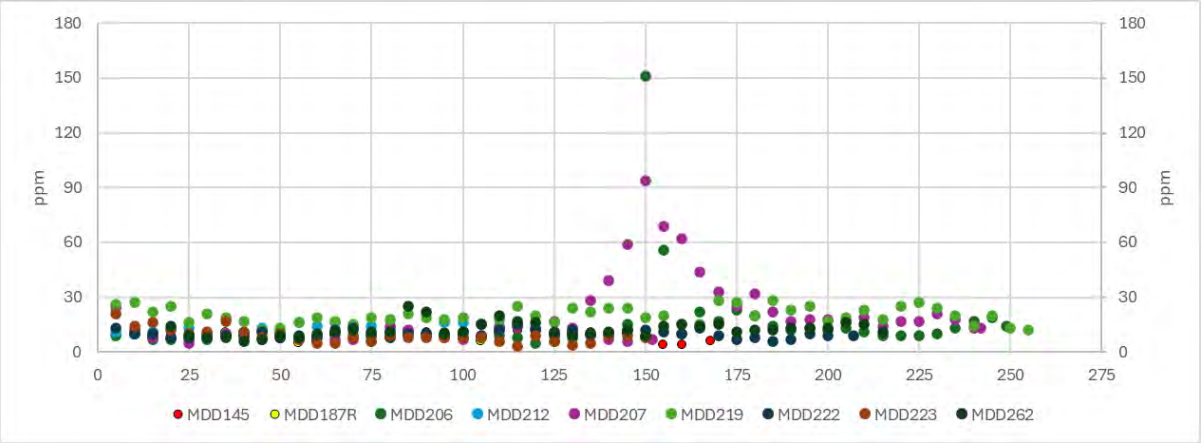


Figure 24. TZ3 As content versus drillhole depth

5.3 Geological Units

Three geological units can be found in the Bendigo-Ophir project:

- **TZ3**: This unit corresponds to a chlorite zone greenschist facies schist. According to the literature review, mineralisation in this area is generally low. However, some TZ3 materials can be elevated in As (Figure 22), hence appropriate material characterisation is required during operations (e.g., blast hole sampling and analysis of As).
- **TZ4**: Corresponds to the footwall materials and is described as a garnet-biotite-albite greenschist facies schist. Most of the samples showed enrichment in As. This unit is host to most of the mineralisation which included pyrite, arsenopyrite and gold.
- **RSSZ**: This corresponds to a late metamorphic deformation zone in TZ4 that contains the Au mineralisation, which is intersected and truncated by the TGF against TZ3. Almost all the samples exhibit enrichment in As. Ankerite and siderite, alongside arsenopyrite, galena, and sphalerite, are identified based on literature review and field observations.

5.4 Material Quantities

Table 20 provides a breakdown of material quantities for ore and waste rock, categorised by geological units.

Table 19. Summary of estimated loads for arsenic and sulfur at the facilities.

DEPOSIT	ORE (kt)	WASTE ROCK TZ3 (kt)	WASTE ROCK TZ4 (AND RSSZ) (kt)	SOIL (kt)	TOTAL WASTE ROCK (NO SOIL) (kt)
Rise and Shine	12,976	179,886	18,089	3,021	197,975
SRX	1,428	4,377	606	625	4,983
Come in Time	700	2,550	850	700	3,400
Total	15,104	186,813	19,545	4,346	206,358
Waste Rock Distribution (%)		88.7	9.3	2.1	100
Arsenic					
As (mg/kg)	8,065	13.5	2,618	-	260.2
As (tonnes)	121,814	2,522	51,169	-	175,505
Waste Rock As Distribution (%)	-	4.7	95.3	-	100
Total As Distribution (%)	69.4	1.4	29.2	-	30.6
Sulfur					
S (%)	0.472	0.088	0.236	-	0.137*
S (tonnes)	71,291	164,395	46,126	-	281,813
Waste Rock S Distribution (%)	-	62.8	37.2	-	100
Total S Distribution (%)	25.3	58.3	16.4	-	74.7

Calculated as a weighted average by dividing the total tonnes of As or S by the total tonnes of waste rock.

Waste Rock Distribution:

- The TZ3 geological unit represents 88.7% of the total waste rock, whilst TZ4 and RSSZ make up the remaining 9.3%.

Arsenic Distribution:

- TZ4/RSSZ waste rock contains ~95.3% of the arsenic within the waste rock, whilst TZ3 contains only 4.7%.
- 69.4% of the total arsenic will be present in the ore, which will be stored in the TSF. The remainder 30.6% is in the waste rock, which will be placed in the ELFs.

Sulfur Distribution:

- TZ3 geological unit contains 78.1% of the sulfur found in the waste rock, whilst TZ4 and RSSZ hold the remainder 21.9%.

- 25.3% of the sulfur is present in the ore, whilst the remainder 74.7% of the sulfur is present in the waste rock.
- TZ3 has a sulfur content of 0.088%, and although its arsenic concentration is low, its sulfur content is significant due to the material quantities.
- Data provided by MGL (2025) indicate that the initial 10 to 15 m of the RAS deposit is low sulfur, i.e., <0.02 wt% (Figure 24). This will be mined first, before deeper parts of the deposit, and will be used for the construction of mine infrastructure where lower sulfur materials will be beneficial to mitigate potential effects and for covering ELF final slopes.

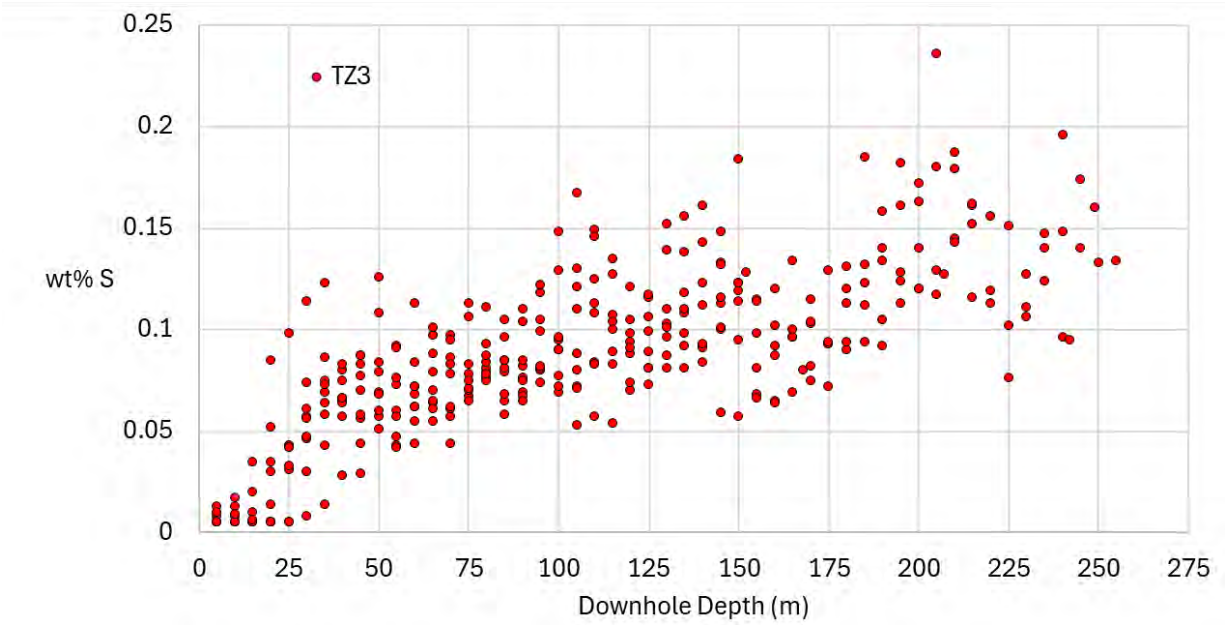


Figure 25. Sulfur content versus downhole depth for TZ3 materials– RAS Deposit.

Data Source: MGL – email dated

Management Implications:

- Waste rock data indicate that the TZ4/RSSZ lithology contains ~95.3% of arsenic and 21.9% of sulfur yet represent only 9.3% of the waste rock that will be disturbed. Hence, appropriate management of waste rock to reduce sulfide mineral oxidation is a critical step to minimise deleterious effects (i.e., management of 9.3% of the waste rock will mitigate 95.3% of the arsenic risk in the ELFs that will contain the waste rock).
- Sulfate is likely to be a key contaminant, especially within the TZ3 material, which contains a significant proportion of the sulfur for the BOGP (58.3%).
- Management to minimise the oxidation of sulfides within the ELF and TSF, and management of water in-flow through the ELF and TSF, which will mobilise oxidation products is a critical management requirement for the project.

5.5 Summary

All materials are classified as NAF and circum-neutral drainage is expected. Acid rock drainage is not expected from these materials. However, neutral metalliferous drainage could occur where some

elements may be elevated such as As and SO_4 and other trace metals. Nitrogenous compounds (notably nitrate) are also expected due to the use of ANFO and cyanide for gold recovery. Hence the terminology ‘Mine Impacted Water’ may be more appropriate to cover AMD and nitrogenous compounds.

Data indicates that waste rock associated with the TZ4 and RSSZ will be elevated in arsenic and sulfur and should be classified as potentially arsenic generating (PAG). Some TZ3 materials are elevated in As and should also be classified as PAG. PAG materials should be managed appropriately to reduce sulfide mineral oxidation and should be placed within the core of the ELF

At closure, the primary mine domains that can potentially influence the water quality include the ELFs, TSF, pit voids, and the underground workings.

6 SUMMARY AND RECOMMENDATIONS

6.1 Summary

The geoenvironmental hazards associated with the proposed Bendigo-Ophir project were investigated as presented in this report. For the study, 1,608 samples were analysed to determine the following geoenvironmental characteristics:

- AMD potential of the materials.
- PCOC associated with the materials.

The materials are classified as NAF; however neutral metalliferous drainage is expected contributing to mine influenced water that will also be elevated in nitrogenous compounds due to the use of ANFO and cyanide for gold recovery. Acid rock drainage is not expected from these materials. The following key observations are provided:

- Arsenic was identified as the main PCOC with elevated concentrations across all geological units.
- Based on geochemical composition (and supporting data):
    - TZ3 materials are enriched As and Co. Antimony is possibly elevated.
    - RZ4 and RSSZ materials are enriched in As, S. Antimony is possibly elevated.
- Based on static leach testing:
    - TZ3 materials were not assessed in this report (see MWM 2025c) for further details.
    - TZ4 & RSSZ materials: Al, As, and Cr
    - Soils: Al, As, Fe, Co, Cu, and Zn.
- Based on analogue data and general geoenvironmental hazards:
    - Nitrogenous compounds (nitrate, nitrite, and ammoniacal nitrogen) are expected due to the use on ammonium-nitrate based explosives and cyanide.
    - Sulfate is considered a PCOC based on sulfate being elevated at the Macraes Gold Mine, which has a similar sulfur content.

Appropriate best practicable management techniques are required to mitigate the potential environmental risks associated with project.

6.2 Recommendations for Water Quality Compliance Monitoring

Based on the studies contained in this report the following PCOC should be included in resource consent monitoring conditions:

- SO_4 – due to elevated sulfur in waste rock and ore.
- As and Fe – due to the presence of As- and Fe- bearing sulfide minerals.
- Sb – due to its relationship with As and sulfur minerals and may be elevated.
- Metals – Al, Co, Cu, Cr, and Zn.

6.3 Recommendations: Geoenvironmental Hazard Assessment

Further work is required to understand the geoenvironmental hazards and potential environmental risk for the project including:

- Complete CLT to confirm static testing results (i.e., PCOC). Columns should be run until geochemical stability is achieved (~ 12 months), validated by acid base accounting processes.
    - *Recommendation #1: Complete CLT for waste rock and tailings.*
- Current data indicate that waste rock associated with the TZ4 and RSSZ will be elevated in arsenic and sulfur and should be classified as PAG.
- PAG materials should be managed to prevent interaction with oxygen and minimise interaction with water.
- Data also suggests that some TZ3 materials are also elevated in arsenic (i.e., > 30 mg/kg) and should be classified as PAG. However, there remains some uncertainty as to the structural controls (e.g., lithology, faulting) for these high As zones within the TZ3. A management process needs to be developed to characterise and classify waste rock as PAG prior to mining commencing.
    - *Recommendation #2: Develop a management process for the operational characterisation and classification of waste rock.*
- Soils elevated in arsenic due to natural mineralisation represent a source hazard that will require management to avoid adverse effects if they are disturbed. The following work is required:
    - Confirmation that a cut-off threshold of ~20 ppm As (GAI ≥ 3 = 17 ppm) is suitable as a threshold to define As-rich soils that require management. Additional static leach test studies are required to quantify the As, Cu, Fe, Zn mobility in these soils. Further discussion is provided in Soil Management Plan (MGL, 2025)
    - Management of dust that may be elevated in PCOC such as arsenic.
    - Management of drainage/seepage from any As-rich soil stockpile area.
    - Confirmation of a suitable location for reuse of the soils for rehabilitation purposes within the Rise and Shine Creek Valley (keeping the materials within their geochemical origin).
    - *Recommendation #3: Develop an As-rich soil management plan*
- A MIW management plan (MIWMP) is recommended for the project. The MIWMP should ensure key AMD hazards/risks/uncertainties are identified and managed appropriately to ensure water quality objectives can be achieved, including a suitable performance monitoring plan and relevant actions for any variance from the expected case. The use of trigger action response plans (TARPs) would be most suitable for this.
    - *Recommendation #4: Develop an MIW Management Plan for the BOGP.*

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8 LIMITATIONS

Attention is drawn to the document “Limitations”, which is included in Appendix I of this report. The statements presented in this document are intended to provide advice on what the realistic expectations of this report should be, and to present recommendations on how to minimise the risks associated with this project. The document is not intended to reduce the level of responsibility accepted by Mine Waste Management, but rather to ensure that all parties who may rely on this report are aware of the responsibilities each assumes in doing so.

APPENDIX A ABBREVIATIONS

ABBREVIATION	DEFINITION
ABA	Acid base accounting
AEE	Assessment of environmental effects
AMD	Acid and metalliferous drainage
ANC	Acid neutralisation capacity
ANFO	Ammonium Nitrate Fuel Oil (ANFO) explosives
ASLP	Australian Standard Leaching Procedure
BOGP	Bendigo-Ophir Gold Project
CIT	Come in Time
CLT	Column Leach test
CRS	Certified Reference Samples
DGV	Default guideline values
DI	Deionised
ELF	Engineered landforms
GAI	Geochemical Abundance Index
INAP	International Network for Acid Prevention
LOM	Life of mine
LOD	Limit of detection
LOQ	Limit of quantification
LOR	Limit of reporting
LRT	Low reliability trigger
MGL	Matakanui Gold Limited
MIW	Mine Impacted Water
Mt	Million tonnes
MPA	Maximum potential acidity
MWM	Mine Waste Management Limited
NAF	Non-acid forming
NAG	Non-arsenic generating
NAPP	Net acid production potential
NMD	Neutral metalliferous drainage
NPR	Neutralisation potential ratio
ORC	Otago Regional Council
PAF	Potentially acid forming
PAG	Potentially arsenic generating
PCOC	Potential Constituents of Concern

ABBREVIATION	DEFINITION
PPM	Parts per million
pXRF	Portable X-ray fluorescence
QA/QC	Quality assurance and quality control
RAS	Rise and Shine
ROM	Run of mine
RSSZ	Rise and Shine Shear Zone
SD	Saline Drainage
SRX	Srex
SRE	Srex East
SPLP	Synthetic Precipitation Leaching Procedure
TARP	Trigger action response plan
TGF	Thomson Gorge Fault
TSF	Tailings Storage Facility
TZ3	Lower Greenschist facies Textural Zone 3 rocks of the Otago Schist
TZ4	Upper Greenschist facies Textural Zone 4 rocks of the Otago Schist
UC	Uncertain
UG	Underground
WQ Limit	Water Quality Limit – based on Ryder (2025) and other water quality guidance
WRS	Waste Rock Stack
XRD	X-ray Diffraction

APPENDIX B MATERIAL CHARACTERISATION METHODOLOGY

Acid Base Accounting Analysis Programme

Acid Base Accounting

The geochemical samples were analysed by a typical ABA static testing suite. This included:

- Paste pH and electrical conductivity (EC)
- Total sulfur and total carbon content (wt%).
- Maximum potential acidity (MPA)
- Acid neutralising capacity (ANC)
- Net acidity generation testing to determine net acid generation (NAG) pH and NAG acidity.

Paste pH and Paste EC

Paste pH and Paste EC was determined with electrochemical probes calibrated using certified buffers standards following the AMIRA (2002) methodology. Slurries are prepared at a 1:2 ratio of finely ground sample (typically < 75 µm) to deionised water. Paste pH is an industry standard test used to determine if the sample is already influenced by stored acidity / acid metalliferous drainage (e.g., AMIRA, 2002). Paste EC was also obtained during this test procedure.

Total Sulfur and Maximum Potential Acidity

The total sulfur of the samples was determined by high temperature combustion in a LECO furnace and sulfur dioxide detection by an infra-red cell (Eltra® 4000 CS Determinator). The infra-red cell output is calibrated against the value of a known standard sample to provide the total sulfur concentration of the sample.

Sulfur content was also assessed by 4 Acid Digestion followed by ICP-MS analysis

The acid generation potential of a rock is determined by measuring the sulfur (or sulfide) content of the sample and calculating the MPA that would be generated, assuming all the sulfur (or sulfide) is present as pyrite and completely oxidises where:

$MPA = S\ (wt\%) \times 30.6$ Units: kg H_2SO_4/t

This approach follows industry standard methodologies (AMIRA, 2002).

Total Carbon

The total carbon of the samples was determined by high temperature combustion in a LECO furnace evolved carbon (as CO_2) is measured by an infra-red cell (Eltra® 4000 CS Determinator). The infra-red cell output is calibrated against the value of a known standard sample to provide the total carbon concentration of the sample.

Acid Neutralisation Capacity

The ANC of the sample was determined by the modified Sobek method (Sobek et al., 1978) where a known amount of standardised hydrochloric acid (HCl) is added to an accurately weighed sample, allowing the sample time to react, then back-titrating the mixture with standardised sodium hydroxide

(NaOH) to determine the amount of unreacted HCl (AMIRA, 2002). The amount of acid consumed by reaction with the sample is then calculated. ANC is an industry standard test used to determine the acid neutralisation capacity of a sample.

NAG Test

The single addition NAG test was undertaken where a pulverised sample (2.5 g) is digested with 250 mL of 15% (unstabilised) hydrogen peroxide and allowed to react to completion before measuring the pH of the NAG liquor. The NAG liquor is then titrated with NaOH to pH 4.5 and pH 7.0. Acidity measured by the titration to pH 4.5 is due to free hydrogen ions as well as acidity from aluminium and iron (AMIRA, 2002). Additional acidity measured by the titration to pH 7 can be attributed to metal hydrolysis reactions such as Cu and Zn (AMIRA, 2002).

Net Acid Producing Potential

The NAPP is a measure of the samples overall acid generating capacity and is calculated by subtracting the ANC from MPA. A negative NAPP indicates a net neutralisation capacity, and the sample can be classified as non-acid forming (NAF). A positive NAPP indicates a positive net acid producing potential and the sample can be classified as potentially acid forming (PAF). NAPP, MPA, and ANC are expressed in kg H_2SO_4 per tonne equivalent.

Neutralisation Potential Ratio

The neutralisation potential ratio (NPR) is another common method to assess the potential to generate acid rock drainage, which is based on the Price (2009) classification methodology. The Price classification system uses the ratio between ANC and MPA to classify samples as PAF, NAF or uncertain (UC), where the NPR = ANC/MPA. When ANC/MPA is less than 1, samples are classified as PAF. When ANC/MPA is greater than 2, sufficient neutralising capacity is inferred to account for acid production and the samples are classified as NAF. When ANC/MPA is between 1 and 2, samples are classified as UC.

Total Element Analysis

Whole rock composition was determined by digesting powdered samples in a four-acid mixture (hydrochloric, nitric, perchloric and hydrofluoric), followed by elemental analysis of the digest solutions by a combination of inductively coupled plasma (ICP) mass spectrometry (ICP-MS) and ICP atomic emission spectrometry (ICP-AES). Separate, dual-acid digests (hydrochloric and nitric) were analysed for boron and mercury concentrations using ICP-AES/MS and cold-vapour atomic absorption spectrometry (CV-AAS), respectively.

Whole rock element analysis data can provide a guide to metals that are elevated. For geochemistry the element enrichments in host rock are identified using the Geochemical Abundance Index (GAI) (Förstner et al., 1993).

Mineralogy

The mineralogical analysis was conducted by the QUT (Queensland University of Technology) Central Analytical Research Facility.

Sub-samples were accurately weighed, and specimens prepared for X-ray diffraction analysis by the addition of a corundum (Al2O3) internal standard at 20 wt%. The specimens were micronized in a

McCrone mill using zirconia beads and ethanol, then dried in an oven overnight at 40 °C. The resultant homogenous powders were back-pressed into sample holders.

Quantitative mineralogy assessment was undertaken utilising powder x-ray diffraction (XRD) technology using a PANalytical Cubix3 with copper radiation and graphite monochromater. Qualitative analysis was undertaken using Bruker Diffracplus Search/Match (ICDD PDF-2 (2011) database) and SIROQUANT Version 4 software was used for quantitative analysis.

Water Leachate Testing

Leachate tests were conducted to assess the leachability of PCOC in the samples. Two methods were used in this study. The Synthetic Precipitation Leaching Procedure (SPLP) and a Custom DI Leachate Test based on the Australian Standard Leaching Procedure (ASLP).

SPLP

The SPLP was originally designed to simulate leaching under acid rain conditions. The procedure as written in USEP SW-846 selected the appropriate buffer on the bases of site location with reference to the Mississippi River.

The extraction involves a rotating extraction at 23ºC ± 2°C for 18 ± 2 hr at 30 ± 2 rpm. Following the extraction the SPLP extract is separated from the solids by filtering through a glass fibre filter paper with a pore size of 0.6 to 0.8 µm. It is this extract that is then analysed as a water sample for the parameters of interest.

This procedure is particularly useful in assessing on-site stockpile run off, where the only external influence is natural precipitation. Deionised water was used in the test. Further details are available:

https://www.epa.gov/sites/default/files/2015-12/documents/1312.pdf

ASLP

The method uses deionised water using a 1:20 solid to liquid ratio. The solid sample is leached with deionised water normally for about 18 hours contact time. Leachate from that interaction is then filtered (0.45 µm) then analysed to understand the concentration of dissolved parameters (mg/L). For this project, the analysis involved an 18-hr tumble time. Leachates are acidified and analysed for a suite of major, trace and ultra-trace elements using a combination of ICP-MS and ICP-AES.

NOTE

Methods for short-term (or ‘static’) leach tests can vary widely, however, all tests generally measure readily soluble constituents of mine wastes and geological materials. The short-term nature of static leach tests provides a snapshot in time of a material’s mobile elements. Test results depend entirely on the present disposition of the sample (e.g., unoxidised vs. oxidised; oxidation products absent vs. oxidation products present). For reactive rocks (e.g., material that contains oxidisable sulfur), the transient processes that lead to changes in solution chemistry during water-rock interactions often develop over periods of time that are much greater than is stipulated in the static water leach test. Therefore, the results from short-term leach tests generally cannot be applied to develop reaction rates and predict long-term mine water quality but should instead be used to get an initial indication of parameters of constituents of interest.

Column Leach Testing

Leach columns (AMIRA, 2002) are used to compliment environmental geochemical investigations on mine rock and waste materials. The leach columns provide information on a range of issues including sulphide reactivity, oxidation kinetics, metal solubility and the leaching behaviour of the test materials. The leach column test period varies depending on material characteristics and the investigation needs, usually the results are reviewed on a 6 monthly basis. The free draining leach column test is the most commonly used and provides information on sulphide reactivity, oxidation kinetics, and the leaching behaviour of materials under optimum oxidising conditions. The standard procedures for free draining leach column tests are provided below. Variations to these procedures are sometimes required in order to accommodate specific investigation or site condition needs.

The free draining leach column test utilises a plastic Buchner Funnel with an internal dimension of 175 mm in diameter and 100 mm high, giving a capacity of about 2.5 litres. Typically, this size funnel will hold about 2 to 2.5 kg of crushed rock, tailings or sediment. For larger sample sizes larger Buchner Funnels or drums can be used. Plate F1 shows an example of the conventional Buchner Funnel set-up. The free draining leach column operation is designed to achieve a weekly wet-dry cycle and a monthly leaching cycle. The sample is wetted by applying the test solution, (usually deionised water), to the surface and leachate is collected through the funnel at the base. Heat lamps are used to ensure drying of the sample between test solution applications. Typically, the test solution is applied weekly, and the leachates are collected monthly, however, sometimes this regime requires modification depending on materials characteristics and analytical requirements.

The conventional free draining leach column set-up is designed to suspend the columns over a collection vessel allowing leachate to freely drain through the test material. Heat lamps can also be installed above the leach columns to maintain a surface temperature of 30 to 35°C. Certified Reference Samples Memorandum

APPENDIX C GEOCHEMISTRY SAMPLES LIST

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1	MG19848	ABA	TZ3	Waste Rock	MDD206	0	5	RAS	WP23-12513
2	MG19849	ABA	TZ3	Waste Rock	MDD206	5	10	RAS	WP23-12513
3	MG19850	ABA	TZ3	Waste Rock	MDD206	10	15	RAS	WP23-12513
4	MG19851	ABA	TZ3	Waste Rock	MDD206	15	20	RAS	WP23-12513
5	MG19852	ABA	TZ3	Waste Rock	MDD206	20	25	RAS	WP23-12513
6	MG19853	ABA	TZ3	Waste Rock	MDD206	25	30	RAS	WP23-12513
7	MG19854	ABA	TZ3	Waste Rock	MDD206	30	35	RAS	WP23-12513
8	MG19855	ABA	TZ3	Waste Rock	MDD206	35	40	RAS	WP23-12513
9	MG19856	ABA	TZ3	Waste Rock	MDD206	40	45	RAS	WP23-12513
10	MG19857	ABA	TZ3	Waste Rock	MDD206	45	50	RAS	WP23-12513
11	MG19858	ABA	TZ3	Waste Rock	MDD206	50	55	RAS	WP23-12513
12	MG19859	ABA	TZ3	Waste Rock	MDD206	55	60	RAS	WP23-12513
13	MG19860	ABA	TZ3	Waste Rock	MDD206	60	65	RAS	WP23-12513
14	MG19861	ABA	TZ3	Waste Rock	MDD206	65	70	RAS	WP23-12513
15	MG19862	ABA	TZ3	Waste Rock	MDD206	70	75	RAS	WP23-12513
16	MG19863	ABA	TZ3	Waste Rock	MDD206	75	80	RAS	WP23-12513
17	MG19864	ABA	TZ3	Waste Rock	MDD206	80	85	RAS	WP23-12513
18	MG19865	ABA	TZ3	Waste Rock	MDD206	85	90	RAS	WP23-12513
19	MG19866	ABA	TZ3	Waste Rock	MDD206	90	95	RAS	WP23-12513
20	MG19867	ABA	TZ3	Waste Rock	MDD206	95	100	RAS	WP23-12513
21	MG19868	ABA	TZ3	Waste Rock	MDD206	100	105	RAS	WP23-12513
22	MG19869	ABA	TZ3	Waste Rock	MDD206	105	110	RAS	WP23-12513
23	MG19870	ABA	TZ3	Waste Rock	MDD206	110	115	RAS	WP23-12513
24	MG19871	ABA	TZ3	Waste Rock	MDD206	115	120	RAS	WP23-12513
25	MG19872	ABA	TZ3	Waste Rock	MDD206	120	125	RAS	WP23-12513
26	MG19873	ABA	TZ3	Waste Rock	MDD206	125	130	RAS	WP23-12513
27	MG19874	ABA	TZ3	Waste Rock	MDD206	130	135	RAS	WP23-12513
28	MG19875	ABA	TZ3	Waste Rock	MDD206	135	140	RAS	WP23-12513
29	MG19876	ABA	TZ3	Waste Rock	MDD206	140	145	RAS	WP23-12513
30	MG19877	ABA	TZ3	Waste Rock	MDD206	145	150	RAS	WP23-12513
31	MG19878	ABA	TZ3	Waste Rock	MDD206	150	155	RAS	WP23-12513
32	MG19879	ABA	TZ3	Waste Rock	MDD206	155	160	RAS	WP23-12513
33	MG19880	ABA	TZ3	Waste Rock	MDD206	160	165	RAS	WP23-12513
34	MG19881	ABA	TZ3	Waste Rock	MDD206	165	170	RAS	WP23-12513
35	MG19882	ABA	TZ3	Waste Rock	MDD206	170	175	RAS	WP23-12513
36	MG19883	ABA	TZ3	Waste Rock	MDD206	175	180	RAS	WP23-12513
37	MG19884	ABA	TZ3	Waste Rock	MDD206	180	185	RAS	WP23-12513
38	MG19885	ABA	TZ3	Waste Rock	MDD206	185	190	RAS	WP23-12513
39	MG19886	ABA	TZ3	Waste Rock	MDD206	190	195	RAS	WP23-12513
40	MG19887	ABA	TZ3	Waste Rock	MDD206	195	200	RAS	WP23-12513
41	MG19888	ABA	TZ3	Waste Rock	MDD206	200	205	RAS	WP23-12513
42	MG19889	ABA	TZ3	Waste Rock	MDD206	205	210	RAS	WP23-12513
43	MG19890	ABA	TZ3	Waste Rock	MDD206	210	215	RAS	WP23-12513
44	MG19891	ABA	TZ3	Waste Rock	MDD206	215	220	RAS	WP23-12513
45	MG19892	ABA	TZ3	Waste Rock	MDD206	220	225	RAS	WP23-12513
46	MG19893	ABA	TZ3	Waste Rock	MDD206	225	230	RAS	WP23-12513
47	MG19894	ABA	TZ3	Waste Rock	MDD206	230	235	RAS	WP23-12513
48	MG19895	ABA	TZ3	Waste Rock	MDD206	235	240	RAS	WP23-12513
49	MG19896	ABA	TZ3	Waste Rock	MDD206	240	245	RAS	WP23-12513
50	MG19897	ABA	TZ3	Waste Rock	MDD206	245	249	RAS	WP23-12513
51	MG43558	ABA	COMPANY_STD	QAQC	na	na	na	QA/QC	WP23-12513
52	MG43559	ABA	COMPANY_STD	QAQC	na	na	na	QA/QC	WP23-12513
53	*DUP-MG19856	ABA	QAQC	QAQC	na	na	na	QA/QC	WP23-12513
54	MG43501	ABA	TZ3	Waste Rock	MDD207	0	5	RAS	WP23-12514
55	MG43502	ABA	TZ3	Waste Rock	MDD207	5	10	RAS	WP23-12514
56	MG43503	ABA	TZ3	Waste Rock	MDD207	10	15	RAS	WP23-12514
57	MG43504	ABA	TZ3	Waste Rock	MDD207	15	20	RAS	WP23-12514
58	MG43505	ABA	TZ3	Waste Rock	MDD207	20	25	RAS	WP23-12514

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
59	MG43506	ABA	TZ3	Waste Rock	MDD207	25	30	RAS	WP23-12514
60	MG43507	ABA	TZ3	Waste Rock	MDD207	30	35	RAS	WP23-12514
61	MG43508	ABA	TZ3	Waste Rock	MDD207	35	40	RAS	WP23-12514
62	MG43509	ABA	TZ3	Waste Rock	MDD207	40	45	RAS	WP23-12514
63	MG43510	ABA	TZ3	Waste Rock	MDD207	45	50	RAS	WP23-12514
64	MG43511	ABA	TZ3	Waste Rock	MDD207	50	55	RAS	WP23-12514
65	MG43512	ABA	TZ3	Waste Rock	MDD207	55	60	RAS	WP23-12514
66	MG43513	ABA	TZ3	Waste Rock	MDD207	60	65	RAS	WP23-12514
67	MG43514	ABA	TZ3	Waste Rock	MDD207	65	70	RAS	WP23-12514
68	MG43515	ABA	TZ3	Waste Rock	MDD207	70	75	RAS	WP23-12514
69	MG43516	ABA	TZ3	Waste Rock	MDD207	75	80	RAS	WP23-12514
70	MG43517	ABA	TZ3	Waste Rock	MDD207	80	85	RAS	WP23-12514
71	MG43518	ABA	TZ3	Waste Rock	MDD207	85	90	RAS	WP23-12514
72	MG43519	ABA	TZ3	Waste Rock	MDD207	90	95	RAS	WP23-12514
73	MG43520	ABA	TZ3	Waste Rock	MDD207	95	100	RAS	WP23-12514
74	MG43521	ABA	TZ3	Waste Rock	MDD207	100	105	RAS	WP23-12514
75	MG43522	ABA	TZ3	Waste Rock	MDD207	105	110	RAS	WP23-12514
76	MG43523	ABA	TZ3	Waste Rock	MDD207	110	115	RAS	WP23-12514
77	MG43524	ABA	TZ3	Waste Rock	MDD207	115	120	RAS	WP23-12514
78	MG43525	ABA	TZ3	Waste Rock	MDD207	120	125	RAS	WP23-12514
79	MG43526	ABA	TZ3	Waste Rock	MDD207	125	130	RAS	WP23-12514
80	MG43527	ABA	TZ3	Waste Rock	MDD207	130	135	RAS	WP23-12514
81	MG43528	ABA	TZ3	Waste Rock	MDD207	135	140	RAS	WP23-12514
82	MG43529	ABA	TZ3	Waste Rock	MDD207	140	145	RAS	WP23-12514
83	MG43530	ABA	TZ3	Waste Rock	MDD207	145	152	RAS	WP23-12514
84	MG43560	ABA	COMPANY_STD	QAQC	na	na	na	QA/QC	WP23-12514
85	*DUP-MG43509	ABA	QAQC	QAQC	na	na	na	QA/QC	WP23-12514
86	MG19493	ABA	RSSZ	Waste Rock	MDD081	211	212	RAS	EP2314634
87	MG19489	ABA	RSSZ	Waste Rock	MDD081	200	201	RAS	EP2314634
88	MG19250-131	ABA	RSSZ	Waste Rock	MDD044	369	370	RAS	EP2314634
89	MG19373	ABA	TZ4	Waste Rock	MDD048R	219	220	RAS	EP2314634
90	MG19077	ABA	TZ4	Waste Rock	MDD021R	355	356	RAS	EP2314634
91	MG19473	ABA	RSSZ	Ore / Tailings	MDD080	184	185	RAS	EP2314634
92	MG19246-131	ABA	RSSZ	Ore / Tailings	MDD044	401	402	RAS	EP2314634
93	MG19238-131	ABA	RSSZ	Ore / Tailings	MDD044	357	358	RAS	EP2314634
94	MG19101	ABA	RSSZ	Ore / Tailings	MDD031	301	302	RAS	EP2314634
95	MG19109	ABA	TZ4	Ore / Tailings	MDD021R	298	299	RAS	EP2314634
96	MG19093	ABA	RSSZ	Waste Rock	MDD028	213	214	RAS	EP2314634
97	MG19202-131	ABA	RSSZ	Waste Rock	MDD034	222	223	RAS	EP2314634
98	MG19350	ABA	RSSZ	Waste Rock	MDD061	176	177	RAS	EP2314634
99	MG19217-131	ABA	RSSZ	Waste Rock	MDD034R	269	270	RAS	EP2314634
100	MG19516	ABA	RSSZ	Waste Rock	MDD083	239	240	RAS	EP2314634
101	MG19499	ABA	RSSZ	Waste Rock	MDD082	177	178	RAS	EP2314634
102	MG19476	ABA	RSSZ	Waste Rock	MDD080	219	220	RAS	EP2314634
103	MG19519	ABA	RSSZ	Waste Rock	MDD083	248	249	RAS	EP2314634
104	MG19528	ABA	RSSZ	Waste Rock	MDD084	202	203	RAS	EP2314634
105	MG19331	ABA	RSSZ	Waste Rock	MDD044	436	437	RAS	EP2314634
106	MG19411	ABA	RSSZ	Waste Rock	MDD050	267	268	RAS	EP2314634
107	MG19107	ABA	RSSZ	Waste Rock	MDD033	253	254	RAS	EP2314634
108	MG19203-131	ABA	RSSZ	Waste Rock	MDD034	224	225	RAS	EP2314634
109	MG19364	ABA	RSSZ	Waste Rock	MDD042	201	202	RAS	EP2314634
110	MG19063	ABA	TZ4	Waste Rock	MDD019R	222	223	RAS	EP2314634
111	MG19110	ABA	TZ4	Waste Rock	MDD021R	313	314	RAS	EP2314634
112	MG19421	ABA	TZ4	Waste Rock	MDD056	228	229	RAS	EP2314634
113	MG19514	ABA	TZ4	Waste Rock	MDD083	220	221	RAS	EP2314634
114	MG19438	ABA	TZ4	Waste Rock	MDD066	520	521	RAS	EP2314634
115	MG19457	ABA	TZ4	Waste Rock	MDD072	216	217	RAS	EP2314634
116	RASMWM001	ABA	MWM_STD	QAQC	na	na	na	QA/QC	EP2314634

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
117	RASMWM002	ABA	MWM_STD	QAQC	na	na	na	QA/QC	EP2314634
118	RASMWM003	ABA	MWM_STD	QAQC	na	na	na	QA/QC	EP2314634
119	MG19792	ABA	TZ3	Waste Rock	MDD145	0	5	RAS	WP23-12026
120	MG19793	ABA	TZ3	Waste Rock	MDD145	5	10	RAS	WP23-12026
121	MG19794	ABA	TZ3	Waste Rock	MDD145	10	15	RAS	WP23-12026
122	MG19795	ABA	TZ3	Waste Rock	MDD145	15	20	RAS	WP23-12026
123	MG19796	ABA	TZ3	Waste Rock	MDD145	20	25	RAS	WP23-12026
124	MG19797	ABA	TZ3	Waste Rock	MDD145	25	30	RAS	WP23-12026
125	MG19798	ABA	TZ3	Waste Rock	MDD145	30	35	RAS	WP23-12026
126	MG19799	ABA	TZ3	Waste Rock	MDD145	35	40	RAS	WP23-12026
127	MG19800	ABA	TZ3	Waste Rock	MDD145	40	45	RAS	WP23-12026
128	MG19801	ABA	TZ3	Waste Rock	MDD145	45	50	RAS	WP23-12026
129	MG19802	ABA	TZ3	Waste Rock	MDD145	50	55	RAS	WP23-12026
130	MG19803	ABA	TZ3	Waste Rock	MDD145	55	60	RAS	WP23-12026
131	MG19804	ABA	TZ3	Waste Rock	MDD145	60	65	RAS	WP23-12026
132	MG19805	ABA	TZ3	Waste Rock	MDD145	65	70	RAS	WP23-12026
133	MG19806	ABA	TZ3	Waste Rock	MDD145	70	75	RAS	WP23-12026
134	MG19807	ABA	TZ3	Waste Rock	MDD145	45	50	RAS	WP23-12026
135	MG19808	ABA	TZ3	Waste Rock	MDD145	75	80	RAS	WP23-12026
136	MG19809	ABA	TZ3	Waste Rock	MDD145	80	85	RAS	WP23-12026
137	MG19810	ABA	TZ3	Waste Rock	MDD145	85	90	RAS	WP23-12026
138	MG19811	ABA	TZ3	Waste Rock	MDD145	90	95	RAS	WP23-12026
139	MG19812	ABA	TZ3	Waste Rock	MDD145	95	100	RAS	WP23-12026
140	MG19813	ABA	TZ3	Waste Rock	MDD145	100	105	RAS	WP23-12026
141	MG19814	ABA	TZ3	Waste Rock	MDD145	105	110	RAS	WP23-12026
142	MG19815	ABA	TZ3	Waste Rock	MDD145	110	115	RAS	WP23-12026
143	MG19816	ABA	TZ3	Waste Rock	MDD145	115	120	RAS	WP23-12026
144	MG19817	ABA	TZ3	Waste Rock	MDD145	120	125	RAS	WP23-12026
145	MG19818	ABA	TZ3	Waste Rock	MDD145	125	130	RAS	WP23-12026
146	MG19819	ABA	TZ3	Waste Rock	MDD145	130	135	RAS	WP23-12026
147	MG19820	ABA	TZ3	Waste Rock	MDD145	135	140	RAS	WP23-12026
148	MG19821	ABA	TZ3	Waste Rock	MDD145	140	145	RAS	WP23-12026
149	MG19822	ABA	TZ3	Waste Rock	MDD145	145	150	RAS	WP23-12026
150	MG19823	ABA	TZ3	Waste Rock	MDD145	150	155	RAS	WP23-12026
151	MG19824	ABA	TZ3	Waste Rock	MDD145	155	160	RAS	WP23-12026
152	MG19825	ABA	TZ3	Waste Rock	MDD145	160	167.9	RAS	WP23-12026
153	MG19826	ABA	TZ3	Waste Rock	MDD145	125	130	RAS	WP23-12026
154	*DUP-MG19800	ABA	QAQC	QAQC	na	na	na	QA/QC	WP23-12026
155	MG19827	ABA	TZ3	Waste Rock	MDD187R	0	5	RAS	WP23-12482
156	MG19828	ABA	TZ3	Waste Rock	MDD187R	5	10	RAS	WP23-12482
157	MG19829	ABA	TZ3	Waste Rock	MDD187R	10	15	RAS	WP23-12482
158	MG19830	ABA	TZ3	Waste Rock	MDD187R	15	20	RAS	WP23-12482
159	MG19831	ABA	TZ3	Waste Rock	MDD187R	20	25	RAS	WP23-12482
160	MG19832	ABA	TZ3	Waste Rock	MDD187R	25	30	RAS	WP23-12482
161	MG19833	ABA	TZ3	Waste Rock	MDD187R	30	35	RAS	WP23-12482
162	MG19834	ABA	TZ3	Waste Rock	MDD187R	35	40	RAS	WP23-12482
163	MG19835	ABA	TZ3	Waste Rock	MDD187R	40	45	RAS	WP23-12482
164	MG19836	ABA	TZ3	Waste Rock	MDD187R	45	50	RAS	WP23-12482
165	MG19837	ABA	TZ3	Waste Rock	MDD187R	50	55	RAS	WP23-12482
166	MG19838	ABA	TZ3	Waste Rock	MDD187R	55	60	RAS	WP23-12482
167	MG19839	ABA	TZ3	Waste Rock	MDD187R	60	65	RAS	WP23-12482
168	MG19840	ABA	TZ3	Waste Rock	MDD187R	65	70	RAS	WP23-12482
169	MG19841	ABA	TZ3	Waste Rock	MDD187R	70	75	RAS	WP23-12482
170	MG19842	ABA	TZ3	Waste Rock	MDD187R	75	80	RAS	WP23-12482
171	MG19843	ABA	TZ3	Waste Rock	MDD187R	80	85	RAS	WP23-12482
172	MG19844	ABA	TZ3	Waste Rock	MDD187R	85	90	RAS	WP23-12482
173	MG19845	ABA	TZ3	Waste Rock	MDD187R	90	95	RAS	WP23-12482
174	MG19846	ABA	TZ3	Waste Rock	MDD187R	95	100	RAS	WP23-12482

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
175	MG19847	ABA	TZ3	Waste Rock	MDD187R	100	105	RAS	WP23-12482
176	MG43557	ABA	COMPANY_STD	QAQC	COMPANY_STD	na	na	QA/QC	WP23-12482
177	*DUP-MG43557	ABA	COMPANY_STD	QAQC	na	na	na	QA/QC	WP23-12482
178	MG43478	ABA	TZ3	Waste Rock	MDD212	0	5	RAS	WP23-12540
179	MG43479	ABA	TZ3	Waste Rock	MDD212	5	10	RAS	WP23-12540
180	MG43480	ABA	TZ3	Waste Rock	MDD212	10	15	RAS	WP23-12540
181	MG43481	ABA	TZ3	Waste Rock	MDD212	15	20	RAS	WP23-12540
182	MG43482	ABA	TZ3	Waste Rock	MDD212	20	25	RAS	WP23-12540
183	MG43483	ABA	TZ3	Waste Rock	MDD212	25	30	RAS	WP23-12540
184	MG43484	ABA	TZ3	Waste Rock	MDD212	30	35	RAS	WP23-12540
185	MG43485	ABA	TZ3	Waste Rock	MDD212	35	40	RAS	WP23-12540
186	MG43486	ABA	TZ3	Waste Rock	MDD212	40	45	RAS	WP23-12540
187	MG43487	ABA	TZ3	Waste Rock	MDD212	45	50	RAS	WP23-12540
188	MG43488	ABA	TZ3	Waste Rock	MDD212	50	55	RAS	WP23-12540
189	MG43489	ABA	TZ3	Waste Rock	MDD212	55	60	RAS	WP23-12540
190	MG43490	ABA	TZ3	Waste Rock	MDD212	60	65	RAS	WP23-12540
191	MG43491	ABA	TZ3	Waste Rock	MDD212	65	70	RAS	WP23-12540
192	MG43492	ABA	TZ3	Waste Rock	MDD212	70	75	RAS	WP23-12540
193	MG43493	ABA	TZ3	Waste Rock	MDD212	75	80	RAS	WP23-12540
194	MG43494	ABA	TZ3	Waste Rock	MDD212	80	85	RAS	WP23-12540
195	MG43495	ABA	TZ3	Waste Rock	MDD212	85	90	RAS	WP23-12540
196	MG43496	ABA	TZ3	Waste Rock	MDD212	90	95	RAS	WP23-12540
197	MG43497	ABA	TZ3	Waste Rock	MDD212	95	100	RAS	WP23-12540
198	MG43498	ABA	TZ3	Waste Rock	MDD212	100	105	RAS	WP23-12540
199	MG43499	ABA	TZ3	Waste Rock	MDD212	105	110	RAS	WP23-12540
200	MG43500	ABA	TZ3	Waste Rock	MDD212	110	115	RAS	WP23-12540
201	MG43531	ABA	TZ3	Waste Rock	MDD212	115	120	RAS	WP23-12540
202	MG43532	ABA	TZ3	Waste Rock	MDD212	120	125	RAS	WP23-12540
203	MG43533	ABA	TZ3	Waste Rock	MDD212	125	130	RAS	WP23-12540
204	MG43534	ABA	TZ3	Waste Rock	MDD212	130	135	RAS	WP23-12540
205	MG43535	ABA	TZ3	Waste Rock	MDD212	135	140	RAS	WP23-12540
206	MG43536	ABA	TZ3	Waste Rock	MDD212	140	145	RAS	WP23-12540
207	MG43537	ABA	TZ3	Waste Rock	MDD212	145	150	RAS	WP23-12540
208	MG43538	ABA	TZ3	Waste Rock	MDD212	150	155	RAS	WP23-12540
209	MG43539	ABA	TZ3	Waste Rock	MDD212	155	160	RAS	WP23-12540
210	MG43540	ABA	TZ3	Waste Rock	MDD212	160	165	RAS	WP23-12540
211	MG43541	ABA	TZ3	Waste Rock	MDD212	165	170	RAS	WP23-12540
212	MG43542	ABA	TZ3	Waste Rock	MDD212	170	175	RAS	WP23-12540
213	MG43543	ABA	TZ3	Waste Rock	MDD212	175	180	RAS	WP23-12540
214	MG43544	ABA	TZ3	Waste Rock	MDD212	180	185	RAS	WP23-12540
215	MG43545	ABA	TZ3	Waste Rock	MDD212	185	190	RAS	WP23-12540
216	MG43546	ABA	TZ3	Waste Rock	MDD212	190	195	RAS	WP23-12540
217	MG43547	ABA	TZ3	Waste Rock	MDD212	195	200	RAS	WP23-12540
218	MG43548	ABA	TZ3	Waste Rock	MDD212	200	205	RAS	WP23-12540
219	MG43549	ABA	TZ3	Waste Rock	MDD212	205	210	RAS	WP23-12540
220	MG43550	ABA	TZ3	Waste Rock	MDD212	210	215	RAS	WP23-12540
221	MG43551	ABA	TZ3	Waste Rock	MDD212	215	220	RAS	WP23-12540
222	MG43552	ABA	TZ3	Waste Rock	MDD212	220	225	RAS	WP23-12540
223	MG43553	ABA	TZ3	Waste Rock	MDD212	225	230	RAS	WP23-12540
224	MG43554	ABA	TZ3	Waste Rock	MDD212	230	235	RAS	WP23-12540
225	MG43555	ABA	TZ3	Waste Rock	MDD212	235	240	RAS	WP23-12540
226	MG43556	ABA	TZ3	Waste Rock	MDD212	240	242	RAS	WP23-12540
227	MG43563	ABA	TZ3	Waste Rock	MDD219	0	5	RAS	WP23-12606
228	MG43564	ABA	TZ3	Waste Rock	MDD219	5	10	RAS	WP23-12606
229	MG43565	ABA	TZ3	Waste Rock	MDD219	10	15	RAS	WP23-12606
230	MG43566	ABA	TZ3	Waste Rock	MDD219	15	20	RAS	WP23-12606
231	MG43567	ABA	TZ3	Waste Rock	MDD219	20	25	RAS	WP23-12606
232	MG43568	ABA	TZ3	Waste Rock	MDD219	25	30	RAS	WP23-12606

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
233	MG43569	ABA	TZ3	Waste Rock	MDD219	30	35	RAS	WP23-12606
234	MG43570	ABA	TZ3	Waste Rock	MDD219	35	40	RAS	WP23-12606
235	MG43571	ABA	TZ3	Waste Rock	MDD219	40	45	RAS	WP23-12606
236	MG43572	ABA	TZ3	Waste Rock	MDD219	45	50	RAS	WP23-12606
237	MG43573	ABA	TZ3	Waste Rock	MDD219	50	55	RAS	WP23-12606
238	MG43574	ABA	TZ3	Waste Rock	MDD219	55	60	RAS	WP23-12606
239	MG43575	ABA	TZ3	Waste Rock	MDD219	60	65	RAS	WP23-12606
240	MG43576	ABA	TZ3	Waste Rock	MDD219	65	70	RAS	WP23-12606
241	MG43577	ABA	TZ3	Waste Rock	MDD219	70	75	RAS	WP23-12606
242	MG43578	ABA	TZ3	Waste Rock	MDD219	75	80	RAS	WP23-12606
243	MG43579	ABA	TZ3	Waste Rock	MDD219	80	85	RAS	WP23-12606
244	MG43580	ABA	TZ3	Waste Rock	MDD219	85	90	RAS	WP23-12606
245	MG43581	ABA	TZ3	Waste Rock	MDD219	90	95	RAS	WP23-12606
246	MG43582	ABA	TZ3	Waste Rock	MDD219	95	100	RAS	WP23-12606
247	MG43584	ABA	TZ3	Waste Rock	MDD219	100	105	RAS	WP23-12606
248	MG43585	ABA	TZ3	Waste Rock	MDD219	105	110	RAS	WP23-12606
249	MG43586	ABA	TZ3	Waste Rock	MDD219	110	115	RAS	WP23-12606
250	MG43587	ABA	TZ3	Waste Rock	MDD219	115	120	RAS	WP23-12606
251	MG43588	ABA	TZ3	Waste Rock	MDD219	120	125	RAS	WP23-12606
252	MG43589	ABA	TZ3	Waste Rock	MDD219	125	130	RAS	WP23-12606
253	MG43590	ABA	TZ3	Waste Rock	MDD219	130	135	RAS	WP23-12606
254	MG43591	ABA	TZ3	Waste Rock	MDD219	135	140	RAS	WP23-12606
255	MG43592	ABA	TZ3	Waste Rock	MDD219	140	145	RAS	WP23-12606
256	MG43593	ABA	TZ3	Waste Rock	MDD219	145	150	RAS	WP23-12606
257	MG43594	ABA	TZ3	Waste Rock	MDD219	150	155	RAS	WP23-12606
258	MG43595	ABA	TZ3	Waste Rock	MDD219	155	160	RAS	WP23-12606
259	MG43596	ABA	TZ3	Waste Rock	MDD219	160	165	RAS	WP23-12606
260	MG43597	ABA	TZ3	Waste Rock	MDD219	165	170	RAS	WP23-12606
261	MG43598	ABA	TZ3	Waste Rock	MDD219	170	175	RAS	WP23-12606
262	MG43599	ABA	TZ3	Waste Rock	MDD219	175	180	RAS	WP23-12606
263	MG43600	ABA	TZ3	Waste Rock	MDD219	180	185	RAS	WP23-12606
264	MG43601	ABA	TZ3	Waste Rock	MDD219	185	190	RAS	WP23-12606
265	MG43602	ABA	TZ3	Waste Rock	MDD219	190	195	RAS	WP23-12606
266	MG43604	ABA	TZ3	Waste Rock	MDD219	195	200	RAS	WP23-12606
267	MG43605	ABA	TZ3	Waste Rock	MDD219	200	205	RAS	WP23-12606
268	MG43606	ABA	TZ3	Waste Rock	MDD219	205	210	RAS	WP23-12606
269	MG43607	ABA	TZ3	Waste Rock	MDD219	210	215	RAS	WP23-12606
270	MG43608	ABA	TZ3	Waste Rock	MDD219	215	220	RAS	WP23-12606
271	MG43609	ABA	TZ3	Waste Rock	MDD219	220	225	RAS	WP23-12606
272	MG43610	ABA	TZ3	Waste Rock	MDD219	225	230	RAS	WP23-12606
273	MG43611	ABA	TZ3	Waste Rock	MDD219	230	235	RAS	WP23-12606
274	MG43612	ABA	TZ3	Waste Rock	MDD219	235	240	RAS	WP23-12606
275	MG43613	ABA	TZ3	Waste Rock	MDD219	240	245	RAS	WP23-12606
276	MG43614	ABA	TZ3	Waste Rock	MDD219	245	250	RAS	WP23-12606
277	MG43615	ABA	TZ3	Waste Rock	MDD219	250	255	RAS	WP23-12606
278	MG43616	ABA	TZ3	Waste Rock	MDD222	0	5	RAS	WP23-12688
279	MG43617	ABA	TZ3	Waste Rock	MDD222	5	10	RAS	WP23-12688
280	MG43618	ABA	TZ3	Waste Rock	MDD222	10	15	RAS	WP23-12688
281	MG43619	ABA	TZ3	Waste Rock	MDD222	15	20	RAS	WP23-12688
282	MG43620	ABA	TZ3	Waste Rock	MDD222	20	25	RAS	WP23-12688
283	MG43621	ABA	TZ3	Waste Rock	MDD222	25	30	RAS	WP23-12688
284	MG43622	ABA	TZ3	Waste Rock	MDD222	30	35	RAS	WP23-12688
285	MG43623	ABA	TZ3	Waste Rock	MDD222	35	40	RAS	WP23-12688
286	MG43624	ABA	TZ3	Waste Rock	MDD222	40	45	RAS	WP23-12688
287	MG43625	ABA	TZ3	Waste Rock	MDD222	45	50	RAS	WP23-12688
288	MG43626	ABA	TZ3	Waste Rock	MDD222	50	55	RAS	WP23-12688
289	MG43627	ABA	TZ3	Waste Rock	MDD222	55	60	RAS	WP23-12688
290	MG43628	ABA	TZ3	Waste Rock	MDD222	60	65	RAS	WP23-12688

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
291	MG43629	ABA	TZ3	Waste Rock	MDD222	65	70	RAS	WP23-12688
292	MG43630	ABA	TZ3	Waste Rock	MDD222	70	75	RAS	WP23-12688
293	MG43631	ABA	TZ3	Waste Rock	MDD222	75	80	RAS	WP23-12688
294	MG43632	ABA	TZ3	Waste Rock	MDD222	80	85	RAS	WP23-12688
295	MG43633	ABA	TZ3	Waste Rock	MDD222	85	90	RAS	WP23-12688
296	MG43634	ABA	TZ3	Waste Rock	MDD222	90	95	RAS	WP23-12688
297	MG43635	ABA	TZ3	Waste Rock	MDD222	95	100	RAS	WP23-12688
298	MG43637	ABA	TZ3	Waste Rock	MDD222	100	105	RAS	WP23-12688
299	MG43638	ABA	TZ3	Waste Rock	MDD222	105	110	RAS	WP23-12688
300	MG43639	ABA	TZ3	Waste Rock	MDD222	110	115	RAS	WP23-12688
301	MG43640	ABA	TZ3	Waste Rock	MDD222	115	120	RAS	WP23-12688
302	MG43641	ABA	TZ3	Waste Rock	MDD222	120	125	RAS	WP23-12688
303	MG43642	ABA	TZ3	Waste Rock	MDD222	125	130	RAS	WP23-12688
304	MG43643	ABA	TZ3	Waste Rock	MDD222	130	135	RAS	WP23-12688
305	MG43644	ABA	TZ3	Waste Rock	MDD222	135	140	RAS	WP23-12688
306	MG43645	ABA	TZ3	Waste Rock	MDD222	140	145	RAS	WP23-12688
307	MG43646	ABA	TZ3	Waste Rock	MDD222	145	150	RAS	WP23-12688
308	MG43647	ABA	TZ3	Waste Rock	MDD222	150	155	RAS	WP23-12688
309	MG43648	ABA	TZ3	Waste Rock	MDD222	155	160	RAS	WP23-12688
310	MG43649	ABA	TZ3	Waste Rock	MDD222	160	165	RAS	WP23-12688
311	MG43650	ABA	TZ3	Waste Rock	MDD222	165	170	RAS	WP23-12688
312	MG43651	ABA	TZ3	Waste Rock	MDD222	170	175	RAS	WP23-12688
313	MG43652	ABA	TZ3	Waste Rock	MDD222	175	180	RAS	WP23-12688
314	MG43653	ABA	TZ3	Waste Rock	MDD222	180	185	RAS	WP23-12688
315	MG43654	ABA	TZ3	Waste Rock	MDD222	185	190	RAS	WP23-12688
316	MG43655	ABA	TZ3	Waste Rock	MDD222	190	195	RAS	WP23-12688
317	MG43656	ABA	TZ3	Waste Rock	MDD222	195	200	RAS	WP23-12688
318	MG43658	ABA	TZ3	Waste Rock	MDD222	200	207	RAS	WP23-12688
319	MG43660	ABA	TZ3	Waste Rock	MDD223	0	5	RAS	WP23-12607
320	MG43661	ABA	TZ3	Waste Rock	MDD223	5	10	RAS	WP23-12607
321	MG43662	ABA	TZ3	Waste Rock	MDD223	10	15	RAS	WP23-12607
322	MG43663	ABA	TZ3	Waste Rock	MDD223	15	20	RAS	WP23-12607
323	MG43664	ABA	TZ3	Waste Rock	MDD223	20	25	RAS	WP23-12607
324	MG43665	ABA	TZ3	Waste Rock	MDD223	25	30	RAS	WP23-12607
325	MG43666	ABA	TZ3	Waste Rock	MDD223	30	35	RAS	WP23-12607
326	MG43667	ABA	TZ3	Waste Rock	MDD223	35	40	RAS	WP23-12607
327	MG43668	ABA	TZ3	Waste Rock	MDD223	40	45	RAS	WP23-12607
328	MG43669	ABA	TZ3	Waste Rock	MDD223	45	50	RAS	WP23-12607
329	MG43671	ABA	TZ3	Waste Rock	MDD223	50	55	RAS	WP23-12607
330	MG43672	ABA	TZ3	Waste Rock	MDD223	55	60	RAS	WP23-12607
331	MG43673	ABA	TZ3	Waste Rock	MDD223	60	65	RAS	WP23-12607
332	MG43674	ABA	TZ3	Waste Rock	MDD223	65	70	RAS	WP23-12607
333	MG43675	ABA	TZ3	Waste Rock	MDD223	70	75	RAS	WP23-12607
334	MG43676	ABA	TZ3	Waste Rock	MDD223	75	80	RAS	WP23-12607
335	MG43677	ABA	TZ3	Waste Rock	MDD223	80	85	RAS	WP23-12607
336	MG43678	ABA	TZ3	Waste Rock	MDD223	85	90	RAS	WP23-12607
337	MG43679	ABA	TZ3	Waste Rock	MDD223	90	95	RAS	WP23-12607
338	MG43680	ABA	TZ3	Waste Rock	MDD223	95	100	RAS	WP23-12607
339	MG43682	ABA	TZ3	Waste Rock	MDD223	100	105	RAS	WP23-12607
340	MG43683	ABA	TZ3	Waste Rock	MDD223	105	110	RAS	WP23-12607
341	MG43684	ABA	TZ3	Waste Rock	MDD223	110	115	RAS	WP23-12607
342	MG43685	ABA	TZ3	Waste Rock	MDD223	115	120	RAS	WP23-12607
343	MG43686	ABA	TZ3	Waste Rock	MDD223	120	125	RAS	WP23-12607
344	MG43687	ABA	TZ3	Waste Rock	MDD223	125	130	RAS	WP23-12607
345	MG43688	ABA	TZ3	Waste Rock	MDD223	130	135	RAS	WP23-12607
346	MG43689	ABA	TZ3	Waste Rock	MDD223	135	140	RAS	WP23-12607
347	MG43690	ABA	TZ3	Waste Rock	MDD223	140	145	RAS	WP23-12607
348	MG43691	ABA	TZ3	Waste Rock	MDD223	145	150	RAS	WP23-12607

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
349	MG43702	ABA	TZ3	Waste Rock	MDD262	15	20	RAS	WP23-12976
350	MG43703	ABA	TZ3	Waste Rock	MDD262	20	25	RAS	WP23-12976
351	MG43704	ABA	TZ3	Waste Rock	MDD262	25	30	RAS	WP23-12976
352	MG43705	ABA	TZ3	Waste Rock	MDD262	30	35	RAS	WP23-12976
353	MG43706	ABA	TZ3	Waste Rock	MDD262	35	40	RAS	WP23-12976
354	MG43707	ABA	TZ3	Waste Rock	MDD262	40	45	RAS	WP23-12976
355	MG43708	ABA	TZ3	Waste Rock	MDD262	45	50	RAS	WP23-12976
356	MG43709	ABA	TZ3	Waste Rock	MDD262	50	55	RAS	WP23-12976
357	MG43710	ABA	TZ3	Waste Rock	MDD262	55	60	RAS	WP23-12976
358	MG43711	ABA	TZ3	Waste Rock	MDD262	60	65	RAS	WP23-12976
359	MG43712	ABA	TZ3	Waste Rock	MDD262	65	70	RAS	WP23-12976
360	MG43713	ABA	TZ3	Waste Rock	MDD262	70	75	RAS	WP23-12976
361	MG43715	ABA	TZ3	Waste Rock	MDD262	75	80	RAS	WP23-12976
362	MG43716	ABA	TZ3	Waste Rock	MDD262	80	85	RAS	WP23-12976
363	MG43717	ABA	TZ3	Waste Rock	MDD262	85	90	RAS	WP23-12976
364	MG43718	ABA	TZ3	Waste Rock	MDD262	90	95	RAS	WP23-12976
365	MG43719	ABA	TZ3	Waste Rock	MDD262	95	100	RAS	WP23-12976
366	MG43720	ABA	TZ3	Waste Rock	MDD262	100	105	RAS	WP23-12976
367	MG43721	ABA	TZ3	Waste Rock	MDD262	105	110	RAS	WP23-12976
368	MG43722	ABA	TZ3	Waste Rock	MDD262	110	115	RAS	WP23-12976
369	MG43723	ABA	TZ3	Waste Rock	MDD262	115	120	RAS	WP23-12976
370	MG43724	ABA	TZ3	Waste Rock	MDD262	120	125	RAS	WP23-12976
371	MG43725	ABA	TZ3	Waste Rock	MDD262	125	130	RAS	WP23-12976
372	MG43726	ABA	TZ3	Waste Rock	MDD262	130	135	RAS	WP23-12976
373	MG43727	ABA	TZ3	Waste Rock	MDD262	135	140	RAS	WP23-12976
374	MG43728	ABA	TZ3	Waste Rock	MDD262	140	145	RAS	WP23-12976
375	MG43729	ABA	TZ3	Waste Rock	MDD262	145	150	RAS	WP23-12976
376	MG43730	ABA	TZ3	Waste Rock	MDD262	150	155	RAS	WP23-12976
377	MG43731	ABA	TZ3	Waste Rock	MDD262	155	160	RAS	WP23-12976
378	MG43732	ABA	TZ3	Waste Rock	MDD262	160	165	RAS	WP23-12976
379	MG43733	ABA	TZ3	Waste Rock	MDD262	165	170	RAS	WP23-12976
380	MG43735	ABA	TZ3	Waste Rock	MDD262	170	175	RAS	WP23-12976
381	MG43736	ABA	TZ3	Waste Rock	MDD262	175	180	RAS	WP23-12976
382	MG43737	ABA	TZ3	Waste Rock	MDD262	180	185	RAS	WP23-12976
383	MG43738	ABA	TZ3	Waste Rock	MDD262	185	190	RAS	WP23-12976
384	MG43739	ABA	TZ3	Waste Rock	MDD262	190	195	RAS	WP23-12976
385	MG43740	ABA	TZ3	Waste Rock	MDD262	195	200	RAS	WP23-12976
386	MG43741	ABA	TZ3	Waste Rock	MDD262	200	205	RAS	WP23-12976
387	MG43742	ABA	TZ3	Waste Rock	MDD262	205	210	RAS	WP23-12976
388	MG43743	ABA	TZ3	Waste Rock	MDD262	210	215	RAS	WP23-12976
389	MG52334	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD216	303	304	RAS	BR24028952
390	MG52335	4-Acid ICP-MS	WSBX(100)	Waste Rock	MDD231	271	272	RAS	BR24028952
391	MG52336	4-Acid ICP-MS	WSBX(100)	Ore	MDD254	279	280	RAS	BR24028952
392	MG52337	4-Acid ICP-MS	RSSZ(100)	Ore	MDD194	257	258	RAS	BR24028952
393	MG52338	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD196	230	231	RAS	BR24028952
394	MG52339	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD192	172	173	RAS	BR24028952
395	MG52340	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD192	58	59	RAS	BR24028952
396	MG52341	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD212	303	304	RAS	BR24028952
397	MG52342	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD189	288	289	RAS	BR24028952
398	MG52343	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD187R	160	161	RAS	BR24028952
399	MG52344	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD180	84	85	RAS	BR24028952
400	MG52345	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD209	313	314	RAS	BR24028952
401	MG52346	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD240	250	251	RAS	BR24028952
402	MG52347	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD187R	211	212	RAS	BR24028952
403	MG52348	4-Acid ICP-MS	RSSZ(100)	Ore	MDD199	247	248	RAS	BR24028952
404	MG52349	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD207	230	231	RAS	BR24028952
405	MG52350	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD200	261	262	RAS	BR24028952
406	MG52351	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD230	243	244	RAS	BR24028952

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
407	MG52352	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD244	194	195	RAS	BR24028952
408	MG52353	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD201	262	263	RAS	BR24028952
409	MG52354	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
410	MG52355	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
411	MG52356	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD180	181	182	RAS	BR24028952
412	MG52357	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD204	78	79	RAS	BR24028952
413	MG52358	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD187R	145	146	RAS	BR24028952
414	MG52359	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD217	209	210	RAS	BR24028952
415	MG52360	4-Acid ICP-MS	TZ4(100)	Ore	MDD184	11	12	RAS	BR24028952
416	MG52361	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD201	264	265	RAS	BR24028952
417	MG52362	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC147	33	34	SRE	BR24028952
418	MG52363	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD191	227	228	RAS	BR24028952
419	MG52364	4-Acid ICP-MS	RSSZ(100)	Ore	MDD206	274	275	RAS	BR24028952
420	MG52365	4-Acid ICP-MS	RSSZ(100)	Ore	MDD216	281	282	RAS	BR24028952
421	MG52366	4-Acid ICP-MS	RSSZ(100)	Ore	MDD209	292	293	RAS	BR24028952
422	MG52367	4-Acid ICP-MS	TZ4(100)	Ore	MDD185	215	216	RAS	BR24028952
423	MG52368	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD207	237	238	RAS	BR24028952
424	MG52369	4-Acid ICP-MS	RSSZ(100)	Ore	MDD206	270	271	RAS	BR24028952
425	MG52370	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD208	300	301	RAS	BR24028952
426	MG52371	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD222	247	248	RAS	BR24028952
427	MG52372	4-Acid ICP-MS	RSSZ(100)	Ore	MDD254	292	293	RAS	BR24028952
428	MG52373	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD231	205	206	RAS	BR24028952
429	MG52374	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC140	45	46	SHR	BR24028952
430	MG52375	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD253	4	5	RAS	BR24028952
431	MG52376	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
432	MG52377	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
433	MG52378	4-Acid ICP-MS	TZ4(100)	Ore	MDD192	188	189	RAS	BR24028952
434	MG52379	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD241	263	264	RAS	BR24028952
435	MG52380	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD220	239	240	RAS	BR24028952
436	MG52381	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD231	236	237	RAS	BR24028952
437	MG52382	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD186	235	236	RAS	BR24028952
438	MG52383	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD206	306	307	RAS	BR24028952
439	MG52384	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD195	184	185	RAS	BR24028952
440	MG52385	4-Acid ICP-MS	RSSZ(100)	Ore	MDD212	276	277	RAS	BR24028952
441	MG52386	4-Acid ICP-MS	RSSZ(100)	Ore	MDD216	278	279	RAS	BR24028952
442	MG52387	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD231	264	265	RAS	BR24028952
443	MG52388	4-Acid ICP-MS	RSSZ(100)	Ore	MDD224	274	275	RAS	BR24028952
444	MG52389	4-Acid ICP-MS	RSSZ(100)	Ore	MDD224	283	284	RAS	BR24028952
445	MG52390	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD222	255	256	RAS	BR24028952
446	MG52391	4-Acid ICP-MS	SSBX(90),RSSZ(10)	Ore	MDD247	313	314	RAS	BR24028952
447	MG52392	4-Acid ICP-MS	RSSZ(100)	Ore	MDD185	160	161	RAS	BR24028952
448	MG52393	4-Acid ICP-MS	RSSZ(100)	Ore	MDD205	266	267	RAS	BR24028952
449	MG52394	4-Acid ICP-MS	RSSZ(100)	Ore	MDD208	260	261	RAS	BR24028952
450	MG52395	4-Acid ICP-MS	RSSZ(100)	Ore	MDD229	260	261	RAS	BR24028952
451	MG52396	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD162	233	234	RAS	BR24028952
452	MG52397	4-Acid ICP-MS	RSSZ(100)	Ore	MDD209	299	300	RAS	BR24028952
453	MG52398	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
454	MG52399	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
455	MG52400	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD231	186	187	RAS	BR24028952
456	MG52401	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD245	284	285	RAS	BR24028952
457	MG52402	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD215	320	321	RAS	BR24028952
458	MG52403	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD213	218	219	RAS	BR24028952
459	MG52404	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD167	218	219	RAS	BR24028952
460	MG52405	4-Acid ICP-MS	TZ4(100)	LGO	MDD205	320	321	RAS	BR24028952
461	MG52406	4-Acid ICP-MS	RSSZ(100)	Ore	MDD191	199.05	200	RAS	BR24028952
462	MG52407	4-Acid ICP-MS	TZ4(100)	Ore	MDD201	274	275	RAS	BR24028952
463	MG52408	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD193	239	240	RAS	BR24028952
464	MG52409	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD162	271	272	RAS	BR24028952

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
465	MG52410	4-Acid ICP-MS	RSSZ(80),VEIN(20)	Ore	MDD244	181	182	RAS	BR24028952
466	MG52411	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD189	244	245	RAS	BR24028952
467	MG52412	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD213	214	215	RAS	BR24028952
468	MG52413	4-Acid ICP-MS	RSSZ(100)	Ore	MDD219	287	288	RAS	BR24028952
469	MG52414	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD186	229	230	RAS	BR24028952
470	MG52415	4-Acid ICP-MS	RSSZ(100)	Ore	MDD191	209	210	RAS	BR24028952
471	MG52416	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD228	309	310	RAS	BR24028952
472	MG52417	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD251	275	276	RAS	BR24028952
473	MG52418	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD230	291	292	RAS	BR24028952
474	MG52419	4-Acid ICP-MS	RSSZ(100)	Ore	MDD205	276	277	RAS	BR24028952
475	MG52420	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
476	MG52421	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
477	MG52422	4-Acid ICP-MS	RSSZ(100)	Ore	MDD228	304	305	RAS	BR24028952
478	MG52423	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD185	161	162	RAS	BR24028952
479	MG52424	4-Acid ICP-MS	RSSZ(100)	Ore	MDD226	203	204	RAS	BR24028952
480	MG52425	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD254	318	319	RAS	BR24028952
481	MG52426	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC138	36	37	SHR	BR24028952
482	MG52427	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD185	187	188	RAS	BR24028952
483	MG52428	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD187R	147	148	RAS	BR24028952
484	MG52429	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD191	258	259	RAS	BR24028952
485	MG52430	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD158	380	381	SHR	BR24028952
486	MG52431	4-Acid ICP-MS	RSSZ(100)	LGO	MDD209	306	307	RAS	BR24028952
487	MG52432	4-Acid ICP-MS	RSSZ(100)	Ore	MDD224	281	282	RAS	BR24028952
488	MG52433	4-Acid ICP-MS	RSSZ(100)	Ore	MDD210	180	181	RAS	BR24028952
489	MG52434	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD242	241	242	RAS	BR24028952
490	MG52435	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD200	201	202	RAS	BR24028952
491	MG52436	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD217	203	204	RAS	BR24028952
492	MG52437	4-Acid ICP-MS	SSBX(100)	Ore	MDD237	234	235	RAS	BR24028952
493	MG52438	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD216	300	301	RAS	BR24028952
494	MG52439	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC132	45	46	CIT	BR24028952
495	MG52440	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD222	254	255	RAS	BR24028952
496	MG52441	4-Acid ICP-MS	WSBX(95),TZ4(5)	Waste Rock	MDD255	297	298	RAS	BR24028952
497	MG52442	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
498	MG52443	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
499	MG52444	4-Acid ICP-MS	RSSZ(100)	Ore	MDD230	231	232	RAS	BR24028952
500	MG52445	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD236	242	243	RAS	BR24028952
501	MG52446	4-Acid ICP-MS	RSSZ(100)	Ore	MDD244	205	206	RAS	BR24028952
502	MG52447	4-Acid ICP-MS	RSSZ(100)	Ore	MDD186	207	208	RAS	BR24028952
503	MG52448	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD230	256	257	RAS	BR24028952
504	MG52449	4-Acid ICP-MS	RSSZ(100)	LGO	MDD251	282	283	RAS	BR24028952
505	MG52450	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD207	183	184	RAS	BR24028952
506	MG52451	4-Acid ICP-MS	RSSZ(100)	Ore	MDD197	228	229	RAS	BR24028952
507	MG52452	4-Acid ICP-MS	RSSZ(100)	Ore	MDD199	227	228	RAS	BR24028952
508	MG52453	4-Acid ICP-MS	RSSZ(100)	Ore	MDD210	168	169	RAS	BR24028952
509	MG52454	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD191	220	221	RAS	BR24028952
510	MG52455	4-Acid ICP-MS	RSSZ(100)	LGO	MDD209	287	288	RAS	BR24028952
511	MG52456	4-Acid ICP-MS	RSSZ(100)	Ore	MDD226	206	207	RAS	BR24028952
512	MG52457	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD199	246	247	RAS	BR24028952
513	MG52458	4-Acid ICP-MS	RSSZ(100)	Ore	MDD247	292	293	RAS	BR24028952
514	MG52459	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD193	206	207	RAS	BR24028952
515	MG52460	4-Acid ICP-MS	RSSZ(100)	Ore	MDD189	230	231	RAS	BR24028952
516	MG52461	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD192	51	52	RAS	BR24028952
517	MG52462	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD186	221	222	RAS	BR24028952
518	MG52463	4-Acid ICP-MS	RSSZ(100)	LGO	MDD244	240	241	RAS	BR24028952
519	MG52464	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
520	MG52465	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
521	MG52466	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD202R	326	327	RAS	BR24028952
522	MG52467	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD210	270	271	RAS	BR24028952

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
523	MG52468	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD186	231	232	RAS	BR24028952
524	MG52469	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD189	236	237	RAS	BR24028952
525	MG52470	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD167	190	191	RAS	BR24028952
526	MG52471	4-Acid ICP-MS	RSSZ(100)	Ore	MDD202R	322	323	RAS	BR24028952
527	MG52472	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD162	232	233	RAS	BR24028952
528	MG52473	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD213	247	248	RAS	BR24028952
529	MG52474	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD234	171	172	RAS	BR24028952
530	MG52475	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD240	274	275	RAS	BR24028952
531	MG52476	4-Acid ICP-MS	RSSZ(100)	Ore	MDD185	218	219	RAS	BR24028952
532	MG52477	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD236	257	258	RAS	BR24028952
533	MG52478	4-Acid ICP-MS	RSSZ(80),TZ4(20)	Waste Rock	MDD236	234	235	RAS	BR24028952
534	MG52479	4-Acid ICP-MS	TZ4(100)	Ore	MDD228	321	322	RAS	BR24028952
535	MG52480	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD219	306	307	RAS	BR24028952
536	MG52481	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD201	297	298	RAS	BR24028952
537	MG52482	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD158	402	403	SHR	BR24028952
538	MG52483	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD244	247	248	RAS	BR24028952
539	MG52484	4-Acid ICP-MS	RSSZ(100)	Ore	MDD206	269	270	RAS	BR24028952
540	MG52485	4-Acid ICP-MS	RSSZ(100)	LGO	MDD255	284	285	RAS	BR24028952
541	MG52486	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
542	MG52487	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
543	MG52488	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD180	189	190	RAS	BR24028952
544	MG52489	4-Acid ICP-MS	RSSZ(100)	LGO	MDD185	177	178	RAS	BR24028952
545	MG52490	4-Acid ICP-MS	RSSZ(100)	Ore	MDD244	204	205	RAS	BR24028952
546	MG52491	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD247	295	296	RAS	BR24028952
547	MG52492	4-Acid ICP-MS	SSBX(80),RSSZ(20)	Ore	MDD256	220	221	RAS	BR24028952
548	MG52493	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD207	240	241	RAS	BR24028952
549	MG52494	4-Acid ICP-MS	RSSZ(100)	Ore	MDD213	184	185	RAS	BR24028952
550	MG52495	4-Acid ICP-MS	RSSZ(100)	Ore	MDD221	186	187	RAS	BR24028952
551	MG52496	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD202R	364	365	RAS	BR24028952
552	MG52497	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC146R	19	20	SHR	BR24028952
553	MG52498	4-Acid ICP-MS	RSSZ(100)	LGO	MDD216	275	276	RAS	BR24028952
554	MG52499	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD180	173	174	RAS	BR24028952
555	MG52500	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD200	205	206	RAS	BR24028952
556	MG52501	4-Acid ICP-MS	RSSZ(100)	Ore	MDD197	225	226	RAS	BR24028952
557	MG52502	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD202R	363	364	RAS	BR24028952
558	MG52503	4-Acid ICP-MS	RSSZ(100)	LGO	MDD229	261	262	RAS	BR24028952
559	MG52504	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD236	216	217	RAS	BR24028952
560	MG52505	4-Acid ICP-MS	RSSZ(100)	LGO	MDD195	196	197	RAS	BR24028952
561	MG52506	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD162	234	235	RAS	BR24028952
562	MG52507	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD162	219	220	RAS	BR24028952
563	MG52508	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
564	MG52509	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
565	MG52510	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC139	35	36	SHR	BR24028952
566	MG52511	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD186	224	225	RAS	BR24028952
567	MG52512	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD244	225	226	RAS	BR24028952
568	MG52513	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD202R	335	336	RAS	BR24028952
569	MG52514	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD200	229	230	RAS	BR24028952
570	MG52515	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC142	48	49	SHR	BR24028952
571	MG52516	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD202R	325	326	RAS	BR24028952
572	MG52517	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC145	18	19	SHR	BR24028952
573	MG52518	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD235	237	238	RAS	BR24028952
574	MG52519	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD244	203	204	RAS	BR24028952
575	MG52520	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD216	318	319	RAS	BR24028952
576	MG52521	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD192	38	39	RAS	BR24028952
577	MG52522	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD181	315	316	RAS	BR24028952
578	MG52523	4-Acid ICP-MS	RSSZ(100)	Ore	MDD247	296	297	RAS	BR24028952
579	MG52524	4-Acid ICP-MS	RSSZ(100)	LGO	MDD167	196	197	RAS	BR24028952
580	MG52525	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD248	313	314	RAS	BR24028952

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
581	MG52526	4-Acid ICP-MS	RSSZ(100)	LGO	MDD201	279	280	RAS	BR24028952
582	MG52527	4-Acid ICP-MS	RSSZ(100)	Ore	MDD202R	297	298	RAS	BR24028952
583	MG52528	4-Acid ICP-MS	RSSZ(100)	Ore	MDD201	277	278	RAS	BR24028952
584	MG52529	4-Acid ICP-MS	RSSZ(100)	Ore	MDD229	257	258	RAS	BR24028952
585	MG52530	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
586	MG52531	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
587	MG52532	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD242	266	267	RAS	BR24028952
588	MG52533	4-Acid ICP-MS	RSSZ(100)	Ore	MDD240	228	229	RAS	BR24028952
589	MG52534	4-Acid ICP-MS	RSSZ(100)	Ore	MDD224	287	288	RAS	BR24028952
590	MG52535	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD192	93	94	RAS	BR24028952
591	MG52536	4-Acid ICP-MS	WSBX(100)	Ore	MDD251	278	279	RAS	BR24028952
592	MG52537	4-Acid ICP-MS	RSSZ(100)	LGO	MDD194	240	241	RAS	BR24028952
593	MG52538	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD226	237	238	RAS	BR24028952
594	MG52539	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD245	280	281	RAS	BR24028952
595	MG52540	4-Acid ICP-MS	RSSZ(65),TZ4(35)	Waste Rock	MDD253	41	42	RAS	BR24028952
596	MG52541	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD195	259	260	RAS	BR24028952
597	MG52542	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD208	277	278	RAS	BR24028952
598	MG52543	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD205	323	324	RAS	BR24028952
599	MG52544	4-Acid ICP-MS	RSSZ(100)	Ore	MDD240	233	234	RAS	BR24028952
600	MG52545	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD206	290	291	RAS	BR24028952
601	MG52546	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD194	245	246	RAS	BR24028952
602	MG52547	4-Acid ICP-MS	RSSZ(75),WSBX(25)	Ore	MDD244	189	190	RAS	BR24028952
603	MG52548	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD191	233	234	RAS	BR24028952
604	MG52549	4-Acid ICP-MS	TZ4(100)	Ore	MDD213	243	244	RAS	BR24028952
605	MG52550	4-Acid ICP-MS	TZ4(100)	Ore	MDD248	289	290	RAS	BR24028952
606	MG52551	4-Acid ICP-MS	RSSZ(100)	Ore	MDD217	176	177	RAS	BR24028952
607	MG52552	4-Acid ICP-MS	#N/A	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
608	MG52553	4-Acid ICP-MS	#N/A	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
609	MG52554	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD244	171	172	RAS	BR24028952
610	MG52555	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD187R	163	164	RAS	BR24028952
611	MG52556	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD184	172	173	RAS	BR24028952
612	MG52557	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD230	263	264	RAS	BR24028952
613	MG52558	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD195	180	181	RAS	BR24028952
614	MG52559	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC148R	51	52	SRE	BR24028952
615	MG52560	4-Acid ICP-MS	RSSZ(90),TZ4(10)	Ore	MDD248	294	295	RAS	BR24028952
616	MG52561	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC152	85	86	SRE	BR24028952
617	MG52562	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD186	265	266	RAS	BR24028952
618	MG52563	4-Acid ICP-MS	TZ4(100)	Ore	MDD228	303	304	RAS	BR24028952
619	MG52564	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD248	308	309	RAS	BR24028952
620	MG52565	4-Acid ICP-MS	RSSZ(100)	Ore	MRC146R	15	16	SHR	BR24028952
621	MG52566	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC146R	24	25	SHR	BR24028952
622	MG52567	4-Acid ICP-MS	TZ4(100)	Ore	MRC138	43	44	SHR	BR24028952
623	MG52568	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD187R	238	239	RAS	BR24028952
624	MG52569	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD242	264	265	RAS	BR24028952
625	MG52570	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD230	233	234	RAS	BR24028952
626	MG52571	4-Acid ICP-MS	RSSZ(100)	Ore	MDD244	182	183	RAS	BR24028952
627	MG52572	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD219	269	270	RAS	BR24028952
628	MG52573	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD195	222	223	RAS	BR24028952
629	MG52574	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
630	MG52575	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
631	MG52576	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD199	267	268	RAS	BR24028952
632	MG52577	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC138	49	50	SHR	BR24028952
633	MG52578	4-Acid ICP-MS	TZ4(100)	Ore	MDD235	190	191	RAS	BR24028952
634	MG52579	4-Acid ICP-MS	RSSZ(95),WSBX(5)	Waste Rock	MDD234	220	221	RAS	BR24028952
635	MG52580	4-Acid ICP-MS	TZ4(75),RSSZ(25)	Waste Rock	MDD256	254	255	RAS	BR24028952
636	MG52581	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD253	43	44	RAS	BR24028952
637	MG52582	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD251	297	298	RAS	BR24028952
638	MG52583	4-Acid ICP-MS	TZ4(80),RSSZ(20)	Waste Rock	MDD244	201	202	RAS	BR24028952

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
639	MG52584	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD219	322	323	RAS	BR24028952
640	MG52585	4-Acid ICP-MS	TZ4(80),RSSZ(20)	Waste Rock	MDD234	255	256	RAS	BR24028952
641	MG52586	4-Acid ICP-MS	TZ4(100)	Ore	MDD184	91	92	RAS	BR24028952
642	MG52587	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD185	182	183	RAS	BR24028952
643	MG52588	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD234	214	215	RAS	BR24028952
644	MG52589	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD254	298	299	RAS	BR24028952
645	MG52590	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD220	222	223	RAS	BR24028952
646	MG52591	4-Acid ICP-MS	RSSZ(100)	Ore	MDD242	227	228	RAS	BR24028952
647	MG52592	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD186	279	280	RAS	BR24028952
648	MG52593	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD235	207	208	RAS	BR24028952
649	MG52594	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD231	182	183	RAS	BR24028952
650	MG52595	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC138	34	35	SHR	BR24028952
651	MG52596	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
652	MG52597	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
653	MG52598	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC146R	52	53	SHR	BR24028952
654	MG52599	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC148R	36	37	SRE	BR24028952
655	MG52600	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD187R	194	195	RAS	BR24028952
656	MG52601	4-Acid ICP-MS	RSSZ(100)	Ore	MDD221	192	193	RAS	BR24028952
657	MG52602	4-Acid ICP-MS	RSSZ(100)	LGO	MDD235	153	154	RAS	BR24028952
658	MG52603	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC142	22	23	SHR	BR24028952
659	MG52604	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD247	270	271	RAS	BR24028952
660	MG52605	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC138	41	42	SHR	BR24028952
661	MG52606	4-Acid ICP-MS	RSSZ(100)	Ore	MDD216	266	267	RAS	BR24028952
662	MG52607	4-Acid ICP-MS	RSSZ(100)	Ore	MDD219	293	294	RAS	BR24028952
663	MG52608	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC150	57	58	SRE	BR24028952
664	MG52609	4-Acid ICP-MS	RSSZ(60),TZ4(40)	Waste Rock	MDD251	312	313	RAS	BR24028952
665	MG52610	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC150	64	65	SRE	BR24028952
666	MG52611	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD226	214	215	RAS	BR24028952
667	MG52612	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC150	16	17	SRE	BR24028952
668	MG52613	4-Acid ICP-MS	TZ4(60),RSSZ(40)	Waste Rock	MDD240	230	231	RAS	BR24028952
669	MG52614	4-Acid ICP-MS	RSSZ(100)	Ore	MDD247	298	299	RAS	BR24028952
670	MG52615	4-Acid ICP-MS	TZ4(100)	LGO	MRC131	39	40	CIT	BR24028952
671	MG52616	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD240	291	292	RAS	BR24028952
672	MG52617	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD200	223	224	RAS	BR24028952
673	MG52618	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
674	MG52619	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
675	MG52620	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC142	24	25	SHR	BR24028952
676	MG52621	4-Acid ICP-MS	TZ4(50),RSSZ(50)	Waste Rock	MDD234	206	207	RAS	BR24028952
677	MG52622	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC138	55	56	SHR	BR24028952
678	MG52623	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC139	43	44	SHR	BR24028952
679	MG52624	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD230	251	252	RAS	BR24028952
680	MG52625	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC142	45	46	SHR	BR24028952
681	MG52626	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD245	292	293	RAS	BR24028952
682	MG52627	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD215	297	298	RAS	BR24028952
683	MG52628	4-Acid ICP-MS	RSSZ(100)	Ore	MDD240	241	242	RAS	BR24028952
684	MG52629	4-Acid ICP-MS	TZ4(100)	Ore	MRC145	17	18	SHR	BR24028952
685	MG52630	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD248	278	279	RAS	BR24028952
686	MG52631	4-Acid ICP-MS	TZ4(85),RSSZ(15)	Waste Rock	MDD234	260	261	RAS	BR24028952
687	MG52632	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC132	66	67	CIT	BR24028952
688	MG52633	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC147	22	23	SRE	BR24028952
689	MG52634	4-Acid ICP-MS	TZ4(100)	Ore	MRC132	65	66	CIT	BR24028952
690	MG52635	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD245	290	291	RAS	BR24028952
691	MG52636	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC140	50	51	SHR	BR24028952
692	MG52637	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC142	53	54	SHR	BR24028952
693	MG52638	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC153	52	53	SRE	BR24028952
694	MG52639	4-Acid ICP-MS	RSSZ(100)	Ore	MDD226	183.3	185	RAS	BR24028952
695	MG52640	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
696	MG52641	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
697	MG52642	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC148R	25	26	SRE	BR24028952
698	MG52643	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC142	43	44	SHR	BR24028952
699	MG52644	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD247	265.5	267	RAS	BR24028952
700	MG52645	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD217	219	220	RAS	BR24028952
701	MG52646	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC144	24	25	SHR	BR24028952
702	MG52647	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC157	49	50	SRE	BR24028952
703	MG52648	4-Acid ICP-MS	RSSZ(100)	Ore	MDD254	285	286	RAS	BR24028952
704	MG52649	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MRC158	41	42	SRE	BR24028952
705	MG52650	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC153	44	45	SRE	BR24028952
706	MG52651	4-Acid ICP-MS	TZ4(100)	Ore	MRC153	33	34	SRE	BR24028952
707	MG52652	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC145	27	28	SHR	BR24028952
708	MG52653	4-Acid ICP-MS	RSSZ(100)	Ore	MDD256	217.38	219	RAS	BR24028952
709	MG52654	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC144	9	10	SHR	BR24028952
710	MG52655	4-Acid ICP-MS	TZ4(100)	Ore	MRC144	26	27	SHR	BR24028952
711	MG52656	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD229	293	294	RAS	BR24028952
712	MG52657	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC141	25	26	SHR	BR24028952
713	MG52658	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC141	26	27	SHR	BR24028952
714	MG52659	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC144	8	9	SHR	BR24028952
715	MG52660	4-Acid ICP-MS	TZ4(100)	LGO	MRC144	16	17	SHR	BR24028952
716	MG52661	4-Acid ICP-MS	TZ4(100)	Waste Rock	MRC148R	57	58	SRE	BR24028952
717	MG52662	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
718	MG52663	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
719	MG52664	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD195	200	201	RAS	BR24028952
720	MG52665	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD200	212	213	RAS	BR24028952
721	MG52666	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD181	145.65	147	RAS	BR24028952
722	MG52667	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD181	198	199	RAS	BR24028952
723	MG52668	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD181	221	222	RAS	BR24028952
724	MG52669	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD181	223	224	RAS	BR24028952
725	MG52670	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD181	235	236	RAS	BR24028952
726	MG52671	4-Acid ICP-MS	RSSZ(100)	LGO	MDD181	249	250	RAS	BR24028952
727	MG52672	4-Acid ICP-MS	RSSZ(100)	Ore	MDD213	215	216	RAS	BR24028952
728	MG52673	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD190	90	91	RAS	BR24028952
729	MG52674	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD231	228	229	RAS	BR24028952
730	MG52675	4-Acid ICP-MS	TZ4(100)	Waste Rock	MDD230	252	253	RAS	BR24028952
731	MG52676	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD228	276	277	RAS	BR24028952
732	MG52677	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD224	282	283	RAS	BR24028952
733	MG52678	4-Acid ICP-MS	TZ4(80),RSSZ(20)	Waste Rock	MDD238	263	264	RAS	BR24028952
734	MG52679	4-Acid ICP-MS	RSSZ(100)	Ore	MDD212	267	268	RAS	BR24028952
735	MG52680	4-Acid ICP-MS	RSSZ(100)	Waste Rock	MDD212	294	295	RAS	BR24028952
736	MG52681	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
737	MG52682	4-Acid ICP-MS	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	QA/QC	BR24028952
738	MG11778	pXRF	RSSZ		MDD023R			RAS	N.A.
739	MG11779	pXRF	RSSZ		MDD023R			RAS	N.A.
740	MG11780	pXRF	RSSZ		MDD023R			RAS	N.A.
741	MG11781	pXRF	RSSZ		MDD023R			RAS	N.A.
742	MG11782	pXRF	RSSZ		MDD023R			RAS	N.A.
743	MG11783	pXRF	RSSZ		MDD023R			RAS	N.A.
744	MG11784	pXRF	RSSZ		MDD023R			RAS	N.A.
745	MG11785	pXRF	RSSZ		MDD023R			RAS	N.A.
746	MG11786	pXRF	RSSZ		MDD023R			RAS	N.A.
747	MG11787	pXRF	RSSZ		MDD023R			RAS	N.A.
748	MG11792	pXRF	RSSZ		MDD023R			RAS	N.A.
749	MG11793	pXRF	RSSZ		MDD023R			RAS	N.A.
750	MG11794	pXRF	RSSZ		MDD023R			RAS	N.A.
751	MG11833	pXRF	RSSZ		MDD025R			RAS	N.A.
752	MG11834	pXRF	RSSZ		MDD025R			RAS	N.A.
753	MG11835	pXRF	RSSZ		MDD025R			RAS	N.A.
754	MG11837	pXRF	RSSZ		MDD025R			RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
755	MG11838	pXRF	RSSZ		MDD025R			RAS	N.A.
756	MG11839	pXRF	RSSZ		MDD025R			RAS	N.A.
757	MG11840	pXRF	RSSZ		MDD025R			RAS	N.A.
758	MG11841	pXRF	RSSZ		MDD025R			RAS	N.A.
759	MG11843	pXRF	RSSZ		MDD025R			RAS	N.A.
760	MG11844	pXRF	RSSZ		MDD025R			RAS	N.A.
761	MG11845	pXRF	RSSZ		MDD025R			RAS	N.A.
762	MG11849	pXRF	RSSZ		MDD025R			RAS	N.A.
763	MG11850	pXRF	RSSZ		MDD025R			RAS	N.A.
764	MG11217	pXRF	RSSZ		MDD019R			RAS	N.A.
765	MG11241	pXRF	TZ4		MDD019R			RAS	N.A.
766	MG11246	pXRF	TZ4		MDD019R			RAS	N.A.
767	MG11251	pXRF	TZ4		MDD019R			RAS	N.A.
768	MG11285	pXRF	RSSZ		MDD019R			RAS	N.A.
769	MG11263	pXRF	TZ4		MDD019R			RAS	N.A.
770	MG11375	pXRF	RSSZ		MDD020			RAS	N.A.
771	MG11379	pXRF	RSSZ		MDD020			RAS	N.A.
772	MG11382	pXRF	RSSZ		MDD020			RAS	N.A.
773	MG11391	pXRF	TZ4		MDD020			RAS	N.A.
774	MG11392	pXRF	TZ4		MDD020			RAS	N.A.
775	MG11454	pXRF	TZ4		MDD020			RAS	N.A.
776	MG11511	pXRF	TZ4		MDD021R			RAS	N.A.
777	MG11514	pXRF	TZ4		MDD021R			RAS	N.A.
778	MG11516	pXRF	TZ4		MDD021R			RAS	N.A.
779	MG11519	pXRF	TZ4		MDD021R			RAS	N.A.
780	MG11521	pXRF	TZ4		MDD021R			RAS	N.A.
781	MG11543	pXRF	TZ4		MDD021R			RAS	N.A.
782	MG11578	pXRF	TZ4		MDD021R			RAS	N.A.
783	MG11512	pXRF	TZ4		MDD021R			RAS	N.A.
784	MG11527	pXRF	TZ4		MDD021R			RAS	N.A.
785	MG11624	pXRF	RSSZ		MDD022			RAS	N.A.
786	MG11625	pXRF	RSSZ		MDD022			RAS	N.A.
787	MG11623	pXRF	RSSZ		MDD022			RAS	N.A.
788	MG11628	pXRF	RSSZ		MDD022			RAS	N.A.
789	MG11627	pXRF	RSSZ		MDD022			RAS	N.A.
790	MG11631	pXRF	RSSZ		MDD022			RAS	N.A.
791	MG13008	pXRF	RSSZ		MDD024			RAS	N.A.
792	MG13089	pXRF	RSSZ		MDD024			RAS	N.A.
793	MG13242	pXRF	RSSZ		MDD026			RAS	N.A.
794	MG13245	pXRF	TZ4		MDD026			RAS	N.A.
795	MG13115	pXRF	RSSZ		MDD026			RAS	N.A.
796	MG12001	pXRF	TZ4		MDD027			RAS	N.A.
797	MG12021	pXRF	RSSZ		MDD027			RAS	N.A.
798	MG11952	pXRF	RSSZ		MDD027			RAS	N.A.
799	MG11955	pXRF	RSSZ		MDD027			RAS	N.A.
800	MG13277	pXRF	TZ4		MDD028			RAS	N.A.
801	MG13287	pXRF	RSSZ		MDD028			RAS	N.A.
802	MG13288	pXRF	RSSZ		MDD028			RAS	N.A.
803	MG13302	pXRF	RSSZ		MDD028			RAS	N.A.
804	MG13324	pXRF	RSSZ		MDD028			RAS	N.A.
805	MG13343	pXRF	RSSZ		MDD028			RAS	N.A.
806	MG13275	pXRF	RSSZ		MDD028			RAS	N.A.
807	MG12174	pXRF	RSSZ		MDD031			RAS	N.A.
808	MG12177	pXRF	RSSZ		MDD031			RAS	N.A.
809	MG12179	pXRF	RSSZ		MDD031			RAS	N.A.
810	MG12180	pXRF	RSSZ		MDD031			RAS	N.A.
811	MG12184	pXRF	RSSZ		MDD031			RAS	N.A.
812	MG12196	pXRF	RSSZ		MDD031			RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
813	MG12199	pXRF	RSSZ		MDD031			RAS	N.A.
814	MG12208	pXRF	RSSZ		MDD031			RAS	N.A.
815	MG12228	pXRF	RSSZ		MDD031			RAS	N.A.
816	MG12176	pXRF	RSSZ		MDD031			RAS	N.A.
817	MG12195	pXRF	RSSZ		MDD031			RAS	N.A.
818	MG12192	pXRF	RSSZ		MDD031			RAS	N.A.
819	MG12185	pXRF	RSSZ		MDD031			RAS	N.A.
820	MG12187	pXRF	RSSZ		MDD031			RAS	N.A.
821	MG13604	pXRF	RSSZ		MDD033			RAS	N.A.
822	MG13605	pXRF	RSSZ		MDD033			RAS	N.A.
823	MG13610	pXRF	RSSZ		MDD033			RAS	N.A.
824	MG15014	pXRF	RSSZ		MDD034R			RAS	N.A.
825	MG13410	pXRF	RSSZ		MDD030R			RAS	N.A.
826	MG13401	pXRF	RSSZ		MDD030R			RAS	N.A.
827	MG13426	pXRF	RSSZ		MDD030R			RAS	N.A.
828	MG13421	pXRF	RSSZ		MDD030R			RAS	N.A.
829	MG13518	pXRF	RSSZ		MDD032			CIT	N.A.
830	MG13519	pXRF	TZ4		MDD032			CIT	N.A.
831	MG13526	pXRF	TZ4		MDD032			CIT	N.A.
832	MG13521	pXRF	TZ4		MDD032			CIT	N.A.
833	MG13525	pXRF	TZ4		MDD032			CIT	N.A.
834	MG13543	pXRF	TZ4		MDD032			CIT	N.A.
835	MG13515	pXRF	TZ4		MDD032			CIT	N.A.
836	MG13512	pXRF	RSSZ		MDD032			CIT	N.A.
837	MG13509	pXRF	RSSZ		MDD032			CIT	N.A.
838	MG13572	pXRF	RSSZ		MDD034			RAS	N.A.
839	MG13568	pXRF	RSSZ		MDD034			RAS	N.A.
840	MG13560	pXRF	RSSZ		MDD034			RAS	N.A.
841	MG13585	pXRF	RSSZ		MDD034			RAS	N.A.
842	MG13584	pXRF	RSSZ		MDD034			RAS	N.A.
843	MG13586	pXRF	RSSZ		MDD034			RAS	N.A.
844	MG13558	pXRF	RSSZ		MDD034			RAS	N.A.
845	MG13569	pXRF	TZ4		MDD034			RAS	N.A.
846	MG13592	pXRF	RSSZ		MDD034			RAS	N.A.
847	MG15086	pXRF	RSSZ		MDD034R			RAS	N.A.
848	MG13719	pXRF	RSSZ		MDD035			CIT	N.A.
849	MG13718	pXRF	RSSZ		MDD035			CIT	N.A.
850	MG15147	pXRF	RSSZ		MDD036			RAS	N.A.
851	MG15143	pXRF	RSSZ		MDD036			RAS	N.A.
852	MG15163	pXRF	RSSZ		MDD036			RAS	N.A.
853	MG15129	pXRF	RSSZ		MDD036			RAS	N.A.
854	MG15155	pXRF	RSSZ		MDD036			RAS	N.A.
855	MG12336	pXRF	RSSZ		MDD037			RAS	N.A.
856	MG12334	pXRF	RSSZ		MDD037			RAS	N.A.
857	MG13807	pXRF	RSSZ		MDD038			CIT	N.A.
858	MG13805	pXRF	RSSZ		MDD038			CIT	N.A.
859	MG13831	pXRF	RSSZ		MDD038			CIT	N.A.
860	MG13812	pXRF	RSSZ		MDD038			CIT	N.A.
861	MG13842	pXRF	TZ4		MDD038			CIT	N.A.
862	MG15231	pXRF	TZ4		MDD039			RAS	N.A.
863	MG13897	pXRF	RSSZ		MDD040			CIT	N.A.
864	MG13875	pXRF	TGF		MDD040			CIT	N.A.
865	MG13932	pXRF	TZ4		MDD040			CIT	N.A.
866	MG12544	pXRF	RSSZ		MDD044			RAS	N.A.
867	MG12518	pXRF	RSSZ		MDD044			RAS	N.A.
868	MG12553	pXRF	RSSZ		MDD044			RAS	N.A.
869	MG12524	pXRF	RSSZ		MDD044			RAS	N.A.
870	MG12530	pXRF	RSSZ		MDD044			RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
871	MG12571	pXRF	RSSZ		MDD044			RAS	N.A.
872	MG12520	pXRF	RSSZ		MDD044			RAS	N.A.
873	MG12519	pXRF	RSSZ		MDD044			RAS	N.A.
874	MG12546	pXRF	RSSZ		MDD044			RAS	N.A.
875	MG12577	pXRF	RSSZ		MDD044			RAS	N.A.
876	MG12563	pXRF	RSSZ		MDD044			RAS	N.A.
877	MG12539	pXRF	RSSZ		MDD044			RAS	N.A.
878	MG12533	pXRF	RSSZ		MDD044			RAS	N.A.
879	MG12535	pXRF	RSSZ		MDD044			RAS	N.A.
880	MG12555	pXRF	RSSZ		MDD044			RAS	N.A.
881	MG15508	pXRF	RSSZ		MDD048R			RAS	N.A.
882	MG14110	pXRF	RSSZ		MDD049			CIT	N.A.
883	MG14107	pXRF	RSSZ		MDD049			CIT	N.A.
884	MG14104	pXRF	RSSZ		MDD049			CIT	N.A.
885	MG12335	pXRF	RSSZ		MDD037			RAS	N.A.
886	MG12412	pXRF	RSSZ		MDD041			RAS	N.A.
887	MG12416	pXRF	RSSZ		MDD041			RAS	N.A.
888	MG12418	pXRF	RSSZ		MDD041			RAS	N.A.
889	MG12420	pXRF	RSSZ		MDD041			RAS	N.A.
890	MG12434	pXRF	RSSZ		MDD041			RAS	N.A.
891	MG15307	pXRF	RSSZ		MDD042			RAS	N.A.
892	MG15325	pXRF	RSSZ		MDD042			RAS	N.A.
893	MG15326	pXRF	RSSZ		MDD042			RAS	N.A.
894	MG15327	pXRF	RSSZ		MDD042			RAS	N.A.
895	MG12607	pXRF	RSSZ		MDD044			RAS	N.A.
896	MG12618	pXRF	RSSZ		MDD044			RAS	N.A.
897	MG15454	pXRF	TZ4		MDD045			RAS	N.A.
898	MG12664	pXRF	RSSZ		MDD047			RAS	N.A.
899	MG12720	pXRF	TZ4		MDD047			RAS	N.A.
900	MG15510	pXRF	RSSZ		MDD048R			RAS	N.A.
901	MG15516	pXRF	RSSZ		MDD048R			RAS	N.A.
902	MG15520	pXRF	RSSZ		MDD048R			RAS	N.A.
903	MG15521	pXRF	TZ4		MDD048R			RAS	N.A.
904	MG15553	pXRF	RSSZ		MDD048R			RAS	N.A.
905	MG15559	pXRF	RSSZ		MDD048R			RAS	N.A.
906	MG15596	pXRF	TZ4		MDD048R			RAS	N.A.
907	MG14108	pXRF	RSSZ		MDD049			CIT	N.A.
908	MG17008	pXRF	RSSZ		MDD050			RAS	N.A.
909	MG15630	pXRF	RSSZ		MDD051			RAS	N.A.
910	MG15640	pXRF	RSSZ		MDD051			RAS	N.A.
911	MG15643	pXRF	RSSZ		MDD051			RAS	N.A.
912	MG15646	pXRF	RSSZ		MDD051			RAS	N.A.
913	MG15647	pXRF	RSSZ		MDD051			RAS	N.A.
914	MG15648	pXRF	RSSZ		MDD051			RAS	N.A.
915	MG15656	pXRF	RSSZ		MDD051			RAS	N.A.
916	MG15658	pXRF	RSSZ		MDD051			RAS	N.A.
917	MG15671	pXRF	RSSZ		MDD051			RAS	N.A.
918	MG15673	pXRF	RSSZ		MDD051			RAS	N.A.
919	MG15679	pXRF	RSSZ		MDD051			RAS	N.A.
920	MG15701	pXRF	RSSZ		MDD051			RAS	N.A.
921	MG15712	pXRF	RSSZ		MDD051			RAS	N.A.
922	MG15716	pXRF	TZ4		MDD051			RAS	N.A.
923	MG14192	pXRF	RSSZ		MDD052			CIT	N.A.
924	MG14211	pXRF	TZ4		MDD052			CIT	N.A.
925	MG15738	pXRF	RSSZ		MDD054			RAS	N.A.
926	MG15739	pXRF	RSSZ		MDD054			RAS	N.A.
927	MG15744	pXRF	RSSZ		MDD054			RAS	N.A.
928	MG15749	pXRF	RSSZ		MDD054			RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
929	MG15768	pXRF	RSSZ		MDD054			RAS	N.A.
930	MG15771	pXRF	RSSZ		MDD054			RAS	N.A.
931	MG15784	pXRF	RSSZ		MDD054			RAS	N.A.
932	MG15793	pXRF	RSSZ		MDD054			RAS	N.A.
933	MG15812	pXRF	RSSZ		MDD054			RAS	N.A.
934	MG15818	pXRF	RSSZ		MDD054			RAS	N.A.
935	MG17241	pXRF	RSSZ		MDD055			RAS	N.A.
936	MG17242	pXRF	RSSZ		MDD055			RAS	N.A.
937	MG17245	pXRF	RSSZ		MDD055			RAS	N.A.
938	MG17248	pXRF	RSSZ		MDD055			RAS	N.A.
939	MG17249	pXRF	RSSZ		MDD055			RAS	N.A.
940	MG17261	pXRF	RSSZ		MDD055			RAS	N.A.
941	MG17270	pXRF	RSSZ		MDD055			RAS	N.A.
942	MG17289	pXRF	RSSZ		MDD055			RAS	N.A.
943	MG15962	pXRF	TZ4		MDD056			RAS	N.A.
944	MG15970	pXRF	RSSZ		MDD056			RAS	N.A.
945	MG15980	pXRF	RSSZ		MDD056			RAS	N.A.
946	MG15998	pXRF	TZ4		MDD056			RAS	N.A.
947	MG16004	pXRF	RSSZ		MDD056			RAS	N.A.
948	MG14253	pXRF	RSSZ		MDD057			CIT	N.A.
949	MG14260	pXRF	RSSZ		MDD057			CIT	N.A.
950	MG14270	pXRF	RSSZ		MDD057			CIT	N.A.
951	MG14315	pXRF	RSSZ		MDD058			CIT	N.A.
952	MG14317	pXRF	RSSZ		MDD058			CIT	N.A.
953	MG14327	pXRF	TZ4		MDD058			CIT	N.A.
954	MG14332	pXRF	RSSZ		MDD058			CIT	N.A.
955	MG16118	pXRF	RSSZ		MDD059			SHR	N.A.
956	MG14387	pXRF	RSSZ		MDD061			RAS	N.A.
957	MG14392	pXRF	RSSZ		MDD061			RAS	N.A.
958	MG14393	pXRF	RSSZ		MDD061			RAS	N.A.
959	MG14402	pXRF	RSSZ		MDD061			RAS	N.A.
960	MG14408	pXRF	RSSZ		MDD061			RAS	N.A.
961	MG14410	pXRF	RSSZ		MDD061			RAS	N.A.
962	MG14413	pXRF	RSSZ		MDD061			RAS	N.A.
963	MG14431	pXRF	RSSZ		MDD061			RAS	N.A.
964	MG14450	pXRF	TZ4		MDD061			RAS	N.A.
965	MG14465	pXRF	RSSZ		MDD061			RAS	N.A.
966	MG14472	pXRF	RSSZ		MDD061			RAS	N.A.
967	MG14477	pXRF	RSSZ		MDD061			RAS	N.A.
968	MG16215	pXRF	RSSZ		MDD062R			SHR	N.A.
969	MG16226	pXRF	RSSZ		MDD062R			SHR	N.A.
970	MG14582	pXRF	RSSZ		MDD064			RAS	N.A.
971	MG14583	pXRF	RSSZ		MDD064			RAS	N.A.
972	MG14587	pXRF	RSSZ		MDD064			RAS	N.A.
973	MG14588	pXRF	RSSZ		MDD064			RAS	N.A.
974	MG14591	pXRF	RSSZ		MDD064			RAS	N.A.
975	MG14604	pXRF	RSSZ		MDD064			RAS	N.A.
976	MG14609	pXRF	RSSZ		MDD064			RAS	N.A.
977	MG16015	pXRF	RSSZ		MDD056			RAS	N.A.
978	MG16057	pXRF	TZ4		MDD056			RAS	N.A.
979	MG16080	pXRF	RSSZ		MDD056			RAS	N.A.
980	MG16082	pXRF	RSSZ		MDD056			RAS	N.A.
981	MG16156	pXRF	TZ4		MDD059			SHR	N.A.
982	MG14524	pXRF	TZ4		MDD061			RAS	N.A.
983	MG14562	pXRF	TZ4		MDD061			RAS	N.A.
984	MG16203	pXRF	RSSZ		MDD062			SHR	N.A.
985	MG16290	pXRF	TZ4		MDD062R			SHR	N.A.
986	MG17482	pXRF	RSSZ		MDD063			RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
987	MG17588	pXRF	RSSZ		MDD066			RAS	N.A.
988	MG17589	pXRF	RSSZ		MDD066			RAS	N.A.
989	MG17593	pXRF	RSSZ		MDD066			RAS	N.A.
990	MG17596	pXRF	RSSZ		MDD066			RAS	N.A.
991	MG17600	pXRF	RSSZ		MDD066			RAS	N.A.
992	MG17616	pXRF	RSSZ		MDD066			RAS	N.A.
993	MG17624	pXRF	RSSZ		MDD066			RAS	N.A.
994	MG17635	pXRF	RSSZ		MDD066			RAS	N.A.
995	MG17636	pXRF	TZ4		MDD066			RAS	N.A.
996	MG20097	pXRF	RSSZ		MDD067			RAS	N.A.
997	MG20120	pXRF	RSSZ		MDD067			RAS	N.A.
998	MG20143	pXRF	RSSZ		MDD067			RAS	N.A.
999	MG20194	pXRF	RSSZ		MDD067			RAS	N.A.
1000	MG17756	pXRF	RSSZ		MDD069			RAS	N.A.
1001	MG17828	pXRF	RSSZ		MDD069			RAS	N.A.
1002	MG20235	pXRF	TZ4		MDD070			RAS	N.A.
1003	MG20244	pXRF	RSSZ		MDD070			RAS	N.A.
1004	MG20252	pXRF	RSSZ		MDD070			RAS	N.A.
1005	MG16421	pXRF	RSSZ		MDD071			SRE	N.A.
1006	MG16425	pXRF	RSSZ		MDD071			SRE	N.A.
1007	MG20348	pXRF	RSSZ		MDD072			RAS	N.A.
1008	MG20364	pXRF	TZ4		MDD072			RAS	N.A.
1009	MG20365	pXRF	TZ4		MDD072			RAS	N.A.
1010	MG20372	pXRF	RSSZ		MDD072			RAS	N.A.
1011	MG20390	pXRF	RSSZ		MDD072			RAS	N.A.
1012	MG20391	pXRF	RSSZ		MDD072			RAS	N.A.
1013	MG20383	pXRF	TZ4		MDD072			RAS	N.A.
1014	MG16493	pXRF	RSSZ		MDD073			SRE	N.A.
1015	MG16506	pXRF	RSSZ		MDD073			SRE	N.A.
1016	MG16507	pXRF	RSSZ		MDD073			SRE	N.A.
1017	MG16516	pXRF	RSSZ		MDD073			SRE	N.A.
1018	MG16562	pXRF	RSSZ		MDD075			SRE	N.A.
1019	MG16660	pXRF	TZ4		MDD077			SHR	N.A.
1020	MG17995	pXRF	RSSZ		MDD078			RAS	N.A.
1021	MG18009	pXRF	RSSZ		MDD078			RAS	N.A.
1022	MG18017	pXRF	RSSZ		MDD078			RAS	N.A.
1023	MG20559	pXRF	RSSZ		MDD079			RAS	N.A.
1024	MG20564	pXRF	RSSZ		MDD079			RAS	N.A.
1025	MG20591	pXRF	TZ4		MDD079			RAS	N.A.
1026	MG16756	pXRF	RSSZ		MDD080			RAS	N.A.
1027	MG16759	pXRF	RSSZ		MDD080			RAS	N.A.
1028	MG16760	pXRF	RSSZ		MDD080			RAS	N.A.
1029	MG16799	pXRF	RSSZ		MDD080			RAS	N.A.
1030	MG16805	pXRF	RSSZ		MDD080			RAS	N.A.
1031	MG16810	pXRF	RSSZ		MDD080			RAS	N.A.
1032	MG16811	pXRF	RSSZ		MDD080			RAS	N.A.
1033	MG16780	pXRF	RSSZ		MDD080			RAS	N.A.
1034	MG16798	pXRF	RSSZ		MDD080			RAS	N.A.
1035	MG20706	pXRF	RSSZ		MDD081			RAS	N.A.
1036	MG20707	pXRF	RSSZ		MDD081			RAS	N.A.
1037	MG20708	pXRF	RSSZ		MDD081			RAS	N.A.
1038	MG20710	pXRF	RSSZ		MDD081			RAS	N.A.
1039	MG20720	pXRF	RSSZ		MDD081			RAS	N.A.
1040	MG20721	pXRF	RSSZ		MDD081			RAS	N.A.
1041	MG20723	pXRF	RSSZ		MDD081			RAS	N.A.
1042	MG20739	pXRF	RSSZ		MDD081			RAS	N.A.
1043	MG20740	pXRF	RSSZ		MDD081			RAS	N.A.
1044	MG20741	pXRF	RSSZ		MDD081			RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1045	MG20748	pXRF	RSSZ		MDD081			RAS	N.A.
1046	MG20749	pXRF	RSSZ		MDD081			RAS	N.A.
1047	MG20754	pXRF	RSSZ		MDD081			RAS	N.A.
1048	MG20758	pXRF	RSSZ		MDD081			RAS	N.A.
1049	MG20750	pXRF	RSSZ		MDD081			RAS	N.A.
1050	MG20732	pXRF	RSSZ		MDD081			RAS	N.A.
1051	MG20745	pXRF	RSSZ		MDD081			RAS	N.A.
1052	MG20729	pXRF	RSSZ		MDD081			RAS	N.A.
1053	MG18148	pXRF	RSSZ		MDD082			RAS	N.A.
1054	MG18154	pXRF	RSSZ		MDD082			RAS	N.A.
1055	MG16870	pXRF	RSSZ		MDD083			RAS	N.A.
1056	MG16874	pXRF	RSSZ		MDD083			RAS	N.A.
1057	MG16884	pXRF	RSSZ		MDD083			RAS	N.A.
1058	MG16886	pXRF	RSSZ		MDD083			RAS	N.A.
1059	MG16890	pXRF	TZ4		MDD083			RAS	N.A.
1060	MG16893	pXRF	RSSZ		MDD083			RAS	N.A.
1061	MG16894	pXRF	RSSZ		MDD083			RAS	N.A.
1062	MG16895	pXRF	RSSZ		MDD083			RAS	N.A.
1063	MG16897	pXRF	TZ4		MDD083			RAS	N.A.
1064	MG16901	pXRF	RSSZ		MDD083			RAS	N.A.
1065	MG16946	pXRF	TZ4		MDD083			RAS	N.A.
1066	MG16944	pXRF	RSSZ		MDD083			RAS	N.A.
1067	MG16948	pXRF	TZ4		MDD083			RAS	N.A.
1068	MG16892	pXRF	TZ4		MDD083			RAS	N.A.
1069	MG16971	pXRF	RSSZ		MDD083			RAS	N.A.
1070	MG16978	pXRF	RSSZ		MDD083			RAS	N.A.
1071	MG16981	pXRF	RSSZ		MDD083			RAS	N.A.
1072	MG16985	pXRF	RSSZ		MDD083			RAS	N.A.
1073	MG16990	pXRF	RSSZ		MDD083			RAS	N.A.
1074	MG27007	pXRF	TZ4		MDD083			RAS	N.A.
1075	MG16955	pXRF	RSSZ		MDD083			RAS	N.A.
1076	MG27025	pXRF	RSSZ		MDD084			RAS	N.A.
1077	MG27038	pXRF	RSSZ		MDD084			RAS	N.A.
1078	MG27048	pXRF	RSSZ		MDD084			RAS	N.A.
1079	MG27051	pXRF	RSSZ		MDD084			RAS	N.A.
1080	MG27052	pXRF	RSSZ		MDD084			RAS	N.A.
1081	MG27053	pXRF	RSSZ		MDD084			RAS	N.A.
1082	MG27054	pXRF	RSSZ		MDD084			RAS	N.A.
1083	MG27060	pXRF	RSSZ		MDD084			RAS	N.A.
1084	MG27061	pXRF	RSSZ		MDD084			RAS	N.A.
1085	MG27080	pXRF	RSSZ		MDD084			RAS	N.A.
1086	MG18273	pXRF	RSSZ		MDD085			RAS	N.A.
1087	MG18290	pXRF	RSSZ		MDD085			RAS	N.A.
1088	MG18300	pXRF	RSSZ		MDD085			RAS	N.A.
1089	MG18266	pXRF	RSSZ		MDD085			RAS	N.A.
1090	MG18279	pXRF	RSSZ		MDD085			RAS	N.A.
1091	MG18259	pXRF	RSSZ		MDD085			RAS	N.A.
1092	MG20830	pXRF	RSSZ		MDD086			RAS	N.A.
1093	MG20833	pXRF	RSSZ		MDD086			RAS	N.A.
1094	MG20834	pXRF	RSSZ		MDD086			RAS	N.A.
1095	MG20836	pXRF	RSSZ		MDD086			RAS	N.A.
1096	MG20839	pXRF	RSSZ		MDD086			RAS	N.A.
1097	MG20843	pXRF	RSSZ		MDD086			RAS	N.A.
1098	MG20849	pXRF	RSSZ		MDD086			RAS	N.A.
1099	MG20868	pXRF	RSSZ		MDD086			RAS	N.A.
1100	MG20876	pXRF	RSSZ		MDD086			RAS	N.A.
1101	MG20879	pXRF	RSSZ		MDD086			RAS	N.A.
1102	MG20894	pXRF	RSSZ		MDD086			RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1103	MG20878	pXRF	RSSZ		MDD086			RAS	N.A.
1104	MG19792	pXRF	TZ3	Waste Rock	MDD145	0	5	RAS	N.A.
1105	MG19793	pXRF	TZ3	Waste Rock	MDD145	5	10	RAS	N.A.
1106	MG19794	pXRF	TZ3	Waste Rock	MDD145	10	15	RAS	N.A.
1107	MG19795	pXRF	TZ3	Waste Rock	MDD145	15	20	RAS	N.A.
1108	MG19796	pXRF	TZ3	Waste Rock	MDD145	20	25	RAS	N.A.
1109	MG19797	pXRF	TZ3	Waste Rock	MDD145	25	30	RAS	N.A.
1110	MG19798	pXRF	TZ3	Waste Rock	MDD145	30	35	RAS	N.A.
1111	MG19799	pXRF	TZ3	Waste Rock	MDD145	35	40	RAS	N.A.
1112	MG19800	pXRF	TZ3	Waste Rock	MDD145	40	45	RAS	N.A.
1113	MG19801	pXRF	TZ3	Waste Rock	MDD145	45	50	RAS	N.A.
1114	MG19802	pXRF	TZ3	Waste Rock	MDD145	50	55	RAS	N.A.
1115	MG19803	pXRF	TZ3	Waste Rock	MDD145	55	60	RAS	N.A.
1116	MG19804	pXRF	TZ3	Waste Rock	MDD145	60	65	RAS	N.A.
1117	MG19805	pXRF	TZ3	Waste Rock	MDD145	65	70	RAS	N.A.
1118	MG19806	pXRF	TZ3	Waste Rock	MDD145	70	75	RAS	N.A.
1119	MG19808	pXRF	TZ3	Waste Rock	MDD145	75	80	RAS	N.A.
1120	MG19809	pXRF	TZ3	Waste Rock	MDD145	80	85	RAS	N.A.
1121	MG19810	pXRF	TZ3	Waste Rock	MDD145	85	90	RAS	N.A.
1122	MG19811	pXRF	TZ3	Waste Rock	MDD145	90	95	RAS	N.A.
1123	MG19812	pXRF	TZ3	Waste Rock	MDD145	95	100	RAS	N.A.
1124	MG19813	pXRF	TZ3	Waste Rock	MDD145	100	105	RAS	N.A.
1125	MG19814	pXRF	TZ3	Waste Rock	MDD145	105	110	RAS	N.A.
1126	MG19815	pXRF	TZ3	Waste Rock	MDD145	110	115	RAS	N.A.
1127	MG19816	pXRF	TZ3	Waste Rock	MDD145	115	120	RAS	N.A.
1128	MG19817	pXRF	TZ3	Waste Rock	MDD145	120	125	RAS	N.A.
1129	MG19818	pXRF	TZ3	Waste Rock	MDD145	125	130	RAS	N.A.
1130	MG19819	pXRF	TZ3	Waste Rock	MDD145	130	135	RAS	N.A.
1131	MG19820	pXRF	TZ3	Waste Rock	MDD145	135	140	RAS	N.A.
1132	MG19821	pXRF	TZ3	Waste Rock	MDD145	140	145	RAS	N.A.
1133	MG19822	pXRF	TZ3	Waste Rock	MDD145	145	150	RAS	N.A.
1134	MG19823	pXRF	TZ3	Waste Rock	MDD145	150	155	RAS	N.A.
1135	MG19824	pXRF	TZ3	Waste Rock	MDD145	155	160	RAS	N.A.
1136	MG19825	pXRF	TZ3	Waste Rock	MDD145	160	167.9	RAS	N.A.
1137	MG19827	pXRF	TZ3	Waste Rock	MDD187R	0	5	RAS	N.A.
1138	MG19828	pXRF	TZ3	Waste Rock	MDD187R	5	10	RAS	N.A.
1139	MG19829	pXRF	TZ3	Waste Rock	MDD187R	10	15	RAS	N.A.
1140	MG19830	pXRF	TZ3	Waste Rock	MDD187R	15	20	RAS	N.A.
1141	MG19831	pXRF	TZ3	Waste Rock	MDD187R	20	25	RAS	N.A.
1142	MG19832	pXRF	TZ3	Waste Rock	MDD187R	25	30	RAS	N.A.
1143	MG19833	pXRF	TZ3	Waste Rock	MDD187R	30	35	RAS	N.A.
1144	MG19834	pXRF	TZ3	Waste Rock	MDD187R	35	40	RAS	N.A.
1145	MG19835	pXRF	TZ3	Waste Rock	MDD187R	40	45	RAS	N.A.
1146	MG19836	pXRF	TZ3	Waste Rock	MDD187R	45	50	RAS	N.A.
1147	MG19837	pXRF	TZ3	Waste Rock	MDD187R	50	55	RAS	N.A.
1148	MG19838	pXRF	TZ3	Waste Rock	MDD187R	55	60	RAS	N.A.
1149	MG19839	pXRF	TZ3	Waste Rock	MDD187R	60	65	RAS	N.A.
1150	MG19840	pXRF	TZ3	Waste Rock	MDD187R	65	70	RAS	N.A.
1151	MG19841	pXRF	TZ3	Waste Rock	MDD187R	70	75	RAS	N.A.
1152	MG19842	pXRF	TZ3	Waste Rock	MDD187R	75	80	RAS	N.A.
1153	MG19843	pXRF	TZ3	Waste Rock	MDD187R	80	85	RAS	N.A.
1154	MG19844	pXRF	TZ3	Waste Rock	MDD187R	85	90	RAS	N.A.
1155	MG19845	pXRF	TZ3	Waste Rock	MDD187R	90	95	RAS	N.A.
1156	MG19846	pXRF	TZ3	Waste Rock	MDD187R	95	100	RAS	N.A.
1157	MG19847	pXRF	TZ3	Waste Rock	MDD187R	100	105	RAS	N.A.
1158	MG19848	pXRF	TZ3	Waste Rock	MDD206	0	5	RAS	N.A.
1159	MG19849	pXRF	TZ3	Waste Rock	MDD206	5	10	RAS	N.A.
1160	MG19850	pXRF	TZ3	Waste Rock	MDD206	10	15	RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1161	MG19851	pXRF	TZ3	Waste Rock	MDD206	15	20	RAS	N.A.
1162	MG19852	pXRF	TZ3	Waste Rock	MDD206	20	25	RAS	N.A.
1163	MG19853	pXRF	TZ3	Waste Rock	MDD206	25	30	RAS	N.A.
1164	MG19854	pXRF	TZ3	Waste Rock	MDD206	30	35	RAS	N.A.
1165	MG19855	pXRF	TZ3	Waste Rock	MDD206	35	40	RAS	N.A.
1166	MG19856	pXRF	TZ3	Waste Rock	MDD206	40	45	RAS	N.A.
1167	MG19857	pXRF	TZ3	Waste Rock	MDD206	45	50	RAS	N.A.
1168	MG19858	pXRF	TZ3	Waste Rock	MDD206	50	55	RAS	N.A.
1169	MG19859	pXRF	TZ3	Waste Rock	MDD206	55	60	RAS	N.A.
1170	MG19860	pXRF	TZ3	Waste Rock	MDD206	60	65	RAS	N.A.
1171	MG19861	pXRF	TZ3	Waste Rock	MDD206	65	70	RAS	N.A.
1172	MG19862	pXRF	TZ3	Waste Rock	MDD206	70	75	RAS	N.A.
1173	MG19863	pXRF	TZ3	Waste Rock	MDD206	75	80	RAS	N.A.
1174	MG19864	pXRF	TZ3	Waste Rock	MDD206	80	85	RAS	N.A.
1175	MG19865	pXRF	TZ3	Waste Rock	MDD206	85	90	RAS	N.A.
1176	MG19866	pXRF	TZ3	Waste Rock	MDD206	90	95	RAS	N.A.
1177	MG19867	pXRF	TZ3	Waste Rock	MDD206	95	100	RAS	N.A.
1178	MG19868	pXRF	TZ3	Waste Rock	MDD206	100	105	RAS	N.A.
1179	MG19869	pXRF	TZ3	Waste Rock	MDD206	105	110	RAS	N.A.
1180	MG19870	pXRF	TZ3	Waste Rock	MDD206	110	115	RAS	N.A.
1181	MG19871	pXRF	TZ3	Waste Rock	MDD206	115	120	RAS	N.A.
1182	MG19872	pXRF	TZ3	Waste Rock	MDD206	120	125	RAS	N.A.
1183	MG19873	pXRF	TZ3	Waste Rock	MDD206	125	130	RAS	N.A.
1184	MG19874	pXRF	TZ3	Waste Rock	MDD206	130	135	RAS	N.A.
1185	MG19875	pXRF	TZ3	Waste Rock	MDD206	135	140	RAS	N.A.
1186	MG19876	pXRF	TZ3	Waste Rock	MDD206	140	145	RAS	N.A.
1187	MG19877	pXRF	TZ3	Waste Rock	MDD206	145	150	RAS	N.A.
1188	MG19878	pXRF	TZ3	Waste Rock	MDD206	150	155	RAS	N.A.
1189	MG19879	pXRF	TZ3	Waste Rock	MDD206	155	160	RAS	N.A.
1190	MG19880	pXRF	TZ3	Waste Rock	MDD206	160	165	RAS	N.A.
1191	MG19881	pXRF	TZ3	Waste Rock	MDD206	165	170	RAS	N.A.
1192	MG19882	pXRF	TZ3	Waste Rock	MDD206	170	175	RAS	N.A.
1193	MG19883	pXRF	TZ3	Waste Rock	MDD206	175	180	RAS	N.A.
1194	MG19884	pXRF	TZ3	Waste Rock	MDD206	180	185	RAS	N.A.
1195	MG19885	pXRF	TZ3	Waste Rock	MDD206	185	190	RAS	N.A.
1196	MG19886	pXRF	TZ3	Waste Rock	MDD206	190	195	RAS	N.A.
1197	MG19887	pXRF	TZ3	Waste Rock	MDD206	195	200	RAS	N.A.
1198	MG19888	pXRF	TZ3	Waste Rock	MDD206	200	205	RAS	N.A.
1199	MG19889	pXRF	TZ3	Waste Rock	MDD206	205	210	RAS	N.A.
1200	MG19890	pXRF	TZ3	Waste Rock	MDD206	210	215	RAS	N.A.
1201	MG19891	pXRF	TZ3	Waste Rock	MDD206	215	220	RAS	N.A.
1202	MG19892	pXRF	TZ3	Waste Rock	MDD206	220	225	RAS	N.A.
1203	MG19893	pXRF	TZ3	Waste Rock	MDD206	225	230	RAS	N.A.
1204	MG19894	pXRF	TZ3	Waste Rock	MDD206	230	235	RAS	N.A.
1205	MG19895	pXRF	TZ3	Waste Rock	MDD206	235	240	RAS	N.A.
1206	MG19896	pXRF	TZ3	Waste Rock	MDD206	240	245	RAS	N.A.
1207	MG19897	pXRF	TZ3	Waste Rock	MDD206	245	249	RAS	N.A.
1208	MG43501	pXRF	TZ3	Waste Rock	MDD207	0	5	RAS	N.A.
1209	MG43502	pXRF	TZ3	Waste Rock	MDD207	5	10	RAS	N.A.
1210	MG43503	pXRF	TZ3	Waste Rock	MDD207	10	15	RAS	N.A.
1211	MG43504	pXRF	TZ3	Waste Rock	MDD207	15	20	RAS	N.A.
1212	MG43505	pXRF	TZ3	Waste Rock	MDD207	20	25	RAS	N.A.
1213	MG43506	pXRF	TZ3	Waste Rock	MDD207	25	30	RAS	N.A.
1214	MG43507	pXRF	TZ3	Waste Rock	MDD207	30	35	RAS	N.A.
1215	MG43508	pXRF	TZ3	Waste Rock	MDD207	35	40	RAS	N.A.
1216	MG43509	pXRF	TZ3	Waste Rock	MDD207	40	45	RAS	N.A.
1217	MG43510	pXRF	TZ3	Waste Rock	MDD207	45	50	RAS	N.A.
1218	MG43511	pXRF	TZ3	Waste Rock	MDD207	50	55	RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1219	MG43512	pXRF	TZ3	Waste Rock	MDD207	55	60	RAS	N.A.
1220	MG43513	pXRF	TZ3	Waste Rock	MDD207	60	65	RAS	N.A.
1221	MG43514	pXRF	TZ3	Waste Rock	MDD207	65	70	RAS	N.A.
1222	MG43515	pXRF	TZ3	Waste Rock	MDD207	70	75	RAS	N.A.
1223	MG43516	pXRF	TZ3	Waste Rock	MDD207	75	80	RAS	N.A.
1224	MG43517	pXRF	TZ3	Waste Rock	MDD207	80	85	RAS	N.A.
1225	MG43518	pXRF	TZ3	Waste Rock	MDD207	85	90	RAS	N.A.
1226	MG43519	pXRF	TZ3	Waste Rock	MDD207	90	95	RAS	N.A.
1227	MG43520	pXRF	TZ3	Waste Rock	MDD207	95	100	RAS	N.A.
1228	MG43521	pXRF	TZ3	Waste Rock	MDD207	100	105	RAS	N.A.
1229	MG43522	pXRF	TZ3	Waste Rock	MDD207	105	110	RAS	N.A.
1230	MG43523	pXRF	TZ3	Waste Rock	MDD207	110	115	RAS	N.A.
1231	MG43524	pXRF	TZ3	Waste Rock	MDD207	115	120	RAS	N.A.
1232	MG43525	pXRF	TZ3	Waste Rock	MDD207	120	125	RAS	N.A.
1233	MG43526	pXRF	TZ3	Waste Rock	MDD207	125	130	RAS	N.A.
1234	MG43527	pXRF	TZ3	Waste Rock	MDD207	130	135	RAS	N.A.
1235	MG43528	pXRF	TZ3	Waste Rock	MDD207	135	140	RAS	N.A.
1236	MG43529	pXRF	TZ3	Waste Rock	MDD207	140	145	RAS	N.A.
1237	MG43530	pXRF	TZ3	Waste Rock	MDD207	145	152	RAS	N.A.
1238	MG18221	pXRF	RSSZ		MDD082	239	240	RAS	N.A.
1239	MG18428	pXRF	TZ4		MDD088	249	250	SRE	N.A.
1240	MG18505	pXRF	RSSZ		MDD091	304	305	SHR	N.A.
1241	MG18585	pXRF	TZ4		MDD094	235	236	SRE	N.A.
1242	MG18761	pXRF	TZ4		MDD103	351	352	SHR	N.A.
1243	MG20796	pXRF	RSSZ		MDD081	246	247	RAS	N.A.
1244	MG21029	pXRF	TZ4		MDD090	212	213	RAS	N.A.
1245	MG21045	pXRF	RSSZ		MDD090	224	225	RAS	N.A.
1246	MG21189	pXRF	TZ4		MDD096	188	189	RAS	N.A.
1247	MG27347	pXRF	RSSZ		MDD089	237	238	SRE	N.A.
1248	MG27773	pXRF	RSSZ		MDD106	155	156	TSD	N.A.
1249	MG27813	pXRF	TZ4		MDD106	189	190	TSD	N.A.
1250	MG29018	pXRF	RSSZ		MDD097	524	525	RAS	N.A.
1251	MG29047	pXRF	RSSZ		MDD097	547	548	RAS	N.A.
1252	MG18996	pXRF	RSSZ		MDD116	287	288	RAS	N.A.
1253	MG29008	pXRF	RSSZ		MDD097	514	515	RAS	N.A.
1254	MG18999	pXRF	RSSZ		MDD116	290	291	RAS	N.A.
1255	MG31078	pXRF	RSSZ		MDD121	243.84	245	RAS	N.A.
1256	MG21879	pXRF	RSSZ		MDD118	187	188	RAS	N.A.
1257	MG31024	pXRF	RSSZ		MDD116	311	312	RAS	N.A.
1258	MG21528	pXRF	RSSZ		MDD105	185	186	RAS	N.A.
1259	MG21914	pXRF	RSSZ		MDD118	218	219	RAS	N.A.
1260	MG21886	pXRF	RSSZ		MDD118	193	194	RAS	N.A.
1261	MG21901	pXRF	RSSZ		MDD118	205	206	RAS	N.A.
1262	MG27198	pXRF	RSSZ		MDD087	164.97	166	RAS	N.A.
1263	MG18415	pXRF	RSSZ		MDD088	239	240	SRE	N.A.
1264	MG21900	pXRF	RSSZ		MDD118	204	205	RAS	N.A.
1265	MG31003	pXRF	RSSZ		MDD116	294	295	RAS	N.A.
1266	MG27148	pXRF	RSSZ		MDD084	283	284	RAS	N.A.
1267	MG21899	pXRF	RSSZ		MDD118	203	204	RAS	N.A.
1268	MG31093	pXRF	RSSZ		MDD121	259	260	RAS	N.A.
1269	MG21526	pXRF	RSSZ		MDD105	183	184	RAS	N.A.
1270	MG27232	pXRF	RSSZ		MDD087	191	192	RAS	N.A.
1271	MG27510	pXRF	RSSZ		MDD095	261.73	263	SRE	N.A.
1272	MG27233	pXRF	RSSZ		MDD087	192	193	RAS	N.A.
1273	MG21003	pXRF	RSSZ		MDD090	191	192	RAS	N.A.
1274	MG21019	pXRF	RSSZ		MDD090	203	204	RAS	N.A.
1275	MG27127	pXRF	RSSZ		MDD084	265	266	RAS	N.A.
1276	MG31082	pXRF	RSSZ		MDD121	248	249	RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1277	MG21888	pXRF	RSSZ		MDD118	195	196	RAS	N.A.
1278	MG31101	pXRF	RSSZ		MDD121	264	265	RAS	N.A.
1279	MG21904	pXRF	RSSZ		MDD118	208	209	RAS	N.A.
1280	MG27238	pXRF	RSSZ		MDD087	195	196	RAS	N.A.
1281	MG21883	pXRF	RSSZ		MDD118	191	192	RAS	N.A.
1282	MG20972	pXRF	RSSZ		MDD090	168	169	RAS	N.A.
1283	MG18200	pXRF	RSSZ		MDD082	221	222	RAS	N.A.
1284	MG27345	pXRF	RSSZ		MDD089	235	236	SRE	N.A.
1285	MG18195	pXRF	RSSZ		MDD082	217	218	RAS	N.A.
1286	MG27332	pXRF	RSSZ		MDD089	225	226	SRE	N.A.
1287	MG20976	pXRF	RSSZ		MDD090	171	172	RAS	N.A.
1288	MG27760	pXRF	TZ4		MDD106	145	146	TSD	N.A.
1289	MG27151	pXRF	RSSZ		MDD084	286	287	RAS	N.A.
1290	MG21885	pXRF	RSSZ		MDD118	192	193	RAS	N.A.
1291	MG27341	pXRF	RSSZ		MDD089	234	235	SRE	N.A.
1292	MG18383	pXRF	RSSZ		MDD088	210	211	SRE	N.A.
1293	MG21557	pXRF	RSSZ		MDD105	208	209	RAS	N.A.
1294	MG20997	pXRF	RSSZ		MDD090	185	186	RAS	N.A.
1295	MG21017	pXRF	TZ4		MDD090	201	202	RAS	N.A.
1296	MG27225	pXRF	RSSZ		MDD087	186	187	RAS	N.A.
1297	MG21548	pXRF	RSSZ		MDD105	199	200	RAS	N.A.
1298	MG27226	pXRF	RSSZ		MDD087	187	188	RAS	N.A.
1299	MG27264	pXRF	TZ4		MDD087	218	219	RAS	N.A.
1300	MG27144	pXRF	RSSZ		MDD084	279	280	RAS	N.A.
1301	MG18209	pXRF	RSSZ		MDD082	227	228	RAS	N.A.
1302	MG21026	pXRF	RSSZ		MDD090	209	210	RAS	N.A.
1303	MG18758	pXRF	TZ4		MDD103	348	349	SHR	N.A.
1304	MG21922	pXRF	TZ4		MDD118	223	224	RAS	N.A.
1305	MG20988	pXRF	RSSZ		MDD090	178	179	RAS	N.A.
1306	MG21005	pXRF	RSSZ		MDD090	192	193	RAS	N.A.
1307	MG31030	pXRF	RSSZ		MDD116	317	318	RAS	N.A.
1308	MG20610	pXRF	RSSZ		MDD079	205	206	RAS	N.A.
1309	MG20954	pXRF	TZ4		MDD086	265	266	RAS	N.A.
1310	MG27213	pXRF	RSSZ		MDD087	179	180	RAS	N.A.
1311	MG18184	pXRF	RSSZ		MDD082	207	208	RAS	N.A.
1312	MG18162	pXRF	TZ4		MDD082	188	189	RAS	N.A.
1313	MG20991	pXRF	RSSZ		MDD090	180	181	RAS	N.A.
1314	MG31081	pXRF	RSSZ		MDD121	247	248	RAS	N.A.
1315	MG18501	pXRF	RSSZ		MDD091	299.9	301	SHR	N.A.
1316	MG21917	pXRF	TZ4		MDD118	221	222	RAS	N.A.
1317	MG20999	pXRF	RSSZ		MDD090	187	188	RAS	N.A.
1318	MG18474	pXRF	TZ4		MDD088	289	290	SRE	N.A.
1319	MG18203	pXRF	RSSZ		MDD082	224	225	RAS	N.A.
1320	MG21043	pXRF	RSSZ		MDD090	223	224	RAS	N.A.
1321	MG20971	pXRF	RSSZ		MDD090	167	168	RAS	N.A.
1322	MG27261	pXRF	RSSZ		MDD087	215	216	RAS	N.A.
1323	MG16822	pXRF	RSSZ		MDD080	230	231	RAS	N.A.
1324	MG27210	pXRF	RSSZ		MDD087	176	177	RAS	N.A.
1325	MG18417	pXRF	RSSZ		MDD088	241	242	SRE	N.A.
1326	MG18506	pXRF	RSSZ		MDD091	305	306	SHR	N.A.
1327	MG27214	pXRF	TZ4		MDD087	180	181	RAS	N.A.
1328	MG21047	pXRF	RSSZ		MDD090	226	227	RAS	N.A.
1329	MG21967	pXRF	TZ4		MDD118	262	263	RAS	N.A.
1330	MG27254	pXRF	RSSZ		MDD087	208	209	RAS	N.A.
1331	MG21542	pXRF	RSSZ		MDD105	193	194	RAS	N.A.
1332	MG21929	pXRF	TZ4		MDD118	230	231	RAS	N.A.
1333	MG21547	pXRF	RSSZ		MDD105	198	199	RAS	N.A.
1334	MG18760	pXRF	RSSZ		MDD103	350	351	SHR	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1335	MG18232	pXRF	RSSZ		MDD082	247	248	RAS	N.A.
1336	MG18189	pXRF	RSSZ		MDD082	211	212	RAS	N.A.
1337	MG18169	pXRF	RSSZ		MDD082	195	196	RAS	N.A.
1338	MG21927	pXRF	TZ4		MDD118	228	229	RAS	N.A.
1339	MG18759	pXRF	TZ4		MDD103	349	350	SHR	N.A.
1340	MG21538	pXRF	RSSZ		MDD105	190	191	RAS	N.A.
1341	MG21566	pXRF	RSSZ		MDD105	214	215	RAS	N.A.
1342	MG31100	pXRF	TZ4		MDD121	263	264	RAS	N.A.
1343	MG29042	pXRF	RSSZ		MDD097	545	546	RAS	N.A.
1344	MG18193	pXRF	RSSZ		MDD082	215	216	RAS	N.A.
1345	MG21067	pXRF	TZ4		MDD090	243	244	RAS	N.A.
1346	MG18390	pXRF	RSSZ		MDD088	217	218	SRE	N.A.
1347	MG21607	pXRF	TZ4		MDD105	249	250	RAS	N.A.
1348	MG20916	pXRF	TZ4		MDD086	233	234	RAS	N.A.
1349	MG21213	pXRF	TZ4		MDD096	209	210	RAS	N.A.
1350	MG21620	pXRF	TZ4		MDD105	262	263	RAS	N.A.
1351	MG18734	pXRF	RSSZ		MDD099	311	312	SRE	N.A.
1352	MG27770	pXRF	TZ4		MDD106	152	153	TSD	N.A.
1353	MG21572	pXRF	TZ4		MDD105	220	221	RAS	N.A.
1354	MG16821	pXRF	TZ4		MDD080	229	230	RAS	N.A.
1355	MG21413	pXRF	TZ4		MDD101	135	136	RAS	N.A.
1356	MG18587	pXRF	RSSZ		MDD094	237	238	SRE	N.A.
1357	MG16841	pXRF	TZ4		MDD080	246	247	RAS	N.A.
1358	MG18662	pXRF	RSSZ		MDD099	248	249	SRE	N.A.
1359	MG21974	pXRF	TZ4		MDD118	269	270	RAS	N.A.
1360	MG18611	pXRF	TZ4		MDD094	258	259	SRE	N.A.
1361	MG18475	pXRF	TZ4		MDD088	290	291	SRE	N.A.
1362	MG27778	pXRF	RSSZ		MDD106	160	161	TSD	N.A.
1363	MG21404	pXRF	TZ4		MDD101	126	127	RAS	N.A.
1364	MG31072	pXRF	TZ4		MDD116	353	354	RAS	N.A.
1365	MG21587	pXRF	TZ4		MDD105	232	233	RAS	N.A.
1366	MG31113	pXRF	TZ4		MDD121	276	277	RAS	N.A.
1367	MG18509	pXRF	RSSZ		MDD091	308	309	SHR	N.A.
1368	MG21954	pXRF	TZ4		MDD118	252	253	RAS	N.A.
1369	MG18473	pXRF	TZ4		MDD088	288	289	SRE	N.A.
1370	MG31125	pXRF	TZ4		MDD121	285	286	RAS	N.A.
1371	MG31085	pXRF	TZ4		MDD121	251	252	RAS	N.A.
1372	MG27289	pXRF	TZ4		MDD087	240	241	RAS	N.A.
1373	MG18508	pXRF	RSSZ		MDD091	307	308	SHR	N.A.
1374	MG21406	pXRF	RSSZ		MDD101	128	129	RAS	N.A.
1375	MG18678	pXRF	RSSZ		MDD099	261	262	SRE	N.A.
1376	MG21944	pXRF	TZ4		MDD118	242	243	RAS	N.A.
1377	MG31110	pXRF	TZ4		MDD121	273	274	RAS	N.A.
1378	MG18538	pXRF	TZ4		MDD091	334	335	SHR	N.A.
1379	MG18534	pXRF	RSSZ		MDD091	330	331	SHR	N.A.
1380	MG18533	pXRF	TZ4		MDD091	329	330	SHR	N.A.
1381	MG21475	pXRF	TZ4		MDD101	188	189	RAS	N.A.
1382	MG18368	pXRF	TZ4		MDD085	261	262	RAS	N.A.
1383	MG18530	pXRF	TZ4		MDD091	326	327	SHR	N.A.
1384	MG43478	pXRF	TZ3	Waste Rock	MDD212	0	5	RAS	N.A.
1385	MG43479	pXRF	TZ3	Waste Rock	MDD212	5	10	RAS	N.A.
1386	MG43480	pXRF	TZ3	Waste Rock	MDD212	10	15	RAS	N.A.
1387	MG43481	pXRF	TZ3	Waste Rock	MDD212	15	20	RAS	N.A.
1388	MG43482	pXRF	TZ3	Waste Rock	MDD212	20	25	RAS	N.A.
1389	MG43483	pXRF	TZ3	Waste Rock	MDD212	25	30	RAS	N.A.
1390	MG43484	pXRF	TZ3	Waste Rock	MDD212	30	35	RAS	N.A.
1391	MG43485	pXRF	TZ3	Waste Rock	MDD212	35	40	RAS	N.A.
1392	MG43486	pXRF	TZ3	Waste Rock	MDD212	40	45	RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1393	MG43487	pXRF	TZ3	Waste Rock	MDD212	45	50	RAS	N.A.
1394	MG43488	pXRF	TZ3	Waste Rock	MDD212	50	55	RAS	N.A.
1395	MG43489	pXRF	TZ3	Waste Rock	MDD212	55	60	RAS	N.A.
1396	MG43490	pXRF	TZ3	Waste Rock	MDD212	60	65	RAS	N.A.
1397	MG43491	pXRF	TZ3	Waste Rock	MDD212	65	70	RAS	N.A.
1398	MG43492	pXRF	TZ3	Waste Rock	MDD212	70	75	RAS	N.A.
1399	MG43493	pXRF	TZ3	Waste Rock	MDD212	75	80	RAS	N.A.
1400	MG43494	pXRF	TZ3	Waste Rock	MDD212	80	85	RAS	N.A.
1401	MG43495	pXRF	TZ3	Waste Rock	MDD212	85	90	RAS	N.A.
1402	MG43496	pXRF	TZ3	Waste Rock	MDD212	90	95	RAS	N.A.
1403	MG43497	pXRF	TZ3	Waste Rock	MDD212	95	100	RAS	N.A.
1404	MG43498	pXRF	TZ3	Waste Rock	MDD212	100	105	RAS	N.A.
1405	MG43499	pXRF	TZ3	Waste Rock	MDD212	105	110	RAS	N.A.
1406	MG43500	pXRF	TZ3	Waste Rock	MDD212	110	115	RAS	N.A.
1407	MG43531	pXRF	TZ3	Waste Rock	MDD212	115	120	RAS	N.A.
1408	MG43532	pXRF	TZ3	Waste Rock	MDD212	120	125	RAS	N.A.
1409	MG43533	pXRF	TZ3	Waste Rock	MDD212	125	130	RAS	N.A.
1410	MG43534	pXRF	TZ3	Waste Rock	MDD212	130	135	RAS	N.A.
1411	MG43535	pXRF	TZ3	Waste Rock	MDD212	135	140	RAS	N.A.
1412	MG43536	pXRF	TZ3	Waste Rock	MDD212	140	145	RAS	N.A.
1413	MG43537	pXRF	TZ3	Waste Rock	MDD212	145	150	RAS	N.A.
1414	MG43538	pXRF	TZ3	Waste Rock	MDD212	150	155	RAS	N.A.
1415	MG43539	pXRF	TZ3	Waste Rock	MDD212	155	160	RAS	N.A.
1416	MG43540	pXRF	TZ3	Waste Rock	MDD212	160	165	RAS	N.A.
1417	MG43541	pXRF	TZ3	Waste Rock	MDD212	165	170	RAS	N.A.
1418	MG43542	pXRF	TZ3	Waste Rock	MDD212	170	175	RAS	N.A.
1419	MG43543	pXRF	TZ3	Waste Rock	MDD212	175	180	RAS	N.A.
1420	MG43544	pXRF	TZ3	Waste Rock	MDD212	180	185	RAS	N.A.
1421	MG43545	pXRF	TZ3	Waste Rock	MDD212	185	190	RAS	N.A.
1422	MG43546	pXRF	TZ3	Waste Rock	MDD212	190	195	RAS	N.A.
1423	MG43547	pXRF	TZ3	Waste Rock	MDD212	195	200	RAS	N.A.
1424	MG43548	pXRF	TZ3	Waste Rock	MDD212	200	205	RAS	N.A.
1425	MG43549	pXRF	TZ3	Waste Rock	MDD212	205	210	RAS	N.A.
1426	MG43550	pXRF	TZ3	Waste Rock	MDD212	210	215	RAS	N.A.
1427	MG43551	pXRF	TZ3	Waste Rock	MDD212	215	220	RAS	N.A.
1428	MG43552	pXRF	TZ3	Waste Rock	MDD212	220	225	RAS	N.A.
1429	MG43553	pXRF	TZ3	Waste Rock	MDD212	225	230	RAS	N.A.
1430	MG43554	pXRF	TZ3	Waste Rock	MDD212	230	235	RAS	N.A.
1431	MG43555	pXRF	TZ3	Waste Rock	MDD212	235	240	RAS	N.A.
1432	MG43556	pXRF	TZ3	Waste Rock	MDD212	240	242	RAS	N.A.
1433	MG43563	pXRF	TZ3	Waste Rock	MDD219	0	5	RAS	N.A.
1434	MG43564	pXRF	TZ3	Waste Rock	MDD219	5	10	RAS	N.A.
1435	MG43565	pXRF	TZ3	Waste Rock	MDD219	10	15	RAS	N.A.
1436	MG43566	pXRF	TZ3	Waste Rock	MDD219	15	20	RAS	N.A.
1437	MG43567	pXRF	TZ3	Waste Rock	MDD219	20	25	RAS	N.A.
1438	MG43568	pXRF	TZ3	Waste Rock	MDD219	25	30	RAS	N.A.
1439	MG43569	pXRF	TZ3	Waste Rock	MDD219	30	35	RAS	N.A.
1440	MG43570	pXRF	TZ3	Waste Rock	MDD219	35	40	RAS	N.A.
1441	MG43571	pXRF	TZ3	Waste Rock	MDD219	40	45	RAS	N.A.
1442	MG43572	pXRF	TZ3	Waste Rock	MDD219	45	50	RAS	N.A.
1443	MG43573	pXRF	TZ3	Waste Rock	MDD219	50	55	RAS	N.A.
1444	MG43574	pXRF	TZ3	Waste Rock	MDD219	55	60	RAS	N.A.
1445	MG43575	pXRF	TZ3	Waste Rock	MDD219	60	65	RAS	N.A.
1446	MG43576	pXRF	TZ3	Waste Rock	MDD219	65	70	RAS	N.A.
1447	MG43577	pXRF	TZ3	Waste Rock	MDD219	70	75	RAS	N.A.
1448	MG43578	pXRF	TZ3	Waste Rock	MDD219	75	80	RAS	N.A.
1449	MG43579	pXRF	TZ3	Waste Rock	MDD219	80	85	RAS	N.A.
1450	MG43580	pXRF	TZ3	Waste Rock	MDD219	85	90	RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1451	MG43581	pXRF	TZ3	Waste Rock	MDD219	90	95	RAS	N.A.
1452	MG43582	pXRF	TZ3	Waste Rock	MDD219	95	100	RAS	N.A.
1453	MG43584	pXRF	TZ3	Waste Rock	MDD219	100	105	RAS	N.A.
1454	MG43585	pXRF	TZ3	Waste Rock	MDD219	105	110	RAS	N.A.
1455	MG43586	pXRF	TZ3	Waste Rock	MDD219	110	115	RAS	N.A.
1456	MG43587	pXRF	TZ3	Waste Rock	MDD219	115	120	RAS	N.A.
1457	MG43588	pXRF	TZ3	Waste Rock	MDD219	120	125	RAS	N.A.
1458	MG43589	pXRF	TZ3	Waste Rock	MDD219	125	130	RAS	N.A.
1459	MG43590	pXRF	TZ3	Waste Rock	MDD219	130	135	RAS	N.A.
1460	MG43591	pXRF	TZ3	Waste Rock	MDD219	135	140	RAS	N.A.
1461	MG43592	pXRF	TZ3	Waste Rock	MDD219	140	145	RAS	N.A.
1462	MG43593	pXRF	TZ3	Waste Rock	MDD219	145	150	RAS	N.A.
1463	MG43594	pXRF	TZ3	Waste Rock	MDD219	150	155	RAS	N.A.
1464	MG43595	pXRF	TZ3	Waste Rock	MDD219	155	160	RAS	N.A.
1465	MG43596	pXRF	TZ3	Waste Rock	MDD219	160	165	RAS	N.A.
1466	MG43597	pXRF	TZ3	Waste Rock	MDD219	165	170	RAS	N.A.
1467	MG43598	pXRF	TZ3	Waste Rock	MDD219	170	175	RAS	N.A.
1468	MG43599	pXRF	TZ3	Waste Rock	MDD219	175	180	RAS	N.A.
1469	MG43600	pXRF	TZ3	Waste Rock	MDD219	180	185	RAS	N.A.
1470	MG43601	pXRF	TZ3	Waste Rock	MDD219	185	190	RAS	N.A.
1471	MG43602	pXRF	TZ3	Waste Rock	MDD219	190	195	RAS	N.A.
1472	MG43604	pXRF	TZ3	Waste Rock	MDD219	195	200	RAS	N.A.
1473	MG43605	pXRF	TZ3	Waste Rock	MDD219	200	205	RAS	N.A.
1474	MG43606	pXRF	TZ3	Waste Rock	MDD219	205	210	RAS	N.A.
1475	MG43607	pXRF	TZ3	Waste Rock	MDD219	210	215	RAS	N.A.
1476	MG43608	pXRF	TZ3	Waste Rock	MDD219	215	220	RAS	N.A.
1477	MG43609	pXRF	TZ3	Waste Rock	MDD219	220	225	RAS	N.A.
1478	MG43610	pXRF	TZ3	Waste Rock	MDD219	225	230	RAS	N.A.
1479	MG43611	pXRF	TZ3	Waste Rock	MDD219	230	235	RAS	N.A.
1480	MG43612	pXRF	TZ3	Waste Rock	MDD219	235	240	RAS	N.A.
1481	MG43613	pXRF	TZ3	Waste Rock	MDD219	240	245	RAS	N.A.
1482	MG43614	pXRF	TZ3	Waste Rock	MDD219	245	250	RAS	N.A.
1483	MG43615	pXRF	TZ3	Waste Rock	MDD219	250	255	RAS	N.A.
1484	MG43616	pXRF	TZ3	Waste Rock	MDD222	0	5	RAS	N.A.
1485	MG43617	pXRF	TZ3	Waste Rock	MDD222	5	10	RAS	N.A.
1486	MG43618	pXRF	TZ3	Waste Rock	MDD222	10	15	RAS	N.A.
1487	MG43619	pXRF	TZ3	Waste Rock	MDD222	15	20	RAS	N.A.
1488	MG43620	pXRF	TZ3	Waste Rock	MDD222	20	25	RAS	N.A.
1489	MG43621	pXRF	TZ3	Waste Rock	MDD222	25	30	RAS	N.A.
1490	MG43622	pXRF	TZ3	Waste Rock	MDD222	30	35	RAS	N.A.
1491	MG43623	pXRF	TZ3	Waste Rock	MDD222	35	40	RAS	N.A.
1492	MG43624	pXRF	TZ3	Waste Rock	MDD222	40	45	RAS	N.A.
1493	MG43625	pXRF	TZ3	Waste Rock	MDD222	45	50	RAS	N.A.
1494	MG43626	pXRF	TZ3	Waste Rock	MDD222	50	55	RAS	N.A.
1495	MG43627	pXRF	TZ3	Waste Rock	MDD222	55	60	RAS	N.A.
1496	MG43628	pXRF	TZ3	Waste Rock	MDD222	60	65	RAS	N.A.
1497	MG43629	pXRF	TZ3	Waste Rock	MDD222	65	70	RAS	N.A.
1498	MG43630	pXRF	TZ3	Waste Rock	MDD222	70	75	RAS	N.A.
1499	MG43631	pXRF	TZ3	Waste Rock	MDD222	75	80	RAS	N.A.
1500	MG43632	pXRF	TZ3	Waste Rock	MDD222	80	85	RAS	N.A.
1501	MG43633	pXRF	TZ3	Waste Rock	MDD222	85	90	RAS	N.A.
1502	MG43634	pXRF	TZ3	Waste Rock	MDD222	90	95	RAS	N.A.
1503	MG43635	pXRF	TZ3	Waste Rock	MDD222	95	100	RAS	N.A.
1504	MG43637	pXRF	TZ3	Waste Rock	MDD222	100	105	RAS	N.A.
1505	MG43638	pXRF	TZ3	Waste Rock	MDD222	105	110	RAS	N.A.
1506	MG43639	pXRF	TZ3	Waste Rock	MDD222	110	115	RAS	N.A.
1507	MG43640	pXRF	TZ3	Waste Rock	MDD222	115	120	RAS	N.A.
1508	MG43641	pXRF	TZ3	Waste Rock	MDD222	120	125	RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1509	MG43642	pXRF	TZ3	Waste Rock	MDD222	125	130	RAS	N.A.
1510	MG43643	pXRF	TZ3	Waste Rock	MDD222	130	135	RAS	N.A.
1511	MG43644	pXRF	TZ3	Waste Rock	MDD222	135	140	RAS	N.A.
1512	MG43645	pXRF	TZ3	Waste Rock	MDD222	140	145	RAS	N.A.
1513	MG43646	pXRF	TZ3	Waste Rock	MDD222	145	150	RAS	N.A.
1514	MG43647	pXRF	TZ3	Waste Rock	MDD222	150	155	RAS	N.A.
1515	MG43648	pXRF	TZ3	Waste Rock	MDD222	155	160	RAS	N.A.
1516	MG43649	pXRF	TZ3	Waste Rock	MDD222	160	165	RAS	N.A.
1517	MG43650	pXRF	TZ3	Waste Rock	MDD222	165	170	RAS	N.A.
1518	MG43651	pXRF	TZ3	Waste Rock	MDD222	170	175	RAS	N.A.
1519	MG43652	pXRF	TZ3	Waste Rock	MDD222	175	180	RAS	N.A.
1520	MG43653	pXRF	TZ3	Waste Rock	MDD222	180	185	RAS	N.A.
1521	MG43654	pXRF	TZ3	Waste Rock	MDD222	185	190	RAS	N.A.
1522	MG43655	pXRF	TZ3	Waste Rock	MDD222	190	195	RAS	N.A.
1523	MG43656	pXRF	TZ3	Waste Rock	MDD222	195	200	RAS	N.A.
1524	MG43658	pXRF	TZ3	Waste Rock	MDD222	200	207	RAS	N.A.
1525	MG43660	pXRF	TZ3	Waste Rock	MDD223	0	5	RAS	N.A.
1526	MG43661	pXRF	TZ3	Waste Rock	MDD223	5	10	RAS	N.A.
1527	MG43662	pXRF	TZ3	Waste Rock	MDD223	10	15	RAS	N.A.
1528	MG43663	pXRF	TZ3	Waste Rock	MDD223	15	20	RAS	N.A.
1529	MG43664	pXRF	TZ3	Waste Rock	MDD223	20	25	RAS	N.A.
1530	MG43665	pXRF	TZ3	Waste Rock	MDD223	25	30	RAS	N.A.
1531	MG43666	pXRF	TZ3	Waste Rock	MDD223	30	35	RAS	N.A.
1532	MG43667	pXRF	TZ3	Waste Rock	MDD223	35	40	RAS	N.A.
1533	MG43668	pXRF	TZ3	Waste Rock	MDD223	40	45	RAS	N.A.
1534	MG43669	pXRF	TZ3	Waste Rock	MDD223	45	50	RAS	N.A.
1535	MG43671	pXRF	TZ3	Waste Rock	MDD223	50	55	RAS	N.A.
1536	MG43672	pXRF	TZ3	Waste Rock	MDD223	55	60	RAS	N.A.
1537	MG43673	pXRF	TZ3	Waste Rock	MDD223	60	65	RAS	N.A.
1538	MG43674	pXRF	TZ3	Waste Rock	MDD223	65	70	RAS	N.A.
1539	MG43675	pXRF	TZ3	Waste Rock	MDD223	70	75	RAS	N.A.
1540	MG43676	pXRF	TZ3	Waste Rock	MDD223	75	80	RAS	N.A.
1541	MG43677	pXRF	TZ3	Waste Rock	MDD223	80	85	RAS	N.A.
1542	MG43678	pXRF	TZ3	Waste Rock	MDD223	85	90	RAS	N.A.
1543	MG43679	pXRF	TZ3	Waste Rock	MDD223	90	95	RAS	N.A.
1544	MG43680	pXRF	TZ3	Waste Rock	MDD223	95	100	RAS	N.A.
1545	MG43682	pXRF	TZ3	Waste Rock	MDD223	100	105	RAS	N.A.
1546	MG43683	pXRF	TZ3	Waste Rock	MDD223	105	110	RAS	N.A.
1547	MG43684	pXRF	TZ3	Waste Rock	MDD223	110	115	RAS	N.A.
1548	MG43685	pXRF	TZ3	Waste Rock	MDD223	115	120	RAS	N.A.
1549	MG43686	pXRF	TZ3	Waste Rock	MDD223	120	125	RAS	N.A.
1550	MG43687	pXRF	TZ3	Waste Rock	MDD223	125	130	RAS	N.A.
1551	MG43688	pXRF	TZ3	Waste Rock	MDD223	130	135	RAS	N.A.
1552	MG43689	pXRF	TZ3	Waste Rock	MDD223	135	140	RAS	N.A.
1553	MG43690	pXRF	TZ3	Waste Rock	MDD223	140	145	RAS	N.A.
1554	MG43691	pXRF	TZ3	Waste Rock	MDD223	145	150	RAS	N.A.
1555	MG43702	pXRF	TZ3	Waste Rock	MDD262	15	20	RAS	N.A.
1556	MG43703	pXRF	TZ3	Waste Rock	MDD262	20	25	RAS	N.A.
1557	MG43704	pXRF	TZ3	Waste Rock	MDD262	25	30	RAS	N.A.
1558	MG43705	pXRF	TZ3	Waste Rock	MDD262	30	35	RAS	N.A.
1559	MG43706	pXRF	TZ3	Waste Rock	MDD262	35	40	RAS	N.A.
1560	MG43707	pXRF	TZ3	Waste Rock	MDD262	40	45	RAS	N.A.
1561	MG43708	pXRF	TZ3	Waste Rock	MDD262	45	50	RAS	N.A.
1562	MG43709	pXRF	TZ3	Waste Rock	MDD262	50	55	RAS	N.A.
1563	MG43710	pXRF	TZ3	Waste Rock	MDD262	55	60	RAS	N.A.
1564	MG43711	pXRF	TZ3	Waste Rock	MDD262	60	65	RAS	N.A.
1565	MG43712	pXRF	TZ3	Waste Rock	MDD262	65	70	RAS	N.A.
1566	MG43713	pXRF	TZ3	Waste Rock	MDD262	70	75	RAS	N.A.

N	SampleID	Analysis	Lithology	Sample Type	HoleID	From	To	Prospect	Job Number
1567	MG43715	pXRF	TZ3	Waste Rock	MDD262	75	80	RAS	N.A.
1568	MG43716	pXRF	TZ3	Waste Rock	MDD262	80	85	RAS	N.A.
1569	MG43717	pXRF	TZ3	Waste Rock	MDD262	85	90	RAS	N.A.
1570	MG43718	pXRF	TZ3	Waste Rock	MDD262	90	95	RAS	N.A.
1571	MG43719	pXRF	TZ3	Waste Rock	MDD262	95	100	RAS	N.A.
1572	MG43720	pXRF	TZ3	Waste Rock	MDD262	100	105	RAS	N.A.
1573	MG43721	pXRF	TZ3	Waste Rock	MDD262	105	110	RAS	N.A.
1574	MG43722	pXRF	TZ3	Waste Rock	MDD262	110	115	RAS	N.A.
1575	MG43723	pXRF	TZ3	Waste Rock	MDD262	115	120	RAS	N.A.
1576	MG43724	pXRF	TZ3	Waste Rock	MDD262	120	125	RAS	N.A.
1577	MG43725	pXRF	TZ3	Waste Rock	MDD262	125	130	RAS	N.A.
1578	MG43726	pXRF	TZ3	Waste Rock	MDD262	130	135	RAS	N.A.
1579	MG43727	pXRF	TZ3	Waste Rock	MDD262	135	140	RAS	N.A.
1580	MG43728	pXRF	TZ3	Waste Rock	MDD262	140	145	RAS	N.A.
1581	MG43729	pXRF	TZ3	Waste Rock	MDD262	145	150	RAS	N.A.
1582	MG43730	pXRF	TZ3	Waste Rock	MDD262	150	155	RAS	N.A.
1583	MG43731	pXRF	TZ3	Waste Rock	MDD262	155	160	RAS	N.A.
1584	MG43732	pXRF	TZ3	Waste Rock	MDD262	160	165	RAS	N.A.
1585	MG43733	pXRF	TZ3	Waste Rock	MDD262	165	170	RAS	N.A.
1586	MG43735	pXRF	TZ3	Waste Rock	MDD262	170	175	RAS	N.A.
1587	MG43736	pXRF	TZ3	Waste Rock	MDD262	175	180	RAS	N.A.
1588	MG43737	pXRF	TZ3	Waste Rock	MDD262	180	185	RAS	N.A.
1589	MG43738	pXRF	TZ3	Waste Rock	MDD262	185	190	RAS	N.A.
1590	MG43739	pXRF	TZ3	Waste Rock	MDD262	190	195	RAS	N.A.
1591	MG43740	pXRF	TZ3	Waste Rock	MDD262	195	200	RAS	N.A.
1592	MG43741	pXRF	TZ3	Waste Rock	MDD262	200	205	RAS	N.A.
1593	MG43742	pXRF	TZ3	Waste Rock	MDD262	205	210	RAS	N.A.
1594	MG43743	pXRF	TZ3	Waste Rock	MDD262	210	215	RAS	N.A.
1595	MG19238-131	Leachate	RSSZ	Ore	MDD044	357	358	RAS	EB2339577
1596	MG19250-131	Leachate	RSSZ	Waste Rock	MDD044	369	370	RAS	EB2339577
1597	MG19373	Leachate	TZ4	Waste Rock	MDD048R	219	220	RAS	EB2339577
1598	MG19093	Leachate	RSSZ	Waste Rock	MDD028	213	214	RAS	EB2339577
1599	MG19350	Leachate	RSSZ	Waste Rock	MDD061	176	177	RAS	EB2339577
1600	MG19364	Leachate	RSSZ	Waste Rock	MDD042	201	202	RAS	EB2339577
1601	MG19438	Leachate	TZ4	Waste Rock	MDD066	520	521	RAS	EB2339577
1602	MG19203-131	Leachate	RSSZ	Waste Rock	MDD034	224	225	RAS	EB2408297
1603	MG19519	Leachate	RSSZ	Waste Rock	MDD083	248	249	RAS	EB2408297
1604	MG41400	Leachate	Soil	Soil	na	na	na		AR-24-NC-007599-02
1605	MG41405	Leachate	Soil	Soil	na	na	na		AR-24-NC-007599-02
1606	MG41409	Leachate	Soil	Soil	na	na	na		AR-24-NC-007599-02
1607	MG41410	Leachate	Soil	Soil	na	na	na		AR-24-NC-007599-02
1608	MG41414	Leachate	Soil	Soil	na	na	na		AR-24-NC-007599-02
1609	MG19250-131	XRD	RSSZ	Waste Rock	MDD044	369	370	RAS	X24109
1610	MG19238-131	XRD	RSSZ	Ore / Tailings	MDD044	357	358	RAS	X24109
1611	MG19110	XRD	TZ4	Waste Rock	MDD021R	313	314	RAS	X24109

APPENDIX D CERTIFIED REFERENCE SAMPLES

MINE WASTE MANAGEMENT
GREENROAD GROUP

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MEMORANDUM

Document Title:	Certified Reference Materials for acid base accounting
Document Rev:	Rev0
Date	18 September 2023

The potential hazard for acid metalliferous drainage (AMD) typically involves laboratory based static geochemical testing, which includes acid base accounting (ABA) analyses such as acid neutralisation capacity (ANC), maximum potential acidity (MPA) and net acid generating (NAG) tests. These tests are regularly carried out by both mine sites and commercial laboratories. Such testing should include the use of certified reference materials (CRM) as one aspect of the quality assurance / quality control (QA/QC) programme.

CRM are one tool for assessing the accuracy of analyses conducted by laboratories. However, there is an acknowledgment that the development of certified reference materials requires careful consideration to ensure material homogeneity and material stability (Bleeze et al., 2022).

This memorandum provides background information on the use of certified reference materials for QA/QC purposes.

GEOSTATS REFERENCE MATERIAL

Geostats Pty Ltd (Geostats) (Perth, Western Australia) provides a range of CRM. The CRM possess a nominal 40-micron particle size and are blended to achieve maximum homogeneity within the specific sample matrix. All CRM are tested thoroughly in the Geostats bi-annual laboratory survey, which involves assaying by multiple laboratories. Results are compiled into a comprehensive statistical report for each CRM. Table 1 provides a list of the CRM that has been supplied by Geostats and the referenced parameters.

Table 1. Certified reference materials.

PRODUCT CODE	REFERENCED PARAMETER (%)	
GS310-10	Total S	Total C
GS320-10	Total S	Total C
GS917-4	Total S	Total C
GS922-8	Total S	Total C

Source: Geostats Pty Ltd List of certified reference materials (2023).

Table 3 summarises the analysis data for the CRM samples shown in Table 1 as provided by Geostats. Certification can be found in Attachment A.

Interlaboratory Testing

A study conducted by Bleeze et al. (2022) assessed the suitability of six Geostats CRM for ANC and NAG analysis (this work can be found in Attachment B). Two interlaboratory test rounds were conducted on the following CRM: GS312-8, GS310-10, GS918-6, GS911-8, GS917-4, and GS312-3.

The first round of interlaboratory testing requested laboratories to use their usual methods. A second round of testing using the same set of samples, required the participating laboratories to use supplied standardised methods (Bleeze et al., 2022). Results indicated that irrespective of whether participating laboratories used their in-house methods, or the standardised methods, the mean ANC and NAGpH values were the same for both rounds of interlaboratory testing.

Table 2 shows the certification outcomes for ANC and NAGpH. Samples included ores, low-grade ores, and other mine materials covering a range of ANC (11.6 – 516 kg H_2SO_4/t) and NAGpH (3.4 – 8.3) values.

Overall, the results showed that interlaboratory reproducibility was favourable, allowing for certified ANC or NAGpH values to be developed. Hence, these materials can provide confidence in laboratory methodologies, which is essential for informed decision making processes in regards to the potential for AMD.

Table 2. ANC and NAGpH reference material properties.

SAMPLE CODE	REFERENCED PARAMETER	UNITS	REFERENCE VALUE	CERTIFICATION LEVEL
GS312-8	ANC	kg H_2SO_4/t	11.6	Reference Value
GS310-10	ANC	kg H_2SO_4/t	77.8	Certified Value
GS918-6	ANC	kg H_2SO_4/t	516	Certified Value
GS911-8	NAGpH	pH unit	8.29	Certified Value
GS917-4	NAGpH	pH unit	3.43	Certified Value
GS312-3	NAGpH	pH unit	4.48	Certified Value

Source: Bleeze et al. (2022).

Blue samples have been included in the summary table below, which were used for this project.

Summary

For reporting purposes, the Geostats data and Bleeze et al. (2022) data are presented in Table 3.

Table 3. Reference material properties - summary

SAMPLE CODE	SULFUR (MEAN)	CARBON (MEAN)	ANC	NAGpH
	wt%	wt%	kg H_2SO_4/t	pH units
GS310-10	0.27	1.08	77.8	-
GS320-10	0.27	0.59	-	-
GS917-4	0.36	0.05	-	3.43
GS922-8	0.08	0.45	-	-

Table 4. Certified reference material.

PRODUCT CODE	SULFUR STATISTICS (%)				CARBON STATISTICS (%)				DESCRIPTION OF SOURCE / MATRIX	COLOUR DESIGNATION
	Mean	Stdev	Count	95% CI	Mean	Stdev	Count	95% CI		
GS310-10[1]	0.27	0.03	64	+/- 0.008	1.08	0.06	40	+/- 0.019	Copper gold ore	Very light gray
GS320-10[2]	0.27	0.02	95	+/- 0.004	0.59	0.03	75	+/- 0.007	High grade gold sulfide	Light gray
GS917-4[3]	0.36	0.02	90	+/- 0.004	0.05	0.01	68	+/- 0.004	Low grade transitional ore ex Laos	Yellowish gray
GS922-8[4]	0.08	0.02	80	+/- 0.004	0.45	0.03	69	+/- 0.007	Oxide andesite, Pilbara, WA	Moderate orange pink

Source: Geostats Pty Ltd List of certified reference materials (2023).

Certified certificate date:

1 - April-2010.

2 - April-2020.

3 - October-2017.

4 - October-2022.

CLOSING REMARKS

Please do not hesitate to contact Paul Weber at 027 294 5181 or paul.weber@minewaste.com.au should you wish to discuss this memorandum in greater detail.

Attachments: Attachment A – Certified Reference Material Certificates
Attachment B – Interlaboratory Testing Programme Paper

REFERENCES

Bleeze, B., Qian, G., Romero, S., Stewart, W., and Schumann, R., 2022. Development of Certified Reference Materials for ANC and NAG Test Methods. 12th ICARD. 18-24 September 2022.

Geostats (2023). Information retrieved from http://www.geostats.com.au/. Date accessed: 21 August 2023.

ATTACHMENT A – CERTIFIED REFERENCE MATERIAL CERTIFICATES

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Sulphur and Carbon Reference Material Product Code

GS310-10

Certified Control Values

Sulphur

Sulphur Grade	0.27 %
Standard Deviation	0.03 %
Confidence Interval	+/- 0.008 %

Carbon

Carbon Grade	1.08 %
Standard Deviation	0.06 %
Confidence Interval	+/- 0.019 %



CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the April-2010 round robin. A total of 64 sulphur results and 40 carbon results were used to certify this material.

Material Description

This material is described as a Copper gold ore.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic or foil lined pulp packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

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Website http://www.geostats.com.au

GS310-10

Geostats Pty Ltd, Certified Sulphur and Carbon Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Sulphur and Carbon Reference Material Product Code

GS320-10

Certified Control Values

Sulphur

Sulphur Grade	0.27 %
Standard Deviation	0.02 %
Confidence Interval	+/- 0.004 %

Carbon

Carbon Grade	0.59 %
Standard Deviation	0.03 %
Confidence Interval	+/- 0.007 %



CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the April-2020 round robin. A total of 95 sulphur results and 75 carbon results were used to certify this material.

Material Description

This material is described as a High grade gold sulphide.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic or foil lined pulp packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

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GS320-10

Geostats Pty Ltd, Certified Sulphur and Carbon Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Sulphur and Carbon Reference Material Product Code

GS917-4

Certified Control Values

Sulphur

Sulphur Grade	0.36 %
Standard Deviation	0.02 %
Confidence Interval	+/- 0.004 %

Carbon

Carbon Grade	0.05 %
Standard Deviation	0.01 %
Confidence Interval	+/- 0.004 %



CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the October-2017 round robin. A total of 90 sulphur results and 68 carbon results were used to certify this material.

Material Description

This material is described as a Low grade transitional ore ex Laos.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic or foil lined pulp packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

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GS917-4

Geostats Pty Ltd, Certified Sulphur and Carbon Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Sulphur and Carbon Reference Material Product Code

GS922-8

Certified Control Values

Sulphur

Sulphur Grade	0.08 %
Standard Deviation	0.02 %
Confidence Interval	+/- 0.004 %

Carbon

Carbon Grade	0.45 %
Standard Deviation	0.03 %
Confidence Interval	+/- 0.007 %



CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the October-2022 round robin. A total of 80 sulphur results and 69 carbon results were used to certify this material.

Material Description

This material is described as an Oxide andesite, Pilbara, WA.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic or foil lined pulp packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

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GS922-8

Geostats Pty Ltd, Certified Sulphur and Carbon Reference Material, Product Code:

ATTACHMENT B – INTERLABORATORY TESTING PROGRAMME PAPER

Development of Certified Reference Materials for ANC and NAG Test Methods

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ABSTRACT

Current practice in determining potential liability from acid rock drainage (ARD) usually involves static geochemical testing, which frequently includes acid neutralisation capacity (ANC) and net acid generating (NAG) tests. The tests are routinely conducted by mine site and commercial laboratories providing services to the mining industry and consultants. However, unlike many analytical methods, ANC and NAG tests often lack appropriate quality control (QC) measures, including routine analysis of reference materials.

There have been numerous methods or modifications for the determination of ANC. Each modification to the procedure may result in a different measured ANC value for a particular sample. While it appears there is less variation in the methods used for the NAG test, there are numerous factors which may affect the result and lead to variations between laboratories. These circumstances suggest that reference materials should be developed and routinely used for QC purposes in ANC and NAG testing.

In this study, we examined commercially available reference materials to see if they would be suitable for ANC and NAG analysis. Samples included ores, low-grade ores and other mine materials covering a range of ANC (12 – 516 kg H_2SO_4/t) or NAGpH (3.4 – 8.3) values. Two interlaboratory test programmes were conducted to assess their suitability as reference materials for ANC and NAG analysis. The first round of interlaboratory testing requested laboratories to use their usual methods. A second round of testing using the same set of samples, required the participating laboratories to use supplied "standardised" methods.

The results showed that whether participating laboratories used their in-house methods, or the standardised methods, mean ANC and NAGpH values were the same for both rounds of interlaboratory testing. However, when all laboratories used the same test methods, the variation of results was reduced.

The test programme enabled us to apply certified NAGpH values (3.4, 4.5 and 8.3) and certified ANC values (78 and 516 kg H_2SO_4/t) to five reference materials. Results for a sixth sample gave higher interlaboratory variation in the measured ANC and provided a reference value of 12 kg H2SO4/t as guide, but the variation (RSD 23%) was too high to certify this value.

These certified reference materials (CRM) will be available for laboratories undertaking ANC and NAG tests to improve QC protocols and increase end user confidence in the results from laboratories using these materials.

Keywords: ANC; NAG, interlaboratory testing, certified reference materials

1.0 INTRODUCTION

The development of any mining project will invariably include an assessment of the environmental impact of the project. A major component of this assessment is to determine if any acid rock drainage (ARD) is likely to result from the project and to investigate management options. Current practice in determining ARD liability usually includes static geochemical tests, which essentially assess the balance between potential acid generating processes in materials (waste rock, ore and tailings) handled during the mining/processing operations and the acid neutralising potential of these materials.

A number of static geochemical test methods are routinely used to assess this balance between acid generating and acid neutralising capacity, including acid neutralisation capacity (ANC), or neutralising potential (NP), and the net acid generating (NAG) test. These methods are now widely used by mining operations and consultants for ARD assessment. The tests are routinely conducted by mine site laboratories, and commercial laboratories providing services to the mining industry and consultants. Additionally, regulatory bodies frequently recommend the use of these methods as a part of any ARD assessment, further broadening their use by the industry.

A number of methods have been proposed over the years to assess the ANC of mine rock samples. Unlike the concentration of a particular element in a sample, e.g., total sulphur content, the measured neutralising capacity may vary, depending on how the measurement was conducted. Laboratory analyses of ANC should be viewed as a guide to the magnitude of the effective acid neutralisation potential rather than a precise and accurate measurement. Consequently, there have been numerous methods or modifications of various methods reported in the literature for the determination of ANC. Each modification to the procedure is likely to result in a different measured ANC value for a particular sample. Consequently, laboratories and consultants often make errors in analysis and interpretation of the results. The most common error made in the Sobek or modified Sobek ANC test is the incorrect addition of acid, usually because of improper interpretation of the Fizz test (Price 2009). There may also be problems with the relationship between laboratory ANC measurements and effective neutralising potential if different methods are used for different phases of the ARD programme.

Unlike ANC tests, reported methods for NAG testing appear to be restricted to that specified in the ARD Test Handbook (AMIRA 2002). Despite the uniformity of the method used for evaluation of NAG, several authors have identified areas of concern about the reproducibility of the measurement. Charles et al. 2015 noted that for samples with excess of carbonate, very high pH can be measured post boil often 1.5 – 2 pH units above the pre-boil pH. Results showed that any inconsistency in the timing of pH measurement could change the NAGpH

value for this type of sample. The authors also noted that the change in pH could also impact the solubility of certain elements, potentially affecting results of NAG liquor analysis.

Parbhaker-Fox et al. 2018 examined the NAGpH test using a number of samples from Savage River mine, Tasmania. They examined several variables in the test and how they affect the final NAGpH value. Variables included reaction time, heating time, heating temperature, cooling time and peroxide strength. They noted all these factors can affect the final NAGpH. They also recommended that a standard reference material should be developed and used for QC purposes during NAGpH testing.

These studies suggest that both the ANC and NAG procedures used to obtain any set of reported results need to be described in some detail to enable users to fully interpret results. They also suggest that reference materials covering a range of ANC and NAG values and based on specific and detailed methods, would be useful to enable laboratories to develop appropriate QC procedures which are currently lacking for many ARD methods.

This paper describes results from a research programme designed to develop method specific reference standards for ANC and NAG test methods which cover the range of ANC and NAG values and material types required by laboratories undertaking ARD geochemical analyses.

2.0 METHODOLOGY

2.1 Project Outline

It is generally recognised that important aspects of development of reference materials which should be considered are characterisation of material homogeneity, material stability and determination of reference values, usually through interlaboratory studies (Ellison et al. 2001). To meet these criteria, it was thought prudent to investigate the use of existing reference materials which had demonstrated homogeneity and stability, so that the programme could progress immediately to the interlaboratory study stage. To this end, reference materials available through Geostats Pty Ltd (Perth Western Australia), which had been certified for Total S and Total C content, and which represented relevant matrices for ARD characterisation i.e., mining ores and rock, were selected for use in development of ARD reference materials.

The process of development of reference materials for ANC and NAG testing was undertaken using the following steps:

1. Twelve certified reference materials were selected from the Geostats catalogue based on Total S and C values to cover the range of likely ANC and NAGpH values required. These materials were characterised (ANC, NAG, Quantitative X-ray Diffraction (QXRD), multi-element bulk assay) and from these results, six were selected for interlaboratory testing.
2. Round 1 interlaboratory study using in-house methods.
3. Analysis of Round 1 interlaboratory study including variations in the methods employed.

4. Analysis of parameters in ANC and NAG test methods (sensitivity analysis) to assess sources of variability in Round 1 results.
5. Development of "standardised" methods based on the results of sensitivity analysis.
6. Round 2 interlaboratory study using "standardised" methods.
7. Analysis of results to assign reference values.

2.2 Interlaboratory Test Programme

The interlaboratory test programme consisted of two rounds of testing, with inhouse methods used for the first round and standardised methods in the second. Each laboratory was provided with six different certified reference materials (CRM) supplied by Geostats. 60 samples (3 x 10 replicates for ANC testing and 3 x 10 replicates for NAG testing) were dispatched to each participating laboratory. The sample numbering schema was randomised. The participating laboratories comprised a combination of domestic and international commercial laboratories, all of which were assigned a reference number to ensure confidentiality when reporting results.

Statistical analysis was conducted on the results reported in both rounds of the interlaboratory testing. ANC results were converted to the universal unit of kg H_2SO_4/t prior to statistical analysis. The data was analysed using a one-way ANOVA function in Excel, to test for variation and significance in the data set. Outliers were identified using the inter-quartile range (IQR) with the upper and lower limits and confirmed through a GRUBBS analysis. Analysis included the calculation of the mean, standard deviation, 95% confidence interval (CI) and the relative standard deviation (RSD).

The inhouse methods reported by participating laboratories were used to highlight discrepancies between different methods and the potential impact of these differences on the final result. Round one had twelve laboratories participate, while round two had nine participating laboratories.

3.0 RESULTS AND DISCUSSION

3.1 Test Material Characterisation

Following testing of the 12 Geostats CRMs, 3 samples were selected which covered a range of ANC values (17 - 536 kg H_2SO_4/t) and another 3 samples which covered a range of NAGpH values (3.4 – 8.4) (Table 1). XRD analysis of GS312-8 showed the presence of trace calcite, supported by a total carbon assay of 0.03% (carbonate ANC = 2 kg H_2SO_4/t) suggesting that silicate minerals provide most of neutralising capacity in this material. XRD and carbon analysis indicate the majority of ANC in GS310-10 and GS918-6 is derived from dolomite in these materials. Acid-base analysis results for sample GS911-8 reveals an excess of neutralising capacity, which is supported by NAG test results which gave a high NAGpH indicative of excess carbonate. XRD analysis showed the presence of pyrite, but also significant dolomite and calcite. XRD and sulphur speciation analysis of sample GS917-4 showed that all the sulphur present in this material was present as pyrite. Carbon analysis, supported by XRD indicated a lack of carbonate minerals in this material, consistent with the low ANC and low

NAGpH. Carbon and sulphur analysis together with XRD analysis demonstrated a lack of carbonate minerals in GS312-3, with almost all the total S present as chalcopyrite. The moderately low NAGpH (4.9) of this sample probably reflects the lack of carbonate neutralising minerals and the presence of chalcopyrite rather than pyrite as the dominate sulphide. Oxidative dissolution of chalcopyrite will generate only half the acidity of pyrite to pH 4.5, with the remaining acidity arising from copper hydrolysis when titrated to pH 7 (Stewart et al. 2003).

Table 1. Acid-base analysis and NAG test results for materials used in interlaboratory testing

Sample Code	Acid-Base Analysis				NAG Test		
	Total S (%)	ANC (kg H_2SO_4/t)	NAPP (kg H_2SO_4/t)	ANC/MPA	NAGpH	$NAG_{(pH\ 4.5)}$ (kg H_2SO_4/t)	$NAG_{(pH\ 7.0)}$ (kg H_2SO_4/t)
GS312-8	0.75	17	6	0.7	4.3	0.4	8
GS310-10	0.27	77	-69	9.3	9.6	0	0
GS918-6	0.31	536	-527	57.0	8.9	0	0
GS911-8	1.76	98	-44	1.8	8.4	0	0
GS917-4	0.36	3	8	0.3	3.4	5	10
GS312-3	0.47	11	3	0.8	4.9	0	3

3.2 Round 1 Interlaboratory Test Results

Twelve laboratories participated in the initial interlaboratory study. These included 8 commercial laboratory services with 7 of these located within Australia and one laboratory in Canada. In addition to the commercial laboratories, there was one specialised ARD-laboratory and one University-based laboratory (both Australian), and two mine laboratories (Indonesia and PNG) which also participated in the test programme.

The results for ANC and NAG testing are summarised in Tables 2 and 3 respectively. For ANC testing, the two samples with higher ANC, almost exclusively contributed by carbonates (principally dolomite), provided good interlaboratory reproducibility with 5% RSD in each case. However, for the material with the lowest ANC, principally derived from dissolution of silicate minerals, the interlaboratory reproducibility was significantly poorer (RSD of 27%).

Interlaboratory reproducibility for NAGpH was acceptable (<10%) for the two samples where the final NAGpH was either acidic (3.4) or alkaline (8.4). However, for the material where the final NAGpH was close to 4.5, the RSD increased to 15%, suggesting that where there is a more even balance between the acid-generating and acid-neutralising properties of the sample, it is likely that greater variance in the NAGpH values reported by different laboratories will occur.

Table 2. Results for Round 1 interlaboratory ANC testing

Sample Code	Mean ANC (kg H_2SO_4/t)	Std Dev (kg H_2SO_4/t)	RSD (%)	95% CI (kg H_2SO_4/t)	Ave. Intra-Laboratory RSD (%)	Count[1]
GS312-8	10	2.7	27	0.54	7	103
GS310-10	78	4.2	5	0.83	2	102
GS918-6	519	25	5	4.8	1	108

1. Number of results used in the analysis after exclusion of outliers. A total of 113 results were received for GS312-8 and GS918-6 and 112 results for GS310-10.

Table 3. Results for Round 1 interlaboratory NAG testing

Sample Code	Mean NAGpH	Std Dev	RSD (%)	95% CI	Ave. Intra-Laboratory RSD (%)	Count[1]
GS911-8	8.4	0.6	7	0.11	2	113
GS917-4	3.4	0.3	9	0.06	4	103
GS312-3	4.4	0.6	15	0.13	3	103

1. Number of results used in the analysis after exclusion of outliers. A total of 113 results were received for each sample.

3.3 Sensitivity Analysis and Method Refinement

As a part of the first round interlaboratory test programme, participating laboratories were asked to provide details of the in-house method used for each analysis. Tables 4 and 5 provide summaries of the main test parameters used for ANC and NAG testing respectively. Given the apparent considerable variability in the way the ANC and NAG tests were conducted, the results showed surprisingly good interlaboratory reproducibility. However, for some samples (low silicate-based ANC, NAGpH close to 4.5) interlaboratory reproducibility was not satisfactory. Consequently, testing was conducted whereby certain test parameters were varied, and the effect of these variations on the measured ANC or NAGpH were evaluated. For ANC, these parameters included fizz rating assignment (including the final pH after digest), digestion/heating time, digestion/heating temperature, and the cooling time. For NAG testing, the initial pH of hydrogen peroxide, reaction time, heating temperature and cooling time were examined for their influence on the measured NAGpH.

Tables 6 and 7 show the results of experiments used to investigate the influence of test parameters on the measurement of ANC and NAGpH/NAG values respectively. The results of these tests suggest that for determination of ANC, the amount of acid added (evaluated by the final digest solution pH) and digest temperature appear to have the most influence on the result. The NAG test appears to be more robust, except for specific samples where a NAGpH near to 4.5 can be influenced by initial pH of the peroxide used for the test, or where the sample contains organic substances for which changes in the post-reaction heating temperature and time can significantly alter the result.

Table 4. Test parameters reported for Round 1 interlaboratory ANC testing

Parameter	Range of values
Sample weight	1 – 5 g
HCl used for digest	0.1 – 1 M, 4 – 75 mL
Digest temperature	80 – 140 °C
Digest time	2 minutes – 3 hours
Fizz rating	0 - 4, 1 - 5
Final pH control[1]	0.8 – 1.5, <1.9, <3

1. These represent the pH range or upper limit at which the test result is accepted. If these values are not met, the test is repeated using a different fizz rating.

Table 5. Test parameters reported for Round 1 interlaboratory NAG testing

Parameter	Range of values
Sample weight	1 – 2.5 g
H_2O_2 used for digest	15%, 100 – 250 mL
Digest temperature	Ambient and then 150 – 250 °C
Digest time	Typically, overnight at ambient temperature and then 30 minutes to 2 hours at elevated temperature
Initial peroxide pH control[1]	None, adjust to pH 4.5, 4.6, 4.8 – 5.1, 4.9 – 5.2

1. Hydrogen peroxide is often stabilised by addition of various stabilisers some of which are acidic.

Table 6. Results of sensitivity tests for ANC analysis

Parameter	Range of values evaluated	Result
Final pH	0.8 – 3.3	When the final pH was <2, ANC measurements were similar. Where the final pH was 3 or above, there was a significant decrease in ANC.
Digest time	1 – 3 h	Negligible effect
Digest temperature	80 – 100 °C	The effect seems to be sample dependent. Measured ANC was constant across this temperature range for some samples and increased with temperature for others.
Cooling time	2 – 60 h	Negligible effect

Table 7. Results of sensitivity tests for NAG analysis

Parameter	Range of values evaluated	Result
Peroxide pH	2.8 – 5.5	The effect seems to be sample dependent. For a sample with a NAGpH near 4.5 the low peroxide pH sample gave lower measured NAGpH and slightly higher NAG values
Reaction time	8 – 48 h at ambient temperature	Negligible effect
Post reaction heating temperature	100 °C for 2 h – 250 °C for 2 h	The effect seems to be sample dependent. There was negligible effect on a sample lacking organic C, but for a sample with significant organic C, NAGpH increased and NAG values decreased with temperature likely because of mineralisation of organics by reaction with peroxide.
Cooling time	24 and 48 h	Negligible effect

3.4 Round 2 Interlaboratory Test Results

Participating laboratories from round 1 of the interlaboratory test programme were invited to participate in a second round of testing using "standardised" methods derived from the results of the sensitivity analysis experiments described above. In summary, the ANC methodology used for this round of interlaboratory testing included:

- 2 g of sample digested for 2 h at 80 °C
- The final pH of the digest solution should be ≤2, adjust fizz rating to achieve this as required
- Titrate to pH ≈5, add 2 drops 30% H_2O_2 and then titrate to pH 7

For NAG testing, the method used for this round of interlaboratory testing included:

- 2.5 g of sample reacted with 250 mL of 15% H_2O_2 adjusted to pH 4.6 – 5.5
- React at ambient temperature for a maximum of 24 h
- Heat for 2 h at a gentle simmer/boil
- Cool for a maximum of 16 h and titrate to pH 4.5 and then 7

Nine of the 12 labs that participated in the first round of interlaboratory testing also contributed to the second-round test programme. The results for ANC and NAG testing are summarised in Tables 8 and 9 respectively.

There was little variation observed between the two rounds for low ANC material. The absolute standard deviation is consistent between both rounds, with the RSD 3% smaller in the second round. Despite the small reduction in RSD between the first and second rounds, at 23% RSD, the variation in interlaboratory test results is still significant. Participating laboratories typically reported a limit of detection of 1 kg H_2SO_4/t, although this may overestimate method sensitivity. Nevertheless, a value of 12 kg H_2SO_4/t is sufficiently above the method detection limit, such that measurement reproucibility should be less than 10% RSD. The measured Total C in this sample is 0.03 % and, assuming all of this carbon is present as carbonate C, suggests a carbonate ANC of 2 kg H_2SO_4/t. This indicates that the majority of the ANC of approximately 12 kg H_2SO_4/t is likely to be derived from silicate minerals. Dissolution of silicate minerals, unlike carbonate minerals, is unlikely to be quantitative during the ANC digest procedure. As such, the measured ANC is expected to be relatively sensitive to the method parameters used. Under these circumstances, an absolute standard deviation in interlaboratory results of under 3 kg H_2SO_4/t is reasonable and, in the context of acid base accounting, unlikely to be significant.

For the other two samples, interlaboratory reproduciblity using the “standardised” ANC method was excellent with RSD of 3% for both samples.

Using the “standardised” NAG procedure, the interlaboratory reproducibility for analysis of NAGpH of the three samples examined gave RSD of less than or equal to 6%, indicating excellent reproducibility. The use of hydrogen peroxide in which the pH has been standardised to between 4.6 and 5.5, appears to have resulted in significant improvement in the reproducibility of the NAGpH for sample GS918-6, which gave a NAGpH of 4.5. The result was similar to the round 1 results, but with the RSD reduced from 15% in the first round to 4% in the second round.

Table 8. Results for Round 2 interlaboratory ANC testing

Sample Code	Mean ANC (kg H_2SO_4/t)	Std Dev (kg H_2SO_4/t)	RSD (%)	95% CI (kg H_2SO_4/t)	Ave. Intra-Laboratory RSD (%)	Count[1]
GS312-8	12	2.7	23	0.68	5	66
GS310-10	78	2.7	3	0.61	1	76
GS918-6	516	15	3	3.4	0.5	76

1. Number of results used in the analysis after exclusion of outliers. A total of 76 results were received for each sample.

Table 9. Results for Round 2 interlaboratory NAG testing

Sample Code	Mean NAGpH	Std Dev	RSD (%)	95% CI	Ave. Intra-Laboratory RSD (%)	Count[1]
GS911-8	8.3	0.3	4	0.08	2	76
GS917-4	3.4	0.2	6	0.05	2	76
GS312-3	4.5	0.2	4	0.04	1	76

1. Number of results used in the analysis after exclusion of outliers. A total of 76 results were received for each sample.

3.5 Comparison of Round 1 and 2 Interlaboratory Test Results

Figure 1 shows a comparison between the average ANC values measured during the first and second rounds of interlaboratory testing. The error bars represent the 95% CI calculated from all values obtained for the sample, excluding outliers. This comparison shows minimal difference of the average value and 95% CI obtained for both rounds. These results suggest that the measurement of ANC for these materials is not particularly method dependent, which is important for reference materials and supporting their use in QC for ANC analysis.

Figure 2 shows the average NAGpH values obtained from the Round 1 and Round 2 interlaboratory studies for the three NAG materials tested. The values presented exclude outliers and the error bars represent the 95% CI of the means. These figures show that there was minimal difference in the average NAGpH measured in the two rounds of testing. These results suggest that the NAG test is reasonably robust, so that any minor differences in the way the test was conducted by the various participating laboratories, did not appear to result in significant variation in the measured NAGpH. However, **these results do suggest adjusting the pH of the hydrogen peroxide prior to reaction will likely improve method reproducibility.**

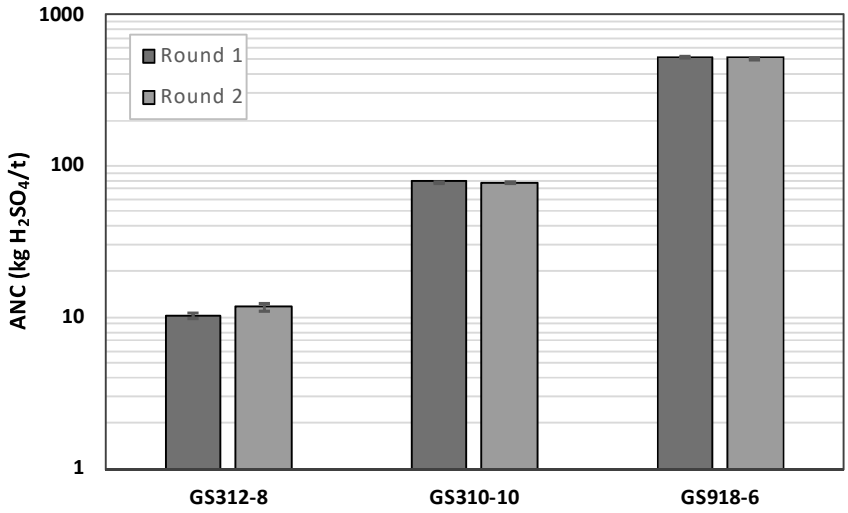


Figure 1. Average ANC values obtained from round one and round two of interlaboratory testing. Error bars show the 95% confidence interval.

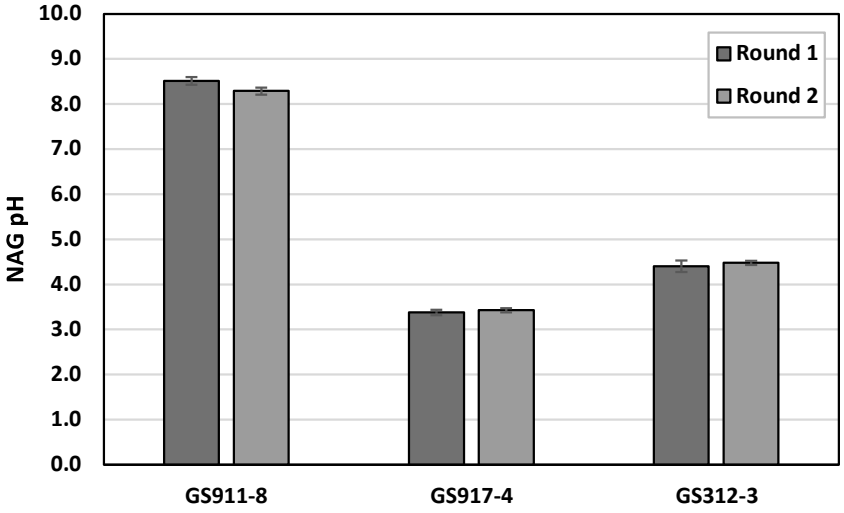


Figure 2. Average NAGpH values obtained from round one and round two of interlaboratory testing. Error bars show the 95% confidence interval.

4.0 CONCLUSIONS

The certification outcomes for the three ANC and three NAG materials tested are shown in Table 10 below. For all but one of the samples evaluated, interlaboratory reproducibility was sufficiently good to provide certified values for ANC or NAGpH. For the lowest ANC sample GS312-8, the interlaboratory variance was such that a certified value was not assigned and for this material a reference value was assigned.

These materials will now be made available to analysts wishing to improve QC protocols for ANC and NAG analyses, and their use should add to the reliability of these measurements which form an important part of ARD risk assessment of mined materials.

Table 10. Properties of reference materials

Sample Code	Referenced Parameter	Units	Reference Value	Certification Level
GS312-8	ANC	(kg H_2SO_4/t)	11.6	Reference Value
GS310-10	ANC	(kg H_2SO_4/t)	77.8	Certified Value
GS918-6	ANC	(kg H_2SO_4/t)	516	Certified Value
GS911-8	NAGpH	pH unit	8.29	Certified Value
GS917-4	NAGpH	pH unit	3.43	Certified Value
GS312-3	NAGpH	pH unit	4.48	Certified Value

5.0 ACKNOWLEDGEMENTS

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APPENDIX E ENVIRONMENTAL GEOCHEMISTRY RESULTS AND CERTIFICATES OF ANALYSIS

CERTIFICATE OF ANALYSIS

Work Order	: **EP2314634**	Page	: 1 of 9
Client	: **MINE WASTE MANAGEMENT**	Laboratory	: Environmental Division Perth
Contact	: Zsofia Waczek	Contact	: Customer Services EP
Address	: Suite 2, 435 Vincent Street West Leederville 6007	Address	: 26 Rigali Way Wangara WA Australia 6065
Telephone	: ----	Telephone	: +61-8-9406 1301
Project	: J-NZ0233 Bendigo AEE Support	Date Samples Received	: 18-Oct-2023 09:45
Order number	: ----	Date Analysis Commenced	: 26-Oct-2023
C-O-C number	: ----	Issue Date	: 02-Nov-2023 15:14
Sampler	: Santana		
Site	: ----		
Quote number	: EN-222		
No. of samples received	: 33		
No. of samples analysed	: 33		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA031 (Saturated Paste pH): NATA accreditation does not cover the performance of this service.
- EA032 (Saturated Paste EC): NATA accreditation does not cover the performance of this service.
- Analysis EA031 and EA032 are cancelled for EP2314634 - 031, 032 and 033 due to insufficient sample volume.
- ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.

Analytical Results

Sub-Matrix: **PULP**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19493 MGL_2022_220 - Low-grade Ore - RSSZ-NA-A	MG19489 MGL_2022_220 - Low-grade Ore - RSSZ-NA-A	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	MG19077 MGL_2022_113 - Low-grade Ore - TZ4-S3-As2
				Sampling date / time	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]
				EP2314634-001	EP2314634-002	EP2314634-003	EP2314634-004	EP2314634-005	
				Result	Result	Result	Result	Result	
EA011: Net Acid Generation									
pH (OX)	----	0.1	pH Unit	**10.3**	**10.4**	**10.5**	**10.4**	**10.4**	
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1	
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1	
EA013: Acid Neutralising Capacity									
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	**70.0**	**68.1**	**62.6**	**64.9**	**66.0**	
ANC as CaCO3	----	0.1	% CaCO3	**7.1**	**7.0**	**6.4**	**6.6**	**6.7**	
Fizz Rating	----	0	Fizz Unit	**2**	**2**	**2**	**2**	**2**	
EA031: pH (saturated paste)									
ø pH (Saturated Paste)	----	0.1	pH Unit	**9.0**	**8.9**	**9.4**	**9.1**	**9.1**	
EA032: Electrical Conductivity (saturated paste)									
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	**373**	**376**	**379**	**310**	**427**	
ED042T: Total Sulfur by LECO									
Sulfur - Total as S (LECO)	----	0.01	%	**0.17**	**0.18**	**0.20**	**0.10**	**0.14**	
EP003TC: Total Carbon (TC) in Soil									
Total Carbon	TC	0.02	%	**1.17**	**1.13**	**1.03**	**1.23**	**1.04**	

Analytical Results

Sub-Matrix: **PULP**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19473 MGL_2022_220 - Ore/Tailings - RSSZ-S1-As3	MG19246-131 MGL_2022_131 - Ore/Tailings - RSSZ-S2-As2	MG19238-131 MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3	MG19101 MGL_2022_113 - Ore/Tailings - RSSZ-S4-As4	MG19109 MGL_2022_113 - Ore/Tailings - TZ4-S2-As3
				Sampling date / time	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]
					EP2314634-006	EP2314634-007	EP2314634-008	EP2314634-009	EP2314634-010
					Result	Result	Result	Result	Result
EA011: Net Acid Generation									
pH (OX)	----	0.1	pH Unit		**10.6**	**10.9**	**10.4**	**6.6**	**10.5**
NAG (pH 4.5)	----	0.1	kg H2SO4/t		<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t		<0.1	<0.1	<0.1	**0.6**	<0.1
EA013: Acid Neutralising Capacity									
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t		**61.3**	**95.0**	**73.4**	**72.4**	**74.2**
ANC as CaCO3	----	0.1	% CaCO3		**6.2**	**9.7**	**7.5**	**7.4**	**7.6**
Fizz Rating	----	0	Fizz Unit		**2**	**2**	**2**	**2**	**2**
EA031: pH (saturated paste)									
ø pH (Saturated Paste)	----	0.1	pH Unit		**9.0**	**9.3**	**9.1**	**8.8**	**9.4**
EA032: Electrical Conductivity (saturated paste)									
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm		**603**	**436**	**441**	**527**	**425**
ED042T: Total Sulfur by LECO									
Sulfur - Total as S (LECO)	----	0.01	%		**0.26**	**0.19**	**0.46**	**1.38**	**0.23**
EP003TC: Total Carbon (TC) in Soil									
Total Carbon	TC	0.02	%		**1.09**	**1.71**	**1.31**	**1.33**	**1.27**

Analytical Results

Sub-Matrix: **PULP**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19093 MGL_2022_113 - Waste - RSSZ-NA-As1	MG19202-131 MGL_2022_131 - Waste - RSSZ-NA-As2	MG19350 MGL_2022_217 - Waste - RSSZ-NA-As2	MG19217-131 MGL_2022_131 - Waste - RSSZ-NA-As3	MG19516 MGL_2022_220 - Waste - RSSZ-S1-As1
				Sampling date / time	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]
					EP2314634-011	EP2314634-012	EP2314634-013	EP2314634-014	EP2314634-015
					Result	Result	Result	Result	Result
EA011: Net Acid Generation									
pH (OX)	----	0.1	pH Unit		**10.7**	**10.7**	**10.1**	**10.9**	**10.8**
NAG (pH 4.5)	----	0.1	kg H2SO4/t		<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t		<0.1	<0.1	<0.1	<0.1	<0.1
EA013: Acid Neutralising Capacity									
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t		**53.6**	**66.3**	**46.5**	**76.8**	**70.2**
ANC as CaCO3	----	0.1	% CaCO3		**5.5**	**6.8**	**4.7**	**7.8**	**7.2**
Fizz Rating	----	0	Fizz Unit		**2**	**2**	**2**	**2**	**2**
EA031: pH (saturated paste)									
ø pH (Saturated Paste)	----	0.1	pH Unit		**9.2**	**9.0**	**9.2**	**9.1**	**9.0**
EA032: Electrical Conductivity (saturated paste)									
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm		**292**	**340**	**365**	**368**	**388**
ED042T: Total Sulfur by LECO									
Sulfur - Total as S (LECO)	----	0.01	%		**0.06**	**0.16**	**0.23**	**0.26**	**0.22**
EP003TC: Total Carbon (TC) in Soil									
Total Carbon	TC	0.02	%		**0.59**	**1.11**	**0.77**	**1.33**	**1.00**

Analytical Results

Sub-Matrix: **PULP**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19499 MGL_2022_220 - Waste - RSSZ-S1-As2	MG19476 MGL_2022_220 - Waste - RSSZ-S1-As3	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	MG19528 MGL_2022_220 - Waste - RSSZ-S1-As3	MG19331 MGL_2022_217 - Waste - RSSZ-S2-As2
				Sampling date / time	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]
				EP2314634-016	EP2314634-017	EP2314634-018	EP2314634-019	EP2314634-020	
				Result	Result	Result	Result	Result	
EA011: Net Acid Generation									
pH (OX)	----	0.1	pH Unit	**10.8**	**10.7**	**10.7**	**10.6**	**10.7**	
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1	
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1	
EA013: Acid Neutralising Capacity									
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	**67.8**	**59.7**	**69.3**	**67.5**	**66.6**	
ANC as CaCO3	----	0.1	% CaCO3	**6.9**	**6.1**	**7.1**	**6.9**	**6.8**	
Fizz Rating	----	0	Fizz Unit	**2**	**2**	**2**	**2**	**2**	
EA031: pH (saturated paste)									
ø pH (Saturated Paste)	----	0.1	pH Unit	**8.9**	**9.0**	**9.1**	**9.0**	**9.1**	
EA032: Electrical Conductivity (saturated paste)									
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	**487**	**309**	**350**	**370**	**392**	
ED042T: Total Sulfur by LECO									
Sulfur - Total as S (LECO)	----	0.01	%	**0.22**	**0.20**	**0.34**	**0.29**	**0.24**	
EP003TC: Total Carbon (TC) in Soil									
Total Carbon	TC	0.02	%	**1.09**	**1.01**	**1.13**	**1.09**	**1.16**	

Analytical Results

Sub-Matrix: **PULP**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19411 MGL_2022_217 - Waste - RSSZ-S2-As2	MG19107 MGL_2022_113 - Waste - RSSZ-S2-As3	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	MG19364 MGL_2022_217 - Waste - RSSZ-S3-As3	MG19063 MGL_2022_113 - Waste - TZ4-NA-As1
				Sampling date / time	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]
					EP2314634-021	EP2314634-022	EP2314634-023	EP2314634-024	EP2314634-025
					Result	Result	Result	Result	Result
EA011: Net Acid Generation									
pH (OX)	----	0.1	pH Unit		**10.4**	**10.3**	**10.7**	**10.5**	**11.0**
NAG (pH 4.5)	----	0.1	kg H2SO4/t		<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t		<0.1	<0.1	<0.1	<0.1	<0.1
EA013: Acid Neutralising Capacity									
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t		**60.9**	**67.2**	**72.4**	**69.2**	**59.4**
ANC as CaCO3	----	0.1	% CaCO3		**6.2**	**6.8**	**7.4**	**7.0**	**6.0**
Fizz Rating	----	0	Fizz Unit		**2**	**2**	**2**	**2**	**2**
EA031: pH (saturated paste)									
ø pH (Saturated Paste)	----	0.1	pH Unit		**9.2**	**9.1**	**9.2**	**9.1**	**9.2**
EA032: Electrical Conductivity (saturated paste)									
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm		**387**	**366**	**341**	**339**	**320**
ED042T: Total Sulfur by LECO									
Sulfur - Total as S (LECO)	----	0.01	%		**0.08**	**0.21**	**0.30**	**0.38**	**0.08**
EP003TC: Total Carbon (TC) in Soil									
Total Carbon	TC	0.02	%		**1.26**	**1.08**	**1.15**	**1.13**	**0.65**

Analytical Results

Sub-Matrix: **PULP**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19110 MGL_2022_113 - Waste - TZ4-NA-As2	MG19421 MGL_2022_220 - Waste - TZ4-NA-As2	MG19514 MGL_2022_220 - Waste - TZ4-NA-As2	MG19438 MGL_2022_220 - Waste - TZ4-S2-As1	MG19457 MGL_2022_220 - Waste - TZ4-S2-As1
				Sampling date / time	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]
					EP2314634-026	EP2314634-027	EP2314634-028	EP2314634-029	EP2314634-030
					Result	Result	Result	Result	Result
EA011: Net Acid Generation									
pH (OX)	----	0.1	pH Unit		**10.2**	**10.9**	**10.9**	**10.7**	**10.9**
NAG (pH 4.5)	----	0.1	kg H2SO4/t		<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t		<0.1	<0.1	<0.1	<0.1	<0.1
EA013: Acid Neutralising Capacity									
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t		**74.7**	**78.2**	**58.6**	**64.9**	**52.2**
ANC as CaCO3	----	0.1	% CaCO3		**7.6**	**8.0**	**6.0**	**6.6**	**5.3**
Fizz Rating	----	0	Fizz Unit		**2**	**2**	**2**	**2**	**2**
EA031: pH (saturated paste)									
ø pH (Saturated Paste)	----	0.1	pH Unit		**9.1**	**8.7**	**8.9**	**9.2**	**9.1**
EA032: Electrical Conductivity (saturated paste)									
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm		**369**	**298**	**344**	**400**	**248**
ED042T: Total Sulfur by LECO									
Sulfur - Total as S (LECO)	----	0.01	%		**0.11**	**0.12**	**0.14**	**0.11**	**0.04**
EP003TC: Total Carbon (TC) in Soil									
Total Carbon	TC	0.02	%		**1.53**	**1.40**	**0.86**	**1.10**	**0.62**

Analytical Results

Sub-Matrix: PULP (Matrix: SOIL)			Sample ID	RASMWM001 Pulp	RASMWM002 Pulp	RASMWM003 Pulp	----	----
			Sampling date / time	[17-Oct-2023]	[17-Oct-2023]	[17-Oct-2023]	----	----
Compound	CAS Number	LOR	Unit	EP2314634-031	EP2314634-032	EP2314634-033	--------	--------
				Result	Result	Result	----	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	**3.7**	**3.5**	**10.0**	**----**	**----**
NAG (pH 4.5)	----	0.1	kg H2SO4/t	**4.9**	**4.8**	<0.1	**----**	**----**
NAG (pH 7.0)	----	0.1	kg H2SO4/t	**8.3**	**8.3**	<0.1	**----**	**----**
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	<0.5	<0.5	**46.7**	**----**	**----**
ANC as CaCO3	----	0.1	% CaCO3	<0.1	<0.1	**4.8**	**----**	**----**
Fizz Rating	----	0	Fizz Unit	**0**	**0**	**2**	**----**	**----**
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	**0.31**	**0.31**	**0.08**	**----**	**----**
EP003TC: Total Carbon (TC) in Soil								
Total Carbon	TC	0.02	%	**0.06**	**0.07**	**0.45**	**----**	**----**

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EA013: Acid Neutralising Capacity

(SOIL) ED042T: Total Sulfur by LECO

(SOIL) EA011: Net Acid Generation

(SOIL) EP003TC: Total Carbon (TC) in Soil

(SOIL) EA032: Electrical Conductivity (saturated paste)

(SOIL) EA031: pH (saturated paste)

ANALYSIS REPORT

WP23-12026

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 10-May-2023
Completed: 05/01/2024
Job Number: WP23-12026
Report Number: 0000027044
Order Reference: MGL_2023_058

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19792	0.005	0.25	27	2.7	0.16
MG19793	<0.005	0.33	32	3.2	<0.15
MG19794	<0.005	0.38	38	3.8	<0.15
MG19795	<0.005	0.30	27	2.8	<0.15
MG19796	0.043	0.34	29	2.9	1.3
MG19797	0.074	0.35	27	2.7	2.3
MG19798	0.064	0.29	27	2.8	2.0
MG19799	0.066	0.36	30	3.1	2.0
MG19800	0.056	0.39	30	3.1	1.7

ANALYSIS REPORT

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Attention:

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Order Reference: MGL_2023_058

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19801	0.069	0.45	37	3.8	2.1
MG19802	0.060	0.42	30	3.1	1.8
MG19803	0.062	0.30	20	2.0	1.9
MG19804	0.070	0.32	22	2.2	2.2
MG19805	0.057	0.38	30	3.0	1.7
MG19806	0.067	0.40	37	3.8	2.1

ANALYSIS REPORT

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Order Reference: MGL_2023_058

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19807	0.078	0.48	34	3.4	2.4
MG19808	0.076	0.39	30	3.1	2.3
MG19809	0.065	0.41	26	2.6	2.0
MG19810	0.069	0.37	27	2.7	2.1
MG19811	0.080	0.38	30	3.1	2.4
MG19812	0.077	0.38	32	3.3	2.4
MG19813	0.072	0.48	44	4.5	2.2
MG19814	0.125	0.51	44	4.5	3.8
MG19815	0.054	0.50	44	4.5	1.7

ANALYSIS REPORT

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Report Number: 0000027044
Order Reference: MGL_2023_058

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19816	0.070	0.49	40	4.0	2.2
MG19817	0.073	0.51	38	3.9	2.2
MG19818	0.103	0.63	41	4.2	3.1
MG19819	0.108	0.65	44	4.5	3.3
MG19820	0.161	0.69	46	4.7	4.9
MG19821	0.100	0.74	51	5.2	3.1

ANALYSIS REPORT

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Report Number: 0000027044
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Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19822	0.095	0.74	56	5.7	2.9
MG19823	0.068	0.88	64	6.5	2.1
MG19824	0.065	0.90	65	6.7	2.0
MG19825	0.080	0.92	67	6.8	2.4
MG19826	0.104	0.63	41	4.2	3.2
MG19800	0.054	0.40	27	2.8	1.6

ANALYSIS REPORT

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Attention:

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Report Number: 0000027044
Order Reference: MGL_2023_058

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG19792	-27	7.1	0	9.1	280
MG19793	-32	7.4	0	9.1	270
MG19794	-38	7.9	0	9.1	250
MG19795	-27	7.1	0	9.1	250
MG19796	-27	7.2	0	9.3	310
MG19797	-24	7.2	0	9.4	350
MG19798	-25	6.8	1	9.4	440
MG19799	-28	7.2	0	9.4	400
MG19800	-28	7.3	0	9.4	430

ANALYSIS REPORT

WP23-12026

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Hokitika 7842 NEW ZEALAND
Attention:

Received: 10-May-2023
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Job Number: WP23-12026
Report Number: 0000027044
Order Reference: MGL_2023_058

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG19801	-35	7.7	0	9.4	410
MG19802	-29	7.5	0	9.5	400
MG19803	-18	6.9	1	9.5	400
MG19804	-19	6.9	0	9.5	390
MG19805	-28	7.2	0	9.4	400
MG19806	-35	7.5	0	9.3	430

ANALYSIS REPORT

WP23-12026

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Hokitika 7842 NEW ZEALAND
Attention:

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Job Number: WP23-12026
Report Number: 0000027044
Order Reference: MGL_2023_058

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG19807	-31	7.6	0	9.4	390
MG19808	-28	7.2	0	9.3	440
MG19809	-24	7.1	0	9.3	510
MG19810	-25	7.2	0	9.3	450
MG19811	-28	7.1	0	9.3	480
MG19812	-30	7.3	0	9.3	480
MG19813	-42	7.6	0	9.3	480
MG19814	-40	7.8	0	9.3	540
MG19815	-42	7.7	0	9.2	490

ANALYSIS REPORT

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Hokitika 7842 NEW ZEALAND
Attention:

Received: 10-May-2023
Completed: 05/01/2024
Job Number: WP23-12026
Report Number: 0000027044
Order Reference: MGL_2023_058

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG19816	-37	7.7	0	9.1	560
MG19817	-36	7.6	0	9.1	590
MG19818	-38	7.8	0	9.0	490
MG19819	-41	7.9	0	9.2	500
MG19820	-41	7.9	0	9.2	490
MG19821	-48	8.0	0	9.1	570

ANALYSIS REPORT

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Client: Matakanui Gold Limited
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Job Number: WP23-12026
Report Number: 0000027044
Order Reference: MGL_2023_058

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG19822	-53	7.8	0	9.1	560
MG19823	-62	8.1	0	9.1	570
MG19824	-63	8.1	0	9.1	560
MG19825	-64	8.2	0	9.1	500
MG19826	-38	7.9	0	8.9	560
MG19800	-26	7.4	0	9.3	450

ANALYSIS REPORT

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Attention:

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Report Number: 0000027044
Order Reference: MGL_2023_058

Sample ID	ESO_ORGC_HILLS Org C g/100g LOR 0.05
MG19792	0.08
MG19793	0.13
MG19794	0.09
MG19795	0.11
MG19796	0.20
MG19797	0.18
MG19798	0.16
MG19799	0.17
MG19800	0.18

ANALYSIS REPORT

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Report Number: 0000027044
Order Reference: MGL_2023_058

	ESO_ORGC_HILLS Org C g/100g LOR 0.05
MG19801	0.14
MG19802	0.16
MG19803	0.18
MG19804	0.20
MG19805	0.23
MG19806	0.18

ANALYSIS REPORT

WP23-12026

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 10-May-2023
Completed: 05/01/2024
Job Number: WP23-12026
Report Number: 0000027044
Order Reference: MGL_2023_058

Sample ID	ESO_ORGC_HILLS Org C g/100g LOR 0.05
MG19807	0.15
MG19808	0.19
MG19809	0.26
MG19810	0.20
MG19811	0.21
MG19812	0.19
MG19813	0.18
MG19814	0.19
MG19815	0.20

ANALYSIS REPORT

WP23-12026

Client: Matakanui Gold Limited
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Attention:

Received: 10-May-2023
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Job Number: WP23-12026
Report Number: 0000027044
Order Reference: MGL_2023_058

	ESO_ORGC_HILLS Org C g/100g LOR 0.05
MG19816	0.21
MG19817	0.20
MG19818	0.22
MG19819	0.19
MG19820	0.21
MG19821	0.20

ANALYSIS REPORT

WP23-12026

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 10-May-2023
Completed: 05/01/2024
Job Number: WP23-12026
Report Number: 0000027044
Order Reference: MGL_2023_058

Sample ID	ESO_ORGC_HILLS Org C g/100g LOR 0.05
MG19822	0.20
MG19823	0.18
MG19824	0.20
MG19825	0.19
MG19826	0.24
MG19800	0.18

Date Start/End Analysis (28/6/2023 - 5/1/2024)

* - Denotes non accredited tests

REMARKS:
Organic carbon analysis sub-contracted to Hill Laboratories.

NAG Blank pH = 5.5

ANALYSIS REPORT

WP23-12026

Client:	Matakanui Gold Limited PO Box 11 Hokitika 7842 NEW ZEALAND Attention:	**Received:** **Completed:** **Job Number:** **Report Number:** **Order Reference:**	10-May-2023 05/01/2024 WP23-12026 0000027044 MGL_2023_058

APPLIED METHODS:

ESO_CSA06V: Total sulphur/carbon, LECO Method: SGS Global method

ESO_NEPM103_1_2: Paste pH in soil: NEPM103 1:2 extraction

ESO_CLA48V: Determination of ANC, TAP and NAPP of Soils/Rocks: SGS inhouse method

EWAEC_APHA2510: Conductivity and TDS by Calculation - Water: APHA 2510 SGS Westport

ESO_CLA49V: Net Acid Generation Test: SGS Global method



Signed and dated on 08-Jan-2024

Nick LEES
Operations Manager

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ANALYSIS REPORT

WP23-12482

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 23-Aug-2023
Completed: 08/01/2024
Job Number: WP23-12482
Report Number: 0000027042
Order Reference: MGL_2023_153 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19827	0.008	0.08	15	1.5	0.25
MG19828	<0.005	0.09	16	1.6	<0.15
MG19829	<0.005	0.10	10	1.1	<0.15
MG19830	<0.005	0.14	18	1.8	<0.15
MG19831	0.031	0.19	21	2.1	0.96
MG19832	0.061	0.24	22	2.2	1.9
MG19833	0.075	0.24	31	3.2	2.3
MG19834	0.065	0.32	33	3.3	2.0
MG19835	0.087	0.33	42	4.3	2.7

ANALYSIS REPORT

WP23-12482

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 23-Aug-2023
Completed: 08/01/2024
Job Number: WP23-12482
Report Number: 0000027042
Order Reference: MGL_2023_153 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19836	0.126	0.43	35	3.6	3.9
MG19837	0.092	0.39	33	3.4	2.8
MG19838	0.113	0.38	37	3.8	3.5
MG19839	0.097	0.38	33	3.3	3.0
MG19840	0.086	0.38	34	3.4	2.6
MG19841	0.083	0.34	29	2.9	2.5

ANALYSIS REPORT

WP23-12482

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 23-Aug-2023
Completed: 08/01/2024
Job Number: WP23-12482
Report Number: 0000027042
Order Reference: MGL_2023_153 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19842	0.075	0.35	28	2.9	2.3
MG19843	0.085	0.35	31	3.1	2.6
MG19844	0.110	0.40	36	3.7	3.4
MG19845	0.118	0.41	34	3.5	3.6
MG19846	0.095	0.44	41	4.1	2.9
MG19847	0.088	0.60	43	4.4	2.7
MG43557	0.369	0.06	4	0.4	11
MG43557	-	-	-	-	-

ANALYSIS REPORT

WP23-12482

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 23-Aug-2023
Completed: 08/01/2024
Job Number: WP23-12482
Report Number: 0000027042
Order Reference: MGL_2023_153 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19827	-15	6.2	9	8.1	150
MG19828	-16	6.1	10	8.6	140
MG19829	-10	6.3	8	8.7	190
MG19830	-18	6.4	8	9.0	190
MG19831	-20	6.6	4	9.0	220
MG19832	-20	6.8	2	9.0	270
MG19833	-29	7.1	0	9.0	220
MG19834	-31	7.5	0	9.2	310
MG19835	-39	7.7	0	9.3	320

ANALYSIS REPORT

WP23-12482

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 23-Aug-2023
Completed: 08/01/2024
Job Number: WP23-12482
Report Number: 0000027042
Order Reference: MGL_2023_153 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19836	-32	7.7	0	9.4	320
MG19837	-31	7.7	0	9.5	360
MG19838	-34	7.5	0	9.3	330
MG19839	-30	7.7	0	9.3	330
MG19840	-31	7.3	0	9.3	320
MG19841	-26	7.1	0	9.4	310

ANALYSIS REPORT

WP23-12482

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 23-Aug-2023
Completed: 08/01/2024
Job Number: WP23-12482
Report Number: 0000027042
Order Reference: MGL_2023_153 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19842	-26	7.5	0	9.5	330
MG19843	-28	7.3	0	9.5	310
MG19844	-33	7.4	0	9.4	320
MG19845	-30	7.4	0	9.3	320
MG19846	-38	7.6	0	9.4	360
MG19847	-41	7.6	0	9.4	380
MG43557	7	3.8	6	-	-
MG43557	-	-	-	-	-

ANALYSIS REPORT

WP23-12482

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 23-Aug-2023
Completed: 08/01/2024
Job Number: WP23-12482
Report Number: 0000027042
Order Reference: MGL_2023_153 AMD

Sample ID	ESO_ORGC_HILLS Org C g/100g LOR 0.05
MG19827	<0.05
MG19828	<0.05
MG19829	<0.05
MG19830	<0.05
MG19831	0.14
MG19832	0.11
MG19833	0.13
MG19834	0.12
MG19835	0.12

ANALYSIS REPORT

WP23-12482

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 23-Aug-2023
Completed: 08/01/2024
Job Number: WP23-12482
Report Number: 0000027042
Order Reference: MGL_2023_153 AMD

	ESO_ORGC_HILLS Org C g/100g LOR 0.05
MG19836	0.10
MG19837	0.09
MG19838	0.11
MG19839	0.11
MG19840	0.14
MG19841	0.16

ANALYSIS REPORT

WP23-12482

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 23-Aug-2023
Completed: 08/01/2024
Job Number: WP23-12482
Report Number: 0000027042
Order Reference: MGL_2023_153 AMD

Sample ID	ESO_ORGC_HILLS Org C g/100g LOR 0.05
MG19842	0.15
MG19843	0.12
MG19844	0.14
MG19845	0.17
MG19846	0.15
MG19847	0.13
MG43557	-
MG43557	-

Date Start/End Analysis (19/9/2023 - 8/1/2024)

* - Denotes non accredited tests

ANALYSIS REPORT

WP23-12482

Client:	Matakanui Gold Limited PO Box 11 Hokitika 7842 NEW ZEALAND Attention:	**Received:** **Completed:** **Job Number:** **Report Number:** **Order Reference:**	15-Sep-2023 08/01/2024 WP23-12482 0000027042 MGL_2023_153 AMD

REMARKS:
Organic carbon analysis sub-contracted to Hill Laboratories.

NAG Blank pH = 6.8

APPLIED METHODS:

ESO_CSA06V: Total sulphur/carbon, LECO Method: SGS Global method
ESO_NEPM103_1_2: Paste pH in soil: NEPM103 1:2 extraction
ESO_CLA48V: Determination of ANC, TAP and NAPP of Soils/Rocks: SGS inhouse method
ESO_CLA49V: Net Acid Generation Test: SGS Global method



Signed and dated on 08-Jan-2024

Nick LEES
Operations Manager

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ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19848	0.005	0.14	15	1.5	0.16
MG19849	<0.005	0.13	18	1.8	<0.15
MG19850	<0.005	0.28	28	2.9	<0.15
MG19851	<0.005	0.39	37	3.8	<0.15
MG19852	<0.005	0.35	32	3.3	<0.15
MG19853	0.030	0.34	29	3.0	0.93
MG19854	0.086	0.36	27	2.7	2.6
MG19855	0.064	0.32	25	2.6	2.0
MG19856	0.077	0.28	25	2.5	2.4

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19857	0.057	0.35	26	2.7	1.7
MG19858	0.043	0.33	24	2.5	1.3
MG19859	0.068	0.32	24	2.4	2.1
MG19860	0.064	0.27	23	2.3	2.0
MG19861	0.083	0.36	27	2.7	2.5
MG19862	0.070	0.51	40	4.1	2.1

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
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Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19863	0.079	0.52	43	4.4	2.4
MG19864	0.079	0.42	33	3.4	2.4
MG19865	0.076	0.44	36	3.7	2.3
MG19866	0.080	0.50	38	3.9	2.4
MG19867	0.069	0.37	32	3.3	2.1
MG19868	0.053	0.42	33	3.4	1.6
MG19869	0.084	0.54	39	4.0	2.6
MG19870	0.089	0.79	66	6.7	2.7
MG19871	0.074	1.37	88	8.9	2.3

ANALYSIS REPORT

WP23-12513

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Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19872	0.081	1.06	74	7.6	2.5
MG19873	0.096	1.04	70	7.1	2.9
MG19874	0.081	0.57	41	4.2	2.5
MG19875	0.092	0.44	69	7.1	2.8
MG19876	0.113	0.43	33	3.4	3.5
MG19877	0.123	0.40	37	3.8	3.8

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19878	0.081	0.36	32	3.3	2.5
MG19879	0.092	0.34	28	2.8	2.8
MG19880	0.096	0.35	28	2.9	2.9
MG19881	0.082	0.36	28	2.9	2.5
MG19882	0.072	0.53	48	4.9	2.2
MG19883	0.120	0.62	55	5.6	3.7
MG19884	0.132	0.61	54	5.5	4.0
MG19885	0.140	0.56	45	4.6	4.3
MG19886	0.124	0.54	46	4.6	3.8

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19887	0.120	0.53	46	4.7	3.7
MG19888	0.117	0.53	48	4.9	3.6
MG19889	0.145	0.56	43	4.4	4.4
MG19890	0.161	0.51	45	4.6	4.9
MG19891	0.119	0.56	53	5.4	3.7
MG19892	0.102	0.60	50	5.2	3.1

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG19893	0.106	0.63	52	5.3	3.3
MG19894	0.147	0.68	55	5.6	4.5
MG19895	0.196	0.71	52	5.3	6.0
MG19896	0.174	0.75	55	5.6	5.3
MG19897	0.160	0.75	57	5.8	4.9
MG19856	0.064	0.28	25	2.6	2.0
MG43558	0.084	0.45	45	4.6	2.6
MG43559	0.279	0.59	53	5.4	8.5

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19848	-15	6.2	14	8.0	220
MG19849	-18	6.6	7	8.5	180
MG19850	-28	7.4	0	8.7	190
MG19851	-37	8.0	0	8.7	190
MG19852	-32	7.6	0	8.8	190
MG19853	-28	7.3	0	8.9	210
MG19854	-24	7.6	0	8.9	220
MG19855	-23	7.1	0	9.0	200
MG19856	-23	7.2	0	9.2	190

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19857	-24	7.4	0	9.0	200
MG19858	-23	7.0	0	9.1	190
MG19859	-22	7.0	0	9.3	210
MG19860	-21	7.2	0	9.3	200
MG19861	-24	7.2	0	9.4	220
MG19862	-38	7.8	0	9.4	220

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19863	-41	7.9	0	9.3	230
MG19864	-31	7.7	0	9.3	210
MG19865	-34	7.7	0	9.3	210
MG19866	-35	7.6	0	9.3	210
MG19867	-30	7.3	0	9.4	230
MG19868	-32	7.4	0	9.4	220
MG19869	-37	7.6	0	9.3	230
MG19870	-63	8.6	0	9.1	240
MG19871	-85	10.1	0	8.8	340

ANALYSIS REPORT

WP23-12513

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Hokitika 7842 NEW ZEALAND
Attention:

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Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19872	-72	10.6	0	8.9	280
MG19873	-67	10.8	0	8.9	330
MG19874	-39	7.6	0	9.3	280
MG19875	-66	7.6	0	9.4	260
MG19876	-30	7.6	0	9.3	280
MG19877	-34	7.4	0	9.4	290

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
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Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19878	-30	7.5	0	9.4	280
MG19879	-25	7.3	0	9.4	260
MG19880	-25	7.1	0	9.4	260
MG19881	-26	7.4	0	9.2	230
MG19882	-46	7.8	0	9.1	240
MG19883	-51	7.8	0	9.3	230
MG19884	-50	7.8	0	9.4	270
MG19885	-41	7.8	0	9.4	270
MG19886	-42	7.8	0	9.3	280

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19887	-42	7.6	0	9.4	250
MG19888	-44	7.7	0	9.4	250
MG19889	-39	8.0	0	9.3	270
MG19890	-40	8.2	0	9.2	280
MG19891	-49	7.9	0	9.2	280
MG19892	-47	7.7	0	9.1	230

ANALYSIS REPORT

WP23-12513

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed: 10/04/2024
Job Number: WP23-12513
Report Number: 0000028048
Order Reference: MGL_2023_158 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG19893	-48	8.0	0	9.2	250
MG19894	-50	7.7	0	9.2	260
MG19895	-46	7.8	0	9.2	260
MG19896	-50	7.8	0	9.2	240
MG19897	-52	7.8	0	9.2	280
MG19856	-23	7.0	0	9.2	190
MG43558	-42	8.3	0	-	-
MG43559	-45	8.2	0	-	-

Date Start/End Analysis (3/10/2023 - 10/4/2024)

* - Denotes non accredited tests

ANALYSIS REPORT

WP23-12513

Client:	Matakanui Gold Limited PO Box 11 Hokitika 7842 NEW ZEALAND Attention:	**Received:** **Completed:** **Job Number:** **Report Number:** **Order Reference:**	15-Sep-2023 10/04/2024 WP23-12513 0000028048 MGL_2023_158 AMD

REMARKS:
NAG pH for blanks were initially unusually high (7.3 - 7.4), but 5.6 after repeats carried out for blank and selected samples.

APPLIED METHODS:

ESO_CSA06V: Total sulphur/carbon, LECO Method: SGS Global method
ESO_CLA48V: Determination of ANC, TAP and NAPP of Soils/Rocks: SGS inhouse method
ESO_CLA49V: Net Acid Generation Test: SGS Global method
ESO_NEPM103_1_2: Paste pH in soil: NEPM103 1:2 extraction



Signed and dated on 16-Apr-2024

Nick LEES
Operations Manager

This document is issued by the Company under its General Conditions of Service at http://www.sgs.com/term_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content and appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and/or provided by the Client or by a third party acting at the Client's discretion. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43501	0.010	0.11	19	1.9	0.32
MG43502	0.017	0.18	26	2.6	0.53
MG43503	<0.005	0.47	46	4.7	<0.15
MG43504	0.035	0.47	45	4.6	1.1
MG43505	0.042	0.40	42	4.3	1.3
MG43506	0.046	0.42	40	4.1	1.4
MG43507	0.058	0.37	34	3.5	1.8
MG43508	0.066	0.37	33	3.3	2.0
MG43509	0.083	0.37	35	3.6	2.5

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43510	0.079	0.43	46	4.7	2.4
MG43511	0.091	0.36	35	3.6	2.8
MG43512	0.072	0.35	31	3.2	2.2
MG43513	0.079	0.40	39	4.0	2.4
MG43514	0.078	0.40	39	4.0	2.4
MG43515	0.065	0.40	46	4.7	2.0

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43516	0.081	0.40	40	4.1	2.5
MG43517	0.058	0.53	56	5.7	1.8
MG43518	0.075	0.48	49	5.0	2.3
MG43519	0.099	0.33	29	2.9	3.0
MG43520	0.096	0.48	40	4.1	2.9
MG43521	0.130	0.70	52	5.3	4.0
MG43522	0.149	0.38	35	3.6	4.5
MG43523	0.135	0.46	38	3.9	4.1
MG43524	0.088	0.58	44	4.5	2.7

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43525	0.089	0.41	35	3.5	2.7
MG43526	0.101	0.48	48	4.9	3.1
MG43527	0.156	0.59	55	5.6	4.8
MG43528	0.091	0.66	64	6.5	2.8
MG43529	0.133	0.61	55	5.6	4.1
MG43530	0.128	0.61	54	5.5	3.9

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43509	0.079	0.38	34	3.4	2.4
MG43560	0.295	1.08	77	7.8	9.0

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43501	-18	6.4	5	8.4	200
MG43502	-25	7.2	0	8.7	180
MG43503	-46	7.7	0	8.8	170
MG43504	-44	7.7	0	8.9	190
MG43505	-41	7.7	0	9.2	210
MG43506	-38	7.6	0	9.3	290
MG43507	-32	7.8	0	9.3	320
MG43508	-31	7.6	0	9.4	330
MG43509	-33	7.4	0	9.3	310

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43510	-43	7.6	0	9.4	270
MG43511	-32	7.3	0	9.4	320
MG43512	-29	6.7	2	9.4	270
MG43513	-37	7.2	0	9.4	270
MG43514	-36	7.3	0	9.3	290
MG43515	-44	7.5	0	9.3	320

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43516	-37	7.6	0	9.1	320
MG43517	-54	8.1	0	9.2	380
MG43518	-47	7.7	0	9.3	350
MG43519	-26	7.3	0	9.4	310
MG43520	-37	7.6	0	9.4	270
MG43521	-48	7.7	0	9.4	280
MG43522	-30	7.4	0	9.3	310
MG43523	-34	7.5	0	9.3	260
MG43524	-41	7.8	0	9.3	320

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43525	-32	7.8	0	9.4	350
MG43526	-45	8.2	0	9.4	310
MG43527	-50	8.0	0	9.4	340
MG43528	-61	8.0	0	9.4	330
MG43529	-51	7.9	0	9.4	350
MG43530	-50	8.1	0	9.4	380

ANALYSIS REPORT

Draft Report: WP23-12514

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Aug-2023
Completed:
Job Number: WP23-12514
Report Number: 0000027260
Order Reference: MGL_2023_159 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43509	-31	7.5	0	9.3	310
MG43560	-67	8.3	0	-	-

Date Start/End Analysis (28/9/2023 -)

* - Denotes non accredited tests

REMARKS:
NAG pH for Blank was 7.0

APPLIED METHODS:

ESO_CSA06V: Total sulphur/carbon, LECO Method: SGS Global method
ESO_NEPM103_1_2: Paste pH in soil: NEPM103 1:2 extraction

ESO_CLA48V: Determination of ANC, TAP and NAPP of Soils/Rocks: SGS inhouse method

ESO_CLA49V: Net Acid Generation Test: SGS Global method

ANALYSIS REPORT

Draft Report: WP23-12514

Client:	Matakanui Gold Limited PO Box 11 Hokitika 7842 NEW ZEALAND Attention:	**Received:**	15-Sep-2023
		Completed:	
		Job Number:	WP23-12514
		Report Number:	0000027260
		Order Reference:	MGL_2023_159 AMD



Signed and dated on 26-Jan-2024

Nick LEES
Operations Manager

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ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43478	0.013	10	1.0	0.41	-10
MG43479	0.013	21	2.2	0.41	-21
MG43480	0.200	32	3.3	6.1	-26
MG43481	0.033	27	2.8	1.0	-26
MG43482	0.043	25	2.6	1.3	-24
MG43483	0.057	21	2.2	1.7	-19
MG43484	0.069	25	2.5	2.1	-23
MG43485	0.080	25	2.6	2.4	-23
MG43486	0.087	24	2.4	2.6	-21

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43487	0.084	24	2.5	2.6	-22
MG43488	0.042	23	2.4	1.3	-22
MG43489	0.062	32	3.2	1.9	-30
MG43490	0.101	22	2.2	3.1	-18
MG43491	0.097	22	2.2	3.0	-19
MG43492	0.113	27	2.7	3.5	-23

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43493	0.111	21	2.2	3.4	-18
MG43494	0.081	22	2.3	2.5	-20
MG43495	0.067	18	1.8	2.1	-16
MG43496	0.074	18	1.8	2.3	-16
MG43497	0.072	31	3.1	2.2	-29
MG43498	0.080	38	3.9	2.4	-35
MG43499	0.083	33	3.4	2.5	-31
MG43500	0.107	46	4.7	3.3	-43
MG43531	0.105	48	4.9	3.2	-44

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43532	0.099	35	3.6	3.0	-32
MG43533	0.087	30	3.0	2.7	-27
MG43534	0.110	37	3.8	3.4	-34
MG43535	0.112	67	6.9	3.4	-64
MG43536	0.116	53	5.4	3.6	-50
MG43537	0.119	44	4.5	3.6	-40

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43538	0.115	52	5.3	3.5	-48
MG43539	0.120	60	6.1	3.7	-56
MG43540	0.100	41	4.2	3.1	-38
MG43541	0.103	40	4.0	3.2	-36
MG43542	0.093	40	4.1	2.8	-37
MG43543	0.090	39	4.0	2.8	-37
MG43544	0.094	44	4.5	2.9	-41
MG43545	0.105	41	4.2	3.2	-38
MG43546	0.128	39	3.9	3.9	-35

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43547	0.120	38	3.9	3.7	-34
MG43548	0.129	37	3.8	4.0	-33
MG43549	0.143	37	3.8	4.4	-33
MG43550	0.152	37	3.8	4.6	-33
MG43551	0.156	36	3.7	4.8	-31
MG43552	0.151	40	4.1	4.6	-35

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43553	0.127	37	3.8	3.9	-33
MG43554	0.124	43	4.4	3.8	-39
MG43555	0.096	50	5.1	2.9	-47
MG43556	0.095	55	5.6	2.9	-52
MG43486	0.083	27	2.8	2.5	-25
MG43561	0.287	74	7.5	8.8	-65
MG43562	0.286	49	5.0	8.7	-41

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43478	6.7	2	8.7	200	-
MG43479	6.7	3	9.1	150	-
MG43480	7.3	0	9.2	160	-
MG43481	7.4	0	8.9	170	-
MG43482	7.3	0	8.9	170	120
MG43483	7.4	0	9.1	200	-
MG43484	7.2	0	9.2	220	-
MG43485	7.2	0	9.4	230	-
MG43486	7.4	0	9.4	230	-

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43487	6.8	1	9.5	250	160
MG43488	7.6	0	9.2	260	-
MG43489	7.4	0	9.4	300	-
MG43490	7.2	0	9.7	280	-
MG43491	7.1	0	9.5	260	-
MG43492	7.1	0	9.6	320	200

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43493	7.2	0	9.6	250	-
MG43494	7.3	0	9.6	280	-
MG43495	7.2	0	9.6	290	-
MG43496	7.0	0	9.6	260	-
MG43497	7.2	0	9.5	280	190
MG43498	7.2	0	9.6	290	-
MG43499	7.2	0	9.6	280	-
MG43500	6.2	29	9.6	320	-
MG43531	6.3	22	9.5	320	-

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43532	6.3	22	9.5	300	200
MG43533	6.3	22	9.5	330	-
MG43534	6.2	31	9.3	290	-
MG43535	6.5	21	9.4	270	-
MG43536	6.5	17	9.3	370	-
MG43537	6.3	26	9.3	360	210

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43538	6.5	15	9.3	400	-
MG43539	6.6	14	9.2	410	-
MG43540	6.4	21	9.2	380	-
MG43541	6.8	2	9.2	390	-
MG43542	6.7	3	9.3	370	220
MG43543	6.2	25	9.2	420	-
MG43544	6.3	22	9.2	430	-
MG43545	6.3	22	9.3	350	-
MG43546	6.2	28	9.4	290	-

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43547	6.2	26	9.5	280	170
MG43548	6.3	24	9.5	300	-
MG43549	6.2	26	9.5	280	-
MG43550	6.3	22	9.5	280	-
MG43551	7.1	0	9.5	270	-
MG43552	6.5	7	9.5	270	170

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43553	7.4	0	9.4	260	-
MG43554	7.0	0	9.4	260	-
MG43555	7.2	0	9.5	290	-
MG43556	6.8	2	9.6	270	-
MG43486	6.7	3	9.2	230	150
MG43561	7.4	0	-	-	-
MG43562	7.5	0	-	-	-

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43478	-
MG43479	-
MG43480	-
MG43481	-
MG43482	9.2
MG43483	-
MG43484	-
MG43485	-
MG43486	-

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43487	9.7
MG43488	-
MG43489	-
MG43490	-
MG43491	-
MG43492	9.9

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43493	-
MG43494	-
MG43495	-
MG43496	-
MG43497	9.9
MG43498	-
MG43499	-
MG43500	-
MG43531	-

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43532	9.8
MG43533	-
MG43534	-
MG43535	-
MG43536	-
MG43537	9.7

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43538	-
MG43539	-
MG43540	-
MG43541	-
MG43542	9.7
MG43543	-
MG43544	-
MG43545	-
MG43546	-

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43547	9.8
MG43548	-
MG43549	-
MG43550	-
MG43551	-
MG43552	9.8

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 06-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

Sample ID	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43553	-
MG43554	-
MG43555	-
MG43556	-
MG43486	9.5
MG43561	-
MG43562	-

Date Start/End Analysis (19/12/2023 - 12/4/2024)

* - Denotes non accredited tests

REMARKS:
NAG pH for blank range 5.3 to 5.8

ANALYSIS REPORT

WP23-12540

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 15-Sep-2023
Completed: 12/04/2024
Job Number: WP23-12540
Report Number: 0000028018
Order Reference: MGL_2023_163 AMD

APPLIED METHODS:

ESO_CSA06V: Total sulphur/carbon, LECO Method: SGS Global method
ESO_NEPM103_1_2: Paste pH in soil: NEPM103 1:2 extraction
ESO_CLA48V: Determination of ANC, TAP and NAPP of Soils/Rocks: SGS inhouse method
ESO_RINSEPH: Rinse pH in AMD crush or pulp (1:5): Rinse pH
ESO_CLA49V: Net Acid Generation Test: SGS Global method

Signed and dated on 12-Apr-2024

Nick LEES
Operations Manager

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ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43563	<0.005	0.12	11	1.1	<0.15
MG43564	0.008	0.24	22	2.3	0.26
MG43565	0.035	0.31	23	2.3	1.1
MG43566	0.085	0.39	25	2.5	2.6
MG43567	0.098	0.43	27	2.8	3.0
MG43568	0.114	0.40	28	2.8	3.5
MG43569	0.123	0.39	27	2.8	3.7
MG43570	0.083	0.44	29	3.0	2.5
MG43571	0.044	0.53	35	3.6	1.4

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43572	0.068	0.53	34	3.4	2.1
MG43573	0.073	0.51	34	3.5	2.2
MG43574	0.084	0.54	33	3.4	2.6
MG43575	0.055	0.45	30	3.1	1.7
MG43576	0.044	0.36	21	2.2	1.3
MG43577	0.071	0.38	23	2.4	2.2

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43578	0.078	0.54	31	3.1	2.4
MG43579	0.085	0.51	31	3.2	2.6
MG43580	0.082	0.49	35	3.5	2.5
MG43581	0.081	0.59	37	3.8	2.5
MG43582	0.129	0.92	56	5.7	3.9
MG43583	0.281	0.59	50	5.1	8.6
MG43584	0.071	1.88	86	8.8	2.2
MG43585	0.057	2.07	89	9.1	1.8
MG43586	0.083	1.74	84	8.6	2.5

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43587	0.094	0.68	37	3.7	2.9
MG43588	0.116	0.49	34	3.4	3.5
MG43589	0.152	0.46	30	3.1	4.6
MG43590	0.138	0.44	25	2.5	4.2
MG43591	0.143	0.48	24	2.4	4.4
MG43592	0.101	0.42	21	2.1	3.1

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43593	0.114	0.34	24	2.4	3.5
MG43594	0.114	0.34	21	2.1	3.5
MG43595	0.064	0.34	22	2.2	1.9
MG43596	0.069	0.34	22	2.3	2.1
MG43597	0.075	0.67	48	4.9	2.3
MG43598	0.093	0.87	65	6.6	2.8
MG43599	0.094	0.64	51	5.2	2.9
MG43600	0.185	0.62	49	5.0	5.7
MG43601	0.134	0.56	45	4.6	4.1

ANALYSIS REPORT

WP23-12606

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Attention:

Received: 21-Sep-2023
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Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43602	0.161	0.57	44	4.5	4.9
MG43603	0.075	0.45	38	3.9	2.3
MG43604	0.163	0.58	45	4.6	5.0
MG43605	0.180	0.61	44	4.5	5.5
MG43606	0.187	0.56	38	3.9	5.7
MG43607	0.162	0.59	44	4.5	5.0

ANALYSIS REPORT

WP23-12606

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Attention:

Received: 21-Sep-2023
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Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43608	0.113	1.09	85	8.6	3.4
MG43609	0.076	1.20	94	9.6	2.3
MG43610	0.111	0.82	64	6.6	3.4
MG43611	0.140	0.66	51	5.2	4.3
MG43612	0.148	0.66	47	4.8	4.5
MG43613	0.140	0.75	53	5.4	4.3
MG43614	0.133	0.63	40	4.1	4.1
MG43615	0.134	0.73	45	4.6	4.1
MG43571	0.044	0.53	34	3.5	1.4

ANALYSIS REPORT

WP23-12606

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Attention:

Received: 21-Sep-2023
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Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00
MG43563	-10	6.4	9	8.7	220
MG43564	-22	7.1	0	9.4	230
MG43565	-22	6.8	2	9.6	250
MG43566	-22	7.3	0	9.7	260
MG43567	-24	7.2	0	9.7	270
MG43568	-24	7.2	0	9.7	270
MG43569	-24	7.1	0	9.8	270
MG43570	-27	7.3	0	9.7	270
MG43571	-34	7.4	0	9.7	270

ANALYSIS REPORT

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Order Reference: MGL_2023_172 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00
MG43572	-32	7.2	0	9.7	280
MG43573	-32	7.2	0	9.7	250
MG43574	-31	7.1	0	9.7	270
MG43575	-28	7.1	0	9.8	260
MG43576	-20	7.1	0	9.7	260
MG43577	-21	6.8	1	9.7	250

ANALYSIS REPORT

WP23-12606

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Attention:

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Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00
MG43578	-28	7.2	0	9.6	270
MG43579	-29	7.1	0	9.6	290
MG43580	-32	7.1	0	9.7	300
MG43581	-34	7.3	0	9.6	300
MG43582	-52	7.5	0	9.4	320
MG43583	-42	8.5	0	-	-
MG43584	-84	7.8	0	9.4	320
MG43585	-87	8.0	0	9.4	350
MG43586	-82	7.6	0	9.3	360

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
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Attention:

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Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00
MG43587	-34	7.2	0	9.5	310
MG43588	-30	7.2	0	9.5	290
MG43589	-26	7.1	0	9.4	330
MG43590	-21	7.2	0	9.5	330
MG43591	-19	7.2	0	9.5	410
MG43592	-17	6.8	2	9.5	300

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
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Attention:

Received: 21-Sep-2023
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Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00
MG43593	-20	6.8	1	9.5	290
MG43594	-17	6.8	1	9.6	280
MG43595	-20	7.1	0	9.7	280
MG43596	-20	7.1	0	9.6	270
MG43597	-45	7.5	0	9.5	270
MG43598	-62	7.4	0	9.5	260
MG43599	-48	7.4	0	9.6	280
MG43600	-43	7.4	0	9.6	280
MG43601	-41	7.3	0	9.6	310

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00
MG43602	-40	7.2	0	9.5	280
MG43603	-36	7.3	0	-	-
MG43604	-40	7.2	0	9.6	280
MG43605	-39	7.3	0	9.5	280
MG43606	-33	7.1	0	9.5	300
MG43607	-39	7.3	0	9.6	270

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00
MG43608	-81	7.7	0	9.5	250
MG43609	-92	7.6	0	9.4	250
MG43610	-61	7.3	0	9.5	280
MG43611	-47	7.3	0	9.5	260
MG43612	-42	7.3	0	9.6	300
MG43613	-49	7.3	0	9.5	290
MG43614	-36	7.3	0	9.6	290
MG43615	-41	7.3	0	9.4	280
MG43571	-33	7.4	0	9.6	270

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43563	150	9.2
MG43564	-	-
MG43565	-	-
MG43566	-	-
MG43567	-	-
MG43568	200	10.1
MG43569	-	-
MG43570	-	-
MG43571	-	-

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43572	-	-
MG43573	-	-
MG43574	200	10.0
MG43575	-	-
MG43576	-	-
MG43577	-	-

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43578	200	10.1
MG43579	-	-
MG43580	-	-
MG43581	-	-
MG43582	220	10.0
MG43583	-	-
MG43584	-	-
MG43585	-	-
MG43586	-	-

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43587	-	-
MG43588	200	10.1
MG43589	-	-
MG43590	-	-
MG43591	-	-
MG43592	-	-

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43593	-	-
MG43594	-	-
MG43595	190	10.1
MG43596	-	-
MG43597	-	-
MG43598	-	-
MG43599	200	10.1
MG43600	-	-
MG43601	-	-

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43602	-	-
MG43603	-	-
MG43604	-	-
MG43605	-	-
MG43606	-	-
MG43607	200	10.0

ANALYSIS REPORT

WP23-12606

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 09/04/2024
Job Number: WP23-12606
Report Number: 0000027940
Order Reference: MGL_2023_172 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43608	-	-
MG43609	-	-
MG43610	-	-
MG43611	-	-
MG43612	-	-
MG43613	-	-
MG43614	-	-
MG43615	-	-
MG43571	190	10.1

ANALYSIS REPORT

WP23-12606

Client:	Matakanui Gold Limited PO Box 11 Hokitika 7842 NEW ZEALAND Attention:	**Received:** **Completed:** **Job Number:** **Report Number:** **Order Reference:**	21-Sep-2023 09/04/2024 WP23-12606 0000027940 MGL_2023_172 AMD

Date Start/End Analysis (20/12/2023 - 9/4/2024)

* - Denotes non accredited tests

REMARKS:

NAG blank pH range from 5.3 to 6.9

APPLIED METHODS:

ESO_CSA06V: Total sulphur/carbon, LECO Method: SGS Global method

ESO_CLA48V: Determination of ANC, TAP and NAPP of Soils/Rocks: SGS inhouse method

ESO_CLA49V: Net Acid Generation Test: SGS Global method

ESO_NEPM103_1_2: Paste pH in soil: NEPM103 1:2 extraction

ESO_RINSEPH: Rinse pH in AMD crush or pulp (1:5): Rinse pH



Signed and dated on 09-Apr-2024

Nick LEES
Operations Manager

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ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43660	<0.005	0.35	14	1.4	<0.15
MG43661	0.009	0.25	18	1.8	0.28
MG43662	0.006	0.31	19	2.0	0.18
MG43663	0.014	0.42	25	2.5	0.43
MG43664	0.033	0.47	33	3.4	1.0
MG43665	0.047	0.47	27	2.8	1.4
MG43666	0.043	0.54	26	2.6	1.3
MG43667	0.057	0.47	29	2.9	1.7
MG43668	0.058	0.41	23	2.3	1.8

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43669	0.060	0.41	24	2.4	1.8
MG43670	0.277	1.08	75	7.6	8.5
MG43671	0.057	0.41	29	2.9	1.8
MG43672	0.055	0.45	33	3.3	1.7
MG43673	0.065	0.44	29	2.9	2.0
MG43674	0.061	0.48	38	3.9	1.9

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43675	0.075	0.44	32	3.2	2.3
MG43676	0.087	0.43	29	3.0	2.7
MG43677	0.068	0.44	32	3.2	2.1
MG43678	0.065	0.46	32	3.3	2.0
MG43679	0.082	0.54	44	4.5	2.5
MG43680	0.090	0.49	37	3.8	2.8
MG43681	0.276	0.60	51	5.2	8.4
MG43682	0.110	0.43	29	3.0	3.4
MG43683	0.108	0.48	34	3.5	3.3

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
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Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43684	0.104	0.56	38	3.8	3.2
MG43685	0.098	0.54	37	3.8	3.0
MG43686	0.081	0.56	40	4.1	2.5
MG43687	0.081	0.60	42	4.3	2.5
MG43688	0.098	0.57	40	4.0	3.0
MG43689	0.093	0.67	48	4.9	2.8

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43690	0.148	0.72	52	5.3	4.5
MG43691	0.184	0.70	47	4.8	5.6
MG43668	0.055	0.43	24	2.4	1.7

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG43660	-14	6.2	9	8.4	220
MG43661	-18	7.0	0	8.9	180
MG43662	-19	6.6	4	8.9	190
MG43663	-24	7.3	0	9.1	250
MG43664	-32	7.4	0	9.2	280
MG43665	-26	7.1	0	9.2	280
MG43666	-25	7.2	0	9.0	280
MG43667	-27	7.4	0	9.4	270
MG43668	-21	7.2	0	9.5	270

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG43669	-22	7.1	0	9.4	280
MG43670	-66	7.7	0	-	-
MG43671	-27	7.0	0	9.5	240
MG43672	-31	7.2	0	9.5	220
MG43673	-27	7.0	0	9.4	210
MG43674	-36	7.2	0	9.5	220

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG43675	-29	7.2	0	9.4	220
MG43676	-27	7.0	0	9.5	210
MG43677	-30	7.1	0	9.4	190
MG43678	-30	7.0	0	9.3	190
MG43679	-42	7.4	0	9.2	240
MG43680	-34	7.3	0	9.4	220
MG43681	-42	9.1	0	-	-
MG43682	-26	7.1	0	9.4	220
MG43683	-31	7.1	0	9.4	230

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG43684	-34	7.1	0	9.2	230
MG43685	-34	7.3	0	9.2	250
MG43686	-37	7.3	0	9.3	240
MG43687	-39	7.1	0	9.2	230
MG43688	-37	7.2	0	9.3	240
MG43689	-45	7.3	0	9.3	250

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	EWAEC_APHA2510 Conductivity µS/cm LOR 2.00
MG43690	-47	7.2	0	9.2	270
MG43691	-41	7.2	0	9.3	260
MG43668	-22	7.3	0	9.4	290

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43660	-	-
MG43661	-	-
MG43662	-	-
MG43663	-	-
MG43664	170	9.6
MG43665	-	-
MG43666	-	-
MG43667	-	-
MG43668	-	-

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43669	180	9.8
MG43670	-	-
MG43671	-	-
MG43672	-	-
MG43673	-	-
MG43674	140	9.9

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43675	-	-
MG43676	-	-
MG43677	-	-
MG43678	-	-
MG43679	140	9.7
MG43680	-	-
MG43681	-	-
MG43682	-	-
MG43683	-	-

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43684	140	9.7
MG43685	-	-
MG43686	-	-
MG43687	-	-
MG43688	-	-
MG43689	160	9.8

ANALYSIS REPORT

WP23-12607

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 21-Sep-2023
Completed: 03/04/2024
Job Number: WP23-12607
Report Number: 0000027846
Order Reference: MGL_2023_175 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43690	-	-
MG43691	-	-
MG43668	-	-

Date Start/End Analysis (20/12/2023 - 3/4/2024)

* - Denotes non accredited tests

REMARKS:
NAG pH range from 5.9 to 6.2

APPLIED METHODS:

ESO_CSA06V: Total sulphur/carbon, LECO Method: SGS Global method
ESO_NEPM103_1_2: Paste pH in soil: NEPM103 1:2 extraction
ESO_CLA48V: Determination of ANC, TAP and NAPP of Soils/Rocks: SGS inhouse method
EWAEC_APHA2510: Conductivity and TDS by Calculation - Water: APHA 2510 SGS Westport
ESO_CLA49V: Net Acid Generation Test: SGS Global method
ESO_RINSEPH: Rinse pH in AMD crush or pulp (1:5): Rinse pH

ANALYSIS REPORT

WP23-12607

Client:	Matakanui Gold Limited PO Box 11 Hokitika 7842 NEW ZEALAND Attention:	**Received:** **Completed:** **Job Number:** **Report Number:** **Order Reference:**	21-Sep-2023 03/04/2024 WP23-12607 0000027846 MGL_2023_175 AMD



Signed and dated on 03-Apr-2024

Nick LEES
Operations Manager

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ANALYSIS REPORT

WP23-12688

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 28-Sep-2023
Completed: 05/04/2024
Job Number: WP23-12688
Report Number: 0000027894
Order Reference: MGL_2023_178 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43616	<0.005	9	0.9	<0.15	-9
MG43617	<0.005	12	1.2	<0.15	-12
MG43618	0.010	26	2.7	0.32	-26
MG43619	0.052	42	4.3	1.6	-41
MG43620	0.042	26	2.7	1.3	-25
MG43621	0.056	22	2.3	1.7	-20
MG43622	0.073	16	1.6	2.2	-14
MG43623	0.075	22	2.3	2.3	-20
MG43624	0.070	29	2.9	2.1	-27

ANALYSIS REPORT

WP23-12688

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 28-Sep-2023
Completed: 05/04/2024
Job Number: WP23-12688
Report Number: 0000027894
Order Reference: MGL_2023_178 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43625	0.108	30	3.1	3.3	-27
MG43626	0.076	21	2.1	2.3	-18
MG43627	0.072	32	3.2	2.2	-29
MG43628	0.088	25	2.5	2.7	-22
MG43629	0.095	34	3.5	2.9	-31
MG43630	0.078	33	3.4	2.4	-31

ANALYSIS REPORT

WP23-12688

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 28-Sep-2023
Completed: 05/04/2024
Job Number: WP23-12688
Report Number: 0000027894
Order Reference: MGL_2023_178 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43631	0.084	31	3.2	2.6	-29
MG43632	0.096	25	2.5	2.9	-22
MG43633	0.104	32	3.2	3.2	-28
MG43634	0.122	24	2.5	3.7	-21
MG43635	0.148	25	2.6	4.5	-21
MG43636	0.197	0	0.0	6.0	6
MG43637	0.167	27	2.7	5.1	-22
MG43638	0.146	36	3.7	4.5	-32
MG43639	0.127	64	6.5	3.9	-60

ANALYSIS REPORT

WP23-12688

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 28-Sep-2023
Completed: 05/04/2024
Job Number: WP23-12688
Report Number: 0000027894
Order Reference: MGL_2023_178 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43640	0.121	56	5.7	3.7	-52
MG43641	0.117	44	4.5	3.6	-41
MG43642	0.139	43	4.4	4.3	-39
MG43643	0.118	36	3.7	3.6	-33
MG43644	0.123	38	3.8	3.8	-34
MG43645	0.132	47	4.7	4.0	-43

ANALYSIS REPORT

WP23-12688

Client: Matakanui Gold Limited
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Attention:

Received: 28-Sep-2023
Completed: 05/04/2024
Job Number: WP23-12688
Report Number: 0000027894
Order Reference: MGL_2023_178 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43646	0.123	48	4.9	3.8	-44
MG43647	0.098	41	4.2	3.0	-38
MG43648	0.087	36	3.7	2.7	-33
MG43649	0.134	45	4.6	4.1	-41
MG43650	0.115	45	4.5	3.5	-41
MG43651	0.094	47	4.8	2.9	-44
MG43652	0.113	50	5.1	3.4	-47
MG43653	0.112	51	5.2	3.4	-47
MG43654	0.092	42	4.3	2.8	-40

ANALYSIS REPORT

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Attention:

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Report Number: 0000027894
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	ESO_CSA06V S % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00
MG43655	0.113	44	4.5	3.4	-40
MG43656	0.140	49	5.0	4.3	-45
MG43657	0.082	40	4.0	2.5	-37
MG43658	0.127	46	4.7	3.9	-42
MG43624	0.073	32	3.3	2.2	-30

ANALYSIS REPORT

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Attention:

Received: 28-Sep-2023
Completed: 05/04/2024
Job Number: WP23-12688
Report Number: 0000027894
Order Reference: MGL_2023_178 AMD

Sample ID	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43616	5.4	21	8.3	240	130
MG43617	5.8	17	8.8	220	-
MG43618	6.7	1	9.0	220	-
MG43619	7.2	0	9.2	220	-
MG43620	6.6	6	9.1	200	-
MG43621	6.4	10	9.4	220	-
MG43622	6.1	19	9.3	230	-
MG43623	6.8	1	9.3	260	-
MG43624	6.7	2	9.5	270	180

ANALYSIS REPORT

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Attention:

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	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43625	6.8	2	9.6	220	-
MG43626	7.0	0	9.8	210	-
MG43627	6.7	4	9.9	240	-
MG43628	6.7	4	9.7	220	-
MG43629	6.7	5	9.8	220	-
MG43630	7.0	0	9.6	270	-

ANALYSIS REPORT

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Report Number: 0000027894
Order Reference: MGL_2023_178 AMD

Sample ID	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T LOR 2.00	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43631	7.3	0	9.6	270	180
MG43632	6.7	3	9.5	270	-
MG43633	7.2	0	9.4	260	-
MG43634	7.4	0	9.4	280	-
MG43635	7.0	0	9.4	290	-
MG43636	3.9	6	-	-	-
MG43637	7.4	0	9.4	310	200
MG43638	7.6	0	9.2	300	-
MG43639	7.7	0	9.2	290	-

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	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43640	7.8	0	9.5	290	-
MG43641	7.7	0	9.4	300	-
MG43642	7.4	0	9.4	300	-
MG43643	7.1	0	9.4	260	160
MG43644	7.2	0	9.7	250	-
MG43645	7.4	0	9.7	240	-

ANALYSIS REPORT

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Order Reference: MGL_2023_178 AMD

Sample ID	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T LOR 2.00	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43646	7.3	0	9.7	260	-
MG43647	7.4	0	9.4	250	-
MG43648	7.2	0	9.2	260	-
MG43649	7.3	0	9.4	280	-
MG43650	7.4	0	9.4	270	-
MG43651	7.3	0	9.4	270	-
MG43652	7.7	0	9.4	270	-
MG43653	7.4	0	9.5	270	180
MG43654	7.4	0	9.0	270	-

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	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) µS/cm LOR 2.00	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00
MG43655	7.3	0	9.2	270	-
MG43656	7.3	0	9.5	260	-
MG43657	7.4	0	-	-	-
MG43658	7.4	0	9.2	290	-
MG43624	7.3	0	9.4	270	180

ANALYSIS REPORT

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Sample ID	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43616	8.9
MG43617	-
MG43618	-
MG43619	-
MG43620	-
MG43621	-
MG43622	-
MG43623	-
MG43624	9.9

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Order Reference: MGL_2023_178 AMD

	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43625	-
MG43626	-
MG43627	-
MG43628	-
MG43629	-
MG43630	-

ANALYSIS REPORT

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Report Number: 0000027894
Order Reference: MGL_2023_178 AMD

Sample ID	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43631	9.9
MG43632	-
MG43633	-
MG43634	-
MG43635	-
MG43636	-
MG43637	9.8
MG43638	-
MG43639	-

ANALYSIS REPORT

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	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43640	-
MG43641	-
MG43642	-
MG43643	9.8
MG43644	-
MG43645	-

ANALYSIS REPORT

WP23-12688

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Attention:

Received: 28-Sep-2023
Completed: 05/04/2024
Job Number: WP23-12688
Report Number: 0000027894
Order Reference: MGL_2023_178 AMD

Sample ID	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43646	-
MG43647	-
MG43648	-
MG43649	-
MG43650	-
MG43651	-
MG43652	-
MG43653	9.9
MG43654	-

ANALYSIS REPORT

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Order Reference: MGL_2023_178 AMD

	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43655	-
MG43656	-
MG43657	-
MG43658	-
MG43624	9.9

Date Start/End Analysis (20/12/2023 - 5/4/2024)

* - Denotes non accredited tests

REMARKS:
NAG Blank pH range from 5.4 to 6.3

APPLIED METHODS:

ESO_CSA06V: Total sulphur/carbon, LECO Method: SGS Global method
ESO_NEPM103_1_2: Paste pH in soil: NEPM103 1:2 extraction
ESO_CLA48V: Determination of ANC, TAP and NAPP of Soils/Rocks: SGS inhouse method
ESO_RINSEPH: Rinse pH in AMD crush or pulp (1:5): Rinse pH
ESO_CLA49V: Net Acid Generation Test: SGS Global method

ANALYSIS REPORT

WP23-12688

Client:	Matakanui Gold Limited PO Box 11 Hokitika 7842 NEW ZEALAND Attention:	**Received:** **Completed:** **Job Number:** **Report Number:** **Order Reference:**	28-Sep-2023 05/04/2024 WP23-12688 0000027894 MGL_2023_178 AMD



Signed and dated on 05-Apr-2024

Nick LEES
Operations Manager

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ANALYSIS REPORT

WP23-12976

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43702	<0.005	0.22	16	1.6	<0.15
MG43703	<0.005	0.29	22	2.3	<0.15
MG43704	0.008	0.26	19	2.0	0.26
MG43705	0.014	0.34	23	2.3	0.44
MG43706	0.028	0.44	30	3.1	0.84
MG43707	0.029	0.44	29	3.0	0.89
MG43708	0.051	0.55	35	3.6	1.6
MG43709	0.047	0.57	36	3.6	1.5
MG43710	0.044	0.73	34	3.5	1.3

ANALYSIS REPORT

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Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43711	0.061	0.94	56	5.7	1.9
MG43712	0.062	0.78	46	4.7	1.9
MG43713	0.106	0.57	35	3.6	3.2
MG43714	0.284	0.59	51	5.2	8.7
MG43715	0.093	0.58	33	3.4	2.8
MG43716	0.105	0.44	27	2.8	3.2

ANALYSIS REPORT

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Order Reference: MGL_2023_231 AMD

Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43717	0.085	0.46	26	2.7	2.6
MG43718	0.105	0.39	23	2.3	3.2
MG43719	0.090	0.41	25	2.5	2.7
MG43720	0.121	0.40	25	2.6	3.7
MG43721	0.113	0.34	22	2.3	3.4
MG43722	0.100	0.34	24	2.4	3.0
MG43723	0.091	0.34	22	2.2	2.8
MG43724	0.106	0.31	19	2.0	3.2
MG43725	0.110	0.34	22	2.3	3.4

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	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43726	0.092	0.34	21	2.1	2.8
MG43727	0.084	0.33	18	1.9	2.6
MG43728	0.059	0.35	20	2.0	1.8
MG43729	0.057	0.34	19	1.9	1.7
MG43730	0.066	0.38	23	2.3	2.0
MG43731	0.102	0.47	35	3.5	3.1

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Sample ID	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43732	0.096	0.50	33	3.4	2.9
MG43733	0.104	0.48	34	3.5	3.2
MG43734	0.363	0.07	1	0.1	11
MG43735	0.129	0.52	39	4.0	3.9
MG43736	0.131	0.55	41	4.2	4.0
MG43737	0.123	0.55	39	4.0	3.8
MG43738	0.158	0.68	47	4.8	4.8
MG43739	0.182	0.60	41	4.1	5.6
MG43740	0.172	0.63	43	4.4	5.3

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	ESO_CSA06V S % LOR 0.01	ESO_CSA06V C % LOR 0.01	ESO_CLA48V ANC H2SO4 KGH2SO4/T LOR -1,000.00	ESO_CLA48V ANC CaCO3 % LOR -100.00	ESO_CLA48V TAP KGH2SO4/T LOR 0.15
MG43741	0.236	0.67	42	4.3	7.2
MG43742	0.179	0.68	47	4.8	5.5
MG43743	0.116	0.67	50	5.1	3.6
MG43710	0.043	0.76	36	3.7	1.3

ANALYSIS REPORT

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Attention:

Received: 30-Nov-2023
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Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43702	-15	6.6	47	8.8	180
MG43703	-22	6.7	36	9.0	190
MG43704	-19	6.8	1	9.2	150
MG43705	-22	6.7	2	9.1	160
MG43706	-29	6.8	1	9.5	180
MG43707	-28	6.7	3	9.4	190
MG43708	-34	7.0	0	9.5	210
MG43709	-34	7.0	0	9.5	220
MG43710	-33	7.5	0	9.5	350

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	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43711	-54	7.2	0	9.4	280
MG43712	-44	7.0	0	9.5	250
MG43713	-32	7.4	0	9.5	220
MG43714	-43	7.6	0	-	-
MG43715	-31	7.0	0	9.5	250
MG43716	-24	6.8	1	9.7	230

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Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43717	-24	6.8	0	9.6	210
MG43718	-19	6.6	0	9.7	210
MG43719	-22	7.0	0	9.6	210
MG43720	-21	7.1	0	9.7	220
MG43721	-19	6.7	1	9.8	200
MG43722	-21	6.5	4	9.7	220
MG43723	-19	6.6	3	9.7	210
MG43724	-16	6.5	4	9.8	230
MG43725	-19	7.0	0	9.7	210

ANALYSIS REPORT

WP23-12976

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43726	-18	7.1	0	9.8	230
MG43727	-16	6.6	3	9.7	210
MG43728	-18	6.8	2	9.8	200
MG43729	-17	7.2	0	9.8	220
MG43730	-21	7.1	0	9.8	220
MG43731	-32	7.2	0	9.8	240

ANALYSIS REPORT

WP23-12976

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

Sample ID	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43732	-30	7.2	0	9.8	230
MG43733	-31	7.2	0	9.8	240
MG43734	10	4.8	7	-	-
MG43735	-35	7.1	0	9.8	220
MG43736	-37	7.1	0	9.8	240
MG43737	-35	7.1	0	9.8	220
MG43738	-42	7.2	0	9.7	210
MG43739	-35	7.1	0	9.7	230
MG43740	-38	7.1	0	9.7	240

ANALYSIS REPORT

WP23-12976

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

	ESO_CLA48V NAPP KGH2SO4/T LOR -1,000.00	ESO_CLA49V NAG pH pH unit LOR 2.00	ESO_CLA49V NAG KGH2SO4/T	ESO_NEPM103_1_2 pH 1:2 aged pH unit LOR 2.00	ESO_NEPM103_1_2 Cond (1:2) aged µS/cm LOR 2.00
MG43741	-35	7.1	0	9.7	240
MG43742	-41	7.1	0	9.8	240
MG43743	-46	7.3	0	9.7	240
MG43710	-34	7.4	0	9.5	350

ANALYSIS REPORT

WP23-12976

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43702	100	9.1
MG43703	-	-
MG43704	-	-
MG43705	-	-
MG43706	-	-
MG43707	-	-
MG43708	-	-
MG43709	-	-
MG43710	210	9.9

ANALYSIS REPORT

WP23-12976

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Attention:

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Job Number: WP23-12976
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Order Reference: MGL_2023_231 AMD

	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43711	-	-
MG43712	-	-
MG43713	-	-
MG43714	-	-
MG43715	-	-
MG43716	-	-

ANALYSIS REPORT

WP23-12976

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43717	-	-
MG43718	150	10.0
MG43719	-	-
MG43720	-	-
MG43721	160	10.1
MG43722	-	-
MG43723	-	-
MG43724	-	-
MG43725	-	-

ANALYSIS REPORT

WP23-12976

Client: Matakanui Gold Limited
PO Box 11

Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43726	-	-
MG43727	-	-
MG43728	-	-
MG43729	-	-
MG43730	-	-
MG43731	150	10.1

ANALYSIS REPORT

WP23-12976

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

Sample ID	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43732	-	-
MG43733	-	-
MG43734	-	-
MG43735	-	-
MG43736	-	-
MG43737	-	-
MG43738	-	-
MG43739	-	-
MG43740	-	-

ANALYSIS REPORT

WP23-12976

Client: Matakanui Gold Limited
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Hokitika 7842 NEW ZEALAND
Attention:

Received: 30-Nov-2023
Completed: 10/04/2024
Job Number: WP23-12976
Report Number: 0000027942
Order Reference: MGL_2023_231 AMD

	ESO_RINSEPH Cond (1:5) µS/cm LOR 2.00	ESO_RINSEPH Rinse pH 1:5 pH unit LOR 2.00
MG43741	170	10.0
MG43742	-	-
MG43743	-	-
MG43710	240	9.9

Date Start/End Analysis (19/2/2024 - 10/4/2024)

* - Denotes non accredited tests

REMARKS:
NAG Blank pH rangr from 5.4 to 6.2

APPLIED METHODS:

ESO_CSA06V: Total sulphur/carbon, LECO Method: SGS Global method
ESO_NEPM103_1_2: Paste pH in soil: NEPM103 1:2 extraction
ESO_CLA48V: Determination of ANC, TAP and NAPP of Soils/Rocks: SGS inhouse method
ESO_RINSEPH: Rinse pH in AMD crush or pulp (1:5): Rinse pH
ESO_CLA49V: Net Acid Generation Test: SGS Global method

ANALYSIS REPORT

WP23-12976

Client:	Matakanui Gold Limited PO Box 11 Hokitika 7842 NEW ZEALAND Attention:	**Received:** **Completed:** **Job Number:** **Report Number:** **Order Reference:**	30-Nov-2023 10/04/2024 WP23-12976 0000027942 MGL_2023_231 AMD



Signed and dated on 10-Apr-2024

Nick LEES
Operations Manager

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HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD023R	MG11778	RSSZ			QAQC_DUP	MG19002-80	0.89	0.1	0.99	MGL_2022_80			44680	MG11778					2090				10665	
MDD023R	MG11779	RSSZ			QAQC_DUP	MG19004-80	0.35	0.03	0.38	MGL_2022_80			44680	MG11779					730				10532	
MDD023R	MG11780	RSSZ			QAQC_DUP	MG19006-80	0.35	0.05	0.4	MGL_2022_80			44680	MG11780					1719				10224	
MDD023R	MG11781	RSSZ			QAQC_DUP	MG19008-80	0.47	0.06	0.53	MGL_2022_80			44680	MG11781					1736				10239	
MDD023R	MG11782	RSSZ			QAQC_DUP	MG19010-80	0.26	0.03	0.29	MGL_2022_80			44680	MG11782					38.5				10671	
MDD023R	MG11783	RSSZ			QAQC_DUP	MG19012-80	0.15	0.04	0.19	MGL_2022_80			44680	MG11783					1363				8176	
MDD023R	MG11784	RSSZ			QAQC_DUP	MG19014-80	1.04	0.1	1.14	MGL_2022_80			44680	MG11784					630				9801	
MDD023R	MG11785	RSSZ			QAQC_DUP	MG19016-80	0.93	0.11	1.04	MGL_2022_80			44680	MG11785					984				15453	
MDD023R	MG11786	RSSZ			QAQC_DUP	MG19018-80	0.76	0.08	0.84	MGL_2022_80			44680	MG11786					1088				8277	
MDD023R	MG11787	RSSZ			QAQC_DUP	MG19020-80	0.18	0.03	0.21	MGL_2022_80			44680	MG11787					637				10645	
MDD023R	MG11792	RSSZ			QAQC_DUP	MG19024-80	0.19	0.03	0.22	MGL_2022_80			44680	MG11792					1097				7261	
MDD023R	MG11793	RSSZ			QAQC_DUP	MG19026-80	0.16	0.06	0.22	MGL_2022_80			44680	MG11793					1700				10795	
MDD023R	MG11794	RSSZ			QAQC_DUP	MG19028-80	0.21	0.05	0.26	MGL_2022_80			44680	MG11794					578				15999	
MDD025R	MG11833	RSSZ			QAQC_DUP	MG19030-80	0.86	1.51	2.37	MGL_2022_80			44680	MG11833					18025			20	5880	
MDD025R	MG11834	RSSZ			QAQC_DUP	MG19032-80	33.5	1.22	34.72	MGL_2022_80			44680	MG11834					13632				9548	
MDD025R	MG11835	RSSZ			QAQC_DUP	MG19034-80	17.95	0.95	18.9	MGL_2022_80			44680	MG11835					10154				12721	
MDD025R	MG11837	RSSZ			QAQC_DUP	MG19038-80	2.72	0.22	2.94	MGL_2022_80			44680	MG11837					5563				11298	
MDD025R	MG11838	RSSZ			QAQC_DUP	MG19040-80	3.38	0.28	3.66	MGL_2022_80			44680	MG11838					6968				12691	
MDD025R	MG11839	RSSZ			QAQC_DUP	MG19042-80	0.67	0.13	0.8	MGL_2022_80			44680	MG11839					5319				11747	
MDD025R	MG11840	RSSZ			QAQC_DUP	MG19044-80	2.55	0.3	2.85	MGL_2022_80			44680	MG11840					6701				9829	
MDD025R	MG11841	RSSZ			QAQC_DUP	MG19046-80	2.48	0.23	2.71	MGL_2022_80			44680	MG11841					4838				10469	
MDD025R	MG11843	RSSZ			QAQC_DUP	MG19050-80	0.4	0.16	0.56	MGL_2022_80			44680	MG11843					7113				12619	
MDD025R	MG11844	RSSZ			QAQC_DUP	MG19052-80	0.7	0.13	0.83	MGL_2022_80			44680	MG11844					4227				13935	
MDD025R	MG11845	RSSZ			QAQC_DUP	MG19054-80	0.23	0.16	0.39	MGL_2022_80			44680	MG11845					3812				13762	
MDD025R	MG11849	RSSZ			QAQC_DUP	MG19056-80	1.87	0.72	2.59	MGL_2022_80			44680	MG11849					21371				15390	
MDD025R	MG11850	RSSZ			QAQC_DUP	MG19058-80	0.06	0.04	0.1	MGL_2022_80			44680	MG11850			14		1209				11600	
MDD019R	MG11217	RSSZ			QAQC_DUP	MG19060	1.75	0.07	1.82	MGL_2022_113			44746	MG11217					496				10790	
MDD019R	MG11285	RSSZ			QAQC_DUP	MG19064	21.7	0.67	22.37	MGL_2022_113			44746	MG11285					4406				13701	
MDD020	MG11375	RSSZ			QAQC_DUP	MG19065	1.13	0.14	1.27	MGL_2022_113			44746	MG11375			12		7142				13819	
MDD020	MG11379	RSSZ			QAQC_DUP	MG19066	1.24	0.08	1.32	MGL_2022_113			44746	MG11379					2897				14490	
MDD020	MG11382	RSSZ			QAQC_DUP	MG19067	0.82	0.04	0.86	MGL_2022_113			44746	MG11382					1478				11528	
MDD022	MG11624	RSSZ			QAQC_DUP	MG19078	9.22	0.44	9.66	MGL_2022_113			44746	MG11624					6619				10243	
MDD022	MG11625	RSSZ			QAQC_DUP	MG19079	0.49	0.18	0.67	MGL_2022_113			44746	MG11625					6121				8401	
MDD022	MG11623	RSSZ			QAQC_DUP	MG19111	2.08	0.31	2.39	MGL_2022_113			44746	MG11623					9088				11544	
MDD022	MG11628	RSSZ			QAQC_DUP	MG19112	2.52	0.18	2.7	MGL_2022_113			44746	MG11628					5593				8031	
MDD022	MG11627	RSSZ			QAQC_DUP	MG19123	3.52	0.29	3.81	MGL_2022_113			44746	MG11627					7995				12882	
MDD022	MG11631	RSSZ			QAQC_DUP	MG19124	2.16	0.17	2.33	MGL_2022_113			44746	MG11631					5925				23036	
MDD024	MG13008	RSSZ			QAQC_DUP	MG19082	1.45	0.24	1.69	MGL_2022_113			44746	MG13008					4941				10270	
MDD024	MG13089	RSSZ			QAQC_DUP	MG19083	1.04	0.05	1.09	MGL_2022_113			44746	MG13089					1132				12598	
MDD026	MG13242	RSSZ			QAQC_DUP	MG19084	9.74	0.39	10.13	MGL_2022_113			44746	MG13242					3684				7995	
MDD026	MG13115	RSSZ			QAQC_DUP	MG19113	0.78	0.1	0.88	MGL_2022_113			44746	MG13115					1171				8895	
MDD027	MG12021	RSSZ			QAQC_DUP	MG19087	1.66	0.09	1.75	MGL_2022_113			44746	MG12021					1058				11068	
MDD027	MG11952	RSSZ			QAQC_DUP	MG19114	12.9	0.85	13.75	MGL_2022_113			44746	MG11952					14814			18	11236	
MDD027	MG11955	RSSZ			QAQC_DUP	MG19115	3.8	0.24	4.04	MGL_2022_113			44746	MG11955					3289				12155	
MDD028	MG13287	RSSZ			QAQC_DUP	MG19089	1.64	0.07	1.71	MGL_2022_113			44746	MG13287					725				7312	
MDD028	MG13288	RSSZ			QAQC_DUP	MG19090	0.57	0.04	0.61	MGL_2022_113			44746	MG13288					753				7337	
MDD028	MG13302	RSSZ			QAQC_DUP	MG19091	0.31	0.09	0.4	MGL_2022_113			44746	MG13302					2292				7895	
MDD028	MG13324	RSSZ			QAQC_DUP	MG19092	1.16	0.17	1.33	MGL_2022_113			44746	MG13324					4374				9385	
MDD028	MG13343	RSSZ			QAQC_DUP	MG19093	0.05	0.01	0.06	MGL_2022_113			44746	MG13343					11				11324	
MDD028	MG13275	RSSZ			QAQC_DUP	MG19116	1.52	0.2	1.72	MGL_2022_113			44746	MG13275					4295				10514	
MDD031	MG12174	RSSZ			QAQC_DUP	MG19094	2.48	0.21	2.69	MGL_2022_113			44746	MG12174					6314				13826	
MDD031	MG12177	RSSZ			QAQC_DUP	MG19095	2.26	0.16	2.42	MGL_2022_113			44746	MG12177					3513				8831	
MDD031	MG12179	RSSZ			QAQC_DUP	MG19096	2.24	0.13	2.37	MGL_2022_113			44746	MG12179					906				7903	
MDD031	MG12180	RSSZ			QAQC_DUP	MG19097	6.51	0.25	6.76	MGL_2022_113			44746	MG12180					2040				10577	
MDD031	MG12184	RSSZ			QAQC_DUP	MG19098	3.27	0.12	3.39	MGL_2022_113			44746	MG12184					706				9327	
MDD031	MG12196	RSSZ			QAQC_DUP	MG19101	1.86	0.63	2.49	MGL_2022_113			44746	MG12196					23154				13113	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD031	MG12199	RSSZ			QAQC_DUP	MG19102	0.86	0.18	1.04	MGL_2022_113			44746	MG12199					4927				9694	
MDD031	MG12208	RSSZ			QAQC_DUP	MG19103	0.42	0.09	0.51	MGL_2022_113			44746	MG12208					3055				12515	
MDD031	MG12228	RSSZ			QAQC_DUP	MG19104	0.19	0.18	0.37	MGL_2022_113			44746	MG12228					5306				16731	
MDD031	MG12176	RSSZ			QAQC_DUP	MG19117	15.4	0.66	16.06	MGL_2022_113			44746	MG12176					10593				12020	
MDD031	MG12195	RSSZ			QAQC_DUP	MG19120	4.99	0.23	5.22	MGL_2022_113			44746	MG12195					4338				7356	
MDD031	MG12192	RSSZ			QAQC_DUP	MG19122	4.26	0.24	4.5	MGL_2022_113			44746	MG12192					1292				8699	
MDD031	MG12185	RSSZ			QAQC_DUP	MG19125	0.29	0.03	0.32	MGL_2022_113			44746	MG12185					1160				8995	
MDD031	MG12187	RSSZ			QAQC_DUP	MG19126	0.62	0.06	0.68	MGL_2022_113			44746	MG12187					1159				8949	
MDD033	MG13604	RSSZ			QAQC_DUP	MG19105	0.9	0.27	1.17	MGL_2022_113			44746	MG13604					10620				18030	
MDD033	MG13605	RSSZ			QAQC_DUP	MG19106	1.5	0.03	1.53	MGL_2022_113			44746	MG13605					8749				15212	
MDD033	MG13610	RSSZ			QAQC_DUP	MG19107	0.05	0.07	0.12	MGL_2022_113			44746	MG13610					1200				10481	
MDD034R	MG15014	RSSZ			QAQC_DUP	MG19108	0.53	0.11	0.64	MGL_2022_113			44746	MG15014					1747				12605	
MDD030R	MG13410	RSSZ			QAQC_DUP	MG19194-131	0.67	0.11	0.78	MGL_2022_131			44777	MG13410					2067				9417	
MDD030R	MG13401	RSSZ			QAQC_DUP	MG19195-131	0.32	0.1	0.42	MGL_2022_131			44777	MG13401					1319				9687	
MDD030R	MG13426	RSSZ			QAQC_DUP	MG19196-131	0.48	0.15	0.63	MGL_2022_131			44777	MG13426					3610				12095	
MDD030R	MG13421	RSSZ			QAQC_DUP	MG19197-131	0.03	0.02	0.05	MGL_2022_131			44777	MG13421					544				11918	
MDD032	MG13518	RSSZ			QAQC_DUP	MG19207-131	6.76	0.53	7.29	MGL_2022_131			44777	MG13518					3180				12078	
MDD032	MG13512	RSSZ			QAQC_DUP	MG19214-131	0.33	0.05	0.38	MGL_2022_131			44777	MG13512					421				13841	
MDD032	MG13509	RSSZ			QAQC_DUP	MG19216-131	0.04	0.18	0.22	MGL_2022_131			44777	MG13509					2631				11151	
MDD034	MG13572	RSSZ			QAQC_DUP	MG19198-131	0.09	0.08	0.17	MGL_2022_131			44777	MG13572			13		4090				10463	
MDD034	MG13568	RSSZ			QAQC_DUP	MG19199-131	0.14	0.05	0.19	MGL_2022_131			44777	MG13568					1722				14407	
MDD034	MG13560	RSSZ			QAQC_DUP	MG19200-131	0.15	0.11	0.26	MGL_2022_131			44777	MG13560					3114				11742	
MDD034	MG13585	RSSZ			QAQC_DUP	MG19201-131	1.08	0.09	1.17	MGL_2022_131			44777	MG13585					1600				10872	
MDD034	MG13584	RSSZ			QAQC_DUP	MG19202-131	0.05	0.02	0.07	MGL_2022_131			44777	MG13584					370				10477	
MDD034	MG13586	RSSZ			QAQC_DUP	MG19203-131	0.11	0.09	0.2	MGL_2022_131			44777	MG13586					3391				12416	
MDD034	MG13558	RSSZ			QAQC_DUP	MG19204-131	0.04	0.11	0.15	MGL_2022_131			44777	MG13558					4843				13332	
MDD034	MG13592	RSSZ			QAQC_DUP	MG19206-131	0.06	0.02	0.08	MGL_2022_131			44777	MG13592					378				9744	
MDD034R	MG15086	RSSZ			QAQC_DUP	MG19217-131	0.11	0.09	0.2	MGL_2022_131			44777	MG15086					2681				13697	
MDD035	MG13719	RSSZ			QAQC_DUP	MG19218-131	1.44	0.11	1.55	MGL_2022_131			44777	MG13719					677				19528	
MDD035	MG13718	RSSZ			QAQC_DUP	MG19219-131	0.47	0.06	0.53	MGL_2022_131			44777	MG13718					917				14131	
MDD036	MG15147	RSSZ			QAQC_DUP	MG19220-131	5.19	0.57	5.76	MGL_2022_131			44777	MG15147					1427				12913	
MDD036	MG15143	RSSZ			QAQC_DUP	MG19221-131	0.55	0.03	0.58	MGL_2022_131			44777	MG15143					339				11319	
MDD036	MG15163	RSSZ			QAQC_DUP	MG19222-131	0.78	0.09	0.87	MGL_2022_131			44777	MG15163					641				14638	
MDD036	MG15129	RSSZ			QAQC_DUP	MG19223-131	0.49	0.04	0.53	MGL_2022_131			44777	MG15129					277				11211	
MDD036	MG15155	RSSZ			QAQC_DUP	MG19224-131	0.27	0.03	0.3	MGL_2022_131			44777	MG15155					168				13733	
MDD037	MG12336	RSSZ			QAQC_DUP	MG19230-131	0.86	0.19	1.05	MGL_2022_131			44777	MG12336					7265				18905	
MDD037	MG12334	RSSZ			QAQC_DUP	MG19231-131	0.3	0.1	0.4	MGL_2022_131			44777	MG12334					2814				12989	
MDD038	MG13807	RSSZ			QAQC_DUP	MG19225-131	0.23	0.03	0.26	MGL_2022_131			44777	MG13807					495				9591	
MDD038	MG13805	RSSZ			QAQC_DUP	MG19226-131	0.15	0.03	0.18	MGL_2022_131			44777	MG13805					765				13426	
MDD038	MG13831	RSSZ			QAQC_DUP	MG19227-131	0.81	0.11	0.92	MGL_2022_131			44777	MG13831					1994				9512	
MDD038	MG13812	RSSZ			QAQC_DUP	MG19228-131	0.02	0.01	0.03	MGL_2022_131			44777	MG13812					45.2				10969	
MDD040	MG13897	RSSZ			QAQC_DUP	MG19233-131	22.2	1.19	23.39	MGL_2022_131			44777	MG13897					4895				10680	
MDD044	MG12544	RSSZ			QAQC_DUP	MG19237-131	25.5	1.15	26.65	MGL_2022_131			44777	MG12544					877				9627	
MDD044	MG12518	RSSZ			QAQC_DUP	MG19238-131	26.7	1.76	28.46	MGL_2022_131			44777	MG12518					7443				11850	
MDD044	MG12553	RSSZ			QAQC_DUP	MG19239-131	10.95	0.57	11.52	MGL_2022_131			44777	MG12553					4636				7961	
MDD044	MG12524	RSSZ			QAQC_DUP	MG19240-131	4.42	0.3	4.72	MGL_2022_131			44777	MG12524					2565				13191	
MDD044	MG12530	RSSZ			QAQC_DUP	MG19241-131	4.21	0.18	4.39	MGL_2022_131			44777	MG12530					409				9749	
MDD044	MG12571	RSSZ			QAQC_DUP	MG19242-131	2.59	0.13	2.72	MGL_2022_131			44777	MG12571					312				10284	
MDD044	MG12520	RSSZ			QAQC_DUP	MG19243-131	2.08	0.16	2.24	MGL_2022_131			44777	MG12520					1829				14144	
MDD044	MG12519	RSSZ			QAQC_DUP	MG19244-131	1.24	0.12	1.36	MGL_2022_131			44777	MG12519					1364				11245	
MDD044	MG12546	RSSZ			QAQC_DUP	MG19245-131	1.65	0.11	1.76	MGL_2022_131			44777	MG12546					1172				10816	
MDD044	MG12577	RSSZ			QAQC_DUP	MG19246-131	2.62	0.16	2.78	MGL_2022_131			44777	MG12577					233				16478	
MDD044	MG12563	RSSZ			QAQC_DUP	MG19247-131	8.2	0.47	8.67	MGL_2022_131			44777	MG12563					1021				11778	
MDD044	MG12539	RSSZ			QAQC_DUP	MG19248-131	0.6	0.04	0.64	MGL_2022_131			44777	MG12539					332				10254	
MDD044	MG12533	RSSZ			QAQC_DUP	MG19249-131	1.16	0.08	1.24	MGL_2022_131			44777	MG12533					927				11041	
MDD044	MG12535	RSSZ			QAQC_DUP	MG19250-131	0.29	0.08	0.37	MGL_2022_131			44777	MG12535					1818				10374	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD044	MG12555	RSSZ			QAQC_DUP	MG19251-131	1.2	0.08	1.28	MGL_2022_131			44777	MG12555					107				10166	
MDD048R	MG15508	RSSZ			QAQC_DUP	MG19252-131	0.8	0.11	0.91	MGL_2022_131			44777	MG15508					1988				11364	
MDD049	MG14110	RSSZ			QAQC_DUP	MG19253-131	2.69	0.19	2.88	MGL_2022_131			44777	MG14110					1713				16283	
MDD049	MG14107	RSSZ			QAQC_DUP	MG19254-131	0.22	0.03	0.25	MGL_2022_131			44777	MG14107					228				10062	
MDD049	MG14104	RSSZ			QAQC_DUP	MG19255-131	0.48	0.12	0.6	MGL_2022_131			44777	MG14104					1774				12638	
MDD037	MG12335	RSSZ			QAQC_DUP	MG19324	0.22	0.06	0.28	MGL_2022_217			44910	MG12335					2725				15576	
MDD041	MG12412	RSSZ			QAQC_DUP	MG19325	2.91	0.74	3.65	MGL_2022_217			44910	MG12412					12836				17103	
MDD041	MG12416	RSSZ			QAQC_DUP	MG19326	0.11	0.08	0.19	MGL_2022_217			44910	MG12416					2935				10818	
MDD041	MG12418	RSSZ			QAQC_DUP	MG19327	0.19	0.12	0.31	MGL_2022_217			44910	MG12418					4163				11983	
MDD041	MG12420	RSSZ			QAQC_DUP	MG19328	1.82	0.15	1.97	MGL_2022_217			44910	MG12420					4717				12769	
MDD041	MG12434	RSSZ			QAQC_DUP	MG19329	0.55	0.13	0.68	MGL_2022_217			44910	MG12434					3885				13227	
MDD042	MG15307	RSSZ			QAQC_DUP	MG19364	0.06	0.11	0.17	MGL_2022_217			44910	MG15307					2812				13247	
MDD042	MG15325	RSSZ			QAQC_DUP	MG19366	0.13	0.03	0.16	MGL_2022_217			44910	MG15325					790				15065	
MDD042	MG15326	RSSZ			QAQC_DUP	MG19367	3.39	0.2	3.59	MGL_2022_217			44910	MG15326					470				8969	
MDD042	MG15327	RSSZ			QAQC_DUP	MG19368	0.78	0.07	0.85	MGL_2022_217			44910	MG15327					350				6976	
MDD044	MG12607	RSSZ			QAQC_DUP	MG19330	2.24	0.24	2.48	MGL_2022_217			44910	MG12607					1101				10335	
MDD044	MG12618	RSSZ			QAQC_DUP	MG19331	0.2	0.02	0.22	MGL_2022_217			44910	MG12618					226				11905	
MDD047	MG12664	RSSZ			QAQC_DUP	MG19332	1.18	0.21	1.39	MGL_2022_217			44910	MG12664					4282				12374	
MDD048R	MG15510	RSSZ			QAQC_DUP	MG19370	2.1	0.22	2.32	MGL_2022_217			44910	MG15510					2941				10101	
MDD048R	MG15516	RSSZ			QAQC_DUP	MG19371	0.07	0.02	0.09	MGL_2022_217			44910	MG15516					583				10148	
MDD048R	MG15520	RSSZ			QAQC_DUP	MG19372	0.44	0.06	0.5	MGL_2022_217			44910	MG15520					850				11537	
MDD048R	MG15553	RSSZ			QAQC_DUP	MG19374	0.79	0.07	0.86	MGL_2022_217			44910	MG15553					591				9929	
MDD048R	MG15559	RSSZ			QAQC_DUP	MG19375	1.74	0.1	1.84	MGL_2022_217			44910	MG15559					679				12365	
MDD049	MG14108	RSSZ			QAQC_DUP	MG19334	0.18	0.07	0.25	MGL_2022_217			44910	MG14108					1522				12375	
MDD050	MG17008	RSSZ			QAQC_DUP	MG19411	0.02	0.01	0.03	MGL_2022_217			44910	MG17008					117				8137	
MDD051	MG15630	RSSZ			QAQC_DUP	MG19377	2.82	0.27	3.09	MGL_2022_217			44910	MG15630					5817				10864	
MDD051	MG15640	RSSZ			QAQC_DUP	MG19378	2.02	0.25	2.27	MGL_2022_217			44910	MG15640					7752				7100	
MDD051	MG15643	RSSZ			QAQC_DUP	MG19379	0.47	0.16	0.63	MGL_2022_217			44910	MG15643					6772				9602	
MDD051	MG15646	RSSZ			QAQC_DUP	MG19380	3.4	0.24	3.64	MGL_2022_217			44910	MG15646					3845				7208	
MDD051	MG15647	RSSZ			QAQC_DUP	MG19381	4.78	0.29	5.07	MGL_2022_217			44910	MG15647					2259				8749	
MDD051	MG15648	RSSZ			QAQC_DUP	MG19382	0.43	0.15	0.58	MGL_2022_217			44910	MG15648					2728				8526	
MDD051	MG15656	RSSZ			QAQC_DUP	MG19383	2.15	0.19	2.34	MGL_2022_217			44910	MG15656					1931				11045	
MDD051	MG15658	RSSZ			QAQC_DUP	MG19384	8.23	0.38	8.61	MGL_2022_217			44910	MG15658					1359				8435	
MDD051	MG15671	RSSZ			QAQC_DUP	MG19385	18.4	1.14	19.54	MGL_2022_217			44910	MG15671					463				6994	
MDD051	MG15673	RSSZ			QAQC_DUP	MG19387	2.07	0.14	2.21	MGL_2022_217			44910	MG15673					1560				6132	
MDD051	MG15679	RSSZ			QAQC_DUP	MG19388	0.2	0.06	0.26	MGL_2022_217			44910	MG15679					901				10094	
MDD051	MG15701	RSSZ			QAQC_DUP	MG19389	4.26	0.2	4.46	MGL_2022_217			44910	MG15701					925				11247	
MDD051	MG15712	RSSZ			QAQC_DUP	MG19390	1.37	0.09	1.46	MGL_2022_217			44910	MG15712					1198				12189	
MDD052	MG14192	RSSZ			QAQC_DUP	MG19335	3.92	0.26	4.18	MGL_2022_217			44910	MG14192					928				11475	
MDD054	MG15738	RSSZ			QAQC_DUP	MG19392	6.21	0.5	6.71	MGL_2022_217			44910	MG15738					6379				11193	
MDD054	MG15739	RSSZ			QAQC_DUP	MG19393	2.86	0.31	3.17	MGL_2022_217			44910	MG15739					4726				10320	
MDD054	MG15744	RSSZ			QAQC_DUP	MG19394	0.4	0.1	0.5	MGL_2022_217			44910	MG15744					1542				9081	
MDD054	MG15749	RSSZ			QAQC_DUP	MG19395	3.21	0.22	3.43	MGL_2022_217			44910	MG15749					1715				9204	
MDD054	MG15768	RSSZ			QAQC_DUP	MG19396	5.19	0.3	5.49	MGL_2022_217			44910	MG15768					2700				10209	
MDD054	MG15771	RSSZ			QAQC_DUP	MG19397	10.8	0.54	11.34	MGL_2022_217			44910	MG15771					1353				8695	
MDD054	MG15784	RSSZ			QAQC_DUP	MG19398	6.09	0.43	6.52	MGL_2022_217			44910	MG15784					2987				9563	
MDD054	MG15793	RSSZ			QAQC_DUP	MG19399	0.4	0.06	0.46	MGL_2022_217			44910	MG15793					1504				11660	
MDD054	MG15812	RSSZ			QAQC_DUP	MG19400	0.19	0.21	0.4	MGL_2022_217			44910	MG15812					4131				11231	
MDD054	MG15818	RSSZ			QAQC_DUP	MG19401	0.19	0.37	0.56	MGL_2022_217			44910	MG15818					3506				11960	
MDD055	MG17241	RSSZ			QAQC_DUP	MG19412	14.25	0.73	14.98	MGL_2022_217			44910	MG17241					8617				13983	
MDD055	MG17242	RSSZ			QAQC_DUP	MG19413	10.6	0.62	11.22	MGL_2022_217			44910	MG17242					7797				10601	
MDD055	MG17245	RSSZ			QAQC_DUP	MG19414	2.41	0.27	2.68	MGL_2022_217			44910	MG17245					10665				9566	
MDD055	MG17248	RSSZ			QAQC_DUP	MG19415	1.11	0.2	1.31	MGL_2022_217			44910	MG17248					9279				16191	
MDD055	MG17249	RSSZ			QAQC_DUP	MG19416	0.6	0.12	0.72	MGL_2022_217			44910	MG17249					6800				11787	
MDD055	MG17261	RSSZ			QAQC_DUP	MG19417	1.16	0.06	1.22	MGL_2022_217			44910	MG17261					1914				11235	
MDD055	MG17270	RSSZ			QAQC_DUP	MG19418	1.82	0.1	1.92	MGL_2022_217			44910	MG17270					106				13248	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD055	MG17289	RSSZ			QAQC_DUP	MG19419	0.26	0.18	0.44	MGL_2022_217			44910	MG17289					6874				13857	
MDD056	MG15970	RSSZ			QAQC_DUP	MG19403	0.44	0.13	0.57	MGL_2022_217			44910	MG15970					3609				8598	
MDD056	MG15980	RSSZ			QAQC_DUP	MG19404	0.3	0.03	0.33	MGL_2022_217			44910	MG15980					386				8915	
MDD056	MG16004	RSSZ			QAQC_DUP	MG19406	0.28	0.08	0.36	MGL_2022_217			44910	MG16004					1658				8891	
MDD057	MG14253	RSSZ			QAQC_DUP	MG19337	0.53	0.35	0.88	MGL_2022_217			44910	MG14253					7751				12189	
MDD057	MG14260	RSSZ			QAQC_DUP	MG19338	0.83	0.19	1.02	MGL_2022_217			44910	MG14260					2372				9668	
MDD057	MG14270	RSSZ			QAQC_DUP	MG19339	0.15	0.07	0.22	MGL_2022_217			44910	MG14270					644				9646	
MDD058	MG14315	RSSZ			QAQC_DUP	MG19340	1.22	0.3	1.52	MGL_2022_217			44910	MG14315					4726				15354	
MDD058	MG14317	RSSZ			QAQC_DUP	MG19341	2.54	0.43	2.97	MGL_2022_217			44910	MG14317					4162				28345	
MDD058	MG14332	RSSZ			QAQC_DUP	MG19343	0.37	0.2	0.57	MGL_2022_217			44910	MG14332					4472				12254	
MDD059	MG16118	RSSZ			QAQC_DUP	MG19408	2.05	0.2	2.25	MGL_2022_217			44910	MG16118					264				13879	
MDD061	MG14387	RSSZ			QAQC_DUP	MG19345	3.09	0.24	3.33	MGL_2022_217			44910	MG14387					3849				8171	
MDD061	MG14392	RSSZ			QAQC_DUP	MG19346	0.3	0.22	0.52	MGL_2022_217			44910	MG14392					6878				11516	
MDD061	MG14393	RSSZ			QAQC_DUP	MG19347	0.37	0.22	0.59	MGL_2022_217			44910	MG14393					6687				10428	
MDD061	MG14402	RSSZ			QAQC_DUP	MG19348	0.1	0.04	0.14	MGL_2022_217			44910	MG14402					1332				8661	
MDD061	MG14408	RSSZ			QAQC_DUP	MG19349	0.16	0.12	0.28	MGL_2022_217			44910	MG14408					5101				7447	
MDD061	MG14410	RSSZ			QAQC_DUP	MG19350	0.15	0.05	0.2	MGL_2022_217			44910	MG14410					965				6166	
MDD061	MG14413	RSSZ			QAQC_DUP	MG19351	0.46	0.16	0.62	MGL_2022_217			44910	MG14413					8550				8146	
MDD061	MG14431	RSSZ			QAQC_DUP	MG19352	0.78	0.11	0.89	MGL_2022_217			44910	MG14431					2200				15050	
MDD061	MG14465	RSSZ			QAQC_DUP	MG19354	1.07	0.07	1.14	MGL_2022_217			44910	MG14465					515				11442	
MDD061	MG14472	RSSZ			QAQC_DUP	MG19355	5.23	0.31	5.54	MGL_2022_217			44910	MG14472					1677				10075	
MDD061	MG14477	RSSZ			QAQC_DUP	MG19356	4.42	0.48	4.9	MGL_2022_217			44910	MG14477					11912				8158	
MDD062R	MG16215	RSSZ			QAQC_DUP	MG19409	0.02	0.07	0.09	MGL_2022_217			44910	MG16215					610				11289	
MDD062R	MG16226	RSSZ			QAQC_DUP	MG19410	0.04	0.05	0.09	MGL_2022_217			44910	MG16226					249				13072	
MDD064	MG14582	RSSZ			QAQC_DUP	MG19357	3.39	0.22	3.61	MGL_2022_217			44910	MG14582					1459				7106	
MDD064	MG14583	RSSZ			QAQC_DUP	MG19358	1.57	0.17	1.74	MGL_2022_217			44910	MG14583					1416				8446	
MDD064	MG14587	RSSZ			QAQC_DUP	MG19359	1.1	0.12	1.22	MGL_2022_217			44910	MG14587					645				10560	
MDD064	MG14588	RSSZ			QAQC_DUP	MG19360	0.29	0.04	0.33	MGL_2022_217			44910	MG14588					72.5				11233	
MDD064	MG14591	RSSZ			QAQC_DUP	MG19361	0.83	0.08	0.91	MGL_2022_217			44910	MG14591					364				8576	
MDD064	MG14604	RSSZ			QAQC_DUP	MG19362	2.41	0.17	2.58	MGL_2022_217			44910	MG14604					966				7686	
MDD064	MG14609	RSSZ			QAQC_DUP	MG19363	6.53	0.49	7.02	MGL_2022_217			44910	MG14609					1341				8506	
MDD056	MG16015	RSSZ			QAQC_DUP	MG19420	0.54	0.04	0.58	MGL_2022_220			44910	MG16015					439				13216	
MDD056	MG16080	RSSZ			QAQC_DUP	MG19422	2.19	0.47	2.66	MGL_2022_220			44910	MG16080					13281				16071	
MDD056	MG16082	RSSZ			QAQC_DUP	MG19423	1.52	0.24	1.76	MGL_2022_220			44910	MG16082					5387				10007	
MDD062	MG16203	RSSZ			QAQC_DUP	MG19427	16.1	1.2	17.3	MGL_2022_220			44910	MG16203					4038				8914	
MDD063	MG17482	RSSZ			QAQC_DUP	MG19429	1.14	0.07	1.21	MGL_2022_220			44910	MG17482					54.2				13733	
MDD066	MG17588	RSSZ			QAQC_DUP	MG19430	0.9	0.18	1.08	MGL_2022_220			44910	MG17588					6983				9095	
MDD066	MG17589	RSSZ			QAQC_DUP	MG19431	0.96	0.25	1.21	MGL_2022_220			44910	MG17589					9709				9272	
MDD066	MG17593	RSSZ			QAQC_DUP	MG19432	6.3	0.43	6.73	MGL_2022_220			44910	MG17593					10364				15123	
MDD066	MG17596	RSSZ			QAQC_DUP	MG19433	0.75	0.29	1.04	MGL_2022_220			44910	MG17596					10780				13372	
MDD066	MG17600	RSSZ			QAQC_DUP	MG19434	3.74	0.14	3.88	MGL_2022_220			44910	MG17600					2859				13440	
MDD066	MG17616	RSSZ			QAQC_DUP	MG19435	0.85	0.06	0.91	MGL_2022_220			44910	MG17616					743				10224	
MDD066	MG17624	RSSZ			QAQC_DUP	MG19436	0.31	0.19	0.5	MGL_2022_220			44910	MG17624					5379				11812	
MDD066	MG17635	RSSZ			QAQC_DUP	MG19437	0.56	0.03	0.59	MGL_2022_220			44910	MG17635					16				11478	
MDD067	MG20097	RSSZ			QAQC_DUP	MG19439	0.79	0.14	0.93	MGL_2022_220			44910	MG20097					351				15112	
MDD067	MG20120	RSSZ			QAQC_DUP	MG19441	0.07	0.02	0.09	MGL_2022_220			44910	MG20120					46.3				10965	
MDD067	MG20143	RSSZ			QAQC_DUP	MG19442	0.05	0.01	0.06	MGL_2022_220			44910	MG20143					20.8				13512	
MDD067	MG20194	RSSZ			QAQC_DUP	MG19443	0.72	0.06	0.78	MGL_2022_220			44910	MG20194					125				13217	
MDD069	MG17756	RSSZ			QAQC_DUP	MG19444	6	0.68	6.68	MGL_2022_220			44910	MG17756					7410				15289	
MDD069	MG17828	RSSZ			QAQC_DUP	MG19445	0.06	0.02	0.08	MGL_2022_220			44910	MG17828					657				11289	
MDD070	MG20244	RSSZ			QAQC_DUP	MG19447	0.2	0.06	0.26	MGL_2022_220			44910	MG20244			13		883				12653	
MDD070	MG20252	RSSZ			QAQC_DUP	MG19448	7.22	0.55	7.77	MGL_2022_220			44910	MG20252					1930				11955	
MDD071	MG16421	RSSZ			QAQC_DUP	MG19449	0.12	0.04	0.16	MGL_2022_220			44910	MG16421					571				9654	
MDD071	MG16425	RSSZ			QAQC_DUP	MG19450	1.4	0.14	1.54	MGL_2022_220			44910	MG16425					803				10803	
MDD072	MG20348	RSSZ			QAQC_DUP	MG19451	1.44	0.09	1.53	MGL_2022_220			44910	MG20348					570				9375	
MDD072	MG20372	RSSZ			QAQC_DUP	MG19454	4.87	0.31	5.18	MGL_2022_220			44910	MG20372					499				9595	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD072	MG20390	RSSZ			QAQC_DUP	MG19455	2.85	0.21	3.06	MGL_2022_220			44910	MG20390					486				10629	
MDD072	MG20391	RSSZ			QAQC_DUP	MG19456	0.1	0.02	0.12	MGL_2022_220			44910	MG20391					121				10270	
MDD073	MG16493	RSSZ			QAQC_DUP	MG19458	0.23	0.04	0.27	MGL_2022_220			44910	MG16493					126				9505	
MDD073	MG16506	RSSZ			QAQC_DUP	MG19459	0.39	0.04	0.43	MGL_2022_220			44910	MG16506					825				11633	
MDD073	MG16507	RSSZ			QAQC_DUP	MG19460	3.78	0.31	4.09	MGL_2022_220			44910	MG16507					1402				13693	
MDD073	MG16516	RSSZ			QAQC_DUP	MG19462	0.06	0.02	0.08	MGL_2022_220			44910	MG16516					163				10438	
MDD075	MG16562	RSSZ			QAQC_DUP	MG19463	0.13	0.03	0.16	MGL_2022_220			44910	MG16562					123				11801	
MDD078	MG17995	RSSZ			QAQC_DUP	MG19465	0.52	0.17	0.69	MGL_2022_220			44910	MG17995					7992				10374	
MDD078	MG18009	RSSZ			QAQC_DUP	MG19466	1.12	0.28	1.4	MGL_2022_220			44910	MG18009					8798				10881	
MDD078	MG18017	RSSZ			QAQC_DUP	MG19467	0.54	0.12	0.66	MGL_2022_220			44910	MG18017					3805				11529	
MDD079	MG20559	RSSZ			QAQC_DUP	MG19468	1.97	0.24	2.21	MGL_2022_220			44910	MG20559					3182				10893	
MDD079	MG20564	RSSZ			QAQC_DUP	MG19469	5.29	0.39	5.68	MGL_2022_220			44910	MG20564					5887				11257	
MDD080	MG16756	RSSZ			QAQC_DUP	MG19471	0.29	0.18	0.47	MGL_2022_220			44910	MG16756				5352	4459		323		11390	
MDD080	MG16759	RSSZ			QAQC_DUP	MG19472	1.02	0.22	1.24	MGL_2022_220			44910	MG16759				7031	3089		424		9692	
MDD080	MG16760	RSSZ			QAQC_DUP	MG19473	2.43	0.26	2.69	MGL_2022_220			44910	MG16760				4945	3762		305		9446	
MDD080	MG16799	RSSZ			QAQC_DUP	MG19474	7.59	0.44	8.03	MGL_2022_220			44910	MG16799				6565	2255		453		9917	
MDD080	MG16805	RSSZ			QAQC_DUP	MG19475	0.16	0.06	0.22	MGL_2022_220			44910	MG16805				6154	477		444		10557	
MDD080	MG16810	RSSZ			QAQC_DUP	MG19476	0.15	0.03	0.18	MGL_2022_220			44910	MG16810				9292	1569		450		10765	
MDD080	MG16811	RSSZ			QAQC_DUP	MG19477	0.7	0.08	0.78	MGL_2022_220			44910	MG16811				16144	2927		584		12511	
MDD080	MG16780	RSSZ			QAQC_DUP	MG19478	1.14	0.12	1.26	MGL_2022_220			44910	MG16780				5850	2026		394		10355	
MDD080	MG16798	RSSZ			QAQC_DUP	MG19479	4.18	0.26	4.44	MGL_2022_220			44910	MG16798				8302	962		437		7941	
MDD081	MG20706	RSSZ			QAQC_DUP	MG19480	6.89	0.36	7.25	MGL_2022_220			44910	MG20706			0	8900	4118			0	12172	0
MDD081	MG20707	RSSZ			QAQC_DUP	MG19481	2.16	0.21	2.37	MGL_2022_220			44910	MG20707			0	7100	3161			0	9924	0
MDD081	MG20708	RSSZ			QAQC_DUP	MG19483	0.31	0.18	0.49	MGL_2022_220			44910	MG20708			0	8000	3283			0	12521	0
MDD081	MG20710	RSSZ			QAQC_DUP	MG19484	15.7	0.95	16.65	MGL_2022_220			44910	MG20710			0	8200	1161			0	11263	0
MDD081	MG20720	RSSZ			QAQC_DUP	MG19485	5.18	0.41	5.59	MGL_2022_220			44910	MG20720			0	7700	2014			0	12316	0
MDD081	MG20721	RSSZ			QAQC_DUP	MG19486	1.89	0.17	2.06	MGL_2022_220			44910	MG20721			0	6400	1678			0	11819	0
MDD081	MG20723	RSSZ			QAQC_DUP	MG19487	0.94	0.28	1.22	MGL_2022_220			44910	MG20723			0	6300	4511			0	8183	0
MDD081	MG20739	RSSZ			QAQC_DUP	MG19488	0.09	0.05	0.14	MGL_2022_220			44910	MG20739			0	8600	2317			0	15445	0
MDD081	MG20740	RSSZ			QAQC_DUP	MG19489	0.35	0.12	0.47	MGL_2022_220			44910	MG20740			0	5500	2396			0	16994	0
MDD081	MG20741	RSSZ			QAQC_DUP	MG19490	2.63	0.46	3.09	MGL_2022_220			44910	MG20741			0	7100	12907			0	11032	0
MDD081	MG20748	RSSZ			QAQC_DUP	MG19491	0.13	0.08	0.21	MGL_2022_220			44910	MG20748			0	8100	3477			0	13623	0
MDD081	MG20749	RSSZ			QAQC_DUP	MG19492	1.24	0.1	1.34	MGL_2022_220			44910	MG20749			0	8100	665			0	12531	0
MDD081	MG20754	RSSZ			QAQC_DUP	MG19493	0.4	0.04	0.44	MGL_2022_220			44910	MG20754			0	7600	885			8	17779	0
MDD081	MG20758	RSSZ			QAQC_DUP	MG19494	0.12	0.05	0.17	MGL_2022_220			44910	MG20758			0	7600	1624			0	13616	0
MDD081	MG20750	RSSZ			QAQC_DUP	MG19495	0.24	0.05	0.29	MGL_2022_220			44910	MG20750			0	9400	1531			0	12116	0
MDD081	MG20732	RSSZ			QAQC_DUP	MG19496	0.17	0.12	0.29	MGL_2022_220			44910	MG20732			0	8200	4279			0	14794	0
MDD081	MG20745	RSSZ			QAQC_DUP	MG19497	0.19	0.06	0.25	MGL_2022_220			44910	MG20745			0	8400	1279			0	13898	0
MDD081	MG20729	RSSZ			QAQC_DUP	MG19498	2.83	0.29	3.12	MGL_2022_220			44910	MG20729			0	10900	1629			0	10883	0
MDD082	MG18148	RSSZ			QAQC_DUP	MG19499	0.06	0.03	0.09	MGL_2022_220			44910	MG18148				5966	851		519		12471	
MDD082	MG18154	RSSZ			QAQC_DUP	MG19500	0.32	0.24	0.56	MGL_2022_220			44910	MG18154				6399	3583		358		11441	
MDD083	MG16870	RSSZ			QAQC_DUP	MG19501	2.56	0.26	2.82	MGL_2022_220			44910	MG16870				4249	4684		368		10559	
MDD083	MG16874	RSSZ			QAQC_DUP	MG19502	1	0.11	1.11	MGL_2022_220			44910	MG16874				5601	2928		402		11927	
MDD083	MG16884	RSSZ			QAQC_DUP	MG19504	1.46	0.11	1.57	MGL_2022_220			44910	MG16884				4967	2262		393		11643	
MDD083	MG16886	RSSZ			QAQC_DUP	MG19505	0.47	0.08	0.55	MGL_2022_220			44910	MG16886				5228	2292		452		9561	
MDD083	MG16893	RSSZ			QAQC_DUP	MG19507	0.53	0.05	0.58	MGL_2022_220			44910	MG16893				5227	598		435		9236	
MDD083	MG16894	RSSZ			QAQC_DUP	MG19508	0.19	0.03	0.22	MGL_2022_220			44910	MG16894				5701	1202		469		9131	
MDD083	MG16895	RSSZ			QAQC_DUP	MG19509	2.12	0.15	2.27	MGL_2022_220			44910	MG16895				6011	967		368		14886	
MDD083	MG16901	RSSZ			QAQC_DUP	MG19511	0.21	0.11	0.32	MGL_2022_220			44910	MG16901				6497	5246		374		12875	
MDD083	MG16944	RSSZ			QAQC_DUP	MG19513	0.23	0.03	0.26	MGL_2022_220			44910	MG16944				6185	585		472		10988	17
MDD083	MG16971	RSSZ			QAQC_DUP	MG19516	0.01	0.01	0.01	MGL_2022_220			44910	MG16971				11641	75		533		13163	
MDD083	MG16978	RSSZ			QAQC_DUP	MG19517	0.99	0.1	1.09	MGL_2022_220			44910	MG16978				6909	1969		415		13059	
MDD083	MG16981	RSSZ			QAQC_DUP	MG19518	8.68	0.59	9.27	MGL_2022_220			44910	MG16981				7098	9585		435		10474	
MDD083	MG16985	RSSZ			QAQC_DUP	MG19519	0.11	0.13	0.24	MGL_2022_220			44910	MG16985				5104	4802		351		11612	
MDD083	MG16990	RSSZ			QAQC_DUP	MG19520	0.51	0.04	0.55	MGL_2022_220			44910	MG16990				5144	393		375		9851	
MDD083	MG16955	RSSZ			QAQC_DUP	MG19522	2.54	0.2	2.74	MGL_2022_220			44910	MG16955				7871	2713		380		15533	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD084	MG27025	RSSZ			QAQC_DUP	MG19523	4.11	0.4	4.51	MGL_2022_220			44910	MG27025				3509	8308		178		7000	
MDD084	MG27038	RSSZ			QAQC_DUP	MG19525	0.98	0.16	1.14	MGL_2022_220			44910	MG27038				5445	7714		434		12818	
MDD084	MG27048	RSSZ			QAQC_DUP	MG19526	0.24	0.06	0.3	MGL_2022_220			44910	MG27048				4538	2153		335		9125	14
MDD084	MG27051	RSSZ			QAQC_DUP	MG19527	0.1	0.07	0.17	MGL_2022_220			44910	MG27051				4125	4314		350		10694	
MDD084	MG27052	RSSZ			QAQC_DUP	MG19528	0.12	0.07	0.19	MGL_2022_220			44910	MG27052				5466	3043		470		11585	
MDD084	MG27053	RSSZ			QAQC_DUP	MG19529	0.3	0.06	0.36	MGL_2022_220			44910	MG27053				4239	2111		456		11639	
MDD084	MG27054	RSSZ			QAQC_DUP	MG19530	1.23	0.14	1.37	MGL_2022_220			44910	MG27054				4538	4884		465		13346	
MDD084	MG27060	RSSZ			QAQC_DUP	MG19531	2.07	0.18	2.25	MGL_2022_220			44910	MG27060				4901	3197		444		11043	
MDD084	MG27061	RSSZ			QAQC_DUP	MG19532	1.57	0.12	1.69	MGL_2022_220			44910	MG27061				4938	3922		441		11666	
MDD084	MG27080	RSSZ			QAQC_DUP	MG19533	0.52	0.06	0.58	MGL_2022_220			44910	MG27080				5727	2168		472		11213	
MDD085	MG18273	RSSZ			QAQC_DUP	MG19534	3.67	0.22	3.89	MGL_2022_220			44910	MG18273			0	8500	1636			0	13840	0
MDD085	MG18290	RSSZ			QAQC_DUP	MG19535	1.86	0.18	2.04	MGL_2022_220			44910	MG18290			0	4700	3690			0	13387	0
MDD085	MG18300	RSSZ			QAQC_DUP	MG19536	1.52	0.17	1.69	MGL_2022_220			44910	MG18300				6478	3777		464		10129	
MDD085	MG18266	RSSZ			QAQC_DUP	MG19537	0.26	0.09	0.35	MGL_2022_220			44910	MG18266			0	7100	616			0	15631	0
MDD085	MG18279	RSSZ			QAQC_DUP	MG19538	4.13	0.26	4.39	MGL_2022_220			44910	MG18279			0	7200	3407			0	13346	0
MDD085	MG18259	RSSZ			QAQC_DUP	MG19539	1.25	1.15	2.4	MGL_2022_220			44910	MG18259			0	7300	12007			0	17082	0
MDD086	MG20830	RSSZ			QAQC_DUP	MG19540	0.11	0.38	0.49	MGL_2022_220			44910	MG20830				4731	5407		255		21187	
MDD086	MG20833	RSSZ			QAQC_DUP	MG19541	1.34	0.3	1.64	MGL_2022_220			44910	MG20833				5927	5703		375		10079	
MDD086	MG20834	RSSZ			QAQC_DUP	MG19542	8.55	0.66	9.21	MGL_2022_220			44910	MG20834				7794	6621		510		10656	
MDD086	MG20836	RSSZ			QAQC_DUP	MG19543	0.62	0.15	0.77	MGL_2022_220			44910	MG20836				7953	1431		525		8822	
MDD086	MG20839	RSSZ			QAQC_DUP	MG19544	0.57	0.08	0.65	MGL_2022_220			44910	MG20839				6907	659		525		9633	
MDD086	MG20843	RSSZ			QAQC_DUP	MG19546	7.36	0.4	7.76	MGL_2022_220			44910	MG20843				5539	1640		441		7713	
MDD086	MG20849	RSSZ			QAQC_DUP	MG19547	2.56	0.3	2.86	MGL_2022_220			44910	MG20849				8031	2195		472		8958	
MDD086	MG20868	RSSZ			QAQC_DUP	MG19548	0.61	0.09	0.7	MGL_2022_220			44910	MG20868				6132	1348		437		7914	
MDD086	MG20876	RSSZ			QAQC_DUP	MG19549	0.23	0.08	0.31	MGL_2022_220			44910	MG20876				5215	2961		380		11639	
MDD086	MG20879	RSSZ			QAQC_DUP	MG19550	0.49	0.08	0.57	MGL_2022_220			44910	MG20879				6462	2277		373		10303	15
MDD086	MG20894	RSSZ			QAQC_DUP	MG19551	0.24	0.14	0.38	MGL_2022_220			44910	MG20894				6765	6029		367		17248	
MDD086	MG20878	RSSZ			QAQC_DUP	MG19552	0.09	0.06	0.15	MGL_2022_220			44910	MG20878				6689	1891		545		7732	
MDD082	MG18221	RSSZ	239	240						MGL_2022_170			71	As_corrXRF	0.155	Au_Au-PA01_ppm_A			76		496		13294	
MDD091	MG18505	RSSZ	304	305						MGL_2022_192			302	As_corrXRF	0.225	Au_Au-PA01_ppm_A			323		407		12188	
MDD081	MG20796	RSSZ	246	247						MGL_2022_168			431	As_corrXRF	0.075	Au_Au-PA01_ppm_A			463		464		10617	
MDD090	MG21045	RSSZ	224	225						MGL_2022_191			383	As_corrXRF	0.085	Au_Au-PA01_ppm_A			411		452		11977	
MDD089	MG27347	RSSZ	237	238						MGL_2022_188			33	As_corrXRF	0.085	Au_Au-PA01_ppm_A			35		482		10660	
MDD106	MG27773	RSSZ	155	156						MGL_2022_225			530.72	As_XRF_pp	0.135	Au_Au-PA01_ppm_A			530.72				15598	0
MDD097	MG29018	RSSZ	524	525						MGL_2022_204			34.47	As_XRF_pp	0.11	Au_Au-PA01_ppm_A			34.47			0	18254	0
MDD097	MG29047	RSSZ	547	548						MGL_2022_204			486.47	As_XRF_pp	0.105	Au_Au-PA01_ppm_A			486.47			0	13629	0
MDD116	MG18996	RSSZ	287	288						MGL_2023_007			17502	As_corrXRF	13.48	Au_Au-PA01_ppm_A			18830		67		5440	
MDD097	MG29008	RSSZ	514	515						MGL_2022_204			12936.16	As_XRF_pp	0.96	Au_Au-PA01_ppm_A			12936			0	20170	0
MDD116	MG18999	RSSZ	290	291						MGL_2023_007			10689	As_corrXRF	15.985	Au_Au-PA01_ppm_A			11500		384		12092	
MDD121	MG31078	RSSZ	243.84	245						MGL_2023_028			10147	As_corrXRF	3.625	Au_Au-PA01_ppm_A			10907		824		14621	
MDD118	MG21879	RSSZ	187	188						MGL_2023_010			8243	As_corrXRF	3.615	Au_Au-PA01_ppm_A			8868		39		13313	
MDD116	MG31024	RSSZ	311	312						MGL_2023_007			7304	As_corrXRF	1.19	Au_Au-PA01_ppm_A			7858		516		12316	
MDD105	MG21528	RSSZ	185	186						MGL_2022_216			6942	As_corrXRF	4.335	Au_Au-PA01_ppm_A			7384		371		10521	
MDD118	MG21914	RSSZ	218	219						MGL_2023_010			6194	As_corrXRF	15.275	Au_Au-PA01_ppm_A			6664		243		11047	
MDD118	MG21886	RSSZ	193	194						MGL_2023_010			5874	As_corrXRF	1.08	Au_Au-PA01_ppm_A			6319		204		10696	
MDD118	MG21901	RSSZ	205	206						MGL_2023_010			5713	As_corrXRF	0.775	Au_Au-PA01_ppm_A			6146		403		13339	
MDD087	MG27198	RSSZ	164.97	166						MGL_2022_184			4996	As_corrXRF	1.225	Au_Au-PA01_ppm_A			5242		1379		23015	
MDD088	MG18415	RSSZ	239	240						MGL_2022_186			4962	As_XRF_pp	0.64	Au_Au-PA01_ppm_A			4962			0	18636	0
MDD118	MG21900	RSSZ	204	205						MGL_2023_010			4865	As_corrXRF	0.28	Au_Au-PA01_ppm_A			5234		413		10718	
MDD116	MG31003	RSSZ	294	295						MGL_2023_007			4752	As_corrXRF	1.87	Au_Au-PA01_ppm_A			5112		482		13060	
MDD084	MG27148	RSSZ	283	284						MGL_2022_179			4547	As_corrXRF	0.855	Au_Au-PA01_ppm_A			4867		328		15986	
MDD118	MG21899	RSSZ	203	204						MGL_2023_010			4305	As_corrXRF	0.275	Au_Au-PA01_ppm_A			4631		95		10679	
MDD121	MG31093	RSSZ	259	260						MGL_2023_028			4180	As_corrXRF	0.6	Au_Au-PA01_ppm_A			4493		312		9565	
MDD105	MG21526	RSSZ	183	184						MGL_2022_216			3992	As_corrXRF	4.96	Au_Au-PA01_ppm_A			4246		290		11669	
MDD087	MG27232	RSSZ	191	192						MGL_2022_184			3914	As_corrXRF	7.09	Au_Au-PA01_ppm_A			4107		397		9984	14
MDD095	MG27510	RSSZ	261.73	263						MGL_2022_201			3773	As_corrXRF	0.29	Au_Au-PA01_ppm_A			4053		355		14662	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD087	MG27233	RSSZ	192	193						MGL_2022_184			3755	As_corrXRF	10.465	Au_Au-PA01_ppm_A			3940		392		9628	
MDD090	MG21003	RSSZ	191	192						MGL_2022_190			3746	As_corrXRF	0.63	Au_Au-PA01_ppm_A			4022		401		8981	
MDD090	MG21019	RSSZ	203	204						MGL_2022_191			3583	As_corrXRF	3.105	Au_Au-PA01_ppm_A			3847		404		11689	
MDD084	MG27127	RSSZ	265	266						MGL_2022_179			3481	As_corrXRF	0.3	Au_Au-PA01_ppm_A			3726		440		11904	
MDD121	MG31082	RSSZ	248	249						MGL_2023_028			3397	As_corrXRF	0.275	Au_Au-PA01_ppm_A			3652		373		9206	
MDD118	MG21888	RSSZ	195	196						MGL_2023_010			3276	As_corrXRF	0.14	Au_Au-PA01_ppm_A			3524		146		12876	
MDD121	MG31101	RSSZ	264	265						MGL_2023_028			3182	As_corrXRF	1.02	Au_Au-PA01_ppm_A			3421		380		12430	
MDD118	MG21904	RSSZ	208	209						MGL_2023_010			3179	As_corrXRF	3.15	Au_Au-PA01_ppm_A			3420		447		11394	
MDD087	MG27238	RSSZ	195	196						MGL_2022_184			3092	As_corrXRF	0.69	Au_Au-PA01_ppm_A			3244		402		11151	
MDD118	MG21883	RSSZ	191	192						MGL_2023_010			3031	As_corrXRF	12.59	Au_Au-PA01_ppm_A			3261		59		13000	
MDD090	MG20972	RSSZ	168	169						MGL_2022_190			3007	As_corrXRF	2.685	Au_Au-PA01_ppm_A			3229		558		9106	
MDD082	MG18200	RSSZ	221	222						MGL_2022_170			2964	As_corrXRF	0.32	Au_Au-PA01_ppm_A			3173		392		11757	
MDD089	MG27345	RSSZ	235	236						MGL_2022_188			2938	As_corrXRF	1.03	Au_Au-PA01_ppm_A			3087		456		11558	
MDD082	MG18195	RSSZ	217	218						MGL_2022_170			2829	As_corrXRF	0.395	Au_Au-PA01_ppm_A			3028		267		12500	
MDD089	MG27332	RSSZ	225	226						MGL_2022_188			2720	As_corrXRF	0.26	Au_Au-PA01_ppm_A			2858		504		11477	
MDD090	MG20976	RSSZ	171	172						MGL_2022_190			2586	As_corrXRF	6.935	Au_Au-PA01_ppm_A			2777		466		11488	
MDD084	MG27151	RSSZ	286	287						MGL_2022_179			2403	As_corrXRF	0.2	Au_Au-PA01_ppm_A			2572		351		13397	
MDD118	MG21885	RSSZ	192	193						MGL_2023_010			2367	As_corrXRF	16.565	Au_Au-PA01_ppm_A			2546		84		8543	
MDD089	MG27341	RSSZ	234	235						MGL_2022_188			2085	As_corrXRF	0.255	Au_Au-PA01_ppm_A			2191		533		11489	
MDD088	MG18383	RSSZ	210	211						MGL_2022_186			1989	As_XRF_pp	0.395	Au_Au-PA01_ppm_A			1989			0	15847	0
MDD105	MG21557	RSSZ	208	209						MGL_2022_216			1951	As_corrXRF	0.305	Au_Au-PA01_ppm_A			2075		522		12989	
MDD090	MG20997	RSSZ	185	186						MGL_2022_190			1949	As_corrXRF	1.37	Au_Au-PA01_ppm_A			2093		497		7399	
MDD087	MG27225	RSSZ	186	187						MGL_2022_184			1881	As_corrXRF	13.655	Au_Au-PA01_ppm_A			1973		435		10814	
MDD105	MG21548	RSSZ	199	200						MGL_2022_216			1769	As_corrXRF	1.46	Au_Au-PA01_ppm_A			1881		446		12259	
MDD087	MG27226	RSSZ	187	188						MGL_2022_184			1738	As_corrXRF	2.515	Au_Au-PA01_ppm_A			1823		425		9931	
MDD084	MG27144	RSSZ	279	280						MGL_2022_179			1620	As_corrXRF	0.17	Au_Au-PA01_ppm_A			1734		551		10049	
MDD082	MG18209	RSSZ	227	228						MGL_2022_170			1603	As_corrXRF	0.2	Au_Au-PA01_ppm_A			1716		360		15968	
MDD090	MG21026	RSSZ	209	210						MGL_2022_191			1600	As_corrXRF	0.16	Au_Au-PA01_ppm_A			1718		490		10972	
MDD090	MG20988	RSSZ	178	179						MGL_2022_190			1374	As_corrXRF	6.885	Au_Au-PA01_ppm_A			1475		442		7981	
MDD090	MG21005	RSSZ	192	193						MGL_2022_190			1364	As_corrXRF	0.145	Au_Au-PA01_ppm_A			1464		410		10696	
MDD116	MG31030	RSSZ	317	318						MGL_2023_007			1254	As_corrXRF	0.685	Au_Au-PA01_ppm_A			1349		549		10075	
MDD079	MG20610	RSSZ	205	206						MGL_2022_164			1189	As_corrXRF	0.17	Au_Au-PA01_ppm_A			1273		435		11760	
MDD087	MG27213	RSSZ	179	180						MGL_2022_184			1159	As_corrXRF	2.19	Au_Au-PA01_ppm_A			1216		540		11171	
MDD082	MG18184	RSSZ	207	208						MGL_2022_170			1155	As_corrXRF	2.11	Au_Au-PA01_ppm_A			1236		417		11325	
MDD090	MG20991	RSSZ	180	181						MGL_2022_190			1094	As_corrXRF	0.225	Au_Au-PA01_ppm_A			1175		504		11140	
MDD121	MG31081	RSSZ	247	248						MGL_2023_028			1058	As_corrXRF	0.64	Au_Au-PA01_ppm_A			1137		359		11074	
MDD091	MG18501	RSSZ	299.9	301						MGL_2022_192			1032	As_corrXRF	0.455	Au_Au-PA01_ppm_A			1103		534		13761	
MDD090	MG20999	RSSZ	187	188						MGL_2022_190			978	As_corrXRF	0.075	Au_Au-PA01_ppm_A			1050		414		9088	
MDD082	MG18203	RSSZ	224	225						MGL_2022_170			966	As_corrXRF	0.245	Au_Au-PA01_ppm_A			1034		387		11198	
MDD090	MG21043	RSSZ	223	224						MGL_2022_191			940	As_corrXRF	1.885	Au_Au-PA01_ppm_A			1009		442		12905	
MDD090	MG20971	RSSZ	167	168						MGL_2022_190			756	As_corrXRF	2.98	Au_Au-PA01_ppm_A			812		465		7151	
MDD087	MG27261	RSSZ	215	216						MGL_2022_184			745	As_corrXRF	0.355	Au_Au-PA01_ppm_A			782		487		10735	
MDD080	MG16822	RSSZ	230	231						MGL_2022_166			706	As_corrXRF	0.185	Au_Au-PA01_ppm_A			756		514		16058	
MDD087	MG27210	RSSZ	176	177						MGL_2022_184			682	As_corrXRF	0.795	Au_Au-PA01_ppm_A			716		527		8012	
MDD088	MG18417	RSSZ	241	242						MGL_2022_186			644	As_XRF_pp	0.29	Au_Au-PA01_ppm_A			644			0	15746	0
MDD091	MG18506	RSSZ	305	306						MGL_2022_192			578	As_corrXRF	1.695	Au_Au-PA01_ppm_A			618		474		13400	
MDD090	MG21047	RSSZ	226	227						MGL_2022_191			563	As_corrXRF	0.305	Au_Au-PA01_ppm_A			604		486		11860	
MDD087	MG27254	RSSZ	208	209						MGL_2022_184			535	As_corrXRF	0.415	Au_Au-PA01_ppm_A			561		489		11032	
MDD105	MG21542	RSSZ	193	194						MGL_2022_216			529	As_corrXRF	0.2	Au_Au-PA01_ppm_A			563		407		10636	
MDD105	MG21547	RSSZ	198	199						MGL_2022_216			463	As_corrXRF	0.39	Au_Au-PA01_ppm_A			492		451		12213	
MDD103	MG18760	RSSZ	350	351						MGL_2022_213			456.33	As_XRF_pp	0.34	Au_Au-PA01_ppm_A			456.33				14970	0
MDD082	MG18232	RSSZ	247	248						MGL_2022_170			456	As_corrXRF	2.22	Au_Au-PA01_ppm_A			488		319		14898	
MDD082	MG18189	RSSZ	211	212						MGL_2022_170			444	As_corrXRF	0.595	Au_Au-PA01_ppm_A			475		453		12937	
MDD082	MG18169	RSSZ	195	196						MGL_2022_170			442	As_corrXRF	1.09	Au_Au-PA01_ppm_A			473		484		12407	
MDD105	MG21538	RSSZ	190	191						MGL_2022_216			379	As_corrXRF	0.515	Au_Au-PA01_ppm_A			403		484		12028	
MDD105	MG21566	RSSZ	214	215						MGL_2022_216			376	As_corrXRF	0.295	Au_Au-PA01_ppm_A			400		470		15778	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD097	MG29042	RSSZ	545	546						MGL_2022_204			344.43	As_XRF_pp	0.055	Au_Au-PA01_ppm_A			344.43			0	12732	0
MDD082	MG18193	RSSZ	215	216						MGL_2022_170			344	As_corrXRF	0.1	Au_Au-PA01_ppm_A			368		432		13204	
MDD088	MG18390	RSSZ	217	218						MGL_2022_186			335	As_XRF_pp	2.295	Au_Au-PA01_ppm_A			335			0	20633	0
MDD099	MG18734	RSSZ	311	312						MGL_2022_207			257	As_corrXRF	0.17	Au_Au-PA01_ppm_A			277		526		11616	
MDD094	MG18587	RSSZ	237	238						MGL_2022_199			220.46	As_XRF_pp	0.14	Au_Au-PA01_ppm_A			220.46			0	14172	0
MDD099	MG18662	RSSZ	248	249						MGL_2022_206			190	As_corrXRF	1.38	Au_Au-PA01_ppm_A			203		624		8387	
MDD106	MG27778	RSSZ	160	161						MGL_2022_225			162.94	As_XRF_pp	0.105	Au_Au-PA01_ppm_A			162.94				11639	0
MDD091	MG18509	RSSZ	308	309						MGL_2022_192			103	As_corrXRF	0.19	Au_Au-PA01_ppm_A			110		421		8956	
MDD091	MG18508	RSSZ	307	308						MGL_2022_192			47	As_corrXRF	0.185	Au_Au-PA01_ppm_A			50		523		8187	
MDD101	MG21406	RSSZ	128	129						MGL_2022_210			42.22	As_XRF_pp	0.265	Au_Au-PA01_ppm_A			42.22				17275	0
MDD099	MG18678	RSSZ	261	262						MGL_2022_207			32	As_corrXRF	0.1	Au_Au-PA01_ppm_A			34		436		12874	
MDD091	MG18534	RSSZ	330	331						MGL_2022_192			22	As_corrXRF	0.105	Au_Au-PA01_ppm_A			23		437		11056	
MDD040	MG13875	TGF			QAQC_DUP	MG19234-131	0.04	0.49	0.53	MGL_2022_131			44777	MG13875					1697				12744	
MDD145	MG19792	TZ3	0	5						MGL_2023_058				MG19792				5000	12		405		11034	
MDD145	MG19793	TZ3	5	10						MGL_2023_058				MG19793				5017	9		399		13157	
MDD145	MG19794	TZ3	10	15						MGL_2023_058				MG19794				6775	8		435		14182	
MDD145	MG19795	TZ3	15	20						MGL_2023_058				MG19795				10377	10		396		11478	
MDD145	MG19796	TZ3	20	25						MGL_2023_058				MG19796				4507	8		414		8751	
MDD145	MG19797	TZ3	25	30						MGL_2023_058				MG19797				7429	7		364		8650	
MDD145	MG19798	TZ3	30	35						MGL_2023_058				MG19798				4611	8		431		9404	
MDD145	MG19799	TZ3	35	40						MGL_2023_058				MG19799				4940	11		410		9221	
MDD145	MG19800	TZ3	40	45						MGL_2023_058				MG19800				4078	8		361		7440	
MDD145	MG19801	TZ3	45	50						MGL_2023_058				MG19801				7204	7		375		7292	
MDD145	MG19802	TZ3	50	55						MGL_2023_058				MG19802				5318	8		433		6783	
MDD145	MG19803	TZ3	55	60						MGL_2023_058				MG19803				4323	8		468		6423	
MDD145	MG19804	TZ3	60	65						MGL_2023_058				MG19804				6905	10		576		7096	
MDD145	MG19805	TZ3	65	70						MGL_2023_058				MG19805				7230	11		464		8403	14
MDD145	MG19806	TZ3	70	75						MGL_2023_058				MG19806				4330	9		492		9567	
MDD145	MG19808	TZ3	75	80						MGL_2023_058				MG19808				8245	11		482		9816	
MDD145	MG19809	TZ3	80	85						MGL_2023_058				MG19809				5284	12		429		7646	17
MDD145	MG19810	TZ3	85	90						MGL_2023_058				MG19810				5389	11		423		8586	
MDD145	MG19811	TZ3	90	95						MGL_2023_058				MG19811				5517	10		444		10651	
MDD145	MG19812	TZ3	95	100						MGL_2023_058				MG19812				5104	9		388		10317	
MDD145	MG19813	TZ3	100	105						MGL_2023_058				MG19813				6185	8		480		14319	
MDD145	MG19814	TZ3	105	110						MGL_2023_058				MG19814				5575	11		483		14232	14
MDD145	MG19815	TZ3	110	115						MGL_2023_058				MG19815				6408	12		517		13412	
MDD145	MG19816	TZ3	115	120						MGL_2023_058				MG19816				4943	9		454		10229	
MDD145	MG19817	TZ3	120	125						MGL_2023_058				MG19817				7700	10		445		9097	
MDD145	MG19818	TZ3	125	130						MGL_2023_058				MG19818				4975	10		437		10233	
MDD145	MG19819	TZ3	130	135						MGL_2023_058				MG19819				5255	11		455		12886	
MDD145	MG19820	TZ3	135	140						MGL_2023_058				MG19820				6390	11		393		13497	
MDD145	MG19821	TZ3	140	145						MGL_2023_058				MG19821				4697	10		366		14530	
MDD145	MG19822	TZ3	145	150						MGL_2023_058				MG19822				5744	8		363		14713	
MDD145	MG19823	TZ3	150	155						MGL_2023_058				MG19823				5063	4		335		17230	
MDD145	MG19824	TZ3	155	160						MGL_2023_058				MG19824				4596	4		342		16452	
MDD145	MG19825	TZ3	160	167.9						MGL_2023_058				MG19825				5898	6		362		18159	
MDD187R	MG19827	TZ3	0	5						MGL_2023_153				MG19827				7373	10		509		5872	
MDD187R	MG19828	TZ3	5	10						MGL_2023_153				MG19828				6409	10		500		5326	
MDD187R	MG19829	TZ3	10	15						MGL_2023_153				MG19829				6793	8		541		5672	
MDD187R	MG19830	TZ3	15	20						MGL_2023_153				MG19830				5810	8		511		7329	
MDD187R	MG19831	TZ3	20	25						MGL_2023_153				MG19831				7300	10		462		8182	
MDD187R	MG19832	TZ3	25	30						MGL_2023_153				MG19832				6662	8		413		7914	
MDD187R	MG19833	TZ3	30	35						MGL_2023_153				MG19833				6734	11		435		8052	
MDD187R	MG19834	TZ3	35	40						MGL_2023_153				MG19834				7494	9		430		11185	
MDD187R	MG19835	TZ3	40	45						MGL_2023_153				MG19835				6890	10		399		10778	
MDD187R	MG19836	TZ3	45	50						MGL_2023_153				MG19836				6511	7		308		11148	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD187R	MG19837	TZ3	50	55						MGL_2023_153				MG19837				6921	5		299		9218	
MDD187R	MG19838	TZ3	55	60						MGL_2023_153				MG19838				6264	6		303		8694	
MDD187R	MG19839	TZ3	60	65						MGL_2023_153				MG19839				7503	9		313		8149	
MDD187R	MG19840	TZ3	65	70						MGL_2023_153				MG19840				7220	8		338		7988	
MDD187R	MG19841	TZ3	70	75						MGL_2023_153				MG19841				7514	11		404		7472	
MDD187R	MG19842	TZ3	75	80						MGL_2023_153				MG19842				6134	8		396		7170	
MDD187R	MG19843	TZ3	80	85						MGL_2023_153				MG19843				6566	9		387		8468	
MDD187R	MG19844	TZ3	85	90						MGL_2023_153				MG19844				7021	10		332		8354	
MDD187R	MG19845	TZ3	90	95						MGL_2023_153				MG19845				6656	11		338		7482	
MDD187R	MG19846	TZ3	95	100						MGL_2023_153				MG19846				7507	8		295		9021	
MDD187R	MG19847	TZ3	100	105						MGL_2023_153				MG19847				9677	6		345		11690	13
MDD206	MG19848	TZ3	0	5						0-5								7732	9		482		4923	
MDD206	MG19849	TZ3	5	10						5-Oct								9249	11		370		5390	
MDD206	MG19850	TZ3	10	15						Oct-15								5372	7		354		6062	
MDD206	MG19851	TZ3	15	20						15-20								8782	7		403		8628	
MDD206	MG19852	TZ3	20	25						20-25								11040	7		433		10451	
MDD206	MG19853	TZ3	25	30						25-30								7061	7		403		8796	
MDD206	MG19854	TZ3	30	35						30-35								13316	10		488		9586	
MDD206	MG19855	TZ3	35	40						35-40								7854	10		480		9416	
MDD206	MG19856	TZ3	40	45						40-45								9649	11		503		9693	
MDD206	MG19857	TZ3	45	50						45-50								8439	10		472		7811	
MDD206	MG19858	TZ3	50	55						50-55								7890	8		469		7063	
MDD206	MG19859	TZ3	55	60						55-60								10735	9		489		7347	
MDD206	MG19860	TZ3	60	65						60-65								7560	10		582		6819	
MDD206	MG19861	TZ3	65	70						65-70								5653	9		538		7814	
MDD206	MG19862	TZ3	70	75						70-75							28	7524	6		443		9516	
MDD206	MG19863	TZ3	75	80						75-80							85	7731	9		431		11918	
MDD206	MG19864	TZ3	80	85						80-85							3	7081	11		407		10586	
MDD206	MG19865	TZ3	85	90						85-90								9064	10		387		10494	
MDD206	MG19866	TZ3	90	95						90-95							3	10450	9		530		9523	
MDD206	MG19867	TZ3	95	100						95-100								7729	8		467		9750	
MDD206	MG19868	TZ3	100	105						100-105								14610	8		470		9531	
MDD206	MG19869	TZ3	105	110						105-110								10717	9		448		11762	
MDD206	MG19870	TZ3	110	115						110-115								9466	8		538		14843	
MDD206	MG19871	TZ3	115	120						115-120								8743	5		367		13034	
MDD206	MG19872	TZ3	120	125						120-125								7618	6		346		11010	
MDD206	MG19873	TZ3	125	130						125-130								9659	8		352		9553	
MDD206	MG19874	TZ3	130	135						130-135								6709	10		435		9084	
MDD206	MG19875	TZ3	135	140						135-140								6522	10		549		8612	
MDD206	MG19876	TZ3	140	145						140-145								6531	15		587		8814	
MDD206	MG19877	TZ3	145	150						145-150								5435	151		514		8735	
MDD206	MG19878	TZ3	150	155						150-155								4721	56		499		8988	
MDD206	MG19879	TZ3	155	160						155-160								5438	40		433		7941	
MDD206	MG19880	TZ3	160	165						160-165								4608	22		475		6924	
MDD206	MG19881	TZ3	165	170						165-170								5432	17		417		6802	
MDD206	MG19882	TZ3	170	175						170-175								4543	23		390		10144	
MDD206	MG19883	TZ3	175	180						175-180								5455	20		368		12780	
MDD206	MG19884	TZ3	180	185						180-185								6065	14		342		12387	
MDD206	MG19885	TZ3	185	190						185-190								6717	12		394		10101	
MDD206	MG19886	TZ3	190	195						190-195								5529	13		340		10343	
MDD206	MG19887	TZ3	195	200						195-200								5501	12		352		11305	
MDD206	MG19888	TZ3	200	205						200-205								5540	13		367		11461	
MDD206	MG19889	TZ3	205	210						205-210								5059	11		369		10710	
MDD206	MG19890	TZ3	210	215						210-215								6195	9		345		11963	
MDD206	MG19891	TZ3	215	220						215-220								4199	9		312		14248	
MDD206	MG19892	TZ3	220	225						220-225								5378	9		332		13716	

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MDD206	MG19893	TZ3	225	230						225-230								4723	10		318		12410	
MDD206	MG19894	TZ3	230	235						230-235								6842	13		359		14218	
MDD206	MG19895	TZ3	235	240						235-240								5883	17		421		13401	
MDD206	MG19896	TZ3	240	245						240-245								6468	19		399		13578	
MDD206	MG19897	TZ3	245	249						245-249								8245	14		333		16299	
MDD207	MG43501	TZ3	0	5						0-5								6131	24		442		6159	17
MDD207	MG43502	TZ3	5	10						5-Oct								5682	12		375		6837	16
MDD207	MG43503	TZ3	10	15						Oct-15								5196	8		300		10037	
MDD207	MG43504	TZ3	15	20						15-20								6055	8		348		10866	
MDD207	MG43505	TZ3	20	25						20-25								4761	5		306		10316	
MDD207	MG43506	TZ3	25	30						25-30								5221	9		256		9207	
MDD207	MG43507	TZ3	30	35						30-35								6030	10		357		8719	
MDD207	MG43508	TZ3	35	40						35-40								5399	8		331		6869	
MDD207	MG43509	TZ3	40	45						40-45								6350	7		448		7840	
MDD207	MG43510	TZ3	45	50						45-50								5374	8		366		11649	
MDD207	MG43511	TZ3	50	55						50-55								6422	7		406		9420	
MDD207	MG43512	TZ3	55	60						55-60								7546	9		448		7707	
MDD207	MG43513	TZ3	60	65						60-65								4828	7		350		7253	
MDD207	MG43514	TZ3	65	70						65-70								5349	7		381		9504	
MDD207	MG43515	TZ3	70	75						70-75								6193	9		356		12301	
MDD207	MG43516	TZ3	75	80						75-80								6858	14		387		9847	12
MDD207	MG43517	TZ3	80	85						80-85								5697	12		347		13195	
MDD207	MG43518	TZ3	85	90						85-90								5344	10		404		13750	
MDD207	MG43519	TZ3	90	95						90-95								6233	8		380		7454	
MDD207	MG43520	TZ3	95	100						95-100								5614	7		323		10122	
MDD207	MG43521	TZ3	100	105						100-105								6504	9		379		13575	
MDD207	MG43522	TZ3	105	110						105-110								6250	13		359		7630	
MDD207	MG43523	TZ3	110	115						110-115								6723	14		359		9214	
MDD207	MG43524	TZ3	115	120						115-120								5811	12		344		12032	
MDD207	MG43525	TZ3	120	125						120-125								6533	9		369		8591	
MDD207	MG43526	TZ3	125	130						125-130								7302	13		352		10913	
MDD207	MG43527	TZ3	130	135						130-135								6255	9		329		11960	
MDD207	MG43528	TZ3	135	140						135-140								6682	7		314		18158	
MDD207	MG43529	TZ3	140	145						140-145								6061	6		364		16440	
MDD207	MG43530	TZ3	145	152						145-152								4633	7		337		13171	
MDD212	MG43478	TZ3	0	5						MGL_2023_163									11				2210	
MDD212	MG43479	TZ3	5	10						MGL_2023_163									10				7823	
MDD212	MG43480	TZ3	10	15						MGL_2023_163									11				12457	
MDD212	MG43481	TZ3	15	20						MGL_2023_163									12				13427	
MDD212	MG43482	TZ3	20	25						MGL_2023_163									13				11191	
MDD212	MG43483	TZ3	25	30						MGL_2023_163									10				10021	
MDD212	MG43484	TZ3	30	35						MGL_2023_163									9				13402	
MDD212	MG43485	TZ3	35	40						MGL_2023_163									10				15198	
MDD212	MG43486	TZ3	40	45						MGL_2023_163									13				13684	
MDD212	MG43487	TZ3	45	50						MGL_2023_163									12				13206	
MDD212	MG43488	TZ3	50	55						MGL_2023_163									16				12835	
MDD212	MG43489	TZ3	55	60						MGL_2023_163									14				13662	
MDD212	MG43490	TZ3	60	65						MGL_2023_163									16				11902	
MDD212	MG43491	TZ3	65	70						MGL_2023_163									13				10551	
MDD212	MG43492	TZ3	70	75						MGL_2023_163									14				7174	
MDD212	MG43493	TZ3	75	80						MGL_2023_163									13				10420	
MDD212	MG43494	TZ3	80	85						MGL_2023_163									10				7361	
MDD212	MG43495	TZ3	85	90						MGL_2023_163									9				7420	
MDD212	MG43496	TZ3	90	95						MGL_2023_163									16				7235	
MDD212	MG43497	TZ3	95	100						MGL_2023_163									16				9378	
MDD212	MG43498	TZ3	100	105						MGL_2023_163									15				10736	

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MDD212	MG43499	TZ3	105	110						MGL_2023_163									14				9645	
MDD212	MG43500	TZ3	110	115						MGL_2023_163									14				15627	
MDD212	MG43531	TZ3	115	120						MGL_2023_163									13				15417	
MDD212	MG43532	TZ3	120	125						MGL_2023_163									17				10787	
MDD212	MG43533	TZ3	125	130						MGL_2023_163									11				8850	
MDD212	MG43534	TZ3	130	135						MGL_2023_163									28				11726	
MDD212	MG43535	TZ3	135	140						MGL_2023_163									39				20953	
MDD212	MG43536	TZ3	140	145						MGL_2023_163									59				15713	
MDD212	MG43537	TZ3	145	150						MGL_2023_163									94				13901	
MDD212	MG43538	TZ3	150	155						MGL_2023_163									69				16074	
MDD212	MG43539	TZ3	155	160						MGL_2023_163									62				17861	
MDD212	MG43540	TZ3	160	165						MGL_2023_163									44				12392	
MDD212	MG43541	TZ3	165	170						MGL_2023_163									33				8969	
MDD212	MG43542	TZ3	170	175						MGL_2023_163									25				10747	
MDD212	MG43543	TZ3	175	180						MGL_2023_163									32				8549	
MDD212	MG43544	TZ3	180	185						MGL_2023_163									22				9326	
MDD212	MG43545	TZ3	185	190						MGL_2023_163									17				10703	
MDD212	MG43546	TZ3	190	195						MGL_2023_163									18				9185	
MDD212	MG43547	TZ3	195	200						MGL_2023_163									18				9670	
MDD212	MG43548	TZ3	200	205						MGL_2023_163									17				11717	
MDD212	MG43549	TZ3	205	210						MGL_2023_163									19				14087	
MDD212	MG43550	TZ3	210	215						MGL_2023_163									14				11091	
MDD212	MG43551	TZ3	215	220						MGL_2023_163									17				11814	
MDD212	MG43552	TZ3	220	225						MGL_2023_163									17				13622	
MDD212	MG43553	TZ3	225	230						MGL_2023_163									21				15775	
MDD212	MG43554	TZ3	230	235						MGL_2023_163									18				16153	
MDD212	MG43555	TZ3	235	240						MGL_2023_163									13				18671	
MDD212	MG43556	TZ3	240	242						MGL_2023_163									13				18541	
MDD219	MG43563	TZ3	0	5						MGL_2023_172									26				6987	
MDD219	MG43564	TZ3	5	10						MGL_2023_172									27				11055	
MDD219	MG43565	TZ3	10	15						MGL_2023_172									22				9090	
MDD219	MG43566	TZ3	15	20						MGL_2023_172									25				8675	
MDD219	MG43567	TZ3	20	25						MGL_2023_172							23		16				8718	
MDD219	MG43568	TZ3	25	30						MGL_2023_172									21				8235	
MDD219	MG43569	TZ3	30	35						MGL_2023_172									19				10746	
MDD219	MG43570	TZ3	35	40						MGL_2023_172									17				10585	
MDD219	MG43571	TZ3	40	45						MGL_2023_172									12				6695	
MDD219	MG43572	TZ3	45	50						MGL_2023_172									13				7231	
MDD219	MG43573	TZ3	50	55						MGL_2023_172									16				7838	
MDD219	MG43574	TZ3	55	60						MGL_2023_172									19				6972	
MDD219	MG43575	TZ3	60	65						MGL_2023_172									17				6485	
MDD219	MG43576	TZ3	65	70						MGL_2023_172									15				5377	
MDD219	MG43577	TZ3	70	75						MGL_2023_172									19				6340	
MDD219	MG43578	TZ3	75	80						MGL_2023_172									18				7130	
MDD219	MG43579	TZ3	80	85						MGL_2023_172									21				7864	
MDD219	MG43580	TZ3	85	90						MGL_2023_172									19				6945	
MDD219	MG43581	TZ3	90	95						MGL_2023_172									18				7626	
MDD219	MG43582	TZ3	95	100						MGL_2023_172									19				11781	
MDD219	MG43584	TZ3	100	105						MGL_2023_172									15				13977	
MDD219	MG43585	TZ3	105	110						MGL_2023_172									18				13804	
MDD219	MG43586	TZ3	110	115						MGL_2023_172									25				19024	
MDD219	MG43587	TZ3	115	120						MGL_2023_172									20				8734	
MDD219	MG43588	TZ3	120	125						MGL_2023_172									16				6613	
MDD219	MG43589	TZ3	125	130						MGL_2023_172									24				6876	
MDD219	MG43590	TZ3	130	135						MGL_2023_172									22				6947	
MDD219	MG43591	TZ3	135	140						MGL_2023_172									24				7009	

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MDD219	MG43592	TZ3	140	145						MGL_2023_172									24				7122	
MDD219	MG43593	TZ3	145	150						MGL_2023_172									19				6164	
MDD219	MG43594	TZ3	150	155						MGL_2023_172									20				6219	
MDD219	MG43595	TZ3	155	160						MGL_2023_172									15				6646	
MDD219	MG43596	TZ3	160	165						MGL_2023_172									15				6400	
MDD219	MG43597	TZ3	165	170						MGL_2023_172									28				13335	
MDD219	MG43598	TZ3	170	175						MGL_2023_172									27				17857	
MDD219	MG43599	TZ3	175	180						MGL_2023_172									20				12007	
MDD219	MG43600	TZ3	180	185						MGL_2023_172									28				11575	
MDD219	MG43601	TZ3	185	190						MGL_2023_172									23				10926	
MDD219	MG43602	TZ3	190	195						MGL_2023_172									25				10604	
MDD219	MG43604	TZ3	195	200						MGL_2023_172								16540	17		343		11680	
MDD219	MG43605	TZ3	200	205						MGL_2023_172								22033	19		382		14065	
MDD219	MG43606	TZ3	205	210						MGL_2023_172								14907	23		319		12922	
MDD219	MG43607	TZ3	210	215						MGL_2023_172								19676	18		401		16200	
MDD219	MG43608	TZ3	215	220						MGL_2023_172								15916	25		329		27886	
MDD219	MG43609	TZ3	220	225						MGL_2023_172								12458	27		300		32500	
MDD219	MG43610	TZ3	225	230						MGL_2023_172								20665	24		382		21524	
MDD219	MG43611	TZ3	230	235						MGL_2023_172								10497	20		344		14707	
MDD219	MG43612	TZ3	235	240						MGL_2023_172								18926	14		448		13382	
MDD219	MG43613	TZ3	240	245						MGL_2023_172								17500	20		454		14861	
MDD219	MG43614	TZ3	245	250						MGL_2023_172								15582	13		492		10871	
MDD219	MG43615	TZ3	250	255						MGL_2023_172								14361	12		374		11280	
MDD222	MG43616	TZ3	0	5						MGL_2023_178									13				4032	
MDD222	MG43617	TZ3	5	10						MGL_2023_178									10				9917	
MDD222	MG43618	TZ3	10	15						MGL_2023_178									10				12614	
MDD222	MG43619	TZ3	15	20						MGL_2023_178									8				7589	
MDD222	MG43620	TZ3	20	25						MGL_2023_178									8				5745	
MDD222	MG43621	TZ3	25	30						MGL_2023_178									8				5419	
MDD222	MG43622	TZ3	30	35						MGL_2023_178									9				8766	
MDD222	MG43623	TZ3	35	40						MGL_2023_178									9				8744	
MDD222	MG43624	TZ3	40	45						MGL_2023_178									11				12587	
MDD222	MG43625	TZ3	45	50						MGL_2023_178									8				8452	
MDD222	MG43626	TZ3	50	55						MGL_2023_178									9				7939	
MDD222	MG43627	TZ3	55	60						MGL_2023_178									8				10329	
MDD222	MG43628	TZ3	60	65						MGL_2023_178									12				11755	
MDD222	MG43629	TZ3	65	70						MGL_2023_178									13				12499	
MDD222	MG43630	TZ3	70	75						MGL_2023_178									9				11904	
MDD222	MG43631	TZ3	75	80						MGL_2023_178									8				5494	
MDD222	MG43632	TZ3	80	85						MGL_2023_178									10				7954	
MDD222	MG43633	TZ3	85	90						MGL_2023_178									10				8614	
MDD222	MG43634	TZ3	90	95						MGL_2023_178									10				6278	
MDD222	MG43635	TZ3	95	100						MGL_2023_178									11				6344	
MDD222	MG43637	TZ3	100	105						MGL_2023_178									9				5366	
MDD222	MG43638	TZ3	105	110						MGL_2023_178									12				10130	
MDD222	MG43639	TZ3	110	115						MGL_2023_178									15				16049	
MDD222	MG43640	TZ3	115	120						MGL_2023_178								10104	12		334		15050	
MDD222	MG43641	TZ3	120	125						MGL_2023_178								9025	9		345		10538	
MDD222	MG43642	TZ3	125	130						MGL_2023_178								9125	12		371		11196	19
MDD222	MG43643	TZ3	130	135						MGL_2023_178								9875	10		386		9523	
MDD222	MG43644	TZ3	135	140						MGL_2023_178								11356	10		336		9607	
MDD222	MG43645	TZ3	140	145						MGL_2023_178								11672	12		344		11255	
MDD222	MG43646	TZ3	145	150						MGL_2023_178								10233	12		345		12859	13
MDD222	MG43647	TZ3	150	155						MGL_2023_178								9230	11		313		11640	
MDD222	MG43648	TZ3	155	160						MGL_2023_178								9690	10		342		10156	
MDD222	MG43649	TZ3	160	165						MGL_2023_178								9679	13		352		13408	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD222	MG43650	TZ3	165	170						MGL_2023_178								11817	9		444		14122	
MDD222	MG43651	TZ3	170	175						MGL_2023_178								11595	7		371		16048	
MDD222	MG43652	TZ3	175	180						MGL_2023_178								12173	8		412		15457	
MDD222	MG43653	TZ3	180	185						MGL_2023_178								10337	6		345		17349	
MDD222	MG43654	TZ3	185	190						MGL_2023_178								11266	7		329		15957	
MDD222	MG43655	TZ3	190	195						MGL_2023_178								9814	10		363		13938	15
MDD222	MG43656	TZ3	195	200						MGL_2023_178								10092	9		365		15387	
MDD222	MG43658	TZ3	200	207						MGL_2023_178								9396	9		373		13942	
MDD223	MG43660	TZ3	0	5														7119	21		500		8312	
MDD223	MG43661	TZ3	5	10														7333	14		404		9838	
MDD223	MG43662	TZ3	10	15														4317	16		391		10091	
MDD223	MG43663	TZ3	15	20														6223	12		391		11232	
MDD223	MG43664	TZ3	20	25														21758	10		500		2E+05	
MDD223	MG43665	TZ3	25	30														21796	11		502		2E+05	
MDD223	MG43666	TZ3	30	35														15591	17		458		62651	
MDD223	MG43667	TZ3	35	40														14010	11		475		60110	13
MDD223	MG43668	TZ3	40	45														22398	8		520		2E+05	
MDD223	MG43669	TZ3	45	50														7195	10		431		7696	
MDD223	MG43671	TZ3	50	55														19282	7		418		1E+05	
MDD223	MG43672	TZ3	55	60														23042	5		474		2E+05	
MDD223	MG43673	TZ3	60	65														21289	5		423		1E+05	
MDD223	MG43674	TZ3	65	70														9021	8		365		11016	
MDD223	MG43675	TZ3	70	75														8362	6		353		8982	
MDD223	MG43676	TZ3	75	80														6109	9		384		9108	
MDD223	MG43677	TZ3	80	85														8689	8		324		10552	
MDD223	MG43678	TZ3	85	90														22489	8		506		2E+05	
MDD223	MG43679	TZ3	90	95														24404	8		744		2E+05	12
MDD223	MG43680	TZ3	95	100														6901	8		425		12397	
MDD223	MG43682	TZ3	100	105														19141	8		453		99582	
MDD223	MG43683	TZ3	105	110														6151	6		309		9693	
MDD223	MG43684	TZ3	110	115														22072	3		483		2E+05	
MDD223	MG43685	TZ3	115	120														10129	9		375		9893	
MDD223	MG43686	TZ3	120	125														21101	6		404		2E+05	
MDD223	MG43687	TZ3	125	130														18567	4		338		1E+05	
MDD223	MG43688	TZ3	130	135														12482	5		323		44355	
MDD223	MG43689	TZ3	135	140														6864	9		337		12054	
MDD223	MG43690	TZ3	140	145														11742	9		287		16214	
MDD223	MG43691	TZ3	145	150														8020	8		377		11926	
MDD262	MG43702	TZ3	15	20														7789	14		437		6152	
MDD262	MG43703	TZ3	20	25														11575	9		410		6623	
MDD262	MG43704	TZ3	25	30														3950	8		394		6913	
MDD262	MG43705	TZ3	30	35														7528	8		411		7443	
MDD262	MG43706	TZ3	35	40														6598	6		368		7617	
MDD262	MG43707	TZ3	40	45													3	6588	7		370		7450	
MDD262	MG43708	TZ3	45	50													4	7709	9		384		9914	
MDD262	MG43709	TZ3	50	55													25	4845	8		427		8776	
MDD262	MG43710	TZ3	55	60														7395	10		444		8991	
MDD262	MG43711	TZ3	60	65														5056	11		432		12415	
MDD262	MG43712	TZ3	65	70														5847	12		416		10681	
MDD262	MG43713	TZ3	70	75														6502	11		443		9650	
MDD262	MG43715	TZ3	75	80														7514	11		429		9522	
MDD262	MG43716	TZ3	80	85														7829	25		494		8032	14
MDD262	MG43717	TZ3	85	90														7140	22		502		7862	
MDD262	MG43718	TZ3	90	95														6627	10		494		7181	
MDD262	MG43719	TZ3	95	100														5968	11		428		7621	
MDD262	MG43720	TZ3	100	105														4870	15		455		7418	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD262	MG43721	TZ3	105	110														5135	20		499		8275	
MDD262	MG43722	TZ3	110	115														5848	17		469		8259	
MDD262	MG43723	TZ3	115	120														7400	16		444		7063	
MDD262	MG43724	TZ3	120	125														7695	11		504		6059	
MDD262	MG43725	TZ3	125	130														4769	9		366		5506	
MDD262	MG43726	TZ3	130	135														6201	10		420		6721	
MDD262	MG43727	TZ3	135	140														7849	11		437		6766	
MDD262	MG43728	TZ3	140	145														5695	12		443		6767	
MDD262	MG43729	TZ3	145	150														5233	9		488		6018	
MDD262	MG43730	TZ3	150	155														6833	14		507		6724	
MDD262	MG43731	TZ3	155	160														6839	15		414		9625	
MDD262	MG43732	TZ3	160	165														5856	14		375		10080	
MDD262	MG43733	TZ3	165	170														5157	15		400		9446	
MDD262	MG43735	TZ3	170	175													4	6472	11		377		10582	
MDD262	MG43736	TZ3	175	180														6794	12		378		10373	
MDD262	MG43737	TZ3	180	185													6	6815	12		369		12313	
MDD262	MG43738	TZ3	185	190													105	8122	13		407		13073	
MDD262	MG43739	TZ3	190	195													19	5805	13		376		11547	
MDD262	MG43740	TZ3	195	200														6795	13		463		12344	
MDD262	MG43741	TZ3	200	205														4867	16		473		12629	
MDD262	MG43742	TZ3	205	210													18	10503	15		445		14356	
MDD262	MG43743	TZ3	210	215														7707	11		395		15425	
MDD019R	MG11241	TZ4			QAQC_DUP	MG19061	3.03	0.14	3.17	MGL_2022_113			44746	MG11241					625				16895	
MDD019R	MG11246	TZ4			QAQC_DUP	MG19062	0.56	0.03	0.59	MGL_2022_113			44746	MG11246					242				21403	
MDD019R	MG11251	TZ4			QAQC_DUP	MG19063	0.05	0.05	0.1	MGL_2022_113			44746	MG11251					17.5				12684	
MDD019R	MG11263	TZ4			QAQC_DUP	MG19121	0.55	0.08	0.63	MGL_2022_113			44746	MG11263					990				11019	
MDD020	MG11391	TZ4			QAQC_DUP	MG19068	1.07	0.09	1.16	MGL_2022_113			44746	MG11391					2587				12120	
MDD020	MG11392	TZ4			QAQC_DUP	MG19069	1.6	0.09	1.69	MGL_2022_113			44746	MG11392					1115				12079	
MDD020	MG11454	TZ4			QAQC_DUP	MG19070	0.2	0.04	0.24	MGL_2022_113			44746	MG11454					78				10677	
MDD021R	MG11511	TZ4			QAQC_DUP	MG19071	0.53	0.14	0.67	MGL_2022_113			44746	MG11511			13		6425				12812	
MDD021R	MG11514	TZ4			QAQC_DUP	MG19072	0.31	0.04	0.35	MGL_2022_113			44746	MG11514					1752				12080	
MDD021R	MG11516	TZ4			QAQC_DUP	MG19073	1.36	0.1	1.46	MGL_2022_113			44746	MG11516					5569				13305	
MDD021R	MG11519	TZ4			QAQC_DUP	MG19074	9.07	0.29	9.36	MGL_2022_113			44746	MG11519					3962				18105	
MDD021R	MG11521	TZ4			QAQC_DUP	MG19075	1.84	0.08	1.92	MGL_2022_113			44746	MG11521					413				13691	
MDD021R	MG11543	TZ4			QAQC_DUP	MG19076	0.19	0.09	0.28	MGL_2022_113			44746	MG11543					4029				12631	
MDD021R	MG11578	TZ4			QAQC_DUP	MG19077	0.42	0.03	0.45	MGL_2022_113			44746	MG11578					678				10987	
MDD021R	MG11512	TZ4			QAQC_DUP	MG19109	0.81	0.28	1.09	MGL_2022_113			44746	MG11512					2750				12154	
MDD021R	MG11527	TZ4			QAQC_DUP	MG19110	0.2	0.03	0.23	MGL_2022_113			44746	MG11527					448				10129	
MDD026	MG13245	TZ4			QAQC_DUP	MG19085	4.89	0.2	5.09	MGL_2022_113			44746	MG13245					742				10963	
MDD027	MG12001	TZ4			QAQC_DUP	MG19086	2.58	0.15	2.73	MGL_2022_113			44746	MG12001					199				10158	
MDD028	MG13277	TZ4			QAQC_DUP	MG19088	2.5	0.11	2.61	MGL_2022_113			44746	MG13277					2510				8340	
MDD032	MG13519	TZ4			QAQC_DUP	MG19208-131	3.76	0.29	4.05	MGL_2022_131			44777	MG13519					508				14038	
MDD032	MG13526	TZ4			QAQC_DUP	MG19209-131	1.3	0.1	1.4	MGL_2022_131			44777	MG13526					185				12133	
MDD032	MG13521	TZ4			QAQC_DUP	MG19210-131	0.12	0.03	0.15	MGL_2022_131			44777	MG13521					189				8680	
MDD032	MG13525	TZ4			QAQC_DUP	MG19211-131	0.46	0.06	0.52	MGL_2022_131			44777	MG13525					229				9755	
MDD032	MG13543	TZ4			QAQC_DUP	MG19212-131	0.71	0.09	0.8	MGL_2022_131			44777	MG13543					268				12957	
MDD032	MG13515	TZ4			QAQC_DUP	MG19213-131	0.88	0.09	0.97	MGL_2022_131			44777	MG13515					696				10850	
MDD034	MG13569	TZ4			QAQC_DUP	MG19205-131	0.27	0.04	0.31	MGL_2022_131			44777	MG13569					485				8099	
MDD038	MG13842	TZ4			QAQC_DUP	MG19229-131	0.13	0.03	0.16	MGL_2022_131			44777	MG13842					534				9370	
MDD039	MG15231	TZ4			QAQC_DUP	MG19232-131	3.48	0.18	3.66	MGL_2022_131			44777	MG15231					7.3				11141	
MDD040	MG13932	TZ4			QAQC_DUP	MG19235-131	0.01	0.01	0.01	MGL_2022_131			44777	MG13932					30.9				13997	
MDD045	MG15454	TZ4			QAQC_DUP	MG19369	0.24	0.03	0.27	MGL_2022_217			44910	MG15454					232				11376	
MDD047	MG12720	TZ4			QAQC_DUP	MG19333	0.23	0.02	0.25	MGL_2022_217			44910	MG12720					26.3				15741	
MDD048R	MG15521	TZ4			QAQC_DUP	MG19373	0.38	0.04	0.42	MGL_2022_217			44910	MG15521					185				11936	
MDD048R	MG15596	TZ4			QAQC_DUP	MG19376	0.33	0.04	0.37	MGL_2022_217			44910	MG15596					387				10031	
MDD051	MG15716	TZ4			QAQC_DUP	MG19391	1.3	0.07	1.37	MGL_2022_217			44910	MG15716					257				11383	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	As_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD052	MG14211	TZ4			QAQC_DUP	MG19336	0.79	0.06	0.85	MGL_2022_217			44910	MG14211					69.8				9795	
MDD056	MG15962	TZ4			QAQC_DUP	MG19402	0.09	0.05	0.14	MGL_2022_217			44910	MG15962					824				9788	
MDD056	MG15998	TZ4			QAQC_DUP	MG19405	0.98	0.17	1.15	MGL_2022_217			44910	MG15998					3809				6979	
MDD058	MG14327	TZ4			QAQC_DUP	MG19342	0.31	0.14	0.45	MGL_2022_217			44910	MG14327					2811				12517	
MDD061	MG14450	TZ4			QAQC_DUP	MG19353	0.2	0.02	0.22	MGL_2022_217			44910	MG14450					605				11246	
MDD056	MG16057	TZ4			QAQC_DUP	MG19421	0.17	0.04	0.21	MGL_2022_220			44910	MG16057					433				15625	
MDD059	MG16156	TZ4			QAQC_DUP	MG19424	0.03	0.06	0.09	MGL_2022_220			44910	MG16156					33.6				17845	
MDD061	MG14524	TZ4			QAQC_DUP	MG19425	0.65	0.06	0.71	MGL_2022_220			44910	MG14524					275				11483	
MDD061	MG14562	TZ4			QAQC_DUP	MG19426	3.85	0.2	4.05	MGL_2022_220			44910	MG14562					793				11795	
MDD062R	MG16290	TZ4			QAQC_DUP	MG19428	0.01	0.01	0.02	MGL_2022_220			44910	MG16290					7.1				9600	
MDD066	MG17636	TZ4			QAQC_DUP	MG19438	0.09	0.01	0.1	MGL_2022_220			44910	MG17636					19.2				11342	
MDD070	MG20235	TZ4			QAQC_DUP	MG19446	0.27	0.06	0.33	MGL_2022_220			44910	MG20235					264				11922	
MDD072	MG20364	TZ4			QAQC_DUP	MG19452	0.06	0.04	0.1	MGL_2022_220			44910	MG20364					72.3				7569	
MDD072	MG20365	TZ4			QAQC_DUP	MG19453	3.25	0.24	3.49	MGL_2022_220			44910	MG20365					1413				10262	
MDD072	MG20383	TZ4			QAQC_DUP	MG19457	0.01	0.01	0.01	MGL_2022_220			44910	MG20383					39.7				10330	
MDD077	MG16660	TZ4			QAQC_DUP	MG19464	0.24	0.03	0.27	MGL_2022_220			44910	MG16660					26.8				11220	
MDD079	MG20591	TZ4			QAQC_DUP	MG19470	0.08	0.03	0.11	MGL_2022_220			44910	MG20591					513				8910	
MDD083	MG16890	TZ4			QAQC_DUP	MG19506	4.05	0.27	4.32	MGL_2022_220			44910	MG16890				5602	828		368		8696	
MDD083	MG16897	TZ4			QAQC_DUP	MG19510	0.35	0.04	0.39	MGL_2022_220			44910	MG16897				6641	1326		553		9071	
MDD083	MG16946	TZ4			QAQC_DUP	MG19512	0.24	0.03	0.27	MGL_2022_220			44910	MG16946				5558	611		463		10789	
MDD083	MG16948	TZ4			QAQC_DUP	MG19514	0.17	0.01	0.18	MGL_2022_220			44910	MG16948				7545	205		425		11483	
MDD083	MG16892	TZ4			QAQC_DUP	MG19515	0.58	0.03	0.61	MGL_2022_220			44910	MG16892				5801	338		410		11492	
MDD083	MG27007	TZ4			QAQC_DUP	MG19521	0.19	0.04	0.23	MGL_2022_220			44910	MG27007				7382	517		424		14168	
MDD088	MG18428	TZ4	249	250						MGL_2022_187			101	As_corrXRF	0.075	Au_Au-PA01_ppm_A			109		451		9744	
MDD094	MG18585	TZ4	235	236						MGL_2022_199			115.39	As_XRF_pp	0.185	Au_Au-PA01_ppm_A			115.39			0	14489	0
MDD103	MG18761	TZ4	351	352						MGL_2022_213			675.47	As_XRF_pp	0.3	Au_Au-PA01_ppm_A			675.47				16756	0
MDD090	MG21029	TZ4	212	213						MGL_2022_191			159	As_corrXRF	0.215	Au_Au-PA01_ppm_A			171		440		9413	
MDD096	MG21189	TZ4	188	189						MGL_2022_203			41	As_corrXRF	0.595	Au_Au-PA01_ppm_A			44		538		9499	
MDD106	MG27813	TZ4	189	190						MGL_2022_225			55.76	As_XRF_pp	0.61	Au_Au-PA01_ppm_A			55.76				21732	0
MDD106	MG27760	TZ4	145	146						MGL_2022_225			2536.62	As_XRF_pp	0.41	Au_Au-PA01_ppm_A			2536.6				11158	0
MDD090	MG21017	TZ4	201	202						MGL_2022_191			1929	As_corrXRF	0.175	Au_Au-PA01_ppm_A			2071		480		10700	
MDD087	MG27264	TZ4	218	219						MGL_2022_184			1696	As_corrXRF	0.095	Au_Au-PA01_ppm_A			1779		456		12274	
MDD103	MG18758	TZ4	348	349						MGL_2022_213			1437.77	As_XRF_pp	0.245	Au_Au-PA01_ppm_A			1437.8				14306	0
MDD118	MG21922	TZ4	223	224						MGL_2023_010			1432	As_corrXRF	0.705	Au_Au-PA01_ppm_A			1541		454		11402	
MDD086	MG20954	TZ4	265	266						MGL_2022_183			1181	As_corrXRF	0.15	Au_Au-PA01_ppm_A			1268		367		11988	
MDD082	MG18162	TZ4	188	189						MGL_2022_170			1103	As_corrXRF	3.79	Au_Au-PA01_ppm_A			1181		293		10897	
MDD118	MG21917	TZ4	221	222						MGL_2023_010			1004	As_corrXRF	0.255	Au_Au-PA01_ppm_A			1080		488		11424	
MDD088	MG18474	TZ4	289	290						MGL_2022_187			978	As_corrXRF	3.8	Au_Au-PA01_ppm_A			1051		394		12926	
MDD087	MG27214	TZ4	180	181						MGL_2022_184			571	As_corrXRF	0.63	Au_Au-PA01_ppm_A			599		508		9007	
MDD118	MG21967	TZ4	262	263						MGL_2023_010			555	As_corrXRF	0.055	Au_Au-PA01_ppm_A			597		539		12020	
MDD118	MG21929	TZ4	230	231						MGL_2023_010			528	As_corrXRF	0.155	Au_Au-PA01_ppm_A			568		459		9779	
MDD118	MG21927	TZ4	228	229						MGL_2023_010			425	As_corrXRF	0.08	Au_Au-PA01_ppm_A			457		495		11262	
MDD103	MG18759	TZ4	349	350						MGL_2022_213			387.95	As_XRF_pp	0.225	Au_Au-PA01_ppm_A			387.95				14820	0
MDD121	MG31100	TZ4	263	264						MGL_2023_028			367	As_corrXRF	0.355	Au_Au-PA01_ppm_A			395		501		11112	
MDD090	MG21067	TZ4	243	244						MGL_2022_191			337	As_corrXRF	0.11	Au_Au-PA01_ppm_A			362		439		16049	
MDD105	MG21607	TZ4	249	250						MGL_2022_216			328	As_corrXRF	0.82	Au_Au-PA01_ppm_A			349		408		15819	
MDD086	MG20916	TZ4	233	234						MGL_2022_183			287	As_corrXRF	0.06	Au_Au-PA01_ppm_A			308		417		10239	
MDD096	MG21213	TZ4	209	210						MGL_2022_203			280	As_corrXRF	0.08	Au_Au-PA01_ppm_A			300		461		11507	
MDD105	MG21620	TZ4	262	263						MGL_2022_216			272	As_corrXRF	0.045	Au_Au-PA01_ppm_A			289		554		9243	
MDD106	MG27770	TZ4	152	153						MGL_2022_225			256.17	As_XRF_pp	0.11	Au_Au-PA01_ppm_A			256.17				12292	0
MDD105	MG21572	TZ4	220	221						MGL_2022_216			244	As_corrXRF	0.135	Au_Au-PA01_ppm_A			259		452		12860	
MDD080	MG16821	TZ4	229	230						MGL_2022_166			244	As_corrXRF	0.07	Au_Au-PA01_ppm_A			261		528		9007	
MDD101	MG21413	TZ4	135	136						MGL_2022_210			238.71	As_XRF_pp	0.105	Au_Au-PA01_ppm_A			238.71				15356	0
MDD080	MG16841	TZ4	246	247						MGL_2022_166			199	As_corrXRF	0.535	Au_Au-PA01_ppm_A			213		534		12869	19
MDD118	MG21974	TZ4	269	270						MGL_2023_010			185	As_corrXRF	0.09	Au_Au-PA01_ppm_A			199		617		11820	
MDD094	MG18611	TZ4	258	259						MGL_2022_200			176	As_corrXRF	0.43	Au_Au-PA01_ppm_A			187		448		9897	

HOLEID	SAMPLEID	GeolUnit	SAMPFROM	SAMPTO	DUPLICATENO	CHECKID	Au_MECN15_ppm	Au_AuAA26R_ppm	Au_calc_BLEG_ppm	DESPATCHNO	SENDDATE	XRFID	As_BEST_ppm_D	As_BEST_n	Au_BEST_p	Au_pref_metho	Ag_XRF_ppm	Al_XRF_ppm	As_XRF_ppm	Au_XRF_ppm	Ba_XRF_ppm	Bi_XRF_ppm	Ca_XRF_ppm	Cd_XRF_ppm
MDD088	MG18475	TZ4	290	291						MGL_2022_187			163	As_corrXRF	1.32	Au_Au-PA01_ppm_A			175		408		13917	
MDD101	MG21404	TZ4	126	127						MGL_2022_210			126.76	As_XRF_pp	0.045	Au_Au-PA01_ppm_A			126.76				13551	0
MDD116	MG31072	TZ4	353	354						MGL_2023_007			112	As_corrXRF	0.05	Au_Au-PA01_ppm_A			121		608		9911	
MDD105	MG21587	TZ4	232	233						MGL_2022_216			112	As_corrXRF	0.105	Au_Au-PA01_ppm_A			119		516		10708	
MDD121	MG31113	TZ4	276	277						MGL_2023_028			111	As_corrXRF	0.195	Au_Au-PA01_ppm_A			119		501		10192	
MDD118	MG21954	TZ4	252	253						MGL_2023_010			92	As_corrXRF	0.04	Au_Au-PA01_ppm_A			99		478		9497	
MDD088	MG18473	TZ4	288	289						MGL_2022_187			84	As_corrXRF	2.66	Au_Au-PA01_ppm_A			90		451		11401	
MDD121	MG31125	TZ4	285	286						MGL_2023_028			74	As_corrXRF	0.245	Au_Au-PA01_ppm_A			79		444		10644	
MDD121	MG31085	TZ4	251	252						MGL_2023_028			71	As_corrXRF	0.08	Au_Au-PA01_ppm_A			76		294		11678	
MDD087	MG27289	TZ4	240	241						MGL_2022_185			70	As_corrXRF	0.045	Au_Au-PA01_ppm_A			75		525		10305	
MDD118	MG21944	TZ4	242	243						MGL_2023_010			27	As_corrXRF	0.04	Au_Au-PA01_ppm_A			29		442		16247	
MDD121	MG31110	TZ4	273	274						MGL_2023_028			27	As_corrXRF	0.1	Au_Au-PA01_ppm_A			29		483		14215	
MDD091	MG18538	TZ4	334	335						MGL_2022_192			25	As_corrXRF	0.04	Au_Au-PA01_ppm_A			27		453		12398	
MDD091	MG18533	TZ4	329	330						MGL_2022_192			17	As_corrXRF	0.04	Au_Au-PA01_ppm_A			18		454		10831	14
MDD101	MG21475	TZ4	188	189						MGL_2022_210			14.09	As_XRF_pp	0.15	Au_Au-PA01_ppm_A			14.09				17328	0
MDD085	MG18368	TZ4	261	262						MGL_2022_181			14	As_corrXRF	0.04	Au_Au-PA01_ppm_A			15		512		16582	
MDD091	MG18530	TZ4	326	327						MGL_2022_192					0.045	Au_Au-PA01_ppm_A								

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD023R	MG11778				36	21	24184		15139				375		12.8		29		10.6		102.5					
MDD023R	MG11779				38	18	22367		15272				390		12.4		38		19.2		115.6					
MDD023R	MG11780				26	26	24135		13548				391		13.6		45		19.8		104.3				2.9	
MDD023R	MG11781				30	20	26555		13719				436		14.6		28		16.9		107.3					
MDD023R	MG11782				37	20	26913		17339				425		11.6		30		16.5		122.2					
MDD023R	MG11783				31	16	25116		12698				379		13		37		14.5		102.8				2.5	
MDD023R	MG11784				29	18	29370		16985				460		14.3		39		19.4		130.3					
MDD023R	MG11785				33	23	32622		22714				507		15.3		32		20.8		147.4					
MDD023R	MG11786				31	27	29527		16488				408		14.9		32		23		133.4				2.6	
MDD023R	MG11787				33	27	30830		18743				463		14.5		30		19.6		140.8				2.9	
MDD023R	MG11792				33	28	27547	11	17609				402		14.2		34		12.9		140.1	438			2.8	
MDD023R	MG11793				26	24	25060		14332				401		11.5		33		14.9		100.2	486			3.1	
MDD023R	MG11794				26	19	22681		14377				468		12.2		31		18.4		90				3	
MDD025R	MG11833				24	31	25439		4661				253		7.7		70		57		26.1	1667				
MDD025R	MG11834				29	16	21690		6635				285		11.1		57		120		29.5	1229				
MDD025R	MG11835				31	34	25345		13457				384		12.1		51		52		76.8	952			4.3	
MDD025R	MG11837				24	25	17517		10220				329		8.9		30		32.3		52.2	406			3.5	
MDD025R	MG11838				27	32	20076		12300				351		9.1		41		22.9		60.1	1110				
MDD025R	MG11839				21	34	19391		14361				361		10.2		41		9.7		79.9	759				
MDD025R	MG11840				25	31	18844	11	13161				318		8		46		22.7		73.2	695			3.6	
MDD025R	MG11841				29	30	17747		12568				328		11.1		32		32.4		72.3					
MDD025R	MG11843				36	29	21803		15443				369		9.5		41		12.8		84.9	792				
MDD025R	MG11844				34	32	20294		19154				381		10.7		35		32		109.3	611				
MDD025R	MG11845				39	43	26339		22060				441		15.9		45		26.9		132.9	591			3	
MDD025R	MG11849				32	38	43126		19538				436		12.9		79		56		98.7	2050			6	
MDD025R	MG11850				32	31	27755		21719				458		15.4		48		45		151.4	531				
MDD019R	MG11217				18	21	21853		11573				387		12.8		29		16.1		88.4					
MDD019R	MG11285				29	17	26120		15497				389		10.8		46		17.9		107.3	614				
MDD020	MG11375				34	21	22911		17936				366		10.6		50		12.3		106.1	735			4.9	
MDD020	MG11379				23	18	21843		16958				408		12.3		24		12.1		103	565				
MDD020	MG11382				28	16	22213		11887				389		12.4		34		15		90.6	468			2.4	
MDD022	MG11624				25	37	21043		11113				330		11.1		36		29.3		72.8	620				
MDD022	MG11625				37	30	18129		12334				294		11.9		40		21		79.5	444				
MDD022	MG11623				30	29	22379		8839				363		9.2		54		50		61.6	819			4.5	
MDD022	MG11628				37	23	20809		12775				305		13.3		37		19.8		83.2	749				
MDD022	MG11627				48	22	21344		9665				362		11.8		63		37		56.7	572			3.9	
MDD022	MG11631				31	29	20204		15033				366		9.8		48		19		89.1	632				
MDD024	MG13008				41	41	31302		19434				480		15.1		45		21.2		155.3	685				
MDD024	MG13089				28	24	18611		13532				388		10.1		30		15.3		100.1					
MDD026	MG13242				24	10	14929		7901				246		9		35		31.9		57.3	602				
MDD026	MG13115				32	37	30869	9	20959				449		14.7		31		19.6		153.8					
MDD027	MG12021				28	19	28981		13893				447		11.2		32		18.6		111.4					
MDD027	MG11952		192		37	26	20816		1078				334		11.4		74		61		2.8	1461			7.5	
MDD027	MG11955				31	48	18502		14843				371		11.2		33		14.9		92					
MDD028	MG13287				24	14	17829		12627				313		10.4		15		16.5		109.3					
MDD028	MG13288				27	17	26912		15888				355		14.9		21		18.6		119.6					
MDD028	MG13302				29	22	20046		15170				300		13		33		11.2		123.3	411			3	
MDD028	MG13324				37	23	23675		17132				333		12.8		30		14.3		110.8	836			3	
MDD028	MG13343				33	14	22615		15271				370		12.1		19		14.7		111.6					
MDD028	MG13275				32	28	22079		14801				334		12.5		30		13.7		103.6	772				
MDD031	MG12174				29	25	22339		9566				427		10.6		43		15.6		53.9	538	30			
MDD031	MG12177				35	30	24318		14773				378		12.9		26		28.9		99.5				3.3	
MDD031	MG12179				33	35	26995		17446				434		14.3		35		23.3		126.7					
MDD031	MG12180				39	32	25329		16909				402		12.7		39		19.3		108.2	715			3.4	
MDD031	MG12184				35	33	25601		16450				401		13		31		14.8		118.4	425				
MDD031	MG12196				32	54	58080		23129				545		12.8		99	4969	14		129	2069				

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD031	MG12199				42	24	28553		17247				447		14.2		43		64		112.5	552				
MDD031	MG12208				37	27	28702		17615				462		15.6		42		15.7		117	648				
MDD031	MG12228				27	15	22735		14397				428		12.5		49		6.1		77.5	721				
MDD031	MG12176				39	32	27599		16238				412		14.1		44		105		83.1	1405				
MDD031	MG12195				38	34	25064		13762				365		13.2		43		24		113.4	575				
MDD031	MG12192				42	31	31176		19922				467		15.8		36		26.5		143.2					
MDD031	MG12185				32	22	18140		11950				332		9.5		31		30.6		91.5					
MDD031	MG12187				27	28	25685		15766				421		13.3		26		14.3		119.5					
MDD033	MG13604				34	22	29562		15376				475		16.2		66		29		89.3	1029				
MDD033	MG13605				32	31	29263		16288				476		14		51		27		100.1	667				
MDD033	MG13610				30	25	22412		15658				365		12.4		26		17.1		114.1	425			3.3	
MDD034R	MG15014				31	20	22178		16206				368		13.6		35		15.2		103	544				
MDD030R	MG13410				27	22	21882		12485				356		13.2		38		20.3		113.6					
MDD030R	MG13401				30	25	25365		16032				425		14.5		44		21.4		139.7					
MDD030R	MG13426				28	39	22815		14116				334		11.3		25		15.6		114.5					
MDD030R	MG13421				25	14	23996		12865				408		11.3		21		11.7		110.7					
MDD032	MG13518				34	24	29397		20898				426		14.8		40		72		167	843				
MDD032	MG13512				29	25	23681		16665				419		13.2		24		21.8		143					
MDD032	MG13509				31	20	23772		17206				389		13.1		34		8.7		139	694			2.6	
MDD034	MG13572				40	46	31521		19871				438		15.8		59		26.3		156.5	512				
MDD034	MG13568				31	17	23808		14226				415		12.2		33		20.6		96.3					
MDD034	MG13560				32	26	20404		13389				377		10.3		43		15.9		96.4					
MDD034	MG13585				30	24	22492		15044				370		11.1		38		18.4		114.7					
MDD034	MG13584				48	15	20665		15199				353		11		26		16.5		114.9					
MDD034	MG13586				34	28	21368		15534				346		8.8		32		17.5		103.5	543				
MDD034	MG13558				26	23	19474		13190				349	3.2	10.8		23		19.5		77.4	523				
MDD034	MG13592				47	30	35189		20285				511		19.2		38		20.3		159.1					
MDD034R	MG15086				29	27	23689		17392				420		10.8		29		12.8		111.4					
MDD035	MG13719				38	49	35053		17631				690		19.6		60	4568	15.6		121.2	686			2.5	
MDD035	MG13718				32	16	26793		19762				538		14.3		38		21.5		143.2					
MDD036	MG15147				27	17	24530		13899				403		12.6		33		29		94.7					
MDD036	MG15143				26	13	24430		10136				394		10.3		25		19.3		75.9					
MDD036	MG15163				33	25	30964		17933				468		15.5		20		20.3		124.8					
MDD036	MG15129				30	22	21773		14700				381		12.9		32		18.5		109.6					
MDD036	MG15155				27	16	23815		11549				398		14.5		28		18.3		84					
MDD037	MG12336				44	24	26520		15760				446		12.5		39		7.7		89.7	589				
MDD037	MG12334				31	24	23218		19489				406		11.2		39		11.3		110.7	437			3.8	
MDD038	MG13807				37	26	22085	7	16183				342	3.5	13.9		42		16.8		133.4	449				
MDD038	MG13805				24	18	21954		13471				413		11.8		25		19.8		104.8					
MDD038	MG13831				20	18	17645		13956				288		10.9		31		13.3		109.4	446				
MDD038	MG13812				32	14	20340		14965				346		12.7		14		17.7		107.4					
MDD040	MG13897				21	17	24188		11778				352		8.6		44		91		86.3	686				
MDD044	MG12544				34	32	21200		14467				340		13.8		36		34.1		106.5				3	
MDD044	MG12518				38	33	29393		15640				447		14.7		44		46		94.3	809				
MDD044	MG12553				28	19	18007		8215				316		10.2		34		54		70.1					
MDD044	MG12524				40	32	24744		18622				452		14.2		40		43		134.3	529				
MDD044	MG12530				29	22	21393		14817				358		12		29		21.3		108.3					
MDD044	MG12571				32	25	23507		16639				387		12.9		33		42.7		114.3				3.1	
MDD044	MG12520				35	42	25122		15061				430		12.9		30		22.2		117.4				2.8	
MDD044	MG12519				39	67	26022		17369				450		14.2		34		26.6		126.8					
MDD044	MG12546				27	37	21092		14566				359		11.5		21		24.2		103.4					
MDD044	MG12577				35	22	23787	7	19251				419		12.4		31		59		115.3	648				
MDD044	MG12563				34	20	23821		17627				370		12.2		38		15.5		117.3				2.6	
MDD044	MG12539				34	22	21135		12734				364		10.5		30		12.7		99.3					
MDD044	MG12533				28	18	21522		12914				353		10.7		33		19.6		94.9					
MDD044	MG12535				41	17	19529		12502				350		10.1		22		14.4		95.6	414				

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD044	MG12555				28	24	21742		14942				356		12.4		24		19.1		109.4	534				
MDD048R	MG15508				34	26	21321		14213				396		9.9				13.7		109.2	667			4.2	
MDD049	MG14110				27	36	22744		16954				433		13.7		30		31.1		130.9					
MDD049	MG14107				28	44	21983		17271				370		14		30		38		144.7					
MDD049	MG14104				39	49	31253		22625				510		15.1		43		17.9		166	629				
MDD037	MG12335				32	25	24999		16351				427		13.8		39		6.8		104.8					
MDD041	MG12412				35	28	25155		6389				459		13		68		19.2		31.5	1483			4.9	
MDD041	MG12416				34	44	21255		14069				390		13.7		37		11.4		100.1					
MDD041	MG12418				35	33	29427		20947				471		14.1		42		18		137.7					
MDD041	MG12420				29	21	19352		12263				351		8.8		39		31.4		80.8	461				
MDD041	MG12434				30	27	28065		20604				440		15.3		37		21.4		139.5	684				
MDD042	MG15307				31	19	25876		19261				404		13.2		30		16.4		114.2	816				
MDD042	MG15325				45	33	29963		21112				514		15.9		31		21.6		148.9					
MDD042	MG15326				44	47	29624		18545				435		16.4		38		66		140.9					
MDD042	MG15327				48	35	32119		22500				458		15.6		27		37		162.3					
MDD044	MG12607				45	38	25819		20593				355		16.2		40		11.6		143.4	669				
MDD044	MG12618				32	36	22415		19360				366		12.7		25		13.8		126.1	673				
MDD047	MG12664				33	23	32993		22342				465		13.4		34		17.8		123.8	700			3.7	
MDD048R	MG15510				30	12	21439		13482				312		9.7		17		18.9		103.3	414			3.9	
MDD048R	MG15516				31	24	24842		16477				392		11.4		19		15.1		124					
MDD048R	MG15520				26	25	24160		15483				376		12.8		28		96		103.3	719			3	
MDD048R	MG15553				27	21	23401		14986				390	3.4	12.4		30		21.5		111.3					
MDD048R	MG15559				34	24	21800		15440				358		11.4		23		27.4		112.7					
MDD049	MG14108				37	36	27065		19396				425		14.9		30		17.7		150.2	781				
MDD050	MG17008				32	20	30079		19712				452		15.8		44		20.7		146.4	517				
MDD051	MG15630				29	38	29424		15127				442		15.8		53		33		120.1	783			3.7	
MDD051	MG15640				29	28	20186		13218				278		9.9		53		12.5		92	462			7.7	
MDD051	MG15643				29	27	23479		14487				376		11.5		50		15.8		95.3	903				
MDD051	MG15646				28	24	18115		11508				288		11.6		38		18.1		83.3					
MDD051	MG15647				28	29	22979		17427				401		13.6		40		18		137.2	478				
MDD051	MG15648				26	26	23051	9	17004				381		13.4		32		14.5		130.6	655				
MDD051	MG15656				30	31	25530		18446				421		12.4		41		19.7		122.4	922			2.7	
MDD051	MG15658				23	17	21685		13841				366		12		39		16.8		99.8	407				
MDD051	MG15671				30	20	20453		16762				298		12.9		16		13.5		122.4					
MDD051	MG15673				17	10	11719		6262				234		5.5		20		6.9		44.2					
MDD051	MG15679				28	20	23732		16785				414		10.6		25		12.7		119.2					
MDD051	MG15701				29	25	22473		14948				378		13.5		26		14.2		108.8					
MDD051	MG15712				30	21	22893		16317				374		12.1		18		77		104.9					
MDD052	MG14192				34	22	25168		19834				384		11.8		37		26.7		146.8					
MDD054	MG15738				29	25	21148		12080				350		11.4		56		21.1		80.5	597				
MDD054	MG15739		128		32	24	21714	12	11765				377		10.3		37		26		88.8					
MDD054	MG15744				36	31	34180		19393				466		15.1		44		23.6		158.5	534				
MDD054	MG15749				24	37	21261		13432				402		13.6		30		21.2		109.9	427			2.7	
MDD054	MG15768				31	18	20286		13338				364		10.7		26		18.7		100.6	439				
MDD054	MG15771				28	19	21890		13805				352		13.5		25		18.6		109.4					
MDD054	MG15784				31	17	21095		13765				346		12.3		37		18.2		107.7					
MDD054	MG15793				37	23	21848		15832				354		11.8		32		14.3		110.3					
MDD054	MG15812				28	27	26031		14525				373		12.7		31		15.9		106.2	487				
MDD054	MG15818				23	24	19385		12433				356		10.7		29		11.3		81.6					
MDD055	MG17241				33	34	28234		18878				483		14.6		54		62		102.9	914				
MDD055	MG17242				35	28	22273		12257				358		12.2		43		83		70.3	779				
MDD055	MG17245				49	36	28305		15665				387		12.1		55		24		109.1	847				
MDD055	MG17248		390		35	33	27734		16226				494		12.6		46		30		88.9	1153				
MDD055	MG17249		156		41	20	28346		14740				468		13.7		42		13.1		88.6	806				
MDD055	MG17261		180		28	19	18839		13180				340		9.6		27		15.4		86.1					
MDD055	MG17270				25	16	22143		15487				374		13.2		32		15.8		120.8					

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD055	MG17289				29	22	25872		14652				394		10.3		42		9.8		90.8	700				
MDD056	MG15970				31	15	19998		11271				309		10.3		30		17.5		88.2					
MDD056	MG15980				32	28	25988		18813				401		13.7		29		16.8		147.6					
MDD056	MG16004				31	14	24176		14099				359		12.3		23		11.5		104.8					
MDD057	MG14253		145		32	24	28142		17083				413		13.7		51		19.2		149.6	960				
MDD057	MG14260				24	40	23233		16039				383		13.7		29		16.9		135.2	593				
MDD057	MG14270				38	45	32776		19744				466		16.8		47		17.4		159.9	558				
MDD058	MG14315		167		36	30	28212		17929				468		15.5		41		67		135	916				
MDD058	MG14317				38	66	26473	10	17673				510		13.7		39		47		128.9	1225				
MDD058	MG14332				40	50	27501		20778				417		15.3		31		13.8		159	1004			3.2	
MDD059	MG16118				29	19	22554		16226				393		11.9		32		49		123.1	465				
MDD061	MG14387				29	22	15405		9370				302		8.5		30		12.3		64.2	610				
MDD061	MG14392				30	31	22612		13624				380		12.1		46		18.3		98.2	591				
MDD061	MG14393				37	27	32989		21748				470		13.8		52		18.8		155	546				
MDD061	MG14402				43	20	26682		21247				378		14.2		16		17.4		159.2					
MDD061	MG14408				30	19	16639		11396				273		12.8		34		15.3		83.1	580				
MDD061	MG14410				34	21	19667		15110				296		12.6		22		16.4		117.3					
MDD061	MG14413				29	28	23146		14646				303		11		42		12.9		101.2	1035				
MDD061	MG14431				23	15	23009		12745				388		11.2		34		14.6		93.1					
MDD061	MG14465				22	22	22576		16219				392		12.6		36		17.6		121.7					
MDD061	MG14472				18	21	21196		11477				362		11.4		18		13.7		87.7				4.3	
MDD061	MG14477				30	21	28498		15903				324		9.2		40		19		109.2	1347			7.9	
MDD062R	MG16215				22	22	22839		19378				375		13.7		39		18.3		144.5	495			2.8	
MDD062R	MG16226				17	13	19534		18310				400		15.5		27		18.8		151.1					
MDD064	MG14582				31	26	27216		15232				377		13.3		30		22.2		130.7					
MDD064	MG14583				28	40	23507		16436				382		15.2		31		20		133.9					
MDD064	MG14587				27	36	32224		19247				513		14.8		43		25.4		153.8					
MDD064	MG14588				31	52	26856		14311				467		13.5		30		23.2		119					
MDD064	MG14591				31	29	29853	7	17797				461		15.6		35		22.7		156.7					
MDD064	MG14604				26	17	20866		12212				362		11		32		21.7		103.5					
MDD064	MG14609				34	52	37259	9	21538				521		19.3		58		42		183				3.2	
MDD056	MG16015				30	23	21166		16093				343		12.1		19		17.1		114.1					
MDD056	MG16080				36	23	36213		15651				392		11.2		41		71		95.8	1296				
MDD056	MG16082				24	16	26072		13413				335		12.2		44		17.8		98.3	567				
MDD062	MG16203				26	26	19983		15079				311		13.1		25		39		121.6	466				
MDD063	MG17482				30	13	22184		15297				389		14.5		23		15.6		104.9	525				
MDD066	MG17588				28	25	21735		4575				402		12		40		19.1		29.1	897			3.8	
MDD066	MG17589				42	36	27621		12656				412		14.2		46		21.1		63.3	763				
MDD066	MG17593				38	17	30027		13888				505		16.3		49		18.5		66.7	770				
MDD066	MG17596				37	33	26345		14473				418		13.2		54		14.9		66.7	1385			4.6	
MDD066	MG17600				36	20	23060		9200				407		8.2				31.7		61.8					
MDD066	MG17616				26	13	18360		12813				336		9.7				15.6		87.6					
MDD066	MG17624				36	36	25419		15783				406		14.4		41		34		103.6	459				
MDD066	MG17635				33	12	23401		16210				401		13.2		12		16.4		118.6					
MDD067	MG20097				34	31	27830		17634				490		15.3		43		26.1		146					
MDD067	MG20120				37	15	27788		18257				432		15.5		35		18.4		149.7					
MDD067	MG20143				33	18	21340		14711				360		12.2		21		13.2		109					
MDD067	MG20194				26	18	22364		14305				395		11.2		27		16.9		107.1					
MDD069	MG17756				36	15	23755		10368				418		11.2		49		18.7		70	790			4.3	
MDD069	MG17828				23	20	24968		15350				391		12.8		16		12.5		115.4					
MDD070	MG20244				34	25	33556		19126				502		16.8		26		18.7		156					
MDD070	MG20252				30	41	28118		20836				428		16.2		46		33		170					
MDD071	MG16421				30	24	31883		19004				469		16.3		20		23.8		162					
MDD071	MG16425				23	19	21865		15018				350		11.9		20		39.9		124.8	494				
MDD072	MG20348				34	30	31926		19003				467		18		39		24.1		156.4					
MDD072	MG20372				24	31	31717		18968				467		15.3		35		21.3		156.2					

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD072	MG20390				26	26	37355		21095				508		18.8		46		27.5		172	585				
MDD072	MG20391				30	25	31392	6	20377				431		15.1		32		24.7		152.7					
MDD073	MG16493				27	15	31652		17119				449	3.4	16.8		27		21.3		139.2					
MDD073	MG16506				22	18	24679		13973				389		11.7		43		13.6		107.5					
MDD073	MG16507				19	19	24546		14448				421		12.5		34		19.9		105.8					
MDD073	MG16516				21	19	20966		13407				357		12.7		31		18.5		108.1					
MDD075	MG16562				27	20	25186		14942				418		14.2		35		23.9		118.9					
MDD078	MG17995				38	51	29293		14012				421		15.6		46		19.1		74.6	904				
MDD078	MG18009				28	24	20081		11358				336		9.9		43		46		59	811				
MDD078	MG18017				28	18	21366		10766				389		12		22		13.2		66.6					
MDD079	MG20559				36	40	28552		17845				469		13		30		21.2		130.1					
MDD079	MG20564				33	34	28042		21121				401		15.6		42		25.9		144.2	674				
MDD080	MG16756	67		135		46	28594		16004	56	899863		422		5		18	250	25		121	107				29102
MDD080	MG16759	97		118		29	31392		18091		890434	6369	422		4		23	238	34		145					28717
MDD080	MG16760	82		107		21	23259		13771		906106	5757	327		3		13	291	42		108	133				28594
MDD080	MG16799	88		104		22	25329		17773	54	891170	6076	347				14	260	52		128	119	28			36028
MDD080	MG16805			81		23	26316		16102		898648	7048	344		4		14	272	19		119					29768
MDD080	MG16810	61		83		19	23125		16457		892563		324				15	263	18		115	73				41756
MDD080	MG16811	79		128		21	25788		20583		857837	7129	367		3		20	283	19		146	344				51743
MDD080	MG16780	73		123		27	27290		15324	64	901210	5503	411				12	256	24		125					27709
MDD080	MG16798	85		81		16	22227		16526		892420	5735	295		4		9	284	23		115					41621
MDD081	MG20706		5134	0	0	20	23472	0	17029		886900	0	352	0			32	240	28		115	0	0		0	38428
MDD081	MG20707		4890	0	0	22	24242	0	14803		900100	0	345	0			23	0	22		104	0	0		0	32453
MDD081	MG20708		5920	0	0	36	32774	0	19875		881100	0	463	0			34	212	33		143	0	0		0	32032
MDD081	MG20710		4613	0	0	31	31076	0	20408		885900	0	458	0			38	239	41		155	0	0		0	32733
MDD081	MG20720		7509	0	0	44	25078	0	17016		889100	0	370	0			0	168	21		120	0	0		0	35213
MDD081	MG20721		5834	0	0	32	22700	0	17116		902300	0	393	0			29	241	22		128	0	0		0	28233
MDD081	MG20723		5709	0	0	17	20257	0	13202		884900	15000	247	0			0	270	34		84	0	0		0	38841
MDD081	MG20739		3462	0	0	21	22219	0	17614		880600	0	387	0			28	307	20		106	0	0		0	45904
MDD081	MG20740		5697	0	0	0	16857	0	9565		902800	0	396	0			0	224	6		52	0	0		0	37536
MDD081	MG20741		4128	0	0	20	24362	0	16986		874700	0	234	0			32	174	14		100	810	0		0	44705
MDD081	MG20748		4708	0	0	22	21244	0	16534		882000	0	314	0			35	218	16		102	0	0		0	46692
MDD081	MG20749		3766	0	0	25	25026	0	18850		884000	0	361	0			22	239	26		116	0	0		0	42773
MDD081	MG20754		3386	0	0	17	22130	0	15666		888400	0	440	0			26	200	15		93	0	0		0	40225
MDD081	MG20758		5477	0	78	22	25299	0	16494		888100	0	373	0			33	248	18		106	0	0		0	37833
MDD081	MG20750		2693	0	87	13	20813	0	15898		887800	0	304	0			30	278	16		98	0	0		0	45936
MDD081	MG20732		4105	0	0	25	28483	0	17563		875500	0	437	0			26	222	27		118	0	0		0	42642
MDD081	MG20745		5791	0	0	17	20189	0	15577		891000	0	383	0			23	0	11		97	0	0		0	40309
MDD081	MG20729		3541	0	0	35	34227	0	21041		871400	0	446	0			35	222	23		152	0	0		0	41501
MDD082	MG18148	81		122		19	23375		16847	79	891612	6478	360		3		11	254	18		119	67				37847
MDD082	MG18154	59		86		25	21185		13244		900947	4712	295				10	264	17		89	147				34208
MDD083	MG16870	103		101		15	20688		12025	77	915710	5301	311				10	257	23		86		30			22501
MDD083	MG16874			90		12	23245		14751		898390	6621	372		3		16	307	22		98	101				32177
MDD083	MG16884	83		87		13	21182		14003	56	910220		342	3			11	222	17		97					31333
MDD083	MG16886			90		10	25400		16328		911854		371		5		19	255	19		132					24762
MDD083	MG16893			93		11	22438		12812		911193	6412	317				13	261	24		93					27880
MDD083	MG16894			103		19	21648		15160		905334	5823	300				13	267	21		105					31847
MDD083	MG16895			71		6	22485		12235		899934	5588	430		4		10	244	14		88					33661
MDD083	MG16901	68		94		25	21996		14401		890025	6064	352				12	254	21		99	287	26			38230
MDD083	MG16944	81		95		18	24216		13754		905238	6363	327		3		14	240	19		106					28499
MDD083	MG16971			89		23	27837		14922	68	882401	5518	430				15	281	17		105	88				39637
MDD083	MG16978	67		93		25	26669		16899		890915	7451	388		4		15	312	27		121					31587
MDD083	MG16981			113		9	24004		14314		896378	6478	273				15	271	14		110	266				27614
MDD083	MG16985			88		12	20635		14557		907901		288		3	128	11	219	16		95	143				31298
MDD083	MG16990			91		15	23285	8	12398		913639	5361	332		4		11	255	15		101					25716
MDD083	MG16955			115		13	22826		11711	61	897376	5294	367				13	242	19		86					32764

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MDD084	MG27025	78		95			15050		6410		917544	5873	222				6	233	139		37	373				33161
MDD084	MG27038	73		123		24	20788		13917		891581	7022	329				11	136	18		79	295	35			36333
MDD084	MG27048	101		76		12	18829		11688		907966	5326	295				7	188	122		70					36952
MDD084	MG27051			75		14	18068		11464		915097	4896	279				6	237	98		70					28215
MDD084	MG27052	98		97		14	21509		14196	53	898938	5506	318				10	245	33		87	144				35554
MDD084	MG27053	57		76		28	20944		15281		904506	5052	316				12	181	17		92					32220
MDD084	MG27054			113		16	20730		14158		901460	4756	331				10	148	23		81	154				32169
MDD084	MG27060	61		92		17	22410		15740	50	900360	4170	323				13	241	20		101	110				34075
MDD084	MG27061	65		104		16	22196		15574		904614	5749	361				12	204	32		108					27246
MDD084	MG27080			59		15	17681		15414	56	895994	6077	295				12	194	18		87					42026
MDD085	MG18273		4027	0	0	51	27485	0	18896		883900	0	424	0			18	236	18		125	0	0		0	37331
MDD085	MG18290		10736	0	0	23	22010	0	15740		900100	0	342	0			0	0	24		100	0	0		0	25972
MDD085	MG18300	72		94		29	24615		15694		899637	5530	292		3		12	231	22		109	158	28			29507
MDD085	MG18266		3979	0	0	25	26862	0	17405		887400	0	413	0			32	233	19		109	0	0		0	37033
MDD085	MG18279		5049	0	0	13	19231	0	13779		902400	0	289	0			0	0	17		86	0	0		0	32631
MDD085	MG18259		5632	0	0	14	20960	0	12122		879100	0	321	0			18	0	15		64	825	0		0	41694
MDD086	MG20830			97		34	19610		7372	52	910796	6001	326				17	200	25		56					21155
MDD086	MG20833			115		40	20558		13481		897665	7558	280				21	177	28		92	127				34877
MDD086	MG20834	82		143		30	28089		17723		876788	5069	385		4		18	202	31	121	125	239				41970
MDD086	MG20836	91		125		41	33319		18632	84	884314	6572	456		4		23	240	24		152					33387
MDD086	MG20839	75		87		26	29200		15346	50	891332	6457	393		4		18	213	25		125					35220
MDD086	MG20843	68		102		41	34889		16932	59	892747	6890	452		4		25	225	44		153					28276
MDD086	MG20849	63		121		40	29595		18719	52	887255	4535	377		5		22	243	32		143	90				35510
MDD086	MG20868			91		21	24902		15637		904455	6514	360		3		15	256	24		128					28591
MDD086	MG20876	64		89		24	23061		14250		900519	7533	335		3		15	223	22		106					30525
MDD086	MG20879	74		101		13	23408		14197	49	900840	5522	322		3		15	226	20		106					32748
MDD086	MG20894	65		100		14	24456		13119		885374	4593	347				13	254	19		98	452				37702
MDD086	MG20878	66		85		20	25629		18946	51	891894	4583	299				15	234	19		133					37922
MDD082	MG18221	66		74		16	26785		11410	48	905953	5551	426		3		10	102	19		84					26425
MDD091	MG18505	70		95		20	23946		14763	58	902081	5963	357				15		11		127					30138
MDD081	MG20796	84		111		17	24548		12249		915170	6819	338			151	15	85	25		99		27			20997
MDD090	MG21045	64		115		23	26950		15476		910810	5649	382				14	86	22		120					19320
MDD089	MG27347	68		72		16	24659		14371		912046	6880	345		3		15	85	21		115					22109
MDD106	MG27773		5032.3	0	0	17.97	27072.14		17164.97				382.4	0			22.8	1110.72			139.38	0			0	37201.95
MDD097	MG29018		2840.26	0	0	16.74	24208.48	0	15680.16		886026.25	0	414.16	0			29.94	1050.13	18.07		102.92	0	0		0	34332.67
MDD097	MG29047		4409.28	0	0	28.96	23756.69	0	14816.01		889627.22	0	352.89	0			19.99	1207.79	17.93		95.39	148.14	0		0	35123.67
MDD116	MG18996	64		116	35	20	17514		914	67	898831	5101	111			136	10	168	212			1171				40310
MDD097	MG29008		0	0	0	0	19463.26	0	2106.01		867737.69	0	387.58	0			0	1012.77	14.77		5.95	1087.6	0		0	55302.35
MDD116	MG18999	95		116	43	16	19554		9802		874475	5141	254			148	10	186	43		52	538				49681
MDD121	MG31078	73		90	156	14	21140		6864	63	895797	5456	359				27	86	22		49	368				29627
MDD118	MG21879			69		25	17619		898		865400	7586	277				18	213	38			741				64936
MDD116	MG31024	73		117	38	13	19729		14209		870963	8870	270				12	181	20		80	214	31			45760
MDD105	MG21528	72		87		18	20757		13463		885884	5626	290				15	86	30		89	217				41871
MDD118	MG21914			84	30		18268		7089	48	895104	8010	286				12	212	39		44	77				40057
MDD118	MG21886			91	61	9	17534		7214		897716	7222	255				10	187	63		52	118				39591
MDD118	MG21901	75		104	29		20171		12046		874726	9914	329	4			11	272	18		73	127				46474
MDD087	MG27198	84		89	37	13	28668		14933	62	884239	4631	537		3		18	226	31		94	238				27869
MDD088	MG18415		9104	0	0	21	23729	0	10900		876100	0	361	0			0	0	16		67	0	0		0	41304
MDD118	MG21900	85		84		25	19586		11814		875953	6686	294				16	209	30		77	104				50291
MDD116	MG31003			88		27	17184		16271	56	885631		271				10	163	23		84					47591
MDD084	MG27148			93		12	22959		12498		900493	5510	347		3		15		13		83					28988
MDD118	MG21899	71		77			15169		2760	58	888649	7767	272			162		221	21		14	160				53896
MDD121	MG31093	83		127	96	28	22066		8323		909850	6797	364			130	18	80	22		81					23233
MDD105	MG21526	62		86		25	22737		10778		898329	3960	404				15	134	23		79					34957
MDD087	MG27232	64		101		13	21067		13212		913851	7133	302				14	221	25		99					22395
MDD095	MG27510	65		114		17	26653		10120	60	910997	4957	380		4		16		22		81					19110

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD087	MG27233	76		90		20	23458		14135	49	902244	5799	280				15	235	30		107					30908
MDD090	MG21003	63		96		8	18925		14719	44	917171	6237	274				10	70	23		115					22679
MDD090	MG21019	67		68		15	23789		15183	51	901087	8187	327		3		10	49	19		112	74				26965
MDD084	MG27127	78		125		21	23423		14986	69	900675	5500	336				12	47	16		113					31078
MDD121	MG31082			103	61	14	21702		11274		879609	5780	294			136	13	119	20		90	110				48081
MDD118	MG21888	60		98			15887		4517		897739	5992	295				10	179	33		29					42956
MDD121	MG31101	65		93	104	22	22802	6	10794	52	888159	6776	355				19	95	17		82	155				38278
MDD118	MG21904	89		75	57	10	20565		15027	50	877461	6572	342				10	258	41		102					47926
MDD087	MG27238	77		103		21	22148		14001	50	895752	6325	323		3		7	247	16		98					36202
MDD118	MG21883			76			14985		2817		896896	10046	275			148	6	176	119		13					43494
MDD090	MG20972	75		114		43	32222		19063	53	886453	6120	417		3	142	23	108	43		164	66				29709
MDD082	MG18200	61		100		26	27830		14957		898375		392		3		16	167	23		117					31148
MDD089	MG27345	75		109		9	20509		15233		920323		310		3		11	87	23		107					20608
MDD082	MG18195			95		9	20675		10382		895211	4400	375	4	3		8	118	16		74					39707
MDD089	MG27332			116		12	25174		14060		907375	4246	367				13	113	18		109					23378
MDD090	MG20976	84		108		47	27483		16943		880124	6143	395		3		18	105	43		138					40277
MDD084	MG27151	59		74		13	19128		12150		903983	6060	320				9		11		70					33960
MDD118	MG21885			46			11439		3806		888435	8388	188				5	207	240		18	89				61640
MDD089	MG27341	67		100		20	24182		16111	60	911031	4819	322				13	94	16		119					21486
MDD088	MG18383		6200	0	0	19	21925	0	12351		907800	0	359	0			29	0	12		82	0	0		0	24885
MDD105	MG21557	111		91		14	24801		17022	89	899301	4067	377				13	100	22	166	115					28812
MDD090	MG20997	98		101		19	20493		14366	51	914586	6314	260			165	14	100	19	109	113					24964
MDD087	MG27225	80		107		15	20228		14427		909023	6901	325				12	217	108		104					26839
MDD105	MG21548	84		100		23	22631		14283		904857	4581	343				14	144	29		101					28554
MDD087	MG27226			101		20	20550		14337		904055	5607	320				11	197	21		101					33516
MDD084	MG27144	109		107		20	29673		18504		891276	3495	415		3		23	73	20		136	85				32787
MDD082	MG18209	107		84		21	23029		14316		885879	5930	409				11	165	15		96					39034
MDD090	MG21026	73		66		13	21870		15252		911730	5344	319		3		13	119	16		110					24693
MDD090	MG20988	59		136		22	26880		16185		907578	5749	350		3		17	117	34		140					24922
MDD090	MG21005	93		93		14	23018		14606	48	904886	5201	344				12	100	21		111					30605
MDD116	MG31030	82		95		20	22734		17297		880967	6923	317				20	193	20		113					44549
MDD079	MG20610			92		20	24665		15247		899656	6408	342		3		13	184	18		122					29201
MDD087	MG27213	82		108		32	28725		17800		892298	5932	372		4		17	209	23		134					30460
MDD082	MG18184	66		112		23	23075		13218		905270	7557	337				15	78	18		113					25371
MDD090	MG20991			100		24	24930		16572	51	897313	6486	365		3		19	161	25		128					32533
MDD121	MG31081	61		78	67	27	21195		13130	64	842352	4007	320		3		11	139	21		80					83559
MDD091	MG18501	62		132		40	27885		16260		902060	5007	390		5		21		25		148					23012
MDD090	MG20999			101		20	21353		14133		905024	7301	310		4		18	118	20		102					32352
MDD082	MG18203	73		104		22	21519		13079		909619	8287	328				11	68	16		96					25542
MDD090	MG21043	74		62		9	24479		14324		911395	6077	377				14	147	29		100					20986
MDD090	MG20971	85		121		25	25833		15283	81	900784	5379	334		2		18	110	26		128					32648
MDD087	MG27261	67		91		15	22818		14682		901766	4959	341		3		16	239	22		98					33861
MDD080	MG16822	86		77		12	24847		18177	48	868474	7460	409				17	220	18		118					43326
MDD087	MG27210	81		113		29	28617		17922	58	900751	6944	353				15	239	20		142					26459
MDD088	MG18417		6825	0	0	38	28566	0	17051		883300	0	470	0			32	0	21		115	0	0		0	34459
MDD091	MG18506			91		14	26422		16233		900257	5046	378		3		13		19		132					27313
MDD090	MG21047			84		16	22379		15018	69	912551	6182	317				10	95	19		104					22652
MDD087	MG27254			118		13	25266		14510	49	908315	7314	363		3		13	219	22		112					23372
MDD105	MG21542			100		19	25035		13360		909941	3937	342		4		12	127	18		103					25915
MDD105	MG21547	76		99		16	26169		16054	44	894192	6444	389				14	170	21		114					31706
MDD103	MG18760		3809.26	0	0	22.91	21526.65		15731.04				363.84	0			0	954.44			121.75	207.64			0	36132.29
MDD082	MG18232	68		119		10	24908		11157		889604	4981	392		3		12	65	18		72					41277
MDD082	MG18189	64		94		19	24470		13864	63	889586	5085	365		5		15	85	17		100					40697
MDD082	MG18169	95		115		16	25287		14917	49	899835	3935	394		3		16	98	17		112					30865
MDD105	MG21538			101		15	27510		15710	48	896967	6716	349				17	88	22		123					27518
MDD105	MG21566	79		67		15	25053		14347	63	879313	5729	428				12	96	19		96					43071

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD097	MG29042		4132.63	0	0	22.49	23517.3	0	16192.86		887326.41	0	342.46	0			33.67	1086.33	16.6		105.32	164.58	0		0	37291.37
MDD082	MG18193			95		12	24428		15411		903288	4770	382		3		16	93	20		118					27381
MDD088	MG18390		3455	0	0	30	28773	0	16469		891300	0	452	0			36	0	26		112	0	0		0	28018
MDD099	MG18734			101		26	30005		15441		852575	10119	428				19	236	27		118					54923
MDD094	MG18587		3853.49	0	0	26.4	26922.13	0	15323.12		887909.31	0	405.1	0			0	920.73	26.02		116.92	0	0		0	33672.42
MDD099	MG18662	71		115		21	28126		15594		920958		313		4		19		25		145					16488
MDD106	MG27778		838.25	0	0	26.33	33554.23		19266.85				368.18	0			36.75	1137.74			173.18	198.17			0	33833.1
MDD091	MG18509	75		140		29	26546		14901	58	912774	6728	359		4		27		32		131					20003
MDD091	MG18508	90		107		22	30229	4	17756	60	894585	7044	372		4	165	19	52	25		147					30336
MDD101	MG21406		3567.32	0	71.05	23.56	21945.03		11822.69				357.26	0			27.21	983.07			85.26	0			0	31859.55
MDD099	MG18678	66		75		14	25133		14986		872367	6709	363		3		11	137	25		105					48838
MDD091	MG18534	84		80		15	23087	4	16078		901774	5343	307		3		16	62	16		124					32220
MDD040	MG13875				31	41	33198		15211				507		15.3		18		24.3		126.6	596				
MDD145	MG19792			125	34	27	37225	5	10535	55	906201	4895	528				45		24	108	93					20143
MDD145	MG19793			131	35	29	37816		9935		902031	5788	572				49		21		86					21190
MDD145	MG19794	79		143	61	31	37398		9967		896638	4576	559				45		20		85					25341
MDD145	MG19795	67		152	34	36	36902		11695		884350	7663	521				37		23		97					32500
MDD145	MG19796	61		136		33	33441		11234	57	913324	5405	486		3		26		26		109					18843
MDD145	MG19797	64		130		28	31131		10648		904010	7710	471				29		25		99					26255
MDD145	MG19798			152		37	34359	5	11131	50	913066		502				34		23		100					22911
MDD145	MG19799	75		117		29	33625		11243	44	908030	5017	497				32		23		104					23507
MDD145	MG19800	67		95		32	31109	4	11478		911904	5864	412		3	190	24		23		100	29				23746
MDD145	MG19801	59		131		21	25727	5	11507		909774	5959	328	5		126	20		22		93					28815
MDD145	MG19802	87		97		19	26780		11759	52	920443	4315	342				20		19		108					20563
MDD145	MG19803	69		113		19	30137		13392		917861	5326	376				23		20		122					18377
MDD145	MG19804	88		104	25	19	30976	5	13414	69	906657	4517	413		5		25		17		121					25745
MDD145	MG19805	64		116		26	35398		12791	52	896238	6447	479				32		20		114					28763
MDD145	MG19806			138	34	26	33170	6	11130	49	908043	6518	474	5	4		32		19		96					22454
MDD145	MG19808	84		114	33	29	36031	4	13803	53	888191	5180	471		4	141	37		19		116					33545
MDD145	MG19809	63		136		21	35533		12964		907310	5688	439	4			31		22		125					20877
MDD145	MG19810			131		24	32075	6	11663		909443	4735	440				30		22		104					23712
MDD145	MG19811	79		121		29	37536	6	10460		902375	6543	541				38		21		98					21881
MDD145	MG19812	61		144		31	36727	5	9162		915290		550				41		21		93					18416
MDD145	MG19813	116		117	45	31	38804	5	10939		888147	5066	580		3		48		20		90					31141
MDD145	MG19814	114		146	54	34	40042	5	10587	74	889417	3859	603				49		21		88					30573
MDD145	MG19815			160	36	27	38647		10049		894230	4237	557		3		49		20		88					27702
MDD145	MG19816	82		141	47	23	36627	4	10610		906410	5132	513		4		37		22		107					20933
MDD145	MG19817	74		119	30	25	33705		11911		899836	5012	450		3	139	30		25	102	109					27801
MDD145	MG19818			112		28	32398		11456		908687	4684	505		4	145	25		26		105	27				22858
MDD145	MG19819			126		30	35181	4	12777		895404	5082	522		3		21		25		108					28252
MDD145	MG19820	63		101		32	35413		11772		894024	4691	547		3		20		27		97					29270
MDD145	MG19821			126		28	36281		9648		905329	4578	523				25		21		84					19744
MDD145	MG19822			160		25	36355	6	8838		901834	6379	549				21		22		75					20846
MDD145	MG19823			129		30	36312		8908		898730	4571	547				15		21		70					23901
MDD145	MG19824	75		173		27	35903		8719		909115		554				18		20		71					20103
MDD145	MG19825	77		153		26	36165		9388		900144		552				20		19		73					24819
MDD187R	MG19827	62		95		16	31085		14469		907266		399		5		20		26		108					29353
MDD187R	MG19828			111		19	31645		15239		900486	5928	378		6		21		23		114					30381
MDD187R	MG19829	77		105		20	29783		13591	56	901620	6943	371		4	149	21		22		101					31034
MDD187R	MG19830	110		81		19	30498	4	13458	57	910900		363		4		23		24		106					27296
MDD187R	MG19831			118		22	33337	4	13847		894667	4746	439		4		23		25		106					33302
MDD187R	MG19832			88		21	33089		13493		894677	5559	422		3		28		27		101					34125
MDD187R	MG19833	81		86		20	31881	4	13250	47	895742	4307	413				23		24		101					35613
MDD187R	MG19834	81		133		26	33673	5	10712		897399	4917	483		3		37		26		86					29894
MDD187R	MG19835	69		105	34	29	30960		9356		898955	5211	429				31		21		73					33633
MDD187R	MG19836			76		51	26849	5	9177		905441		410				34		23		69					37365

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD187R	MG19837	66		48		36	24304		10169		899117	6227	344				22		22		73					40755
MDD187R	MG19838	82		56		20	26042		10664		908033		358				21		24		79					36839
MDD187R	MG19839	58		93		17	26355		11158	46	896205	6485	349				19		25		84					40462
MDD187R	MG19840			94		15	26977	4	11250		904979	4338	366				15		27		92					33406
MDD187R	MG19841	74		84		15	27723		12692	53	901748	5420	366				24		21		104					33345
MDD187R	MG19842	57		104		16	25334		11751		915784		326		3		18		22		96					30138
MDD187R	MG19843	91		99		15	26153		11048		897471	6850	353				23		20		85					39607
MDD187R	MG19844	62		132		24	28002		10098	68	911739		375	5			23		25		84					31015
MDD187R	MG19845	87		98		21	30702		11444		902475	6847	380				24		24		96					30317
MDD187R	MG19846			99		21	29414		10843		898420	5472	378				30		27		86					35501
MDD187R	MG19847			105		24	28161		9450		889550	8248	401			144	25		24		74					39293
MDD206	MG19848			110		21	37226	4	14588		890689	7792	459		5		27		26		114					32033
MDD206	MG19849	96		106		17	33322		12487		896454	4229	409		3	171	25		23		95					34373
MDD206	MG19850	84		127		17	36522		13545	66	902109	5637	440	6	4		29		26		110					25998
MDD206	MG19851			120	37	16	35491		11369		895768	5322	492		3		36		22		94					29939
MDD206	MG19852	80		91	29	26	34185		11520		882665	6346	460		3		29		22		89					39357
MDD206	MG19853	75		87		25	32792		11459	59	901998	6722	451		4		24		24		102					26921
MDD206	MG19854	78		119	28	19	34146	4	13551	56	878445	7881	495				29		23		111					38237
MDD206	MG19855			138	26	27	37708	5	13474	53	891015	4790	528		3		36		24		113					30623
MDD206	MG19856	117		126	36	31	34417		13368		886711	6799	516				35	42	22		110		34			34348
MDD206	MG19857			108		14	34946		13563		896198	5354	455		4		29		22		116					28873
MDD206	MG19858	66		107		18	35775		14445		888415	5270	443		3		31		22		117		24			36427
MDD206	MG19859	72		120		14	36028		16543		881984	5106	440		5		33		22		131					37236
MDD206	MG19860	100		67		15	26764	5	12697		905808	5323	346				21		18		99					30954
MDD206	MG19861	90		116		18	30286	5	14178		907156	5277	408		3	207	22		21		122					24934
MDD206	MG19862			84		51	30036		12867		898291	6051	394		3		27		23		107					31388
MDD206	MG19863	67		102	37	81	32266	6	11631		896215	4591	481				41		21		95					30756
MDD206	MG19864	85		109		33	30733	5	12736	48	896690	5212	436				31		26		99					32573
MDD206	MG19865	70		115		26	31195	5	11835	52	892762	5519	441		3		29		20		92					34720
MDD206	MG19866	108		110		30	36344		14838	60	878451	6918	496		5	202	33		20	105	123					37886
MDD206	MG19867	94		118		19	29678	5	12594	48	897379	6424	420		3		25		22		99					31759
MDD206	MG19868	120		122	26	18	33965	4	15136	71	872785	5829	470		4	135	27		20		120					42942
MDD206	MG19869	143		112	27	32	37229		14054	55	877708	5852	516		4		41		21	106	112					37356
MDD206	MG19870			157	48	35	40336		9898		883507	6371	628				47		21		80					30266
MDD206	MG19871	107		106		29	30722		10875	61	891717	4842	506				29		26		81					35734
MDD206	MG19872			71		16	29632		11612		896168	6297	434			167	18		24		90					33550
MDD206	MG19873			69		21	30231		11197	54	891960	7260	413		3		17		24		90					36066
MDD206	MG19874	77		95		22	31115		13644	47	898811	5523	399				20		20		113					30782
MDD206	MG19875	79		89		16	33867		16026	68	893499	6229	436		3		25		19		136					30296
MDD206	MG19876			97		17	33329		15809		894767	6821	454		3		26		18		131					29058
MDD206	MG19877	94		113	25	16	33629		14317	59	901939	5066	442				28		20		125					26022
MDD206	MG19878	71		112		18	34156		13427	59	906894	4119	474				27		20		120					22838
MDD206	MG19879	90		88	28	14	32550	4	12958		903676	5575	434		3		28		23		110					27306
MDD206	MG19880	60		101		16	31535		12599		914808	5998	407			159	23		21		116					19122
MDD206	MG19881	86		95		21	33744	4	13172		907619	5280	427				26		21		118					23433
MDD206	MG19882	75		134		28	39421		10020	56	909987	5782	575				28		23	90	97					15035
MDD206	MG19883	82		100		27	37649		10881	50	900800	4557	699		3		31		20		90					22425
MDD206	MG19884			136		19	31701	5	11070		900396	4716	595		4		25		25		86		25			28484
MDD206	MG19885	76		95		21	28965		10356		910964	5572	516				20		23		89					23037
MDD206	MG19886	80		96		25	29690		10697		910465	4265	571				19		23		87					24562
MDD206	MG19887			82		20	28543		11332		909523		552		3		16		25		88					29502
MDD206	MG19888			79		21	28346		10883	48	909558		547				17		22		84		24			30011
MDD206	MG19889	84		124		25	29983	4	11438		910606		582			139	22		24		90					27584
MDD206	MG19890			86		30	34095		11178		896790	4732	519				19		28		85					30385
MDD206	MG19891	67		118		29	34835		7580	71	912692	5629	531				21		23		63					16042
MDD206	MG19892			143		28	34106		8601		909730	3406	565				20		21		71					20290

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD206	MG19893	62		85		19	32098		9114	55	915001	5039	523				20		23		78					17113
MDD206	MG19894			107		27	31686	4	11444		899786		522				18		25		85					31383
MDD206	MG19895	67		131		26	34037		12252		900691		511		3		20		26		96					28717
MDD206	MG19896	78		114		31	35664		12803	56	893946	4506	520				19		27		103					28070
MDD206	MG19897	61		76		25	34850		11281		889425		523				21		26		83		26			35020
MDD207	MG43501			125		24	32505		13312	56	910153		395			149	25		25		100					27322
MDD207	MG43502	127		79		18	30131		12044	56	910538		405			184	29		22		92					30499
MDD207	MG43503			77		21	28387		9755		919033	4119	417				25		21		85					19989
MDD207	MG43504	84		123		23	30469		9073	59	912341	6928	447				30		21		80					20255
MDD207	MG43505	77		109		20	28778		8593		920524	4944	423				24		18		74					18350
MDD207	MG43506			86		30	23146	5	9947		916030	5426	353				15		20		78					27796
MDD207	MG43507			90		14	26848		12223		901931	5027	340				21		24		95					35481
MDD207	MG43508			86		16	26073	5	10646		922546	5396	321				19		23		99					19525
MDD207	MG43509	96		105		21	27885		10559	45	923114	3619	377				22		25		100					16581
MDD207	MG43510	72		111	29	21	34597		10943		906479	3743	540		3		38		19		96					22443
MDD207	MG43511	61		107	36	21	35362	4	14115	65	895043	4328	486		3		34		22		118					30444
MDD207	MG43512	89		115		16	35997	5	15171		888487	3798	453		4		31		20		125					36568
MDD207	MG43513	60		111		18	32748		11126	57	916716	4303	429				28		23		108					18818
MDD207	MG43514	65		115	25	26	33555	5	9874		912887	4315	470				38		27		92					20350
MDD207	MG43515	86		124	29	32	35288		9228		901331	5355	542				42		19		81					25582
MDD207	MG43516	94		117		28	30096		8560	71	914293	4745	437				31		22		79					21295
MDD207	MG43517	62		120	35	22	33264	4	7829	55	911304	5750	526				40		20		73					18332
MDD207	MG43518			87	46	29	32489		8942		901140	5938	575				41		19		72					27681
MDD207	MG43519			91		15	26675		10001		916994	5303	374			197	25		20		88					23706
MDD207	MG43520	59		106		19	27102		10130		921191		406		2		25		23		89					22334
MDD207	MG43521	66		118		15	27388		10314		911561	4827	423				23		25		95					22102
MDD207	MG43522	76		103		19	27727		10382		911120	6232	379			150	19		23		90					26820
MDD207	MG43523	81		95		16	27593		10691		907846	4166	405			144	20		26		91					29852
MDD207	MG43524			112		22	29276		11946		904538	3481	420				24		23		100					29078
MDD207	MG43525			89		15	26712	5	10844		909261	6035	413				20		24		86					28489
MDD207	MG43526	109		76		19	27361	4	10356	66	902495	5370	522				19		23		78					32198
MDD207	MG43527	61		94		17	27964		8665		912179	8312	487	4			18		23		74					20616
MDD207	MG43528	66		115		27	32992	4	8794	59	890461	5086	567				20		21		61					32736
MDD207	MG43529			91		24	34349		9876		890620	7705	515				20		23		71					30019
MDD207	MG43530	69		113		20	32505		8593		913457	5542	478				19		23		73					17513
MDD212	MG43478				14	16	28054		12136				394		11		24		20		95					
MDD212	MG43479				20	26	33053		14657				514		14		40		22		104					
MDD212	MG43480				28	27	33957		12958				559		13		28		16		92					
MDD212	MG43481				29	36	38081		14513				591	4	11		31		15		86					
MDD212	MG43482				25	26	37199		14099				565		11		43		19		105					
MDD212	MG43483				29	23	34873		13519				539		12		34		17		91					
MDD212	MG43484				30	26	38992	15	14332				590		11		38		19		89					
MDD212	MG43485				30	37	43517		15012				692		12		52		19		101					
MDD212	MG43486				36	37	43239		14100				661		13		50	4630	16		100					
MDD212	MG43487				36	32	41075		13776				612		13		59		18		103					
MDD212	MG43488				36	26	39347		15053				582		15		39		13		101					
MDD212	MG43489				36	37	40300		13637				615		15		60		18		104					
MDD212	MG43490				29	29	42141	14	19307				618		14		30		18		126					
MDD212	MG43491				23	25	39188	16	16795				557		14		24		24		122					
MDD212	MG43492				20	22	28643		11656				477		14		23		14		105					
MDD212	MG43493				24	36	42267		19458				587		15		48		21		143	636				
MDD212	MG43494				17	23	27649		14079				417	4	12		18		14		115					
MDD212	MG43495				25	15	32035		17449				466		12				21		127					
MDD212	MG43496				20	20	37100		16796				501		16		39		16		142					
MDD212	MG43497				22	31	36850	17	19720				517		18		46		16		144					
MDD212	MG43498				24	24	38711		18174				532		18		42		15		143					

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD212	MG43499				25	28	40483		14589				566	4	19		41		16		130					
MDD212	MG43500				34	33	43885		14871				699		13		49		14		107					
MDD212	MG43531				33	34	41764	14	17061				676		16		55		19		117					
MDD212	MG43532				26	30	43031		18645				591		19		50		14		142					
MDD212	MG43533				21	25	35589		17891				513		15		23		19		131					
MDD212	MG43534				20	17	35744		15025				528		13		38		18		111					
MDD212	MG43535				20	27	33589		15708				556		12		37		18		116					
MDD212	MG43536				21	26	34554		15888				541		13		39		18		118					
MDD212	MG43537				19	29	34454		14836				521		14		32		24		113					
MDD212	MG43538				17	22	32292		14842				527		15		23		17		110					
MDD212	MG43539				20	27	33335		14972				556		12		31		16		111					
MDD212	MG43540				16	29	34530		14838				536		12		45		18		109					
MDD212	MG43541				16	31	35566		12880				522		14		44		18		119				3	
MDD212	MG43542				20	29	34006		15218				508		14		30		18		118					
MDD212	MG43543				20	25	35240	14	15217				503		14		31		17		124					
MDD212	MG43544				16	29	29718		13005				600		11		34		18		105					
MDD212	MG43545				14	32	29504		12279				526		9		23		17		93	457				
MDD212	MG43546				14	22	27511	13	11599				482		9				21		86					
MDD212	MG43547				10	29	27221		11149				505		8		30		23		88					
MDD212	MG43548				10	27	31906		10181				524		10		17		22		80					
MDD212	MG43549				10	24	32256		10642				546		11		41		16		76					
MDD212	MG43550				10	27	30769		10030				515		10		28		20		85					
MDD212	MG43551				11	32	32620		12990				536		11		31		21		95					
MDD212	MG43552				14	31	34908	14	12884				557		11		18		23		94					
MDD212	MG43553				12	30	36872		13155				592		11		24		17		89					
MDD212	MG43554				9	28	34423		12893				595		12		29		22		86					
MDD212	MG43555				8	33	37804		12511				620		9		32		20		85					
MDD212	MG43556				8	25	36191		11374				617		9		30		16		78					
MDD219	MG43563				31	26	38066		15024				548		12		27		14		108					
MDD219	MG43564				30	27	36316		11286				559		14		49		13		87					
MDD219	MG43565				27	17	34021		12976				546		12		32		17		102					
MDD219	MG43566				23	27	32306		14723				532		12		23		17		112					
MDD219	MG43567				21	29	32401		12585				513		11		29		24		107					
MDD219	MG43568				21	22	31434		12416				488		11		37		19		107					
MDD219	MG43569				23	28	33150		14213				509		11		25		22		103					
MDD219	MG43570				23	30	35145		14930				558		15		44		18		111					
MDD219	MG43571				20	16	28218		10756				443		11				18		93					
MDD219	MG43572				21	18	29575		12558				438		15		29		20		117					
MDD219	MG43573				19	15	27863		13102				403		12		33		17		110					
MDD219	MG43574				21	20	29156	17	13469				413		13		36		19		120					
MDD219	MG43575				17	27	26557		13213				387		13		31		19		113					
MDD219	MG43576				15	22	25677	14	11684				383		13		30		16		109					
MDD219	MG43577				19	19	28728		14275				408		13		23		17		117					
MDD219	MG43578				19	17	30077		15250				455		12		18		12		116					
MDD219	MG43579				21	26	40371	15	16296				516		16		46	3542	17		141					
MDD219	MG43580				19	22	29926		12809				453		14		29		17		112					
MDD219	MG43581				22	26	32047		13288				445		13		30		14		115					
MDD219	MG43582				24	28	34445	17	11172				543		11		47		18		81					
MDD219	MG43584				21	30	33695		8845				568		10		38		16		69					
MDD219	MG43585				20	21	31498		9443				553		10		29		12		73					
MDD219	MG43586				13	16	33240		13045				539		13		34		19		107					
MDD219	MG43587				18	16	31059		14432				461		13		30		14		120	496				
MDD219	MG43588				17	17	27098		12117				406		11		23		14		108					
MDD219	MG43589				19	20	31811		12584				434		15		35		16		120					
MDD219	MG43590				22	25	33945		13617				486		14		34		16		124					
MDD219	MG43591				20	26	42325		16433				526		17		44		20		155					

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD219	MG43592				22	22	37902		18041				523		15		42		19		150				2	
MDD219	MG43593				21	21	34037		15562				487		15		42		17		129					
MDD219	MG43594				18	18	31249		13329				468		11		42		19		115					
MDD219	MG43595				18	15	31049		13871				462		13		28		18		120				2	
MDD219	MG43596				19	22	31103	15	12987				460		13		33		17		114					
MDD219	MG43597				21	22	39313		14548				636		16		46		15		119					
MDD219	MG43598				19	24	33617		12214				717		14		43		19		93					
MDD219	MG43599				24	24	30756		12127				663		15		41		20		99					
MDD219	MG43600				18	23	29960		10972				581		12		31		16		90					
MDD219	MG43601				14	28	27122		10067				629		9		31		18		83					
MDD219	MG43602				13	31	27865		10009				611		11		34		17		77					
MDD219	MG43604			91		25	28851		9006			7872	518				18		26		72					44489
MDD219	MG43605	71		77		23	32874		10780			7239	546				22		26		79					57328
MDD219	MG43606	87		117		28	34119		9436			6258	490				20		25		76					38194
MDD219	MG43607	103		98		27	34112	4	8764	63		9409	539				20		23		64					49207
MDD219	MG43608			97	79	28	43810	5	7323			6910	751		5		66		18		55					40082
MDD219	MG43609	78		145	131	43	49208	5	6985			6415	858		10		91		12		55					33588
MDD219	MG43610	87		109	52	29	37906	4	9473	70		9128	650		4		56		20		69					53295
MDD219	MG43611			102	34	25	34735		9990	61		4437	566		4		42		22		80					30328
MDD219	MG43612	84		112		24	33076		11865	51		4821	572				28		25		96					49554
MDD219	MG43613			105		25	32709		11992			7816	593		3		28		24		99					46326
MDD219	MG43614	96		89		24	31228	5	13116	52		4926	466		4		18		29		116					41811
MDD219	MG43615	64		88		24	29362		10717	48		6194	568				15		27		90					38900
MDD222	MG43616				20	27	28859		10030				405		11		33		18		81					
MDD222	MG43617				23	22	29330		9110				517		10		31		17		77					
MDD222	MG43618				19	23	26569		7853				492		8		30		14		66					
MDD222	MG43619				15	20	23151		9440				425		12		25		15		82					
MDD222	MG43620				15	22	28402		11776				422		11		24		18		97					
MDD222	MG43621				16	24	31211		11929				442		11		35		16		107					
MDD222	MG43622				20	25	33636		11750				528		12		52		17		98					
MDD222	MG43623				23	32	31519		7667				438		9		33		16		78					
MDD222	MG43624				27	25	34293	13	14251				554		14		46		17		99					
MDD222	MG43625				21	23	36807	13	17117				516		16		39	3189	21		127					
MDD222	MG43626				20	25	36873		16915				509		14		34		18		129					
MDD222	MG43627				17	22	33398		13814				491		12		36		21		107					
MDD222	MG43628				23	28	38015		15812				570		16		40		15		118					
MDD222	MG43629				29	22	35620		11362				586		10		49		20		91					
MDD222	MG43630				25	32	31563		12169				530		12		43		16		92					
MDD222	MG43631				19		19235		6398				340		8				12		75					
MDD222	MG43632				14	30	28132		13367				446		14		39		20		107					
MDD222	MG43633				16	20	27399		10219				417		12		26		16		99					
MDD222	MG43634				16	16	29411		10908				447		13		41		17		99					
MDD222	MG43635				14	19	31961		13180				481		12		29		19		106					
MDD222	MG43637				14	13	28942		10349				426		11		29		17		98					
MDD222	MG43638				15	20	29434	13	12413				476		13		28		19		99	467				
MDD222	MG43639				13	23	26913		10485				463		10		29		16		96					
MDD222	MG43640	78		87		16	29257		11360	48		4872	392				24		23		95					37662
MDD222	MG43641	89		85		15	29085		9383	56		3992	422				23		25		95					29774
MDD222	MG43642	70		110		23	31613		11868			4650	442				23		24		109					33218
MDD222	MG43643	90		70		19	27119	5	12274				379				17		21		95					33515
MDD222	MG43644	75		81		20	26213		9846			5219	519				18		26		78					37395
MDD222	MG43645	66		98		32	30397		9085			6946	889				19		25		71					36046
MDD222	MG43646	96		69		27	31196		10020	46		4137	973				22		23		77					37328
MDD222	MG43647	57		82		22	27404		9814			4929	582			152	17		24		77					35494
MDD222	MG43648			102		17	28748		10997				512				22		23		89					35038
MDD222	MG43649	94		87		26	32213	4	10904			6077	520		3	152	16		23		83					36268

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD222	MG43650	80		103		24	32098	4	10318			7130	511		3		15		21		81		42			37627
MDD222	MG43651	76		96		19	33822	6	10930			4602	519	4			23		22		78					39774
MDD222	MG43652			85		25	31930		9412	49		4585	527				21		19		76					35813
MDD222	MG43653	70		93		16	33810		9233			5077	544			138	15		20		69					31865
MDD222	MG43654	77		85		21	33732		10155			5742	584				20		21		71		35			36964
MDD222	MG43655			119		26	35473		10435			4454	541		3	168	17		24		83					31841
MDD222	MG43656	72		110		37	35555		10931			4333	528			162	19		27		84					33293
MDD222	MG43658			115		26	32758		9534			4488	509				14		25		83					30621
MDD223	MG43660			100	39	29	36796	4	10855			3631	628		2		41		25		93					26482
MDD223	MG43661	78		118	38	31	37916		10912			3893	592				45		22		87					31456
MDD223	MG43662	74		105	43	34	38246		10270	61		5716	610	4	4		43		25		85					22405
MDD223	MG43663	60		119	56	36	37819		9985	49			591				45		22		83					27772
MDD223	MG43664	114		381		22	22393		840				310			190	25		18		68					23827
MDD223	MG43665	139		413		14	21653		933	65			310				22		21		82					23655
MDD223	MG43666			172		25	30896		7089			4311	445				28		24		91					36149
MDD223	MG43667	120		158		15	27626		7474	52		4867	358				23		24		96					31741
MDD223	MG43668	92		327		14	18371		1025				214	4	3		14		20		90					25246
MDD223	MG43669	112		124		22	28701	5	12262			3925	388			157	20		21		104					33198
MDD223	MG43671			237		15	18864		2198	62			249				17		20		72					26782
MDD223	MG43672			289		11	15074		840	98		3301	190				11		19		65					25382
MDD223	MG43673	91		269		16	20302		1691				289				16		19		74					25428
MDD223	MG43674	65		100	28	23	29981		9774			4927	444				31		22		78					35151
MDD223	MG43675	95		128		27	33497		11490			4328	472				31		23		95					33551
MDD223	MG43676	66		76		31	30919		11111			4538	427				31		29		92					29447
MDD223	MG43677	61		56		21	27759		9960	65		3978	418			181	25		23		76					32173
MDD223	MG43678	125		319		19	21333		1427			2882	292				23		19		67					27044
MDD223	MG43679			403		22	21882		855			3053	307				29		18		57					26911
MDD223	MG43680	76		91	31	29	30323		9669			4396	472				32		22		75					34395
MDD223	MG43682	121		220		19	25087		4618			3710	320			173	19		23		83					33258
MDD223	MG43683	73		109		27	29782		11325				401				24		27		89					36502
MDD223	MG43684	114		323		15	18384		1004	68		4028	233				14		24		79					24782
MDD223	MG43685			105		28	30724	4	11073			5488	482				22		25		91					38668
MDD223	MG43686	107		317		12	18488		863				301				9		24		69					23148
MDD223	MG43687			216		17	19451		2383			4231	313	4			12		24		62					25943
MDD223	MG43688	87		96		18	24833		6890	51		4474	423				17		26		69					30969
MDD223	MG43689			78		20	28253	5	10576			4343	526				20		23		81					33836
MDD223	MG43690	57		93		15	25451		9498	44		5135	475				12		23		74					35483
MDD223	MG43691	67		107		21	29742	5	12030				467				15		28		100					30288
MDD262	MG43702	82		104		24	32065		12560	57			410		3		28		23		98					30617
MDD262	MG43703	99		115		17	28063		9894	62		4160	374				22		20		84					28534
MDD262	MG43704	69		92		23	30552		11529	47		4537	417				25		20		98					19795
MDD262	MG43705	63		72		18	31844	5	14044			5898	414				23		21		107					28589
MDD262	MG43706	60		73	28	16	28157	4	11288			3621	387		3		20		21		93					27639
MDD262	MG43707	66		104		90	26114		10986			4936	369				29		22		87					29252
MDD262	MG43708			72		30	29826		11593			5202	414	4	4		33		20		93					29970
MDD262	MG43709	63		105		25	30925	5	12246				448				33		21		106					22351
MDD262	MG43710	74		102		27	32888		12321	51			474		3		30		28		107					30031
MDD262	MG43711			108	33	30	33363	4	10052			4672	494		3		34		20		97					21350
MDD262	MG43712	82		96		27	32249		11906	75		4702	473				32		23		107					24497
MDD262	MG43713			96		22	31975	4	13462			4209	431		3		29		19		113					27332
MDD262	MG43715	73		77		25	32537	7	13246	55		4568	456		3		26		22		114					29034
MDD262	MG43716	81		80		17	30843	4	13636	52		4553	413				27		22		113					32423
MDD262	MG43717	78		87		20	30327	5	13142			3614	414				24		21		115					27238
MDD262	MG43718	91		89	27	19	30594		14001	56		6561	406		3	143	22		23		117					28815
MDD262	MG43719			94		18	30805		13564				408		3		23		23		114					25722
MDD262	MG43720	101		96		15	31424	4	13444	57		5271	407				31		23		115					23932

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD262	MG43721			81	28	39	31930		13682			3728	417		3		29		21		112					21446
MDD262	MG43722	72		109		18	32213		12271	55		6228	432		4	153	27		20		105					25677
MDD262	MG43723			94		23	30941		13870				403		4		23		20		116					25866
MDD262	MG43724	72		108		19	31802	4	12775	69		4933	407				23		19		109					28438
MDD262	MG43725	55		88		14	29832		10355			4777	397				23		22		105					15419
MDD262	MG43726	77		74		22	31972		12663			4241	415		4		22		21		111					25817
MDD262	MG43727	63		85		18	31603	4	13409			4234	432		4		23		20		110					30882
MDD262	MG43728			99		14	30995	4	13531				390				21		21		110					27674
MDD262	MG43729	103		119		22	33121	5	13436	59		3306	425		4		23		22		118					25190
MDD262	MG43730	65		100		24	32909		13711			4374	421		3		23		23	104	117					29784
MDD262	MG43731			61		38	31929	4	12083	57			543		4		37		21		94					27151
MDD262	MG43732	73		53		19	29575	6	12530	46			566		3		23		22		93					27710
MDD262	MG43733			73		20	29733		11939				556				26		23		96					27207
MDD262	MG43735	78		99		36	27335		11410	60			520				26		28		88					29711
MDD262	MG43736	82		73		27	28534		11415	65			508				19		23		87					30400
MDD262	MG43737	67		109		32	31390		10549			4078	502				21		26		82					27608
MDD262	MG43738	83		107		27	32826	5	11917			5186	502				22		27		90					30983
MDD262	MG43739	80		99		31	31125		11941			3579	497				17		23		85					28265
MDD262	MG43740	71		97		27	32192		12171	47		4870	503		3		21		24		100		27			28292
MDD262	MG43741	73		119		42	35963	4	12796	62		4517	501				26		26		109					22209
MDD262	MG43742	92		119		29	36841	4	11638			5307	572			149	24		26		97					32329
MDD262	MG43743			135		41	35735		10485				560				27		23		83					27980
MDD019R	MG11241				34	23	27218		19753				456		14		37		15.1		134.9	711				
MDD019R	MG11246				23	17	23020		14871				482		11.1		20		19.4		109.1					
MDD019R	MG11251				29	17	20931		12937				361		12.8		41		13.3		106.5					
MDD019R	MG11263				44	39	33848		19827				484		15.8		47		19.9		153.3					
MDD020	MG11391				28	27	22397		15860				382		12.9		28		11.3		105.9				2.8	
MDD020	MG11392				36	27	21594		15231				384		11		35		19		109	635				
MDD020	MG11454				34	32	31139		20084				471		14.7		36		30.1		150.5				2.4	
MDD021R	MG11511				34	33	22773	15	11596				380		10.8		49		17.5		63.6	412			5.1	
MDD021R	MG11514				27	19	20220		13653				353		9.3		27		15.4		90.2	411				
MDD021R	MG11516				26	26	25604		15175				391		12.1		45		14.7		93.2					
MDD021R	MG11519				25	22	28678		18325				515		13.2		31		18.3		101.4				4.9	
MDD021R	MG11521				38	21	31141		17246				515		16		31		19.5		125					
MDD021R	MG11543				35	26	31448		19711				465		14.8		59		15.1		141.7	542				
MDD021R	MG11578				31	27	32128		18842				472		15.8		43		14.1		135.8	860			3.3	
MDD021R	MG11512				32	27	22126		14779				378		11.5		26		15		91.7	516				
MDD021R	MG11527				39	29	31300		18177				496		14.6		46		21.3		141					
MDD026	MG13245				28	20	20061		13778				338		10.6		30		28.1		101					
MDD027	MG12001				36	31	28822		16322				448		15.7		16		23.1		130.9					
MDD028	MG13277				30	23	17758		11988				323		9.2		29		21		87.5					
MDD032	MG13519				28	32	29613		20692				479		15.5		32		26.2		174	481				
MDD032	MG13526				26	27	24355		16518				402		11.5		32		26.7		140.2	496				
MDD032	MG13521				27	20	22497	6	16271				371		10.7		27		14.2		135.2					
MDD032	MG13525				32	22	25797		17143				393		14.4		27		28		146.3					
MDD032	MG13543				30	16	21321		15180				383		12		31		21.8		129.4	529				
MDD032	MG13515				28	22	23820		17645				396		14.4		31		31.4		142.2	465				
MDD034	MG13569				34	30	27481		18668				413		13		40		18.1		147.4				2.5	
MDD038	MG13842				22	15	16308		10443				303		9.9		33		19		83.2					
MDD039	MG15231				33	11	21602		13818				325		11.5		33		22.4		95.9					
MDD040	MG13932				34	26	26717	5.8	19850				400		15.4		27		20.3		134.4				1.9	
MDD045	MG15454				27	20	24054		15049				396		13.8		34		15.7		114.1					
MDD047	MG12720				27	17	25135		15269				420		13.1		21		19		111.9					
MDD048R	MG15521				29	22	24496		17808				396		11.8		26		15.4		117.9					
MDD048R	MG15596				29	20	25197		15820				355		11.8		26		24.2		117.1					
MDD051	MG15716				20	18	22643		13907				369		11.3		23		13.6		113					

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD052	MG14211				37	38	30579	7	17718				442		17.4		40		16.6		140.6				2.4	
MDD056	MG15962				30	20	24956		16891				391		13.4		30		16.8		132.4					
MDD056	MG15998				35	20	26329		18023				347		15		36		22.5		136.2	645				
MDD058	MG14327				27	27	22924		17060				412		14		36		15.6		137.5	575				
MDD061	MG14450				23	19	22712		13858				370		10.6		31		15.9		113.2					
MDD056	MG16057				29	20	27518		14639				459		11.8		29		13		104.9					
MDD059	MG16156				25	17	21904		15602				357		11.3		26		20.6		111.6					
MDD061	MG14524				27	17	22094		13852				371		12.5		26		20.3		102.2					
MDD061	MG14562				35	33	31821		18919				445		14.6		29		19.8		134.7					
MDD062R	MG16290				19	17	21575		11633				366		12.5		23		17.2		95.4					
MDD066	MG17636				28	14	22237		16153				406		14		27		12.5		119.1	513				
MDD070	MG20235				31	30	31851		17900				455		18.7		53		24.9		145.7					
MDD072	MG20364				28	20	29150		19271				408		17.6		41		24.2		159.9				3	
MDD072	MG20365				32	23	28210		16441				450		13.1		32		19.2		140				2.5	
MDD072	MG20383				21	21	29256	7	16842				450		16.5		38		23.9		147.7	499				
MDD077	MG16660				28	17	22557		16999				389		13.9		25		13.4		133.5				2	
MDD079	MG20591				24	22	24905		16118				391		13		34		19		128				2	
MDD083	MG16890	78		92		18	23112		15074	57	906310	5365	301		4		17	279	21		109					30355
MDD083	MG16897	66		118		21	28294		18608		895596	5143	373		3		22	230	20		136	85				30174
MDD083	MG16946			106		21	23398		14485		906214	4658	307				15	264	20		107					29908
MDD083	MG16948	69		96		20	24016		14777		898548	6778	328				17	233	20		112					32341
MDD083	MG16892	87		109		10	22543		11715		904105	7267	347				15	235	17		86					32449
MDD083	MG27007	88		97		12	24875		14958		887861	6609	375			199	15	278	17	99	101					39031
MDD088	MG18428	71		106		18	26528		11028		911988	4931	400		4	140	16		21		99					24125
MDD094	MG18585		3580.42	0	0	29.1	28485.52	0	14995.13		888833.85	0	424.7	0			32.12	866.45	26.02		121.51	0	0		0	31015.42
MDD103	MG18761		1307.8	0	0	26.8	21894.01		15366.65				356.55	0			37.29	996.47			114.03	271.08			0	38292.33
MDD090	MG21029			92		19	25372		13579		912115	5791	371		3	124	15	116	21		96					24553
MDD096	MG21189	86		108		27	30875	5	15700	74	899018	7838	430		4		16	102	24		149					24863
MDD106	MG27813		0	0	62.49	24.21	26774.03		13055.21				420.18	0			34.45	1129.03			105.46	201.13			0	39557.8
MDD106	MG27760		4367.56	0	0	14.77	17849.94		15408.35				212.95	0			27.11	1010.16			120.11	176.17			0	37953.88
MDD090	MG21017			97		13	23774		15988	52	906216	5882	304				12	66	18		123					26429
MDD087	MG27264			91		19	23268		16055	58	905557	5283	381				13	251	20		113					26737
MDD103	MG18758		2984.89	0	0	29.95	21540.94		14801.52				377.03	0			0	1005.45			109.67	132.41			0	35363.39
MDD118	MG21922	86		98		15	23557		15242		885422	9272	351	6			19	199	23		105					38972
MDD086	MG20954	68		89		15	21484		12068		909372	5226	322				14	74	16		92					28821
MDD082	MG18162	61		131		14	20766		12592		911474	5492	336				11	54	26		91					26449
MDD118	MG21917	88		114		16	27003		14931	84	863617	8244	329				19	238	24		121					53387
MDD088	MG18474	118		96		16	24282		10777		916874	4284	367		3	136	13	55	23		79					21156
MDD087	MG27214	102		91		16	23832		16080	54	899516	5809	294				15	213	20		120					34069
MDD118	MG21967			82		13	23427		14992	80	886379	6577	340				14	229	19		101					40440
MDD118	MG21929			112		13	18917		12015		910152	9227	317				10	184	22		92					26777
MDD118	MG21927			57		13	24035		13267	49	896836	6199	360				14	177	17		91					34928
MDD103	MG18759		1670.46	0	0	31.1	22670.14		16439.29				408.5	0			43.54	1006.25			120.5	116.7			0	38172.16
MDD121	MG31100	86		109	59	22	24161		12946		887507	8475	337		4		14	102	16		109	134				36806
MDD090	MG21067	75		91		10	24430		13127		910277	5674	382				15	81	19		95					21519
MDD105	MG21607	68		88		17	24587		13325	58	901887	6113	386				14	64	20		100					26751
MDD086	MG20916	66		107		11	24081		11769	45	918859	6002	333				11	94	19		96		26			19459
MDD096	MG21213	72		70		12	20140		12327		916303	5784	291				12	47	18		97					24902
MDD105	MG21620	119		93		30	30819		19464		884444	6208	383		4		21	136	21		151					33681
MDD106	MG27770		1123.09	0	63.45	21.91	22161.3		17709.6				289.89	0			26.98	1060.65			137.23	126.95			0	41802.5
MDD105	MG21572			77		15	23700		14172		891256	4074	339		3		16	97	19		99					38852
MDD080	MG16821	82		96		15	27970		17701		845325	7262	345		3		17	268	21		127					63854
MDD101	MG21413		3691.54	0	65.8	41.94	36627.5		16657.86				606.28	0			32.61	976.64			139.83	0			0	29089.31
MDD080	MG16841	75		116		20	29083		16026	49	878942	6555	426		4		17	219	19		118					36611
MDD118	MG21974	86		124		23	30666		18387	54	872157	6308	395		3		21	168	25		141					42226
MDD094	MG18611	70		107		12	22497		15694	66	900645	6016	294				14	102	21		119					32840

HOLEID	SAMPLEID	Ce_XRF_ppm	Cl_XRF_ppm	Co_XRF_ppm	Cr_XRF_ppm	Cu_XRF_ppm	Fe_XRF_ppm	Hg_XRF_ppm	K_XRF_ppm	La_XRF_ppm	LE_XRF_ppm	Mg_XRF_ppm	Mn_XRF_ppm	Mo_XRF_ppm	Nb_XRF_ppm	Nd_XRF_ppm	Ni_XRF_ppm	P_XRF_ppm	Pb_XRF_ppm	Pr_XRF_ppm	Rb_XRF_ppm	S_XRF_ppm	Sb_XRF_ppm	Sc_XRF_ppm	Se_XRF_ppm	Si_XRF_ppm
MDD088	MG18475	89		110		20	27837		12402		886462	6919	417		3		17	61	23		91					37229
MDD101	MG21404		5751.95	0	0	17.97	20807.42		11831.81				366.73	0			0	972.06			89.68	0			0	30818.31
MDD116	MG31072	65		108	26	22	24370		15698	63	885640	9064	341		4		16	186	21		118					39829
MDD105	MG21587	76		103		14	25946		14340		901797	3612	355		4		14	124	20		109					31283
MDD121	MG31113	72		127	41	24	26561		13371		889767	7233	398				19	104	22		127					33866
MDD118	MG21954			99		18	23766		11602	45	913156	7084	326			136	18	97	20		100					20865
MDD088	MG18473	63		128		22	26681		11678		914507	6682	393		3		17	63	23		100					19453
MDD121	MG31125	114		103	34	19	22122		8876	46	924314	4772	390			141	16		22	93	82					17053
MDD121	MG31085	101		91	73	11	21578		9579	72	892224	7279	325				17	90	22	100	75					38497
MDD087	MG27289	100		86		19	27133	4	14898	52	910484	4638	345		3		19	94	22		123					22813
MDD118	MG21944			67		15	25936	4	14263		877627	6536	384				13	200	20		99					43399
MDD121	MG31110	64		98	69	29	26142		12766		886833	7258	405		3		18	146	21		104					34843
MDD091	MG18538	73		85		16	22843		12501	49	909546	5539	362		3		14		18		104					26863
MDD091	MG18533			83		16	24648		15470	50	901554	5760	329		3		12	53	20		126					30634
MDD101	MG21475		7245.06	0	0	18.23	26382.9		15337.38				435.45	0			28.99	913.19			110.61	0			0	29349.42
MDD085	MG18368	71		102		14	23948		13166	47	906172	6853	384				14	84	19		96					24068
MDD091	MG18530						23355				971105		619	122	73						148					

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD023R	MG11778		388		13	2168		66	130	20.7	64	275													
MDD023R	MG11779		270		20	2337		64	57	19.6	56	256													
MDD023R	MG11780		331		16	2117		59	101	16.7	68	252													
MDD023R	MG11781		356		13	2233		63	72	19.6	53	268													
MDD023R	MG11782		290		11	2617		68	40	17.9	71	256													
MDD023R	MG11783		237		13	2444	6.3	59	71	18.8	60	263													
MDD023R	MG11784		243		16	2709		68	85	20.7	70	234													
MDD023R	MG11785		367		13	3116		87	72	25.9	79	226													
MDD023R	MG11786		242		16	2667		70	85	21.4	76	227													
MDD023R	MG11787		252		13	2760		78	88	20.9	76	216													
MDD023R	MG11792		265		9	2507		73	80	18.8	75	228													
MDD023R	MG11793		392		16	2161		58	71	16.8	63	271													
MDD023R	MG11794		430		17	2161		55	59	15.5	60	269													
MDD025R	MG11833		343			1299	10.7	34	74	10.4	26	111													
MDD025R	MG11834		382			1515	11	37	94	13.9	31	160													
MDD025R	MG11835		418			1991	9	59	79	16.9	62	186													
MDD025R	MG11837		370			1606	11	39.9	61	11.7	48	200													
MDD025R	MG11838		382			1765		48	60	14.8	48	213													
MDD025R	MG11839		390			1962		57	48	14.7	50	246													
MDD025R	MG11840		353			1730	7.3	50	49	13.8	62	176													
MDD025R	MG11841		384			1830		49	51	13.5	50	218													
MDD025R	MG11843		463			1821	9	59	58	14.4	44	238													
MDD025R	MG11844		432		12	2237	7	69	55	16.3	64	225													
MDD025R	MG11845		475		16	2829	9	75	62	21.8	89	206													
MDD025R	MG11849		542			2208	17	70	92	20.6	50	187													
MDD025R	MG11850		397		11	2736		75	54	22.2	82	258													
MDD019R	MG11217		419		17	1895		56	52	15.3	46	264													
MDD019R	MG11285		432		12	2136		61	46	16.6	55	209													
MDD020	MG11375		364			2137	8	65	90	18.3	55	263													
MDD020	MG11379		372			2058		60	87	15.5	49	227													
MDD020	MG11382		346		14	2001		54	30	15.2	52	261													
MDD022	MG11624		366			1914	9	58	78	17.1	55	286													
MDD022	MG11625		315			1960		60	82	17.1	47	240													
MDD022	MG11623		424			1927	9	51	80	18.3	52	258													
MDD022	MG11628		298			1926		52	48	14.3	63	235													
MDD022	MG11627		407			1810	9	49	61	14.3	42	221													
MDD022	MG11631		526			1959		57	46	15.9	51	206													
MDD024	MG13008		385			2641	9	71	45	20.7	81	204													
MDD024	MG13089		317		14	1776		50	38	17.5	58	222													
MDD026	MG13242		262			1369		34.7	48	9.3	52	189													
MDD026	MG13115		220		16	2785	6.3	77	19	22.1	80	215													
MDD027	MG12021		320		19	2620		66	21	20.2	87	223													
MDD027	MG11952		448			1711	13	27	123	17.8	68	165													
MDD027	MG11955		482		12	1953		64	41	13.7	65	222													
MDD028	MG13287		209		17	1887	5.4	55	29	14	41	308													
MDD028	MG13288		255		9	2298		64	44	17.3	61	261													
MDD028	MG13302		217		11	2097		63	47	17	53	310													
MDD028	MG13324		268			2317	6	65	55	19.9	66	297													
MDD028	MG13343		327		15	2168		61		17.1	58	253													
MDD028	MG13275		315		13	2180	6	63	48	17.3	50	332													
MDD031	MG12174		502			2100		54	89	16.7	69	207													
MDD031	MG12177		383		14	2201		70	42	18.5	90	226													
MDD031	MG12179		290		11	2583		70	17	20.3	75	208													
MDD031	MG12180		397		12	2329		70	53	19.1	68	246													
MDD031	MG12184		348		18	2311		73	27	16.3	66	223													
MDD031	MG12196		407			2863	16	89	78	22.4	86	176													

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD031	MG12199		395		15	2540	8	73	52	20.2	97	199													
MDD031	MG12208		424		11	2560		70	39	19.6	75	237													
MDD031	MG12228		563		12	2305		65	73	20.3	27	285													
MDD031	MG12176		401			2247		65	74	15.7	76	179													
MDD031	MG12195		368			2120	7	69	36	18.6	68	191													
MDD031	MG12192		385		15	2778		83	30	22.3	75	226													
MDD031	MG12185		356		17	1816		54	30	15.3	67	262													
MDD031	MG12187	26	402		15	2434		73	42	20.1	83	229													
MDD033	MG13604		596		14	2651	11	68	105	18.9	86	240													
MDD033	MG13605		587		15	2790	8	70	98	21.2	90	213													
MDD033	MG13610		374		17	2116		56	43	15.7	67	239													
MDD034R	MG15014		414			2244		65	48	17.7	57	295													
MDD030R	MG13410		336		14	1882		55	36	15	58	251													
MDD030R	MG13401		357		16	2301		64	82	21.3	64	259													
MDD030R	MG13426		363			2049	6	53	47	19.1	63	312													
MDD030R	MG13421		363		10	2003		55	28	17.4	52	235													
MDD032	MG13518		277		19	2477		68	43	20	88	194													
MDD032	MG13512		411		15	2258		60		17.6	71	236													
MDD032	MG13509		331		13	2179		55	49	18.8	47	242													
MDD034	MG13572		345		12	2812	7	79	41	22.7	103	218													
MDD034	MG13568		481		19	2067		55	56	17.4	57	214													
MDD034	MG13560		413		9	2029	7	61	51	18	71	250													
MDD034	MG13585		342			2092		62	39	18.2	53	236													
MDD034	MG13584		304		18	1881		64	20	16.1	50	252													
MDD034	MG13586		396		9	2076	8	64	52	16.7	59	220													
MDD034	MG13558		437			1875		55	56	16.9	45	218													
MDD034	MG13592		256		22	3203		84	16	24.1	90	234													
MDD034R	MG15086		409		13	2311		62	123	19	77	254													
MDD035	MG13719		408		14	4294		67	51	20.2	93	234													
MDD035	MG13718		313		15	2467		69	20	19.5	63	243													
MDD036	MG15147		470		22	2155		62	53	17.3	49	266													
MDD036	MG15143		449		11	1857		54	64	15.4	53	246													
MDD036	MG15163		437		21	2691		70	62	22	68	217													
MDD036	MG15129		386		16	2168		64	61	17.8	49	347													
MDD036	MG15155		438		16	2136		57	62	16.4	71	279													
MDD037	MG12336		636		15	2576		65	76	19.3	58	231													
MDD037	MG12334		380		11	2053		78	75	18.2	58	263													
MDD038	MG13807		286		19	2190		71	20	19.3	65	312													
MDD038	MG13805		375		12	1987		55	30	17.3	43	294													
MDD038	MG13831		264			1706	6.1	54	34	13.6	41	351													
MDD038	MG13812		334		18	2022		62		18.1	46	328													
MDD040	MG13897		320		10	1663		52	38	15.2	36	257													
MDD044	MG12544		383		10	1957		59	50	16.7	64	240													
MDD044	MG12518		535			2567		73	59	19.6	97	234													
MDD044	MG12553		408		10	1390		49.2	50	13.1	68	194													
MDD044	MG12524	25	500		13	2538	8	78	35	19.7	91	245													
MDD044	MG12530		367		12	1964		63	39	16.4	53	248													
MDD044	MG12571		335		21	2242		72	68	17	107	270													
MDD044	MG12520		515		14	2454		63	27	18.3	101	221													
MDD044	MG12519		458		21	2622		73	49	20.2	111	207													
MDD044	MG12546		417		16	2027	6	68	29	18.6	64	255													
MDD044	MG12577		532		16	2380		71	44	18.5	53	264													
MDD044	MG12563		379		15	2536		76	86	19.2	65	304													
MDD044	MG12539		369		17	1887		61	33	17.7	48	253													
MDD044	MG12533		402		14	2007	7	56	34	18.3	55	252													
MDD044	MG12535		361			1863		57	29	14.9	65	273													

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD044	MG12555		363		16	2065		61	112	18.6	50	275													
MDD048R	MG15508		330			1963		57	230	15.6	49	245													
MDD049	MG14110		328		17	2080		58	36	15.2	86	215													
MDD049	MG14107		263		21	2326		65	34	21.2	87	253													
MDD049	MG14104		326		22	2952		80	40	23	102	202													
MDD037	MG12335		487		13	2354		67	52	17.8	67	307													
MDD041	MG12412		598			2137	9	49	98	16.5	64	206													
MDD041	MG12416		426		13	2169		64	35	16.5	67	241													
MDD041	MG12418		412			2659		80	53	20.4	84	193													
MDD041	MG12420		460			1717	8	53	43	14.4	56	188													
MDD041	MG12434		397		11	2356		69	63	18.9	65	216													
MDD042	MG15307		396		14	2514		72	43	18.3	58	252													
MDD042	MG15325		435		19	2913		73	39	22.9	118	246													
MDD042	MG15326		303		15	2805		78	57	24.4	114	251													
MDD042	MG15327		263		15	3065		85	47	22.7	90	244													
MDD044	MG12607		381		20	3148		81	60	22.7	77	337													
MDD044	MG12618		371		15	2545		67	51	20.6	83	285													
MDD047	MG12664		455		13	2899		89	97	22.3	64	237													
MDD048R	MG15510		320		11	1770		53	229	13.4	43	206													
MDD048R	MG15516		320		22	2274		64	41	19.9	61	268													
MDD048R	MG15520		331		20	2263		65	45	18.9	63	305													
MDD048R	MG15553		306		16	2277		65	33	19.1	57	221													
MDD048R	MG15559		362		11	2185	6	54	64	17.7	57	263													
MDD049	MG14108		287		15	2696		65	31	19.1	73	207													
MDD050	MG17008		289		21	2811		76	24	19.7	72	246													
MDD051	MG15630		352			2314	9	63	54	20.9	85	232													
MDD051	MG15640		235			1713		53	76	15.6	58	198													
MDD051	MG15643	26	277			2075		54	65	14.3	53	202													
MDD051	MG15646		241			1665		50	36	16.2	51	188													
MDD051	MG15647		244		12	2202		68	46	17.5	75	216													
MDD051	MG15648		231		11	2298		64	43	16.6	69	213													
MDD051	MG15656		264			2391		72	115	18.4	59	195													
MDD051	MG15658		270		21	2010		58	46	16.1	46	239													
MDD051	MG15671		200		20	2126		61	24	17.9	55	268													
MDD051	MG15673		175			776		22.9	20	7.1	19.7	92													
MDD051	MG15679		283		14	2175		66	99	15.9	62	247													
MDD051	MG15701		283		16	2098		61	39	17.3	51	312													
MDD051	MG15712		289		11	2074		62	24	17	58	235													
MDD052	MG14192		367		16	2602	7	74	24	19.6	71	275													
MDD054	MG15738		469		10	1988	10	57	78	16.4	59	213													
MDD054	MG15739		436		10	1915	8	51	46	16.7	54	244													
MDD054	MG15744		338		14	2912		79	60	23.4	92	187													
MDD054	MG15749		370		17	2140		61	57	17.5	80	224													
MDD054	MG15768		399		10	1880		55	53	17.1	54	231													
MDD054	MG15771		333		15	2050		58	37	17.4	63	263													
MDD054	MG15784		315		11	1864		56	62	16.8	53	227													
MDD054	MG15793		342		11	2036	7	54	54	18	52	265													
MDD054	MG15812		320			1972	6.4	57	45	16.4	51	254													
MDD054	MG15818		328		9	1768		51	33	12.7	42	181													
MDD055	MG17241		520			2417	8	79	51	17.7	89	205													
MDD055	MG17242		467			1959	9	58	62	15.9	78	222													
MDD055	MG17245		515			2526		80	76	21	79	227													
MDD055	MG17248		586			2179	9	71	67	17.1	53	194													
MDD055	MG17249		474			2470	7	69	60	18.8	77	201													
MDD055	MG17261		408		13	1879		56	27	14.3	47	269													
MDD055	MG17270		350		19	2060		61	80	19	53	270													

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD055	MG17289		456			2026		65	53	16.2	47	272													
MDD056	MG15970		292			1696		50	46	14.8	40	266													
MDD056	MG15980		225		12	2391		70	27	21.6	66	250													
MDD056	MG16004		299		14	2173	6.4	58	46	16.7	49	260													
MDD057	MG14253		385		11	2346	7	59	46	20.1	74	234													
MDD057	MG14260		265		12	1987	7.1	56	19	18.7	62	245													
MDD057	MG14270		284		14	2946		74	30	24.3	87	259													
MDD058	MG14315		492		15	2756	8	67	33	21.1	94	222													
MDD058	MG14317		540		12	2532	9	58	43	22.3	117	190													
MDD058	MG14332		291		10	2552	10	78	35	20.2	83	237													
MDD059	MG16118		281		15	2164		56	26	17.8	76	238													
MDD061	MG14387		293			1600		46	51	13.9	57	250													
MDD061	MG14392		373			2059		56	49	15.5	79	210													
MDD061	MG14393		333			2747		79	71	21	101	180													
MDD061	MG14402		271		20	2605		74	31	19.7	99	249													
MDD061	MG14408		264			1878		47	43	18.2	72	370													
MDD061	MG14410		205		15	2093		58	39	17.6	76	297													
MDD061	MG14413		231			1974	11.3	58	62	16.3	68	247													
MDD061	MG14431		384		11	2009		51	37	17.8	67	249													
MDD061	MG14465		285		15	2183		66	23	16.8	59	283													
MDD061	MG14472		257		14	1808		49	169	14.1	47	228													
MDD061	MG14477		207			1990	9	62	569	16	61	206													
MDD062R	MG16215		320		14	2171		67	21	18.1	62	265													
MDD062R	MG16226		402		24	2104		63	19	13.9	57	138													
MDD064	MG14582		317		15	2432		71	36	18.1	66	236													
MDD064	MG14583		327		19	2230	8	60	24	19.9	75	209													
MDD064	MG14587		339		22	2836	8	76	19	21.5	92	212													
MDD064	MG14588		287		18	2356		59	14	17.1	69	193													
MDD064	MG14591		260		16	2506		71	20	21.4	79	216													
MDD064	MG14604		241		14	1833	5.9	53	24	17.1	51	224													
MDD064	MG14609		253		20	3200		82	29	26.7	103	203													
MDD056	MG16015		297		17	2003		58	28	15.6	53	238													
MDD056	MG16080		350			2175	10	61	62	17	58	266													
MDD056	MG16082		274		12	2091	6.5	59	42	18.7	48	289													
MDD062	MG16203		291		15	1766	8	49	32	18.1	74	223													
MDD063	MG17482		385		12	2177		60	36	17.7	59	268													
MDD066	MG17588		442		10	2187	8	44	77	15.7	70	298													
MDD066	MG17589		456			2713	8	80	90	16.8	76	243													
MDD066	MG17593		536			2504		65	99	19.9	61	225													
MDD066	MG17596		525			2531	12	73	83	17	77	215													
MDD066	MG17600		537		17	1761		46	57	16.4	97	217													
MDD066	MG17616		343			1801		56	27	16.1	53	204													
MDD066	MG17624		430		14	2385		71	50	19	73	242													
MDD066	MG17635		333		15	2327		61	179	19	51	256													
MDD067	MG20097		485		19	2761		74	36	23.3	84	233													
MDD067	MG20120		344		24	2700		73		21.8	72	251													
MDD067	MG20143		372		17	2160		59	14	19.9	53	301													
MDD067	MG20194		362		13	2268		64	27	17.1	55	259													
MDD069	MG17756		628			2382		58	104	19.2	67	268													
MDD069	MG17828		344		16	2308		65	71	18.8	58	235													
MDD070	MG20244		277		21	3013		72	29	19	76	212													
MDD070	MG20252		288		18	2672		76	26	23.3	81	255													
MDD071	MG16421		272		20	2876		74	31	21	76	209													
MDD071	MG16425		304		14	1974	6	54	24	16	55	228													
MDD072	MG20348		260		22	2879		78	25	21.1	82	215													
MDD072	MG20372		246		18	2722		76	20	22	84	207													

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD072	MG20390		315		24	3275		79	19	21.2	101	208													
MDD072	MG20391		343		21	2908		78	15	23.7	91	270													
MDD073	MG16493		290		21	2715		72	18	20.7	80	204													
MDD073	MG16506		399		17	2355		65	46	18.5	57	253													
MDD073	MG16507		399		13	2134		61	39	21.2	57	251													
MDD073	MG16516		332		20	2031		62	21	17.3	52	276													
MDD075	MG16562		469		19	2373		68	32	18.4	68	279													
MDD078	MG17995		430			2711	7	80	120	18.5	112	242													
MDD078	MG18009		427			1806	7	57	73	14.9	64	216													
MDD078	MG18017		479			2045		53	57	16.1	58	221													
MDD079	MG20559		425		14	2577		71	37	20.3	89	206													
MDD079	MG20564		378		12	2695	7	73	75	19.2	85	204													
MDD080	MG16756	20	488		37	2737	12	65	51	19	107	126													
MDD080	MG16759		359		36	2880	10	72	38	21	107	125													
MDD080	MG16760		321		42	2237	12	50	31	16	77	140													
MDD080	MG16799		260		36	2580	10		69	17	91	157													
MDD080	MG16805		436		29	2819	13		26	21	85	178													
MDD080	MG16810		267		33	2402	10	52	26	17	81	166													
MDD080	MG16811		294		31	2611	9	102	31	19	87	159													
MDD080	MG16780		303		34	2531	11	78	27	19	87	136													
MDD080	MG16798		228		28	2307	9	61	18	17	71	177													
MDD081	MG20706	0	284		0	2484	0	66	35	19	93	118													
MDD081	MG20707	0	242		0	2252	0	49	23	21	78	122													
MDD081	MG20708	0	320		9	2897	0	63	29	24	107	117													
MDD081	MG20710	0	242		0	3063	0	65	33	22	118	106													
MDD081	MG20720	0	293		9	2744	0	48	27	18	101	124													
MDD081	MG20721	0	254		0	2560	0	67	25	18	79	130													
MDD081	MG20723	0	326		0	1906	0	0	20	15	68	85													
MDD081	MG20739	0	270		0	2336	0	64	34	19	71	128													
MDD081	MG20740	0	320		0	1542	0	0	16	11	33	115													
MDD081	MG20741	0	239		9	2220	0	0	23	18	63	128													
MDD081	MG20748	0	289		8	2347	0	61	22	18	52	177													
MDD081	MG20749	0	245		0	2828	0	64	27	25	80	199													
MDD081	MG20754	0	329		0	2455	0	65	48	19	72	148													
MDD081	MG20758	0	272		0	2526	0	44	33	17	71	150													
MDD081	MG20750	0	253		0	2374	0	78	33	17	68	173													
MDD081	MG20732	0	326		0	2864	0	82	23	21	91	126													
MDD081	MG20745	0	261		0	2420	0	56	21	15	65	171													
MDD081	MG20729	0	262		9	3354	0	52	23	23	115	119													
MDD082	MG18148		272		27	2259	11		77	18	67	171													
MDD082	MG18154		333		34	2217	9	71	22	15	66	164													
MDD083	MG16870		348		29	2155	10	83	44	14	73	146													
MDD083	MG16874		311		28	2237	9	64	43	16	72	158													
MDD083	MG16884		313		30	2346	12	72	37	17	70	169													
MDD083	MG16886		302		30	2500	9	69	32	18	75	186													
MDD083	MG16893		236		35	2302	12	63	27	17	67	200													
MDD083	MG16894		258		29	2225	11	49	23	17	82	166													
MDD083	MG16895		395		28	2194	11	61	33	17	70	191													
MDD083	MG16901		342		32	2297	12	72	42	15	81	161													
MDD083	MG16944		271		30	2117	9	57	41	17	75	165													
MDD083	MG16971		312		38	2441	10	71	33	16	73	162													
MDD083	MG16978		312		35	2384	11	56	28	19	94	136													
MDD083	MG16981		281		28	1950	11	65	34	14	57	111													
MDD083	MG16985		311		36	2073	10	64	18	14	56	156													
MDD083	MG16990		245		32	2204	12	54	203	18	82	158													
MDD083	MG16955		405		30	1896	9	47	33	13	60	123													

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD084	MG27025		239		25	1228	11		23	7	157	94													
MDD084	MG27038		349		35	2060	12	81	60	15	51	163													
MDD084	MG27048		249		26	1566	11	66	13	12	124	136													
MDD084	MG27051		287		34	1457	12		22	9	70	105													
MDD084	MG27052		301		30	1990	11	57	17	16	70	143													
MDD084	MG27053		313		37	2089	11	57	18	15	71	162													
MDD084	MG27054		364		33	1897	12	53	39	12	60	147													
MDD084	MG27060		311		32	2051	11		18	14	60	133													
MDD084	MG27061		310		29	2093	12	52	42	13	64	137													
MDD084	MG27080		292		28	1872	11	67	22	13	48	139													
MDD085	MG18273	0	327		0	2819	0	67	43	17	109	108													
MDD085	MG18290	0	294		0	2339	0	55	181	17	63	143													
MDD085	MG18300		298		31	2386	10	58	55	18	70	192													
MDD085	MG18266	0	387		0	2444	0	75	22	17	90	138													
MDD085	MG18279	0	289		0	1981	0	0	31	15	74	145													
MDD085	MG18259	0	471		0	2132	0	53	32	14	38	76													
MDD086	MG20830		651		24	1757	7		31	14	56	137													
MDD086	MG20833		451		31	2045	12	74	28	15	63	180													
MDD086	MG20834		446		28	2542	9	89	44	20	85	136													
MDD086	MG20836		384		33	3000	8	85	16	23	115	142													
MDD086	MG20839		787		33	2526	11	64	26	18	100	139													
MDD086	MG20843		277		41	3051	11	74	27	23	117	137													
MDD086	MG20849		296		37	2835	10	82	29	20	91	142													
MDD086	MG20868		263		36	2521	12	73	30	17	84	138													
MDD086	MG20876		334		33	2374	10		24	17	71	174													
MDD086	MG20879		313		31	2229	11	73	22	15	62	171													
MDD086	MG20894		379		30	2238	10	75	29	18	61	144													
MDD086	MG20878		241		34	2615	12	56	23	16	81	170													
MDD082	MG18221		310		29	2078	9	64	9	16	58	158		28944	71		600	20807			16	29719	16840		32427
MDD091	MG18505		273		30	2345	9	58	22	19	70	159		30095	302		487	19108			20	26583	21907		36116
MDD081	MG20796		313		30	2316	10	71	14	16	64	173		21719	431		575	16459			16	26175	17904		
MDD090	MG21045		294		33	2576	12	63	38	20	69	161		22391	383		560	18567			22	28736	22620		
MDD089	MG27347		319		32	2430	11	70		17	67	196		23988	33		605	16363			15	26422	22171		33617
MDD106	MG27773		376.95			2729.95		96.14		21.17	100.18	159.52													
MDD097	MG29018	0	419		0	2449.2	0	86.84	34.35	19.5	70.66	151.8													
MDD097	MG29047	0	326.97		8.9	2611.87	0	77.62	25.61	18.53	96.54	185.58													
MDD116	MG18996		258		19	1097	12		46	8		81		41593	17502		73	8526			21	19433	1364		29285
MDD097	MG29008	0	531.75		0	1950.22	0	0	75.16	13.89	35.85	121.71													
MDD116	MG18999	22	367		22	1777	11		37	12	46	118		59773	10689		417	18951			17	21697	14624		29515
MDD121	MG31078		576		25	1692	4			16	76	135		38805	10147		887	23300			14	23344	10156		29550
MDD118	MG21879		397		28	2003	10		78	13	94	115		76497	8243		42	20865			26	19550	1340		43552
MDD116	MG31024		372		32	2055	11	67	40	16	34	171		70776	7304		561	19302			13	21891	21199		50924
MDD105	MG21528		329		33	2123	11	50	39	17	61	162		44409	6942		433	16360			18	22928	20187		32266
MDD118	MG21914		348		31	1366	13	44	60	9	11	99		47514	6194		264	17313				20270	10576		45986
MDD118	MG21886		390		32	1735	10	48	31	12	31	121		45520	5874		222	16763			9	19455	10763		41462
MDD118	MG21901		401		32	1961	9	58	25	13	42	152		57948	5713		438	20905				22381	17972		56917
MDD087	MG27198		969		23	2175	5	73	44	19	69	139		25020	4996		1741	35228		44	13	30698	23156		22527
MDD088	MG18415	0	547		9	2578	0	0	40	18	64	143													
MDD118	MG21900		357		27	2111	12	60	21	14	53	156		69145	4865		449	16798			26	21732	17625		38385
MDD116	MG31003		363		31	1999	9	58	34	12	36	140		50032	4752		524	20468			28	19067	24275		
MDD084	MG27148		467		30	2322	9	55	38	18	71	132		21025	4547		397	25047			12	25465	18447		35769
MDD118	MG21899		333		27	1525	11		50	9	16	105		58738	4305		103	16737				16831	4118		44591
MDD121	MG31093		416		36	1957	11	46		17	78	133		41441	4180		336	15243			27	24366	12315		36813
MDD105	MG21526		404		29	2160	11	74	32	14	66	162		39535	3992		339	18145			24	25116	16161		22711
MDD087	MG27232		330		31	2122	10	48	37	15	63	154		20663	3914		501	15282			13	22559	20487		34698
MDD095	MG27510		711		30	2598	8	48	47	21	72	174		21160	3773		401	22981			17	29547	15043		32903

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD087	MG27233		281		28	2211	9	69	41	17	68	135		28263	3755		495	14737			19	25119	21918		28209
MDD090	MG21003		257		36	1686	12	50	26	12	53	103		18086	3746		497	13922			8	20179	21514		
MDD090	MG21019		321		39	2133	11	55	36	14	46	134		24237	3583		501	18120			14	25365	22192		
MDD084	MG27127		318		33	2362	10	64	22	17	62	122		20024	3481		532	18651			21	25980	22120		35705
MDD121	MG31082		391		30	2110	10	52		14	65	169		58887	3397		402	14670			14	23964	16682		31305
MDD118	MG21888		415		23	1751	10		35	11	38	122		58872	3276		159	20180				17628	6739		34401
MDD121	MG31101		358		28	2244	8	50		16	68	180		46114	3182		409	19808			21	25179	15971		36699
MDD118	MG21904		288		26	2363	12	55	34	18	48	177		58347	3179		486	17857			10	22818	22419		37731
MDD087	MG27238		312		27	2234	11	84	41	17	68	179		33789	3092		508	17069			20	23717	21711		30768
MDD118	MG21883		408		30	1791	13		60	11	116	119		53657	3031		64	20374				16627	4203		57675
MDD090	MG20972		294		41	2987	11	75	49	21	95	136		39496	3007		691	14116			41	34357	27863		
MDD082	MG18200		285		36	2528	13		54	16	69	156		37380	2964		474	18401			26	30878	22075		
MDD089	MG27345		358		35	2250	10		17	17	55	184		22477	2938		573	17741			9	21975	23501		
MDD082	MG18195		319		31	1915	8	46	40	12	38	135		47643	2829		323	19564			9	22940	15323		25703
MDD089	MG27332		399		30	2458	12	54	23	17	61	189		34144	2720		633	17617			12	26973	21691		20747
MDD090	MG20976		333		33	2762	9	95	32	21	108	127		45289	2586		577	17809			45	29304	24765		
MDD084	MG27151		384		33	2060	12		18	12	47	137		23166	2403		424	20991			13	21216	17934		39340
MDD118	MG21885		263		21	1100	11		28	6	224	74		55944	2367		91	13389				12692	5678		48156
MDD089	MG27341		378		32	2551	9	92	20	19	74	188		19604	2085		669	17635			19	25910	24856		23546
MDD088	MG18383	0	431		0	2302	0	49	19	16	55	150													
MDD105	MG21557		356		31	2350	12	55	77	19	65	191		26297	1951		609	20198			14	27396	25524		23325
MDD090	MG20997		289		30	2271	10	54	26	18	66	180		24371	1949		616	11470			18	21851	20998		
MDD087	MG27225		310		31	2080	10	61	29	13	85	147		27746	1881		549	16553			14	21661	22371		33570
MDD105	MG21548		312		27	1989	9	75	27	18	60	164		29847	1769		521	19063			22	24999	21417		26273
MDD087	MG27226		342		30	2126	10	51	157	15	63	160		29737	1738		537	15201			19	22005	22232		27275
MDD084	MG27144		256		31	2876	10	71	23	21	78	152		33449	1620		666	15745			20	32912	27312		22689
MDD082	MG18209		373		27	2213	11	68	47	17	47	168		44514	1603		436	24992			21	25551	21129		34641
MDD090	MG21026		290		23	2183	11	67	28	17	58	156		20089	1600		607	17009			12	23319	22293		
MDD090	MG20988		252		38	2530	11	65	30	18	96	129		21839	1374		548	12372			21	28661	23657		
MDD090	MG21005		297		35	2256	11	57	22	19	57	201		24505	1364		508	16581			13	24543	21349		
MDD116	MG31030		309		31	2441	12	74	28	17	54	177		51316	1254		597	15790			21	25225	25806		39746
MDD079	MG20610		318		36	2525	10	81	30	18	82	153		32957	1189		526	18426			20	27357	22505		38173
MDD087	MG27213		368		30	2785	10	74	38	21	98	152		35992	1159		682	17099			31	30759	27602		28856
MDD082	MG18184		273		34	2356	12	93	22	18	73	162		39288	1155		505	17725			23	25602	19509		44145
MDD090	MG20991		299		32	2551	9	64	29	20	76	159		24090	1094		625	17269			23	26582	24222		
MDD121	MG31081		351		28	2301	11		18	16	62	156		69107	1058		387	17647			26	23405	19428		21702
MDD091	MG18501		401		29	2565	7	56	34	22	99	160		28822	1032		638	21574			39	30956	24129		30326
MDD090	MG20999		268		33	2345	10	55	47	15	60	174		25711	978		513	14088			19	22768	20657		
MDD082	MG18203		288		28	2272	11	63	29	16	54	166		25618	966		468	17526			22	23876	19303		48410
MDD090	MG21043		350		35	2281	12	72	39	14	103	201		20545	940		548	20005			9	26101	20937		
MDD090	MG20971		251		29	2508	10	81	35	20	82	152		34749	756		576	11086			24	27545	22338		
MDD087	MG27261		285		31	2245	11	53	62	15	62	182		29929	745		615	16432			14	24434	22767		24123
MDD080	MG16822		368		34	2406	10	62	145	17	68	156		68292	706		632	25008			12	26486	26737		35742
MDD087	MG27210		278		37	2884	11	67	39	20	108	167		26577	682		665	12264			28	30644	27791		33779
MDD088	MG18417	0	402		9	2824	0	51	24	22	92	128													
MDD091	MG18506		287		32	2418	10	75	15	18	60	165		30347	578		567	21008			14	29331	24088		30562
MDD090	MG21047		295		37	2270	12	58	139	16	58	168		20715	563		602	18386			15	23862	21951		
MDD087	MG27254		297		33	2395	10	57	63	19	86	172		25128	535		617	16886			13	27055	22500		35579
MDD105	MG21542		337		31	2337	10	80	106	17	70	179		26972	529		475	16539			19	27654	20033		22579
MDD105	MG21547		323		36	2663	11		64	18	75	186		33999	463		527	18991			16	28907	24072		36957
MDD103	MG18760		265.47			2541.1		37.53		17.52	76.12	158.68													
MDD082	MG18232		351		29	2064	8	65	17	16	51	148		39891	456		386	23317			10	27636	16467		29097
MDD082	MG18189		299		30	2381	10	70	32	16	58	168		38442	444		548	20248			19	27150	20462		29705
MDD082	MG18169		303		27	2387	10	82	15	19	62	182		35088	442		586	19418			16	28057	22016		22987
MDD105	MG21538		319		35	2779	10	96	44	20	82	195		35545	379		565	18704			15	30388	23557		38517
MDD105	MG21566		366		34	2396	10	65	41	18	64	191		50321	376		549	24535			15	27674	21513		32857

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD097	MG29042	0	258.4		9.17	2640.5	0	57.11	19.81	18.69	79.16	163.23													
MDD082	MG18193		335		36	2504	9	53	41	19	64	217		30168	344		523	20666			12	27104	22745		27865
MDD088	MG18390	0	480		0	2744	0	51	19	19	81	119													
MDD099	MG18734		321		35	2686	9	73	13	21	76	161		89582	257		572	18205			27	33293	23037		58094
MDD094	MG18587	0	311.19		9.04	2547.17	0	79.61	17.44	22.24	86.62	117.55													
MDD099	MG18662		291		38	2678	12	79	11	23	98	174		23598	190		718	13039			21	31032	23319		
MDD106	MG27778		322.67			3122.91		85.29		28.91	138.97	118													
MDD091	MG18509		241		42	2596	13	65	19	19	79	148		25576	103		503	14041			28	29469	22112		40749
MDD091	MG18508		196		39	2853	11	74	33	23	90	165		31429	47		625	12835			22	33558	26348		42663
MDD101	MG21406		380.18			2254.46		56.92		17.65	59.31	187.79													
MDD099	MG18678		326		33	2412	9	80	8	17	60	174		65317	32		474	20177			15	27887	22358		38517
MDD091	MG18534		215		30	2459	9	53	11	18	59	228		28864	22		522	17333			15	25629	23858		32361
MDD040	MG13875		701		21	2602		63	20	18.1	82	225													
MDD145	MG19792		233		35	2873	11	98	11	25	84	150		25329	11		450	17759			28	41463	16293		32483
MDD145	MG19793		254		35	3084	12	87	11	23	88	152		25415	8		443	21176			30	42121	15365		38408
MDD145	MG19794		265		33	3000	10	92	11	24	88	148		34321	7		483	22826			32	41656	15415		30366
MDD145	MG19795		237		41	3007	14	83	12	24	106	151		52568	9		440	18474			38	41103	18087		50851
MDD145	MG19796		197		38	2512	11	85	12	24	119	151		22832	7		460	14085			35	37248	17374		35867
MDD145	MG19797		186		34	2369	14	79	12	25	105	139		37634	7		404	13922			29	34675	16468		51163
MDD145	MG19798		218		31	2547	11	87	11	25	98	158		23359	7		479	15136			39	38271	17215		
MDD145	MG19799		186		44	2492	11	86	11	24	90	143		25025	10		455	14841			30	37453	17388		33292
MDD145	MG19800		145		37	2513	12	70	11	21	89	147		20659	7		401	11975			33	34651	17752		38913
MDD145	MG19801		132		41	2104	12		11	21	73	147		36494	7		417	11737			22	28656	17796		39543
MDD145	MG19802		158		31	2322	9	68	11	21	80	164		26940	7		481	10917			20	29829	18186		30262
MDD145	MG19803		173		37	2386	14	61	11	23	83	164		21900	7		520	10338			20	33568	20712		37352
MDD145	MG19804		193		22	2617	9	68	11	26	89	190		34980	9		640	11421			20	34503	20746		31678
MDD145	MG19805		193		36	2737	10	83	11	27	98	154		36626	10		515	13525			27	39428	19782		45214
MDD145	MG19806		197		30	2745	11	77	12	24	146	174		21935	8		547	15398			27	36946	17213		45712
MDD145	MG19808		207		31	2955	10	94	11	26	101	167		41768	10		535	15799			30	40133	21347		36328
MDD145	MG19809		170		44	2757	12	90	12	28	128	172		26768	11		477	12306			22	39579	20050		39891
MDD145	MG19810		196		39	2555	11	88	12	25	116	177		27300	10		470	13819			25	35727	18038		33207
MDD145	MG19811		239		37	2977	12	104	11	25	100	156		27948	9		493	17143			30	41810	16177		45887
MDD145	MG19812		248		40	2957	11	110	11	25	97	152		25856	8		431	16605			32	40908	14170		
MDD145	MG19813		295		34	3159	12	86	11	23	93	155		31332	7		533	23047			32	43222	16918		35529
MDD145	MG19814		331		36	3259	12	105	11	26	95	154		28242	10		537	22907			36	44601	16374		27064
MDD145	MG19815		327		27	3107	7	111	11	25	91	153		32462	11		574	21587			28	43047	15542		29715
MDD145	MG19816		256		33	3007	11	80	11	25	100	162		25040	8		504	16464			24	40797	16409		35992
MDD145	MG19817		207		30	2762	12	84	11	26	94	161		39007	9		494	14642			26	37542	18421		35150
MDD145	MG19818		246		36	2665	12	61	12	20	90	158		25203	9		485	16470			29	36087	17718		32850
MDD145	MG19819		333		31	3076	11	104	11	19	113	173		26621	10		505	20740			31	39186	19761		35641
MDD145	MG19820		296		35	2951	11	87	12	18	101	151		32371	10		437	21724			33	39445	18206		32899
MDD145	MG19821		507		36	3077	10	108	12	20	101	150		23794	9		407	23386			29	40412	14921		32106
MDD145	MG19822		464		35	3207	11	97	11	18	82	148		29098	7		403	23681			26	40494	13669		44737
MDD145	MG19823		490		35	3243	9	109	11	18	86	143		25648	4		372	27732			31	40446	13777		32057
MDD145	MG19824		376		30	3058	11	100	11	18	83	151		23283	4		380	26480			28	39991	13485		
MDD145	MG19825		439		31	3317	8	91	11	20	81	151		29878	6		402	29227			27	40282	14519		
MDD187R	MG19827		184		36	2748	10	75		26	79	174													
MDD187R	MG19828		156		34	2848	10	71		25	79	184													
MDD187R	MG19829		171		26	2539	12	66		23	87	166													
MDD187R	MG19830		216		36	2761	10	87		24	75	189													
MDD187R	MG19831		205		36	2793	11	91		26	80	165													
MDD187R	MG19832		185		36	2752	12	99	7	25	92	162													
MDD187R	MG19833		190		34	2574	12	101		23	91	149													
MDD187R	MG19834		240		33	2766	8	98		23	94	146													
MDD187R	MG19835		235		29	2436	12	70		22	82	132													
MDD187R	MG19836		184		30	2028	11	68		17	76	113													

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD187R	MG19837		149		29	1905	10	58	8	17	73	123													
MDD187R	MG19838		148		31	2002	10	62		18	112	129													
MDD187R	MG19839		149		30	2125	13	89		20	97	147													
MDD187R	MG19840		163		36	2324	12	72		20	95	161													
MDD187R	MG19841		161		35	2375	13	74		22	85	166													
MDD187R	MG19842		161		32	2112	11	50	7	20	94	156													
MDD187R	MG19843		177		26	2241	11	55		22	68	155													
MDD187R	MG19844		170		34	2130	11	57		20	75	135													
MDD187R	MG19845		145		35	2485	10	72	8	19	88	135													
MDD187R	MG19846		163		35	2356	12	60	11	21	90	132													
MDD187R	MG19847		194		24	2235	9	77	8	18	94	113													
MDD206	MG19848		122		34	3189	11	105		24	91	185		31806	8		540	7987			22	41119	22681		48295
MDD206	MG19849		126		35	2624	12	122		21	84	144		38047	10		414	8744			18	36807	19414		26212
MDD206	MG19850		102		46	2959	12	101		22	94	150		22098	7		396	9834			18	40341	21059		34938
MDD206	MG19851		146		26	2944	8	94		23	87	145		36126	7		451	13997			17	39202	17676		32986
MDD206	MG19852		187		27	2625	9	78		23	82	137		45414	7		485	16955			27	37760	17911		39333
MDD206	MG19853		177		32	2432	11	81		22	103	132		29046	7		451	14270			26	36221	17816		41663
MDD206	MG19854		188		31	2784	10	83	8	25	89	160		54777	9		547	15551			20	37717	21069		48847
MDD206	MG19855		210		31	3034	11	86	23	28	93	162		32308	9		538	15276			28	41651	20949		29689
MDD206	MG19856		213		29	2833	10	79		25	84	159		39692	10		563	15725			32	38016	20784		42141
MDD206	MG19857		155		35	2826	12	92	204	25	81	156		34715	9		529	12672			14	38600	21087		33184
MDD206	MG19858		147		32	2842	11	75		26	122	153		32456	7		525	11458			19	39516	22459		32664
MDD206	MG19859		172		36	3032	11	118	9	28	105	177		44160	8		548	11919			14	39796	25720		31647
MDD206	MG19860		191		33	2240	11	63		21	81	172		31099	9		652	11063			16	29563	19741		32992
MDD206	MG19861		178		31	2524	10	88		28	110	175		23254	8		603	12677			19	33453	22043		32707
MDD206	MG19862		167		34	2490	12	82	81	22	101	173		30951	6		496	15438			53	33177	20005		37504
MDD206	MG19863		208		32	2621	11	83	140	23	178	140		31802	8		483	19335			84	35640	18083		28455
MDD206	MG19864		212		37	2457	13	52	48	22	96	156		29128	10		456	17174			34	33947	19801		32304
MDD206	MG19865		210		40	2532	11	88	29	22	96	137		37286	9		433	17024			27	34457	18401		34207
MDD206	MG19866		211		35	3034	9	78	53	27	148	160		42987	8		594	15449			31	40145	23070		42878
MDD206	MG19867		230		35	2653	11	90	23	22	120	174		31794	7		523	15817			20	32782	19581		39816
MDD206	MG19868		194		36	2919	12	106		24	121	173		60100	7		526	15462			19	37517	23533		36129
MDD206	MG19869		214		37	3002	12	107	28	25	123	148		44086	8		502	19082			33	41122	21851		36271
MDD206	MG19870		245		38	3027	11	98	40	21	136	134		38939	7		603	24080			36	44554	15389		39488
MDD206	MG19871		267		29	2311	10	82	21	19	147	131		35965	5		411	21145			30	33935	16908		30011
MDD206	MG19872		239		30	2368	10		8	20	137	129		31337	6		388	17862			17	32731	18054		39029
MDD206	MG19873		243		32	2235	10	56	16	21	290	120		39733	7		394	15498			22	33392	17409		44998
MDD206	MG19874		207		34	2499	11	65		20	114	146		27598	9		487	14737			23	34369	21213		34232
MDD206	MG19875		214		27	2855	9	76	10	28	124	177			9		621	13951			16	37369	23178		
MDD206	MG19876		215		32	2818	9	96		25	157	169			14		663	14278			17	36775	22864		
MDD206	MG19877		209		33	2660	11	78		26	95	156			140		581	14150			16	37106	20706		
MDD206	MG19878		226		31	2796	11	64		26	92	154			52		564	14560			18	37688	19419		
MDD206	MG19879		199		34	2615	10	95		25	132	151			37		489	12864			14	35916	18740		
MDD206	MG19880		200		35	2394	12	81		26	100	159			20		537	11216			16	34796	18221		
MDD206	MG19881		188		44	2666	11	87	13	26	104	145			16		471	11019			21	37233	19050		
MDD206	MG19882		235		39	2895	13	100		24	104	140			21		441	16432			28	43497	14491		
MDD206	MG19883		268		36	3269	10	86		23	133	140			18		416	20702			27	41542	15737		
MDD206	MG19884		285		34	3204	10	78		20	126	145			13		387	20066			19	34979	16010		
MDD206	MG19885		261		31	2398	12	70		18	112	141			11		445	16363			21	31960	14977		
MDD206	MG19886		250		39	2547	13	76		18	107	142			12		384	16755			25	32760	15470		
MDD206	MG19887		253		33	2455	10	69		16	163	144			11		398	18313			20	31494	16389		
MDD206	MG19888		250		34	2332	11	91		15	109	136			12		415	18566			21	31277	15739		
MDD206	MG19889		258		33	2531	10	71		18	89	136			10		417	17349			25	33083	16542		
MDD206	MG19890		305		34	2861	12	83		17	92	138			8		390	19379			30	37620	16166		
MDD206	MG19891		393		31	2720	10	104		16	126	131			8		353	23080			29	38437	10963		
MDD206	MG19892		363		26	2830	9	99		19	103	136			8		375	22218			28	37633	12439		

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD206	MG19893		335		36	2584	12	96		17	94	138			9		359	20103			19	35417	13181		
MDD206	MG19894	21	370		35	2717	10	79		18	92	138			12		406	23032			27	34962	16551		
MDD206	MG19895		352		34	2960	10	86		17	96	144			16		476	21708			26	37556	17719		
MDD206	MG19896		336		34	2904	8	66		18	92	142			18		451	21995			31	39352	18516		
MDD206	MG19897		406		34	2894	10	91	7	19	97	134			13		376	26403			25	38454	16315		
MDD207	MG43501		182		32	2460	10	74		24	88	166			22		497	9958			24	35769	19244		
MDD207	MG43502		137		31	2392	10	60		20	74	128			11		422	11054			18	33157	17411		
MDD207	MG43503		144		34	2056	11	72		19	79	114			7		337	16227			21	31238	14102		
MDD207	MG43504		183		36	2260	9	77		22	82	121			7		391	17568			23	33529	13116		
MDD207	MG43505		164		29	2186	11	81		21	70	118			5		344	16678			20	31668	12422		
MDD207	MG43506		142		33	1937	13		56	16	59	121			8		288	14885			30	25471	14380		
MDD207	MG43507		168		34	2238	11	63	7	21	97	153			9		401	14096			14	29544	17670		
MDD207	MG43508		157		34	2115	12	50		20	84	164			7		372	11105			16	28691	15390		
MDD207	MG43509		183		34	2268	10	55		23	80	151			6		504	12675			21	30685	15264		
MDD207	MG43510		218		34	2847	11	121		24	78	137			7		411	18834			21	38072	15819		
MDD207	MG43511		171		35	2913	12	101		26	89	151			6		456	15230			21	38913	20405		
MDD207	MG43512		147		37	2855	9	76		26	107	155			8		504	12460			16	39612	21932		
MDD207	MG43513		120		38	2554	12	56		22	87	127			6		393	11726			18	36037	16084		
MDD207	MG43514		176		30	2394	14	56		23	92	130			6		428	15366			26	36925	14274		
MDD207	MG43515		265		37	2754	10	106		21	84	126			8		400	19888			32	38832	13340		
MDD207	MG43516		212		33	2418	12	67		22	101	147			13		435	15920			28	33118	12375		
MDD207	MG43517		263		37	2621	12	99		23	125	133			11		390	21333			22	36605	11318		
MDD207	MG43518		299		29	2760	10	93		22	91	126			9		454	22230			29	35752	12927		
MDD207	MG43519		164		33	1998	11			21	80	130			7		427	12051			15	29354	14458		
MDD207	MG43520		167		36	1955	12	56		19	75	127			6		363	16365			19	29824	14644		
MDD207	MG43521		174		31	2139	10			18	81	123			8		426	21947			15	30139	14910		
MDD207	MG43522		147		35	2124	11	62		19	82	127			12		404	12336			19	30512	15008		
MDD207	MG43523		151		27	2180	9	66		20	86	126			13		404	14897			16	30364	15455		
MDD207	MG43524		185		34	2243	12	67		20	87	131			11		387	19453			22	32216	17269		
MDD207	MG43525		201		36	2023	11			17	86	130			8		415	13890			15	29395	15676		
MDD207	MG43526		227		32	2143	11	81		17	94	119			12		396	17644			19	30109	14971		
MDD207	MG43527		283		30	2328	10	62	7	16	69	131			8		370	19336			17	30772	12526		
MDD207	MG43528		488		29	2978	10	105		18	70	133			6		353	29357			27	36305	12713		
MDD207	MG43529		407		33	3033	11	91		18	86	137			6		409	26579			24	37799	14277		
MDD207	MG43530		312		27	2775	12	80		20	91	132			6		379	21294			20	35769	12422		
MDD212	MG43478		84		12	2461		63		19	70	220			11			2552			21	30529	14572		
MDD212	MG43479		151		12	2615		76		22	81	223			10			9032			34	35969	17600		
MDD212	MG43480		188		15	2762		71		20	81	212			11			14383			36	36953	15559		
MDD212	MG43481		181		10	3153		80		18	79	185			12			15503			47	41441	17427		
MDD212	MG43482		182		12	3020		79		22	97	225			14			12921			34	40481	16930		
MDD212	MG43483		187		13	3029		71		19	82	193			10			11570			30	37950	16233		
MDD212	MG43484		241		12	3236		81		19	87	202			9			15474			34	42432	17209		
MDD212	MG43485		280		18	3617		85		25	90	230			10			17547			49	47356	18026		
MDD212	MG43486		296		15	3535		78		25	116	225			13			15799			49	47054	16931		
MDD212	MG43487		289		17	3265		74		24	102	258			12			15248			42	44699	16542		
MDD212	MG43488		252		14	3360		80		22	120	264			16			14819			34	42818	18075		
MDD212	MG43489		272		20	3376		89	15	25	107	249			14			15774			49	43856	16375		
MDD212	MG43490		199		18	3343		88		26	105	244			16			13742			38	45859	23183		
MDD212	MG43491		202		14	2956		77		25	95	229			13			12182			33	42645	20167		
MDD212	MG43492		176		11	2308		63		20	74	221			14			8283			29	31170	13996		
MDD212	MG43493		224		18	3268		90	17	28	117	281			13			12031			47	45996	23364		
MDD212	MG43494		194		16	2404		70	18	25	90	273			10			8499			30	30088	16905		
MDD212	MG43495		185		17	2748		77		28	95	268			9			8567			20	34861	20952		
MDD212	MG43496		208		19	2962		83		28	101	288			16			8353			26	40373	20168		
MDD212	MG43497		200		24	3215		87		30	180	312			16			10828			41	40101	23679		
MDD212	MG43498		194		21	3293		89	20	28	241	287			15			12396			32	42126	21823		

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD212	MG43499		220		20	3057		83		26	110	280			14			11136			37	44055	17518		
MDD212	MG43500		269		10	3506		88		24	154	255			14			18043			44	47757	17856		
MDD212	MG43531		289		23	3547		84	18	27	206	260			13			17800			45	45449	20486		
MDD212	MG43532		246		19	3368		84	16	27	112	288			18			12455			40	46827	22388		
MDD212	MG43533		199		21	3109		84	24	24	97	273			11			10218			33	38729	21483		
MDD212	MG43534		194		12	2742		71		24	100	223			28			13539			22	38898	18041		
MDD212	MG43535		223		16	2724		68		25	112	228			39			24192			36	36552	18862		
MDD212	MG43536		215		22	2875		75	14	27	103	235			60			18142			34	37603	19078		
MDD212	MG43537		218		13	2785		74	19	23	105	236			95			16050			38	37494	17814		
MDD212	MG43538		219		13	2782		69		24	99	220			70			18559			29	35141	17822		
MDD212	MG43539		220		11	2563		68	15	23	96	218			63			20622			36	36276	17978		
MDD212	MG43540		205		23	2758		69	24	23	92	218			44			14308			38	37576	17817		
MDD212	MG43541		201		20	2684		69		24	152	244			33			10356			41	38704	15466		
MDD212	MG43542		217		13	2702		72	20	22	114	235			25			12408			38	37006	18273		
MDD212	MG43543		333		14	2655		71		24	145	258			32			9871			33	38349	18272		
MDD212	MG43544		277		20	2421		66	18	20	105	227			23			10768			38	32340	15616		
MDD212	MG43545		246		9	2229		55	17	18	124	211			18			12358			42	32107	14744		
MDD212	MG43546		234		12	2043		54		16	95	191			18			10605			29	29938	13928		
MDD212	MG43547		243		14	2007		50	19	19	211	197			18			11165			38	29623	13387		
MDD212	MG43548		317		11	2365		53	20	18	89	215			17			13528			36	34721	12225		
MDD212	MG43549		356		17	2533		61		19	115	210			19			16265			32	35102	12778		
MDD212	MG43550		313		16	2305		57		17	95	221			14			12806			36	33484	12044		
MDD212	MG43551		297		18	2666		64		18	99	208			17			13640			42	35498	15598		
MDD212	MG43552		330		20	2796		66		18	89	220			17			15728			41	37988	15471		
MDD212	MG43553		387		13	2965		67		19	98	221			21			18214			40	40125	15796		
MDD212	MG43554		366		16	2872		68	19	17	114	231			18			18650			37	37460	15481		
MDD212	MG43555		390		12	3166		66	17	19	360	233			14			21557			44	41139	15023		
MDD212	MG43556		397		20	3018		65	22	20	344	228			13			21407			33	39384	13657		
MDD219	MG43563		187		16	2982		84		24	117	231			27			6850			29	36762	20034		
MDD219	MG43564		263		22	2766		77		21	82	233			27			10838			30	35072	15049		
MDD219	MG43565		208			2648		71		21	78	225			23			8912			19	32855	17303		
MDD219	MG43566		176		11	2540		75		24	79	210			26			8505			30	31199	19633		
MDD219	MG43567		171		15	2390		68		20	96	224			17			8547			32	31291	16782		
MDD219	MG43568		173		18	2121		63		22	80	208			22			8074			25	30357	16556		
MDD219	MG43569		200		9	2618		71		24	80	211			19			10535			31	32014	18953		
MDD219	MG43570		205		18	2817		72	18	25	83	227			17			10377			34	33941	19909		
MDD219	MG43571		128		11	2269		59		19	67	166			12			6564			18	27251	14343		
MDD219	MG43572		158		15	2524		66		21	80	232			13			7089			20	28562	16746		
MDD219	MG43573		168		14	2380		57		21	78	239			16			7684			17	26908	17471		
MDD219	MG43574		152		15	2474		69		26	83	264			19			6835			22	28157	17960		
MDD219	MG43575		159		18	2255		61		22	80	264			17			6358			30	25647	17619		
MDD219	MG43576		175		16	2087	6	59		21	75	259			16			5272			25	24797	15580		
MDD219	MG43577		178		13	2330		66	16	22	81	246			19			6216			21	27744	19035		
MDD219	MG43578		159		13	2541		73		20	76	211			18			6990			19	29046	20335		
MDD219	MG43579		178		14	3116		82	18	27	100	257			22			7710			29	38988	21730		
MDD219	MG43580		181		18	2509		67		21	96	237			19			6809			25	28901	17080		
MDD219	MG43581		169		17	2600		70	18	24	96	241			18			7476			29	30949	17719		
MDD219	MG43582		211		14	2665		59		18	82	180			19			11550			31	33265	14897		
MDD219	MG43584		339			2228		50		20	73	168			15			13703			34	32540	11795		
MDD219	MG43585		310		13	2231		53	15	17	78	173			18			13533			24	30419	12592		
MDD219	MG43586		344		15	2347		59		20	103	199			25			18651			18	32101	17395		
MDD219	MG43587		236		15	2667		74	17	23	79	226			20			8563			18	29995	19245		
MDD219	MG43588		193		9	2200		56		18	73	204			16			6483			19	26169	16158		
MDD219	MG43589		216		17	2492		69		24	80	243			25			6741			22	30721	16780		
MDD219	MG43590		201		17	2581		78		26	95	238			23			6811			28	32782	18158		
MDD219	MG43591		225		20	2990	6	81		30	144	269			25			6872			29	40875	21913		

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD219	MG43592		243		19	2936		85	17	28	110	263			24			6982			25	36603	24057		
MDD219	MG43593		225		21	2591		70	17	27	108	229			19			6043			24	32871	20751		
MDD219	MG43594		202		13	2364		68	15	22	124	206			21			6097			20	30178	17774		
MDD219	MG43595		271		17	2397		70		24	125	236			15			6516			17	29985	18497		
MDD219	MG43596		275		16	2309		65		24	123	224			15			6274			25	30037	17318		
MDD219	MG43597		310		22	3291		75		25	122	229			28			13074			25	37966	19399		
MDD219	MG43598		333		13	2778		66	18	19	91	195			27			17507			27	32465	16287		
MDD219	MG43599		276		10	2531		62		14	86	191			20			11772			27	29702	16171		
MDD219	MG43600		290		15	2404		57		17	89	196			28			11348			26	28933	14631		
MDD219	MG43601		280		15	2051		50		16	77	185			23			10712			31	26193	13424		
MDD219	MG43602		257			2120		48		16	82	188			25			10396			35	26910	13347		
MDD219	MG43604		260		32	2219	9	54		15	89	116			17		431	14242			25	29139	15659		14494
MDD219	MG43605		302		31	2793	11	74		18	94	128			19		480	17150			23	33202	18744		13328
MDD219	MG43606		325		35	2583	10	70	8	17	85	125			23		401	15756			28	34460	16407		11522
MDD219	MG43607		381		23	2886	9	78	7	18	72	127			18		504	19753			27	34453	15238		17324
MDD219	MG43608		479		35	4514	10	134	8	22	91	138			25		414	34003		123	28	44247	12733		12723
MDD219	MG43609		470		30	5470	8	118	9	28	114	150			27		377	39629		205	43	49699	12145		11811
MDD219	MG43610		349		29	3788	9	121		22	137	138			24		480	26245		81	29	38284	16471		16806
MDD219	MG43611		297		36	3449	12	59		21	92	146			20		433	17933		53	25	35082	17370		8169
MDD219	MG43612		284		31	3070	12	86		19	95	144			14		563	16317			24	33406	20630		8876
MDD219	MG43613	17	306		32	3258	11	66	7	21	93	158			20		571	18121			25	33036	20851		14391
MDD219	MG43614		248		34	2967	12	83		21	93	172			13		619	13256			24	31540	22806		9070
MDD219	MG43615		264		33	2665	12	88		19	81	137			12		470	13754			24	29655	18634		11404
MDD222	MG43616		145		13	2285		55		18	70	239			14			4655			36	31405	12044		
MDD222	MG43617		221		15	2388		58		20	68	222			10			11450			29	31918	10939		
MDD222	MG43618		195		14	1994		49		15	61	167			11			14564			30	28913	9430		
MDD222	MG43619		167			1925		51		19	65	203			8			8762			26	25194	11335		
MDD222	MG43620		147		10	2160		59	15	18	74	210			8			6633			29	30908	14140		
MDD222	MG43621		154		14	2326		64		20	88	205			8			6257			32	33965	14324		
MDD222	MG43622		205		9	2578		67	17	22	75	222			9			10121			33	36604	14109		
MDD222	MG43623		254		15	2021		54	17	19	77	231			9			10096			42	34300	9206		
MDD222	MG43624		220		17	3003		78		19	81	229			11			14533			33	37319	17112		
MDD222	MG43625		168		18	2945		83		24	99	220			9			9759			30	40054	20553		
MDD222	MG43626		165		14	2826		81		23	98	220			9			9166			33	40126	20311		
MDD222	MG43627		163		12	2529		67		22	89	193			8			11926			29	36345	16587		
MDD222	MG43628		219		16	3108		80		24	96	239			12			13572			37	41369	18986		
MDD222	MG43629		226		14	2772		71		22	78	207			13			14431			29	38763	13643		
MDD222	MG43630		232		15	2656		68		21	77	212			10			13744			42	34348	14612		
MDD222	MG43631		183		15	1500		43		17	60	176			8			6343				20932	7682		
MDD222	MG43632		199		20	2279		65		22	90	214			10			9184			40	30614	16051		
MDD222	MG43633		193		17	1986		61	14	20	95	199			10			9946			26	29816	12271		
MDD222	MG43634		198		13	2284		63		21	96	221			10			7249			21	32006	13098		
MDD222	MG43635	26	188		13	2589		67	16	21	91	217			11			7325			25	34781	15826		
MDD222	MG43637		166		12	2207		57		21	82	188			9			6196			17	31495	12427		
MDD222	MG43638		204		13	2464		61		22	97	213			12			11696			26	32031	14905		
MDD222	MG43639		231		12	1949		50		19	95	195			15			18530			30	29287	12590		
MDD222	MG43640		212		41	2465	14	61		22	101	133			12		420	18351			16	29549	19752		8970
MDD222	MG43641		204		32	2234	11			19	71	127			9		434	12850			15	29375	16315		7350
MDD222	MG43642		215		39	2645	10	82		23	183	142			12		467	13652			23	31929	20636		8562
MDD222	MG43643		190		36	2437	12	62		20	124	152			10		485	11612			19	27390	21341		
MDD222	MG43644		195		30	2086	12			14	67	125			10		423	11714			20	26475	17120		9609
MDD222	MG43645		264		31	2459	11	71		17	85	124			12		433	13724			32	30700	15797		12789
MDD222	MG43646		286		34	2782	9	94		18	73	136			12		434	15680			27	31507	17422		7617
MDD222	MG43647		260		33	2299	12	53		17	66	142			11		394	14193			22	27678	17064		9075
MDD222	MG43648		256		33	2645	11	90		19	76	175			10		430	12384			17	29035	19121		
MDD222	MG43649		314		35	3029	12	86		19	75	154			13		443	16349			26	32535	18959		11189

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD222	MG43650		353		22	2891	8	84		20	103	158			9		558	17220			24	32418	17940		13128
MDD222	MG43651		372		36	3150	11	83		20	83	153			7		467	19568			19	34160	19005		8473
MDD222	MG43652		373		24	2794	7	91		20	75	163			8		518	18848			25	32249	16365		8442
MDD222	MG43653		400		33	3035	8	100		20	70	150			6		434	21155			16	34148	16054		9348
MDD222	MG43654		359		34	3118	10	100		19	74	165			7		414	19457			21	34069	17657		10572
MDD222	MG43655		339		38	3128	11	94		20	80	164			10		456	16995			26	35827	18144		8201
MDD222	MG43656		303		34	3147	11	96		19	80	143			9		459	18762			37	35910	19006		7978
MDD222	MG43658		309		27	3009	8	79		19	74	164			9		469	17000			26	33085	16577		8263
MDD223	MG43660		244		25	3126	9	108		31	90	175		9053	20		558	10085		52	29	37210	12681		6627
MDD223	MG43661		245		37	3089	10	104		24	101	146		9325	13		451	11936		51	31	38342	12747		7105
MDD223	MG43662		255		40	3242	11	112		26	114	152		5490	15		437	12243		57	34	38676	11997		10432
MDD223	MG43663		257		32	3112	10	100		25	111	145		7913	11		437	13628		75	36	38244	11664		
MDD223	MG43664		243		39	965	11	67		18	63	134		27668	9		558	196768			22	22645	981		
MDD223	MG43665		193		42	807	12	59		20	73	148		27716	10		561	200870			14	21896	1090		
MDD223	MG43666		204		38	2342	13	101		22	84	154		19826	16		512	76013			25	31243	8281		7868
MDD223	MG43667		177		35	2190	12	62		21	80	153		17816	10		531	72930			15	27936	8731		8883
MDD223	MG43668		149		41	791	11	50		18	55	147		28482	7		581	197879			14	18577	1197		
MDD223	MG43669		156		33	2458	12	76		21	81	179		9149	9		481	9337			22	29024	14324		7163
MDD223	MG43671		144		33	1089	11			17	65	125		24520	7		467	156999			15	19076	2568		
MDD223	MG43672		141		35	609	11			14	55	115		29301	5		529	193899			11	15243	981		6025
MDD223	MG43673		138		37	1000	12	60		18	69	111		27072	5		472	174233			16	20530	1975		
MDD223	MG43674		186		23	2364	10	62		18	114	121		11471	7		408	13366		37	23	30318	11418		8992
MDD223	MG43675		175		34	2580	12	98	9	21	131	134		10633	6		394	10898			27	33873	13422		7899
MDD223	MG43676		155		28	2248	10	86		20	94	125		7768	8		429	11051			31	31266	12980		8282
MDD223	MG43677		177		33	2311	12	51		20	84	136		11049	7		362	12803			21	28071	11635		7260
MDD223	MG43678		201		40	963	12	57		19	92	120		28598	7		565	189364			19	21573	1667		5260
MDD223	MG43679		254		35	818	14		7	19	64	112		31033	7		831	202853			22	22128	999		5572
MDD223	MG43680		225		33	2255	9	62	12	19	107	126		8776	7		475	15041		41	29	30664	11295		8023
MDD223	MG43682		154		39	1474	12	64	17	16	83	111		24340	7		506	120821			19	25369	5395		6771
MDD223	MG43683		159		41	1971	13		21	15	105	112		7822	6		345	11760			27	30117	13230		
MDD223	MG43684		156		38	671	10			16	73	110		28067	3		539	196311			15	18591	1173		7351
MDD223	MG43685		224		33	2570	11	59		18	114	143		12880	8		419	12003			28	31069	12935		10016
MDD223	MG43686		203		43	757	12			13	70	120		26833	6		451	196125			12	18696	1008		
MDD223	MG43687		237		37	1304	11	64		15	73	113		23610	4		378	154001			17	19670	2784		7722
MDD223	MG43688		233		33	1821	11	55		13	120	118		15872	5		361	53815			18	25112	8049		8165
MDD223	MG43689		285		35	2403	10	69		16	101	135		8728	8		376	14625			20	28571	12355		7926
MDD223	MG43690		279		35	2233	11	76		15	101	130		14931	8		321	19672			15	25737	11095		9372
MDD223	MG43691		255		35	2639	11	57		18	121	148		10198	7		421	14470			21	30076	14053		
MDD262	MG43702		156		35	2587	10			22	86	155			14		555	7426			24	32328	16732		
MDD262	MG43703		143		27	2230	8	61		20	81	123			9		520	7995			17	28293	13181		7262
MDD262	MG43704		156		33	2360	11	82		19	81	137			8		500	8345			23	30803	15359		7920
MDD262	MG43705		157		36	2769	11	79		25	78	150			8		522	8984			18	32105	18709		10296
MDD262	MG43706		162		22	2425	9	71		19	69	130			6		467	9194		39	16	28388	15038		6321
MDD262	MG43707		148		25	2243	9	80	55	19	99	146			7		469	8993			91	26328	14635		8617
MDD262	MG43708		207		37	2783	10	91	47	22	69	162			9		487	11967			30	30071	15444		9081
MDD262	MG43709		189		38	2746	11	73	16	23	79	163			8		542	10594			25	31179	16314		
MDD262	MG43710		188		32	2956	12	93	19	25	89	163			10		563	10853			27	33158	16414		
MDD262	MG43711		228		20	2983	8	79	8	25	151	144			11		548	14986		47	30	33637	13391		8156
MDD262	MG43712		192		34	2899	11	99		22	227	152			12		528	12893			27	32514	15861		8208
MDD262	MG43713		198		32	2783	13	72		25	116	154			11		562	11649			22	32237	17934		7348
MDD262	MG43715		205		37	2767	11	77		25	120	162			11		544	11494			25	32804	17646		7974
MDD262	MG43716		197		30	2630	10	61		24	97	161			25		627	9695			17	31096	18166		7948
MDD262	MG43717		207		33	2614	9	84		24	96	169			22		637	9490			20	30576	17507		6309
MDD262	MG43718		187		30	2490	12	79		23	211	159			10		627	8668		38	19	30845	18652		11453
MDD262	MG43719		190		40	2469	12	54		24	98	155			11		543	9199			18	31058	18070		
MDD262	MG43720		184		37	2487	11	69		25	97	149			15		577	8954			15	31682	17910		9201

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD262	MG43721		204		29	2542	11	69		24	86	152			20		633	9989		39	39	32192	18227		6508
MDD262	MG43722		201		31	2401	12	69		23	83	144			17		595	9969			18	32477	16347		10872
MDD262	MG43723		180		35	2408	11	84		22	123	152			16		563	8526			23	31195	18477		
MDD262	MG43724		177		31	2478	10	80		26	98	154			11		640	7314			19	32063	17019		8611
MDD262	MG43725		166		40	2145	12	74	9	22	87	126			9		464	6646			14	30077	13795		8339
MDD262	MG43726		202		37	2450	12	77	9	24	135	139			10		533	8113			22	32234	16869		7403
MDD262	MG43727		217		31	2410	11	79		25	92	144			11		555	8167			18	31862	17863		7391
MDD262	MG43728		212		36	2453	12	69		23	97	142			12		562	8168			14	31249	18026		
MDD262	MG43729		176		30	2533	11	101		23	115	145			9		619	7264			22	33393	17899		5771
MDD262	MG43730		190		31	2508	12	70		24	97	143			14		643	8117			24	33179	18265		7636
MDD262	MG43731	17	221		34	3031	12	106	38	19	79	139			15		525	11618			38	32191	16097		
MDD262	MG43732		224		38	2596	11	84		19	93	149			14		476	12168			19	29818	16692		
MDD262	MG43733		227		33	2434	12	71	17	19	90	144			15		508	11402			20	29977	15905		
MDD262	MG43735		255		33	2260	10	65	75	17	70	133			11		478	12774			36	27559	15200		
MDD262	MG43736		274		31	2449	10	67	32	17	75	141			12		480	12521			27	28768	15207		
MDD262	MG43737		349		27	2596	11	87	64	18	78	137			12		468	14863			32	31648	14053		7119
MDD262	MG43738		339		34	2911	9	55	31	18	78	136			13		516	15780			27	33095	15876		9053
MDD262	MG43739		301		34	2549	10	70	76	18	64	144			13		477	13938			31	31380	15908		6248
MDD262	MG43740		332		31	3094	9	96	37	19	78	162			13		588	14900			27	32456	16214		8501
MDD262	MG43741		344		33	3232	10	93	41	20	84	159			16		600	15244			42	36258	17047		7885
MDD262	MG43742		366		34	3538	10	110	29	19	81	157			15		565	17329			29	37143	15504		9264
MDD262	MG43743		471		34	3222	10	88	38	20	76	150			11		501	18620			41	36028	13968		
MDD019R	MG11241		375		17	2292		77	55	18.1	57	237													
MDD019R	MG11246		625		19	2065		56	48	19.2	48	287													
MDD019R	MG11251		422		16	2066		59	39	19.2	52	315													
MDD019R	MG11263		321		18	2932		79	48	23.3	93	223													
MDD020	MG11391		360		10	2100		66	49	17.6	54	293													
MDD020	MG11392		326		13	1995	6.6	63	44	15.8	56	219													
MDD020	MG11454		270		17	2843		70	102	21.3	78	196													
MDD021R	MG11511		488			2164		56	97	17.5	49	263													
MDD021R	MG11514		383		11	1852		53	58	15.3	61	217													
MDD021R	MG11516		434			2148	7	66	70	16.4	55	291													
MDD021R	MG11519		545			2288		63	63	18	55	223													
MDD021R	MG11521		417		18	2688		68	49	23.6	75	242													
MDD021R	MG11543		396		10	2739	7	81	51	22.9	75	243													
MDD021R	MG11578		318		17	2909		79	52	22.3	75	234													
MDD021R	MG11512		420			2229		63	62	16.7	57	279													
MDD021R	MG11527		328		13	2734		75	70	20.8	93	214													
MDD026	MG13245		294		15	1892		48	29	16.8	49	270													
MDD027	MG12001		311		18	2503		66	42	20.3	77	218													
MDD028	MG13277		254		13	1836		53	45	15.2	43	295													
MDD032	MG13519		298		22	2564	7	70	32	20.1	79	195													
MDD032	MG13526		266		17	2163		60	32	20.2	75	204													
MDD032	MG13521		203		16	2129		58	19	18.3	63	222													
MDD032	MG13525		222		12	2196		67	19	16.3	65	226													
MDD032	MG13543		316		17	1974		58	36	18.2	50	310													
MDD032	MG13515		302		19	2308		64	21	20.6	118	233													
MDD034	MG13569		267		22	2592		71	34	22.3	79	238													
MDD038	MG13842		285		16	1585		52		13.8	47	363													
MDD039	MG15231		293		15	2110		58		17.2	51	252													
MDD040	MG13932		366		20	2610		73		17.2	81	237													
MDD045	MG15454		375		20	2171		63	27	17.5	61	269													
MDD047	MG12720		480		18	2367		67	41	17.2	61	274													
MDD048R	MG15521		316		12	2305		61	35	18.4	65	267													
MDD048R	MG15596		384		13	2316		66	55	17.5	60	255													
MDD051	MG15716		300		12	2013		58	32	16.1	52	195													

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF	La_corrXRF	Mg_corrXRF
MDD052	MG14211		329		19	2744		78	24	23.4	93	245													
MDD056	MG15962		307		17	2315		72	22	16.8	64	215													
MDD056	MG15998		187		13	2303		68	43	18.7	62	306													
MDD058	MG14327		296		18	2223		69	46	19.8	67	249													
MDD061	MG14450		324		18	1994		64	20	18.7	56	257													
MDD056	MG16057		348		16	2312		59	31	18.3	56	246													
MDD059	MG16156		386		18	1959		53	22	15.9	50	233													
MDD061	MG14524		313		13	2081		54	20	15.4	60	248													
MDD061	MG14562		375		16	2815		82	24	20.3	79	199													
MDD062R	MG16290		509		21	1945	8	61		14.8	52	241													
MDD066	MG17636		308		14	2116		61	49	15.6	56	225													
MDD070	MG20235		320		20	2969		76	30	21.9	74	259													
MDD072	MG20364		241		18	2709		74		22.6	71	238													
MDD072	MG20365		291		17	2479	7	63	37	19.3	68	217													
MDD072	MG20383		301		23	2657		70	18	21.1	81	245													
MDD077	MG16660		245		10	2217		68	21	16.9	68	230													
MDD079	MG20591		292		9	2218		64	20	18.5	73	244													
MDD083	MG16890		248		38	2560	10	108	50	17	80	204													
MDD083	MG16897		251		30	2835	10	86	34	21	96	158													
MDD083	MG16946		263		30	2217	11	52	262	15	71	156													
MDD083	MG16948		266		31	2327	11	63	11	18	79	181													
MDD083	MG16892		289		27	2302	11		37	17	68	223													
MDD083	MG27007		336		26	2182	10	56	23	17	66	178													
MDD088	MG18428		386		38	2625	10	78	14	19	84	178		30974	101		510	15264			18	29387	16342		31894
MDD094	MG18585	0	312.99		0	2730.48	0	62.4	35.9	22.59	86.71	123.77													
MDD103	MG18761		329.32			2553.9		44.91		15.75	148.37	142.47													
MDD090	MG21029		229		39	2453	12	75	27	17	67	217		21056	159		545	14592			18	27053	19848		
MDD096	MG21189		240		39	2881	14	83		20	90	156		29994	41		661	14793			26	32912	23093		37553
MDD106	MG27813		335.78			2525.49		80.18		20.71	92.56	149.72													
MDD106	MG27760		282.24			2024.29		57.2		16.17	77.97	148.85													
MDD090	MG21017		253		36	2365	10	70	40	19	57	197		21774	1929		595	16587			12	25349	23369		
MDD087	MG27264		294		37	2307	11	55	34	18	71	178		22871	1696		576	18787			18	24916	24896		25699
MDD103	MG18758		269.75			2429.91		66.04		16.69	79.13	161.32													
MDD118	MG21922		317		31	2409	11	84	27	20	49	168		44955	1432		493	17870			16	26138	22740		53232
MDD086	MG20954		328		30	1975	12	49	14	19	50	190		27856	1181		455	18584			14	22908	17639		
MDD082	MG18162		309		43	2244	11	80	26	15	58	169		32302	1103		355	17055			14	23040	18585		32082
MDD118	MG21917		274		33	2547	12	73	20	22	65	179		69172	1004		530	17904			17	29962	22276		47330
MDD088	MG18474		415		26	2039	10	59	23	14	55	158		20761	978		446	20248			16	26899	15970		27709
MDD087	MG27214		324		31	2286	12	65	28	18	80	156		32798	571		641	13787			15	25520	24935		28258
MDD118	MG21967		291		31	2377	11	82	23	18	52	187		49220	555		586	18838			13	25994	22367		37759
MDD118	MG21929		312		33	1778	14	79	32	17	47	171		39394	528		499	15326			13	20990	17925		52973
MDD118	MG21927		279		36	2261	10	82	30	16	50	198		39003	425		538	17650			13	26669	19793		35589
MDD103	MG18759		273.05			2542.71		90.19		15.95	95.46	161.12													
MDD121	MG31100		291		24	2325	10	96	48	20	67	211		49984	367		539	17708			21	26680	19156		45901
MDD090	MG21067		359		36	2249	10	54	33	18	54	189		20034	337		544	24879			9	26049	19187		
MDD105	MG21607		409		34	2460	10	72	16	17	79	158		28582	328		476	24599			17	27159	19980		35059
MDD086	MG20916		306		31	2219	11	58	18	17	54	194		23713	287		517	15873			10	25677	17202		
MDD096	MG21213		380		26	1985	10	48		16	52	212		22853	280		529	18062			12	22362	18264		36457
MDD105	MG21620		224		35	2981	10	66	55	23	100	150		45686	272		647	14373			29	34043	29186		37221
MDD106	MG27770		292.02			2459.82		50.73		18.57	97.45	167.47													
MDD105	MG21572		331		33	2310	11		19	19	77	182		45827	244		528	19997			15	26179	21250		23365
MDD080	MG16821		216		35	2664	10	65	13	21	89	174		101011	244		649	14027			14	29815	26037		34793
MDD101	MG21413		297.94			3272.52		52.39		24.56	100.6	120.65													
MDD080	MG16841		401		33	2751	12	63	10	21	88	192		61531	199		657	20042			19	31002	23573		31406
MDD118	MG21974		293		34	2863	10	55	144	20	80	156		57410	185		670	18525			24	34026	27432		36215
MDD094	MG18611		337		34	2306	10	49	10	18	75	184		33160	176		520	15368			12	24803	23466		34533

HOLEID	SAMPLEID	Sn_XRF_ppm	Sr_XRF_ppm	Te_XRF_ppm	Th_XRF_ppm	Ti_XRF_ppm	U_XRF_ppm	V_XRF_ppm	W_XRF_ppm	Y_XRF_ppm	Zn_XRF_ppm	Zr_XRF_ppm	Ag_corrXRF	Al_corrXRF	As_corrXRF	Au_corrXRF	Ba_corrXRF	Ca_corrXRF	Ce_corrXRF	Cr_corrXRF	Cu_corrXRF	Fe_corrXRF	K_corrXRF_	La_corrXRF	Mg_corrXRF
MDD088	MG18475		410		37	2640	11	62	14	20	71	219		47141	163		462	21801			20	30837	18378		44752
MDD101	MG21404		301.41			2426.63		63.62		16.36	55.72	178.56													
MDD116	MG31072		230		27	2390	9	63	14	19	57	178		47971	112		661	15533			23	27040	23420		52037
MDD105	MG21587		273		33	2550	10	65	24	17	78	159		32688	112		602	16651			14	28660	21502		20715
MDD121	MG31113		276		34	2421	10	58	48	19	84	142		51226	111		539	16242			23	29330	19784		39174
MDD118	MG21954		291		35	2285	12	52	13	17	54	186		42863	92		519	14884			19	26370	17309		40670
MDD088	MG18473		400		28	2385	8	69	15	19	77	192		23032	84		510	17859			22	29557	17305		43219
MDD121	MG31125		323		31	2007	13	54	56	16	59	163		28181	74		481	16915			18	24396	13117		26116
MDD121	MG31085		377		34	2202	11	57	42	15	57	156		53030	71		317	18610			11	23827	14174		39423
MDD087	MG27289		287		32	2487	12	57	11	20	82	166		23524	70		651	15975			18	28931	21776		
MDD118	MG21944		333		34	2312	9		26	17	54	159		52293	27		480	25463			16	28778	21279		37524
MDD121	MG31110		378		29	2349	9	88	51	18	70	207		47352	27		520	22653			28	28867	18889		39309
MDD091	MG18538		316		27	2260	9		8	16	59	165		29125	25		542	19437			16	25358	18550		33548
MDD091	MG18533		263		31	2235	9	73		17	73	165		32908	17		543	16980			16	27362	22956		34886
MDD101	MG21475		409.05			2634.42		67.58		22.82	61.31	162.8													
MDD085	MG18368		445		36	2131	10		136	15	56	165		22373	14		634	25706			13	25535	19244		
MDD091	MG18530		321			3776				47	159	273										25927			

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF_	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF_	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm	
MDD023R	MG11778																						
MDD023R	MG11779																						
MDD023R	MG11780																						
MDD023R	MG11781																						
MDD023R	MG11782																						
MDD023R	MG11783																						
MDD023R	MG11784																						
MDD023R	MG11785																						
MDD023R	MG11786																						
MDD023R	MG11787																						
MDD023R	MG11792																						
MDD023R	MG11793																						
MDD023R	MG11794																						
MDD025R	MG11833																						
MDD025R	MG11834																						
MDD025R	MG11835																						
MDD025R	MG11837																						
MDD025R	MG11838																						
MDD025R	MG11839																						
MDD025R	MG11840																						
MDD025R	MG11841																						
MDD025R	MG11843																						
MDD025R	MG11844																						
MDD025R	MG11845																						
MDD025R	MG11849																						
MDD025R	MG11850																						
MDD019R	MG11217																						
MDD019R	MG11285																						
MDD020	MG11375																						
MDD020	MG11379																						
MDD020	MG11382																						
MDD022	MG11624																						
MDD022	MG11625																						
MDD022	MG11623																						
MDD022	MG11628																						
MDD022	MG11627																						
MDD022	MG11631																						
MDD024	MG13008																						
MDD024	MG13089																						
MDD026	MG13242																						
MDD026	MG13115																						
MDD027	MG12021																						
MDD027	MG11952																						
MDD027	MG11955																						
MDD028	MG13287																						
MDD028	MG13288																						
MDD028	MG13302																						
MDD028	MG13324																						
MDD028	MG13343																						
MDD028	MG13275																						
MDD031	MG12174																						
MDD031	MG12177																						
MDD031	MG12179																						
MDD031	MG12180																						
MDD031	MG12184																						
MDD031	MG12196																						

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF_	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm	
MDD031	MG12199																						
MDD031	MG12208																						
MDD031	MG12228																						
MDD031	MG12176																						
MDD031	MG12195																						
MDD031	MG12192																						
MDD031	MG12185																						
MDD031	MG12187																						
MDD033	MG13604																						
MDD033	MG13605																						
MDD033	MG13610																						
MDD034R	MG15014																						
MDD030R	MG13410																						
MDD030R	MG13401																						
MDD030R	MG13426																						
MDD030R	MG13421																						
MDD032	MG13518																						
MDD032	MG13512																						
MDD032	MG13509																						
MDD034	MG13572																						
MDD034	MG13568																						
MDD034	MG13560																						
MDD034	MG13585																						
MDD034	MG13584																						
MDD034	MG13586																						
MDD034	MG13558																						
MDD034	MG13592																						
MDD034R	MG15086																						
MDD035	MG13719																						
MDD035	MG13718																						
MDD036	MG15147																						
MDD036	MG15143																						
MDD036	MG15163																						
MDD036	MG15129																						
MDD036	MG15155																						
MDD037	MG12336																						
MDD037	MG12334																						
MDD038	MG13807																						
MDD038	MG13805																						
MDD038	MG13831																						
MDD038	MG13812																						
MDD040	MG13897																						
MDD044	MG12544																						
MDD044	MG12518																						
MDD044	MG12553																						
MDD044	MG12524																						
MDD044	MG12530																						
MDD044	MG12571																						
MDD044	MG12520																						
MDD044	MG12519																						
MDD044	MG12546																						
MDD044	MG12577																						
MDD044	MG12563																						
MDD044	MG12539																						
MDD044	MG12533																						
MDD044	MG12535																						

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF_	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm	
MDD044	MG12555																						
MDD048R	MG15508																						
MDD049	MG14110																						
MDD049	MG14107																						
MDD049	MG14104																						
MDD037	MG12335																						
MDD041	MG12412																						
MDD041	MG12416																						
MDD041	MG12418																						
MDD041	MG12420																						
MDD041	MG12434																						
MDD042	MG15307																						
MDD042	MG15325																						
MDD042	MG15326																						
MDD042	MG15327																						
MDD044	MG12607																						
MDD044	MG12618																						
MDD047	MG12664																						
MDD048R	MG15510																						
MDD048R	MG15516																						
MDD048R	MG15520																						
MDD048R	MG15553																						
MDD048R	MG15559																						
MDD049	MG14108																						
MDD050	MG17008																						
MDD051	MG15630																						
MDD051	MG15640																						
MDD051	MG15643																						
MDD051	MG15646																						
MDD051	MG15647																						
MDD051	MG15648																						
MDD051	MG15656																						
MDD051	MG15658																						
MDD051	MG15671																						
MDD051	MG15673																						
MDD051	MG15679																						
MDD051	MG15701																						
MDD051	MG15712																						
MDD052	MG14192																						
MDD054	MG15738																						
MDD054	MG15739																						
MDD054	MG15744																						
MDD054	MG15749																						
MDD054	MG15768																						
MDD054	MG15771																						
MDD054	MG15784																						
MDD054	MG15793																						
MDD054	MG15812																						
MDD054	MG15818																						
MDD055	MG17241																						
MDD055	MG17242																						
MDD055	MG17245																						
MDD055	MG17248																						
MDD055	MG17249																						
MDD055	MG17261																						
MDD055	MG17270																						

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF_	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm	
MDD055	MG17289																						
MDD056	MG15970																						
MDD056	MG15980																						
MDD056	MG16004																						
MDD057	MG14253																						
MDD057	MG14260																						
MDD057	MG14270																						
MDD058	MG14315																						
MDD058	MG14317																						
MDD058	MG14332																						
MDD059	MG16118																						
MDD061	MG14387																						
MDD061	MG14392																						
MDD061	MG14393																						
MDD061	MG14402																						
MDD061	MG14408																						
MDD061	MG14410																						
MDD061	MG14413																						
MDD061	MG14431																						
MDD061	MG14465																						
MDD061	MG14472																						
MDD061	MG14477																						
MDD062R	MG16215																						
MDD062R	MG16226																						
MDD064	MG14582																						
MDD064	MG14583																						
MDD064	MG14587																						
MDD064	MG14588																						
MDD064	MG14591																						
MDD064	MG14604																						
MDD064	MG14609																						
MDD056	MG16015																						
MDD056	MG16080																						
MDD056	MG16082																						
MDD062	MG16203																						
MDD063	MG17482																						
MDD066	MG17588																						
MDD066	MG17589																						
MDD066	MG17593																						
MDD066	MG17596																						
MDD066	MG17600																						
MDD066	MG17616																						
MDD066	MG17624																						
MDD066	MG17635																						
MDD067	MG20097																						
MDD067	MG20120																						
MDD067	MG20143																						
MDD067	MG20194																						
MDD069	MG17756																						
MDD069	MG17828																						
MDD070	MG20244																						
MDD070	MG20252																						
MDD071	MG16421																						
MDD071	MG16425																						
MDD072	MG20348																						
MDD072	MG20372																						

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF_	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm	
MDD072	MG20390																						
MDD072	MG20391																						
MDD073	MG16493																						
MDD073	MG16506																						
MDD073	MG16507																						
MDD073	MG16516																						
MDD075	MG16562																						
MDD078	MG17995																						
MDD078	MG18009																						
MDD078	MG18017																						
MDD079	MG20559																						
MDD079	MG20564																						
MDD080	MG16756																						
MDD080	MG16759																						
MDD080	MG16760																						
MDD080	MG16799																						
MDD080	MG16805																						
MDD080	MG16810																						
MDD080	MG16811																						
MDD080	MG16780																						
MDD080	MG16798																						
MDD081	MG20706																						
MDD081	MG20707																						
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MDD081	MG20720																						
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MDD081	MG20739																						
MDD081	MG20740																						
MDD081	MG20741																						
MDD081	MG20748																						
MDD081	MG20749																						
MDD081	MG20754																						
MDD081	MG20758																						
MDD081	MG20750																						
MDD081	MG20732																						
MDD081	MG20745																						
MDD081	MG20729																						
MDD082	MG18148																						
MDD082	MG18154																						
MDD083	MG16870																						
MDD083	MG16874																						
MDD083	MG16884																						
MDD083	MG16886																						
MDD083	MG16893																						
MDD083	MG16894																						
MDD083	MG16895																						
MDD083	MG16901																						
MDD083	MG16944																						
MDD083	MG16971																						
MDD083	MG16978																						
MDD083	MG16981																						
MDD083	MG16985																						
MDD083	MG16990																						
MDD083	MG16955																						

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF_	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm	
MDD084	MG27025																						
MDD084	MG27038																						
MDD084	MG27048																						
MDD084	MG27051																						
MDD084	MG27052																						
MDD084	MG27053																						
MDD084	MG27054																						
MDD084	MG27060																						
MDD084	MG27061																						
MDD084	MG27080																						
MDD085	MG18273																						
MDD085	MG18290																						
MDD085	MG18300																						
MDD085	MG18266																						
MDD085	MG18279																						
MDD085	MG18259																						
MDD086	MG20830																						
MDD086	MG20833																						
MDD086	MG20834																						
MDD086	MG20836																						
MDD086	MG20839																						
MDD086	MG20843																						
MDD086	MG20849																						
MDD086	MG20868																						
MDD086	MG20876																						
MDD086	MG20879																						
MDD086	MG20894																						
MDD086	MG20878																						
MDD082	MG18221	532				9	345	13		85			97294		322		2786	83					
MDD091	MG18505	446				13		7		128			111902		283		3149	75					
MDD081	MG20796	427				13	318			100			76075		322		2977	94					
MDD090	MG21045	483				12	321			121			69999		302		3312	84					
MDD089	MG27347	438				13	277			118			86484		329		3177	93					
MDD106	MG27773																						
MDD097	MG29018																						
MDD097	MG29047																						
MDD116	MG18996	139				8	553	132			3457		146022		266		1463						
MDD097	MG29008																						
MDD116	MG18999	318				8	612	27		52	1588		179968		379		2371						
MDD121	MG31078	445				23	384	15		49	978		103304		594		2243						
MDD118	MG21879	347				15	701	24			2187		235229		410		2672						
MDD116	MG31024	338				10	595	12		80	632		165765		384		2741	89					
MDD105	MG21528	361				13	403	21		89	582		150634		340		2836	65					
MDD118	MG21914	359				10	697	24		44	227		145106		359		1822	58					
MDD118	MG21886	320				8	615	39		52	348		143418		403		2315	64					
MDD118	MG21901	412				9	895	11		73	375		168351		414		2616	77					
MDD087	MG27198	680				15	727			96			109483		998		2846	96					
MDD088	MG18415																						
MDD118	MG21900	369				13	688	19		77	307		182178		369		2816	80					
MDD116	MG31003	340				8	536	14		84			172397		375		2667	77					
MDD084	MG27148	433				13		9		84			106835		485		3112	71					
MDD118	MG21899	341					727	13		14	472		195237		344		2034						
MDD121	MG31093	451				15	357	15		81			81010		429		2594	60					
MDD105	MG21526	503				13	628	16		79			125760		417		2886	97					
MDD087	MG27232	382				12	711			101			87978		340		2776	63					
MDD095	MG27510	475				14		15		81			69677		735		3463	63					

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm	
MDD087	MG27233	354				13	756			109			121421		290		2893	90					
MDD090	MG21003	346				8	262			116			82169		264		2167	66					
MDD090	MG21019	413				8	183			113	189		97697		330		2742	73					
MDD084	MG27127	419				10	160	11		114			114537		330		3166	83					
MDD121	MG31082	364				11	532	13		90	292		167650		403		2797	68					
MDD118	MG21888	370				8	589	21		29			155607		429		2336						
MDD121	MG31101	440				16	424	11		82	412		133469		369		2975	65					
MDD118	MG21904	429				8	849	26		102			173611		297		3152	73					
MDD087	MG27238	409				6	794			100			142219		321		2923	110					
MDD118	MG21883	345				5	579	74		13			157556		421		2389						
MDD090	MG20972	527				20	404			165	168		107639		302		3840	100					
MDD082	MG18200	489				14	566	16		118			114683		296		3390						
MDD089	MG27345	393				9	283			109			80612		369		2942						
MDD082	MG18195	468				7	400	11		75			146197		331		2568	60					
MDD089	MG27332	466				11	368			111			91448		411		3213	72					
MDD090	MG20976	499				15	392			139			145928		342		3551	126					
MDD084	MG27151	399				8		7		70			125159		398		2761						
MDD118	MG21885	236				4	681	150		18	263		223290		272		1467						
MDD089	MG27341	409				11	306			122			84047		390		3335	122					
MDD088	MG18383																						
MDD105	MG21557	469				11	469	15		115			103653		368		3140	72					
MDD090	MG20997	329				12	374			114			90448		297		2919	72					
MDD087	MG27225	411				10	698			106			105436		319		2721	80					
MDD105	MG21548	427				12	675	20		101			102725		322		2657	98					
MDD087	MG27226	405				9	634			103			131667		352		2781	67					
MDD084	MG27144	518				20	248	14		137	234		120836		266		3855	92					
MDD082	MG18209	511				10	559	10		97			143719		387		2967	88					
MDD090	MG21026	403				11	445			111			89466		298		2806	89					
MDD090	MG20988	442				14	437			141			90295		259		3252	86					
MDD090	MG21005	435				10	374			112			110886		305		2900	76					
MDD116	MG31030	397				17	635	12		113			161378		319		3256	98					
MDD079	MG20610	427				11	626	12		123			107620		330		3384	105					
MDD087	MG27213	471				14	672			137			119661		379		3644	97					
MDD082	MG18184	421				13	264	12		114			93413		283		3159	121					
MDD090	MG20991	461				16	602			129			117871		307		3279	85					
MDD121	MG31081	397				9	621	14		80			291356		362		3051						
MDD091	MG18501	487				18		17		149			85443		416		3445	72					
MDD090	MG20999	392				15	441			103			117215		275		3015	73					
MDD082	MG18203	410				10	230	11		97			94043		299		3047	82					
MDD090	MG21043	477				12	549			101			76035		360		2932	96					
MDD090	MG20971	422				15	411			129			118288		258		3224	108					
MDD087	MG27261	432				13	769			100			133022		294		2937	69					
MDD080	MG16822	519				14	750			119			156402		378		3110	77					
MDD087	MG27210	447				13	769			145			103944		286		3773	88					
MDD088	MG18417																						
MDD091	MG18506	472				11		13		133			101413		298		3247	97					
MDD090	MG21047	401				8	355			105			82071		303		2918	77					
MDD087	MG27254	459				11	704			114			91816		306		3133	75					
MDD105	MG21542	426				10	595	12		103			93231		348		3122	104					
MDD105	MG21547	484				12	797	14		114			114064		334		3558						
MDD103	MG18760																						
MDD082	MG18232	489				10	220	12		72			151977		364		2768	84					
MDD082	MG18189	456				13	288	11		101			149842		310		3193	91					
MDD082	MG18169	492				14	332	11		113			113641		315		3201	106					
MDD105	MG21538	435				15	412	15		123			98998		330		3713	125					
MDD105	MG21566	533				10	450	13		96			154951		378		3201	85					

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm
MDD097	MG29042																					
MDD082	MG18193	477				14	315	14		119			100814		348		3358	69				
MDD088	MG18390																					
MDD099	MG18734	537				16	889	17		118			198957		331		3583	97				
MDD094	MG18587																					
MDD099	MG18662	389				16		17		145			58991		300		3562	104				
MDD106	MG27778																					
MDD091	MG18509	449				23		22		132			74271		250		3486	84				
MDD091	MG18508	465				16	183	17		148			112637		203		3832	96				
MDD101	MG21406																					
MDD099	MG18678	455				9	451	16		105			176915		337		3218	106				
MDD091	MG18534	384				14	218	11		125			119632		223		3302	69				
MDD040	MG13875																					
MDD145	MG19792	661				39		15		93			80123		240		3858	129		24	75	144
MDD145	MG19793	716				42		13		86			84287		262		4141	115		22	79	146
MDD145	MG19794	700				39		12		85			100799		273		4028	121		23	79	142
MDD145	MG19795	652				32		14		97			129275		244		4038	109		23	95	145
MDD145	MG19796	608				22		16		109			74952		203		3373	112		23	106	145
MDD145	MG19797	590				25		16		99			104434		192		3181	104		24	94	133
MDD145	MG19798	629				29		14		100			91133		225		3420	115		24	88	152
MDD145	MG19799	622				27		14		104			93504		192		3346	113		23	80	137
MDD145	MG19800	516				21		14		100			94454		150		3374	92		20	80	141
MDD145	MG19801	411				17		14		93			114617		136		2825			20	65	141
MDD145	MG19802	428				17		12		108			81793		163		3118	90		20	72	158
MDD145	MG19803	471				20		12		122			73098		178		3204	80		22	74	158
MDD145	MG19804	517				21		11		121			102406		199		3514	90		25	80	182
MDD145	MG19805	600				27		12		114			114410		199		3675	109		26	88	148
MDD145	MG19806	593				27		12		96			89315		203		3686	101		23	131	167
MDD145	MG19808	590				32		12		116			133432		213		3968	124		25	90	160
MDD145	MG19809	550				27		14		125			83042		175		3702	119		27	114	165
MDD145	MG19810	551				26		14		104			94319		202		3431	116		24	104	170
MDD145	MG19811	677				33		13		98			87036		246		3998	137		24	89	150
MDD145	MG19812	689				35		13		93			73253		256		3971	145		24	87	146
MDD145	MG19813	726				41		12		90			123869		304		4242	113		22	83	149
MDD145	MG19814	755				42		13		88			121610		341		4376	138		25	85	148
MDD145	MG19815	697				42		12		88			110190		337		4172	146		24	81	147
MDD145	MG19816	642				32		14		107			83265		264		4038	105		24	89	156
MDD145	MG19817	563				26		16		109			110584		213		3709	111		25	84	155
MDD145	MG19818	632				21		16		105			90922		254		3579	80		19	80	152
MDD145	MG19819	654				18		16		108			112378		343		4130	137		18	101	166
MDD145	MG19820	685				17		17		97			116427		305		3963	115		17	90	145
MDD145	MG19821	655				21		13		84			78535		523		4132	142		19	90	144
MDD145	MG19822	687				18		14		75			82919		478		4306	128		17	73	142
MDD145	MG19823	685				13		13		70			95071		505		4355	144		17	77	137
MDD145	MG19824	694				15		12		71			79963		388		4106	132		17	74	145
MDD145	MG19825	691				17		12		73			98722		453		4454	120		19	72	145
MDD187R	MG19827																					
MDD187R	MG19828																					
MDD187R	MG19829																					
MDD187R	MG19830																					
MDD187R	MG19831																					
MDD187R	MG19832																					
MDD187R	MG19833																					
MDD187R	MG19834																					
MDD187R	MG19835																					
MDD187R	MG19836																					

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm
MDD187R	MG19837																					
MDD187R	MG19838																					
MDD187R	MG19839																					
MDD187R	MG19840																					
MDD187R	MG19841																					
MDD187R	MG19842																					
MDD187R	MG19843																					
MDD187R	MG19844																					
MDD187R	MG19845																					
MDD187R	MG19846																					
MDD187R	MG19847																					
MDD206	MG19848	570				23		16		114			122050		126		4245	140		23	83	178
MDD206	MG19849	508				21		14		95			130966		130		3493	163		20	76	138
MDD206	MG19850	547				24		16		110			99056		105		3939	135		21	86	144
MDD206	MG19851	611				30		14		94			114072		151		3919	125		22	79	139
MDD206	MG19852	571				24		14		89			149956		193		3495	104		22	75	132
MDD206	MG19853	560				20		15		102			102573		183		3238	108		21	94	127
MDD206	MG19854	615				24		14		111			145688		194		3706	111	7	24	81	154
MDD206	MG19855	656				30		15		113			116678		217		4039	115	19	27	85	156
MDD206	MG19856	641				29		14		110			130871		220		3771	105		24	76	153
MDD206	MG19857	565				24		14		116			110010		160		3762	123	168	24	74	150
MDD206	MG19858	550				26		14		117			138792		152		3783	100		25	111	147
MDD206	MG19859	547				28		14		131			141874		177		4036	157	7	27	96	170
MDD206	MG19860	430				18		11		99			117939		197		2982	84		20	74	165
MDD206	MG19861	507				18		13		122			95002		184		3360	117		27	100	168
MDD206	MG19862	489				23		14		107			119593		172		3315	109	67	21	92	166
MDD206	MG19863	598				34		13		95			117185		215		3489	111	116	22	162	134
MDD206	MG19864	542				26		16		99			124108		219		3271	69	40	21	87	150
MDD206	MG19865	548				24		12		92			132288		217		3371	117	24	21	87	132
MDD206	MG19866	616				28		12		123			144351		218		4039	104	44	26	135	154
MDD206	MG19867	522				21		14		99			121006		237		3532	120	19	21	109	167
MDD206	MG19868	584				23		12		120			163615		200		3886	141		23	110	166
MDD206	MG19869	641				34		13		112			142332		221		3996	143	23	24	112	142
MDD206	MG19870	780				39		13		80			115318		253		4030	131	33	20	124	129
MDD206	MG19871	629				24		16		81			136151		275		3077	109	17	18	134	126
MDD206	MG19872	539				15		15		90			127830		247		3152		7	19	125	124
MDD206	MG19873	513				14		15		90			137416		251		2975	75	13	20	264	115
MDD206	MG19874	496				17		12		113			117284		214		3327	87		19	104	140
MDD206	MG19875	529				21		19		138					222		3762	101	11	27	132	165
MDD206	MG19876	551				22		18		133					223		3713	127		24	167	158
MDD206	MG19877	537				23		20		127					217		3505	104		25	101	146
MDD206	MG19878	575				23		20		122					235		3684	85		25	98	144
MDD206	MG19879	527				23		23		112					207		3445	126		24	140	141
MDD206	MG19880	494				19		21		118					208		3154	108		25	106	148
MDD206	MG19881	518				22		21		120					195		3513	116	14	25	110	135
MDD206	MG19882	698				23		23		98					244		3814	133		23	110	131
MDD206	MG19883	849				26		20		91					279		4307	114		22	141	131
MDD206	MG19884	722				21		25		87					296		4221	104		19	134	135
MDD206	MG19885	626				17		23		90					271		3159	93		17	119	132
MDD206	MG19886	693				16		23		88					260		3356	101		17	113	133
MDD206	MG19887	670				13		25		89					263		3235	92		15	173	134
MDD206	MG19888	664				14		22		85					260		3072	121		14	116	127
MDD206	MG19889	707				18		24		91					268		3335	94		17	94	127
MDD206	MG19890	630				16		28		86					317		3769	110		16	98	129
MDD206	MG19891	645				18		23		64					408		3584	138		15	134	122
MDD206	MG19892	686				17		21		72					377		3729	131		18	109	127

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm
MDD206	MG19893	635				17		23		79					348		3405	127		16	100	129
MDD206	MG19894	634				15		25		86					385		3580	105		17	98	129
MDD206	MG19895	620				17		26		97					366		3900	114		16	102	134
MDD206	MG19896	631				16		27		104					349		3826	88		17	98	133
MDD206	MG19897	635				18		26		84					422		3813	121	8	18	103	125
MDD207	MG43501	479				21		25		101					189		3229	98		23	93	155
MDD207	MG43502	491				24		22		93					142		3139	80		19	78	119
MDD207	MG43503	505				21		21		86					149		2698	96		18	84	106
MDD207	MG43504	542				25		21		81					190		2966	102		21	87	113
MDD207	MG43505	513				20		18		75					170		2869	107		20	74	110
MDD207	MG43506	428				13		20		79					147		2542		60	15	63	113
MDD207	MG43507	412				18		24		96					174		2937	84	7	20	103	143
MDD207	MG43508	389				16		23		100					163		2776	66		19	89	153
MDD207	MG43509	457				18		25		101					190		2977	73		22	85	141
MDD207	MG43510	655				32		19		97					226		3737	161		23	83	128
MDD207	MG43511	589				28		22		119					177		3823	134		25	94	141
MDD207	MG43512	549				26		20		127					153		3747	101		25	113	144
MDD207	MG43513	520				23		23		109					125		3352	74		21	92	118
MDD207	MG43514	570				32		27		93					183		3142	74		22	98	121
MDD207	MG43515	657				35		19		82					275		3615	141		20	89	117
MDD207	MG43516	530				26		22		80					220		3174	89		21	107	137
MDD207	MG43517	638				33		20		74					273		3440	131		22	133	124
MDD207	MG43518	697				34		19		73					310		3622	123		21	97	117
MDD207	MG43519	453				21		20		89					170		2622			20	85	121
MDD207	MG43520	492				21		23		90					173		2566	74		18	80	118
MDD207	MG43521	513				19		25		96					181		2807			17	86	115
MDD207	MG43522	459				16		23		91					153		2788	82		18	87	118
MDD207	MG43523	491				17		26		92					157		2861	88		19	91	117
MDD207	MG43524	509				20		23		101					192		2944	89		19	92	122
MDD207	MG43525	501				17		24		87					209		2655			16	91	121
MDD207	MG43526	633				16		23		79					236		2813	107		16	100	111
MDD207	MG43527	590				15		23		75					294		3055	82	7	15	73	122
MDD207	MG43528	687				17		21		62					506		3909	139		17	74	124
MDD207	MG43529	624				17		23		72					422		3981	121		17	91	128
MDD207	MG43530	579				16		23		74					324		3642	106		19	97	123
MDD212	MG43478	487				26		21		94					103		3137				71	97
MDD212	MG43479	635				44		24		103					184		3333				83	98
MDD212	MG43480	691				31		18		91					229		3520				83	93
MDD212	MG43481	730				34		16		85					220		4019				81	82
MDD212	MG43482	698				47		20		104					221		3849				99	99
MDD212	MG43483	666				37		19		90					227		3861				84	85
MDD212	MG43484	729				41		20		88					293		4125				89	89
MDD212	MG43485	855				57		20		100					340		4610				92	101
MDD212	MG43486	817				55		18		99					360		4506				118	99
MDD212	MG43487	756				64		19		102					351		4162				104	114
MDD212	MG43488	719				43		14		100					306		4283				122	116
MDD212	MG43489	760				65		19		103					331		4303				109	110
MDD212	MG43490	763				33		19		125					242		4261				107	108
MDD212	MG43491	688				26		26		120					246		3768				97	101
MDD212	MG43492	589				25		15		104					214		2942				75	97
MDD212	MG43493	725				52		23		142	871				272		4165				119	124
MDD212	MG43494	515				20		16		114					236		3064				92	120
MDD212	MG43495	576						23		125					225		3503				97	118
MDD212	MG43496	619				43		18		141					253		3775				103	127
MDD212	MG43497	639				50		18		143					243		4098				184	138
MDD212	MG43498	657				46		16		142					236		4197				246	127

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm
MDD212	MG43499	699				45		18		129					267		3897				112	123
MDD212	MG43500	863				53		16		106					327		4469				157	112
MDD212	MG43531	835				60		21		116					351		4521				210	115
MDD212	MG43532	730				55		15		141					299		4293				114	127
MDD212	MG43533	634				25		21		130					242		3963				99	120
MDD212	MG43534	652				41		20		110					236		3495				102	98
MDD212	MG43535	687				40		19		115					271		3472				114	101
MDD212	MG43536	668				43		19		117					261		3665				105	104
MDD212	MG43537	644				35		26		112					265		3550				107	104
MDD212	MG43538	651				25		18		109					266		3546				101	97
MDD212	MG43539	687				34		17		110					267		3267				98	96
MDD212	MG43540	662				49		19		108					249		3515				94	96
MDD212	MG43541	645				48		20		118					244		3421				155	108
MDD212	MG43542	628				33		19		117					264		3444				116	104
MDD212	MG43543	621				34		18		123					405		3384				148	114
MDD212	MG43544	741				37		20		104					337		3086				107	100
MDD212	MG43545	650				25		19		92	626				299		2841				127	93
MDD212	MG43546	595						23		85					284		2604				97	84
MDD212	MG43547	624				33		25		88					295		2558				215	87
MDD212	MG43548	647				19		24		80					385		3014				91	95
MDD212	MG43549	674				45		17		75					433		3229				117	93
MDD212	MG43550	636				31		21		84					381		2938				97	97
MDD212	MG43551	662				34		23		94					361		3398				101	92
MDD212	MG43552	688				20		25		93					401		3564				91	97
MDD212	MG43553	731				26		18		88					470		3779				100	97
MDD212	MG43554	735				32		25		85					445		3661				116	102
MDD212	MG43555	766				35		21		84					474		4035				367	103
MDD212	MG43556	762				33		18		78					483		3847				351	101
MDD219	MG43563	592				26		13		109					192		3550	228		22	109	104
MDD219	MG43564	604				46		13		88					270		3293	209		18	77	105
MDD219	MG43565	590				30		16		103					213		3152	192		19	73	102
MDD219	MG43566	575				22		16		113					180		3024	203		22	74	95
MDD219	MG43567	554				28		23		108					175		2845	184		18	90	101
MDD219	MG43568	527				35		18		109					177		2525	171		20	75	94
MDD219	MG43569	550				24		21		104					205		3117	192		22	75	95
MDD219	MG43570	603				42		17		113					210		3354	195		23	78	103
MDD219	MG43571	478						17		94					131		2701	160		17	63	75
MDD219	MG43572	473				28		20		119					162		3005	179		19	75	105
MDD219	MG43573	435				31		17		111					172		2833	155		19	73	108
MDD219	MG43574	446				34		18		122					156		2945	187		23	78	119
MDD219	MG43575	418				29		19		115					163		2685	165		20	75	119
MDD219	MG43576	414				28		16		110					179		2485	160		19	70	117
MDD219	MG43577	441				22		16		118					182		2774	179		20	76	111
MDD219	MG43578	491				17		12		117					163		3025	198		18	71	95
MDD219	MG43579	557				44	95	16		143					182		3710	222		24	93	116
MDD219	MG43580	489				28		16		113					185		2987	182		19	90	107
MDD219	MG43581	481				28		14		116					173		3095	190		21	90	109
MDD219	MG43582	586				45		17		82					216		3173	160		16	77	81
MDD219	MG43584	613				36		15		70					347		2652	136		17	68	76
MDD219	MG43585	597				28		12		74					318		2656	144		15	73	78
MDD219	MG43586	582				32		18		108					353		2794	160		17	96	90
MDD219	MG43587	498				28		14		121	648				242		3175	201		21	74	102
MDD219	MG43588	438				22		14		109					198		2619	152		17	68	92
MDD219	MG43589	469				33		16		121					221		2967	187		22	75	110
MDD219	MG43590	525				32		16		125					206		3073	211		23	89	108
MDD219	MG43591	568				42		19		157					231		3560	220		27	135	122

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF_	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm
MDD219	MG43592	565				40		18		152					249		3495	230		25	103	119
MDD219	MG43593	526				40		17		131					231		3085	190		24	101	104
MDD219	MG43594	505				40		18		116					207		2814	184		19	116	93
MDD219	MG43595	499				27		17		122					278		2854	190		22	117	107
MDD219	MG43596	497				31		17		115					282		2749	176		21	115	101
MDD219	MG43597	687				44		14		120					318		3918	203		23	114	104
MDD219	MG43598	774				41		19		94					341		3307	179		17	85	88
MDD219	MG43599	716				39		19		100					283		3013	168		13	80	86
MDD219	MG43600	627				29		15		91					297		2862	155		16	83	89
MDD219	MG43601	679				29		18		84					287		2442	136		15	72	84
MDD219	MG43602	660				32		17		78					263		2524	130		14	77	85
MDD219	MG43604	562				15		19		72					264		2548	61		12	87	74
MDD219	MG43605	593				18		19		79					307		3207	83		15	92	82
MDD219	MG43606	532				17		19		76					330		2966	79		14	83	80
MDD219	MG43607	585				17		17		64					387		3313	88		15	70	81
MDD219	MG43608	815				55		13		55					486		5183	151		18	89	88
MDD219	MG43609	931				76		9		55					477		6280	133		23	111	96
MDD219	MG43610	705				47		15		69					354		4349	136		18	134	88
MDD219	MG43611	614				35		16		80					302		3960	67		17	90	94
MDD219	MG43612	621				23		19		96					288		3525	97		15	93	92
MDD219	MG43613	644				23		18		99					311		3741	74		17	91	101
MDD219	MG43614	506				15		22		116					252		3406	94		17	91	110
MDD219	MG43615	616				13		20		90					268		3060	99		15	79	88
MDD222	MG43616	500				36		19		81					176		2913				71	105
MDD222	MG43617	639				34		18		77					269		3044				69	98
MDD222	MG43618	608				33		16		65					237		2542				62	74
MDD222	MG43619	525				27		16		81					203		2454				66	90
MDD222	MG43620	521				26		20		97					179		2753				75	93
MDD222	MG43621	546				38		18		106					187		2965				90	90
MDD222	MG43622	652				57		18		97					249		3286				77	98
MDD222	MG43623	541				36		18		78					309		2576				79	102
MDD222	MG43624	684				50		19		98					267		3828				83	101
MDD222	MG43625	637				43		23		126					204		3754				101	97
MDD222	MG43626	629				37		20		128					201		3602				100	97
MDD222	MG43627	607				39		23		106					198		3224				91	85
MDD222	MG43628	704				44		16		117					266		3962				98	105
MDD222	MG43629	724				53		22		90					275		3533				80	91
MDD222	MG43630	655				47		17		91					282		3385				79	93
MDD222	MG43631	420						13		75					222		1912				61	78
MDD222	MG43632	551				43		22		106					242		2905				92	94
MDD222	MG43633	515				28		17		98					235		2531				97	88
MDD222	MG43634	552				45		19		98					241		2911				98	97
MDD222	MG43635	594				32		21		105					229		3300				93	96
MDD222	MG43637	526				32		18		97					202		2813				84	83
MDD222	MG43638	588				31		21		98	639				248		3141				99	94
MDD222	MG43639	572				32		18		96					281		2484				97	86
MDD222	MG43640	425				20		17		95					215		2830	69		18	99	85
MDD222	MG43641	458				19		19		95					207		2565			15	69	81
MDD222	MG43642	480				19		18		109					218		3037	92		19	179	91
MDD222	MG43643	411				14		16		95					193		2798	70		16	121	97
MDD222	MG43644	563				15		19		78					198		2395			11	65	80
MDD222	MG43645	965				16		19		71					268		2823	80		14	83	79
MDD222	MG43646	1056				18		17		77					290		3194	106		15	71	87
MDD222	MG43647	632				14		18		77					264		2639	60		14	64	91
MDD222	MG43648	556				18		17		89					260		3037	102		15	74	112
MDD222	MG43649	564				13		17		83					319		3478	97		15	73	99

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm
MDD222	MG43650	555				13		16		81					358		3319	95		16	101	101
MDD222	MG43651	563				19		16		78					378		3617	94		16	81	98
MDD222	MG43652	572				18		14		76					379		3208	103		16	73	104
MDD222	MG43653	590				13		15		69					406		3485	113		16	68	96
MDD222	MG43654	634				17		16		71					364		3580	113		15	72	106
MDD222	MG43655	587				14		18		83					344		3591	106		16	78	105
MDD222	MG43656	573				16		20		84					308		3613	108		15	78	92
MDD222	MG43658	552				12		19		83					314		3455	89		15	72	105
MDD223	MG43660	689				34		18		86			40237		248		3397	126			88	106
MDD223	MG43661	649				38		16		80			47795		249		3357	121			98	88
MDD223	MG43662	669				36		18		79			34043		259		3523	130			111	92
MDD223	MG43663	648				38		16		77			42197		262		3382	116			108	88
MDD223	MG43664	340				21		13		63			36203		247		1049	78			61	81
MDD223	MG43665	340				19		15		76			35942		196		877	69			71	89
MDD223	MG43666	488				24		18		84			54926		208		2545	117			82	93
MDD223	MG43667	393				19		18		89			48228		180		2380	72			78	92
MDD223	MG43668	235				12		15		83			38359		152		860	58			53	89
MDD223	MG43669	425				17		15		96			50442		159		2671	88			79	108
MDD223	MG43671	273				14		15		67			40693		147		1184				63	76
MDD223	MG43672	208				9		14		60			38566		143		662				53	69
MDD223	MG43673	317				13		14		68			38636		140		1087	70			67	67
MDD223	MG43674	487				26		16		72			53409		189		2569	72			111	73
MDD223	MG43675	518				26		17		88			50978		178		2804	114			127	81
MDD223	MG43676	468				26		21		85			44742		158		2443	100			91	76
MDD223	MG43677	458				21		17		70			48884		180		2512	59			82	82
MDD223	MG43678	320				19		14		62			41091		205		1047	66			89	73
MDD223	MG43679	337				24		13		53			40889		258		889				62	68
MDD223	MG43680	518				27		16		69			52260		229		2451	72			104	76
MDD223	MG43682	351				16		17		77			50533		157		1602	74			81	67
MDD223	MG43683	440				20		20		82			55462		162		2142				102	68
MDD223	MG43684	255				12		18		73			37654		159		729				71	66
MDD223	MG43685	529				19		18		84			58753		228		2793	69			111	86
MDD223	MG43686	330				8		18		64			35172		207		823				68	73
MDD223	MG43687	343				10		18		57			39418		241		1417	74			71	68
MDD223	MG43688	464				14		19		64			47055		237		1979	64			117	71
MDD223	MG43689	577				17		17		75			51411		290		2612	80			98	82
MDD223	MG43690	521				10		17		68			53914		284		2427	88			98	79
MDD223	MG43691	512				13		21		92			46020		259		2868	66			118	89
MDD262	MG43702	443				23		17		94					159		2840			16	86	94
MDD262	MG43703	404				18		15		81					146		2448	69		15	81	75
MDD262	MG43704	451				21		15		94					159		2590	93		14	81	83
MDD262	MG43705	448				19		16		103					160		3039	90		18	78	91
MDD262	MG43706	418				17		16		90					165		2662	81		14	69	79
MDD262	MG43707	399				24		16		84					151		2462	91		14	99	89
MDD262	MG43708	448				28		15		90					211		3055	103		16	69	99
MDD262	MG43709	484				28		16		102					193		3014	83		17	79	99
MDD262	MG43710	512				25		21		103					192		3245	106		18	89	99
MDD262	MG43711	534				28		15		93					232		3274	90		18	151	88
MDD262	MG43712	511				27		17		103					196		3182	112		16	227	92
MDD262	MG43713	466				24		14		109					202		3055	82		18	116	94
MDD262	MG43715	493				22		16		110					209		3037	87		18	120	99
MDD262	MG43716	446				23		16		109					201		2887	69		17	97	98
MDD262	MG43717	448				20		16		111					211		2869	95		17	96	103
MDD262	MG43718	439				18		17		113					191		2733	90		17	211	97
MDD262	MG43719	441				19		17		110					194		2710	61		17	98	94
MDD262	MG43720	440				26		17		111					188		2730	78		18	97	91

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm
MDD262	MG43721	451				24		16		108					208		2790	78		17	86	92
MDD262	MG43722	467				23		15		101					205		2635	78		17	83	88
MDD262	MG43723	436				19		15		112					183		2643	95		16	123	92
MDD262	MG43724	440				19		14		105					180		2720	91		19	98	94
MDD262	MG43725	429				19		16		101					169		2354	84		16	87	77
MDD262	MG43726	449				18		16		107					206		2689	87		17	135	85
MDD262	MG43727	467				19		15		106					221		2645	90		18	92	88
MDD262	MG43728	422				18		16		106					216		2692	78		17	97	86
MDD262	MG43729	459				19		16		114					179		2780	115		17	115	88
MDD262	MG43730	455				19		17		113					194		2753	80		17	97	87
MDD262	MG43731	587				31		16		91					225		3327	120		14	79	85
MDD262	MG43732	612				19		16		90					228		2849	95		14	93	91
MDD262	MG43733	601				22		17		92					231		2672	81		14	90	88
MDD262	MG43735	562				22		21		85					260		2481	74		12	70	81
MDD262	MG43736	549				16		17		84					279		2688	76		12	75	86
MDD262	MG43737	543				18		19		79					356		2849	99		13	78	83
MDD262	MG43738	543				18		20		87					346		3195	62		13	78	83
MDD262	MG43739	537				14		17		82					307		2798	80		13	64	88
MDD262	MG43740	544				18		18		96					338		3396	109		14	78	99
MDD262	MG43741	542				22		19		105					351		3547	106		15	84	97
MDD262	MG43742	618				20		19		93					373		3883	125		14	81	96
MDD262	MG43743	605				23		17		80					480		3537	100		15	76	91
MDD019R	MG11241																					
MDD019R	MG11246																					
MDD019R	MG11251																					
MDD019R	MG11263																					
MDD020	MG11391																					
MDD020	MG11392																					
MDD020	MG11454																					
MDD021R	MG11511																					
MDD021R	MG11514																					
MDD021R	MG11516																					
MDD021R	MG11519																					
MDD021R	MG11521																					
MDD021R	MG11543																					
MDD021R	MG11578																					
MDD021R	MG11512																					
MDD021R	MG11527																					
MDD026	MG13245																					
MDD027	MG12001																					
MDD028	MG13277																					
MDD032	MG13519																					
MDD032	MG13526																					
MDD032	MG13521																					
MDD032	MG13525																					
MDD032	MG13543																					
MDD032	MG13515																					
MDD034	MG13569																					
MDD038	MG13842																					
MDD039	MG15231																					
MDD040	MG13932																					
MDD045	MG15454																					
MDD047	MG12720																					
MDD048R	MG15521																					
MDD048R	MG15596																					
MDD051	MG15716																					

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF_	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm	
MDD052	MG14211																						
MDD056	MG15962																						
MDD056	MG15998																						
MDD058	MG14327																						
MDD061	MG14450																						
MDD056	MG16057																						
MDD059	MG16156																						
MDD061	MG14524																						
MDD061	MG14562																						
MDD062R	MG16290																						
MDD066	MG17636																						
MDD070	MG20235																						
MDD072	MG20364																						
MDD072	MG20365																						
MDD072	MG20383																						
MDD077	MG16660																						
MDD079	MG20591																						
MDD083	MG16890																						
MDD083	MG16897																						
MDD083	MG16946																						
MDD083	MG16948																						
MDD083	MG16892																						
MDD083	MG27007																						
MDD088	MG18428	499				14		14		99			87749		399		3501	102					
MDD094	MG18585																						
MDD103	MG18761																						
MDD090	MG21029	469				13	434			97			88959		235		3153	100					
MDD096	MG21189	546				13	348			150			89752		246		3724	103					
MDD106	MG27813																						
MDD106	MG27760																						
MDD090	MG21017	384				10	247			124			95755		260		3040	93					
MDD087	MG27264	482				11	807			116			105036		303		3018	72					
MDD103	MG18758																						
MDD118	MG21922	440				16	655	14		105			141175		327		3214	112					
MDD086	MG20954	407				12	277			93			104422		337		2539	65					
MDD082	MG18162	420				10	183	18		92			97382		321		3009	104					
MDD118	MG21917	412				16	783	15		121			193393		283		3398	97					
MDD088	MG18474	458				11	217	16		79			76950		429		2720	77					
MDD087	MG27214	372				13	685			123			133839		334		2991	85					
MDD118	MG21967	426				12	753	12		101			146493		300		3171	109					
MDD118	MG21929	397				8	605	14		92			96999		322		2372	105					
MDD118	MG21927	451				12	582	11		91			126526		288		3016	109					
MDD103	MG18759																						
MDD121	MG31100	418				12	456	11		109	356		128336		300		3082	125					
MDD090	MG21067	483				13	303			96			77966		369		2891	72					
MDD105	MG21607	481				12	300	14		100			96239		423		3287	94					
MDD086	MG20916	421				9	351			97			70502		314		2853	77					
MDD096	MG21213	363				10	176	12		97			91636		393		2661	62					
MDD105	MG21620	477				18	637	14		151			121170		231		3983	86					
MDD106	MG27770																						
MDD105	MG21572	422				14	455	13		99			139773		342		3086						
MDD080	MG16821	438				14	914			128			230505		222		3444	81					
MDD101	MG21413																						
MDD080	MG16841	541				14	747			119			132161		412		3556	78					
MDD118	MG21974	495				18	553	16		141			152963		303		3819	73					
MDD094	MG18611	365				12	489	14		119			117056		348		3076	64					

HOLEID	SAMPLEID	Mn_corrXRF	Mo_corrXRF	Nb_corrXRF	Nd_corrXRF	Ni_corrXRF	P_corrXRF_	Pb_corrXRF	Pr_corrXRF	Rb_corrXRF	S_corrXRF_	Sb_corrXRF	Si_corrXRF_	Sn_corrXRF	Sr_corrXRF_	Th_corrXRF	Ti_corrXRF_	V_corrXRF_	W_corrXRF_	Y_corrXRF_	Zn_corrXRF	Zr_corrXRF_ppm	
MDD088	MG18475	520				15	240	16		91			135412		424		3521	81					
MDD101	MG21404																						
MDD116	MG31072	428				13	612	13		118			144280		238		3188	84					
MDD105	MG21587	442				12	581	14		109			112543		282		3407	85					
MDD121	MG31113	493				16	465	15		127			118085		285		3210	76					
MDD118	MG21954	409				15	319	12		100			75583		300		3048	69					
MDD088	MG18473	490				15	248	16		100			70756		413		3181	90					
MDD121	MG31125	482				14		15		82			58970		333		2656	71					
MDD121	MG31085	403				14	402	15		75			134233		389		2919	74					
MDD087	MG27289	436				16				124			82654		295		3197	76					
MDD118	MG21944	481				11	658	12		99			157212		344		3084						
MDD121	MG31110	502				15	652	14		104			121492		390		3114	115					
MDD091	MG18538	452				12		12		105			99742		328		3035						
MDD091	MG18533	411				10	186	14		127			113744		273		3002	94					
MDD101	MG21475																						
MDD085	MG18368	485				12	314			97			87201		457		2739						
MDD091	MG18530	773								149					333		5071						

CERTIFICATE OF ANALYSIS

Work Order	: **EB2339577**	Page	: 1 of 8
Client	: **MINE WASTE MANAGEMENT**	Laboratory	: Environmental Division Brisbane
Contact	: Zsofia Waczek	Contact	: Carsten Emrich
Address	: Suite 2, 435 Vincent Street West Leederville 6007	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: J-NZ0233 Bendigo AEE Support	Date Samples Received	: 30-Nov-2023 16:56
Order number	: ----	Date Analysis Commenced	: 15-Dec-2023
C-O-C number	: ----	Issue Date	: 29-Dec-2023 11:46
Sampler	: Santana		
Site	: ----		
Quote number	: EN-222		
No. of samples received	: 7		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ALS is not NATA accredited for the performance of EN35: Miscellaneous Leaching procedure.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	MG19238-131 MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3	MG19093 MGL_2022_113 - Waste - RSSZ-NA-As1	MG19350 MGL_2022_217 - Waste - RSSZ-NA-AS2
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
					EB2339577-001	EB2339577-002	EB2339577-003	EB2339577-004	EB2339577-005
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		9.34	9.31	9.33	9.08	9.15
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		123	100	135	85	114
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		20	17	20	10	15
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		38	32	40	29	37
Total Alkalinity as CaCO3	----	1	mg/L		59	49	60	40	52
ED038: Acidity									
Acidity as CaCO3	----	1	mg/L		<1	<1	<1	<1	<1
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		2	1	4	<1	3
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		1	<1	2	<1	1
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		10	7	10	5	8
Magnesium	7439-95-4	1	mg/L		3	2	3	<1	2
Sodium	7440-23-5	1	mg/L		5	3	5	3	4
Potassium	7440-09-7	1	mg/L		15	14	16	16	14
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		0.48	0.52	0.50	0.86	0.42
Antimony	7440-36-0	0.001	mg/L		0.003	0.002	0.006	<0.001	0.001
Arsenic	7440-38-2	0.001	mg/L		0.251	0.058	0.649	0.029	0.144
Barium	7440-39-3	0.001	mg/L		0.007	0.003	0.006	0.002	0.004
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		0.003	<0.001	<0.001	0.001	<0.001

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	MG19238-131 MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3	MG19093 MGL_2022_113 - Waste - RSSZ-NA-As1	MG19350 MGL_2022_217 - Waste - RSSZ-NA-AS2
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
					EB2339577-001	EB2339577-002	EB2339577-003	EB2339577-004	EB2339577-005
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L		**0.003**	**0.002**	**0.002**	**0.001**	**0.002**
Molybdenum	7439-98-7	0.001	mg/L		<0.001	<0.001	**0.001**	**0.001**	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**0.123**	**0.176**	**0.185**	**0.106**	**0.137**
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L		**0.008**	<0.005	<0.005	<0.005	<0.005
Boron	7440-42-8	0.05	mg/L		**0.06**	**0.06**	**0.06**	**0.06**	**0.06**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.02**	**0.05**	**0.04**	**0.03**	**0.02**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	**0.01**	<0.01

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	MG19238-131 MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3	MG19093 MGL_2022_113 - Waste - RSSZ-NA-As1	MG19350 MGL_2022_217 - Waste - RSSZ-NA-AS2
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00	17-Oct-2023 00:00
					EB2339577-001	EB2339577-002	EB2339577-003	EB2339577-004	EB2339577-005
					Result	Result	Result	Result	Result
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.02**	**0.03**	**0.03**	**0.03**	**0.03**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.02**	**0.03**	**0.03**	**0.04**	**0.03**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.1**	**0.2**	**0.2**	**0.2**	<0.1
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		**0.1**	**0.2**	**0.2**	**0.2**	<0.1
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.14**	**0.06**	**0.30**	**0.06**	**0.06**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.02**	**0.02**	**0.04**	<0.01	**0.01**
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**9.6**	**9.3**	**9.4**	**9.4**	**9.8**

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19364 MGL_2022_217 - Waste - RSSZ-S3-As3	MG19438 MGL_2022_220 - Waste - TZ4-S2-As1	----	----	----
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	----	----	----
					EB2339577-006	EB2339577-007	--------	--------	--------
					Result	Result	----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**9.13**	**9.20**	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**122**	**132**	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		**15**	**17**	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**42**	**46**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**57**	**63**	----	----	----
ED038: Acidity									
Acidity as CaCO3	----	1	mg/L		<1	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**2**	**1**	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		<1	**1**	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**10**	**9**	----	----	----
Magnesium	7439-95-4	1	mg/L		**3**	**2**	----	----	----
Sodium	7440-23-5	1	mg/L		**4**	**5**	----	----	----
Potassium	7440-09-7	1	mg/L		**14**	**17**	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.49**	**0.53**	----	----	----
Antimony	7440-36-0	0.001	mg/L		**0.003**	**0.001**	----	----	----
Arsenic	7440-38-2	0.001	mg/L		**0.382**	**0.048**	----	----	----
Barium	7440-39-3	0.001	mg/L		**0.004**	**0.005**	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	**0.004**	----	----	----

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19364 MGL_2022_217 - Waste - RSSZ-S3-As3	MG19438 MGL_2022_220 - Waste - TZ4-S2-As1	----	----	----
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	----	----	----
					EB2339577-006	EB2339577-007	--------	--------	--------
					Result	Result	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.002**	**0.003**	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		**0.001**	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	----	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	----	----	----
Strontium	7440-24-6	0.001	mg/L		**0.173**	**0.100**	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	----	----	----
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	----	----	----
Boron	7440-42-8	0.05	mg/L		**0.06**	**0.06**	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.2**	**0.2**	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.06**	**0.01**	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	**0.01**	----	----	----
EK058G: Nitrate as N by Discrete Analyser									

Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)				Sample ID	MG19364 MGL_2022_217 - Waste - RSSZ-S3-As3	MG19438 MGL_2022_220 - Waste - TZ4-S2-As1	----	----	----
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2339577-006	EB2339577-007	--------	--------	--------
					Result	Result	----	----	----
EK058G: Nitrate as N by Discrete Analyser - Continued									
Nitrate as N	14797-55-8	0.01	mg/L		**0.03**	**0.03**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.03**	**0.04**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.2**	**0.1**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		**0.2**	**0.1**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.16**	**0.03**	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.03**	<0.01	----	----	----
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**9.4**	**10.0**	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB2408297**	Page	: 1 of 5
Client	: **MINE WASTE MANAGEMENT**	Laboratory	: Environmental Division Brisbane
Contact	: Zsofia Waczek	Contact	: Carsten Emrich
Address	: Level 1, 8A/232 Churchill Ave Subiaco 6008	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: J-NZ0233 Bendigo AEE Support	Date Samples Received	: 08-Mar-2024 04:21
Order number	: ----	Date Analysis Commenced	: 13-Mar-2024
C-O-C number	: ----	Issue Date	: 20-Mar-2024 15:14
Sampler	: ----		
Site	: ----		
Quote number	: EN-222		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK059G (Nitrite + Nitrate as N (NOx)): Sample MG19519 (EB2408297-001) was diluted due to matrix interference. LOR adjusted accordingly.
- ALS is not NATA accredited for the performance of EN35: Miscellaneous Leaching procedure.
- ED041G (Sulfate as SO4): Sample MG19519 (EB2408297-001) was diluted due to matrix interference. LOR adjusted accordingly.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)			Sample ID	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	----	----	----
			Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2408297-001	EB2408297-002	--------	--------	--------
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**8.72**	**9.43**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**124**	**122**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	**19**	**26**	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**40**	**35**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**59**	**60**	----	----	----
ED038: Acidity								
Acidity as CaCO3	----	1	mg/L	<1	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<5	**3**	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**3**	**2**	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**10**	**9**	----	----	----
Magnesium	7439-95-4	1	mg/L	**3**	**3**	----	----	----
Sodium	7440-23-5	1	mg/L	**5**	**6**	----	----	----
Potassium	7440-09-7	1	mg/L	**13**	**13**	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.27**	**0.34**	----	----	----
Antimony	7440-36-0	0.001	mg/L	**0.004**	**0.003**	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**1.06**	**0.438**	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.058**	**0.084**	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	----	----	----
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	----	----	----
					EB2408297-001	EB2408297-002	--------	--------	--------
					Result	Result	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.002**	**0.001**	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.001**	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	----	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	----	----	----
Strontium	7440-24-6	0.001	mg/L		**0.180**	**0.204**	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	----	----	----
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	----	----	----
Boron	7440-42-8	0.05	mg/L		<0.05	<0.05	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.3**	**0.3**	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.18**	**0.08**	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser									

Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)				Sample ID	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	----	----	----
				Sampling date / time	17-Oct-2023 00:00	17-Oct-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2408297-001	EB2408297-002	--------	--------	--------
					Result	Result	----	----	----
EK058G: Nitrate as N by Discrete Analyser - Continued									
Nitrate as N	14797-55-8	0.01	mg/L		<0.05	**0.02**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.05	**0.02**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.2**	**0.2**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		**0.2**	**0.2**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.43**	**0.17**	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.04**	**0.01**	----	----	----
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**9.0**	**9.1**	----	----	----

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Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-24-NC-007599-02 #** REPORT DATE **13/03/2024**

This amended report supersedes Analytical Report number AR-24-NC-007599-01, dated 12/03/2024.

Attention Matakanui Gold
Hamish McLauchlan
1460 Bendigo Station
RD3
9383 Cromwell
NEW ZEALAND
Phone 0064275886631
Email hamish.mclauchlan@matakanuigold.co.nz

Contact for your orders: James Thornton
Contract: Matakanui Gold Water Monitoring
Comments: sample refs amended
Order code: EUNZCH-00166903
Purchase Order Number: NA

SAMPLE CODE **817-2024-00018180**

Sample Reference MG41400
Reception Date & Time: 12/02/2024 10:55
Analysis Started on: 12/02/2024
Analysis Ending Date: 08/03/2024
Sampler(s) Hamish
Sampled Date & Time 20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)** Aluminium	0.33	mg/l	0.02
④NU0ZC	**Antimony (Sb)** Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)** Arsenic (As)	0.33	mg/l	0.0001
④NU0PF	**Barium (Ba)** Barium (Ba)	0.090	mg/l	0.001
④NU0LB	**Beryllium (Be)** Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level** Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)** Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)** Cobalt (Co)	0.0040	mg/l	0.001
④VQ107	**Iron (Fe)** Iron (Fe)	0.55	mg/l	0.001
④VQ368	**Lead (Pb)** Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)** Manganese (Mn)	0.31	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)** Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)** Selenium (Se)	<0.001	mg/l	0.001

		RESULTS		LOQ
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	complete		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0060	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.4	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.012	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.0	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	7.8	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	13.6	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	2.5	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.154	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.080	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018181**		
Sample Reference	MG41405		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	<0.05	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.040	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.090	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005

		RESULTS		LOQ
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0020	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.49	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	<0.2	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	complete		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	<0.005	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.1	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.007	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	0.8	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.003	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	3.7	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	9.15	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1.8	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.122	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.058	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018182**		
Sample Reference	MG41409		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

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		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.24	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.10	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.11	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0080	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	1.1	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.36	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	complete		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0070	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.1	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.012	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.0	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.007	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	4.5	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	13.8	mg/l	0.03
②NW171	**Total Sodium**			

		RESULTS		LOQ
②NW171	**Total Sodium**			
	Sodium (Na)	1.5	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.225	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.080	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018183**		
Sample Reference	MG41410		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	0.59	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.10	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.090	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0030	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.60	mg/l	0.001
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.22	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	completed		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	0.0050	mg/l	0.001

		RESULTS		LOQ
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	0.9	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.005	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.3	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	5.3	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	16.7	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1.7	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.220	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.081	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

SAMPLE CODE	**817-2024-00018184**		
Sample Reference	MG41414		
Reception Date & Time:	12/02/2024 10:55		
Analysis Started on:	12/02/2024	**Analysis Ending Date:**	08/03/2024
Sampler(s)	Hamish	**Sampled Date & Time**	20/12/2023 00:00

		RESULTS		LOQ
④VQ050	**Aluminium (Al)**			
	Aluminium	1.1	mg/l	0.02
④NU0ZC	**Antimony (Sb)**			
	Antimony (Sb)	<0.005	mg/l	0.005
④VQ364	**Arsenic (As)**			
	Arsenic (As)	0.020	mg/l	0.0001
④NU0PF	**Barium (Ba)**			
	Barium (Ba)	0.10	mg/l	0.001
④NU0LB	**Beryllium (Be)**			
	Beryllium (Be)	<0.001	mg/l	0.005
④NU0Q1	**Boron (B) - Low Level**			
	Boron (B)	<0.05	mg/l	0.005
④VQ058	**Chromium (Cr)**			
	Chromium (Cr)	<0.001	mg/l	0.001
④NU0YE	**Cobalt (Co)**			
	Cobalt (Co)	0.0020	mg/l	0.001
④VQ107	**Iron (Fe)**			
	Iron (Fe)	0.61	mg/l	0.001

		RESULTS		LOQ
④VQ368	**Lead (Pb)**			
	Lead (Pb)	<0.01	mg/l	0.001
④VQ395	**Manganese (Mn)**			
	Manganese (Mn)	0.30	mg/l	0.2
④NU0SJ	**Molybdenum (Mo)**			
	Molybdenum (Mo)	<0.005	mg/l	0.005
④VQ068	**Selenium (Se)**			
	Selenium (Se)	<0.001	mg/l	0.001
④NU0LE	**Silver (Ag)**			
	Silver (Ag)	<0.005	mg/l	0.0005
⑤VQ763	**Soil Preparation - Metals Digestion**			
	Sample Preparation	completed		-
④NU0K0	**Tin (Sn)**			
	Tin (Sn)	<0.005	mg/l	0.001
②NW154	**Total Cadmium**			
	Cadmium (Cd)	<0.001	mg/l	0.001
②NW156	**Total Calcium**			
	Calcium (Ca)	1.0	mg/l	0.1
②NW159	**Total Copper**			
	Copper (Cu)	0.004	mg/l	0.002
②NW163	**Total Magnesium**			
	Magnesium (Mg)	1.4	mg/l	0.1
②NW167	**Total Nickel**			
	Nickel (Ni)	0.004	mg/l	0.001
②NW168	**Total Potassium**			
	Potassium (K)	8.2	mg/l	0.1
②NW143	**Total Silicon**			
	Silicon (Si)	23.4	mg/l	0.03
②NW171	**Total Sodium**			
	Sodium (Na)	1.8	mg/l	0.1
②NW174	**Total Titanium**			
	Titanium (Ti)	0.332	mg/l	0.001
②NW177	**Total Zinc**			
	Zinc (Zn)	0.088	mg/l	0.005
④NU0M0	**Vanadium (V)**			
	Vanadium (V)	<0.005	mg/l	0.005

LIST OF METHODS

NU0K0	**Tin (Sn):** US EPA 6020	NU0LB	**Beryllium (Be):** US EPA 6020
NU0LE	**Silver (Ag):** US EPA 6020	NU0M0	**Vanadium (V):** US EPA 6020
NU0PF	**Barium (Ba):** US EPA 6020	NU0Q1	**Boron (B) - Low Level:** US EPA 6020
NU0SJ	**Molybdenum (Mo):** US EPA 6020	NU0YE	**Cobalt (Co):** US EPA 6020
NU0ZC	**Antimony (Sb):** US EPA 6020	NW143	**Total Silicon:** APHA Online Edition 3120 B mod.
NW154	**Total Cadmium:** APHA Online Edition 3125 B mod.	NW156	**Total Calcium:** APHA Online Edition 3125 B mod.
NW159	**Total Copper:** APHA Online Edition 3125 B mod.	NW163	**Total Magnesium:** APHA Online Edition 3125 B mod.
NW167	**Total Nickel:** APHA Online Edition 3125 B mod.	NW168	**Total Potassium:** APHA Online Edition 3125 B mod.

NW171	**Total Sodium:** APHA Online Edition 3125 B mod.	NW174	**Total Titanium:** APHA Online Edition 3125 B mod.
NW177	**Total Zinc:** APHA Online Edition 3125 B mod.	VQ050	**Aluminium (Al):** US EPA 6020
VQ058	**Chromium (Cr):** US EPA 6020	VQ068	**Selenium (Se):** US EPA 6020
VQ107	**Iron (Fe):** US EPA 6020	VQ364	**Arsenic (As):** US EPA 6020
VQ368	**Lead (Pb):** US EPA 6020	VQ395	**Manganese (Mn):** US EPA 6020
VQ763	**Soil Preparation - Metals Digestion:**		

Signature



Leroy Swale Supervisor - Sampling Services - KTP

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

The Customer acknowledges and accepts that: (a) where Eurofins is not responsible for sampling, the test result(s) in this report apply only to the sample as received. Customer is solely responsible for the sampling process and warrants that the sample provided to Eurofins is representative of the lot / batch from which the samples were drawn; and (b) Eurofins expresses no opinion and accepts no liability in respect of the Customer's production process or homogeneity of the product.
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The tests are identified by a five-digit code, their description is available on request.
Accreditation does not apply to comments or graphical representations.
Unless otherwise stated, all tests in this analytical report (except for subcontracted tests) are performed at 43 Detroit Drive, Rolleston, Christchurch, NEW ZEALAND.
The laboratory is not responsible for the information provided by the customer which can affect the validity of the results, for example: sampling information such as date/time, field data etc.
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All samples become the property of Eurofins to the extent necessary for the performance of the Services.
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END OF REPORT

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE BR24028952

This report is for 349 samples of Pulp submitted to our lab in Brisbane, QLD, Australia on 31-JAN-2024.

The following have access to data associated with this certificate:

GEO RESULTS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21b	Weight - Pulp
LEV-01	Waste Disposal Levy
LOG-24	Pulp Login - Rcd w/o Barcode
LOG-QC	QC Test on Received Samples

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
As-OG46	Ore Grade As - Aqua Regia	
ME-OG46	Ore Grade Elements - AquaRegia	ICP-AES
Au-AA26	Ore Grade Au 50g FA AA finish	AAS
ME-ICP61	34 element four acid ICP-AES	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:



Shaun Kenny, Brisbane Laboratory Manager

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NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	WEI-21b	LOG-QC	Au-AA26	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Pulp Wt	Pass75um	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	g	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOD	1	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01
MG52334		202	99.0	0.16	<0.5	7.08	3340	670	2.8	3	1.82	<0.5	11	71	22	2.83
MG52335		202		0.28	<0.5	6.62	>10000	480	2.2	<2	1.68	<0.5	9	101	16	2.68
MG52336		201		8.37	<0.5	5.56	9650	300	3.3	<2	1.57	<0.5	7	135	3	1.82
MG52337		201		1.91	0.9	4.69	>10000	360	1.3	<2	1.46	<0.5	6	23	6	2.52
MG52338		200		0.17	<0.5	6.81	630	570	2.5	<2	1.67	<0.5	10	27	20	2.61
MG52339		201		0.09	<0.5	6.66	86	500	2.2	<2	1.87	<0.5	8	27	15	2.70
MG52340		200		0.15	<0.5	6.12	70	480	2.0	<2	1.31	<0.5	8	20	19	2.12
MG52341		200		0.37	<0.5	6.57	8570	530	2.3	2	1.98	<0.5	9	30	20	3.03
MG52342		200		0.13	<0.5	6.92	552	580	2.7	<2	2.06	<0.5	10	31	24	3.01
MG52343		201		0.20	<0.5	7.21	3060	650	2.6	<2	1.46	<0.5	9	30	15	2.74
MG52344		181		0.13	<0.5	6.87	679	500	2.3	<2	1.36	<0.5	9	26	17	2.65
MG52345		201		0.18	<0.5	7.88	30	550	2.8	<2	1.58	<0.5	13	86	27	3.51
MG52346		201		0.04	<0.5	6.60	499	600	2.4	<2	1.65	<0.5	9	120	16	2.36
MG52347		200		0.11	<0.5	6.44	28	470	2.1	2	3.05	<0.5	9	27	16	2.59
MG52348		200		3.62	<0.5	5.45	3810	530	1.9	<2	1.99	<0.5	8	26	12	2.45
MG52349		200		0.37	<0.5	6.11	4070	440	2.1	<2	1.74	<0.5	8	28	13	2.40
MG52350		202		0.40	<0.5	3.04	>10000	210	0.8	<2	0.70	<0.5	4	23	2	1.61
MG52351		200		0.41	<0.5	6.74	1155	540	2.7	<2	1.77	<0.5	10	84	18	2.59
MG52352		200		0.20	<0.5	5.89	6150	500	2.2	<2	1.78	<0.5	9	26	14	2.45
MG52353		202		0.19	<0.5	6.95	1550	510	2.7	<2	1.66	<0.5	9	29	12	2.64
MG52354		205		<0.01	<0.5	7.08	<5	440	2.0	7	6.78	0.6	43	107	49	8.87
MG52355		61		1.66	<0.5	7.49	351	680	2.4	2	0.88	<0.5	17	127	28	4.07
MG52356		199		0.11	<0.5	7.27	1465	620	2.4	<2	1.71	<0.5	11	28	19	2.91
MG52357		199		0.18	<0.5	8.60	1365	680	3.1	<2	1.46	<0.5	14	51	38	4.45
MG52358		202		0.04	<0.5	7.32	1915	580	2.9	<2	1.77	<0.5	11	32	24	2.96
MG52359		199		0.15	<0.5	6.86	59	570	1.9	<2	1.77	<0.5	10	76	23	2.72
MG52360		186		10.70	<0.5	7.14	2310	490	2.4	<2	1.84	<0.5	10	28	22	2.84
MG52361		202		0.13	<0.5	6.80	1895	530	2.5	<2	1.55	<0.5	8	27	18	2.43
MG52362		200		0.16	<0.5	7.25	461	500	2.1	<2	1.25	<0.5	9	76	22	3.00
MG52363		204		0.47	<0.5	6.13	10000	540	2.1	<2	1.65	<0.5	10	30	14	2.65
MG52364		207		4.24	<0.5	5.57	>10000	560	1.6	<2	1.41	<0.5	8	127	19	2.26
MG52365		200		0.81	0.5	5.96	8710	630	2.2	<2	1.40	<0.5	11	71	21	3.02
MG52366		202		1.48	<0.5	6.39	>10000	500	2.0	<2	1.64	<0.5	8	77	7	2.26
MG52367		208		1.33	<0.5	6.83	292	570	2.6	2	1.94	<0.5	9	30	13	2.49
MG52368		200		0.30	<0.5	7.08	1030	580	2.7	<2	1.65	<0.5	11	36	25	3.10
MG52369		203		9.20	<0.5	5.53	9460	510	1.5	<2	1.68	<0.5	8	122	22	1.99
MG52370		202		0.01	<0.5	6.81	11	630	2.3	<2	2.08	<0.5	10	84	14	2.47
MG52371		206		0.27	<0.5	6.70	2230	630	2.8	<2	2.02	<0.5	10	31	26	2.71
MG52372		199		1.17	<0.5	6.82	7790	520	2.3	<2	2.36	<0.5	11	117	28	2.65
MG52373		200		0.10	<0.5	6.63	931	550	2.5	<2	1.94	<0.5	10	91	17	2.62

***** See Appendix Page for comments regarding this certificate *****

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NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Ga	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	0.01	10	10	0.01	5	1	0.01	1	10	2	0.01	5	1	1
MG52334		20	2.92	20	40	0.89	431	1	2.65	16	670	15	0.30	<5	9	390
MG52335		20	2.08	20	30	0.72	360	2	2.82	19	510	10	0.62	6	7	343
MG52336		10	0.94	20	10	0.58	334	1	3.52	14	330	27	0.49	<5	7	485
MG52337		10	1.52	20	10	0.51	296	1	2.01	9	330	17	0.72	<5	5	373
MG52338		20	2.61	20	30	0.81	434	1	2.29	13	600	19	0.14	<5	8	295
MG52339		20	2.22	20	40	0.78	470	<1	2.36	14	490	16	0.13	<5	8	284
MG52340		10	1.88	30	30	0.63	343	<1	2.26	9	450	21	0.12	<5	6	214
MG52341		20	2.37	20	20	0.85	453	1	2.50	14	500	18	0.49	5	9	426
MG52342		20	2.66	20	30	1.02	522	<1	1.98	17	660	21	0.17	<5	9	357
MG52343		20	2.58	30	50	0.81	410	1	2.34	13	630	19	0.25	<5	8	269
MG52344		20	2.41	30	40	0.75	364	<1	2.10	13	580	16	0.24	<5	8	247
MG52345		20	2.83	30	60	1.06	528	1	2.02	23	760	18	0.13	<5	12	267
MG52346		20	2.37	30	30	0.76	408	1	2.49	14	540	14	0.13	<5	7	284
MG52347		20	2.06	30	50	0.79	579	1	2.17	12	490	17	0.05	<5	8	567
MG52348		10	2.03	20	20	0.77	428	<1	2.18	10	470	127	0.25	<5	7	381
MG52349		20	1.98	20	20	0.70	379	<1	2.52	15	570	30	0.27	<5	7	345
MG52350		10	0.84	10	10	0.25	154	1	1.61	5	220	5	0.51	<5	3	180
MG52351		20	2.33	20	30	0.83	451	1	2.67	15	560	17	0.15	<5	8	334
MG52352		10	2.18	20	20	0.73	445	<1	2.43	11	470	21	0.38	<5	7	322
MG52353		20	2.26	30	30	0.84	425	1	2.85	16	550	16	0.21	<5	8	316
MG52354		20	1.26	50	10	3.87	1495	3	2.48	105	3590	7	0.02	<5	16	903
MG52355		20	2.77	40	60	1.74	411	1	0.73	68	750	18	0.14	334	14	147
MG52356		20	2.57	30	40	0.80	475	1	2.42	15	650	13	0.14	<5	9	281
MG52357		20	3.46	30	70	1.19	689	1	1.53	26	750	17	0.15	<5	14	307
MG52358		20	2.50	30	40	0.94	535	<1	2.56	18	620	26	0.21	<5	9	314
MG52359		20	2.12	30	50	0.85	438	2	2.32	16	610	21	0.06	<5	8	370
MG52360		20	2.42	30	30	0.77	439	1	2.03	16	710	18	0.18	<5	9	220
MG52361		20	2.19	20	30	0.73	391	<1	2.93	15	560	18	0.25	<5	8	321
MG52362		20	2.18	30	40	0.88	457	1	2.36	18	640	24	0.08	<5	9	251
MG52363		20	2.37	20	20	0.71	359	1	2.61	14	480	14	0.58	<5	7	304
MG52364		10	2.15	20	10	0.56	298	1	2.61	13	380	19	0.73	<5	6	330
MG52365		20	2.70	20	20	0.85	471	1	3.05	18	710	14	0.46	<5	8	358
MG52366		20	1.86	20	20	0.69	362	1	3.28	14	470	21	0.56	<5	7	406
MG52367		20	2.40	30	40	0.75	393	<1	2.45	15	540	17	0.15	<5	8	319
MG52368		20	2.46	20	40	0.92	476	<1	2.79	19	660	17	0.24	<5	9	267
MG52369		10	1.94	20	10	0.61	358	1	2.86	15	360	20	0.50	<5	6	351
MG52370		20	2.29	20	40	0.91	417	1	2.49	10	620	15	0.04	<5	8	362
MG52371		20	2.65	20	40	0.93	466	1	2.35	12	650	24	0.19	<5	8	397
MG52372		20	2.42	30	20	1.06	501	2	3.16	21	490	16	0.41	<5	12	545
MG52373		20	2.39	20	30	0.78	453	2	2.83	11	590	25	0.25	<5	8	345

***** See Appendix Page for comments regarding this certificate *****

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To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	As-OG46
	Analyte	Th	Ti	Tl	U	V	W	Zn	As
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOD	20	0.01	10	10	1	10	2	0.001
MG52334		<20	0.33	<10	<10	79	40	69	
MG52335		<20	0.28	<10	<10	66	40	41	1.180
MG52336		<20	0.22	<10	<10	43	50	53	
MG52337		<20	0.18	<10	<10	39	30	24	1.430
MG52338		<20	0.29	<10	<10	66	30	63	
MG52339		<20	0.29	<10	<10	72	20	58	
MG52340		<20	0.24	<10	<10	54	20	46	
MG52341		<20	0.28	<10	<10	73	40	66	
MG52342		<20	0.31	<10	<10	74	30	75	
MG52343		<20	0.29	<10	<10	71	30	57	
MG52344		<20	0.26	<10	<10	67	50	58	
MG52345		<20	0.38	<10	<10	91	60	88	
MG52346		<20	0.29	<10	<10	66	40	55	
MG52347		<20	0.25	<10	<10	63	30	55	
MG52348		<20	0.23	<10	<10	52	30	74	
MG52349		<20	0.25	<10	<10	61	30	55	
MG52350		<20	0.10	<10	<10	24	20	6	1.030
MG52351		<20	0.28	<10	<10	64	70	59	
MG52352		<20	0.25	<10	<10	60	40	50	
MG52353		<20	0.28	<10	<10	67	60	58	
MG52354		<20	1.78	<10	<10	197	<10	128	
MG52355		20	0.49	<10	<10	103	<10	97	
MG52356		<20	0.32	<10	<10	73	10	60	
MG52357		<20	0.40	<10	<10	118	50	122	
MG52358		<20	0.31	<10	<10	74	30	70	
MG52359		<20	0.30	<10	<10	69	10	64	
MG52360		<20	0.30	<10	<10	72	20	65	
MG52361		<20	0.27	<10	<10	62	50	60	
MG52362		<20	0.31	<10	<10	74	10	84	
MG52363		<20	0.27	<10	<10	60	40	44	1.070
MG52364		<20	0.23	<10	<10	53	70	51	1.535
MG52365		<20	0.33	<10	<10	89	70	65	
MG52366		<20	0.25	<10	<10	56	60	51	1.175
MG52367		<20	0.30	<10	<10	65	30	55	
MG52368		<20	0.35	<10	<10	78	30	78	
MG52369		<20	0.24	<10	<10	47	70	50	
MG52370		<20	0.28	<10	<10	64	30	59	
MG52371		<20	0.31	<10	10	75	20	75	
MG52372		<20	0.37	<10	<10	99	60	129	
MG52373		<20	0.30	<10	<10	74	40	60	

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To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	WEI-21b	LOG-QC	Au-AA26	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Pulp Wt	Pass75um	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	g	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOD	1	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01
MG52374		205	96.0	0.29	<0.5	6.99	390	600	2.8	<2	2.13	<0.5	11	85	20	3.04
MG52375		200		0.15	<0.5	7.20	825	480	2.5	<2	1.47	<0.5	10	93	26	2.76
MG52376		202		0.01	<0.5	7.34	5	460	2.1	<2	7.10	<0.5	44	107	50	9.27
MG52377		61		1.61	<0.5	7.45	354	690	2.5	<2	0.94	<0.5	17	127	29	4.17
MG52378		202		0.95	<0.5	6.67	34	570	2.2	<2	2.08	<0.5	10	28	15	2.94
MG52379		200		0.16	<0.5	7.47	570	660	3.1	<2	2.28	<0.5	13	47	32	4.05
MG52380		205		0.36	<0.5	6.49	3410	520	2.8	<2	1.80	<0.5	11	127	22	2.57
MG52381		205		0.34	<0.5	6.98	2370	610	2.8	<2	2.09	<0.5	10	110	20	3.01
MG52382		202		0.18	<0.5	7.20	5230	650	3.0	<2	1.75	<0.5	11	42	36	3.41
MG52383		204		0.11	<0.5	7.66	462	600	2.9	<2	1.63	<0.5	12	129	30	3.36
MG52384		204		0.31	<0.5	6.38	6750	590	2.3	<2	2.45	<0.5	11	29	30	2.85
MG52385		204		3.90	<0.5	6.25	9870	660	2.5	<2	1.65	<0.5	10	28	29	2.72
MG52386		179		1.12	<0.5	6.42	>10000	550	2.1	<2	2.20	<0.5	10	77	10	2.60
MG52387		181		0.25	<0.5	7.20	6260	750	3.0	<2	1.74	<0.5	12	119	24	3.39
MG52388		202		1.84	<0.5	5.96	>10000	690	1.6	<2	2.06	<0.5	9	65	21	2.51
MG52389		201		1.11	<0.5	5.76	>10000	490	1.7	<2	1.80	<0.5	8	77	3	2.24
MG52390		203		0.03	<0.5	7.40	575	580	2.9	<2	1.68	<0.5	11	35	23	3.16
MG52391		206		0.81	<0.5	6.98	>10000	440	1.4	<2	2.37	<0.5	10	95	4	3.95
MG52392		200		1.00	0.5	5.76	>10000	470	2.0	<2	2.11	<0.5	8	26	23	2.80
MG52393		201		1.68	<0.5	6.48	6520	540	2.4	<2	1.91	<0.5	10	31	28	2.62
MG52394		205		1.51	<0.5	5.97	>10000	580	2.0	<2	1.72	<0.5	10	106	27	2.55
MG52395		201		3.45	<0.5	6.06	9330	170	1.4	<2	2.19	<0.5	8	106	2	2.35
MG52396		201		0.17	<0.5	7.26	1460	660	3.0	<2	1.68	<0.5	11	36	14	2.93
MG52397		203		2.16	0.5	5.57	>10000	320	1.2	<2	0.85	<0.5	6	92	3	3.09
MG52398		203		<0.01	<0.5	7.37	12	450	2.0	<2	6.64	<0.5	43	96	47	8.66
MG52399		62		0.77	<0.5	6.72	39	190	<0.5	<2	6.97	0.7	45	98	168	8.30
MG52400		202		0.15	<0.5	6.80	246	610	2.7	<2	2.13	<0.5	10	92	18	2.82
MG52401		200		0.17	<0.5	7.14	6070	530	2.3	<2	2.13	<0.5	10	97	11	2.56
MG52402		202		0.14	<0.5	7.68	1625	690	3.1	<2	1.76	<0.5	13	99	25	3.58
MG52403		204		0.24	<0.5	7.00	466	640	2.6	<2	1.82	<0.5	11	34	20	2.81
MG52404		202		0.03	<0.5	7.16	300	580	2.3	<2	1.64	<0.5	11	32	15	2.72
MG52405		208		0.68	<0.5	7.67	544	730	3.2	<2	1.89	<0.5	12	39	17	3.35
MG52406		200		1.51	<0.5	6.63	8200	510	2.5	<2	2.49	<0.5	11	36	30	3.28
MG52407		207		1.30	<0.5	6.87	6820	640	2.8	<2	1.81	<0.5	10	32	11	2.54
MG52408		203		0.07	<0.5	7.07	359	520	2.4	<2	1.79	<0.5	10	28	18	2.59
MG52409		203		0.15	<0.5	7.30	1435	660	2.9	<2	2.10	<0.5	12	30	16	2.82
MG52410		203		1.69	<0.5	4.81	7980	350	1.9	<2	1.15	<0.5	7	22	9	2.07
MG52411		202		0.35	<0.5	7.02	50	610	2.4	<2	1.80	<0.5	10	24	18	2.57
MG52412		204		0.06	<0.5	6.55	602	590	2.5	<2	1.62	<0.5	10	31	10	2.45
MG52413		200		0.98	<0.5	6.84	>10000	590	2.1	<2	2.14	<0.5	9	109	11	2.74

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To: MATAKANUI GOLD LIMITED
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51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Ga	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	0.01	10	10	0.01	5	1	0.01	1	10	2	0.01	5	1	1
MG52374		20	3.11	20	20	0.95	511	2	1.95	16	780	38	0.20	<5	10	262
MG52375		20	2.42	20	50	0.84	442	1	2.68	16	680	20	0.16	<5	9	234
MG52376		30	1.34	50	20	4.03	1505	3	2.66	100	3870	5	0.03	<5	17	942
MG52377		20	2.87	40	60	1.81	412	1	0.78	69	800	19	0.15	342	14	152
MG52378		20	2.52	20	100	0.93	467	<1	2.27	14	590	12	0.09	<5	9	335
MG52379		20	3.41	20	50	1.30	663	1	1.91	22	910	18	0.18	<5	12	386
MG52380		20	2.58	20	30	0.86	408	1	2.22	18	680	15	0.31	<5	8	330
MG52381		20	2.98	30	40	0.95	455	2	2.38	17	970	27	0.28	<5	10	326
MG52382		20	3.37	20	40	1.03	502	1	1.99	21	760	16	0.42	<5	11	319
MG52383		20	3.03	30	60	1.06	480	1	1.78	21	930	21	0.13	<5	11	304
MG52384		20	2.45	20	20	0.87	474	<1	2.92	12	370	13	0.40	<5	9	523
MG52385		20	2.53	20	30	0.78	401	<1	2.73	14	510	14	0.56	<5	8	313
MG52386		20	2.10	20	20	0.86	435	1	3.68	14	610	16	0.61	<5	8	451
MG52387		20	3.41	30	50	0.98	426	2	1.47	21	870	22	0.44	<5	11	245
MG52388		20	2.14	20	10	0.81	460	1	3.46	14	290	18	0.62	<5	9	478
MG52389		10	1.82	20	10	0.67	349	1	3.13	12	380	13	0.67	<5	6	406
MG52390		20	2.66	20	50	0.99	500	<1	2.55	17	770	18	0.15	<5	10	332
MG52391		20	1.57	20	10	0.75	406	1	4.74	16	330	9	1.53	9	8	667
MG52392		10	1.89	20	20	0.72	443	<1	2.69	15	430	57	0.57	6	7	437
MG52393		20	2.31	20	30	0.84	443	<1	2.95	14	550	16	0.44	<5	8	337
MG52394		20	2.19	20	20	0.72	377	2	3.08	13	470	27	0.68	<5	8	393
MG52395		20	0.84	20	10	0.68	385	2	3.97	13	560	32	0.49	<5	8	445
MG52396		20	2.78	20	50	0.94	458	1	2.52	17	710	15	0.16	<5	9	323
MG52397		10	1.07	20	10	0.33	153	2	3.54	9	470	15	1.53	13	4	248
MG52398		20	1.42	50	20	3.69	1450	3	2.60	87	3480	3	0.02	<5	17	851
MG52399		20	0.40	<10	10	3.85	1395	1	2.06	79	490	15	0.31	<5	40	135
MG52400		20	2.61	20	30	0.91	463	1	2.62	14	660	16	0.19	<5	9	377
MG52401		20	2.38	20	20	0.82	419	1	3.51	16	490	15	0.35	<5	8	523
MG52402		20	3.42	20	50	1.11	473	1	2.42	19	780	20	0.15	<5	11	394
MG52403		20	2.64	20	50	0.91	444	1	2.67	18	740	19	0.11	<5	8	298
MG52404		20	2.25	30	40	0.74	438	<1	2.44	14	660	20	0.07	<5	8	317
MG52405		20	3.30	20	60	1.09	515	1	2.14	20	870	15	0.11	<5	11	315
MG52406		20	2.29	20	20	0.93	582	1	2.59	15	450	54	0.43	6	10	547
MG52407		20	2.39	30	30	0.83	456	1	2.80	9	610	18	0.39	5	8	299
MG52408		20	2.04	20	30	0.81	454	1	3.00	13	720	17	0.09	<5	8	320
MG52409		20	2.60	20	40	0.88	502	1	2.76	12	750	17	0.12	5	9	546
MG52410		10	1.61	20	20	0.53	315	1	1.80	7	350	50	0.42	<5	6	259
MG52411		20	2.49	20	30	0.80	441	1	2.53	10	540	14	0.07	<5	8	311
MG52412		20	2.38	20	40	0.74	418	<1	2.50	12	670	15	0.11	<5	7	274
MG52413		20	2.14	20	10	0.82	426	1	3.68	14	830	5	0.84	6	7	491

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Finalized Date: 5-MAR-2024
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CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	As-OG46
	Analyte	Th	Ti	Tl	U	V	W	Zn	As
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOD	20	0.01	10	10	1	10	2	0.001
MG52374		<20	0.35	<10	10	79	30	84	
MG52375		<20	0.28	<10	<10	71	20	74	
MG52376		<20	1.79	<10	<10	199	<10	139	
MG52377		<20	0.50	<10	<10	111	<10	103	
MG52378		<20	0.32	<10	<10	76	20	64	
MG52379		<20	0.40	<10	<10	104	110	105	
MG52380		<20	0.31	<10	<10	73	30	59	
MG52381		<20	0.34	<10	<10	83	30	73	
MG52382		<20	0.36	<10	<10	103	40	101	
MG52383		<20	0.36	<10	<10	88	30	93	
MG52384		<20	0.32	<10	10	81	30	81	
MG52385		<20	0.29	<10	<10	79	60	63	
MG52386		<20	0.30	<10	10	74	50	60	1.105
MG52387		<20	0.37	<10	<10	99	20	82	
MG52388		<20	0.27	<10	10	63	90	64	1.235
MG52389		<20	0.23	<10	<10	48	70	40	1.425
MG52390		<20	0.33	<10	<10	83	20	79	
MG52391		<20	0.25	<10	<10	35	80	13	2.94
MG52392		<20	0.25	<10	<10	64	70	55	0.999
MG52393		<20	0.29	<10	<10	75	60	70	
MG52394		<20	0.27	<10	<10	69	80	63	1.220
MG52395		<20	0.28	<10	10	51	60	99	
MG52396		<20	0.30	<10	<10	76	90	77	
MG52397		<20	0.18	<10	<10	34	60	9	3.01
MG52398		<20	1.61	<10	<10	197	<10	133	
MG52399		<20	0.65	<10	<10	287	20	135	
MG52400		<20	0.32	<10	<10	78	30	69	
MG52401		<20	0.30	<10	<10	66	30	64	
MG52402		<20	0.38	<10	<10	102	60	91	
MG52403		<20	0.31	<10	<10	75	30	70	
MG52404		<20	0.30	<10	10	69	30	62	
MG52405		<20	0.37	<10	10	88	30	83	
MG52406		<20	0.31	<10	<10	92	50	100	
MG52407		<20	0.29	<10	<10	72	60	56	
MG52408		<20	0.29	<10	<10	67	40	62	
MG52409		<20	0.30	<10	<10	72	30	65	
MG52410		<20	0.20	<10	<10	53	50	45	
MG52411		<20	0.28	<10	<10	69	50	54	
MG52412		<20	0.29	<10	<10	70	30	57	
MG52413		<20	0.27	<10	<10	60	70	42	1.640

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CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	WEI-21b	LOG-QC	Au-AA26	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Pulp Wt	Pass75um	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	g	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOD	1	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01
MG52414		203	94.0	0.22	<0.5	6.88	3420	650	2.5	<2	1.89	<0.5	10	30	20	2.55
MG52415		205		1.53	<0.5	4.89	>10000	320	1.5	<2	1.25	<0.5	7	25	7	2.24
MG52416		206		0.10	<0.5	7.78	950	640	3.3	<2	1.33	<0.5	14	106	40	3.44
MG52417		203		0.18	<0.5	6.99	2370	670	2.6	<2	1.95	<0.5	10	108	42	2.38
MG52418		203		0.16	<0.5	7.55	530	590	2.7	<2	1.67	<0.5	12	75	21	3.15
MG52419		204		1.46	<0.5	6.99	>10000	660	2.1	<2	2.13	<0.5	10	34	8	2.64
MG52420		204		0.01	<0.5	7.35	<5	450	2.1	2	6.99	<0.5	46	106	50	9.12
MG52421		61		1.62	<0.5	7.80	369	710	2.5	<2	0.91	<0.5	18	131	30	4.17
MG52422		204		1.73	<0.5	6.94	7740	420	2.3	<2	1.66	<0.5	11	104	27	2.92
MG52423		205		0.47	<0.5	6.46	8520	500	2.5	<2	1.89	<0.5	9	27	21	2.69
MG52424		205		3.27	<0.5	7.17	>10000	610	3.1	<2	1.51	<0.5	11	95	22	2.85
MG52425		202		0.37	<0.5	7.54	8320	600	2.3	<2	2.32	<0.5	11	85	12	3.26
MG52426		201		0.32	<0.5	7.35	1280	510	2.4	<2	1.74	<0.5	10	101	20	2.98
MG52427		204		0.33	<0.5	5.96	6100	430	1.8	<2	3.18	<0.5	9	22	16	2.39
MG52428		200		0.17	<0.5	7.46	1625	640	3.2	<2	1.55	<0.5	12	37	27	2.81
MG52429		203		0.14	<0.5	8.24	876	590	3.2	<2	1.67	<0.5	15	46	35	3.63
MG52430		204		0.40	<0.5	7.53	158	580	2.4	<2	2.31	<0.5	12	32	20	2.93
MG52431		203		0.54	<0.5	6.88	2050	520	2.5	<2	1.92	<0.5	11	84	14	2.60
MG52432		201		2.27	<0.5	5.72	>10000	540	1.9	<2	2.04	<0.5	9	74	10	2.40
MG52433		204		0.98	<0.5	6.88	1270	530	2.5	<2	1.78	<0.5	10	29	22	2.87
MG52434		200		0.18	<0.5	6.52	3570	600	2.6	<2	1.44	<0.5	8	107	13	2.38
MG52435		202		0.13	<0.5	6.41	2260	590	2.2	<2	1.84	<0.5	9	22	18	2.45
MG52436		185		0.15	<0.5	6.90	1210	530	2.3	<2	2.17	<0.5	11	71	16	2.68
MG52437		200		1.86	<0.5	6.76	>10000	100	0.9	<2	2.30	<0.5	10	95	2	3.01
MG52438		202		0.16	<0.5	7.45	760	730	2.9	<2	2.12	<0.5	12	76	25	3.03
MG52439		205		0.46	<0.5	7.78	3960	610	2.8	<2	1.78	<0.5	13	124	26	3.73
MG52440		200		0.19	<0.5	7.45	1085	700	2.8	<2	2.09	<0.5	11	34	21	3.04
MG52441		199		0.16	<0.5	7.01	8010	590	2.4	<2	1.70	<0.5	11	104	29	3.04
MG52442		200		<0.01	<0.5	7.16	<5	440	2.0	4	6.72	0.5	42	97	49	8.77
MG52443		60		0.74	<0.5	6.63	37	190	<0.5	3	6.54	0.7	43	93	167	7.98
MG52444		200		1.04	<0.5	6.61	3280	560	2.4	2	1.76	<0.5	10	84	12	2.51
MG52445		197		0.14	<0.5	7.23	114	560	2.6	<2	1.55	<0.5	10	115	18	2.74
MG52446		200		1.90	<0.5	6.35	5350	550	2.5	<2	1.48	<0.5	9	32	19	2.55
MG52447		196		1.13	<0.5	4.89	>10000	430	1.5	<2	1.56	<0.5	7	22	11	2.38
MG52448		195		0.14	<0.5	7.43	52	570	2.5	<2	1.58	<0.5	11	90	19	2.89
MG52449		199		0.69	<0.5	7.10	7320	800	2.4	<2	1.82	<0.5	10	101	19	2.62
MG52450		197		0.08	<0.5	6.86	275	470	2.3	2	1.94	<0.5	10	28	19	2.93
MG52451		200		7.95	0.5	5.96	2280	500	2.3	<2	1.52	<0.5	9	27	22	2.50
MG52452		200		5.87	1.2	6.07	>10000	180	1.4	<2	1.56	<0.5	8	28	2	2.91
MG52453		198		0.89	<0.5	6.24	6100	390	2.4	<2	2.02	<0.5	9	30	12	2.75

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To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Ga	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	0.01	10	10	0.01	5	1	0.01	1	10	2	0.01	5	1	1
MG52414		20	2.72	20	30	0.77	427	<1	2.73	12	590	11	0.25	<5	8	442
MG52415		10	1.40	20	20	0.48	304	1	2.15	9	350	49	0.64	6	5	272
MG52416		20	3.42	30	40	1.07	499	1	1.97	24	970	15	0.16	<5	12	256
MG52417		20	2.62	30	20	0.93	469	1	2.90	12	730	7	0.22	<5	9	411
MG52418		20	2.67	30	60	0.99	477	2	1.95	20	750	26	0.10	<5	11	341
MG52419		20	2.48	20	20	0.83	479	<1	3.46	11	530	11	0.55	<5	9	476
MG52420		20	1.28	50	10	3.92	1550	3	2.55	106	3940	<2	0.03	<5	17	945
MG52421		20	2.87	40	60	1.77	423	1	0.78	69	830	17	0.15	343	15	156
MG52422		20	1.83	30	20	0.81	459	2	3.24	18	680	16	0.50	<5	9	357
MG52423		20	2.17	20	20	0.74	430	1	2.66	12	540	22	0.49	<5	8	407
MG52424		20	2.82	30	40	0.80	404	1	2.35	18	630	29	0.62	5	9	295
MG52425		20	2.68	20	30	0.98	569	1	3.27	16	700	15	0.44	<5	10	553
MG52426		20	2.84	30	20	0.88	490	2	2.03	17	730	38	0.17	5	10	264
MG52427		10	1.78	20	20	0.75	465	<1	2.95	13	270	11	0.38	<5	8	532
MG52428		20	3.02	30	40	0.89	458	<1	1.88	16	790	13	0.28	<5	10	266
MG52429		20	2.83	30	60	1.14	534	1	2.30	25	930	22	0.12	<5	13	341
MG52430		20	2.67	20	30	0.92	525	<1	2.37	15	730	17	0.11	<5	9	332
MG52431		20	2.25	20	30	0.81	422	2	2.86	15	600	15	0.15	<5	8	427
MG52432		10	1.88	20	10	0.74	404	2	2.91	11	390	20	0.69	5	7	410
MG52433		20	2.30	30	40	0.81	520	1	2.41	12	570	13	0.21	<5	9	304
MG52434		20	2.26	20	30	0.78	353	1	2.78	14	570	13	0.26	<5	8	266
MG52435		20	2.22	20	30	0.73	473	1	2.81	12	520	13	0.24	<5	8	361
MG52436		20	2.19	20	40	0.85	490	1	2.60	12	610	25	0.13	<5	9	429
MG52437		20	0.46	20	<10	0.76	459	1	5.06	15	50	14	1.11	<5	9	605
MG52438		20	2.97	30	40	0.98	506	1	2.30	19	730	19	0.23	<5	10	400
MG52439		20	3.17	30	70	1.11	556	2	1.79	21	840	25	0.35	<5	12	312
MG52440		20	2.88	20	40	0.94	532	1	2.55	15	710	17	0.15	<5	9	468
MG52441		20	2.64	20	30	0.81	449	1	2.40	16	680	14	0.46	6	9	384
MG52442		20	1.27	50	10	3.75	1465	3	2.50	96	3510	5	0.02	6	16	891
MG52443		10	0.39	10	10	3.60	1320	1	1.97	75	430	17	0.29	<5	38	128
MG52444		20	2.22	20	30	0.78	384	1	2.99	15	620	16	0.23	5	8	377
MG52445		20	2.48	30	40	0.86	418	1	2.42	17	590	19	0.09	<5	9	268
MG52446		20	2.62	20	30	0.76	363	1	2.07	15	570	18	0.33	5	8	270
MG52447		10	1.80	20	10	0.55	335	1	2.16	9	380	24	0.55	7	6	357
MG52448		20	2.37	30	50	0.92	442	1	2.57	20	700	18	0.07	5	10	215
MG52449		20	3.27	20	30	0.87	421	1	2.62	16	680	19	0.42	<5	9	399
MG52450		20	2.31	20	30	0.85	482	<1	2.46	9	670	19	0.11	<5	9	389
MG52451		10	2.30	20	20	0.72	417	1	2.26	13	490	83	0.24	<5	8	320
MG52452		10	0.85	20	10	0.52	301	1	3.86	11	410	48	0.92	9	7	354
MG52453		20	2.11	20	30	0.78	451	1	2.12	12	540	32	0.36	<5	8	449

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HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	As-OG46
	Analyte	Th	Ti	Tl	U	V	W	Zn	As
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOD	20	0.01	10	10	1	10	2	0.001
MG52414		<20	0.29	<10	<10	71	30	58	
MG52415		<20	0.19	<10	<10	45	40	32	1.260
MG52416		<20	0.40	<10	<10	108	70	108	
MG52417		<20	0.32	<10	<10	81	50	88	
MG52418		<20	0.32	<10	<10	86	50	83	
MG52419		<20	0.30	<10	<10	68	70	57	1.030
MG52420		<20	1.81	<10	<10	202	<10	131	
MG52421		<20	0.51	<10	<10	110	<10	100	
MG52422		<20	0.30	<10	<10	69	70	61	
MG52423		<20	0.29	<10	<10	79	70	62	
MG52424		<20	0.32	<10	<10	81	70	78	1.105
MG52425		<20	0.33	<10	<10	83	40	60	
MG52426		<20	0.33	<10	<10	81	30	100	
MG52427		<20	0.26	<10	<10	56	30	59	
MG52428		<20	0.32	<10	<10	80	30	73	
MG52429		<20	0.40	<10	<10	101	70	101	
MG52430		<20	0.30	<10	<10	77	40	69	
MG52431		<20	0.27	<10	<10	66	70	55	
MG52432		<20	0.24	<10	<10	55	80	44	1.340
MG52433		<20	0.31	<10	<10	78	30	59	
MG52434		<20	0.28	<10	<10	69	60	56	
MG52435		<20	0.26	<10	<10	69	70	48	
MG52436		<20	0.27	<10	<10	71	30	59	
MG52437		<20	0.30	<10	<10	43	90	69	2.26
MG52438		<20	0.35	<10	<10	89	50	80	
MG52439		<20	0.34	<10	<10	91	20	102	
MG52440		<20	0.32	<10	<10	83	30	67	
MG52441		<20	0.31	<10	<10	86	40	66	
MG52442		<20	1.73	<10	<10	190	<10	126	
MG52443		<20	0.63	<10	<10	266	20	124	
MG52444		<20	0.29	<10	<10	67	60	53	
MG52445		<20	0.32	<10	<10	70	20	65	
MG52446		<20	0.30	<10	<10	75	20	70	
MG52447		<20	0.22	<10	<10	51	20	37	1.155
MG52448		<20	0.34	<10	<10	75	20	70	
MG52449		<20	0.31	<10	<10	74	60	72	
MG52450		<20	0.31	<10	<10	75	40	62	
MG52451		<20	0.26	<10	<10	67	30	106	
MG52452		<20	0.27	<10	<10	48	30	25	1.895
MG52453		<20	0.26	<10	<10	65	80	60	

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HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	WEI-21b	LOG-QC	Au-AA26	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Pulp Wt	Pass75um	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	g	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOD	1	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01
MG52454		189	99.0	0.25	<0.5	6.75	2260	670	2.3	<2	1.48	<0.5	9	29	17	2.49
MG52455		196		0.51	<0.5	6.90	4730	530	2.4	<2	1.68	<0.5	10	79	20	2.57
MG52456		197		9.32	<0.5	5.03	>10000	470	1.8	<2	1.38	<0.5	8	139	7	2.32
MG52457		198		0.26	<0.5	6.25	1880	670	2.1	<2	1.69	<0.5	8	28	20	2.35
MG52458		175		1.05	<0.5	6.94	4570	640	2.5	<2	1.68	<0.5	11	108	26	3.18
MG52459		196		0.42	<0.5	6.57	>10000	290	1.2	<2	2.34	<0.5	9	31	8	2.97
MG52460		200		2.11	<0.5	7.03	1065	600	2.8	<2	1.76	<0.5	11	26	22	2.89
MG52461		198		0.20	<0.5	7.07	499	580	2.3	<2	1.18	<0.5	9	29	25	2.85
MG52462		201		0.11	<0.5	6.36	3950	600	2.4	<2	1.86	<0.5	10	26	19	2.63
MG52463		202		0.72	<0.5	6.37	2220	520	2.4	<2	1.66	<0.5	8	26	17	2.29
MG52464		201		0.01	<0.5	7.24	5	440	2.0	6	6.71	<0.5	42	95	49	8.92
MG52465		59		0.78	<0.5	6.70	39	190	<0.5	<2	6.61	0.6	43	95	167	8.04
MG52466		203		0.48	<0.5	7.03	5590	630	2.6	<2	1.99	<0.5	10	119	22	3.37
MG52467		200		0.09	<0.5	6.92	574	520	2.2	<2	1.82	<0.5	9	26	17	2.46
MG52468		197		0.11	<0.5	6.93	124	590	2.5	<2	1.78	<0.5	10	28	15	2.67
MG52469		184		0.20	<0.5	6.40	2160	570	2.1	2	2.14	<0.5	9	24	16	2.62
MG52470		201		0.46	<0.5	6.82	395	570	2.5	<2	1.85	<0.5	10	31	22	2.70
MG52471		198		2.76	<0.5	6.73	>10000	570	1.8	2	2.23	<0.5	8	112	9	2.79
MG52472		216		0.22	<0.5	7.05	3160	570	2.9	2	1.80	<0.5	10	30	18	2.79
MG52473		220		0.11	<0.5	8.01	943	650	3.0	<2	2.01	<0.5	11	38	20	3.30
MG52474		177		0.46	<0.5	6.59	1860	530	2.1	<2	2.55	<0.5	10	113	17	2.46
MG52475		198		0.13	<0.5	7.22	2120	600	2.9	<2	2.02	<0.5	10	130	32	3.01
MG52476		197		2.02	<0.5	6.90	1305	590	2.7	<2	1.98	<0.5	8	31	14	2.77
MG52477		197		0.35	<0.5	5.71	5970	580	2.0	<2	2.04	<0.5	8	176	13	2.33
MG52478		202		0.15	<0.5	7.04	295	660	2.8	<2	1.81	<0.5	9	83	15	2.55
MG52479		198		1.14	<0.5	7.61	19	650	2.4	2	1.67	<0.5	12	120	24	2.99
MG52480		192		0.23	3.8	7.76	782	660	3.1	<2	1.56	<0.5	14	136	42	3.37
MG52481		200		0.30	<0.5	7.75	2540	630	3.1	<2	1.92	<0.5	13	44	30	3.55
MG52482		204		0.13	<0.5	8.11	30	610	2.3	<2	1.72	<0.5	11	38	24	3.41
MG52483		201		0.08	<0.5	7.25	772	680	2.6	2	1.80	<0.5	10	35	15	2.75
MG52484		204		5.69	<0.5	6.10	>10000	520	1.5	<2	1.85	<0.5	7	136	20	2.45
MG52485		198		0.50	<0.5	7.60	>10000	750	2.4	<2	1.95	<0.5	9	95	15	3.27
MG52486		200		0.01	<0.5	7.69	7	490	2.2	3	7.54	<0.5	49	125	54	9.82
MG52487		58		1.67	<0.5	8.03	377	730	2.6	<2	0.94	<0.5	18	135	30	4.28
MG52488		202		0.23	<0.5	7.52	567	560	2.5	<2	2.15	<0.5	11	36	19	3.55
MG52489		193		0.55	<0.5	6.64	5470	580	2.1	<2	2.12	<0.5	9	22	25	2.68
MG52490		203		9.91	<0.5	6.69	4350	590	2.7	<2	1.51	<0.5	9	33	14	2.56
MG52491		199		0.27	<0.5	7.54	2770	740	2.8	<2	1.97	<0.5	12	129	48	3.34
MG52492		200		6.42	0.8	4.32	>10000	160	0.9	4	0.85	<0.5	5	237	7	2.49
MG52493		201		0.29	<0.5	6.27	2530	500	2.5	<2	1.88	<0.5	10	34	15	3.02

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To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Ga	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	0.01	10	10	0.01	5	1	0.01	1	10	2	0.01	5	1	1
MG52454		10	2.58	30	30	0.72	384	<1	2.70	14	540	15	0.25	<5	8	275
MG52455		20	2.06	30	30	0.80	424	2	3.33	15	600	16	0.28	<5	8	422
MG52456		10	2.08	20	20	0.54	307	2	1.92	13	430	18	0.64	<5	7	301
MG52457		10	2.59	20	20	0.72	398	1	2.41	14	640	18	0.18	<5	7	347
MG52458		20	3.05	20	30	0.96	501	1	2.61	19	710	22	0.32	6	10	322
MG52459		20	0.95	30	10	0.75	424	1	4.51	18	420	16	0.77	6	9	592
MG52460		20	2.72	30	20	0.88	471	<1	2.20	15	600	15	0.16	<5	9	351
MG52461		20	2.61	30	40	0.80	363	<1	1.92	15	600	18	0.13	<5	9	214
MG52462		20	2.54	20	30	0.80	435	1	2.35	14	580	24	0.27	<5	8	372
MG52463		20	2.27	30	30	0.70	396	<1	2.60	11	500	12	0.23	<5	7	304
MG52464		20	1.29	50	10	3.78	1470	3	2.52	97	3480	5	0.02	7	17	899
MG52465		10	0.39	10	10	3.61	1340	1	1.99	73	440	17	0.30	<5	39	130
MG52466		20	2.94	20	30	1.01	526	1	2.13	20	610	19	0.33	<5	11	418
MG52467		20	2.16	20	30	0.74	406	<1	2.88	13	570	17	0.14	<5	7	326
MG52468		20	2.46	30	40	0.84	470	<1	2.51	14	650	19	0.09	<5	8	318
MG52469		20	2.09	20	20	0.77	438	<1	2.74	11	480	18	0.25	<5	8	431
MG52470		20	2.40	20	30	0.85	461	1	2.55	13	610	37	0.11	<5	8	330
MG52471		20	1.98	20	10	0.79	434	1	3.76	15	590	9	0.75	<5	7	516
MG52472		20	2.42	20	40	0.87	405	<1	2.55	16	630	16	0.23	<5	8	346
MG52473		20	2.79	30	50	1.03	512	<1	2.71	16	750	15	0.18	<5	11	371
MG52474		20	2.01	20	20	0.85	490	1	2.99	13	370	22	0.19	<5	8	516
MG52475		20	2.81	30	40	0.95	488	2	1.96	21	790	27	0.27	<5	10	384
MG52476		20	2.37	30	40	0.88	447	1	2.56	13	640	73	0.25	<5	8	330
MG52477		20	2.52	20	20	0.72	379	1	2.00	13	510	13	0.37	<5	7	384
MG52478		20	2.67	20	40	0.83	408	2	2.30	16	630	17	0.12	<5	8	343
MG52479		20	2.49	30	140	0.91	460	1	2.21	18	700	14	0.10	<5	10	372
MG52480		20	3.02	30	40	1.06	515	2	1.90	20	810	18	0.15	<5	11	359
MG52481		20	3.03	30	40	1.12	528	1	2.16	19	900	20	0.25	<5	12	332
MG52482		20	2.62	30	40	1.05	573	1	2.30	17	820	23	0.06	<5	12	325
MG52483		20	2.64	30	50	0.84	427	1	2.43	13	620	16	0.13	<5	9	297
MG52484		10	1.75	20	10	0.65	375	2	3.47	12	370	14	0.75	<5	7	398
MG52485		20	2.92	20	20	0.79	399	1	3.32	16	630	30	0.92	5	8	539
MG52486		20	1.26	60	10	4.27	1560	4	2.78	112	4190	2	0.03	<5	18	1050
MG52487		20	2.88	40	60	1.83	421	1	0.79	71	820	18	0.16	364	15	162
MG52488		20	2.65	30	80	1.03	596	1	1.98	14	710	15	0.15	<5	11	364
MG52489		20	2.22	20	20	0.79	443	<1	2.97	11	370	11	0.38	6	8	437
MG52490		20	2.62	30	40	0.76	394	1	2.31	10	590	13	0.31	<5	8	258
MG52491		20	3.50	30	30	1.07	514	1	2.37	21	700	13	0.24	<5	12	420
MG52492		10	0.63	10	10	0.29	166	3	2.81	12	220	71	1.12	12	3	274
MG52493		20	2.45	20	30	0.89	488	<1	1.79	15	670	46	0.26	<5	10	334

***** See Appendix Page for comments regarding this certificate *****

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HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	As-OG46
	Analyte	Th	Ti	Tl	U	V	W	Zn	As
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOD	20	0.01	10	10	1	10	2	0.001
MG52454		<20	0.29	<10	<10	62	80	56	
MG52455		<20	0.29	<10	<10	67	120	61	
MG52456		<20	0.23	<10	<10	61	60	41	1.310
MG52457		<20	0.28	<10	<10	64	30	59	
MG52458		<20	0.33	<10	<10	96	50	81	
MG52459		<20	0.30	<10	<10	54	90	61	1.600
MG52460		<20	0.31	<10	<10	77	40	67	
MG52461		<20	0.31	<10	<10	74	30	71	
MG52462		<20	0.28	<10	<10	69	20	59	
MG52463		<20	0.26	<10	<10	62	20	49	
MG52464		<20	1.74	<10	<10	189	<10	126	
MG52465		<20	0.65	<10	<10	269	20	125	
MG52466		<20	0.33	<10	<10	94	30	90	
MG52467		<20	0.26	<10	<10	59	120	57	
MG52468		<20	0.29	<10	<10	68	110	60	
MG52469		<20	0.28	<10	<10	66	30	53	
MG52470		<20	0.30	<10	10	73	200	103	
MG52471		<20	0.27	<10	<10	48	50	29	1.445
MG52472		<20	0.29	<10	<10	73	170	62	
MG52473		<20	0.39	<10	<10	95	30	85	
MG52474		<20	0.29	<10	<10	63	50	58	
MG52475		<20	0.34	<10	10	89	30	90	
MG52476		<20	0.32	<10	<10	73	20	60	
MG52477		<20	0.26	<10	<10	66	30	44	
MG52478		<20	0.31	<10	<10	69	130	62	
MG52479		<20	0.34	<10	<10	81	30	82	
MG52480		<20	0.37	<10	<10	98	50	93	
MG52481		<20	0.40	<10	<10	103	30	100	
MG52482		<20	0.35	<10	<10	94	10	90	
MG52483		<20	0.31	<10	<10	75	10	65	
MG52484		<20	0.25	<10	<10	48	70	54	1.445
MG52485		<20	0.29	<10	<10	75	50	42	1.710
MG52486		<20	1.98	<10	<10	219	<10	146	
MG52487		<20	0.53	<10	<10	116	<10	105	
MG52488		<20	0.37	<10	<10	94	40	89	
MG52489		<20	0.28	<10	<10	65	40	64	
MG52490		<20	0.30	<10	<10	70	30	62	
MG52491		<20	0.36	<10	<10	109	60	122	
MG52492		<20	0.15	<10	<10	28	40	9	2.19
MG52493		<20	0.29	<10	<10	90	30	176	

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NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	WEI-21b	LOG-QC	Au-AA26	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Pulp Wt	Pass75um	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	g	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOD	1	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01
MG52494		176	83.0	1.27	<0.5	6.66	1010	500	2.5	<2	2.37	<0.5	9	24	19	2.79
MG52495		202		4.65	<0.5	4.75	>10000	230	1.4	<2	1.35	<0.5	7	171	5	2.27
MG52496		198		0.08	<0.5	6.96	478	790	2.5	<2	1.85	<0.5	9	108	17	2.75
MG52497		199		0.33	<0.5	7.28	1135	530	2.7	2	1.65	<0.5	10	81	25	3.02
MG52498		197		0.69	<0.5	6.65	>10000	450	1.8	2	1.87	<0.5	9	70	4	2.55
MG52499		198		0.23	<0.5	6.21	850	510	2.2	<2	1.44	<0.5	9	30	71	2.57
MG52500		199		0.18	<0.5	7.04	2990	540	2.9	<2	1.94	<0.5	9	26	26	2.68
MG52501		199		1.91	<0.5	5.96	>10000	60	0.8	2	2.04	<0.5	8	29	3	2.74
MG52502		201		0.02	<0.5	7.04	62	640	2.6	<2	1.78	<0.5	9	99	15	2.67
MG52503		199		0.56	<0.5	6.36	7450	190	1.4	<2	2.07	<0.5	8	94	2	2.18
MG52504		205		0.28	<0.5	6.27	6550	470	2.1	2	2.20	<0.5	10	126	35	2.69
MG52505		197		0.58	<0.5	6.47	6910	510	2.3	<2	2.17	<0.5	10	24	17	3.06
MG52506		203		0.24	<0.5	7.31	2360	600	2.7	2	1.65	<0.5	10	32	20	2.77
MG52507		195		0.48	<0.5	7.62	727	670	3.5	<2	1.82	<0.5	13	44	31	3.52
MG52508		196		0.01	<0.5	7.35	<5	450	2.1	<2	6.97	<0.5	44	110	50	9.02
MG52509		61		1.64	<0.5	7.81	364	710	2.5	2	0.91	<0.5	18	131	29	4.17
MG52510		201		0.12	<0.5	7.39	329	480	2.4	<2	1.63	<0.5	10	75	20	2.93
MG52511		202		0.16	<0.5	6.44	6380	600	2.1	<2	1.79	<0.5	7	27	14	2.48
MG52512		189		0.24	<0.5	6.66	781	630	2.5	<2	2.21	<0.5	9	31	16	2.83
MG52513		197		0.21	<0.5	7.53	1260	570	2.7	<2	1.56	<0.5	12	108	26	3.37
MG52514		194		0.06	<0.5	7.63	516	560	2.6	<2	1.76	<0.5	11	43	31	3.12
MG52515		198		0.26	<0.5	7.53	469	490	2.6	2	1.68	<0.5	9	73	20	2.56
MG52516		204		0.22	<0.5	6.87	4630	600	2.6	<2	2.22	<0.5	11	119	27	3.06
MG52517		198		0.10	<0.5	7.29	499	580	2.6	<2	1.31	<0.5	10	69	24	2.96
MG52518		202		0.05	<0.5	7.11	1780	620	2.5	<2	2.09	<0.5	10	85	17	2.72
MG52519		199		0.24	<0.5	6.76	4650	600	2.7	<2	1.35	<0.5	9	36	17	2.57
MG52520		200		0.24	<0.5	6.82	9180	460	2.3	<2	2.23	<0.5	10	73	17	2.90
MG52521		186		0.32	<0.5	7.34	285	540	2.1	<2	1.55	<0.5	9	25	19	2.72
MG52522		202		0.10	<0.5	7.83	4060	580	2.8	<2	1.90	<0.5	10	35	23	3.03
MG52523		203		1.17	<0.5	6.51	4600	580	2.4	<2	1.88	<0.5	9	119	26	2.40
MG52524		198		0.50	<0.5	6.84	2210	540	2.4	<2	1.67	<0.5	9	27	23	2.58
MG52525		201		0.44	<0.5	7.97	106	700	3.3	<2	1.40	<0.5	12	128	32	3.68
MG52526		200		0.63	<0.5	6.86	7120	640	2.7	2	1.88	<0.5	9	31	24	2.74
MG52527		184		1.01	<0.5	6.84	>10000	570	2.1	3	1.86	<0.5	10	117	15	2.70
MG52528		201		1.10	<0.5	7.06	6470	580	2.6	2	1.90	<0.5	10	31	13	2.57
MG52529		202		1.04	0.6	5.85	>10000	110	1.1	<2	1.69	<0.5	7	107	1	2.28
MG52530		177		<0.01	<0.5	7.18	<5	460	2.1	8	7.00	<0.5	44	108	55	9.22
MG52531		61		0.75	<0.5	6.72	41	190	<0.5	<2	6.56	0.5	43	97	165	7.99
MG52532		196		0.03	<0.5	7.10	29	660	2.8	<2	2.03	<0.5	8	81	12	2.56
MG52533		198		0.80	<0.5	6.15	>10000	580	2.3	2	1.64	<0.5	9	132	11	3.24

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	Analyte	Ga	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	0.01	10	10	0.01	5	1	0.01	1	10	2	0.01	5	1	1
MG52494		20	2.28	20	20	0.88	498	1	2.11	11	610	21	0.15	<5	8	450
MG52495		10	1.02	20	10	0.46	289	2	2.66	10	340	47	0.77	12	6	356
MG52496		20	2.91	20	40	0.87	438	1	2.10	15	690	21	0.11	<5	9	363
MG52497		20	2.66	30	20	0.90	479	2	2.30	17	690	21	0.18	<5	10	284
MG52498		20	1.55	20	10	0.69	359	1	4.03	13	480	13	0.87	5	7	452
MG52499		20	2.22	20	50	0.73	384	1	1.83	13	500	71	0.13	<5	8	233
MG52500		20	2.75	20	30	0.87	441	1	2.09	11	700	28	0.27	<5	9	316
MG52501		20	0.17	20	<10	0.60	375	1	4.73	8	310	19	0.89	11	7	476
MG52502		20	2.53	30	40	0.85	417	1	2.39	13	610	15	0.10	<5	8	354
MG52503		20	0.83	20	10	0.65	367	2	4.12	10	510	21	0.39	5	7	454
MG52504		20	2.01	30	20	0.82	559	2	2.84	13	710	19	0.41	<5	9	467
MG52505		20	2.45	20	20	0.83	461	1	2.02	9	560	17	0.44	5	8	456
MG52506		20	2.43	20	40	0.87	442	<1	2.65	15	630	18	0.18	<5	9	329
MG52507		20	3.27	30	50	1.04	500	1	1.71	19	720	27	0.14	<5	12	439
MG52508		30	1.28	50	10	3.92	1510	3	2.56	95	3760	<2	0.03	<5	17	947
MG52509		20	2.86	40	60	1.78	416	1	0.77	65	790	20	0.15	348	15	157
MG52510		20	2.73	30	20	0.91	470	1	2.24	16	690	19	0.16	<5	10	240
MG52511		20	2.42	20	20	0.71	399	<1	2.85	10	520	14	0.39	<5	7	413
MG52512		20	2.66	20	30	0.89	515	<1	2.46	10	720	21	0.18	<5	9	369
MG52513		20	2.62	30	50	1.02	511	1	2.40	19	750	23	0.16	<5	11	315
MG52514		20	2.81	30	50	0.99	521	1	2.30	18	740	18	0.16	<5	11	301
MG52515		20	2.69	30	20	0.76	408	1	2.49	13	690	23	0.20	<5	9	260
MG52516		20	2.91	20	30	0.97	545	1	2.37	19	640	23	0.29	<5	11	493
MG52517		20	2.62	30	30	0.92	456	1	2.45	14	790	22	0.08	<5	10	261
MG52518		20	2.50	20	40	0.89	469	1	2.52	16	760	24	0.17	<5	9	341
MG52519		20	2.66	30	40	0.70	358	1	2.28	14	750	16	0.33	<5	8	238
MG52520		20	1.87	20	30	0.83	429	1	3.45	12	620	11	0.55	6	8	531
MG52521		20	2.30	30	70	0.78	402	<1	2.50	11	660	16	0.06	5	9	322
MG52522		20	2.44	30	30	0.90	476	1	3.32	14	730	13	0.30	<5	10	424
MG52523		20	2.30	20	20	0.76	414	1	3.08	13	650	17	0.28	<5	8	366
MG52524		20	2.38	20	30	0.80	430	2	2.31	10	600	19	0.19	<5	8	320
MG52525		20	3.30	30	60	1.13	521	1	1.67	30	860	21	0.20	<5	13	238
MG52526		20	2.44	30	30	0.88	448	<1	2.96	15	600	25	0.44	<5	9	381
MG52527		20	2.26	20	20	0.83	409	1	3.08	20	420	13	0.66	<5	10	450
MG52528		20	2.32	20	20	0.84	428	<1	3.31	15	590	15	0.40	5	9	412
MG52529		10	0.50	20	<10	0.53	296	1	4.05	12	390	25	0.72	7	6	391
MG52530		20	1.29	50	10	4.01	1530	3	2.58	105	3810	5	0.02	<5	16	961
MG52531		20	0.38	10	10	3.64	1365	1	1.95	79	460	17	0.30	<5	39	131
MG52532		20	2.35	20	50	0.87	446	1	2.70	15	630	18	0.07	<5	8	345
MG52533		20	2.44	20	10	0.61	352	2	2.38	13	630	19	1.16	8	7	343

***** See Appendix Page for comments regarding this certificate *****

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To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	As-OG46
	Analyte	Th	Ti	Tl	U	V	W	Zn	As
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOD	20	0.01	10	10	1	10	2	0.001
MG52494		<20	0.26	<10	<10	75	20	59	
MG52495		<20	0.19	<10	<10	53	40	43	1.560
MG52496		<20	0.30	<10	<10	77	110	67	
MG52497		<20	0.32	<10	<10	79	60	75	
MG52498		<20	0.24	<10	<10	46	70	28	1.790
MG52499		<20	0.27	<10	<10	67	30	84	
MG52500		<20	0.29	<10	<10	70	80	66	
MG52501		<20	0.26	<10	10	40	100	18	1.780
MG52502		<20	0.30	<10	<10	72	20	60	
MG52503		<20	0.25	<10	<10	50	50	72	
MG52504		<20	0.32	<10	<10	86	20	78	
MG52505		<20	0.26	<10	<10	67	30	48	
MG52506		<20	0.28	<10	<10	75	60	63	
MG52507		<20	0.31	<10	<10	98	30	95	
MG52508		<20	1.75	<10	<10	209	<10	133	
MG52509		<20	0.50	<10	<10	114	<10	101	
MG52510		<20	0.32	<10	<10	74	20	84	
MG52511		<20	0.27	<10	<10	60	50	52	
MG52512		<20	0.30	<10	<10	74	50	66	
MG52513		<20	0.36	<10	<10	96	30	90	
MG52514		<20	0.35	<10	<10	90	20	85	
MG52515		<20	0.31	<10	<10	69	20	88	
MG52516		<20	0.34	<10	<10	101	30	93	
MG52517		<20	0.34	<10	<10	85	30	86	
MG52518		<20	0.30	<10	<10	73	340	64	
MG52519		<20	0.30	<10	<10	74	150	60	
MG52520		<20	0.27	<10	<10	66	60	51	
MG52521		<20	0.29	<10	<10	73	30	61	
MG52522		<20	0.33	<10	<10	87	40	71	
MG52523		<20	0.29	<10	<10	73	50	62	
MG52524		<20	0.28	<10	<10	72	40	59	
MG52525		<20	0.37	<10	<10	102	100	98	
MG52526		<20	0.30	<10	<10	78	80	64	
MG52527		<20	0.32	<10	<10	89	50	78	1.325
MG52528		<20	0.29	<10	<10	75	70	60	
MG52529		<20	0.25	<10	<10	41	50	22	1.435
MG52530		<20	1.79	<10	<10	207	<10	132	
MG52531		<20	0.64	<10	<10	290	20	127	
MG52532		<20	0.29	<10	<10	70	40	56	
MG52533		<20	0.26	<10	<10	65	50	36	2.17

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To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	WEI-21b	LOG-QC	Au-AA26	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Pulp Wt	Pass75um	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	g	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOD	1	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01
MG52534		187	98.0	4.13	<0.5	6.62	>10000	480	1.9	<2	2.03	<0.5	10	68	7	2.93
MG52535		187		0.13	<0.5	7.55	1035	600	2.6	<2	1.38	<0.5	8	27	14	2.51
MG52536		187		0.78	<0.5	6.83	>10000	510	1.7	<2	2.51	<0.5	9	97	6	2.75
MG52537		199		0.62	<0.5	5.72	>10000	480	1.9	<2	1.53	<0.5	8	25	14	2.36
MG52538		184		0.22	<0.5	6.68	5080	650	2.6	2	2.06	<0.5	11	114	23	2.75
MG52539		197		0.34	<0.5	7.41	>10000	570	2.0	<2	2.50	<0.5	9	75	11	2.85
MG52540		196		0.09	<0.5	7.15	201	600	2.6	<2	1.65	<0.5	10	93	26	2.86
MG52541		196		0.01	<0.5	7.70	238	720	2.9	<2	1.42	<0.5	10	32	24	2.90
MG52542		197		<0.01	<0.5	7.24	34	450	2.0	3	6.44	<0.5	41	112	47	8.48
MG52543		196		0.37	<0.5	7.88	2490	730	3.2	<2	1.54	<0.5	13	44	32	3.76
MG52544		204		1.40	<0.5	6.50	5220	650	2.2	2	1.94	<0.5	9	117	23	2.44
MG52545		190		0.19	<0.5	6.95	6190	630	2.1	<2	2.47	<0.5	10	89	15	2.79
MG52546		198		0.30	<0.5	5.05	>10000	480	1.6	<2	1.39	<0.5	6	27	4	2.38
MG52547		195		2.31	<0.5	7.18	4390	700	2.5	<2	1.78	<0.5	9	31	25	2.63
MG52548		174		0.43	<0.5	6.88	4250	680	2.5	<2	1.73	<0.5	9	31	24	2.59
MG52549		197		7.69	<0.5	7.30	289	640	2.5	<2	1.72	<0.5	8	32	16	2.69
MG52550		195		1.79	<0.5	6.82	581	660	2.9	<2	1.56	<0.5	10	102	18	2.96
MG52551		196		0.93	1.3	7.07	979	520	2.5	<2	1.35	<0.5	9	81	23	2.78
MG52552		197		<0.01	<0.5	7.38	<5	450	2.1	3	6.88	<0.5	42	106	70	9.12
MG52553		60		1.59	<0.5	7.72	366	700	2.5	<2	0.90	<0.5	17	126	28	4.10
MG52554		202		0.42	<0.5	6.50	9990	480	2.2	<2	1.95	<0.5	9	32	16	2.88
MG52555		204		0.11	<0.5	7.26	3470	620	3.1	2	1.85	<0.5	10	42	25	3.27
MG52556		201		0.42	<0.5	7.13	683	520	2.4	<2	1.54	<0.5	9	22	18	2.52
MG52557		197		0.11	<0.5	7.22	86	530	2.5	<2	2.18	<0.5	10	82	16	2.80
MG52558		198		0.13	<0.5	6.46	4200	490	2.2	<2	1.94	<0.5	9	26	31	2.63
MG52559		189		0.08	<0.5	6.76	236	620	2.5	<2	1.68	<0.5	10	74	19	2.89
MG52560		197		2.18	<0.5	6.67	1640	600	2.5	<2	2.09	<0.5	9	102	24	2.49
MG52561		201		0.02	<0.5	7.26	27	500	2.3	<2	1.66	<0.5	10	87	16	2.80
MG52562		182		<0.01	<0.5	7.37	114	620	2.5	<2	1.69	<0.5	12	37	25	3.22
MG52563		204		1.02	<0.5	6.22	2060	420	1.9	<2	1.41	<0.5	8	89	25	1.95
MG52564		181		0.46	<0.5	6.54	1610	830	3.3	<2	1.44	<0.5	13	110	38	3.58
MG52565		199		1.92	<0.5	7.32	6380	570	2.9	<2	1.94	<0.5	12	96	23	3.61
MG52566		201		0.06	<0.5	8.65	83	760	3.2	3	2.23	<0.5	13	82	29	3.88
MG52567		206		1.39	0.5	7.13	91	550	2.6	<2	2.06	<0.5	10	92	41	3.23
MG52568		200		0.37	0.7	6.03	3320	320	2.0	<2	2.25	<0.5	10	23	20	2.56
MG52569		197		0.27	<0.5	6.47	16	630	2.5	<2	1.67	<0.5	10	91	19	2.83
MG52570		198		0.22	<0.5	6.88	1245	760	2.6	<2	1.69	<0.5	9	93	13	2.41
MG52571		204		2.25	<0.5	5.57	>10000	360	2.1	<2	1.78	<0.5	8	23	8	2.62
MG52572		198		0.20	<0.5	6.28	3730	320	1.7	<2	2.11	<0.5	9	109	5	2.84
MG52573		202		0.08	<0.5	7.49	122	640	2.8	<2	1.41	<0.5	11	40	28	3.43

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51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Ga	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	0.01	10	10	0.01	5	1	0.01	1	10	2	0.01	5	1	1
MG52534		20	1.92	30	10	0.78	405	2	3.28	17	320	15	1.02	<5	8	484
MG52535		20	2.39	30	50	0.71	420	<1	2.55	14	580	16	0.15	<5	8	255
MG52536		20	1.82	20	10	0.94	503	1	4.00	18	390	11	0.74	5	9	585
MG52537		10	2.19	20	20	0.64	367	<1	2.24	13	450	25	0.52	<5	7	355
MG52538		20	2.82	20	30	0.85	504	1	2.47	17	610	19	0.40	<5	9	359
MG52539		20	2.64	20	20	0.88	487	1	3.83	14	240	7	0.55	<5	9	620
MG52540		20	2.38	20	40	0.89	446	1	2.26	15	730	17	0.15	<5	9	326
MG52541		20	2.72	20	50	0.92	438	<1	2.54	19	730	17	0.15	<5	10	276
MG52542		20	1.28	50	20	3.64	1440	3	2.49	97	3510	5	0.02	<5	16	890
MG52543		20	3.51	30	50	1.12	561	<1	1.88	25	770	16	0.30	<5	12	298
MG52544		20	2.52	20	20	0.80	420	1	2.60	16	500	16	0.36	<5	8	384
MG52545		20	2.79	20	20	0.87	481	1	3.20	19	310	9	0.35	<5	9	617
MG52546		10	1.56	20	20	0.52	336	1	2.29	9	380	21	0.62	<5	5	330
MG52547		20	3.01	20	30	0.80	410	<1	2.77	15	510	15	0.39	<5	9	344
MG52548		20	2.97	20	30	0.78	403	<1	2.72	17	510	16	0.39	<5	9	338
MG52549		20	2.44	30	40	0.86	424	<1	2.55	17	650	22	0.10	<5	8	314
MG52550		20	2.94	20	40	0.84	506	1	2.40	17	680	25	0.21	<5	10	323
MG52551		20	2.33	20	50	0.84	436	1	2.32	18	680	17	0.13	<5	10	307
MG52552		20	1.30	60	10	3.95	1515	2	2.59	102	3700	6	0.02	<5	17	932
MG52553		20	2.79	40	60	1.76	416	1	0.74	68	780	19	0.15	341	15	154
MG52554		20	2.14	20	20	0.79	456	1	2.68	17	300	23	0.52	<5	10	469
MG52555		20	2.93	30	50	0.98	496	1	1.95	20	630	12	0.30	<5	10	390
MG52556		20	2.20	20	40	0.76	434	<1	2.64	12	500	17	0.17	<5	8	259
MG52557		20	2.20	30	50	0.91	492	1	2.51	17	680	22	0.09	<5	9	360
MG52558		20	2.08	20	20	0.78	466	<1	2.73	18	540	13	0.32	<5	8	412
MG52559		20	2.89	20	50	0.99	478	1	1.61	17	720	25	0.05	<5	9	277
MG52560		20	2.18	20	30	0.80	425	1	3.29	14	530	14	0.21	<5	8	408
MG52561		20	2.24	20	40	0.75	482	1	2.50	15	650	18	0.04	<5	9	291
MG52562		20	2.74	20	50	1.01	490	<1	2.44	21	740	20	0.10	<5	10	300
MG52563		20	1.64	20	20	0.52	370	1	3.53	9	470	13	0.37	<5	6	271
MG52564		20	3.71	20	40	1.08	497	1	2.10	27	870	21	0.27	<5	10	287
MG52565		20	3.17	20	30	1.04	531	2	1.89	20	780	25	0.42	<5	11	314
MG52566		20	3.91	30	30	1.22	597	1	1.95	20	940	27	0.09	<5	13	288
MG52567		20	3.09	20	20	1.00	509	1	1.97	21	770	102	0.25	<5	10	293
MG52568		20	1.88	20	20	0.80	406	<1	2.25	8	420	11	0.46	<5	7	374
MG52569		20	2.64	10	60	0.84	446	1	2.38	18	670	17	0.09	<5	8	275
MG52570		20	2.93	20	30	0.78	360	1	2.75	16	560	19	0.12	<5	8	360
MG52571		10	1.76	20	20	0.68	441	<1	2.53	11	480	18	0.61	<5	6	340
MG52572		20	1.24	20	10	0.89	516	1	3.73	16	650	8	0.20	<5	9	499
MG52573		20	3.10	20	70	1.04	476	1	2.01	19	820	21	0.21	<5	11	227

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CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	As-OG46
	Analyte	Th	Ti	Tl	U	V	W	Zn	As
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOD	20	0.01	10	10	1	10	2	0.001
MG52534		<20	0.29	<10	<10	59	80	46	2.02
MG52535		<20	0.29	<10	<10	65	40	59	
MG52536		<20	0.28	<10	<10	55	60	66	1.490
MG52537		<20	0.25	<10	<10	66	30	49	1.025
MG52538		<20	0.31	<10	<10	80	60	59	
MG52539		<20	0.30	<10	<10	67	50	40	1.030
MG52540		<20	0.32	<10	<10	82	40	71	
MG52541		<20	0.32	<10	<10	79	20	68	
MG52542		<20	1.68	<10	<10	197	<10	126	
MG52543		<20	0.41	<10	<10	110	40	100	
MG52544		<20	0.28	<10	<10	75	30	59	
MG52545		<20	0.31	<10	<10	68	40	74	
MG52546		<20	0.20	<10	<10	44	40	25	1.225
MG52547		<20	0.30	<10	<10	79	40	67	
MG52548		<20	0.30	<10	<10	79	40	67	
MG52549		<20	0.30	<10	<10	69	20	63	
MG52550		<20	0.32	<10	<10	87	50	84	
MG52551		<20	0.30	<10	<10	81	30	73	
MG52552		<20	1.76	<10	<10	203	<10	132	
MG52553		20	0.50	<10	<10	108	<10	99	
MG52554		<20	0.29	<10	<10	85	70	108	
MG52555		<20	0.34	<10	<10	91	40	76	
MG52556		<20	0.28	<10	<10	66	20	57	
MG52557		<20	0.32	<10	<10	75	40	67	
MG52558		<20	0.29	<10	<10	76	30	60	
MG52559		<20	0.31	<10	<10	75	10	89	
MG52560		<20	0.29	<10	<10	68	50	65	
MG52561		<20	0.30	<10	<10	72	20	74	
MG52562		<20	0.35	<10	<10	86	10	86	
MG52563		<20	0.24	<10	<10	51	70	47	
MG52564		<20	0.37	<10	<10	97	60	98	
MG52565		<20	0.35	<10	<10	96	40	94	
MG52566		<20	0.42	<10	<10	101	100	104	
MG52567		<20	0.34	<10	10	85	30	204	
MG52568		<20	0.26	<10	<10	56	30	38	
MG52569		<20	0.32	<10	<10	75	20	72	
MG52570		<20	0.26	<10	<10	62	60	59	
MG52571		<20	0.24	<10	<10	55	60	43	1.170
MG52572		<20	0.27	<10	<10	63	70	37	
MG52573		<20	0.35	<10	<10	91	70	93	

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Sample Description	Method	WEI-21b	LOG-QC	Au-AA26	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Pulp Wt	Pass75um	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	g	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOD	1	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01
MG52574		186	89.0	<0.01	<0.5	7.14	<5	460	2.1	<2	7.23	<0.5	46	107	51	9.50
MG52575		60		0.75	<0.5	6.68	38	190	<0.5	<2	6.75	0.6	44	94	166	8.24
MG52576		196		0.34	<0.5	6.56	4510	620	2.4	<2	2.10	<0.5	9	29	15	2.76
MG52577		182		0.16	<0.5	6.75	681	490	2.3	<2	1.93	<0.5	9	93	14	2.65
MG52578		197		2.41	<0.5	7.05	3230	550	2.6	<2	2.12	<0.5	11	98	19	2.75
MG52579		196		0.27	<0.5	5.50	4630	500	2.2	<2	1.48	<0.5	9	173	15	2.09
MG52580		197		0.15	<0.5	6.88	1220	610	2.3	2	2.16	<0.5	10	93	19	2.43
MG52581		197		0.25	<0.5	6.62	1545	520	2.4	<2	1.72	<0.5	9	117	14	2.47
MG52582		202		0.17	<0.5	7.12	1045	630	2.9	<2	1.55	<0.5	12	97	19	2.82
MG52583		195		0.14	<0.5	7.87	2520	710	3.3	<2	1.36	<0.5	11	39	26	3.48
MG52584		199		0.38	<0.5	7.18	613	720	3.3	<2	1.69	<0.5	13	99	31	3.61
MG52585		196		0.19	<0.5	6.67	2300	660	3.0	2	1.50	<0.5	11	119	21	3.33
MG52586		199		0.78	<0.5	6.89	180	570	2.2	<2	1.35	<0.5	9	28	16	2.50
MG52587		199		0.19	<0.5	7.46	1280	740	3.3	<2	1.80	<0.5	12	40	36	3.65
MG52588		199		0.13	<0.5	6.29	1460	550	2.5	<2	1.90	<0.5	10	126	23	2.64
MG52589		198		0.44	<0.5	6.70	7040	680	2.4	<2	1.93	<0.5	8	101	16	2.37
MG52590		198		0.46	<0.5	5.67	>10000	50	0.8	<2	2.04	<0.5	7	169	4	2.37
MG52591		199		1.01	<0.5	6.26	4090	550	2.6	<2	2.18	<0.5	10	124	21	2.57
MG52592		197		0.25	<0.5	6.95	4430	570	2.6	<2	1.66	<0.5	11	33	23	3.22
MG52593		197		0.19	<0.5	7.35	388	580	2.8	<2	2.03	<0.5	11	99	21	3.12
MG52594		196		0.10	<0.5	6.89	119	530	2.5	<2	1.69	<0.5	9	91	14	2.68
MG52595		196		0.34	<0.5	7.14	2770	460	2.3	<2	1.80	<0.5	10	87	25	3.27
MG52596		198		<0.01	<0.5	6.98	14	440	2.1	2	6.90	<0.5	44	124	49	9.04
MG52597		60		1.66	<0.5	7.45	356	680	2.4	<2	0.86	<0.5	18	129	28	4.16
MG52598		198		0.07	<0.5	7.03	101	470	2.1	<2	1.50	<0.5	9	66	19	2.74
MG52599		199		0.09	<0.5	7.27	344	490	2.7	<2	1.34	<0.5	9	71	24	3.00
MG52600		197		0.45	<0.5	6.48	3210	500	2.5	2	1.92	<0.5	10	28	21	2.78
MG52601		197		9.59	0.5	5.13	7280	410	1.6	<2	1.66	<0.5	7	160	12	1.94
MG52602		199		0.50	<0.5	6.44	1760	490	2.6	<2	1.42	<0.5	8	110	13	2.14
MG52603		199		0.17	<0.5	7.08	86	430	2.4	<2	1.27	<0.5	9	65	16	2.53
MG52604		198		0.33	<0.5	7.09	1465	340	2.2	<2	1.58	<0.5	10	95	26	2.55
MG52605		199		0.08	<0.5	7.29	69	440	2.5	<2	1.63	<0.5	8	88	14	2.84
MG52606		198		1.33	<0.5	7.85	5230	690	2.7	3	1.39	<0.5	11	75	25	3.36
MG52607		200		1.40	<0.5	7.48	>10000	490	1.8	<2	2.27	<0.5	10	98	1	2.89
MG52608		195		0.47	<0.5	7.31	175	520	2.4	<2	1.30	<0.5	9	105	16	3.00
MG52609		197		0.11	<0.5	7.36	3090	560	2.6	<2	1.56	<0.5	10	97	14	3.01
MG52610		201		0.03	<0.5	6.89	315	480	2.4	<2	1.65	<0.5	8	129	14	2.67
MG52611		202		0.20	<0.5	6.94	3270	610	2.9	<2	1.68	<0.5	8	124	11	2.61
MG52612		204		0.20	<0.5	6.70	1535	480	2.7	<2	1.40	<0.5	8	89	20	2.88
MG52613		200		0.25	<0.5	6.41	4150	470	2.8	<2	2.06	<0.5	8	133	18	2.74

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To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Ga	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	0.01	10	10	0.01	5	1	0.01	1	10	2	0.01	5	1	1
MG52574		30	1.27	50	10	4.09	1515	3	2.70	104	3980	<2	0.03	<5	17	979
MG52575		20	0.40	<10	10	3.76	1365	1	2.04	76	470	16	0.31	<5	39	132
MG52576		20	2.78	20	30	0.85	442	1	2.47	12	610	24	0.33	<5	8	398
MG52577		20	2.62	20	20	0.85	470	2	2.26	13	620	15	0.17	<5	8	263
MG52578		20	2.58	20	50	0.86	438	2	2.46	16	620	25	0.23	<5	8	368
MG52579		20	2.41	20	30	0.66	323	2	1.79	16	520	11	0.30	<5	7	255
MG52580		20	2.47	20	30	0.80	437	1	2.84	14	650	15	0.15	<5	8	405
MG52581		20	2.36	20	40	0.78	418	1	2.40	13	640	12	0.22	<5	8	281
MG52582		20	2.79	20	50	0.93	446	1	2.69	18	740	16	0.18	<5	9	257
MG52583		20	3.29	30	60	1.03	465	<1	2.30	17	790	16	0.26	<5	11	217
MG52584		20	3.50	20	60	1.18	531	1	2.28	23	810	15	0.22	<5	11	265
MG52585		20	3.23	20	60	1.03	496	2	1.79	22	760	21	0.19	<5	10	214
MG52586		20	2.37	30	50	0.69	388	1	2.41	10	610	21	0.07	<5	8	242
MG52587		20	3.33	20	40	1.04	502	1	1.93	24	930	19	0.20	<5	11	311
MG52588		20	2.63	20	40	0.84	438	1	2.00	14	530	14	0.25	<5	8	285
MG52589		20	2.61	20	20	0.81	424	1	3.23	14	640	11	0.39	<5	7	396
MG52590		20	0.19	20	10	0.58	345	2	4.55	14	590	25	0.68	7	6	477
MG52591		20	2.42	20	30	0.84	470	1	2.32	14	700	15	0.29	<5	8	402
MG52592		20	2.68	20	40	0.90	474	1	2.27	16	770	26	0.39	<5	9	253
MG52593		20	2.77	30	50	0.97	494	1	2.30	14	740	24	0.10	<5	10	328
MG52594		20	2.29	20	20	0.88	444	2	2.83	14	640	17	0.07	<5	8	358
MG52595		20	2.59	20	20	1.00	515	1	2.24	17	740	24	0.18	<5	10	364
MG52596		20	1.18	60	10	3.98	1465	3	2.56	103	3770	3	0.02	<5	16	940
MG52597		20	2.80	40	60	1.77	404	1	0.75	67	760	19	0.14	331	14	149
MG52598		20	2.25	20	30	0.81	442	1	2.59	15	670	20	0.05	<5	9	229
MG52599		20	2.49	30	30	0.91	498	1	2.47	16	670	23	0.09	<5	9	339
MG52600		20	2.18	20	30	0.80	506	1	2.64	12	540	25	0.30	<5	8	301
MG52601		10	1.62	20	10	0.58	359	2	2.73	13	380	86	0.37	<5	6	367
MG52602		20	2.14	30	30	0.69	343	2	2.49	11	510	16	0.20	<5	7	309
MG52603		20	2.46	30	20	0.75	405	1	2.73	13	630	19	0.16	<5	8	203
MG52604		20	1.44	30	20	0.82	408	1	4.17	15	720	21	0.14	<5	9	334
MG52605		20	2.62	30	20	0.90	455	2	2.37	16	700	21	0.07	<5	9	278
MG52606		20	2.99	30	20	1.02	518	2	3.05	19	750	24	0.29	<5	12	372
MG52607		20	1.70	20	10	0.86	431	1	4.75	16	620	6	0.95	6	9	579
MG52608		20	2.18	20	50	0.88	465	2	2.88	16	700	21	0.07	<5	9	325
MG52609		20	2.48	20	40	0.97	479	1	3.10	16	670	17	0.22	<5	10	340
MG52610		20	2.22	20	50	0.78	416	2	2.08	14	620	18	0.08	<5	8	380
MG52611		20	2.68	20	30	0.86	417	1	2.34	17	750	18	0.21	<5	8	281
MG52612		20	2.21	20	30	0.86	467	2	2.42	17	620	25	0.14	<5	9	310
MG52613		20	2.48	20	20	0.90	458	4	1.85	12	600	15	0.37	<5	8	355

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To: MATAKANUI GOLD LIMITED
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51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	As-OG46
	Analyte	Th	Ti	Tl	U	V	W	Zn	As
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOD	20	0.01	10	10	1	10	2	0.001
MG52574		<20	1.84	<10	<10	211	<10	139	
MG52575		<20	0.64	<10	<10	278	20	133	
MG52576		<20	0.27	<10	<10	65	50	59	
MG52577		<20	0.28	<10	<10	63	20	66	
MG52578		<20	0.28	<10	<10	71	170	61	
MG52579		<20	0.25	<10	<10	70	20	50	
MG52580		<20	0.29	<10	<10	69	30	61	
MG52581		<20	0.27	<10	10	67	40	56	
MG52582		<20	0.32	<10	<10	80	40	72	
MG52583		<20	0.38	<10	<10	98	20	89	
MG52584		<20	0.39	<10	<10	102	160	95	
MG52585		<20	0.35	<10	<10	97	30	92	
MG52586		<20	0.28	<10	<10	64	20	58	
MG52587		<20	0.38	<10	<10	97	60	96	
MG52588		<20	0.29	<10	<10	71	30	61	
MG52589		<20	0.28	<10	10	68	50	58	
MG52590		<20	0.23	<10	<10	34	70	16	1.305
MG52591		<20	0.26	<10	<10	74	50	56	
MG52592		<20	0.32	<10	10	81	40	72	
MG52593		<20	0.34	<10	<10	86	30	79	
MG52594		<20	0.31	<10	10	71	30	65	
MG52595		<20	0.32	<10	<10	80	50	88	
MG52596		<20	1.78	10	<10	203	<10	130	
MG52597		20	0.48	<10	<10	107	<10	98	
MG52598		<20	0.29	<10	<10	68	10	71	
MG52599		<20	0.30	<10	<10	74	20	81	
MG52600		<20	0.27	<10	<10	66	40	56	
MG52601		<20	0.20	<10	<10	48	60	47	
MG52602		<20	0.27	<10	<10	63	50	52	
MG52603		<20	0.30	<10	<10	63	20	66	
MG52604		20	0.34	<10	<10	79	30	69	
MG52605		<20	0.31	<10	<10	68	40	62	
MG52606		20	0.36	<10	<10	101	40	94	
MG52607		<20	0.32	<10	<10	56	110	24	1.745
MG52608		<20	0.34	<10	<10	82	10	75	
MG52609		<20	0.35	<10	<10	86	40	79	
MG52610		<20	0.29	<10	<10	72	20	64	
MG52611		<20	0.31	<10	<10	74	100	60	
MG52612		<20	0.31	<10	<10	78	30	78	
MG52613		<20	0.29	<10	<10	82	50	54	

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To: MATAKANUI GOLD LIMITED
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51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	WEI-21b	LOG-QC	Au-AA26	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Pulp Wt	Pass75um	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	g	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOD	1	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01
MG52614		172	98.0	0.98	<0.5	6.80	6120	560	2.2	2	2.09	<0.5	8	123	15	2.48
MG52615		197		0.62	<0.5	7.82	2790	630	3.0	2	1.76	<0.5	11	113	30	3.72
MG52616		202		0.14	<0.5	7.08	133	480	2.4	2	1.61	<0.5	9	123	23	2.96
MG52617		200		0.07	<0.5	6.83	1155	650	2.8	<2	1.72	<0.5	8	34	25	2.54
MG52618		198		<0.01	<0.5	7.32	9	470	2.2	<2	7.41	0.6	46	118	51	9.53
MG52619		64		0.75	<0.5	6.81	43	190	<0.5	<2	6.84	0.7	42	101	166	8.09
MG52620		198		0.13	<0.5	7.13	67	480	2.5	<2	1.19	<0.5	8	75	11	2.46
MG52621		200		0.21	<0.5	6.59	1360	620	2.6	<2	1.95	<0.5	8	113	15	2.51
MG52622		202		0.34	<0.5	7.26	1190	510	2.7	<2	2.22	<0.5	9	111	23	3.50
MG52623		203		0.17	<0.5	7.51	1095	570	2.7	<2	1.67	<0.5	9	88	19	3.22
MG52624		201		0.22	<0.5	6.97	3860	680	2.9	<2	1.80	<0.5	8	98	16	2.55
MG52625		198		0.43	<0.5	7.26	911	470	2.7	<2	1.87	<0.5	7	75	19	2.59
MG52626		203		0.10	<0.5	7.54	4340	630	2.9	<2	2.02	<0.5	11	130	26	3.31
MG52627		196		0.14	<0.5	7.39	2010	720	2.6	<2	2.07	<0.5	9	103	20	2.75
MG52628		201		0.85	<0.5	5.94	>10000	510	2.1	<2	1.39	<0.5	7	163	9	3.46
MG52629		199		1.20	<0.5	7.81	1020	570	2.9	2	1.51	<0.5	9	65	20	3.04
MG52630		199		0.19	<0.5	6.56	934	540	2.2	<2	1.55	<0.5	7	120	12	2.06
MG52631		199		0.10	<0.5	6.65	474	600	2.7	<2	1.41	<0.5	9	119	18	2.58
MG52632		201		0.06	<0.5	7.15	223	520	2.4	<2	2.25	<0.5	9	97	21	3.03
MG52633		202		0.31	<0.5	7.49	1130	510	2.8	<2	1.59	<0.5	9	89	28	3.38
MG52634		200		1.23	0.5	7.30	68	570	2.5	<2	1.83	<0.5	9	92	20	2.86
MG52635		197		0.36	<0.5	7.27	8160	610	2.7	<2	2.11	<0.5	10	119	18	3.21
MG52636		196		0.22	<0.5	7.26	546	610	2.8	<2	2.03	<0.5	9	91	19	3.49
MG52637		205		0.12	<0.5	7.05	79	440	2.3	3	1.36	<0.5	6	76	13	2.30
MG52638		199		0.15	<0.5	8.25	1255	650	3.2	<2	1.50	<0.5	11	91	36	3.99
MG52639		198		2.15	<0.5	6.82	9040	570	3.1	<2	3.15	<0.5	8	101	42	3.04
MG52640		202		<0.01	<0.5	7.31	<5	460	2.1	3	7.21	<0.5	47	121	53	9.44
MG52641		59		0.75	<0.5	6.78	44	190	<0.5	2	6.69	0.5	44	100	169	8.11
MG52642		197		0.33	<0.5	7.31	878	510	2.6	2	1.41	<0.5	10	85	26	3.23
MG52643		203		0.15	<0.5	7.33	298	460	2.5	3	1.45	<0.5	9	54	16	2.54
MG52644		201		0.20	<0.5	7.19	1765	500	2.5	2	2.43	<0.5	12	106	23	3.49
MG52645		203		0.43	<0.5	7.12	449	580	2.0	<2	1.77	<0.5	11	74	14	2.69
MG52646		200		0.35	<0.5	5.81	2820	560	2.9	<2	1.44	<0.5	11	63	26	3.23
MG52647		198		0.28	<0.5	6.61	2690	220	1.5	<2	1.56	<0.5	9	99	20	2.88
MG52648		198		9.57	<0.5	6.57	>10000	630	11.1	<2	2.20	<0.5	10	123	18	2.75
MG52649		197		0.34	<0.5	7.89	3790	660	3.2	<2	1.36	<0.5	12	105	38	3.67
MG52650		198		0.12	<0.5	6.76	560	580	3.2	<2	1.12	<0.5	13	100	38	3.79
MG52651		197		0.93	<0.5	7.86	2670	570	2.7	<2	1.71	<0.5	11	109	26	3.73
MG52652		199		0.05	<0.5	7.87	190	630	2.9	<2	1.62	<0.5	12	68	24	3.31
MG52653		197		6.40	0.5	5.34	>10000	310	1.4	<2	2.36	<0.5	9	160	10	2.50

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To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Ga	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	0.01	10	10	0.01	5	1	0.01	1	10	2	0.01	5	1	1
MG52614		20	2.16	20	20	0.81	396	1	3.40	17	490	19	0.39	<5	8	447
MG52615		20	2.97	30	30	1.14	571	3	2.01	21	850	27	0.21	<5	12	315
MG52616		20	2.43	20	40	0.94	473	1	2.11	20	690	25	0.15	<5	10	214
MG52617		20	2.60	30	40	0.87	438	1	2.39	14	680	17	0.20	<5	9	314
MG52618		20	1.23	60	10	4.26	1595	4	2.69	111	4110	4	0.03	<5	17	1005
MG52619		20	0.38	10	10	3.86	1385	1	1.99	78	460	16	0.32	<5	40	134
MG52620		20	2.52	30	20	0.76	384	1	2.35	12	620	21	0.14	<5	8	172
MG52621		20	2.41	20	40	0.87	426	1	2.51	14	700	14	0.18	<5	8	311
MG52622		20	2.98	20	20	1.05	599	2	1.79	19	760	23	0.33	<5	11	294
MG52623		20	3.01	30	20	1.04	523	2	1.92	18	770	30	0.22	<5	10	224
MG52624		20	2.60	30	40	0.86	403	1	2.57	15	560	16	0.31	<5	8	314
MG52625		20	2.43	30	20	0.78	458	1	2.65	12	670	17	0.29	<5	8	260
MG52626		20	2.99	30	30	1.06	516	1	2.47	22	700	20	0.36	<5	11	439
MG52627		20	2.91	30	30	0.96	486	1	2.99	15	870	21	0.21	<5	9	395
MG52628		10	1.97	20	20	0.60	285	1	2.48	13	520	21	1.35	9	6	326
MG52629		20	2.62	30	20	0.98	481	2	2.58	17	710	27	0.15	<5	10	302
MG52630		10	2.05	30	20	0.63	338	1	3.09	12	530	14	0.15	<5	7	361
MG52631		20	2.45	20	40	0.83	395	2	2.13	18	650	16	0.14	<5	8	219
MG52632		20	2.36	20	30	0.98	543	1	2.31	15	680	22	0.14	<5	9	308
MG52633		20	2.45	30	50	0.99	537	2	2.41	18	720	24	0.17	<5	11	316
MG52634		20	2.48	20	30	0.90	485	1	2.38	14	700	23	0.11	<5	9	226
MG52635		20	2.73	30	30	1.00	485	2	2.61	20	560	19	0.49	<5	11	472
MG52636		20	3.33	20	20	1.04	556	2	1.75	22	770	17	0.23	<5	11	261
MG52637		20	2.26	30	20	0.71	396	1	2.79	13	680	19	0.11	<5	8	195
MG52638		20	3.04	30	70	1.23	581	2	2.13	22	820	30	0.17	<5	13	303
MG52639		20	2.44	20	30	0.91	578	2	1.89	15	540	23	0.48	10	10	692
MG52640		20	1.24	60	10	4.14	1540	3	2.68	109	3960	5	0.02	<5	17	995
MG52641		20	0.39	10	10	3.68	1385	1	2.01	81	460	17	0.31	<5	39	135
MG52642		20	2.39	30	40	0.93	514	3	2.45	21	750	25	0.15	<5	10	258
MG52643		20	2.42	30	20	0.72	413	1	2.65	16	620	25	0.21	<5	8	218
MG52644		20	2.22	20	20	1.04	629	1	3.05	21	720	22	0.11	<5	11	633
MG52645		20	2.10	30	50	0.84	442	1	2.47	16	560	20	0.07	<5	9	384
MG52646		20	3.16	20	30	0.93	508	1	2.03	18	800	21	0.30	<5	8	247
MG52647		20	0.85	20	10	0.86	483	1	4.92	19	580	20	0.15	<5	9	478
MG52648		10	2.11	20	10	0.88	439	1	3.24	20	310	13	0.82	7	10	564
MG52649		20	3.14	30	30	1.14	517	1	2.53	21	790	27	0.21	<5	12	377
MG52650		20	3.13	20	60	1.14	554	1	2.11	23	810	29	0.15	<5	10	203
MG52651		20	2.68	30	30	1.13	544	1	2.87	22	730	26	0.15	<5	12	448
MG52652		20	3.05	30	30	1.05	524	1	2.37	20	800	24	0.05	<5	11	272
MG52653		10	1.04	20	10	0.65	401	2	3.17	14	350	44	0.77	6	7	528

***** See Appendix Page for comments regarding this certificate *****

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HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	As-OG46
	Analyte	Th	Ti	Tl	U	V	W	Zn	As
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOD	20	0.01	10	10	1	10	2	0.001
MG52614		<20	0.28	<10	<10	61	50	58	
MG52615		<20	0.34	<10	<10	101	30	108	
MG52616		<20	0.34	<10	<10	83	30	78	
MG52617		<20	0.32	<10	<10	81	40	68	
MG52618		<20	1.95	10	<10	218	<10	139	
MG52619		<20	0.66	<10	<10	290	20	128	
MG52620		<20	0.31	<10	<10	71	20	54	
MG52621		<20	0.31	<10	<10	74	40	60	
MG52622		<20	0.35	<10	<10	89	20	93	
MG52623		<20	0.35	<10	<10	81	20	85	
MG52624		<20	0.30	<10	<10	77	50	61	
MG52625		<20	0.31	<10	<10	67	30	61	
MG52626		<20	0.39	<10	<10	97	40	97	
MG52627		<20	0.33	<10	<10	82	50	71	
MG52628		<20	0.24	<10	<10	60	30	36	2.44
MG52629		20	0.34	<10	<10	85	40	80	
MG52630		<20	0.26	<10	<10	60	40	45	
MG52631		<20	0.30	<10	<10	72	20	61	
MG52632		<20	0.31	<10	<10	77	10	79	
MG52633		<20	0.32	<10	<10	89	20	145	
MG52634		<20	0.33	<10	<10	76	20	75	
MG52635		<20	0.35	<10	<10	90	40	74	
MG52636		<20	0.38	<10	<10	94	30	75	
MG52637		<20	0.28	<10	<10	62	20	58	
MG52638		<20	0.38	<10	<10	112	30	111	
MG52639		<20	0.31	<10	<10	86	50	82	
MG52640		<20	1.86	<10	<10	208	<10	135	
MG52641		<20	0.65	<10	<10	294	20	129	
MG52642		<20	0.32	<10	<10	87	20	99	
MG52643		20	0.31	<10	<10	67	30	67	
MG52644		<20	0.35	<10	<10	87	50	87	
MG52645		<20	0.29	<10	<10	75	20	60	
MG52646		<20	0.38	<10	<10	93	30	88	
MG52647		<20	0.31	<10	<10	68	80	81	
MG52648		<20	0.31	<10	<10	70	90	96	1.620
MG52649		<20	0.32	<10	<10	100	50	96	
MG52650		<20	0.38	<10	<10	113	40	109	
MG52651		<20	0.33	<10	<10	94	50	101	
MG52652		<20	0.37	<10	<10	87	30	89	
MG52653		<20	0.24	<10	<10	54	50	36	1.495

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51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	WEI-21b	LOG-QC	Au-AA26	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Pulp Wt	Pass75um	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	g	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOD	1	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01
MG52654		182	89.0	0.11	<0.5	6.70	88	640	3.0	<2	1.48	<0.5	11	65	25	3.16
MG52655		196		2.09	<0.5	7.97	761	600	2.7	<2	1.38	<0.5	11	72	21	3.36
MG52656		198		0.33	<0.5	6.76	2900	600	2.5	<2	2.08	<0.5	9	111	26	2.57
MG52657		196		0.10	<0.5	7.76	158	600	2.8	2	1.19	<0.5	12	111	29	3.70
MG52658		197		0.27	<0.5	7.36	325	630	2.9	4	1.41	<0.5	13	99	29	3.65
MG52659		178		0.21	<0.5	7.29	143	620	2.9	<2	1.46	<0.5	10	68	27	3.24
MG52660		195		0.51	<0.5	7.11	2350	610	3.0	2	1.54	<0.5	11	80	28	3.30
MG52661		198		0.13	<0.5	6.52	1020	600	2.7	<2	1.22	<0.5	13	82	33	4.01
MG52662		198		0.01	<0.5	7.46	6	470	2.2	3	7.24	<0.5	46	122	52	9.52
MG52663		60		0.73	<0.5	6.87	42	190	<0.5	2	6.79	<0.5	43	101	171	8.32
MG52664		196		0.35	<0.5	6.59	2590	560	2.5	2	1.71	<0.5	9	26	23	2.60
MG52665		198		0.11	<0.5	6.59	1620	560	2.5	2	2.02	<0.5	9	27	20	2.68
MG52666		198		0.22	<0.5	6.88	687	290	1.7	<2	2.16	<0.5	8	26	11	2.70
MG52667		196		0.28	<0.5	5.56	1970	400	1.8	<2	2.13	<0.5	7	25	16	2.42
MG52668		197		0.27	<0.5	7.17	221	580	2.6	2	1.70	<0.5	9	32	14	2.53
MG52669		196		0.08	<0.5	6.93	777	560	2.6	<2	1.81	<0.5	9	29	14	2.59
MG52670		198		0.15	<0.5	7.81	2080	660	3.1	<2	1.76	<0.5	14	42	30	3.45
MG52671		198		0.64	<0.5	5.47	>10000	440	1.5	<2	1.28	<0.5	6	25	4	3.77
MG52672		195		0.95	<0.5	6.32	979	510	2.1	<2	2.59	<0.5	7	25	6	2.68
MG52673		179		0.46	<0.5	6.72	106	550	2.3	<2	2.22	<0.5	8	77	11	2.28
MG52674		200		0.07	<0.5	7.23	608	640	2.8	2	1.60	<0.5	9	108	24	2.81
MG52675		196		0.29	<0.5	7.48	87	630	3.0	<2	1.70	<0.5	11	105	18	2.90
MG52676		199		0.10	<0.5	7.82	880	690	3.4	<2	1.50	<0.5	11	91	18	3.39
MG52677		203		0.40	<0.5	6.56	>10000	580	2.2	<2	2.03	<0.5	9	74	22	2.51
MG52678		197		0.37	<0.5	7.01	5410	580	2.8	<2	1.69	<0.5	11	159	50	3.63
MG52679		204		2.37	<0.5	6.89	8630	570	2.0	2	1.93	<0.5	8	26	16	2.63
MG52680		203		0.28	<0.5	7.60	2460	700	2.9	2	1.71	<0.5	10	34	26	3.17
MG52681		205		<0.01	<0.5	7.37	11	450	2.0	7	6.60	<0.5	41	101	49	8.78
MG52682		60		1.65	<0.5	7.94	373	720	2.5	<2	0.93	<0.5	18	130	30	4.31

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Finalized Date: 5-MAR-2024
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CERTIFICATE OF ANALYSIS BR24028952

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Ga	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	0.01	10	10	0.01	5	1	0.01	1	10	2	0.01	5	1	1
MG52654		20	3.32	20	30	0.96	489	1	2.02	20	730	23	0.11	<5	9	245
MG52655		20	3.10	30	30	1.02	481	1	2.18	19	800	24	0.12	<5	11	221
MG52656		20	2.53	20	30	0.91	437	1	2.65	19	700	15	0.21	<5	8	442
MG52657		20	3.32	30	40	1.06	512	2	1.78	21	860	24	0.24	<5	12	174
MG52658		20	3.53	20	30	1.05	516	2	1.68	23	830	23	0.22	<5	11	198
MG52659		20	3.17	20	30	0.97	490	1	2.03	19	770	24	0.11	<5	10	246
MG52660		20	3.33	30	20	1.01	481	1	2.03	19	850	22	0.25	<5	11	278
MG52661		20	2.89	20	60	1.12	551	1	2.03	25	810	30	0.13	<5	10	271
MG52662		30	1.26	60	10	4.17	1525	3	2.74	109	3930	5	0.03	<5	17	1010
MG52663		10	0.40	10	10	3.81	1370	1	2.05	81	450	17	0.31	<5	40	135
MG52664		20	2.54	20	20	0.79	430	<1	2.45	15	640	18	0.24	<5	8	329
MG52665		20	2.71	20	30	0.83	447	4	2.19	13	560	16	0.21	<5	8	326
MG52666		20	1.36	20	10	0.83	480	1	3.75	13	500	16	0.11	<5	8	582
MG52667		10	1.88	20	20	0.73	500	1	2.62	10	480	15	0.29	<5	6	388
MG52668		20	2.36	30	40	0.75	406	<1	2.70	15	580	17	0.15	<5	8	288
MG52669		20	2.51	30	40	0.79	415	<1	2.53	14	620	17	0.19	<5	8	275
MG52670		20	3.27	30	50	1.01	503	1	2.02	19	820	22	0.27	<5	11	275
MG52671		10	1.95	20	10	0.46	262	1	2.74	12	350	7	1.68	8	5	314
MG52672		20	2.11	20	30	0.90	624	1	2.74	11	740	21	0.09	<5	7	469
MG52673		20	2.00	30	40	0.73	397	1	2.65	13	520	31	0.07	<5	7	422
MG52674		20	2.83	30	40	0.87	456	1	2.35	18	720	69	0.18	<5	9	243
MG52675		20	2.81	30	50	0.95	472	1	2.30	19	690	24	0.11	<5	9	261
MG52676		20	3.24	30	40	1.04	498	1	2.40	19	780	23	0.07	<5	11	326
MG52677		20	2.28	20	20	0.83	405	1	3.16	15	430	14	0.62	5	8	424
MG52678		20	2.73	30	30	0.92	451	2	1.89	19	740	15	0.97	<5	11	357
MG52679		20	2.05	20	20	0.77	428	<1	3.66	11	450	20	0.45	<5	8	467
MG52680		20	3.06	30	40	0.94	434	<1	2.67	17	640	15	0.32	<5	10	305
MG52681		20	1.35	50	20	3.73	1445	2	2.61	96	3380	6	0.02	<5	16	888
MG52682		20	2.90	40	60	1.82	420	1	0.78	69	780	20	0.15	347	15	155

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Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	As-OG46
	Analyte	Th	Ti	Tl	U	V	W	Zn	As
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOD	20	0.01	10	10	1	10	2	0.001
MG52654		<20	0.38	<10	<10	88	30	92	
MG52655		20	0.36	<10	<10	91	20	86	
MG52656		<20	0.30	<10	<10	79	30	61	
MG52657		<20	0.41	<10	<10	100	20	105	
MG52658		<20	0.41	<10	<10	103	20	100	
MG52659		<20	0.37	<10	<10	90	30	89	
MG52660		20	0.40	<10	<10	99	30	93	
MG52661		<20	0.38	<10	<10	114	20	115	
MG52662		<20	1.88	10	<10	216	<10	137	
MG52663		<20	0.66	<10	<10	292	20	130	
MG52664		<20	0.28	<10	<10	69	20	53	
MG52665		<20	0.29	<10	<10	69	90	56	
MG52666		<20	0.27	<10	<10	61	50	55	
MG52667		<20	0.22	<10	10	54	40	44	
MG52668		<20	0.30	<10	<10	67	20	57	
MG52669		<20	0.30	<10	<10	70	30	59	
MG52670		<20	0.36	<10	<10	96	30	88	
MG52671		<20	0.19	<10	<10	42	30	15	3.22
MG52672		<20	0.24	<10	<10	57	120	42	
MG52673		<20	0.28	<10	<10	62	10	52	
MG52674		<20	0.34	<10	<10	83	30	69	
MG52675		<20	0.31	<10	<10	78	40	74	
MG52676		<20	0.36	<10	<10	102	30	93	
MG52677		<20	0.28	<10	<10	75	80	64	1.190
MG52678		<20	0.34	<10	<10	96	20	90	
MG52679		<20	0.27	<10	<10	67	70	52	
MG52680		20	0.33	<10	<10	83	30	75	
MG52681		<20	1.67	<10	<10	201	<10	129	
MG52682		20	0.52	<10	<10	110	<10	101	

***** See Appendix Page for comments regarding this certificate *****

Australian Laboratory Services Pty. Ltd.
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Phone: +61 7 3243 7222 Fax: +61 7 3243 7218
www.alsglobal.com/geochemistry

ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

To: MATAKANUI GOLD LIMITED
C/- CUFFS LIMITED, LEVEL 2 COMO HOUSE
51 TRANCRED STREET
HOKITIKA 7810
NEW ZEALAND

Finalized Date: 5-MAR-2024
Account: MATGOL

CERTIFICATE OF ANALYSIS BR24028952

CERTIFICATE COMMENTS

ACCREDITATION COMMENTS

NATA Accreditation covers the performance of this service but does not cover the performance of ALS Brisbane Sample Preparation. Corporate Accreditation No:825, Corporate Site No:818. Technical Signatory: Christopher Snowdon, ICPAES Reporting Chemist

Applies to Method:	ME-ICP61 ME-OG46

LABORATORY ADDRESSES

Processed at ALS Townsville located at 14-15 Desma Court, Bohle, Townsville, QLD, Australia.

Applies to Method:	Au-AA26

Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia. Processed at ALS Brisbane Sample Preparation at 23 Pineapple Street, Zillmere, QLD, 4034, Australia

Applies to Method:	As-OG46	LEV-01	LOG-24	LOG-QC
	ME-ICP61	ME-OG46	WEI-21b	







QUT Central Analytical Research Facility

QUT Central Analytical Research Facility
Materials Characterisation Report

CLIENT	ALS Environmental
REPORT DATE	2024-04-19
PREPARED BY	Henry Spratt
ANALYSIS REQUESTED	Quantitative XRD
OUR REFERENCE	X24109
YOUR REFERENCE	EB2407696
QUT CONTACTS	Mr Ashley Locke, X-ray Analysis Coordinator Ph: 0400128230 | email: a.locke@qut.edu.au Dr Henry Spratt, Senior X-ray Technologist (Geoscience) Ph: 07 3138 9526 | email: henry.spratt@qut.edu.au **X-ray and Particles Laboratory enquiries: xandp@qut.edu.au**

RESULTS

Phase Identification / Quantification – Bulk Samples

The powder X-ray diffraction patterns show the presence of crystalline phases. Graphics of the collected diffraction patterns along with the phases identified are included at the end of this report. The estimated normalised abundance of the corundum internal standard in the samples is higher than 20 wt%. This means there is an unaccounted for component in the samples (i.e., the samples contain non-diffracting and/or unidentified material). This component is frequently referred to as amorphous.

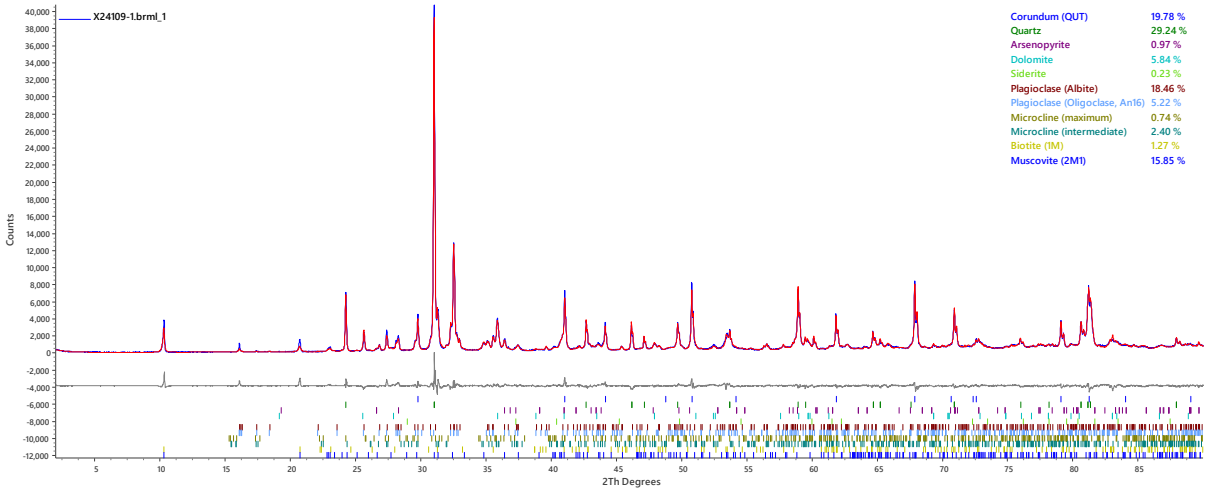
Table of phase abundances (nominal wt%, absolute)

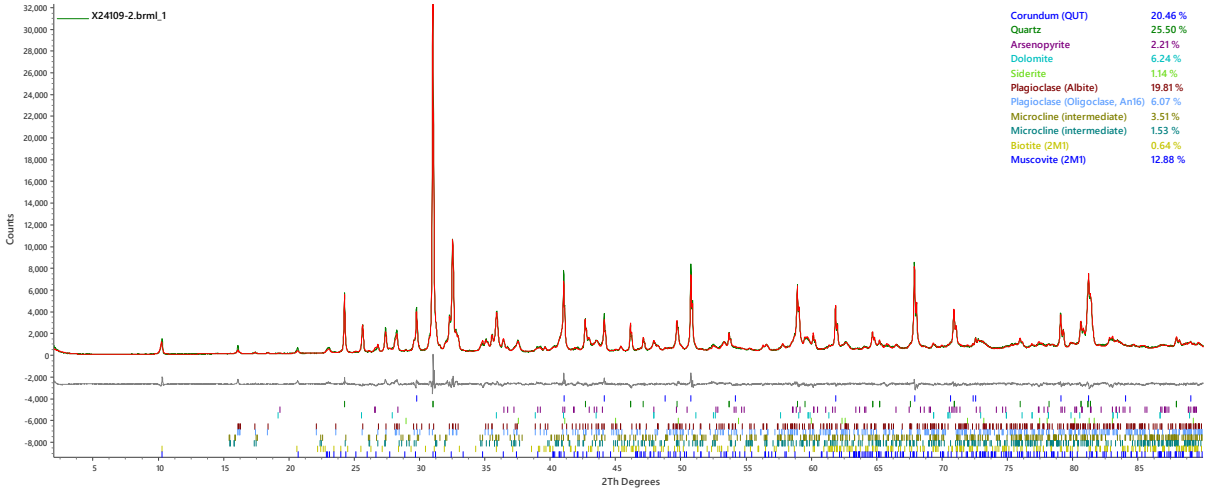
X24109 EB2407696	1 MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	2 MG19238-131 MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3	3 MG19110 MGL_2022_113 - Waste - TZ4-NA-As2
Quartz	36.3	31.2	24.8
Arsenopyrite	1.2	2.7	
Dolomite	7.2	7.6	7.1
Siderite	0.3	1.4	3.2
Plagioclase	29.4	31.6	23.6
K-Feldspar	3.9	6.2	7.5
Kaolinite			1.5
Chlorite			2.8
Illite/mica	21.2	16.5	23.7
Amorphous	0.5	2.8	5.8

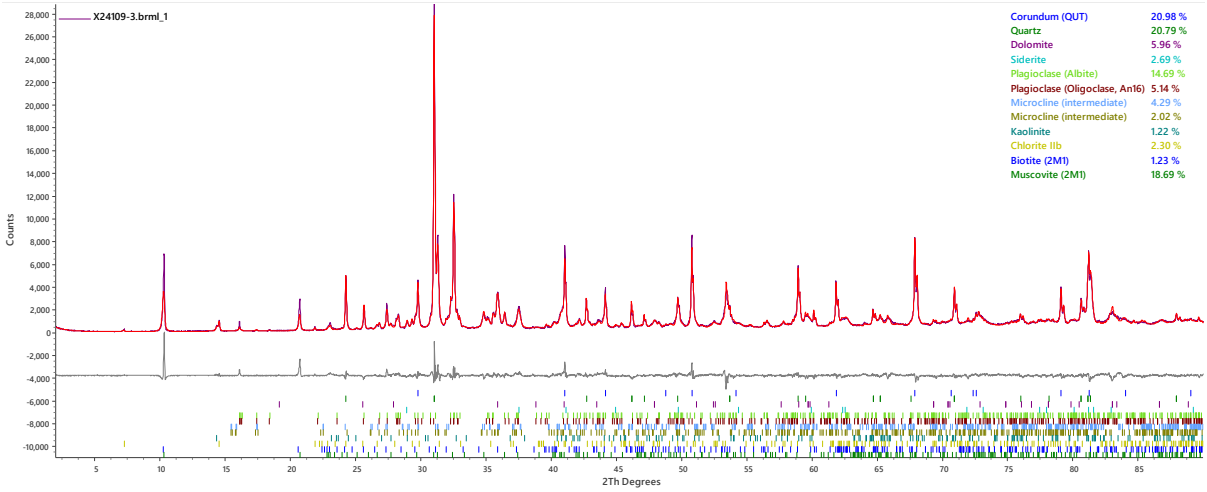
APPENDIX 1 – X-RAY DIFFRACTION DATA AND GRAPHICS

Powder X-ray Diffraction Patterns – Bulk Samples

In the graphics below the red line is the Rietveld refinement model, the coloured line is the collected data, and the grey line is the difference. The abundances on the graphics are before taking into account the known addition of corundum standard. Please use the tabulated abundances (wt% in original sample) which require no further manipulation.






X24109-3.brml_1
Corundum (QUT) 20.98 %
Quartz 20.79 %
Dolomite 5.96 %
Siderite 2.69 %
Plagioclase (Albite) 14.69 %
Plagioclase (Oligoclase, An16) 5.14 %
Microcline (intermediate) 4.29 %
Microcline (intermediate) 2.02 %
Kaolinite 1.22 %
Chlorite IIb 2.30 %
Biotite (2M1) 1.23 %
Muscovite (2M1) 18.69 %
Counts
2Th Degrees

APPENDIX 2 – ANALYTICAL TECHNIQUES

Sample preparation

Sub-samples were accurately weighed and specimens prepared for X-ray diffraction analysis by the addition of a corundum (Al_2O_3) internal standard at 20 wt%. The specimens were micronised in a McCrone mill using zirconia beads and ethanol, then dried in an oven overnight at 40 °C. The resultant homogenous powders were back-pressed into sample holders.

Sample analysis

Step scanned X-ray diffraction patterns were collected for an hour per sample using a Bruker D8 Advance powder diffractometer and cobalt Kα radiation operating in Bragg-Brentano geometry using the usual conditions. The collected data was analysed using JADE (V2010, Materials Data Inc.), EVA (V5, Bruker) and X'Pert Highscore Plus (V4, PANalytical) with various reference databases (PDF4+, AMCSD, COD) for phase identification. Rietveld refinement was performed using TOPAS (V6, Bruker). The known addition of corundum facilitates reporting of absolute phase abundances for the modelled phases. The sum of the absolute abundances is subtracted from 100 wt% to obtain a residual (called non-diffracting/unidentified, also known as "amorphous"). The residual represents the unexplained portion of the pattern: it may be non-diffracting content but will also contain unidentified phases and the error from poorly modelled phases. It is the least accurate measure as its error is the sum of the errors of the modelled phases. The estimated uncertainties in the reported phase abundances are 20 wt% relative or better for every modelled phase. Due to propagation of errors the uncertainty in the amorphous (non-diffracting/unidentified) content is higher at approximately 30 wt% relative. The detection limit using our method is approximately 0.5 – 1 wt% depending on the phase in question and sample matrix. In general, clay phases (e.g. kaolinite) have higher detection limits and more uncertainty than non-clay phases (e.g. quartz).

Powder X-ray diffraction is bulk phase analysis, it is not bulk chemical analysis or trace phase analysis. Phase abundances may be mis-estimated if an incorrect chemical formula is assigned to a phase. Therefore, the closest matches in the reference phase identification databases were used in the Rietveld refinement model, but other members of the identified mineral groups may be present.

APPENDIX F SOIL SAMPLING MEMORANDUM

Santana Minerals Ltd

Baseline Groundwater Study

31/10/2023

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Introduction

Santana staff was requested to collect a variety of soil samples from the various prospects from Come-In-Time (CIT), Rise-And-Shine (RAS), Shreks (SHR), Shreks East (SRE) and TSD (Thomson saddle). The samples were to be gathered within specific arsenic thresholds:

1. **<20ppm**
2. **20-100 ppm**
3. **100-500 ppm**
4. **>500 ppm**

Procedure

The soil sample location was chosen from historic arsenic soil data. A mattock was used to dig down approximately ten centimetres; an initial reading was taken to confirm that the arsenic values were within the threshold required. If arsenic values were not within the chosen threshold, another location or threshold was chosen. If arsenic values were within the chosen threshold the hole was deepened with the mattock and a 3kg sample was collected. The sample was not sieved, though large (>5cm wide) rocks were removed. Once the sample was collected the bag was analysed with the Delta pXRF, two readings were taken per side of the full calico bag resulting in four readings.

All location data is in NZGD2000 datum. All daily pXRF reading data, location data (in tabular format) and accompanying map is presented in Appendices 1-3 at the end of this report. Data was collected on the 24th, 25th and 27th of October, 2023.

Threshold - Prospect Matrix

Prospect	<20 ppm As	20-100 ppm As	100-500 ppm As	>500 ppm As
CIT	MG41401	MG41402	MG41399	MG41400
RAS	MG41403	MG41404	MG41405	XXXXXXXXXXXXX
SHR	MG41406	MG41408	MG41407	MG41409
SRE	MG41411	MG41413	MG41412	MG41410
TSD	MG41416	MG41415	MG41414	XXXXXXXXXXXXX

COME-IN-TIME

MG41399 (threshold 100-500ppm)

Description: High arsenic soil taken from CIT TZ4 footwall - RSSZ. Combination of A and B soil horizons (10-25cm depth). Dark brown loess. No rock fragments. Soil is damp. South of Thomson Gorge track by ~10 metres.

Average arsenic reading:



MG41400 (threshold >500ppm)

Description: Dark brown rocky loess TZ4 footwall - RSSZ. From A horizon. Depth 5-20cm. Schist fragments. Soil is damp. On downhill slope ~20 metres south of Thomson Gorge track.

Average arsenic reading:



MG41401 (threshold <20ppm)

Description: Dark brown loess. Dry soil. Occasional rock fragments. ~20 metres from road. 5-25cm depth. A-B horizons. TZ4 footwall? (unmineralised).

Average arsenic reading:



MG41402 (threshold 20-100 ppm)

Description: Dark brown loess. Dry soil. A horizon. Not rocky. ~25 metres north of the Thomson Gorge track. 5-20cm depth. In hanging wall – TZ3?

Average arsenic reading:



RISE-AND-SHINE

25/10/2023

MG41403 (threshold <20 ppm)

Description: ~15m west of dam. Rocky soil with schist fragments. 5-25cm depth. A-B horizon light grey-brown. Damp soil. In footwall TZ4? Not RSSZ.

Average arsenic reading:



MG41404 (threshold 20-100 ppm)

Description: Dark brown A horizon rocky soil with schist fragments. 5-15cm depth. ~10 metres south of Thomson Gorge track. Slightly damp soil. In footwall TZ4? Not RSSZ.

Average arsenic reading:



MG41405 (threshold 100-500 ppm)

Description: Dark brown, damp soil, rocky A-B soil horizons, 5-25cm depth. In TZ4 footwall possibly RSSZ.

Average arsenic reading:



SHREKS

25/10/2023

MG41406 (threshold <20 ppm)

Description: Light brown, slightly damp rocky soil. 15 metres south of Thomson Gorge track. 5-25cm depth. A-B horizons. TZ4 unmineralised footwall.

Average arsenic reading:



MG41407 (threshold 100-500 ppm)

Description: Brown soils with occasional rock chips. Dry sample. 5-20cm depth. A-B horizons. TZ4 footwall – RSSZ?

Average arsenic reading:



MG41408 (threshold 20-100 ppm)

Description: Dark brown damp loess. No rock chips. A-B soil horizon. 5-20cm depth. Unmineralised TZ4 – footwall.

Average arsenic reading:



MG41409 (threshold >500 ppm)

Description: Dark brown rocky soils. A-B horizon. 5-15cm depth. On edge of ridge. Slightly damp. TZ4-RSSZ?

Average arsenic reading:



MG41410 (threshold >500 ppm)

Description: Dark orange-brown rocky soil. A-B horizon, 5-20cm depth. Lightly Jarositic. Slightly damp. ~2 metres above water race, on ridge top. TZ4 footwall – RSSZ?

Average arsenic reading:



SHREKS EAST

MG41411 (threshold <20 ppm)

Description: Dark brown, rocky soil. 0-10cm depth, A horizon. ~5 metres off Thomson Gorge track (downhill). Slightly damp. TZ4 footwall – unmineralised.

Average arsenic reading:



MG41412 (threshold 100-500 ppm)

Description: 30 metres downhill (north) of Thomson Gorge track. Dark brown rocky soil. 0-10cm depth. A horizon. On gentle slope. Slightly damp. TZ4 footwall – RSSZ?

Average arsenic reading:



MG41413 (threshold 20-100 ppm)

Description: Dark brown, rocky soil. 5-15cm depth. ~5 metres downhill (north) of Thomson Gorge track. A-B horizon. On gentle slope. Slightly damp. TZ4 footwall – unmineralised.

Average arsenic reading:



THOMSON SADDLE

MG41414 (threshold 100-500 ppm)

Description: Dark brown, rocky soil. 5-15cm depth. A horizon. Slightly damp. ~30 metres downhill (north) of Thomson Gorge track. Moderate slope. TZ4 – RSSZ?

Average arsenic reading:



MG41415 (threshold 20-100 ppm)

Description: Dark brown, slightly rocky. A-B horizons. 5-15 cm depth. Slightly damp. Flat terrain. At saddle turn-off to Mt. Moka from Thomson Gorge track. TZ4 – unmineralised.

Average arsenic reading:



MG41416 (threshold <20 ppm)

Description: Dark-medium brown rocky soil. 5-20cm depth. A horizon. On gentle slope. West of Thomson Gorge track by ~20 metres. TZ3 hanging wall.

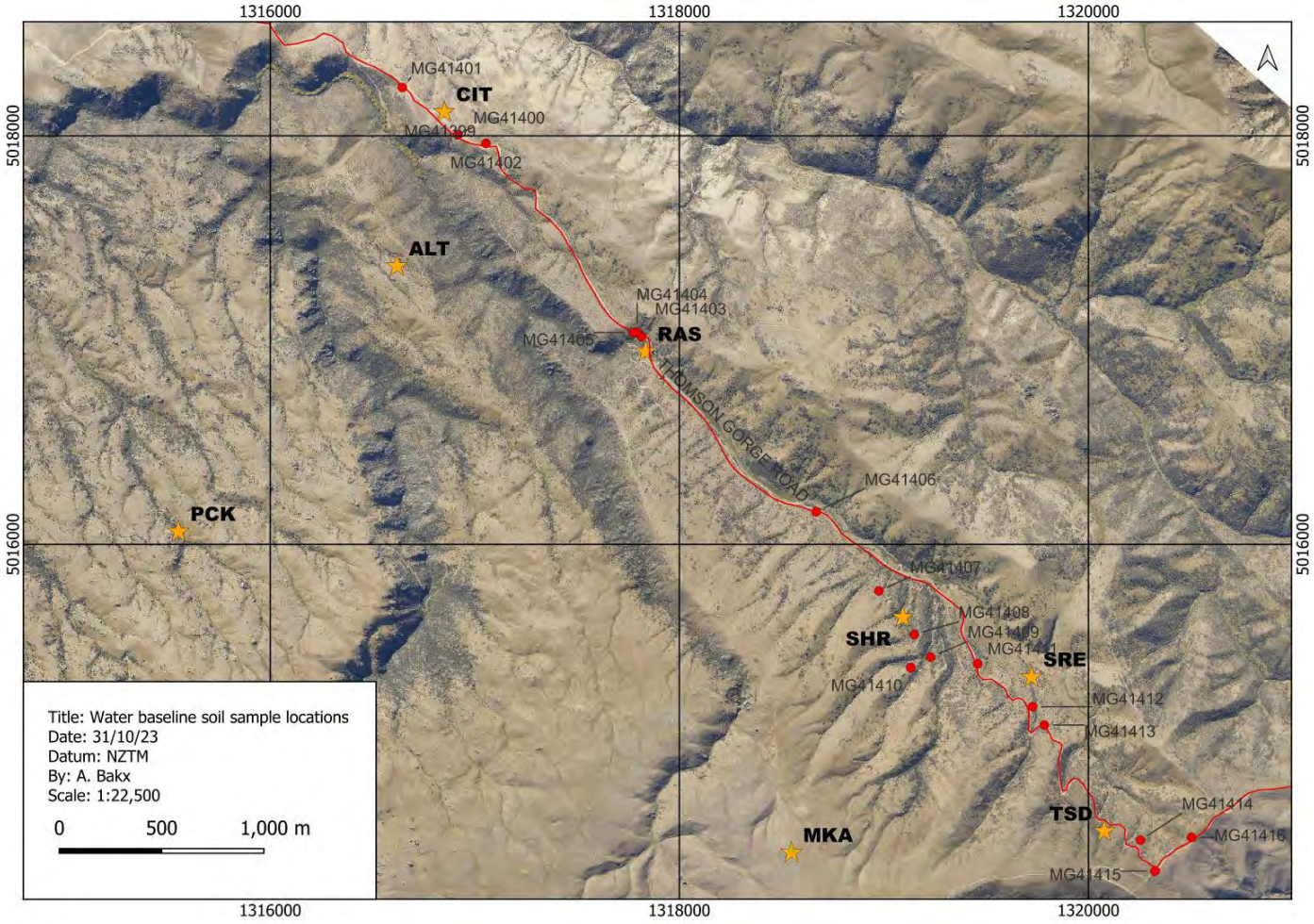
Average arsenic reading:



Appendix 1 – Location Data

Sample	Latitude	Longitude	Northing	Easting
MG41399	-44.93500621	169.4123339	5018005.556	1316916.916
MG41400	-44.93498683	169.4123345	5018007.71	1316916.867
MG41401	-44.93282442	169.4090354	5018236.393	1316645.907
MG41402	-44.93544294	169.4140521	5017963.043	1317054.637
MG41403	-44.94424283	169.4231417	5017017.198	1317815.007
MG41404	-44.94404143	169.4228853	5017038.677	1317793.79
MG41405	-44.94404618	169.4226757	5017037.42	1317777.284
MG41406	-44.952274	169.4334742	5016160.984	1318669.446
MG41407	-44.9558803	169.4371313	5015773.068	1318975.546
MG41408	-44.95786686	169.4392075	5015559.589	1319149.015
MG41409	-44.95889222	169.4401577	5015448.98	1319228.964
MG41410	-44.95931677	169.4388965	5015397.445	1319131.566
MG41411	-44.95927682	169.4430448	5015416.261	1319458.55
MG41413	-44.96209934	169.4469992	5015116.408	1319784.197
MG41412	-44.96127112	169.446316	5015206.049	1319726.278
MG41414	-44.967347	169.45264	5014552.965	1320254.613
MG41415	-44.96873397	169.4534533	5014401.7	1320325.5
MG41416	-44.967325	169.455807	5014566.345	1320504.257

Appendix 2 – Sample Location Map



Appendix 3 – Corrected pXRF Data

*Refer to attached data file for all tabular data including the corrected pXRF data.

APPENDIX G QA/QC CERTIFICATES

QUALITY CONTROL REPORT

Work Order	: **EB2339577**	Page	: 1 of 10
Client	: **MINE WASTE MANAGEMENT**	Laboratory	: Environmental Division Brisbane
Contact	: Zsofia Waczek	Contact	: Carsten Emrich
Address	: Suite 2, 435 Vincent Street West Leederville 6007	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: J-NZ0233 Bendigo AEE Support	Date Samples Received	: 30-Nov-2023
Order number	: ----	Date Analysis Commenced	: 15-Dec-2023
C-O-C number	: ----	Issue Date	: 29-Dec-2023
Sampler	: Santana		
Site	: ----		
Quote number	: EN-222		
No. of samples received	: 7		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 5500424)									
EB2336395-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.29	7.33	0.5	0% - 20%
EB2336395-041	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.83	7.77	0.8	0% - 20%
EA005P: pH by PC Titrator (QC Lot: 5500429)									
EB2339995-006	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.05	7.07	0.3	0% - 20%
EB2339577-004	MG19093 MGL_2022_113 - Waste - RSSZ-NA-As1	EA005-P: pH Value	----	0.01	pH Unit	9.08	9.01	0.8	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 5500421)									
EB2336395-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	586	604	3.0	0% - 20%
EB2336395-041	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	448	438	2.4	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 5500430)									
EB2339995-006	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1210	1230	2.3	0% - 20%
EB2339577-004	MG19093 MGL_2022_113 - Waste - RSSZ-NA-As1	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	85	89	4.4	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 5500422)									
EB2336395-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	67	69	1.9	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	67	69	1.9	0% - 20%
EB2336395-041	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	37	37	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	37	37	0.0	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
ED037P: Alkalinity by PC Titrator (QC Lot: 5500427)									
EB2339995-006	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	53	52	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	53	52	0.0	0% - 20%
EB2339577-004	MG19093 MGL_2022_113 - Waste - RSSZ-NA-As1	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	10	13	20.7	0% - 50%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	29	29	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	40	42	4.8	0% - 20%
ED038: Acidity (QC Lot: 5500425)									
EB2336395-009	Anonymous	ED038-P: Acidity as CaCO3	----	1	mg/L	4	4	0.0	No Limit
EB2336395-037	Anonymous	ED038-P: Acidity as CaCO3	----	1	mg/L	2	2	0.0	No Limit
ED038: Acidity (QC Lot: 5500426)									
EB2339577-006	MG19364 MGL_2022_217 - Waste - RSSZ-S3-As3	ED038-P: Acidity as CaCO3	----	1	mg/L	<1	<1	0.0	No Limit
EB2339995-005	Anonymous	ED038-P: Acidity as CaCO3	----	1	mg/L	11	11	0.0	0% - 50%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 5515119)									
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2	2	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 5515118)									
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	ED045G: Chloride	16887-00-6	1	mg/L	1	1	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 5504978)									
ET2305106-005	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	13	12	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	6	5	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	13	13	0.0	0% - 50%
		ED093F: Potassium	7440-09-7	1	mg/L	4	4	0.0	No Limit
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	ED093F: Calcium	7440-70-2	1	mg/L	10	10	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	3	3	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	5	5	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	15	14	0.0	0% - 50%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5504976)									
ET2305106-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.046	0.045	2.6	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.251	0.247	1.6	0% - 20%
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.007	0.006	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.48	0.46	2.8	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5504976) - continued									
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.06	0.06	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5504977)									
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020B-F: Strontium	7440-24-6	0.001	mg/L	0.123	0.121	2.1	0% - 20%
		EG020B-F: Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020B-F: Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 5504975)									
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 5500423)									
EB2336395-001	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.3	0.0	No Limit
EB2336395-041	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.3	0.0	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 5500428)									
EB2339577-004	MG19093 MGL_2022_113 - Waste - RSSZ-NA-As1	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.2	0.2	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5515111)									
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.02	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5515120)									
EB2339614-004	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5515112)									
EB2339614-004	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.55	0.55	0.0	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5515112) - continued									
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5499340)									
EB2339506-004	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	9.2	9.1	1.6	0% - 20%
EB2339577-005	MG19350 MGL_2022_217 - Waste - RSSZ-NA-AS2	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	<0.1	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5499338)									
EB2338419-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.01	0.01	0.0	No Limit
EB2339506-004	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	6.80	6.60	3.0	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5499341)									
EB2339577-005	MG19350 MGL_2022_217 - Waste - RSSZ-NA-AS2	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.07	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5515121)									
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	0.02	0.0	No Limit
EP025: Oxygen - Dissolved (DO) (QC Lot: 5498742)									
EB2339577-001	MG19250-131 MGL_2022_131 - Low-grade Ore - RSSZ-S2-As	EP025: Dissolved Oxygen	----	0.1	mg/L	9.6	9.6	0.0	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 5500424)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.0	102
				----	7 pH Unit	100	98.0	102
EA005P: pH by PC Titrator (QCLot: 5500429)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	101	98.0	102
				----	7 pH Unit	100	98.0	102
EA010P: Conductivity by PC Titrator (QCLot: 5500421)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	2100 µS/cm	94.9	90.0	106
				<1	12890 µS/cm	99.4	90.0	106
EA010P: Conductivity by PC Titrator (QCLot: 5500430)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	97.8	90.0	106
				<1	12890 µS/cm	97.6	90.0	106
ED037P: Alkalinity by PC Titrator (QCLot: 5500422)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	91.9	80.0	120
ED037P: Alkalinity by PC Titrator (QCLot: 5500427)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	50 mg/L	96.0	80.0	120
ED038: Acidity (QCLot: 5500425)								
ED038-P: Acidity as CaCO3	----	----	mg/L	----	20 mg/L	117	80.0	120
				----	400 mg/L	96.8	80.0	120
ED038: Acidity (QCLot: 5500426)								
ED038-P: Acidity as CaCO3	----	----	mg/L	----	20 mg/L	106	80.0	120
				----	400 mg/L	96.8	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 5515119)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	108	85.0	118
				<1	100 mg/L	95.0	85.0	118
ED045G: Chloride by Discrete Analyser (QCLot: 5515118)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	92.9	90.0	115
				<1	1000 mg/L	98.6	90.0	115
ED093F: Dissolved Major Cations (QCLot: 5504978)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	115	70.0	130
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	97.6	70.0	130
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	96.0	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED093F: Dissolved Major Cations (QCLot: 5504978) - continued								
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	95.2	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 5504976)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	101	79.0	118
EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.1 mg/L	96.8	87.0	113
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.3	88.0	116
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	102	70.0	130
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.7	88.0	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.2	87.0	113
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	95.0	86.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.3	88.0	114
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.7	89.0	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	100	89.0	120
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	101	89.0	112
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.6	89.0	113
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	93.2	83.0	112
EG020A-F: Thallium	7440-28-0	0.001	mg/L	<0.001	0.1 mg/L	97.5	83.0	107
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	100	86.0	112
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	100	88.0	114
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	98.9	87.0	113
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	90.8	81.0	125
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	91.4	82.0	114
EG020F: Dissolved Metals by ICP-MS (QCLot: 5504977)								
EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.1 mg/L	88.5	85.0	114
EG020B-F: Strontium	7440-24-6	0.001	mg/L	<0.001	0.1 mg/L	101	86.0	111
EG020B-F: Titanium	7440-32-6	0.01	mg/L	<0.01	0.1 mg/L	93.0	89.0	111
EG020B-F: Uranium	7440-61-1	0.001	mg/L	<0.001	0.1 mg/L	98.2	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 5504975)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.0	84.0	118
EK040P: Fluoride by PC Titrator (QCLot: 5500423)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	100	80.0	117
EK040P: Fluoride by PC Titrator (QCLot: 5500428)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	0.5 mg/L	95.4	80.0	117
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5515111)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	83.5	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5515120)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.9	90.0	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5515112)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	95.0	85.7	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5499340)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	1 mg/L	91.8	70.1	108
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5499338)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	98.5	84.7	106
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5499341)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.442 mg/L	102	84.7	106
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5515121)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	98.8	81.7	117

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 5515119)							
EB2339577-002	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	20 mg/L	108	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 5515118)							
EB2339577-002	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	ED045G: Chloride	16887-00-6	400 mg/L	105	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 5504976)							
EB2339577-002	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	EG020A-F: Arsenic	7440-38-2	1 mg/L	100	70.0	130
		EG020A-F: Barium	7440-39-3	1 mg/L	104	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	102	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	99.0	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	98.4	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	101	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	107	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	102	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	103	70.0	130
		EG020A-F: Vanadium	7440-62-2	1 mg/L	101	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	105	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EG035F: Dissolved Mercury by FIMS (QCLot: 5504975)							
EB2339577-002	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	EG035F: Mercury	7439-97-6	0.01 mg/L	89.3	70.0	130
EK040P: Fluoride by PC Titrator (QCLot: 5500423)							
EB2336395-005	Anonymous	EK040P: Fluoride	16984-48-8	100 mg/L	88.6	70.0	130
EK040P: Fluoride by PC Titrator (QCLot: 5500428)							
EB2339577-005	MG19350 MGL_2022_217 - Waste - RSSZ-NA-AS2	EK040P: Fluoride	16984-48-8	5 mg/L	92.0	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5515111)							
EB2339577-002	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	113	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5515120)							
EB2339577-002	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	95.4	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5515112)							
EB2339577-002	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	98.3	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5499340)							
EB2339577-006	MG19364 MGL_2022_217 - Waste - RSSZ-S3-As3	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	108	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5499338)							
EB2338461-001	Anonymous	EK067G: Total Phosphorus as P	----	10 mg/L	93.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5499341)							
EB2339577-006	MG19364 MGL_2022_217 - Waste - RSSZ-S3-As3	EK067G: Total Phosphorus as P	----	1 mg/L	103	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5515121)							
EB2339577-002	MG19373 MGL_2022_217 - Low-grade Ore - TZ4-NA-As2	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	94.4	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2339577**	Page	: 1 of 11
Client	: **MINE WASTE MANAGEMENT**	Laboratory	: Environmental Division Brisbane
Contact	: Zsofia Waczek	Telephone	: +61 7 3552 8616
Project	: J-NZ0233 Bendigo AEE Support	Date Samples Received	: 30-Nov-2023
Site	: ----	Issue Date	: 29-Dec-2023
Sampler	: Santana	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 7

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural						
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	----	----	----	19-Dec-2023	15-Dec-2023	4
EK057G: Nitrite as N by Discrete Analyser						
Clear Plastic Bottle - Natural						
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	----	----	----	27-Dec-2023	17-Dec-2023	10
EK071G: Reactive Phosphorus as P by discrete analyser						
Clear Plastic Bottle - Natural						
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	----	----	----	27-Dec-2023	17-Dec-2023	10
EP025: Oxygen - Dissolved (DO)						
Clear Plastic Bottle - Natural						
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	----	----	----	18-Dec-2023	15-Dec-2023	3

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER** Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	**----**	**19-Dec-2023**	15-Dec-2023	✗
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P) MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	**----**	**19-Dec-2023**	12-Jan-2024	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	**----**	**19-Dec-2023**	29-Dec-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED038: Acidity							
Clear Plastic Bottle - Natural (ED038-P)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**19-Dec-2023**	29-Dec-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**27-Dec-2023**	12-Jan-2024	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**27-Dec-2023**	12-Jan-2024	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**23-Dec-2023**	12-Jan-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, Low-grade Ore - TZ4-NA-As2, MG19373 - MGL_2022_217 - MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, RSSZ-NA-As1, MG19093 - MGL_2022_113 - Waste - MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, -As3, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**23-Dec-2023**	12-Jun-2024	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, Low-grade Ore - TZ4-NA-As2, MG19373 - MGL_2022_217 - MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, RSSZ-NA-As1, MG19093 - MGL_2022_113 - Waste - MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, -As3, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**20-Dec-2023**	12-Jan-2024	✓
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, Low-grade Ore - TZ4-NA-As2, MG19373 - MGL_2022_217 - MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, RSSZ-NA-As1, MG19093 - MGL_2022_113 - Waste - MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, -As3, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**19-Dec-2023**	12-Jan-2024	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, Low-grade Ore - TZ4-NA-As2, MG19373 - MGL_2022_217 - MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, RSSZ-NA-As1, MG19093 - MGL_2022_113 - Waste - MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, -As3, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**27-Dec-2023**	12-Jan-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3-As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**27-Dec-2023**	17-Dec-2023	×
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3-As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	----	**27-Dec-2023**	12-Jan-2024	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3-As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**18-Dec-2023**	12-Jan-2024	✓	**18-Dec-2023**	12-Jan-2024	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3-As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**18-Dec-2023**	12-Jan-2024	✓	**18-Dec-2023**	12-Jan-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	**----**	**27-Dec-2023**	17-Dec-2023	✘
EP025: Oxygen - Dissolved (DO)							
Clear Plastic Bottle - Natural (EP025)							
MG19250-131 - MGL_2022_131 - Low-grade Ore - RSSZ-S2-As, MG19373 - MGL_2022_217 - Low-grade Ore - TZ4-NA-As2, MG19238-131 - MGL_2022_131 - Ore/Tailings - RSSZ-S3-As3, MG19093 - MGL_2022_113 - Waste - RSSZ-NA-As1, MG19350 - MGL_2022_217 - Waste - RSSZ-NA-AS2, MG19364 - MGL_2022_217 - Waste - RSSZ-S3 -As3, MG19438 - MGL_2022_220 - Waste - TZ4-S2-As1	**15-Dec-2023**	**----**	----	**----**	**18-Dec-2023**	15-Dec-2023	✘

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Acidity as Calcium Carbonate	ED038-P	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Alkalinity by Auto Titrator	ED037-P	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	3	25	**12.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oxygen - Dissolved	EP025	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	23	**13.04**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Acidity as Calcium Carbonate	ED038-P	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Alkalinity by Auto Titrator	ED037-P	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	10	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	SOIL	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	SOIL	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	SOIL	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Acidity as Calcium Carbonate	ED038-P	SOIL	In house: Referenced to APHA 2310 B Acidity is determined by titration automated titration (e.g. by PC Titrate) of a settled supernatant aliquot of the sample with a standardised alkali to an end-point pH of 8.3. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	SOIL	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	SOIL	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	SOIL	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Metals by ICP-MS - Suite B	EG020B-F	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Fluoride by Auto Titrator	EK040P	SOIL	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	SOIL	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	SOIL	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	SOIL	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	SOIL	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	SOIL	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	SOIL	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	SOIL	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Oxygen - Dissolved	EP025	SOIL	In house: Referenced to APHA 4500-O G. Dissolved Oxygen Probe. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	SOIL	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Leach Preparation	* EN35	SOIL	In house: Preparation of Soil / Liquid leaches as per client instructions.

QUALITY CONTROL REPORT

Work Order	: **EB2408297**	Page	: 1 of 9
Client	: **MINE WASTE MANAGEMENT**	Laboratory	: Environmental Division Brisbane
Contact	: Zsofia Waczek	Contact	: Carsten Emrich
Address	: Level 1, 8A/232 Churchill Ave Subiaco 6008	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: J-NZ0233 Bendigo AEE Support	Date Samples Received	: 08-Mar-2024
Order number	: ----	Date Analysis Commenced	: 13-Mar-2024
C-O-C number	: ----	Issue Date	: 20-Mar-2024
Sampler	: ----		
Site	: ----		
Quote number	: EN-222		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA005P: pH by PC Titrator (QC Lot: 5665355)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EA005-P: pH Value	----	0.01	pH Unit	8.72	8.77	0.6	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 5665356)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	124	130	4.7	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 5665354)									
EB2408575-011	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	<1	<1	0.0	No Limit
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	19	# 26	32.1	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	40	36	9.8	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	59	63	5.8	0% - 20%
ED038: Acidity (QC Lot: 5665357)									
EB2408575-004	Anonymous	ED038-P: Acidity as CaCO3	----	1	mg/L	3	3	0.0	No Limit
EB2408575-010	Anonymous	ED038-P: Acidity as CaCO3	----	1	mg/L	2	2	0.0	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 5665715)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1 (5)*	mg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
ED045G: Chloride by Discrete Analyser (QC Lot: 5665716)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	ED045G: Chloride	16887-00-6	1	mg/L	3	3	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 5665345)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	ED093F: Calcium	7440-70-2	1	mg/L	10	10	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	3	3	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	5	5	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	13	13	0.0	0% - 50%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5665347)									
EB2408675-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.116	0.106	9.3	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.004	0.003	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.10	0.10	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.11	0.09	14.5	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.06	0.0	No Limit
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	1.06	1.08	2.0	0% - 20%
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.058	0.062	4.9	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5665347) - continued									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.27	0.27	0.0	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5665348)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020B-F: Strontium	7440-24-6	0.001	mg/L	0.180	0.186	2.8	0% - 20%
		EG020B-F: Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020B-F: Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 5665346)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 5665353)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.3	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5671595)									
EB2408683-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	1.48	1.47	0.8	0% - 20%
EB2405396-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.22	0.21	0.0	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5665714)									
EB2405396-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.06	0.06	0.0	No Limit
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5671596)									
EB2405396-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	24.8	25.1	1.1	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5669510)									
EB2405396-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1 (0.5)*	mg/L	202	201	0.8	0% - 20%
EB2408368-003	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1 (0.5)*	mg/L	3.8	4.1	8.6	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5669511)									
EB2405396-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01 (0.05)*	mg/L	43.0	42.2	1.8	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5669511) - continued									
EB2408368-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01 (0.05)*	mg/L	7.14	7.86	9.6	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5665717)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.04	0.06	52.0	No Limit
EP025: Oxygen - Dissolved (DO) (QC Lot: 5662585)									
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EP025: Dissolved Oxygen	----	0.1	mg/L	9.0	9.0	0.0	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 5665355)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.0	102
				----	7 pH Unit	100	98.0	102
EA010P: Conductivity by PC Titrator (QCLot: 5665356)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	94.3	90.0	106
				<1	12890 µS/cm	97.0	90.0	106
ED037P: Alkalinity by PC Titrator (QCLot: 5665354)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	50 mg/L	102	80.0	120
ED038: Acidity (QCLot: 5665357)								
ED038-P: Acidity as CaCO3	----	----	mg/L	----	20 mg/L	100	80.0	120
				----	400 mg/L	91.9	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 5665715)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	98.9	85.0	118
				<1	100 mg/L	93.3	85.0	118
ED045G: Chloride by Discrete Analyser (QCLot: 5665716)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	96.0	90.0	115
				<1	1000 mg/L	102	90.0	115
ED093F: Dissolved Major Cations (QCLot: 5665345)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	102	70.0	130
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	89.4	70.0	130
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	91.6	70.0	130
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	86.4	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 5665347)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	92.7	79.0	118
EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.1 mg/L	100	87.0	113
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	91.2	88.0	116
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	93.6	89.8	111
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.6	88.0	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.2	87.0	113
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	90.9	86.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	89.0	88.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5665347) - continued								
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.3	89.0	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.2	89.0	120
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	94.3	89.0	112
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.4	89.0	113
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	87.9	83.0	112
EG020A-F: Thallium	7440-28-0	0.001	mg/L	<0.001	0.1 mg/L	92.9	83.0	107
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	91.9	86.0	112
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	92.2	88.0	114
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.1	87.0	113
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	89.1	81.0	125
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	91.6	82.0	114
EG020F: Dissolved Metals by ICP-MS (QCLot: 5665348)								
EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.1 mg/L	94.5	85.0	114
EG020B-F: Strontium	7440-24-6	0.001	mg/L	<0.001	0.1 mg/L	89.1	86.0	111
EG020B-F: Titanium	7440-32-6	0.01	mg/L	<0.01	0.1 mg/L	92.8	89.0	111
EG020B-F: Uranium	7440-61-1	0.001	mg/L	<0.001	0.1 mg/L	91.9	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 5665346)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.7	84.0	118
EK040P: Fluoride by PC Titrator (QCLot: 5665353)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	0.5 mg/L	109	80.0	117
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5671595)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	92.6	83.5	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5665714)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	98.4	90.0	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5671596)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	91.7	85.7	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5669510)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	97.5	70.1	108
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5669511)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	95.9	84.7	106
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5665717)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	90.0	81.7	117

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 5665715)							
EB2408297-002	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	20 mg/L	94.7	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 5665716)							
EB2408297-002	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	ED045G: Chloride	16887-00-6	400 mg/L	102	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 5665347)							
EB2408297-002	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	EG020A-F: Arsenic	7440-38-2	1 mg/L	99.7	70.0	130
		EG020A-F: Barium	7440-39-3	1 mg/L	96.2	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	96.9	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	100	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	98.6	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	102	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	103	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	99.0	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	99.4	70.0	130
		EG020A-F: Vanadium	7440-62-2	1 mg/L	102	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	99.4	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 5665346)							
EB2408297-002	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	EG035F: Mercury	7439-97-6	0.01 mg/L	88.4	70.0	130
EK040P: Fluoride by PC Titrator (QCLot: 5665353)							
EB2408257-001	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	100	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5671595)							
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EK055G: Ammonia as N	7664-41-7	2 mg/L	92.6	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5665714)							
EB2408297-002	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	89.6	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5671596)							
EB2408297-001	MG19519 MGL_2022_220 - Waste - RSSZ-S1-As3	EK059G: Nitrite + Nitrate as N	----	2 mg/L	91.6	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5669510)							
EB2405396-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	# Not Determined	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5669511)							
EB2405396-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	# Not Determined	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5665717)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5665717) - continued							
EB2408297-002	MG19203-131 MGL_2022_131 - Waste - RSSZ-S2-As3	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	97.1	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2408297**	Page	: 1 of 8
Client	: **MINE WASTE MANAGEMENT**	Laboratory	: Environmental Division Brisbane
Contact	: Zsofia Waczek	Telephone	: +61 7 3552 8616
Project	: J-NZ0233 Bendigo AEE Support	Date Samples Received	: 08-Mar-2024
Site	: ----	Issue Date	: 20-Mar-2024
Sampler	: ----	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
ED037P: Alkalinity by PC Titrator	EB2408297--001	MG19519 MGL_2022_220 - W	**Carbonate Alkalinity as CaCO3**	3812-32-6	32.1 %	0% - 20%	**RPD exceeds LOR based limits**
Matrix Spike (MS) Recoveries							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	EB2405396--002	Anonymous	**Total Kjeldahl Nitrogen as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK067G: Total Phosphorus as P by Discrete Analyser	EB2405396--002	Anonymous	**Total Phosphorus as P**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	----	----	----	15-Mar-2024	13-Mar-2024	**2**
EP025: Oxygen - Dissolved (DO)							
Clear Plastic Bottle - Natural							
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	----	----	----	14-Mar-2024	13-Mar-2024	**1**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	**----**	----	----	**15-Mar-2024**	13-Mar-2024	✘

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**15-Mar-2024**	10-Apr-2024	✓
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**15-Mar-2024**	27-Mar-2024	✓
ED038: Acidity								
Clear Plastic Bottle - Natural (ED038-P)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**18-Mar-2024**	27-Mar-2024	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**15-Mar-2024**	10-Apr-2024	✓
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**15-Mar-2024**	10-Apr-2024	✓
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**16-Mar-2024**	10-Apr-2024	✓
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**16-Mar-2024**	09-Sep-2024	✓
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**18-Mar-2024**	10-Apr-2024	✓
EK040P: Fluoride by PC Titrator								
Clear Plastic Bottle - Natural (EK040P)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**15-Mar-2024**	10-Apr-2024	✓
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	----	----	----	**20-Mar-2024**	10-Apr-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	**----**	----	**----**	**15-Mar-2024**	15-Mar-2024	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	**----**	----	**----**	**20-Mar-2024**	10-Apr-2024	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	**18-Mar-2024**	10-Apr-2024	✓	**18-Mar-2024**	10-Apr-2024	✓
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	**18-Mar-2024**	10-Apr-2024	✓	**18-Mar-2024**	10-Apr-2024	✓
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	**----**	----	**----**	**15-Mar-2024**	15-Mar-2024	✓
EP025: Oxygen - Dissolved (DO)								
Clear Plastic Bottle - Natural (EP025)								
MG19519 - MGL_2022_220 - Waste - RSSZ-S1-As3, RSSZ-S2-As3	MG19203-131 - MGL_2022_131 - Waste -	**13-Mar-2024**	**----**	----	**----**	**14-Mar-2024**	13-Mar-2024	×

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Acidity as Calcium Carbonate	ED038-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Alkalinity by Auto Titrator	ED037-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oxygen - Dissolved	EP025	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Acidity as Calcium Carbonate	ED038-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Alkalinity by Auto Titrator	ED037-P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	7	**28.57**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	2	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	2	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	7	**28.57**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	SOIL	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	SOIL	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	SOIL	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Acidity as Calcium Carbonate	ED038-P	SOIL	In house: Referenced to APHA 2310 B Acidity is determined by titration automated titration (e.g. by PC Titrate) of a settled supernatant aliquot of the sample with a standardised alkali to an end-point pH of 8.3. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	SOIL	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	SOIL	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	SOIL	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Metals by ICP-MS - Suite B	EG020B-F	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Fluoride by Auto Titrator	EK040P	SOIL	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	SOIL	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	SOIL	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	SOIL	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	SOIL	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	SOIL	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	SOIL	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	SOIL	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Oxygen - Dissolved	EP025	SOIL	In house: Referenced to APHA 4500-O G. Dissolved Oxygen Probe. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	SOIL	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Leach Preparation	* EN35	SOIL	In house: Preparation of Soil / Liquid leaches as per client instructions.

APPENDIX H LIMITATIONS

This Document has been provided by Mine Waste Management Ltd (MWM) subject to the following limitations:

This Document has been prepared for the particular purpose outlined in MWM's proposal and no responsibility is accepted for the use of this Document, in whole or in part, in other contexts or for any other purpose.

The scope and the period of MWM's services are as described in MWM's proposal, and are subject to restrictions and limitations. MWM did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in this Document. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by MWM in regards to it.

Conditions may exist which were undetectable given the limited nature of the enquiry MWM was retained to undertake with respect to the site. Variations in conditions may occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the Document. Accordingly, additional studies and actions may be required.

In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. MWM's opinions are based upon information that existed at the time of the production of this Document. It is understood that the services provided allowed MWM to form no more than an opinion of the actual conditions of the site at the time the site was reviewed and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.

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MWM acknowledges that this report will be relied on by a Panel appointed under the Fast Track Approvals Act 2024 and these disclaimers do not prevent that reliance.



MINE WASTE MANAGEMENT

GREENROAD GROUP

APPENDIX G SPLP AND SEM EDS ANALYSIS

MINE WASTE MANAGEMENT
GREENROAD GROUP

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MEMORANDUM

Recipient:	Mary Askey – Matakanui Gold Limited
From:	Simone Hoodhills, Monique Weber – Mine Waste Management Limited
Date:	1 August 2025
Cc:	Paul Weber– Mine Waste Management Limited
Document Number:	J-NZ0233-014-M-Rev1
Document Title:	SPLP and SEM EDS Analysis

EXECUTIVE SUMMARY

Mine Waste Management Limited (MWM) has provided this memorandum to Matakanui Gold Limited (MGL) for the proposed Bendigo-Ophir Gold Project (BOGP Project) on additional geochemical testing of the project materials.

Objectives of this Study

The objectives of this memorandum are to:

- Understand the potential constituents of concern (PCOC) that could be mobilised from materials that will be disturbed as part of the BOGP.
- Understand the forms of sulfur, its mineral form, and mobility.

Findings

A range of BOGP materials were sampled:

- Diamond drillcore from TZ3 and TZ4/RSSZ.
- Grab samples from historic legacy mine waste rock - mullock (mined < 100 years ago).
- Weathered TZ4 materials from the local road cutting near the CIT battery.

Testing included acid base accounting (ABA), Synthetic Precipitation Leaching Procedure (SPLP), and Scanning Electron Microscope (SEM) with Energy Dispersive X-ray Spectroscopy (EDS) of TZ3 and TZ4 materials to determine sulfur speciation.

ABA data confirmed all samples are classified as non-acid forming (NAF). SPLP testing and subsequent metal ecotoxicity quotient (MEQ) analysis against proposed water quality compliance limits (Ryder, 2025) for the BOGP (and ANZG (2018) where limits were not defined by Ryder (2025)) identified that:

- The following metals are elevated in the SPLP test, and it is recommended that compliance monitoring should be undertaken for aluminium (Al), arsenic (As), cobalt (Co), and copper (Cu).

- The following metals are slightly elevated in the SPLP test, and performance monitoring should be undertaken for cadmium (Cd) and vanadium (V) at the ELF, TSF, and underground mine discharge points as this is likely to be the domains that will be potentially elevated.

SEM – EDS indicated a range of sulfide minerals and anglesite, a lead sulfate mineral. Oxidation of sulfide minerals identified by SEM could lead to the release of PCOC that include sulfate (SO_4), As, iron (Fe), and trace metals that include Co, Cu, lead (Pb), and zinc (Zn). However, Pb is not identified as being elevated in the SPLP test.

GENERAL BACKGROUND

MGL is proposing to establish the BOGP, which comprises gold mining operations, processing operations, ancillary facilities and environmental mitigation measures on Bendigo and Ardgour Stations in the Dunstan Mountains of Central Otago. The project site is located approximately 20 km north of Cromwell and will have a maximum disturbance footprint of 550 hectares.

The total Mineral Resource Estimate for the BOGP using a 0.5 g/t cut-off for open pit and 1.5 g/t for underground is 34.3 Mt at 2.1 g/t for 2.34 M oz (MGL, 2025). The Bendigo-Ophir resources occur in four deposits: Come in Time (CIT), Rise and Shine (RAS), Srex (SRX), Srex East (SRE). The majority of identified mineral resources are located within the RAS deposit. Three primary geological units are recognised at site:

- RSSZ – Rise and Shine Shear Zone
- TZ3 – Lower Greenschist facies Textural Zone 3 rocks of the Otago Schist
- TZ4 – Upper Greenschist facies Textural Zone 4 rocks of the Otago Schist

The resources will be mined by open pit methods at each deposit within the project site, with underground mining methods also proposed to be utilised at RAS to access the deeper gold deposits. The majority of the mining activities, ancillary facilities and associated infrastructure will be located in the Shepherds Valley – which includes a conventional carbon-in-leach (CIL) gold processing plant and water treatment plant, a tailing storage facility, three engineered landforms, internal haul roads, topsoil stockpiles, water pipelines, underground utilities and electrical supply - with non-operational infrastructure located on the adjoining Ardgour Terrace. The BOGP also involves the taking of groundwater from the Bendigo Aquifer for use in mining-related activities and the realignment of Thomson Gorge Road via Ardgour Station.

The following mine facilities are proposed:

- Open pits targeting the RAS, SRX, SRE, and CIT deposits.
- An underground mine targeting the RAS deposit.
- Three ex-pit engineered landforms (ELFs) – Shepherds ELF, SRX ELF, and West ELF (WELF).
- Two in-pit landforms (backfill) – CIT and SRE[1].
- Plant and processing area, where CIL extraction technologies will be used as part of the ore recovery process.

[1] *Note: SRE Pit is backfilled by the SRX ELF.*

- A tailings storage facility (TSF) and TSF Embankment.
- Other ancillary support services / structures (e.g., roads, water management infrastructure, water treatment plants, etc).

OBJECTIVES

The objectives of this memorandum are to:

- Understand the potential constituents of concern (PCOC) that could be mobilised from materials that will be disturbed as part of the BOGP.
- Understand the forms of sulfur, its mineral form, and mobility.

The objectives were achieved by the following tests:

- ABA to quantify the geochemical nature of the materials (i.e., the potential to generate acid rock drainage or not).
- SPLP on BOGP material to understand PCOC mobilisation.
- SEM with EDS of TZ3 and TZ4 materials to determine sulfur speciation.

SAMPLE SELECTION

Samples were obtained by Matakanui from:

- Diamond drillcore from TZ3 and TZ4/RSSZ.
- Grab samples from historic legacy mine waste rock (mined < 100 years ago).
- Weathered TZ4 materials from the local road cutting near the CIT battery.

Sample details are provided in

Table 1 with sample locations provided in Figure 1 to Figure 3. Where no material remained after earlier testing, additional drillcore was obtained from the original location, yet was provided with a new sample ID. These samples are identified by Original Sample ID and Sample ID in

Table 1.

Table 1: Sample details.

SAMPLE ID	ORIGINAL SAMPLE ID	PROSPECT	ZONE/ LOCATION	HOLE ID	FROM	TO
Drillcore Sample – SPLP Test (Verum Group Laboratory)						
MG55789	-	CIT	TZ3	MDD347	55	56
MG55790	MG46045	RAS	TZ4/RSSZ	MDD206	301	302
MG55795	MG40061	RAS	TZ4/RSSZ	MDD236	252.1	253
MG55796	MG37922	RAS	TZ4/RSSZ	MDD210	173	174
MG54045	-	RAS	TZ3	MDD372	149	150

SAMPLE ID	ORIGINAL SAMPLE ID	PROSPECT	ZONE/ LOCATION	HOLE ID	FROM	TO
MG54046	-	RAS	TZ3	MDD375	145	146
MG54047	-	RAS	TZ3	MDD239	166	167
Grab Sample – Shake Flask Test (SGS Laboratory)						
Rock CIT TZ4	-	CIT TZ4	Weathered road cutting		-	-
Waste Rock RAS Mullock	-	RAS	Historic mullock pile		-	-
Waste Rock CIT RSSZ	-	CIT RSSZ	Historic mullock pile		-	-

Source: Matakanui

- hyphen indicates no additional sample ID

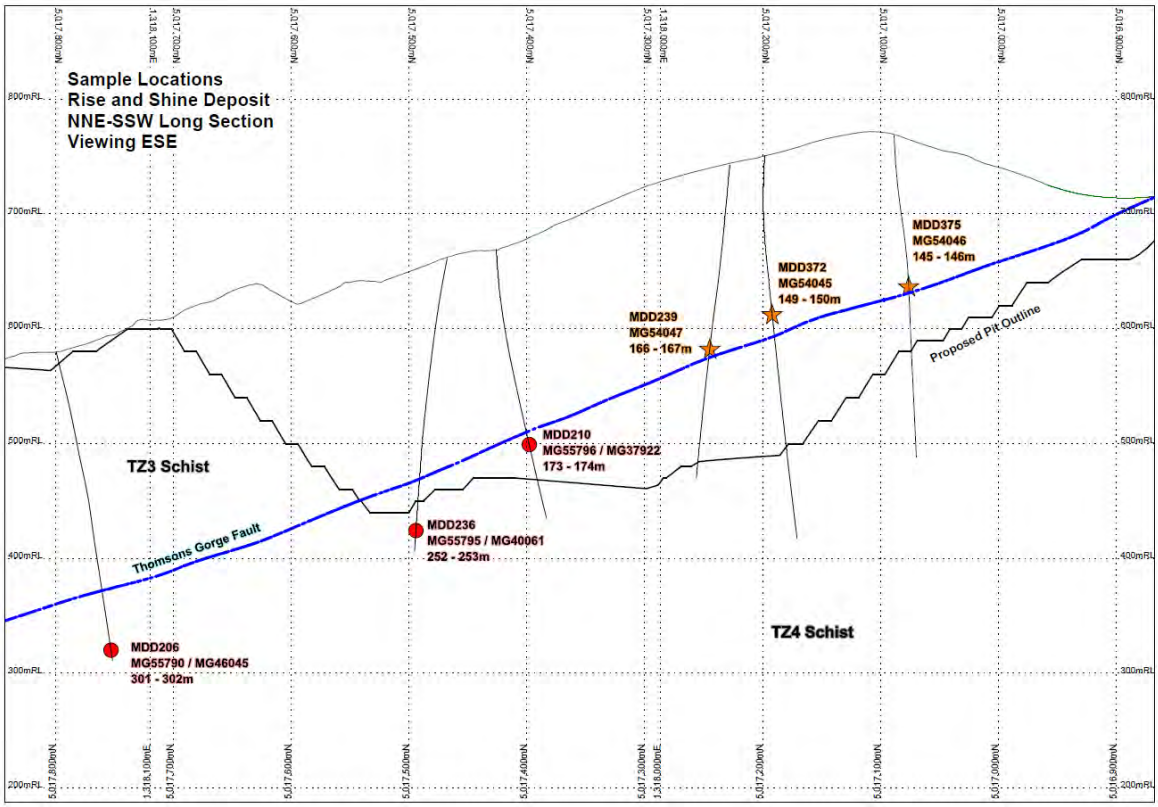


Figure 1: Drillcore sample locations.

Image source: Matakanui.

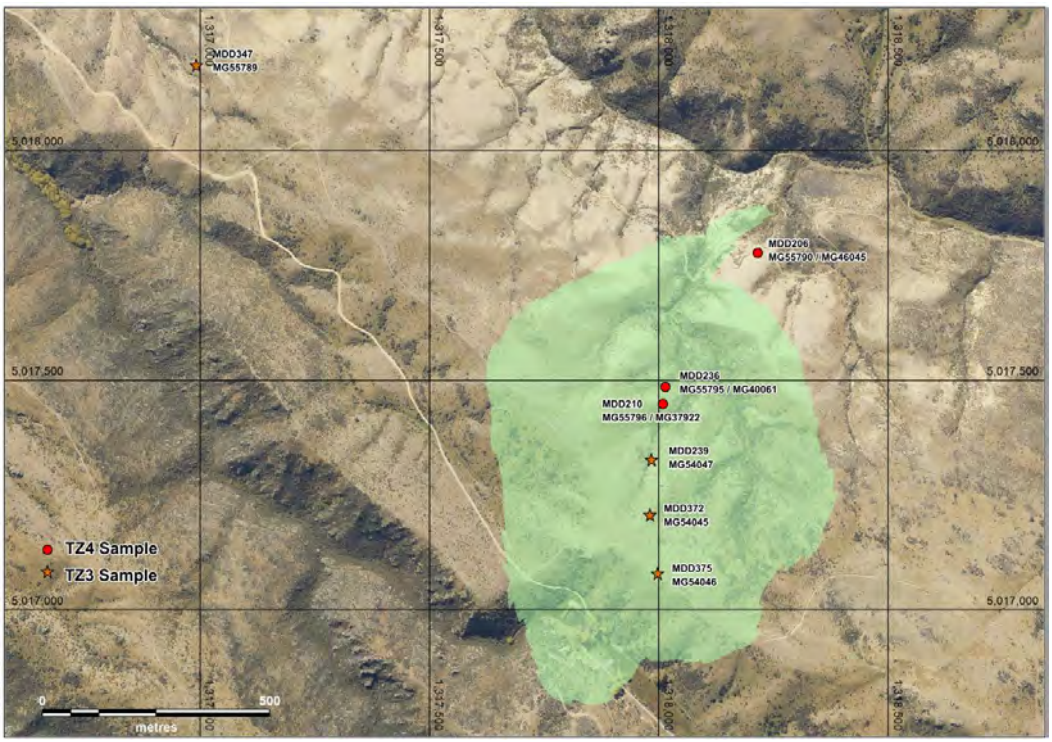


Figure 2. Location of drillhole collars for drill core samples.

Image source: Matakanui. RAS proposed pit outline in green.

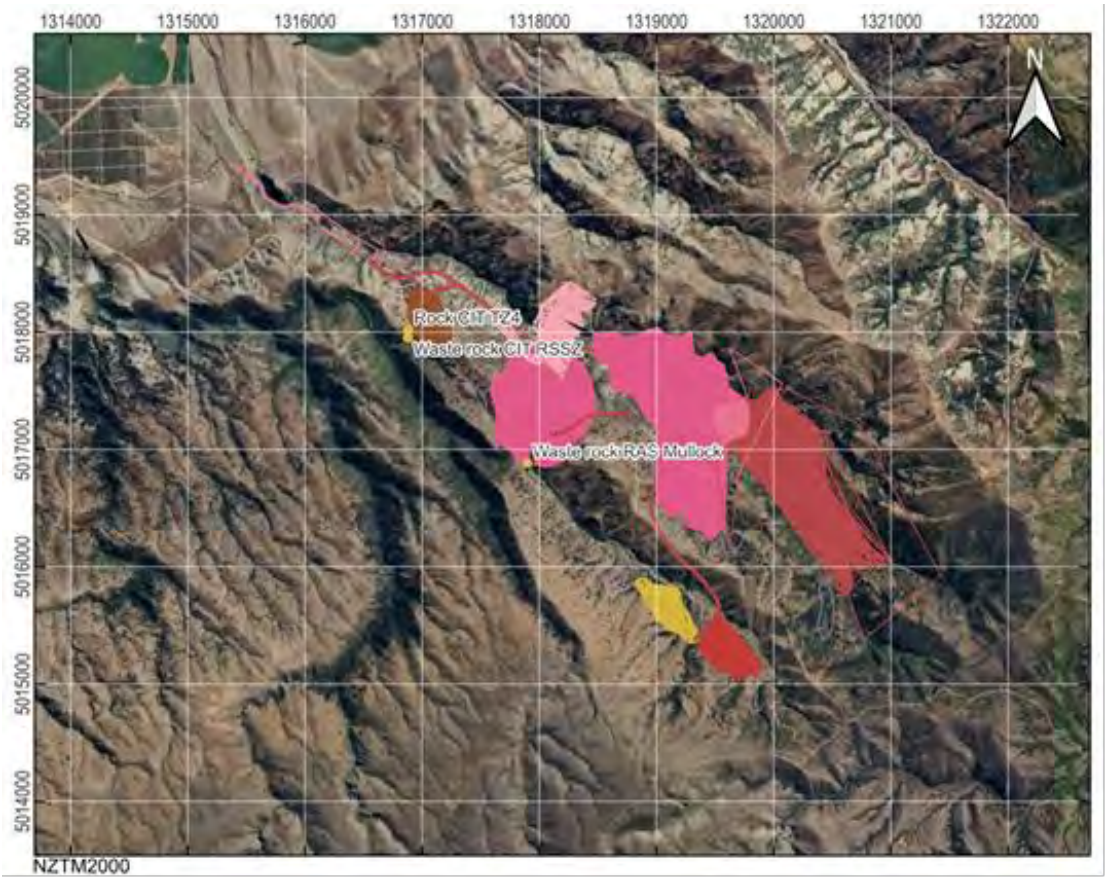


Figure 3. Grab sample locations.

RESULTS: ACID BASE ACCOUNTING

Acid base accounting (ABA) data are presented in Table 2. Tabulated data are provided in Attachment B and laboratory certificates are provided in Attachment C. All samples are classified as non-acid forming (NAF) using:

- AMIRA (2002) where NAG pH > 4.5 and the calculated net acid producing potential (NAPP) < 0 kg H_2SO_4/t based on NAPP = MPA[2] – ANC[3].
- Price (2009) where the neutralisation potential ratio (NPR) > 2.

Circum-neutral pH drainage is expected from the materials that have been tested, which is in alignment with other studies including:

- ABA data for > 377 samples from the BOGP (MWM, 2025c).
- Column leach testing identified all samples as NAF (MWM, 2025b).

Table 2: ABA data.

SAMPLE ID	ZONE	PASTE pH	S (wt%)	MPA kg/H_2SO_4/t	ANC kg/H_2SO_4/t	NAPP kg/H_2SO_4/t	NAG pH	NPR
Grab Samples – Shake Flask Test (SGS laboratory)								
Rock CIT TZ4	Weathered road cutting	7.6	0.0025	0.075	6	-6	6	78.4
Waste Rock RAS Mullock	Historic mullock pile	9.5	0.093	2.9	52	-49	7.1	18.3
Waste Rock CIT RSSZ	Historic mullock pile	8.9	0.006	0.18	36	-36	7.2	196.1
Drill Core – SPLP Test (Verum Laboratory)								
MG55789	TZ3	8.95	0.057	1.74	48.89	-47.15	9.22	28.0
MG55790 (MG46045)	TZ4/RSSZ	8.95	0.32	9.79	79.45	-69.66	9.84	8.1
MG55795 (MG40061)	TZ4/RSSZ	9.20	0.24	7.34	61.09	-53.75	9.97	8.3
MG55796 (MG37922)	TZ4/RSSZ	9.00	0.17	5.20	70.88	-65.68	10.31	13.6
MG54045	TZ3	9.45	0.052	1.59	67.32	-65.73	9.66	42.3
MG54046	TZ3	9.15	0.033	1.01	91.8	-90.79	10.69	90.9
MG54047	TZ3	9.29	0.032	0.98	88.11	-87.13	9.82	90.0

Red data are half the limit of reporting (LOR).

[2] *Maximum potential acidity*

[3] *Acid neutralisation capacity*

SYNTHETIC PRECIPITATION LEACHING PROCEDURE

The SPLP developed by the USEPA[4] uses 50 g of sample and 1 L of deionised water with bottle rolling for 16 hours to evaluate the mobilisation of PCOC from the solid residue phase to provide an indication of the water quality of materials once wetted.

Methodology

Samples were analysed by Verum Group Limited (including sample preparation, ABA testing, and SPLP testing) with Hill Laboratories undertaking the water quality analysis. Testing used crushed waste rock instead of rock pulps, making the method suitable for assessing engineered landform (ELF) runoff influenced only by natural precipitation. Deionised water was used at a 1:20 solid-to-liquid ratio, with a 16-hour contact time (Verum Group).

Previous shake-flask testing was undertaken by SGS Laboratory in Westport for several samples. This process is comparable to the SPLP test, yet a 1:10 solid-to-liquid ratio was used with an 18-hour contact time. Leachates were examined for major, trace, and ultra-trace elements using ICP-MS and ICP-AES.

Although the solid:liquid ratios are different for the two tests, the data remain comparable as solid:liquid ratio is normalised by converting mg/L to mg/kg.

Results

SPLP results for PCOC are presented in Table 3 (TZ3 and TZ4/RSSZ) and Table 4 (grab samples). All data recorded at the LOR[5] are presented as half the LOR.

A metal ecotoxicity quotient (MEQ) is used in this report to identify potential constituents of concern (PCOC) that may be elevated with respect to water quality guidelines, compliance limits, or trigger values that mange ecotoxicity risks (Weber and Olds, 2016). For this report, the proposed BOGP surface water quality compliance limits (Ryder, 2025) are used as a MEQ screening tool to determine whether baseline water quality data were elevated. The approach does not use toxicity modification factors to calculate MEQ and uses conservative data when available (e.g., chronic limits rather than acute limits).

Where no limit was provided by Ryder (2025), other guideline values, together with Ryder (2025), were applied to have a water quality limit (WQ Limit) for assessment purposes (see Attachment A for these limits and further details on MEQ).

Results are not presented for the following analytes as all data are below LOR:

- TZ3 and TZ4/RSSZ: Ag, Co, Cs, La, Ni, Pb, Se, Sn, Tl.
- Grab Samples: Ag, Cd, Cr, Hg, Mo, Pb, Se, Sn, Tl, V, Zn, Cyanide.

Full results are tabulated in Attachment B with laboratory reports provided in Attachment C. PCOC highlighted by MEQ that are greater than 1 in Table 3 and Table 4 include:

[4] https://www.epa.gov/sites/default/files/2015-12/documents/1312.pdf
[5] *Limit of Reporting.*

TZ3

Data suggests that Al and V could be elevated based on MEQ. Data are reasonable for Al to be considered elevated, although elevated Al at circum-neutral pH may be an artifact of the testing process (e.g., colloidal Al). Only one sample is above the ANZG (2018) limit of 0.006 mg/L for V and this is for an unknown level of species protection. Column leach test (CLT) data (MWM, 2025b) suggests that V can be elevated in TZ3 materials, although results are only slightly above the ANZG (2018) limits. Based on these results:

- Compliance monitoring is recommended for Al.
- Performance monitoring is recommended for V at the ELF, TSF, and underground mine discharge points as this is likely to be the domains that will be potentially elevated.

TZ4/RSSZ

Data suggests that Al, As, and Cd could be elevated based on MEQ. Data are reasonable for Al and As to be considered elevated, although elevated Al at circumneutral pH may be an artifact of the testing process (e.g., colloidal Al). Only one sample is above the ANZG (2018) limit of 0.0004 mg/L for Cd (without hardness modification). CLT data (MWM, 2025b) suggest it is not elevated. Based on these results:

- Compliance monitoring is recommended for Al and As.
- Performance monitoring is recommended for Cd at the ELF, TSF, and underground mine discharge points as this is likely to be the domains that will be potentially elevated.

CIT TZ4 (weathered TZ4 road cutting)

Data suggests that Al, As, Co, and Cu could be elevated based on MEQ. Data are reasonable for Al, and As to be considered elevated, although elevated Al at circum-neutral pH may be an artifact of the testing process (e.g., colloidal Al). Based on these results:

- Compliance monitoring is recommended for Al, As, Co, and Cu.

RAS Mullock

Data suggests that Al and As could be elevated based on MEQ. Data are reasonable for Al and As to be considered elevated, although elevated Al at circum-neutral pH may be an artifact of the testing process (e.g., colloidal Al). Based on these results:

- Compliance monitoring is recommended for Al and As.

CIT RSSZ

Data suggests that As could be elevated based on MEQ, data are reasonable for As to be considered elevated. Based on these results:

- Compliance monitoring is recommended for As.

Table 3: SPLP for drillcore from TZ3 and TZ4/RSSZ.

ANALYTE	TRIGGER VALUE*	MG54045	MG54046	MG54047	MG55789	MG55790	MG55795	MG55796	MEQ MAXIMUM	MEQ MAXIMUM
Zone		TZ3	TZ3	TZ3	TZ3	TZ4/RSSZ	TZ4/RSSZ	TZ4/RSSZ	TZ3	TZ4/RSSZ
SO_4	500	0.70	1.10	1.00	0.70	0.60	0.25	0.25	0.002	0.001
Al	0.08	0.96	0.64	0.77	0.39	1.17	0.77	1.10	12.0	14.6
Sb	0.074	0.002	0.0086	0.0022	0.0008	0.0014	0.0023	0.0019	0.12	0.03
As	0.042	0.011	0.004	0.005	0.003	0.12	0.17	0.082	0.27	4.0
Ba	-	0.0025	0.027	0.013	0.006	0.0025	0.0025	0.0025	-	-
B	0.94	0.020	0.024	0.021	0.009	0.009	0.012	0.011	0.03	0.01
Cd	0.0004	0.000025	0.000025	0.00024	0.00009	0.00048	0.000025	0.000025	0.60	1.20
Ca	-	6.20	6.90	6.30	4.00	7.00	7.50	8.30	-	-
Cr	0.0033	0.0005	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.15	0.08
Cu	0.0018	0.00025	0.00025	0.00025	0.00025	0.00050	0.00025	0.00025	0.14	0.28
Fe	0.3^	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03
Li	-	0.0008	0.0019	0.0013	0.0025	0.0022	0.0021	0.0027	-	-
Mg	-	0.79	0.92	0.92	4.50	2.40	1.94	2.10	-	-
Mn	-	0.00025	0.00025	0.00025	0.00510	0.01010	0.00390	0.0053	-	-
Mo	0.034	0.0014	0.00	0.00	0.00	0.00	0.00	0.0002	0.07	0.02
K	-	5.40	4.40	4.90	2.70	4.00	3.70	3.50	-	-
Rb	-	0.00157	0.0014	0.0016	0.0016	0.0014	0.0015	0.0013	-	-
Na	-	2.50	3.00	3.00	1.05	0.72	0.88	0.90	-	-
Sr	2.5	0.70	0.88	1.24	0.08	0.37	0.28	0.40	0.50	0.16
U	0.03^	0.00036	0.00095	0.00011	0.0023	0.00054	0.00055	0.00041	0.08	0.02
V	0.006	0.0047	0.006	0.0065	0.0005	0.0005	0.0012	0.0005	1.08	0.20
Zn	0.015	0.0005	0.0005	0.0015	0.0005	0.0005	0.0005	0.0005	0.10	0.03

All data in mg/L. Data in red indicates MEQ ≥ 1, data in orange indicates MEQ between 0.5 and 1.

** Trigger values discussed in Attachment A.*

^ Groundwater WQ limit.

Table 4: SPLP test results for grab samples.

ANALYTE	TRIGGER VALUE*	CIT TZ4	MEQ	RAS MULLOCK	MEQ	CIT RSSZ	MEQ
pH	6.5 – 9.0	6.9	-	9.2	-	8.7	-
EC (µS/cm)	-	59	-	73	-	99	-
Total Alkalinity as $CaCO_3$	-	30	-	40	-	50	-
Acidity (mg/L)	-	<5		<5	-	<5	-
Al	0.08	0.153	1.9	0.211	2.6	0.029	0.36
Sb	0.074	0.0005	0.01	0.0005	0.01	0.001	0.01
As	0.042	0.082	2.0	0.22	5.2	2.61	62.1
Ba	-	0.006	-	0.001	-	0.001	-
B	0.94	0.04	0.04	0.015	0.02	0.015	0.02
Ca	-	5.9	-	8.2	-	14.2	-
Co	0.001	0.001	1.0	0.00025	0.25	0.00025	0.25
Cu	0.0018	0.003	1.7	0.0008	0.44	0.0011	0.61
Fe	0.3^	0.19	0.63	0.08	0.27	0.005	0.02
Mg	-	0.84	-	2.96	-	0.55	-
Mn	-	0.18	-	0.003	-	0.0005	-
Ni	0.011	0.001	0.09	0.00025	0.02	0.00025	0.02
K	-	5.3	-	2.7	-	6.0	-
Na	-	0.8	-	0.6	-	0.6	-
Sr	2.5	0.025	0.01	0.096	0.04	0.030	0.01
Ti	-	0.0020	-	0.00025	-	0.00025	-
U	0.03^	0.0001	0.003	0.001	0.03	0.0005	0.02
Total N	-	3.95		0.47		1.43	
Ammonia N	0.4	0.30	0.75	0.005	0.01	0.07	0.18
Total P	-	23.8	-	0.32	-	0.45	-
F	-	0.16	-	0.03	-	0.06	-
Cl	-	0.17	-	0.09	-	0.10	-
NO_3-N	3.5	1.19	0.34	0.08	0.02	1.04	0.30
NO_2-N	-	0.08	-	0.005	-	0.005	-
SO_4	500	0.89	0.002	1.88	0.004	0.83	0.002
Dissolved Oxygen	-	8.2	-	9.3	-	9.2	-

All data in mg/L unless otherwise indicated. Data in red indicates MEQ ≥ 1, data in orange indicates MEQ between 0.5 and 1.

** Trigger values discussed in Attachment A.*

^ Groundwater WQ limit.

Stored Water Soluble PCOC Load

SPLP data can be converted into a load (i.e., mg/kg) based on the solid:liquid ratio and the subsequent analytical data, which can then be used to understand the stored water soluble PCOC load. These data are presented in Table 5 with average TZ3 and TZ4/RSSZ data. Analytes where all data is below LOR is not presented.

Table 5: Stored water soluble PCOC load (mg/kg).

ANALYTE	CIT TZ4	RAS MULLOCK	CIT RSSZ	AVERAGE TZ3[1]	AVERAGE TZ4/RSSZ[2]
Sample Type	Grab	Grab	Grab	Drillcore	Drillcore
Al	1.53	2.11	0.29	13.80	20.27
Sb	0.005	0.005	0.01	0.068	0.037
As	0.82	2.17	26.1	0.12	2.47
Ba	0.06	0.01	0.01	0.24	0.05
B	0.40	0.15	0.15	0.37	0.21
Cd	0.001	0.001	0.001	0.0019	0.0035
Ca				117	152
Cr	0.005	0.005	0.005	0.006	0.005
Co	0.01	0.0025	0.0025	0.002	0.002
Cu	0.03	0.008	0.011	0.005	0.007
Fe	1.9	0.8	0.1	0.20	0.20
Pb	0.005	0.0025	0.0025	0.001	0.001
Li				0.033	0.047
Mg	8.4	29.6	5.5	35.7	42.9
Mn	1.83	0.03	0.005	0.03	0.13
Mo	0.005	0.0025	0.0025	0.032	0.009
Ni	0.01	0.0025	0.0025	0.005	0.005
K	53	27	60	87	75
Rb				0.031	0.028
Na	8	6	6	48	17
Sr	0.25	0.96	0.3	14.5	7.0
U	0.001	0.01	0.005	0.019	0.010
V	0.0025	0.005	0.0025	0.089	0.015
Zn	0.01	0.01	0.01	0.015	0.010
SO_4	8.9	18.8	8.3	17.5	7.33
Total N	39.5	4.7	14.3	-	-
Ammonia N	3	0.05	0.7	-	-
Total P	0.035	0.035	0.035	-	-
F	238	3.16	4.53	-	-
Cl	1.6	0.3	0.6	-	-
NO_3-N	1.7	0.9	1	-	-
NO_2-N	11.9	0.8	10.4	-	-
S (wt%)	0.0025	0.093	0.006	0.044[1]	0.24[2]
Total S (mg/kg)	25	930	60	440	2,400
% of S mobilised by deionised water	35.6	2.0	13.8	4.0	0.3

[1]*Average of MG54045, MG54046, MG54047, MG55789.*

[2]*Average of MG55790, MG55794, MG55796.*

Data in blue is <LOR.

Analysis: TZ3 and TZ4/RSSZ

This section reviews the stored water soluble PCOC load (mg/kg) derived from the deionised water extraction testing (SPLP) for TZ3 and TZ4 materials. The following key observations from average TZ3 and TZ4/RSSZ data are provided:

- TZ3 materials have higher sulfate concentration compared to TZ4 (Figure 4), which suggests more sulfate can be mobilised from the TZ3 waste rock that is independent of oxidation processes. Given the proportions of TZ3 that will be disturbed at the BOGP, this load represents a large initial source of sulfate.
- TZ4/RSSZ material is elevated in arsenic compared to TZ3 (Figure 5).
- Notable variation includes the following elements that are elevated in the TZ3 compared to the TZ4/RSSZ materials: Ba (4.8x), Mo (3.7x), Na (2.9x), Sr (2.1x), and V (5.9x)
- TZ4/RSSZ material is elevated in Mn (4.4x) compared to the TZ3 materials.

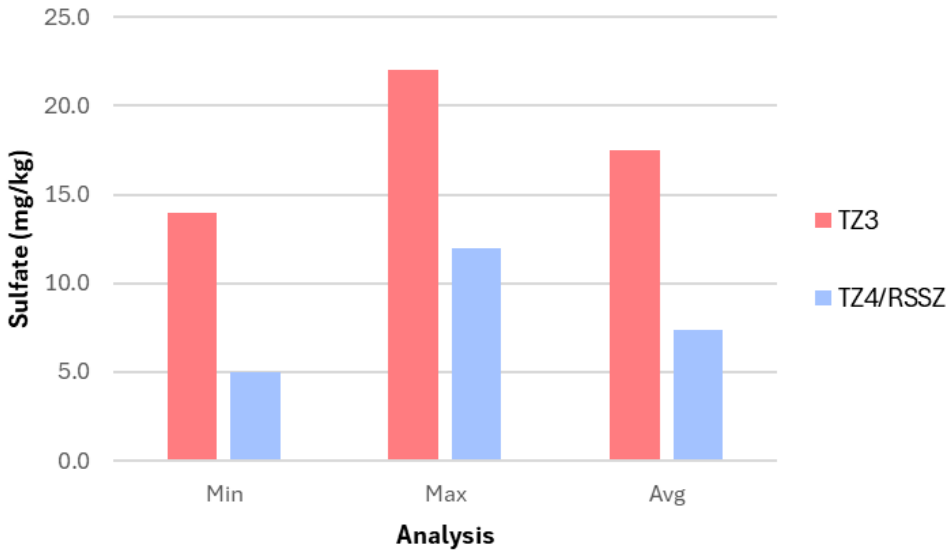


Figure 4: Sulfate (mg/kg) in TZ3 and TZ4/RSSZ samples.

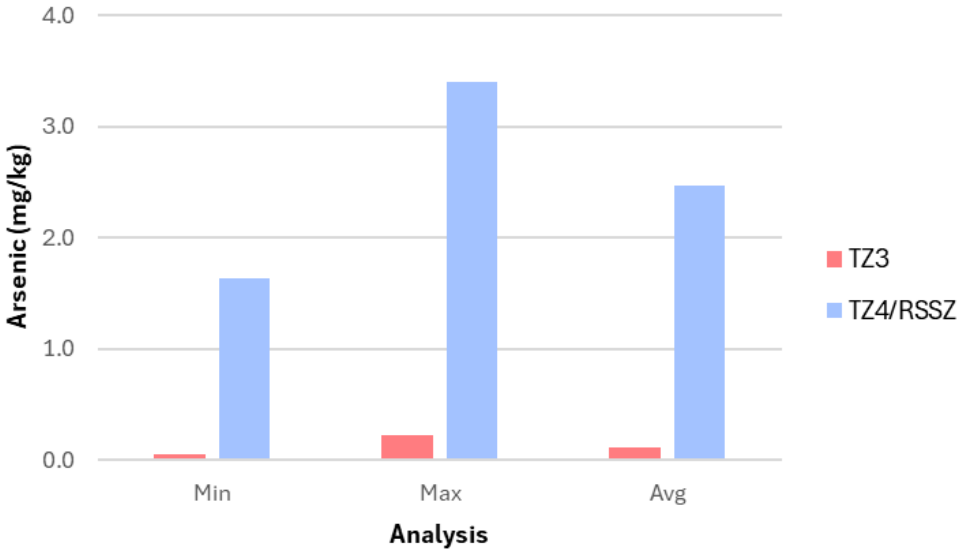


Figure 5: Arsenic (mg/kg) in TZ3 and TZ4/RSSZ samples.

SEM EDS

Several samples were analysed by Microanalysis Laboratory in Perth by scanning electron microscope (SEM) to confirm the sulfur species present as either sulfide or sulfate. A total of 7 samples were selected for the analysis:

- TZ3 – 4 samples
- TZ4/RSSZ – 3 samples

Methodology

Each sample was mounted in epoxy resin and polished to a flat surface before being carbon coated to ensure optimal imaging conditions. The analysis was performed using a Carl Zeiss EVO50 SEM, equipped with an Oxford INCA X-Max EDS. Backscatter electron (BSE) imaging was used to capture high-resolution images of the samples and provide quantitative elemental analysis.

Results

The mineralogical composition for each of the 7 samples is summarised in Table 6.The full report is provided in Attachment D.

Table 6: SEM EDS mineralogical summary of observed sulfur-based particles.

ZONE	SAMPLE	ASSUMED COMPOUND	ASSUMED PHASE
TZ4/RSSZ	MG55790	Arsenic-iron sulfide	Arsenopyrite
		Zinc sulfide	Sphalerite
		Iron sulfide	Pyrite
	MG55795	Arsenic-iron sulfide	Arsenopyrite
		Zinc sulfide	Sphalerite
		Iron sulfide	Pyrite/pyrrhotite
		Iron-copper sulfide	Chalcopyrite
	MG55796	Arsenic-iron sulfide	Arsenopyrite
		Zinc sulfide	Sphalerite
		Iron sulfide	Pyrite/pyrrhotite
TZ3	MG54045	Arsenic-cobalt sulfide	Cobaltite
		Lead sulfide	Galena
		Copper sulfide	Chalcocite
	MG55789	Iron sulfide	Pyrite/pyrrhotite
		Zinc sulfide	Sphalerite
		Lead sulfide	Galena
		Arsenic-cobalt sulfide	Cobaltite
	MG54046	Iron sulfide	Pyrite/pyrrhotite
		Arsenic-iron sulfide	Arsenopyrite
		Copper-iron sulfide	Chalcopyrite
		Arsenic-cobalt sulfide	Cobaltite
		Lead sulfate	Anglesite
	MG54047	Copper-iron sulfide	Chalcopyrite
		Lead sulfate	Anglesite

The SEM EDS assessment was inconclusive regarding identification of sulfate minerals, except for minor anglesite. Additional mineralogical studies could be undertaken to understand why the TZ3 materials generate higher concentrations of sulfate compared to the TZ4/RSSZ samples in the deionised water extractions. However, these SPLP results and CLT studies (MWM, 2025b) suggest that this occurs and that is sufficient for understanding effects.

Data shown in Table 6 indicates that the oxidation of these sulfide minerals could lead to the release of PCOC that include: SO_4, As, Fe, and trace metals that include Co, Cu, Pb, and Zn. These contaminants have been identified as potentially being elevated in BOGP baseline water quality studies (MWM, 2024a) or in the geoenvironmental hazards assessment study (MWM, 2024c).

SUMMARY

ABA data confirmed all samples are classified as non-acid forming (NAF). SPLP testing and subsequent metal ecotoxicity quotient (MEQ) analysis against proposed water quality compliance limits (Ryder, 2025) for the BOGP (and ANZG (2018) where limits were not defined by Ryder (2025)) identified that:

- The following metals are elevated, and it is recommended that compliance monitoring should be undertaken for Al, As, Co, Cu.
- The following metals are slightly elevated, and performance monitoring should be undertaken for Cd and V at the ELF, TSF, and underground mine discharge points as this is likely to be the domains that will be potentially elevated.

SEM – EDS indicated a range of sulfide minerals and anglesite, a lead sulfate mineral. Oxidation of sulfide minerals identified by SEM could lead to the release of PCOC that include SO_4, As, Fe, and trace metals that include Co, Cu, Pb, and Zn. However, Pb is not identified a being elevated in the SPLP test.

CLOSING REMARKS

Please do not hesitate to contact Paul Weber at +64 3 242 0221 or paul.weber@minewaste.com.au should you wish to discuss this memorandum in greater detail.

Attachments:
Attachment A – Proposed Water Quality Limits
Attachment B – Tabulated Results
Attachment C – Laboratory Reports
Attachment D – SEM EDS Laboratory Reports

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ATTACHMENT A – PROPOSED WATER QUALITY LIMITS

Proposed Water Quality

Proposed water quality compliance limits (WQ Limit) for MEQ analysis are provided in Table 7 as modified from Ryder (2025). The most conservative (chronic) values have been used where relative for MEQ analysis. Where no limit was provided, other guideline values were applied (see MEQ Section below).

Table 7. PCOC and WQ Limits for MEQ Analysis.

PARAMETER	SURFACE WATER*	GROUND WATER
Units are mg/L unless stated otherwise	*Recommended compliance limit(s)*	*Recommended compliance limit(s)*
pH (unitless)	6.5 – 9.0	–
NH_3-N (Annual 95th%ile)	<0.4	0.24 [1]
NO_3-N (Annual 95th%ile)	<3.5	11.3 (MAV)
BOD_5	≤2	–
Cyanide (CN^-)	0.011 [2]	0.6 (MAV)
Sulfate	500 [3]	≤250
Sulfide	≤0.0015	–
Ag (diss)	0.00005 [4]	0.00005 [4]
Al (diss)	0.08 [5]	1 (MAV)
As(V) (diss)	≤0.042	0.01 (MAV)
B (diss)	0.94 [4]	0.94 [4]
Cd (diss)	≤0.0004 [6]	0.004 (MAV)
Co (diss)	0.001 (chronic)	<1 (LDW)
Cr (diss)	≤0.0033 (Cr(III)) [6]	≤0.05 (MAV, Total)
Cu (diss)	0.0018 [7]	≤0.5
Fe (total)	–	≤0.3*
Pb (diss)	0.0034 [4]	0.01 (MAV)
Mn (diss)	-	0.4 (MAV)
Mo (diss)	0.034	<0.01 (LDW)
Ni (diss)	0.011 [4]	0.011 [4]
Sb (total)	0.074 (chronic)	0.02 (MAV)
Se (diss)	0.011 [4]	<0.02 (LDW)
Sr (diss)	2.5 [8]	4
U (diss)	–	0.03*
V (diss)	0.006 [4]	0.006 [4]
Zn (diss)	0.015 [9]	≤1.5

Source: Ryder (2025) and other guidelines as shown in blue.

** Surface water quality limits applied to MEQ with the exception of Fe and U where groundwater limits applied.*

1. – NPS for Freshwater Management (MfE, 2020)

2. – ANZG (2018) guidelines – modification for pH and temperature

3. – Modification for hardness and chloride concentrations

4. – ANZG (2018) guidelines for 95% protection of freshwater species.

5. – ANZG (2018) guidelines for 90% protection of freshwater species. This was done to simplify calculations

6. – Modification for hardness

7. – ANZG (2018) guidelines for 90% protection of freshwater species. Modification for dissolved organic carbon (DOC)

8. – Canadian Federal Environmental Quality Guidelines (2020)

9. - ANZG (2018) guidelines for 90% protection of freshwater species. Modification for hardness.

MAV = Maximum Acceptable Value

LDW = Livestock drinking water (ANZG, 2023).

MEQ

A metal ecotoxicity quotient (MEQ) is used in this report to identify potential constituents of concern (PCOC) that may be elevated with respect to water quality guidelines, compliance limits, or trigger values that mange ecotoxicity risks (Weber and Olds, 2016). For this report, the proposed BOGP water quality compliance limits (Ryder, 2025) are used as a MEQ screening tool to determine whether baseline water quality data were elevated. The approach does not use toxicity modification factors to calculate MEQ and uses conservative data when available (e.g., chronic limits rather than acute limits).

For this report, water quality data were assessed against the proposed BOGP water quality compliance limits for surface water quality (Ryder, 2025), with the exception of Fe and U where groundwater quality limits are used . Where no limit was provided, other guideline values were applied to have a water quality limit (WQ Limit) for assessment purposes:

- The 95% ANZG (2018) default guideline values (DGVs).
- The 90% ANZG (2018) DGVs for Al, Cu and Zn.
- Guidelines from the NPS[6] for Freshwater Management (MfE, 2020) for ammoniacal-N in groundwater: 0.24 mg/L.
- A limit of 2.5 mg/L was applied to Sr (strontium). This guideline is based on the Canadian Federal Environmental Quality Guidelines (2020).
- No hardness modifications[7] were applied as this was conducted as a screening assessment to determine exceedances.

The MEQ value for a PCOC is determined by dividing the measured maximum concentration by the WQ Limit. MEQ values greater than 1 indicate parameters that exceed the relevant WQ Limit. Conversely, MEQ values less than 1 are below the relevant WQ Limit. If any constituents are within 50% of the WQ Limit (i.e., MEQ ≥0.5) they are considered potentially elevated (and are noted as being potentially elevated in this report) and ongoing monitoring is recommended to confirm trends and/or potential hazards. This approach is similar to using 50% of maximum acceptable value (MAV) for New Zealand drinking water where it is used as a screening level for follow up action (Taumata Arowai, 2022).

MEQ data are colour coded for ease of analysis and data interpretation where:

- Red MEQ indicates that concentrations exceed the WQ Limits or similar guidelines.
- Orange MEQ indicate MEQ between ≤ 1.0 and ≥ 0.5 (i.e., potentially elevated).
- Blue MEQ indicates all data are influenced by the limit of reporting (LOR) being higher than the WQ Limits and may not be elevated.

NPS = National Policy Statement

[7] *Hardness correction algorithms used to convert chronic toxicity data for Cd, Cr, Pb, Ni, and Zn at a given test water hardness to a hardness of 30 mg $CaCO_3$/L (ANZG, 2018).*

ATTACHMENT B – TABULATED RESULTS

TZ3 and TZ4/RSSZ SPLP data

Sample	MG54045	MG54046	MG54047	MG55789	MG55790	MG55795	MG55796
Zone	TZ3	TZ3	TZ3	TZ3	TZ4/RSSZ	TZ4/RSSZ	TZ4/RSSZ
Lab Number	3765226.1	3765226.2	3765226.3	3718838.1	3718838.2	3718838.3	3718838.4
Sulphate	0.7	1.1	1	0.7	0.6	< 0.5	< 0.5
Dissolved Aluminium	0.96	0.64	0.77	0.39	1.17	0.77	1.1
Dissolved Antimony	0.002	0.0086	0.0022	0.0008	0.0014	0.0023	0.0019
Dissolved Arsenic	0.0112	0.0044	0.0045	0.0029	0.119	0.17	0.082
Dissolved Barium	< 0.005	0.027	0.013	0.006	< 0.005	< 0.005	< 0.005
Dissolved Boron	0.02	0.024	0.021	0.009	0.009	0.012	0.011
Dissolved Cadmium	< 0.00005	< 0.00005	0.00024	0.00009	0.00048	< 0.00005	< 0.00005
Dissolved Caesium	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Calcium	6.2	6.9	6.3	4	7	7.5	8.3
Dissolved Chromium	0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Dissolved Cobalt	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dissolved Copper	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0005	< 0.0005	< 0.0005
Dissolved Iron	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dissolved Lanthanum	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Lead	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Lithium	0.0008	0.0019	0.0013	0.0025	0.0022	0.0021	0.0027
Dissolved Magnesium	0.79	0.92	0.92	4.5	2.4	1.94	2.1
Dissolved Manganese	< 0.0005	< 0.0005	< 0.0005	0.0051	0.0101	0.0039	0.0053
Dissolved Molybdenum	0.0014	0.0025	0.0022	0.0003	0.0007	0.0004	0.0002
Dissolved Nickel	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Dissolved Potassium	5.4	4.4	4.9	2.7	4	3.7	3.5
Dissolved Rubidium	0.00157	0.00141	0.00157	0.0016	0.00141	0.00146	0.0013
Dissolved Selenium	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Dissolved Silver	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Sodium	2.5	3	3	1.05	0.72	0.88	0.9
Dissolved Strontium	0.7	0.88	1.24	0.079	0.37	0.28	0.4
Dissolved Thallium	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Dissolved Tin	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Dissolved Uranium	0.00036	0.00095	0.00011	0.0023	0.00054	0.00055	0.00041
Dissolved Vanadium	0.0047	0.006	0.0065	< 0.0010	< 0.0010	0.0012	< 0.0010
Dissolved Zinc	< 0.0010	< 0.0010	0.0015	< 0.0010	< 0.0010	< 0.0010	< 0.0010

Grab Sample SPLP data

Sample	**CIT T24 Road**	**RAS Mullock**	**CIT RSSZ.003**
Location	**Weathered TZ4 roadcut**	**Historic Mullock**	**Historic Mullock**
Lab number	WP24-13842	WP24-13842	WP24-13842
pH	6.9	9.2	8.7
Conductivity @ 25 °C	59	73	99
Acidity pH 4.0	<5	<5	<5
Acidity pH 5.0	<5	<5	<5
Acidity pH 7.0	<5	<5	<5
Total Alkalinity as CaCO3 (mg/L)	30 mg/l	40 mg/l	50 mg/l
Aluminium, Al g/m3	0.153	0.211	0.029
Antimony, Sb g/m3	<0.001	<0.001	0.001
Arsenic, As g/m3	0.082	0.217	2.61
Barium, Ba g/m3	0.006	<0.002	<0.002
Boron, B g/m3	0.04	<0.03	<0.03
Cadmium, Cd g/m3	<0.0002	<0.0002	<0.0002
Calcium, Ca g/m3	5.9	8.2	14.2
Chromium, Cr g/m3	<0.001	<0.001	<0.001
Cobalt, Co g/m3	0.001	<0.0005	<0.0005
Copper, Cu g/m3	0.003	0.0008	0.0011
Iron, Fe g/m3	0.19	0.08	<0.01
Lead, Pb g/m3	<0.001	<0.0005	<0.0005
Magnesium, Mg g/m3	0.84	2.96	0.55
Manganese, Mn g/m3	0.183	0.003	<0.001
Mercury, Hg g/m3	<0.0005	<0.0005	<0.0005
Molybdenum, Mo g/m3	<0.001	<0.0005	<0.0005
Nickel, Ni g/m3	0.001	<0.0005	<0.0005
Potassium, K g/m3	5.3	2.7	6
Selenium, Se g/m3	<0.005	<0.005	<0.005
Silver, Ag g/m3	<0.0005	<0.0005	<0.0005
Sodium, Na g/m3	0.8	0.6	0.6
Strontium, Sr g/m3	0.025	0.096	0.03
Thallium, Tl g/m3	<0.0005	<0.0005	<0.0005
Tin, Sn g/m3	<0.0005	<0.0005	<0.0005
Titanium, Ti g/m3	0.002	<0.0005	<0.0005
Uranium, U g/m3	<0.0002	0.001	<0.001
Vanadium, V g/m3	<0.0005	<0.001	<0.0005
Zinc, Zn g/m3	<0.002	<0.002	<0.002
Total N	3.95	0.47	1.43
Ammonia N g/m³	0.3	<0.01	0.07
WAD CN	<0.007	<0.007	<0.007
Total phosphorus	23.8	0.316	0.453
Fluoride	0.16	0.03	0.06
Chloride	0.17	0.09	0.1
Nitrate Nitrogen, NO3-N	1.19	0.08	1.04
Nitrite Nitrogen, NO2-N	0.08	<0.01	<0.01
Sulphate, SO4	0.89	1.88	0.83
Dissolved Oxygen	8.2	9.3	9.2

ATTACHMENT C – LABORATORY REPORTS

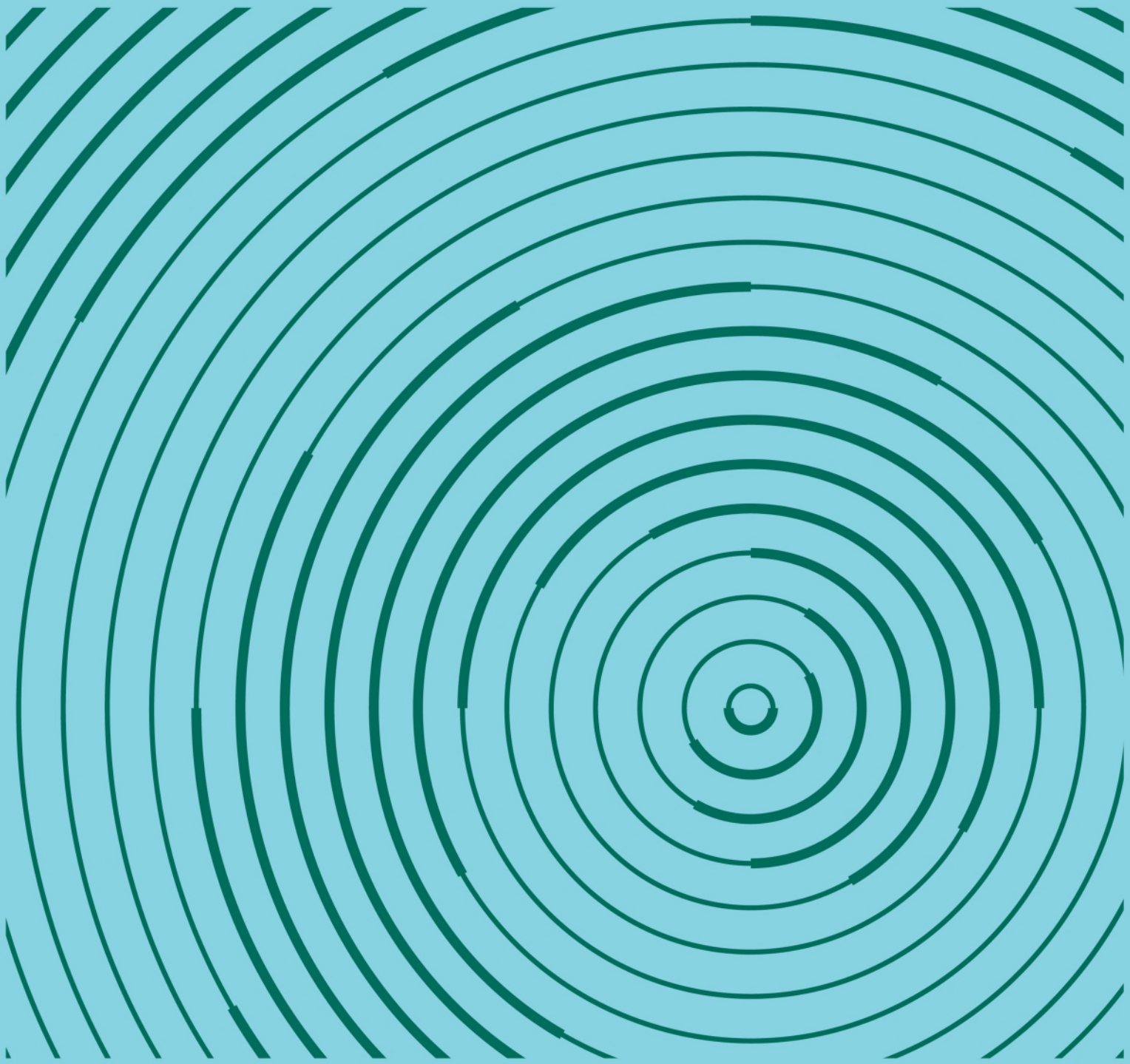
Verum Group

ABA analysis

Prepared for

Mine Waste Management

February 2025
25-76



Author	M.Young
Verum Group reference	25/76
Client name	Mine Waste Management
Client address	
Distribution (other than client)	Nil
Date of Issue	13/02/2025
Reviewed by	Mike Young National Laboratory Manager
Approved by	Mike Young National Laboratory Manager

Document tracking

Version	Date	Changes made	Reviewer(s)

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1. Method Notes

Sample prep	Samples were received were dried and crushed in a jaw mill with a split then crushed in the ring mill and screened to confirm fineness.	
1 – Paste pH/EC	Fine ground sample 1:2 sample to water. Measured after sitting overnight (approx. 16hrs)	
2 – Total Sulphur	Leco combustion furnace	
3 – ANC Acid Neutralising Capacity	AMIRA Handbook 2002 (App C)	
4 – NAG Net Acid Generation	AMIRA Handbook 2002 (App D)	pH after H_2O_2 digestion was greater than 7 no titration was required.
5 – SPLP extraction	Jaw crushed sample (-6mm) 1:20 rolled with distilled water overnight (approx. 16hrs)	
6 – Trace elements	Extended trace element suit	Analysed by Hill Laboratories

A total of 3 samples were received. Samples were identified with as MG54045, MG54046 and MG54047

All tests listed above were completed for all four samples.

Quality assurance and sample duplicates were run as required by the methods.

Data included in this report is also supplied in Excel files.

2. Sample and Analysis data

Verum	MWM ID	Paste pH	EC	Sulphur	MPA	ANC	ANC	ANC	ANC	NAG pH
Sample				%w	kg H2SO4/t	Fizz rating	Digested pH	kg H2SO4/t	%CaCO3	after digest
25/76-01	MG54045	9.45	465	0.052	1.6	2	1.18	67.32	6.87	9.66
25/76-02	MG54046	9.15	478	0.033	1.0	2	1.21	91.80	9.37	10.69
25/76-03	MG54047	9.29	486	0.032	1.0	2	1.21	88.11	8.99	9.82

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Certificate of Analysis

Client:	Verum Group Limited	**Lab No:**	3765226 SPv1
Contact:	Mike Young	**Date Received:**	29-Jan-2025
	C/- Verum Group Limited	**Date Reported:**	04-Feb-2025
	PO Box 29415	**Quote No:**	134778
	Riccarton	**Order No:**	25/76-1/2/3
	Christchurch 8440	**Client Reference:**	
		Submitted By:	Mike Young

Sample Type: Aqueous

		Sample Name:	25/76-1 28-Jan-2025	25/76-2 28-Jan-2025	25/76-3 28-Jan-2025
		Lab Number:	3765226.1	3765226.2	3765226.3
Individual Tests					
Sulphate	g/m³		0.7	1.1	1.0
ICP-MS Extended Dissolved Metals, trace level					
Dissolved Aluminium	g/m³		0.96	0.64	0.77
Dissolved Antimony	g/m³		0.0020	0.0086	0.0022
Dissolved Arsenic	g/m³		0.0112	0.0044	0.0045
Dissolved Barium	g/m³		< 0.005	0.027	0.013
Dissolved Boron	g/m³		0.020	0.024	0.021
Dissolved Cadmium	g/m³		< 0.00005	< 0.00005	0.00024
Dissolved Caesium	g/m³		< 0.00010	< 0.00010	< 0.00010
Dissolved Calcium	g/m³		6.2	6.9	6.3
Dissolved Chromium	g/m³		0.0005	< 0.0005	< 0.0005
Dissolved Cobalt	g/m³		< 0.0002	< 0.0002	< 0.0002
Dissolved Copper	g/m³		< 0.0005	< 0.0005	< 0.0005
Dissolved Iron	g/m³		< 0.02	< 0.02	< 0.02
Dissolved Lanthanum	g/m³		< 0.00010	< 0.00010	< 0.00010
Dissolved Lead	g/m³		< 0.00010	< 0.00010	< 0.00010
Dissolved Lithium	g/m³		0.0008	0.0019	0.0013
Dissolved Magnesium	g/m³		0.79	0.92	0.92
Dissolved Manganese	g/m³		< 0.0005	< 0.0005	< 0.0005
Dissolved Molybdenum	g/m³		0.0014	0.0025	0.0022
Dissolved Nickel	g/m³		< 0.0005	< 0.0005	< 0.0005
Dissolved Potassium	g/m³		5.4	4.4	4.9
Dissolved Rubidium	g/m³		0.00157	0.00141	0.00157
Dissolved Selenium	g/m³		< 0.0010	< 0.0010	< 0.0010
Dissolved Silver	g/m³		< 0.00010	< 0.00010	< 0.00010
Dissolved Sodium	g/m³		2.5	3.0	3.0
Dissolved Strontium	g/m³		0.70	0.88	1.24
Dissolved Thallium	g/m³		< 0.00005	< 0.00005	< 0.00005
Dissolved Tin	g/m³		< 0.0005	< 0.0005	< 0.0005
Dissolved Uranium	g/m³		0.00036	0.00095	0.00011
Dissolved Vanadium	g/m³		0.0047	0.0060	0.0065
Dissolved Zinc	g/m³		< 0.0010	< 0.0010	0.0015

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The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request.
Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
ICP-MS Extended Dissolved Metals, trace level	0.45µm Filtration, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 - 0.05 g/m^3	1-3
Sulphate	Filtered sample. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1-3

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 31-Jan-2025 and 04-Feb-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Ara Heron BSc (Tech)
Client Services Manager - Environmental

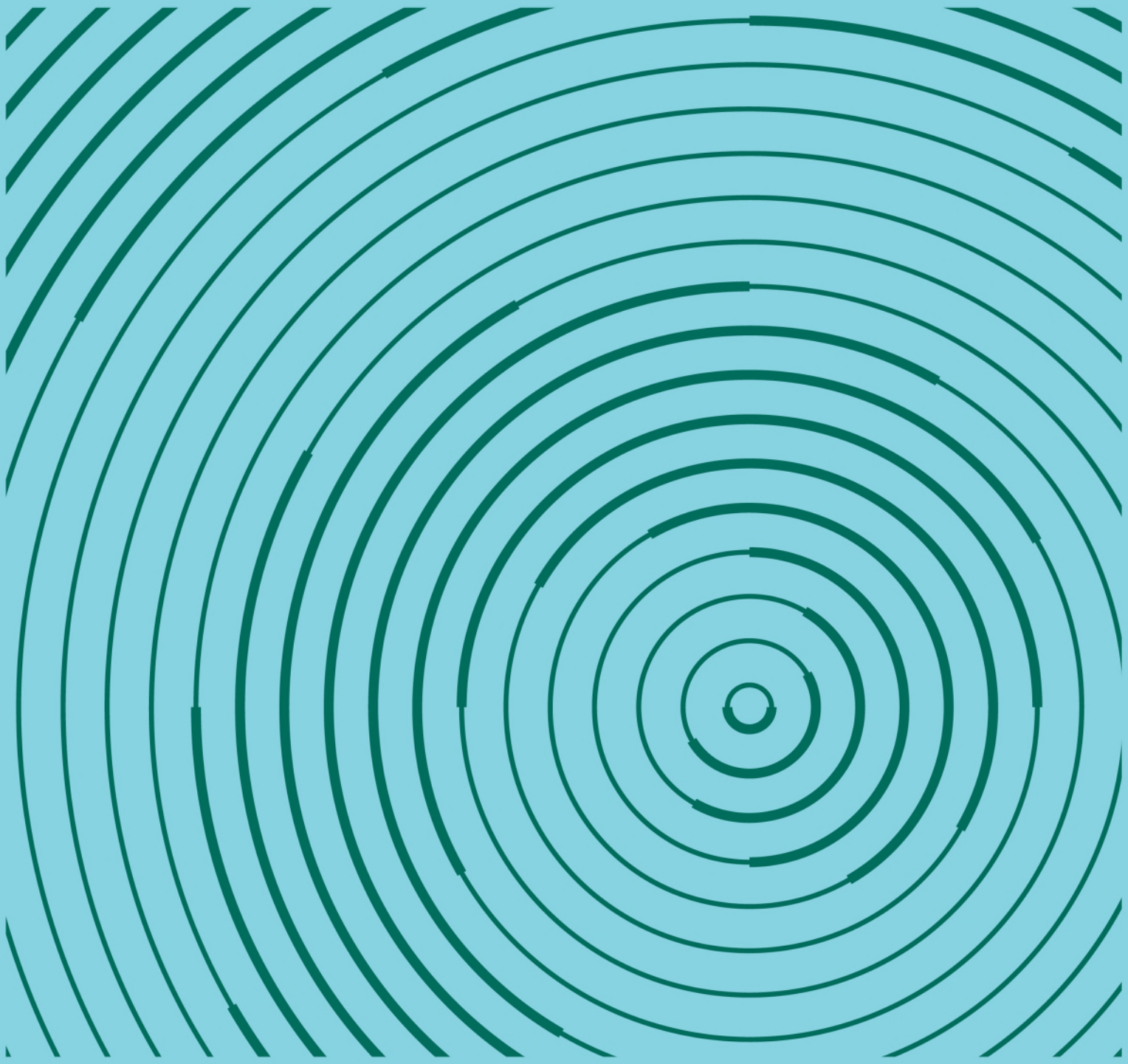
Verum Group

ABA analysis

Prepared for

Mine Waste Management

December 2024
24-1098



Author	M.Young
Verum Group reference	24-1098
Client name	Mine Waste Management
Client address	
Distribution (other than client)	Nil
Date of Issue	19/12/2024
Reviewed by	Mike Young National Laboratory Manager
Approved by	Mike Young National Laboratory Manager

Document tracking

Version	Date	Changes made	Reviewer(s)
2	19/12/24	Addition of sulphate to Hill's Laboratory report	MCY

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1. Method Notes

Sample prep	Samples were received were dried and crushed in a jaw mill with a split then crushed in the ring mill and screened to confirm fineness.	
1 – Paste pH/EC	Fine ground sample 1:2 sample to water. Measured after sitting overnight (approx. 16hrs)	
2 – Total Sulphur	Leco combustion furnace	
3 – ANC Acid Neutralising Capacity	AMIRA Handbook 2002 (App C)	
4 – NAG Net Acid Generation	AMIRA Handbook 2002 (App D)	pH after H_2O_2 digestion was greater than 7 no titration was required.
5 – SPLP extraction	Jaw crushed sample (-6mm) 1:20 rolled with distilled water overnight (approx. 16hrs)	
6 – Trace elements	Extended trace element suit	Analysed by Hill Laboratories

A total of 4 samples were received. Samples were identified with as MG55789, MG55790, MG55795 and MG55796

All tests listed above were completed for all four samples.

Quality assurance and sample duplicates were run as required by the methods.

Data included in this report is also supplied in Excel files.

2. Sample and Analysis data

Verum Sample	MWM ID	Paste pH	EC	Sulphur %w	MPA kg H2SO4/t	ANC Fizz rating	ANC Digested pH	ANC kg H2SO4/t	ANC %CaCO3	NAG pH after digest
24/1098-01	MG55789	8.95	412	0.057	1.7	2	1.45	48.89	4.99	9.22
24/1098-02	MG55790	8.95	562	0.32	9.8	2	1.50	79.45	8.11	9.84
24/1098-03	MG55795	9.20	498	0.24	7.3	2	1.43	61.09	6.23	9.97
24/1098-04	MG55796	9.00	440	0.17	5.2	2	1.46	70.88	7.23	10.31

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Certificate of Analysis

Client:	Verum Group Limited	**Lab No:**	3718838	SPv2
Contact:	Mike Young	**Date Received:**	19-Nov-2024	
	C/- Verum Group Limited	**Date Reported:**	19-Dec-2024	**(Amended)**
	PO Box 29415	**Quote No:**	134778	
	Riccarton	**Order No:**		
	Christchurch 8440	**Client Reference:**		
		Submitted By:	Mike Young	

Sample Type: Aqueous

Sample Name:		24/1098-1 13-Nov-2024	24/1098-2 13-Nov-2024	24/1098-3 13-Nov-2024	24/1098-4 13-Nov-2024
Lab Number:		3718838.1	3718838.2	3718838.3	3718838.4
Individual Tests					
Sulphate	g/m³	0.7	0.6	< 0.5	< 0.5
ICP-MS Extended Dissolved Metals, trace level					
Dissolved Aluminium	g/m³	0.39	1.17	0.77	1.10
Dissolved Antimony	g/m³	0.0008	0.0014	0.0023	0.0019
Dissolved Arsenic	g/m³	0.0029	0.119	0.170	0.082
Dissolved Barium	g/m³	0.006	< 0.005	< 0.005	< 0.005
Dissolved Boron	g/m³	0.009	0.009	0.012	0.011
Dissolved Cadmium	g/m³	0.00009	0.00048	< 0.00005	< 0.00005
Dissolved Caesium	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Calcium	g/m³	4.0	7.0	7.5	8.3
Dissolved Chromium	g/m³	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Dissolved Cobalt	g/m³	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dissolved Copper	g/m³	< 0.0005	0.0005	< 0.0005	< 0.0005
Dissolved Iron	g/m³	< 0.02	< 0.02	< 0.02	< 0.02
Dissolved Lanthanum	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Lead	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Lithium	g/m³	0.0025	0.0022	0.0021	0.0027
Dissolved Magnesium	g/m³	4.5	2.4	1.94	2.1
Dissolved Manganese	g/m³	0.0051	0.0101	0.0039	0.0053
Dissolved Molybdenum	g/m³	0.0003	0.0007	0.0004	0.0002
Dissolved Nickel	g/m³	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Dissolved Potassium	g/m³	2.7	4.0	3.7	3.5
Dissolved Rubidium	g/m³	0.00160	0.00141	0.00146	0.00130
Dissolved Selenium	g/m³	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Dissolved Silver	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Sodium	g/m³	1.05	0.72	0.88	0.90
Dissolved Strontium	g/m³	0.079	0.37	0.28	0.40
Dissolved Thallium	g/m³	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Dissolved Tin	g/m³	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Dissolved Uranium	g/m³	0.0023	0.00054	0.00055	0.00041
Dissolved Vanadium	g/m³	< 0.0010	< 0.0010	0.0012	< 0.0010
Dissolved Zinc	g/m³	< 0.0010	< 0.0010	< 0.0010	< 0.0010

Analyst's Comments

Amended Report: This certificate of analysis replaces report '3718838-SPv1' issued on 26-Nov-2024 at 8:36 am.
Reason for amendment: Further testing added.

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The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request.
Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
ICP-MS Extended Dissolved Metals, trace level	0.45µm Filtration, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00002 - 0.05 g/m^3	1-4
Sulphate	Filtered sample. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m^3	1-4

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 25-Nov-2024 and 19-Dec-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Ara Heron BSc (Tech)
Client Services Manager - Environmental

ANALYSIS REPORT

WP24-13842.001

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention: KIM .

Description:
Sample ID: Rock CIT T24

Received: 4/06/2024
Completed: 15/10/2024
Job Number: WP24-13842
Report Number: 0000029708
Order Reference: J-NZ0233

Analysis	Method	Result	Unit
Sulphur	SGS Global method	<0.005	%
Carbon 0.01-30%*	SGS Global method	0.38	%
pH (1:2) aged overnight/12 hours*	NEPM103 1:2 extraction	7.6	pH unit
Conductivity after PH1_2 (12 hours)*	NEPM103 1:2 extraction	360	µS/cm
Acid Neutralising Capacity (kg H2SO4/T)*	SGS inhouse method	6	KGH2SO4/T
Acid Neutralising Capacity (% CaCO3 equivalent)*	SGS inhouse method	0.6	%
Total Acid Potential (kg H2SO4/T)*	SGS inhouse method	<0.15	KGH2SO4/T
Nett Acid Producing Potential (kg H2SO4/T)*	SGS inhouse method	-6	KGH2SO4/T
NAG pH*	SGS Global method	6.0	pH unit
Net Acid Generation to pH 4.5 (kg H2SO4/T)*	SGS Global method	0	KGH2SO4/T
Nett Acid Generation (kg H2SO4/T)*	SGS Global method	11	KGH2SO4/T
pH in Water analysed within 6 hour holding time	APHA 4500 H SGS Westport	6.9	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	59	µS/cm
Acidity to pH 4.0	APHA 2310	<5	mg/l
Acidity to pH 5.0	APHA 2310	<5	mg/l
Acidity to pH 7.0	APHA 2310	<5	mg/l
Total Alkalinity as CaCO3	APHA 2320B	30	mg/l CaCO3
Aluminium (Al) dissolved*	APHA 3125 subcon SGS Waihi	0.153	g/m3
Antimony (Sb) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Arsenic (As) dissolved*	APHA 3125 subcon SGS Waihi	0.082	g/m3
Barium (Ba) dissolved*	APHA 3125 subcon SGS Waihi	0.006	g/m3
Boron (B) dissolved*	APHA 3125 subcon SGS Waihi	0.040	g/m3
Cadmium (Cd) dissolved*	APHA 3125 subcon SGS Waihi	<0.0002	g/m3
Calcium (Ca) dissolved*	APHA 3125 subcon SGS Waihi	5.9	g/m3
Chromium (Cr) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Cobalt (Co) dissolved*	APHA 3125 subcon SGS Waihi	0.0010	g/m3
Copper (Cu) dissolved*	APHA 3125 subcon SGS Waihi	0.0030	g/m3
Iron (Fe) dissolved*	APHA 3125 subcon SGS Waihi	0.190	g/m3
Lead (Pb) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Magnesium (Mg) dissolved*	APHA 3125 subcon SGS Waihi	0.84	g/m3
Manganese (Mn) dissolved*	APHA 3125 subcon SGS Waihi	0.183	g/m3
Mercury (Hg) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Molybdenum (Mo) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Nickel (Ni) dissolved*	APHA 3125 subcon SGS Waihi	0.001	g/m3
Potassium (K) dissolved*	APHA 3125 subcon SGS Waihi	5.3	g/m3
Selenium (Se) dissolved*	APHA 3125 subcon SGS Waihi	<0.005	g/m3
Silver (Ag) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Sodium (Na) dissolved*	APHA 3125 subcon SGS Waihi	0.8	g/m3
Strontium (Sr) dissolved*	APHA 3125 subcon SGS Waihi	0.025	g/m3
Thallium (Tl) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Tin (Sn) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Titanium (Ti) dissolved*	APHA 3125 subcon SGS Waihi	0.002	g/m3
Uranium (U) dissolved*	APHA 3125 subcon SGS Waihi	<0.0002	g/m3
Vanadium (V) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Zinc (Zn) dissolved*	APHA 3125 subcon SGS Waihi	<0.002	g/m3
Total nitrogen in water	APHA 4500-NO3 I Subcontracted ELS	3.95	g/m3
Ammonia nitrogen by CFA/FIA	APHA 4500 NH3 H online edition subcontracted ELS	0.30	g/m3
Total Cyanide by digestion and colorimetric finish*	APHA4500 CN-I subcontracted SGS Waihi	<0.007	g/m3

Analysis Report:
WP24-13842.001

Analysis	Method	Result	Unit
Total phosphorus in water	APHA 4500-P G subcontracted ELS	23.800	g/m3
Fluoride	APHA 4110 B subcontracted ELS	0.16	g/m3
Chloride	APHA 4110 B subcontracted ELS	0.17	g/m3
Nitrate Nitrogen. NO3-N	APHA 4110 B subcontracted ELS	1.19	g/m3
Nitrite Nitrogen, NO2-N	APHA 4110 B subcontracted ELS	0.08	g/m3
Sulphate as SO4	APHA 4110 B subcontracted ELS	0.89	g/m3
Dissolved Oxygen*	HACH method 10360 USEPA 40 CFR Part 136 approved	8.2	mg/l

* denotes test not IANZ accredited.

NAG pH for blank was 5.9
Dissolved Metals analysed at Eurofins Els 85 Port Road Seaview Lower Hutt Wellington 5010 : AR-24-NW-058652-01
WAD CN analysed at SGS Waihi- 43 Victoria Street Waihi report WAI24-02248

Date Start/End Analysis (4/7/2024 - 15/10/2024)

Reported: 15/10/2024 2:07:02PM

ANALYSIS REPORT

WP24-13842.002

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention: KIM .

Description:
Sample ID: Waste Rock RAS Mullock

Received: 4/06/2024
Completed: 15/10/2024
Job Number: WP24-13842
Report Number: 0000029708
Order Reference: J-NZ0233

Analysis	Method	Result	Unit
Sulphur	SGS Global method	0.093	%
Carbon 0.01-30%*	SGS Global method	0.91	%
pH (1:2) aged overnight/12 hours*	NEPM103 1:2 extraction	9.5	pH unit
Conductivity after PH1_2 (12 hours)*	NEPM103 1:2 extraction	200	µS/cm
Acid Neutralising Capacity (kg H2SO4/T)*	SGS inhouse method	52	KGH2SO4/T
Acid Neutralising Capacity (% CaCO3 equivalent)*	SGS inhouse method	5.3	%
Total Acid Potential (kg H2SO4/T)*	SGS inhouse method	2.9	KGH2SO4/T
Nett Acid Producing Potential (kg H2SO4/T)*	SGS inhouse method	-49	KGH2SO4/T
NAG pH*	SGS Global method	7.1	pH unit
Net Acid Generation to pH 4.5 (kg H2SO4/T)*	SGS Global method	0	KGH2SO4/T
Nett Acid Generation (kg H2SO4/T)*	SGS Global method	0	KGH2SO4/T
pH in Water analysed within 6 hour holding time	APHA 4500 H SGS Westport	9.2	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	73	µS/cm
Acidity to pH 4.0	APHA 2310	<5	mg/l
Acidity to pH 5.0	APHA 2310	<5	mg/l
Acidity to pH 7.0	APHA 2310	<5	mg/l
Total Alkalinity as CaCO3	APHA 2320B	40	mg/l CaCO3
Aluminium (Al) dissolved*	APHA 3125 subcon SGS Waihi	0.211	g/m3
Antimony (Sb) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Arsenic (As) dissolved*	APHA 3125 subcon SGS Waihi	0.217	g/m3
Barium (Ba) dissolved*	APHA 3125 subcon SGS Waihi	<0.002	g/m3
Boron (B) dissolved*	APHA 3125 subcon SGS Waihi	<0.03	g/m3
Cadmium (Cd) dissolved*	APHA 3125 subcon SGS Waihi	<0.0002	g/m3
Calcium (Ca) dissolved*	APHA 3125 subcon SGS Waihi	8.2	g/m3
Chromium (Cr) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Cobalt (Co) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Copper (Cu) dissolved*	APHA 3125 subcon SGS Waihi	0.0008	g/m3
Iron (Fe) dissolved*	APHA 3125 subcon SGS Waihi	0.080	g/m3
Lead (Pb) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Magnesium (Mg) dissolved*	APHA 3125 subcon SGS Waihi	2.96	g/m3
Manganese (Mn) dissolved*	APHA 3125 subcon SGS Waihi	0.003	g/m3
Mercury (Hg) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Molybdenum (Mo) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Nickel (Ni) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Potassium (K) dissolved*	APHA 3125 subcon SGS Waihi	2.7	g/m3
Selenium (Se) dissolved*	APHA 3125 subcon SGS Waihi	<0.005	g/m3
Silver (Ag) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Sodium (Na) dissolved*	APHA 3125 subcon SGS Waihi	0.6	g/m3
Strontium (Sr) dissolved*	APHA 3125 subcon SGS Waihi	0.096	g/m3
Thallium (Tl) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Tin (Sn) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Titanium (Ti) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Uranium (U) dissolved*	APHA 3125 subcon SGS Waihi	0.001	g/m3
Vanadium (V) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Zinc (Zn) dissolved*	APHA 3125 subcon SGS Waihi	<0.002	g/m3
Total nitrogen in water	APHA 4500-NO3 I Subcontracted ELS	0.47	g/m3
Ammonia nitrogen by CFA/FIA	APHA 4500 NH3 H online edition subcontracted ELS	<0.01	g/m3
Total Cyanide by digestion and colorimetric finish*	APHA4500 CN-I subcontracted SGS Waihi	<0.007	g/m3

Analysis Report:
WP24-13842.002

Analysis	Method	Result	Unit
Total phosphorus in water	APHA 4500-P G subcontracted ELS	0.316	g/m3
Fluoride	APHA 4110 B subcontracted ELS	0.03	g/m3
Chloride	APHA 4110 B subcontracted ELS	0.09	g/m3
Nitrate Nitrogen. NO3-N	APHA 4110 B subcontracted ELS	0.08	g/m3
Nitrite Nitrogen, NO2-N	APHA 4110 B subcontracted ELS	<0.01	g/m3
Sulphate as SO4	APHA 4110 B subcontracted ELS	1.88	g/m3
Dissolved Oxygen*	HACH method 10360 USEPA 40 CFR Part 136 approved	9.3	mg/l

* denotes test not IANZ accredited.

NAG pH for blank was 5.9
Dissolved Metals analysed at Eurofins Els 85 Port Road Seaview Lower Hutt Wellington 5010 : AR-24-NW-058652-01
WAD CN analysed at SGS Waihi- 43 Victoria Street Waihi report WAI24-02248

Date Start/End Analysis (4/7/2024 - 15/10/2024)

Reported: 15/10/2024 2:07:02PM

ANALYSIS REPORT

WP24-13842.003

Client:
Matakanui Gold Limited
PO Box 11

7842 Hokitika NEW ZEALAND
Attention: KIM .

Description:
Sample ID: Waste Rock CIT RSSZ

Received: 4/06/2024
Completed: 15/10/2024
Job Number: WP24-13842
Report Number: 0000029708
Order Reference: J-NZ0233

Analysis	Method	Result	Unit
Sulphur	SGS Global method	0.006	%
Carbon 0.01-30%*	SGS Global method	0.51	%
pH (1:2) aged overnight/12 hours*	NEPM103 1:2 extraction	8.9	pH unit
Conductivity after PH1_2 (12 hours)*	NEPM103 1:2 extraction	220	µS/cm
Acid Neutralising Capacity (kg H2SO4/T)*	SGS inhouse method	36	KGH2SO4/T
Acid Neutralising Capacity (% CaCO3 equivalent)*	SGS inhouse method	3.7	%
Total Acid Potential (kg H2SO4/T)*	SGS inhouse method	0.18	KGH2SO4/T
Nett Acid Producing Potential (kg H2SO4/T)*	SGS inhouse method	-36	KGH2SO4/T
NAG pH*	SGS Global method	7.2	pH unit
Net Acid Generation to pH 4.5 (kg H2SO4/T)*	SGS Global method	0	KGH2SO4/T
Nett Acid Generation (kg H2SO4/T)*	SGS Global method	0	KGH2SO4/T
pH in Water analysed within 6 hour holding time	APHA 4500 H SGS Westport	8.7	pH unit
Electrical conductivity at 25 °C	APHA 2510 SGS Westport	99	µS/cm
Acidity to pH 4.0	APHA 2310	<5	mg/l
Acidity to pH 5.0	APHA 2310	<5	mg/l
Acidity to pH 7.0	APHA 2310	<5	mg/l
Total Alkalinity as CaCO3	APHA 2320B	50	mg/l CaCO3
Aluminium (Al) dissolved*	APHA 3125 subcon SGS Waihi	0.029	g/m3
Antimony (Sb) dissolved*	APHA 3125 subcon SGS Waihi	0.001	g/m3
Arsenic (As) dissolved*	APHA 3125 subcon SGS Waihi	2.61	g/m3
Barium (Ba) dissolved*	APHA 3125 subcon SGS Waihi	<0.002	g/m3
Boron (B) dissolved*	APHA 3125 subcon SGS Waihi	<0.03	g/m3
Cadmium (Cd) dissolved*	APHA 3125 subcon SGS Waihi	<0.0002	g/m3
Calcium (Ca) dissolved*	APHA 3125 subcon SGS Waihi	14.2	g/m3
Chromium (Cr) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Cobalt (Co) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Copper (Cu) dissolved*	APHA 3125 subcon SGS Waihi	0.0011	g/m3
Iron (Fe) dissolved*	APHA 3125 subcon SGS Waihi	<0.01	g/m3
Lead (Pb) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Magnesium (Mg) dissolved*	APHA 3125 subcon SGS Waihi	0.55	g/m3
Manganese (Mn) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Mercury (Hg) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Molybdenum (Mo) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Nickel (Ni) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Potassium (K) dissolved*	APHA 3125 subcon SGS Waihi	6.0	g/m3
Selenium (Se) dissolved*	APHA 3125 subcon SGS Waihi	<0.005	g/m3
Silver (Ag) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Sodium (Na) dissolved*	APHA 3125 subcon SGS Waihi	0.6	g/m3
Strontium (Sr) dissolved*	APHA 3125 subcon SGS Waihi	0.030	g/m3
Thallium (Tl) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Tin (Sn) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Titanium (Ti) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Uranium (U) dissolved*	APHA 3125 subcon SGS Waihi	<0.001	g/m3
Vanadium (V) dissolved*	APHA 3125 subcon SGS Waihi	<0.0005	g/m3
Zinc (Zn) dissolved*	APHA 3125 subcon SGS Waihi	<0.002	g/m3
Total nitrogen in water	APHA 4500-NO3 I Subcontracted ELS	1.43	g/m3
Ammonia nitrogen by CFA/FIA	APHA 4500 NH3 H online edition subcontracted ELS	0.07	g/m3
Total Cyanide by digestion and colorimetric finish*	APHA4500 CN-I subcontracted SGS Waihi	<0.007	g/m3

Analysis Report:
WP24-13842.003

Analysis	Method	Result	Unit
Total phosphorus in water	APHA 4500-P G subcontracted ELS	0.453	g/m3
Fluoride	APHA 4110 B subcontracted ELS	0.06	g/m3
Chloride	APHA 4110 B subcontracted ELS	0.10	g/m3
Nitrate Nitrogen. NO3-N	APHA 4110 B subcontracted ELS	1.04	g/m3
Nitrite Nitrogen, NO2-N	APHA 4110 B subcontracted ELS	<0.01	g/m3
Sulphate as SO4	APHA 4110 B subcontracted ELS	0.83	g/m3
Dissolved Oxygen*	HACH method 10360 USEPA 40 CFR Part 136 approved	9.2	mg/l

* denotes test not IANZ accredited.

NAG pH for blank was 5.9
Dissolved Metals analysed at Eurofins Els 85 Port Road Seaview Lower Hutt Wellington 5010 : AR-24-NW-058652-01
WAD CN analysed at SGS Waihi- 43 Victoria Street Waihi report WAI24-02248

Date Start/End Analysis (4/7/2024 - 15/10/2024)

Reported: 15/10/2024 2:07:02PM

Signed and dated on 15-Oct-2024

Alesha BENNETTS
Laboratory Technician

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ATTACHMENT D – SEM EDS LABAORATORY REPORTS

5 Alvan Street
Mount Lawley
WA 6050

Client:	Mine Waste Management NZ	**Date received:**	27/11/2024
Client address:	5 Sir William Pickering Drive BURNSIDE NZ 8053	**Date analysed:**	20/12/2024
Job number:	24_2171	**Date reported:**	20/12/2024
Lab ID:	24_2171_001		
Client ID:	**MG55789**		
Analysis:	Scanning electron microscopy (SEM) with elemental analysis by energy dispersive spectroscopy (EDS)		
Revision number:	0		
Comments:	None		

Sample preparation

The sample was supplied to Microanalysis Australia as a bulk drill core sample.

The sample was mounted in epoxy resin and polished to a flat surface before being carbon coated. Non-conducting samples require coating prior to SEM analysis to prevent charging whilst being analysed by the electron beam.

Analysis

The sample was analysed using a Carl Zeiss EVO50 scanning electron microscope (SEM) fitted with an Oxford INCA X-Max energy dispersive spectrometer (EDS).

EDS is a semi-quantitative technique (at best) on well prepared, optically flat samples. Factors such as sample unevenness may adversely bias elemental concentration interpretation. EDS has a spatial resolution of ~5 µm meaning spectra from particles less than this size may contain elemental concentrations biased by their surroundings. Analysis was conducted at 20 KeV unless otherwise stated.

No calibration standards (standardless quant) were used in the EDS detector standardization prior to analysis.

Summary

All images were acquired using backscatter electrons (BSE) unless otherwise specified. For BSE, image contrast is directly proportional to average atomic number i.e. the brighter the area, the higher the atomic number.

The mineralogy of particles identified has been summarised in the following table (**Table 1: Mineralogy summary of particles observed**) and have been listed in order of abundance i.e. major, minor or trace quantities of particles.

Analyst: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Reported: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Approved: Rick Hughes, B.Sc.(Hons)Physics, MAIP

Table 1: Mineralogy summary of sulfur-based particles observed

Compound/phase relative abundance[2]	Size range (µm)	Observed morphology	Observed composition (elements present)				Assumed compound/phase	Compound/phase confidence[1] (Likely/possible)
			Major	Minor	Trace	Varying		
Major	<5 - ~170	Angular and aggregated particulate	S, Fe	-	Cu, Si, Al	-	Iron sulfide (pyrite/ pyrrhotite)	Likely
Minor	<5 - ~80	Angular and aggregated particulate	S, Zn	-	Fe, O	Na (trace to minor)	Zinc sulfide (sphalerite)	Likely
Trace	<5 - ~70	Irregular particulate	O, Pb, S	-	Se	O, Fe (trace to minor)	Lead sulfide (galena)	Possible
Trace	~10	Subangular particle	S, As, Co	Ni, Fe	Si	-	Arsenic-cobalt sulfide (cobaltite)	Possible

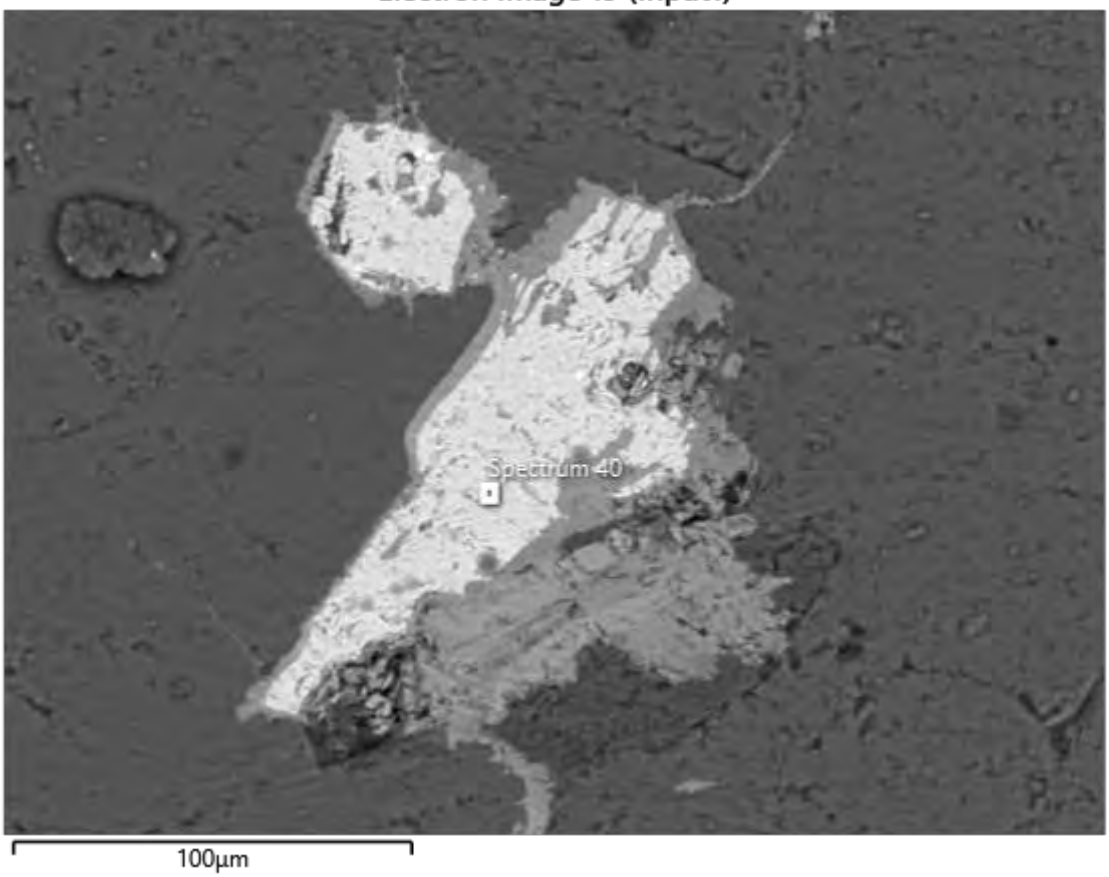
[1] indicates whether multiple options may be possible with similar stoichiometries. Confirmation by other techniques such as XRD or FTIR may be necessary for increased confidence. *Most of the sulfur-based minerals are surrounded by oxygen-containing minerals such as silica, iron oxides and various aluminosilicates. The oxygen from the surrounding materials may interfere with the sulfur-containing particles, allowing oxygen to show as a trace or minor element in the analysis of the sulfur particles. As 'trace' detected oxygen may be from the surrounding materials, however we assign a 'possible' confidence as to not rule out the possibility of partial oxidation of the sulfur-containing mineral present.*

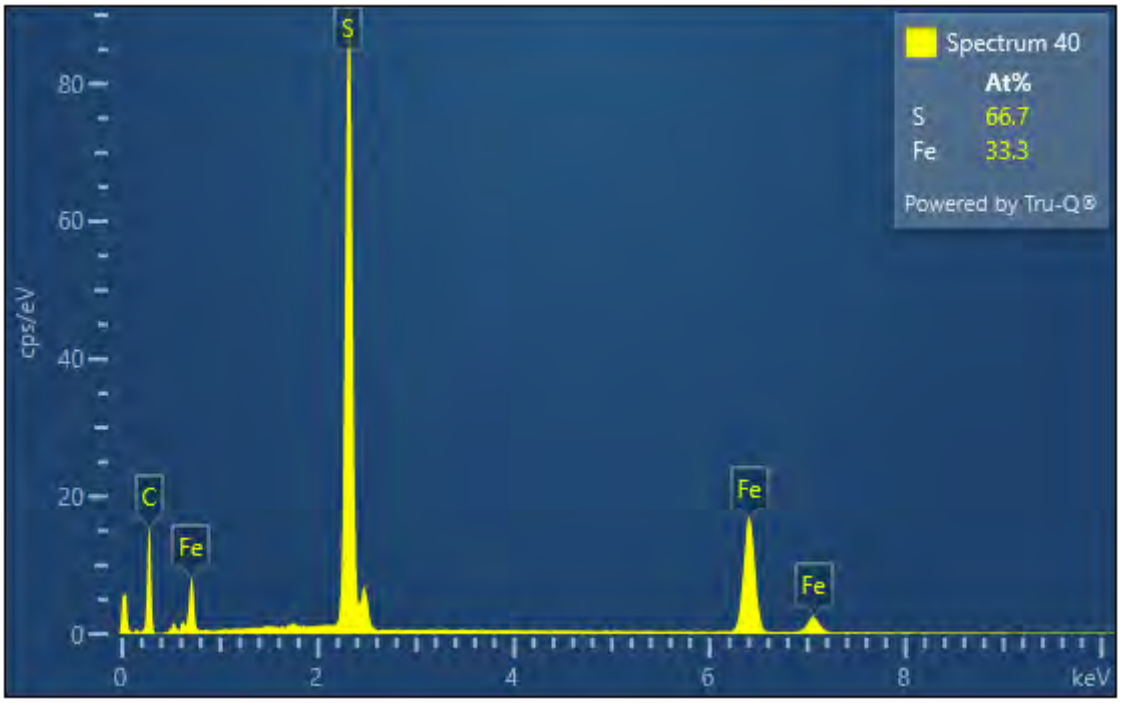
[2] The interpreted compound abundance qualifiers (major, minor, trace) are based on the following categories and are presented by number (count) of observed particles as opposed to wt% or ppm as would be reported by ICP/XRF. **All sulfur-based phases within the sample are trace. This is an abundance relative only to each other type of sulfur-based mineral present.**

Qualifier	***Approximate*** **range, number %**
Major	> ~30
Minor	~1 to ~30
Trace	< ~1

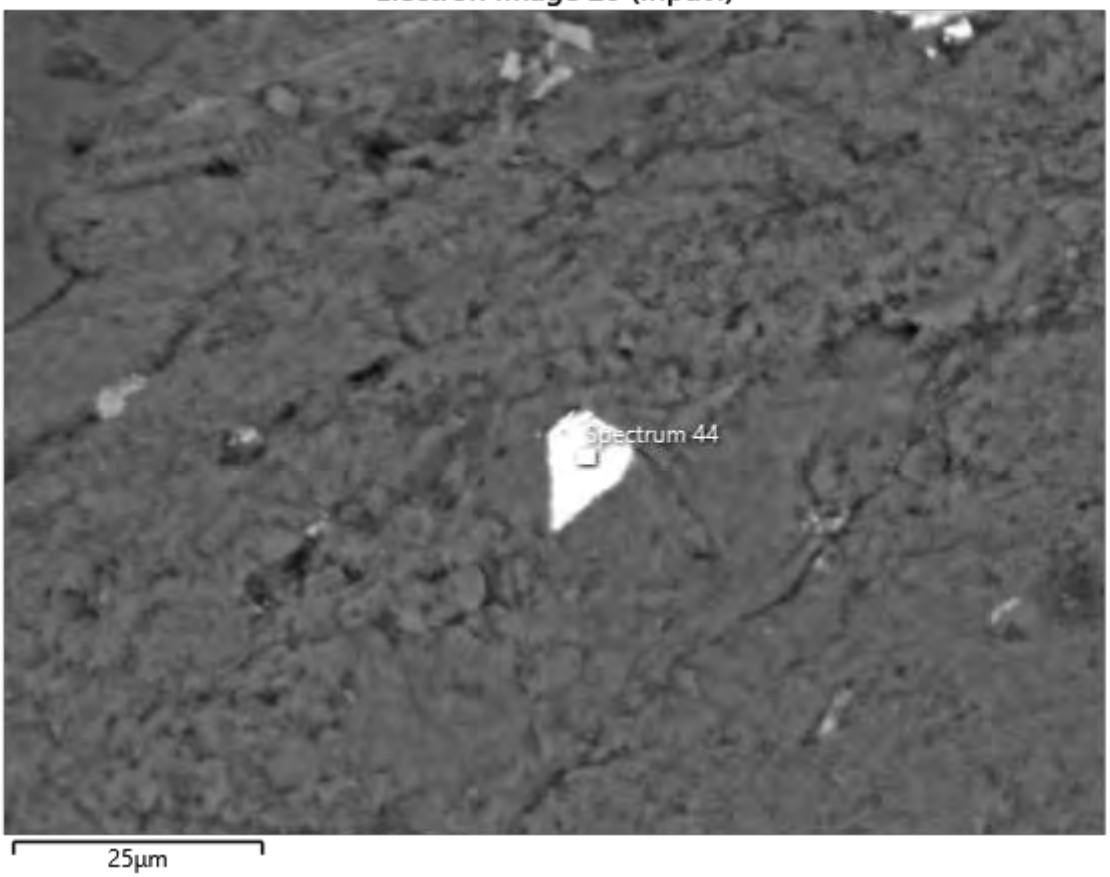
The range (above) is stated as '*Approximate*' as the technique is more a qualitative measure of relative abundance as opposed to a quantitative absolute abundance. The abundance is stated as number percent as no calculations have been made to transform geometric sizes into particle volumes, nor density values used to calculate weight fractions that would enable weight percentages to be quoted

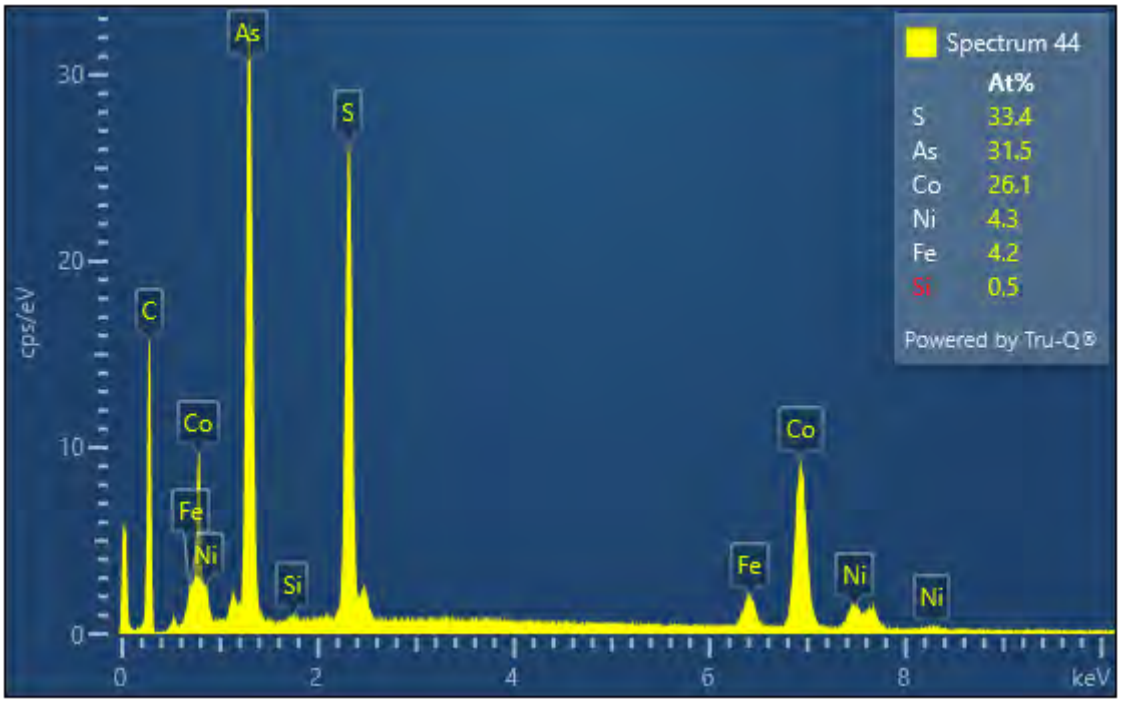
Electron Image 19 (Input1)



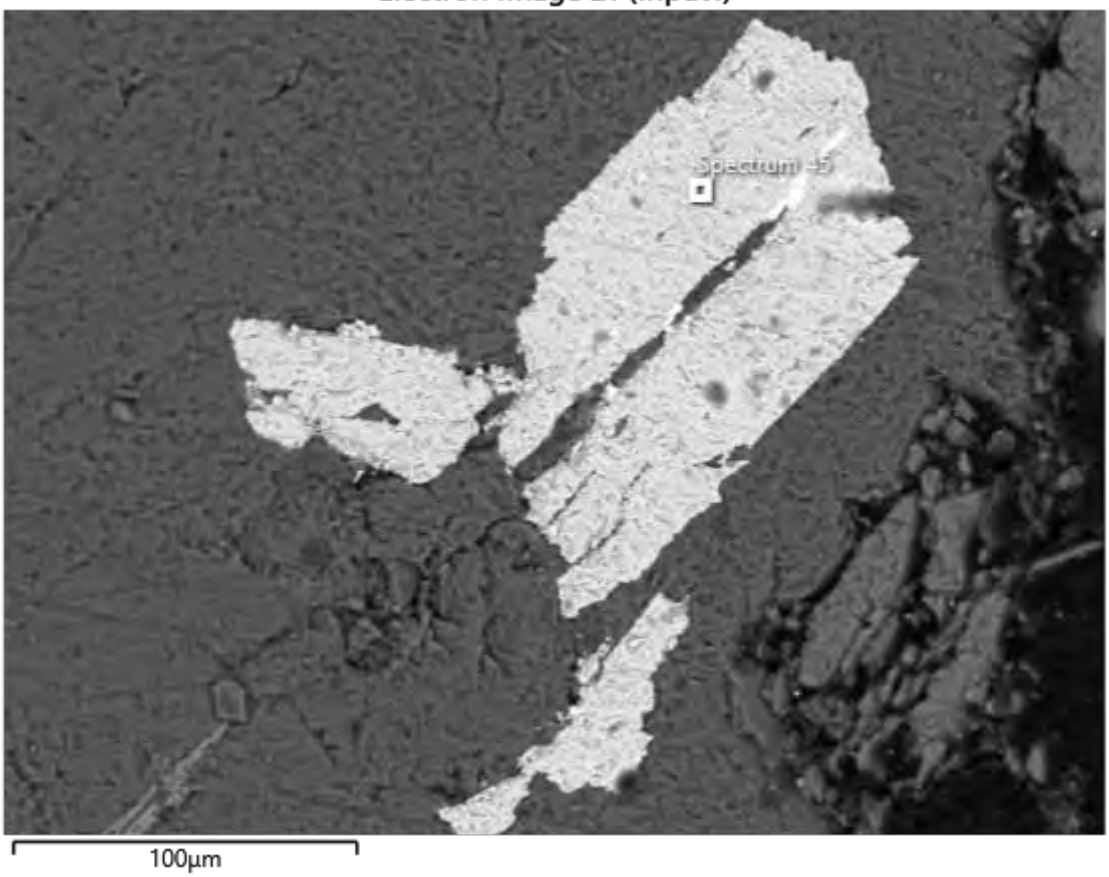


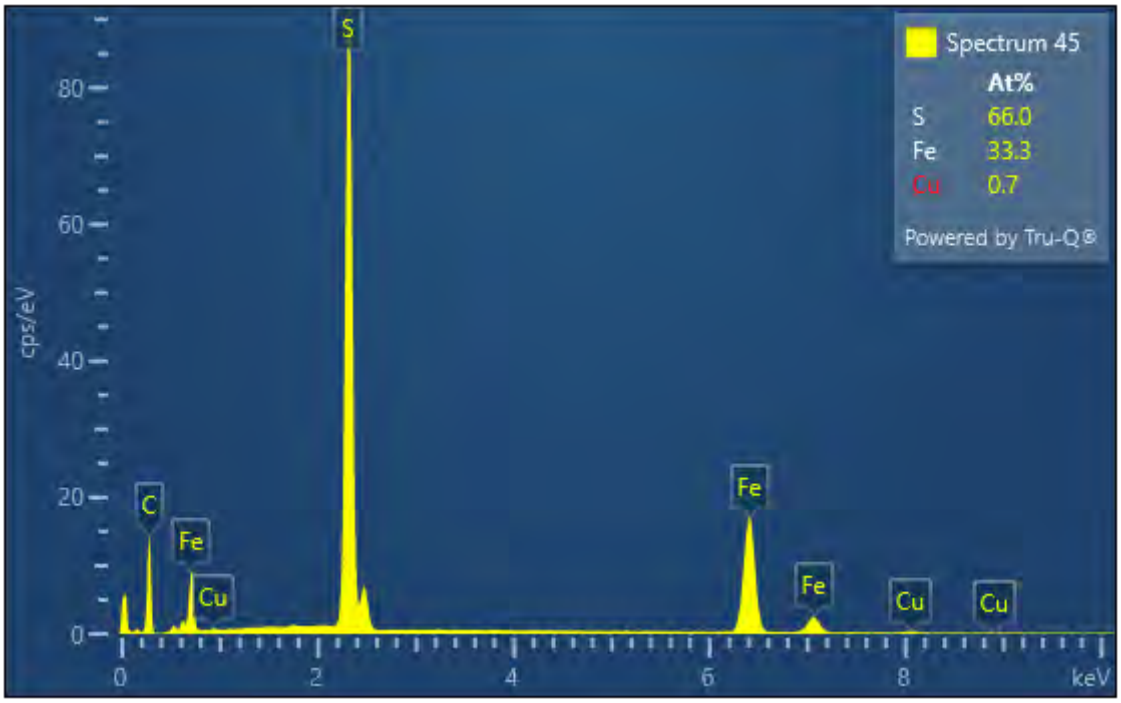
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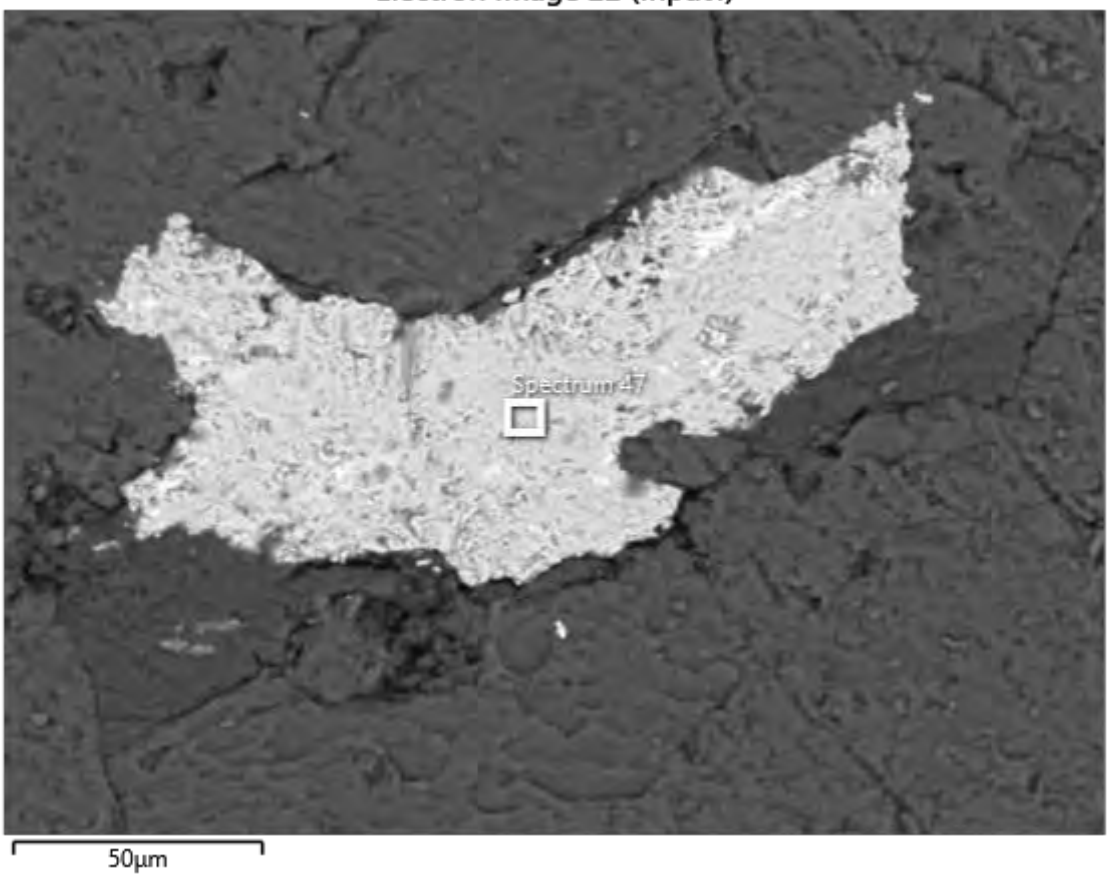


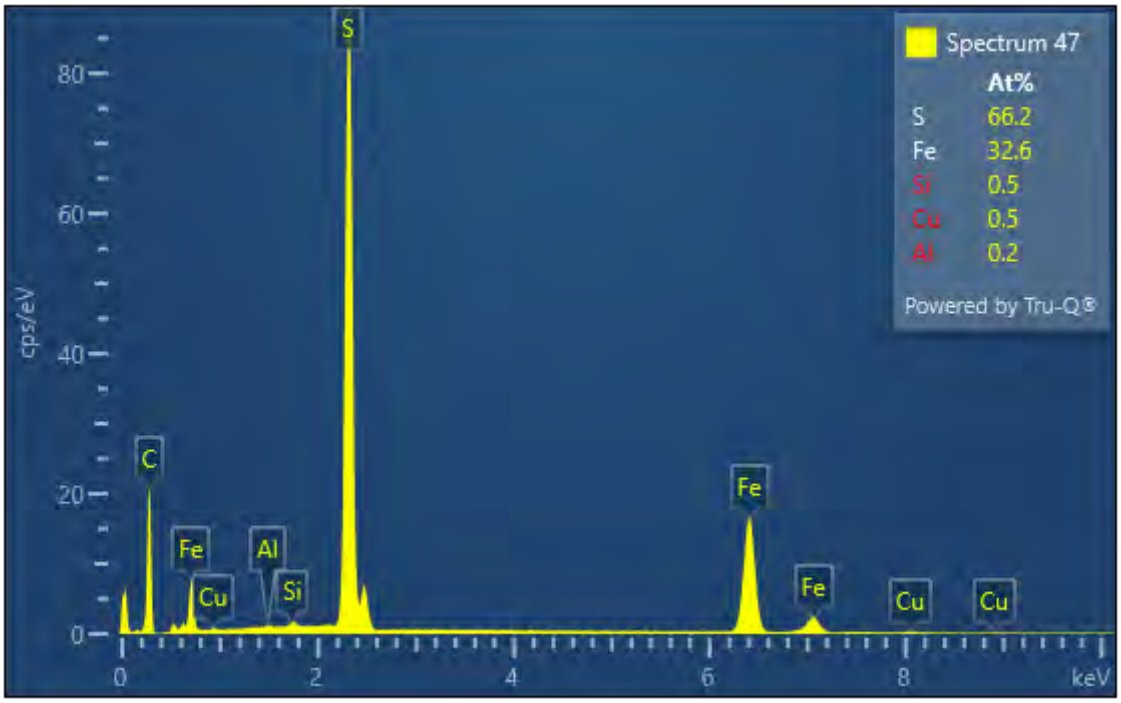
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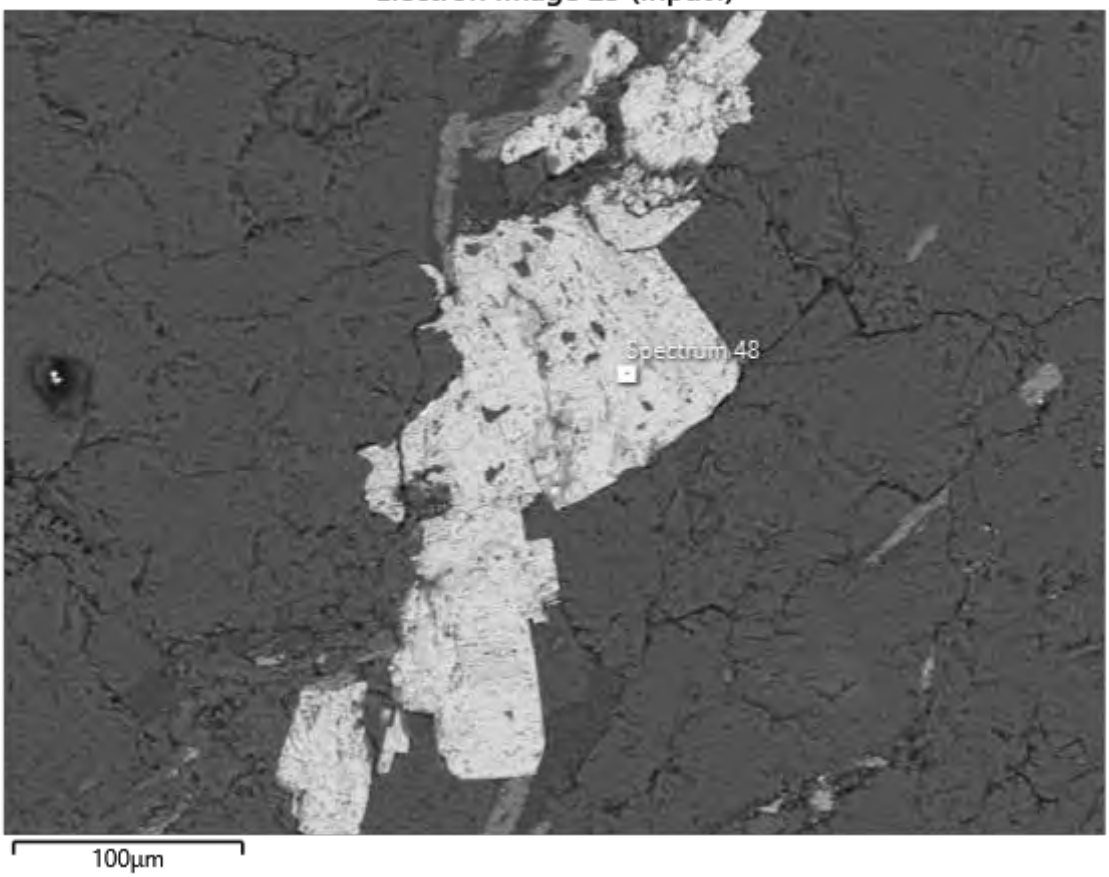


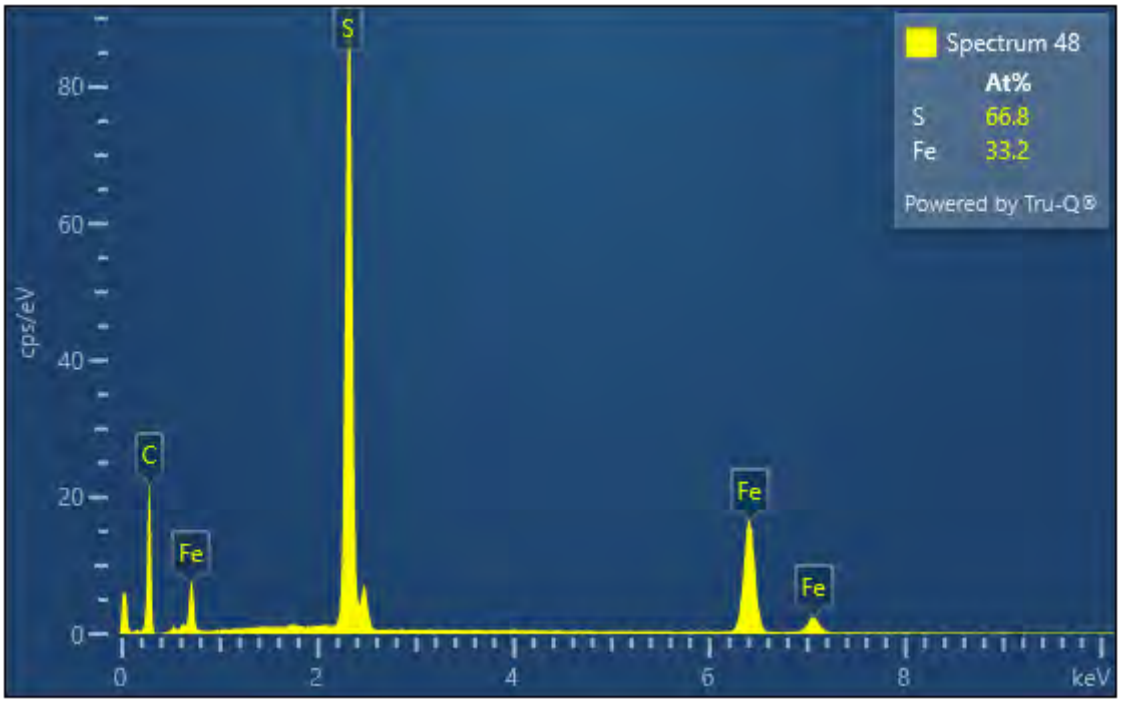
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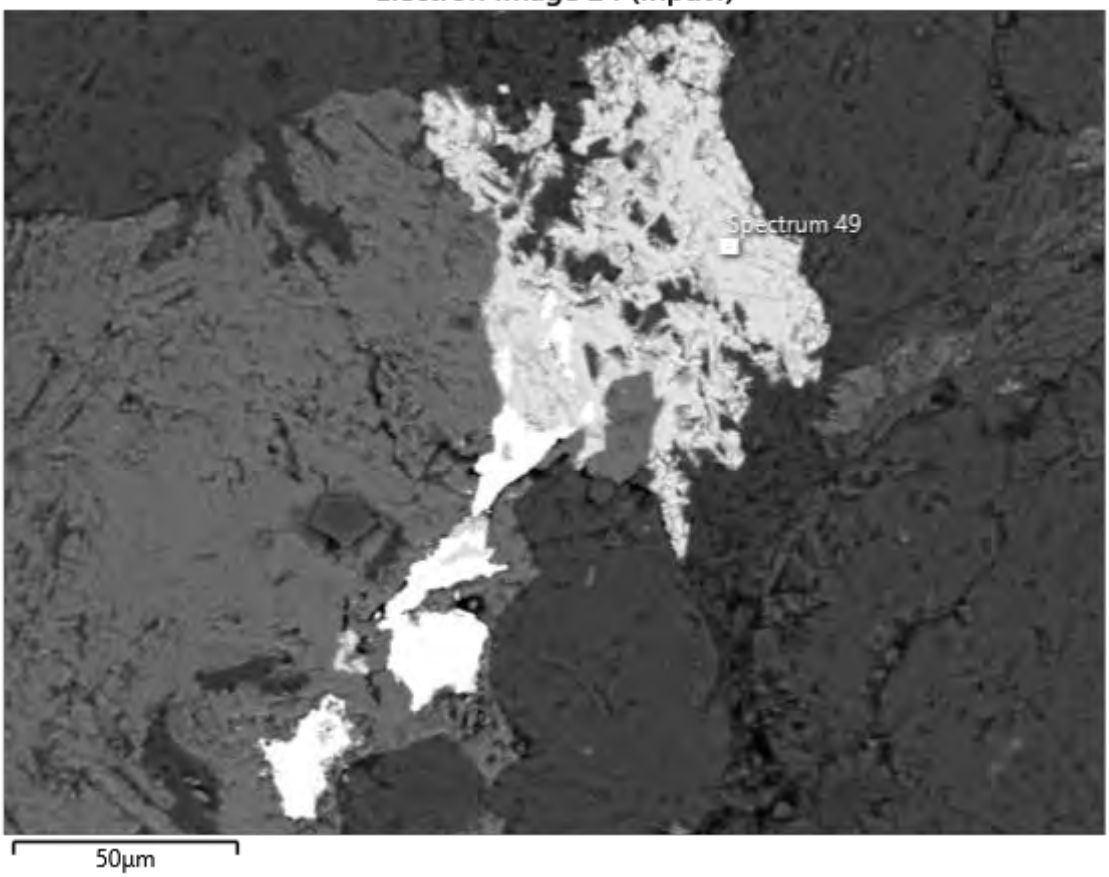


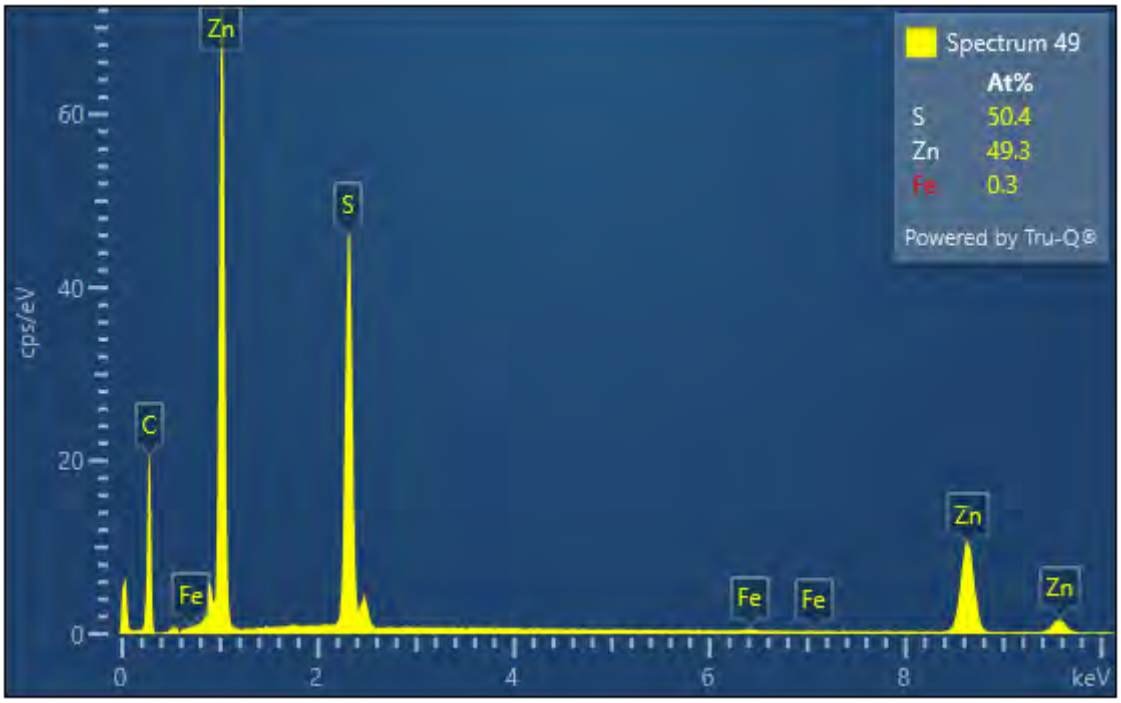
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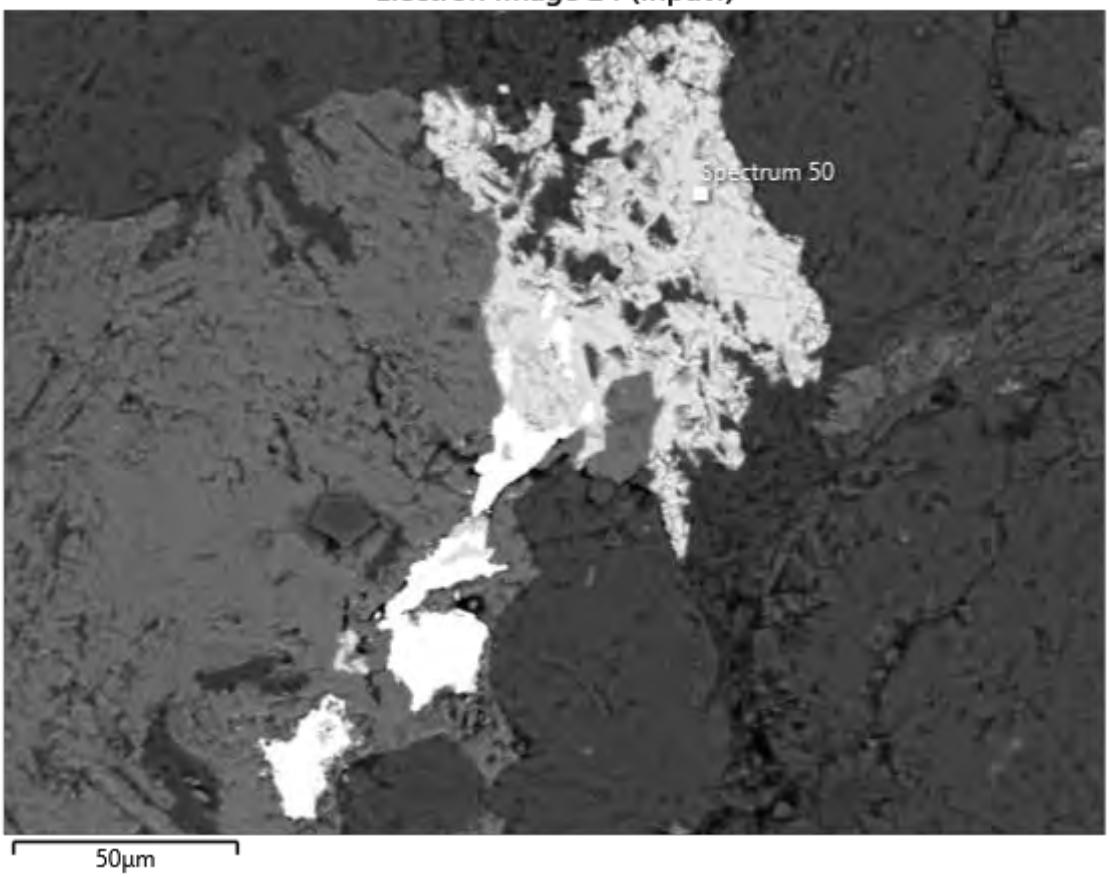


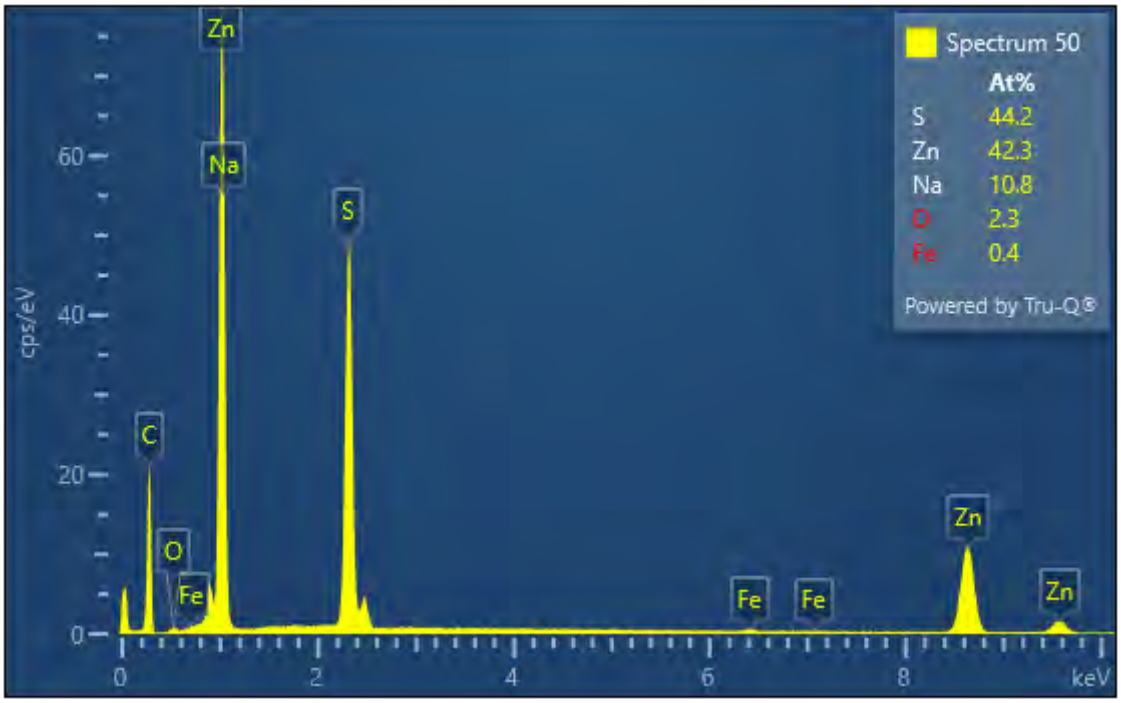
Electron Image 24 (Input1)



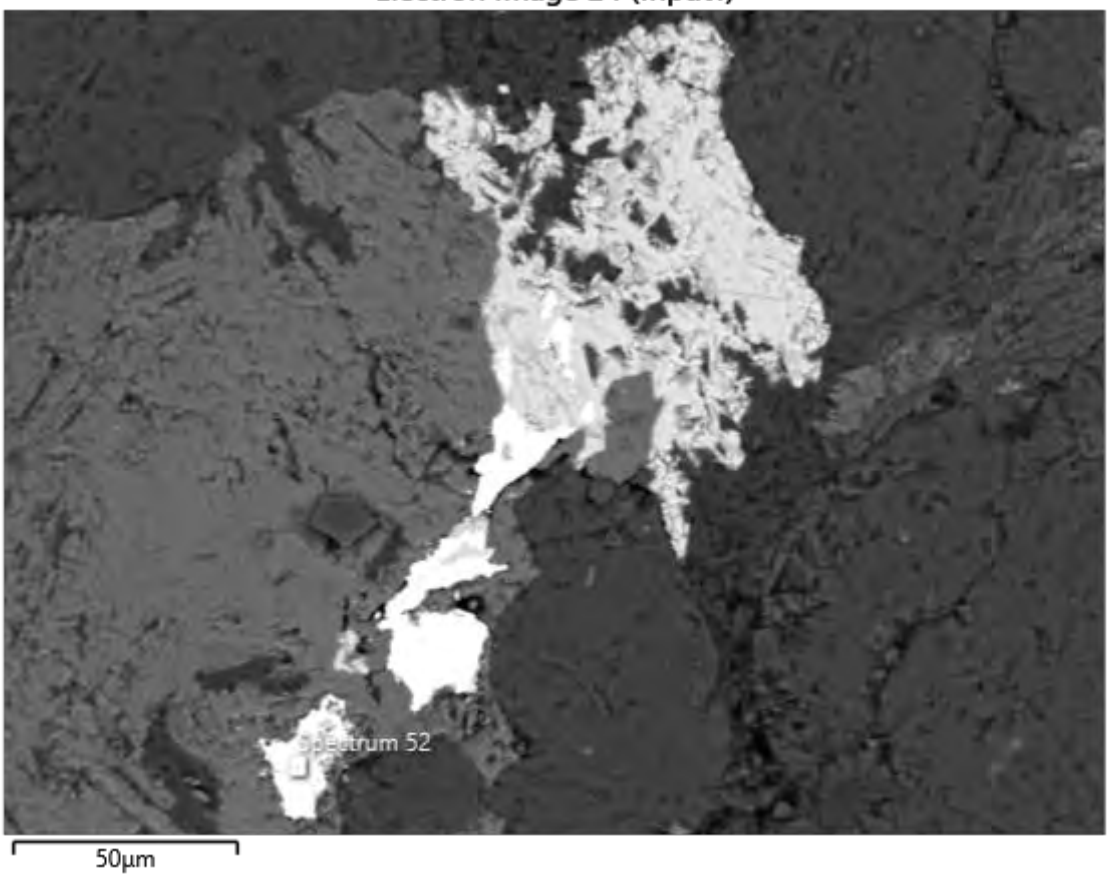


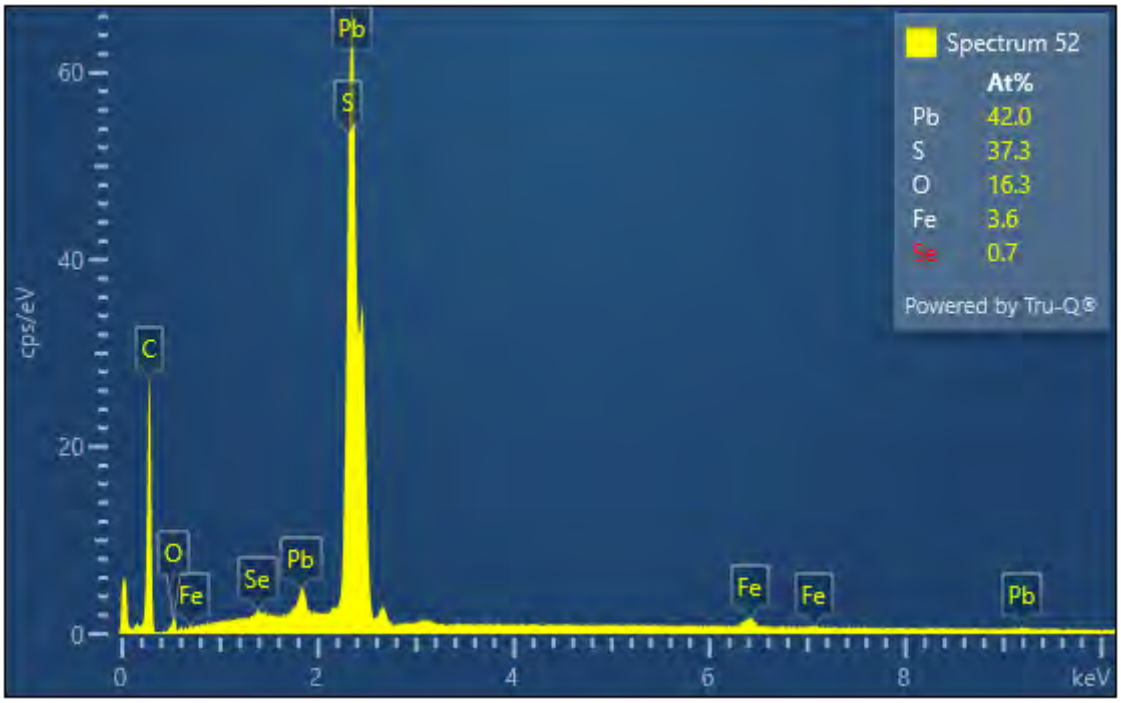
Electron Image 24 (Input1)



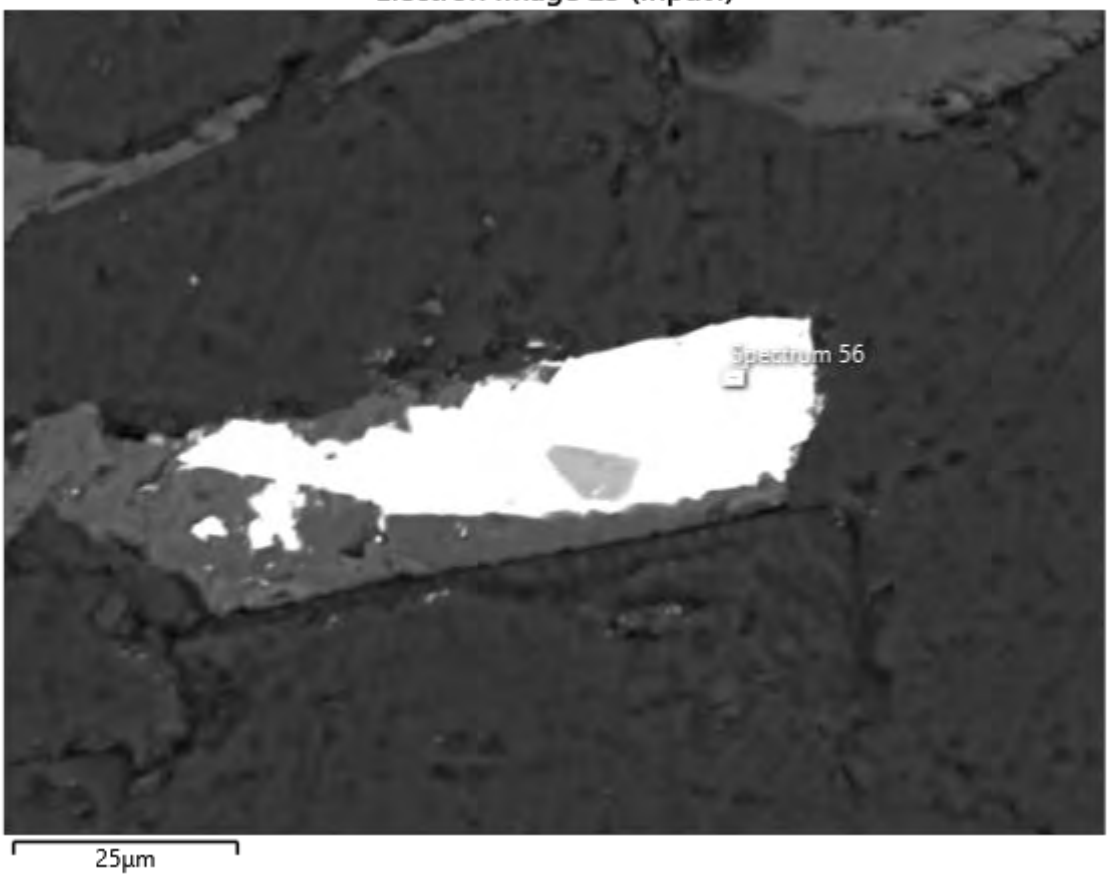


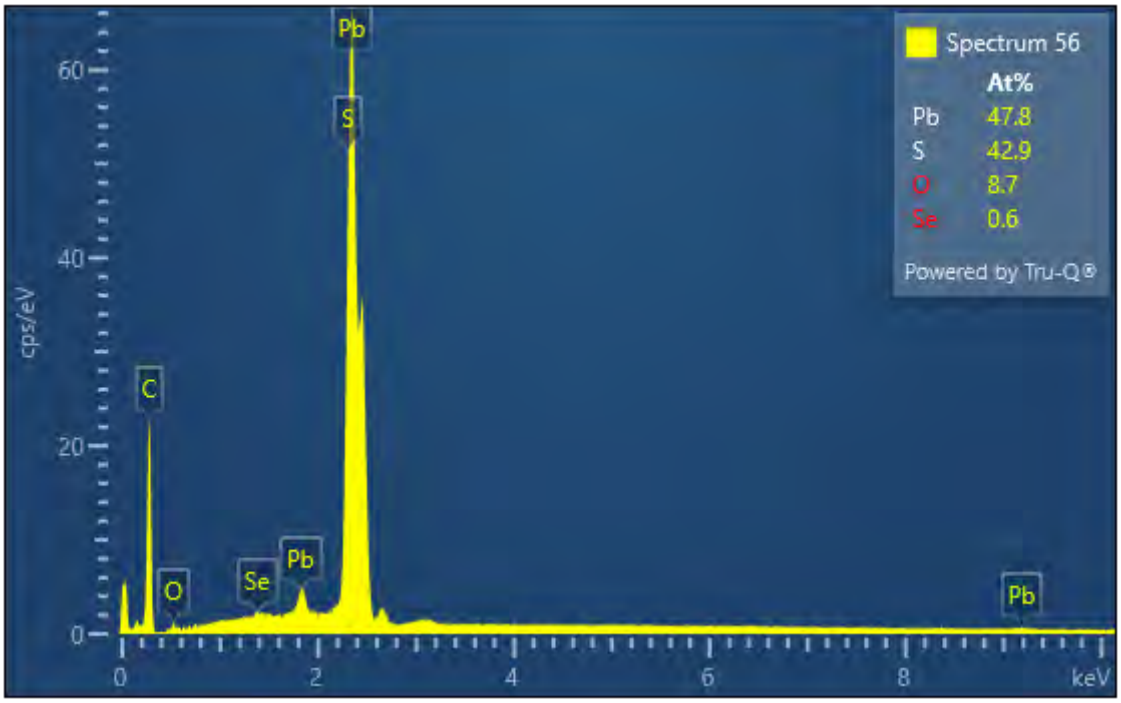
Electron Image 24 (Input1)





Electron Image 25 (Input1)





5 Alvan Street
Mount Lawley
WA 6050

Client:	Mine Waste Management NZ	**Date received:**	27/11/2024
Client address:	5 Sir William Pickering Drive BURNSIDE NZ 8053	**Date analysed:**	19/12/2024
Job number:	24_2171	**Date reported:**	20/12/2024
Lab ID:	24_2171_002		
Client ID:	**MG55790**		
Analysis:	Scanning electron microscopy (SEM) with elemental analysis by energy dispersive spectroscopy (EDS)		
Revision number:	0		
Comments:	None		

Sample preparation

The sample was supplied to Microanalysis Australia as a bulk drill core sample.

The sample was mounted in epoxy resin and polished to a flat surface before being carbon coated. Non-conducting samples require coating prior to SEM analysis to prevent charging whilst being analysed by the electron beam.

Analysis

The sample was analysed using a Carl Zeiss EVO50 scanning electron microscope (SEM) fitted with an Oxford INCA X-Max energy dispersive spectrometer (EDS).

EDS is a semi-quantitative technique (at best) on well prepared, optically flat samples. Factors such as sample unevenness may adversely bias elemental concentration interpretation. EDS has a spatial resolution of ~5 µm meaning spectra from particles less than this size may contain elemental concentrations biased by their surroundings. Analysis was conducted at 20 KeV unless otherwise stated.

No calibration standards (standardless quant) were used in the EDS detector standardization prior to analysis.

Summary

All images were acquired using backscatter electrons (BSE) unless otherwise specified. For BSE, image contrast is directly proportional to average atomic number i.e. the brighter the area, the higher the atomic number.

The mineralogy of particles identified has been summarised in the following table (**Table 1: Mineralogy summary of particles observed**) and have been listed in order of abundance i.e. major, minor or trace quantities of particles.

Analyst: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Reported: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Approved: Rick Hughes, B.Sc.(Hons)Physics, MAIP

Table 1: Mineralogy summary of sulfur-based particles observed

Compound/phase relative abundance[2]	Size range (µm)	Observed morphology	Observed composition (elements present)				Assumed compound/phase	Compound/phase confidence[1] (Likely/possible)
			Major	Minor	Trace	Varying		
Major	<5 - ~110	Angular and aggregated particulate	S, Fe, As	-	Ca, Si, Al	O (trace to minor)	Asrsenic-iron sulfide (arsenopyrite)	Likely
Minor	<5 - ~100	Angular and aggregated particulate	S, Zn	Na	Fe, O	-	Zinc sulfide (sphalerite)	Likely
Trace	<5 - ~25	Angular and aggregated particulate	S, Fe	-	-	-	Iron sulfide (pyrite)	Likely

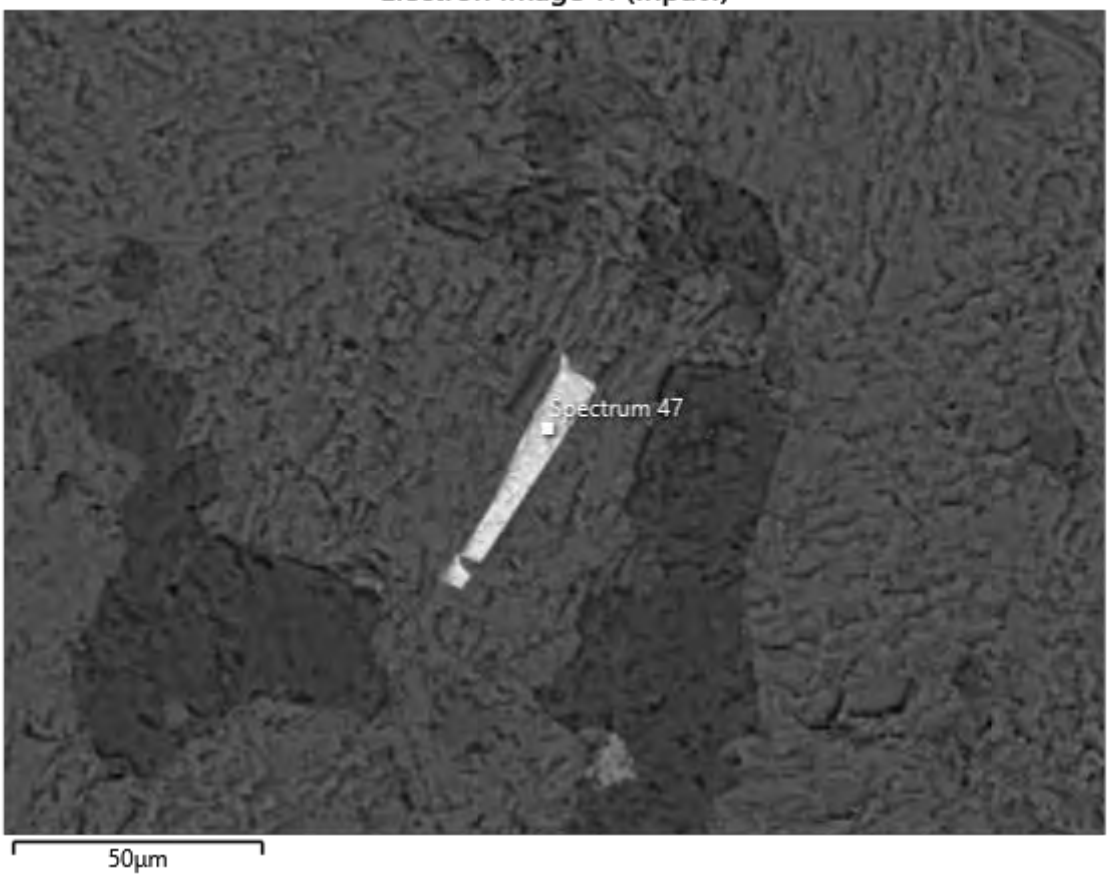
[1] indicates whether multiple options may be possible with similar stoichiometries. Confirmation by other techniques such as XRD or FTIR may be necessary for increased confidence. *Most of the sulfur-based minerals are surrounded by oxygen-containing minerals such as silica, iron oxides, and various aluminosilicates. The oxygen from the surrounding materials may interfere with the sulfur-containing particles, allowing oxygen to show as a trace or minor phase in the analysis of the sulfur particles. Most of the time this will be from the surrounding materials, however we assign a 'possible' confidence as to not rule out the possibility of partial oxidation of the sulfur mineral present.*

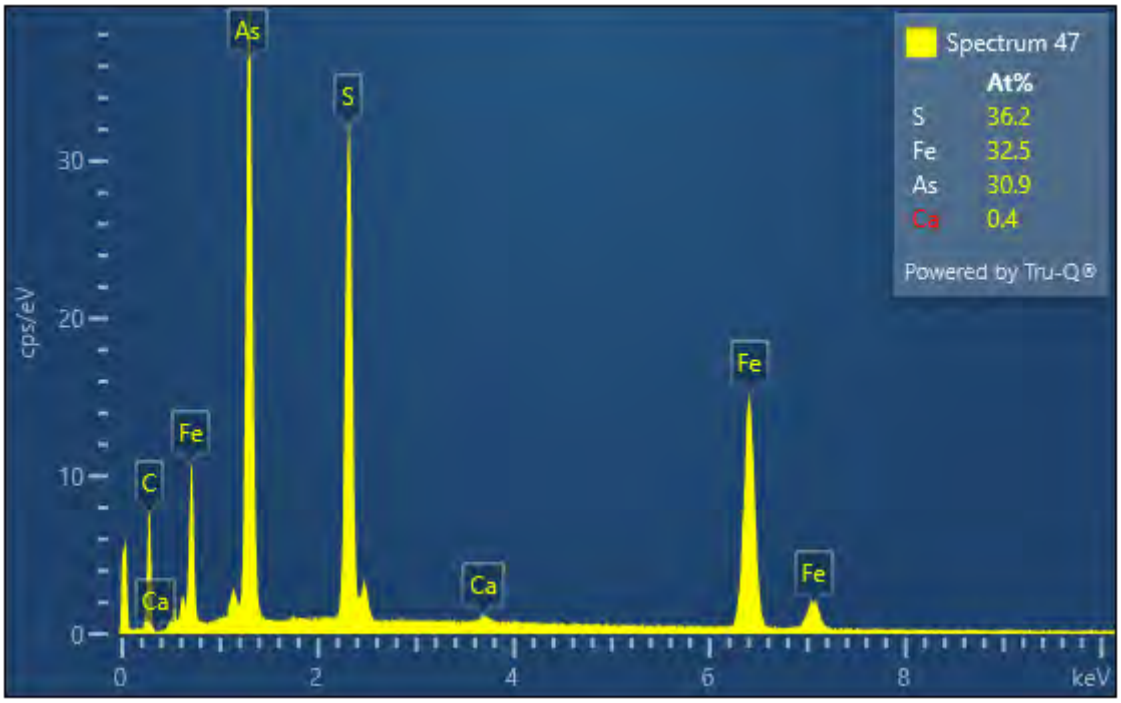
[2] The interpreted compound abundance qualifiers (major, minor, trace) are based on the following categories and are presented by number (count) of observed particles as opposed to wt% or ppm as would be reported by ICP/XRF. **All sulfur-based phases within the sample are trace. This is an abundance relative only to each other type of sulfur-based mineral present.**

Qualifier	***Approximate*** **range, number %**
Major	> ~30
Minor	~1 to ~30
Trace	< ~1

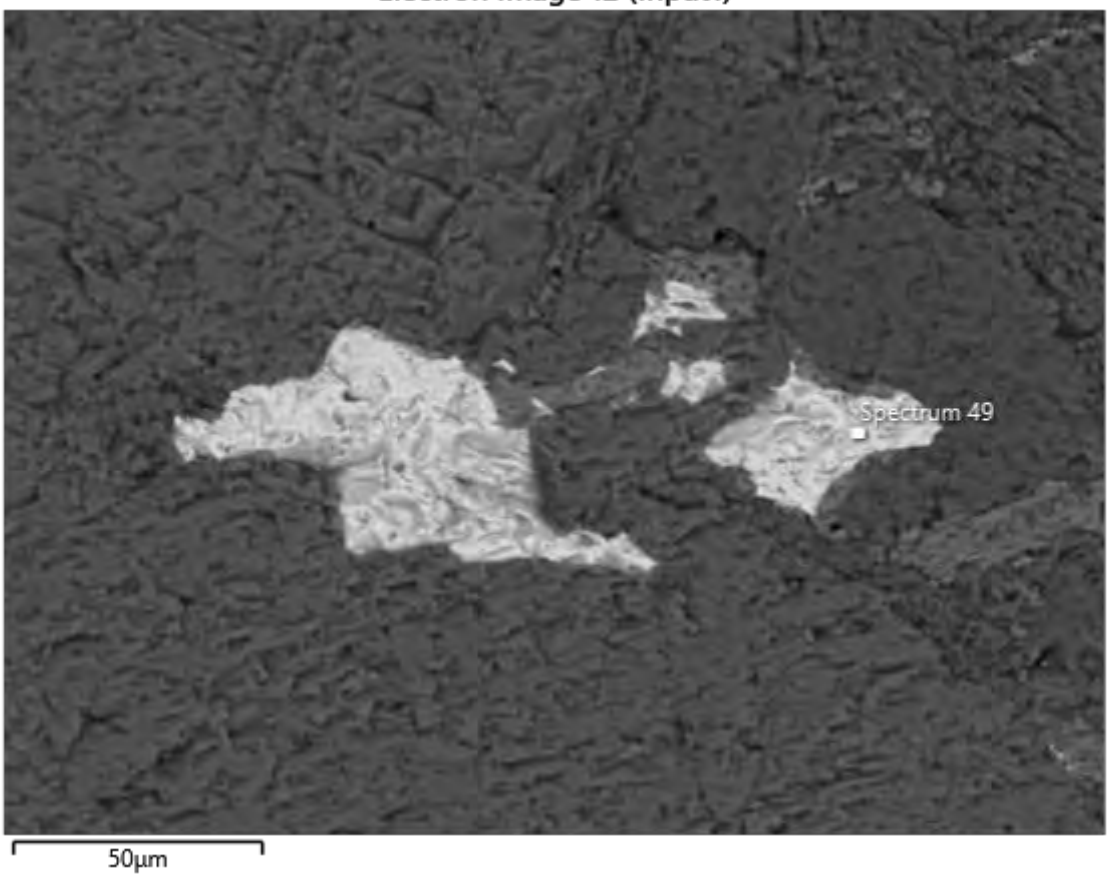
The range (above) is stated as '*Approximate*' as the technique is more a qualitative measure of relative abundance as opposed to a quantitative absolute abundance. The abundance is stated as number percent as no calculations have been made to transform geometric sizes into particle volumes, nor density values used to calculate weight fractions that would enable weight percentages to be quoted.

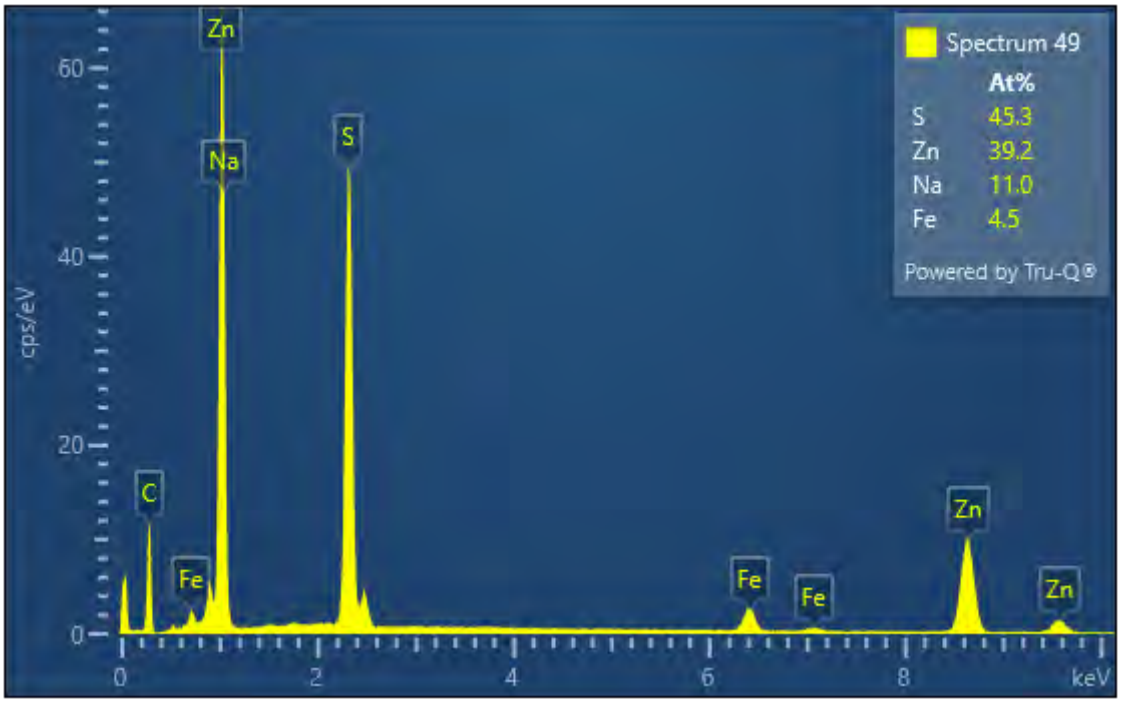
Electron Image 11 (Input1)



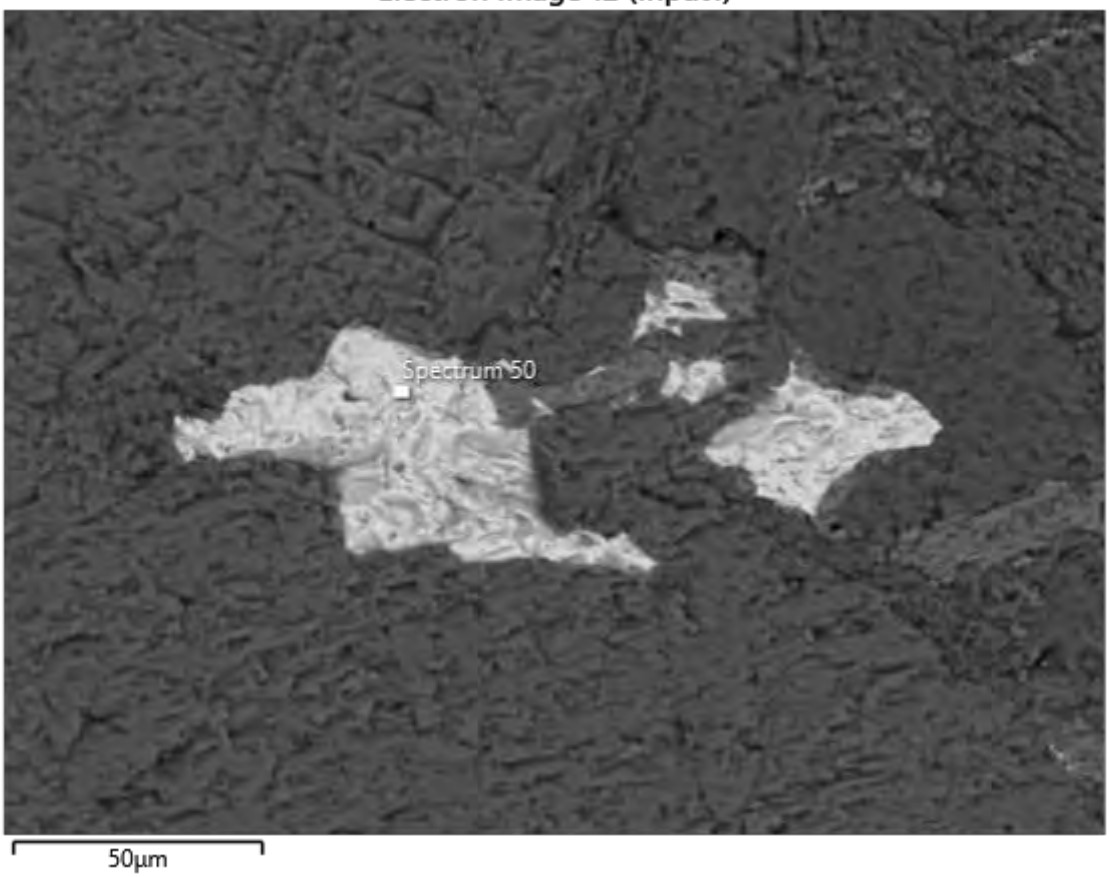


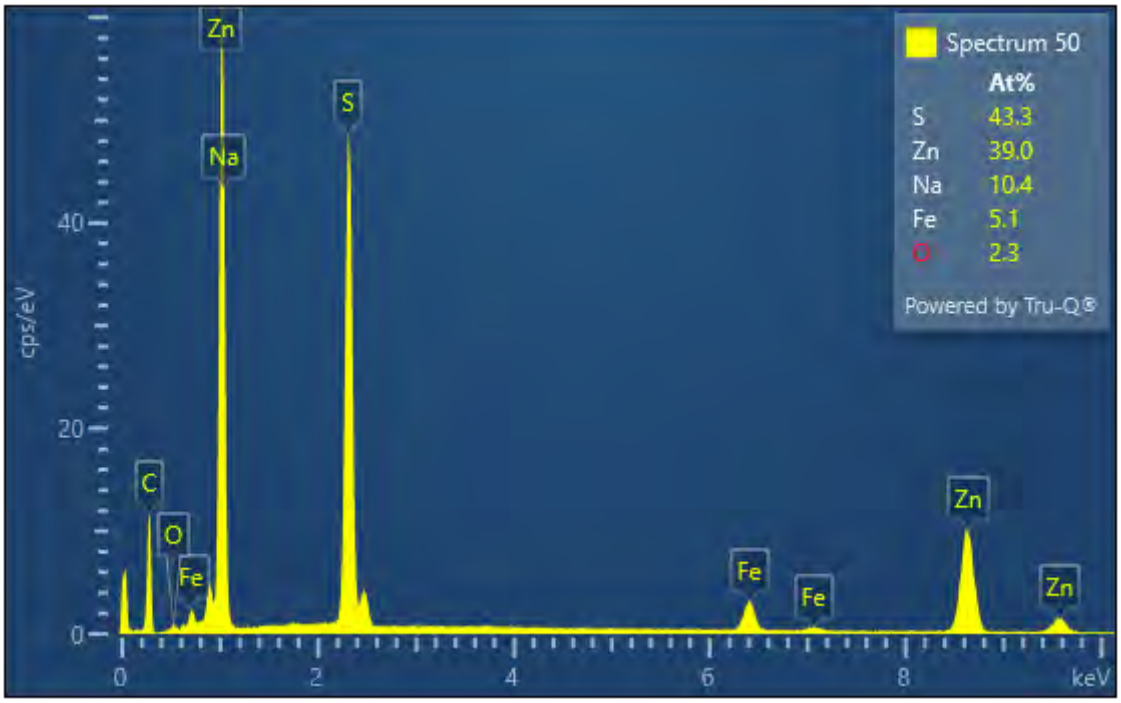
Electron Image 12 (Input1)



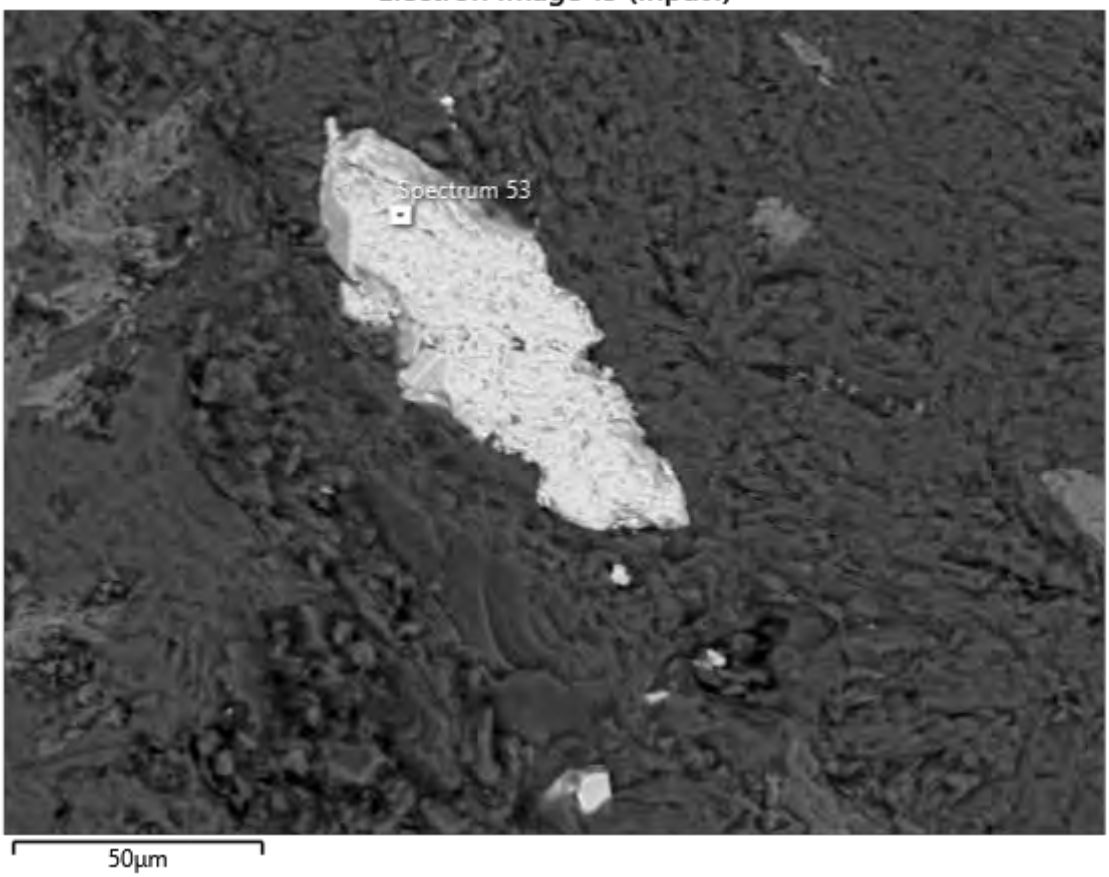


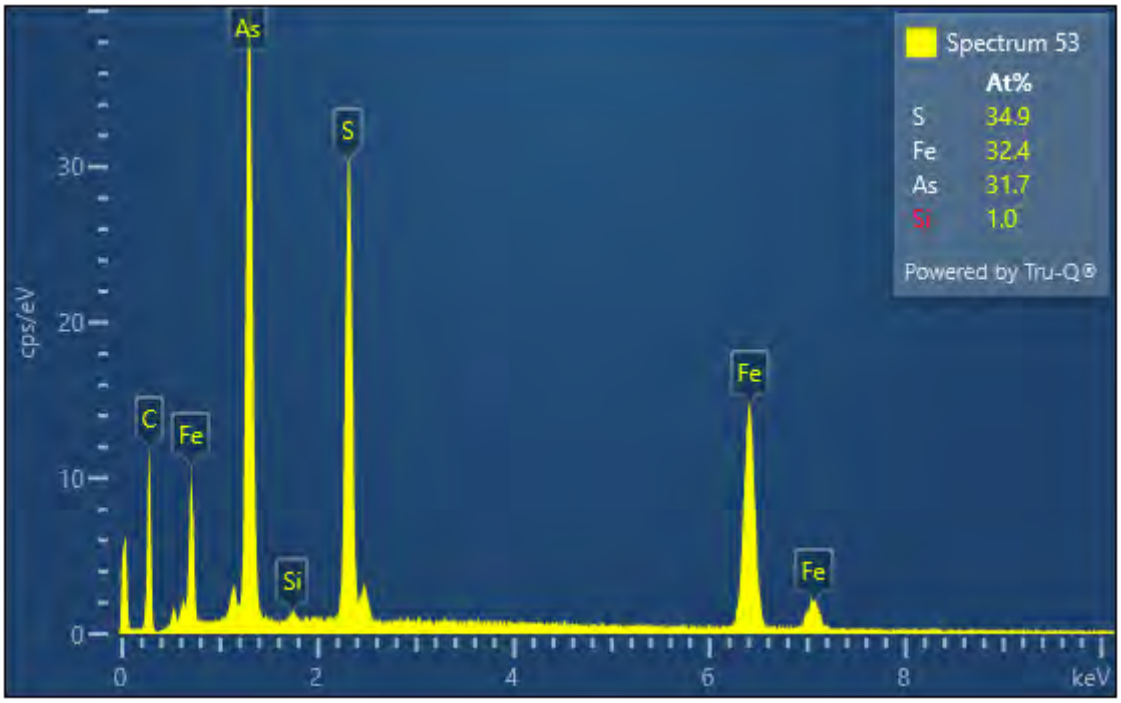
Electron Image 12 (Input1)



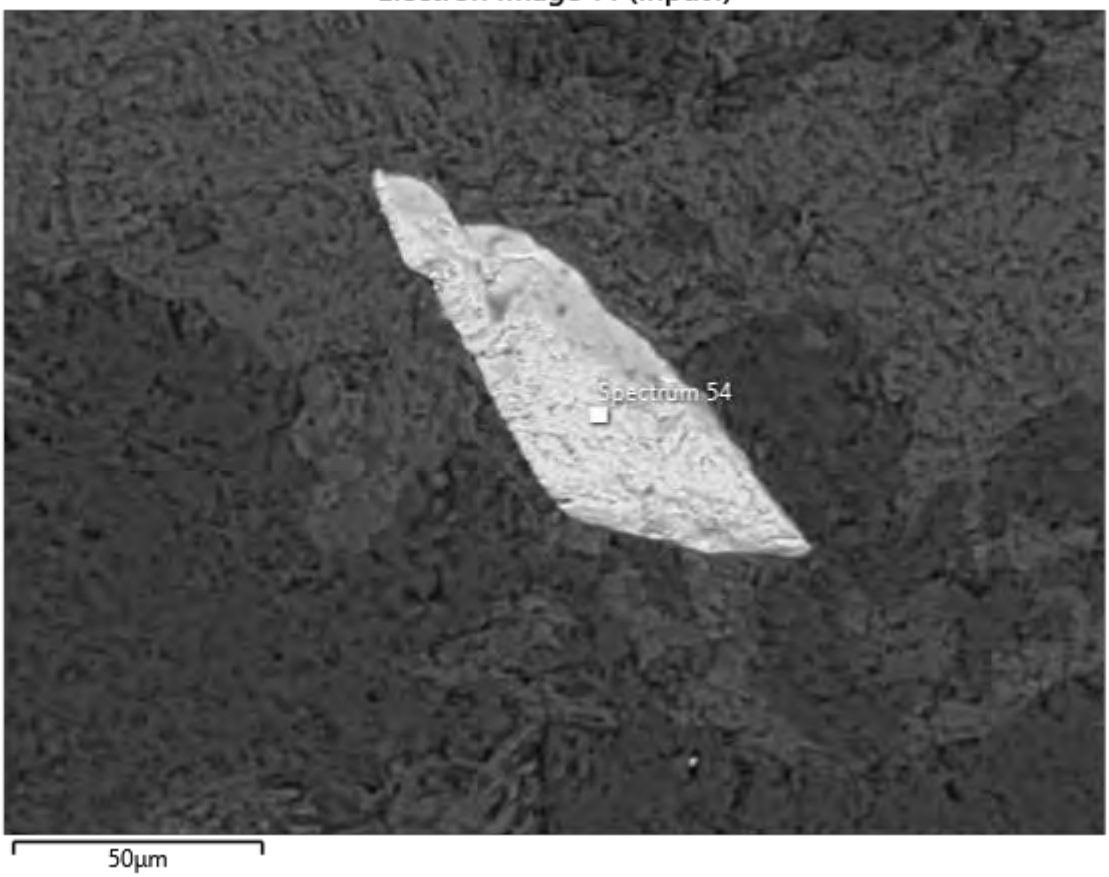


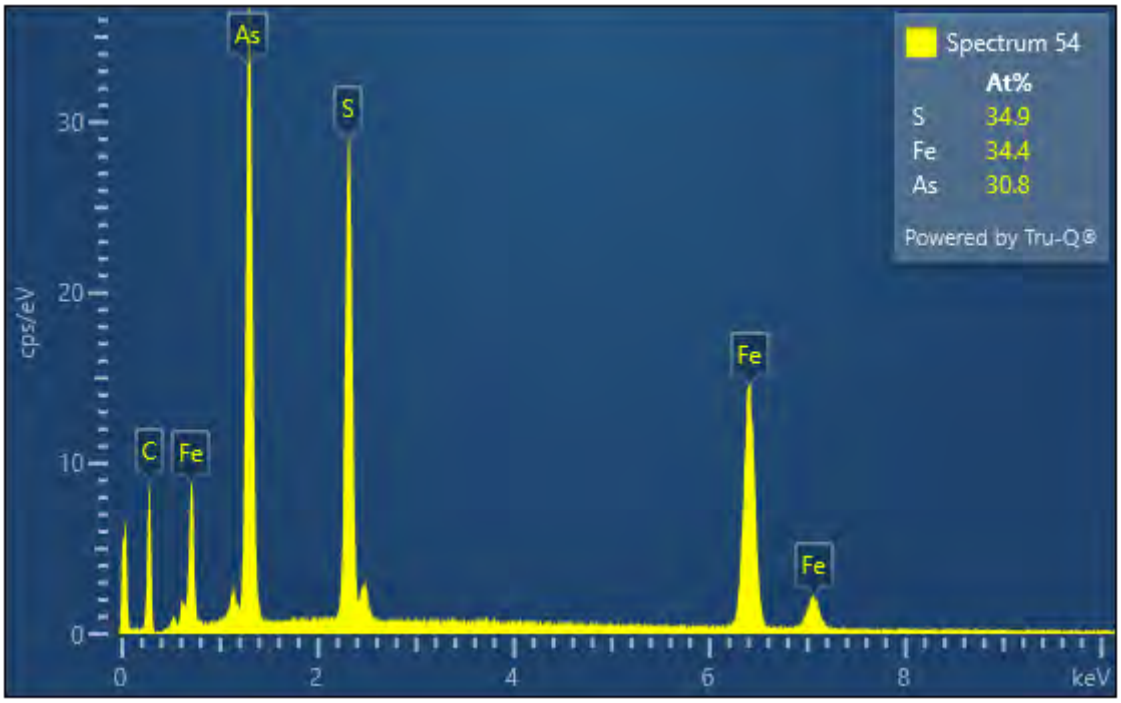
Electron Image 13 (Input1)



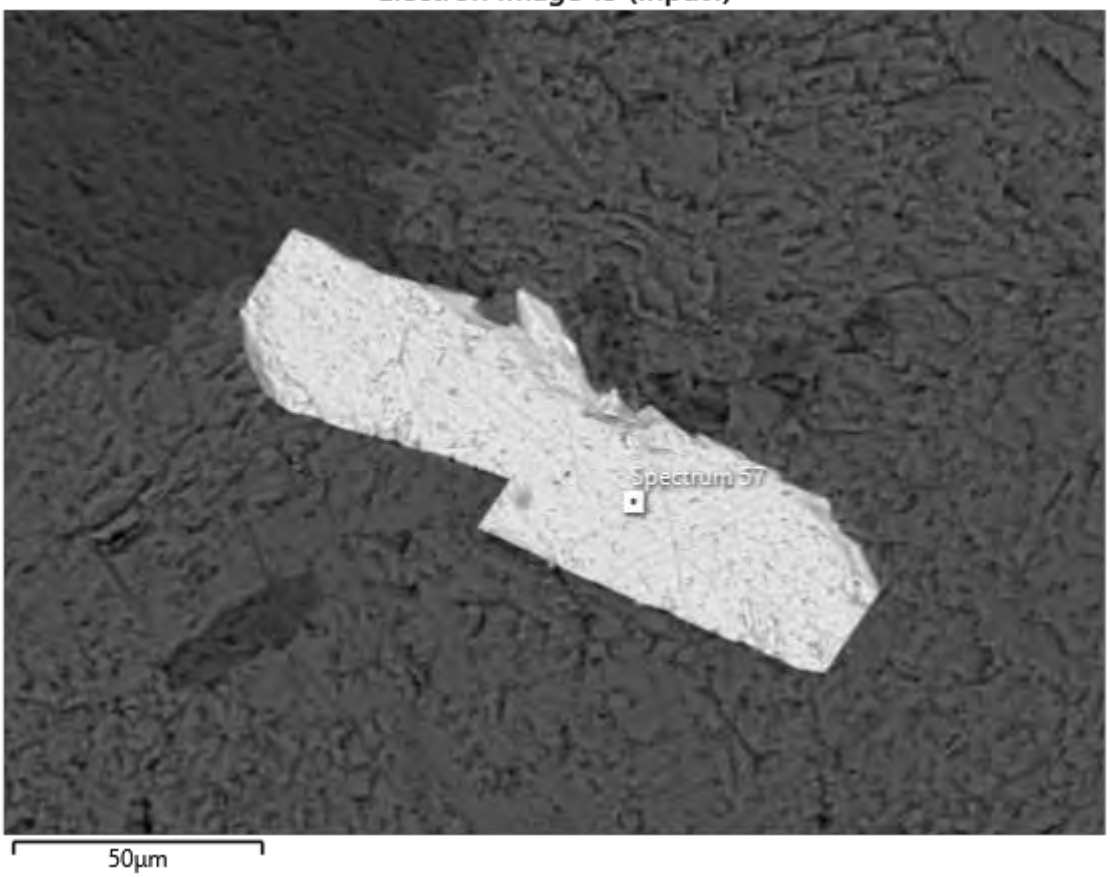


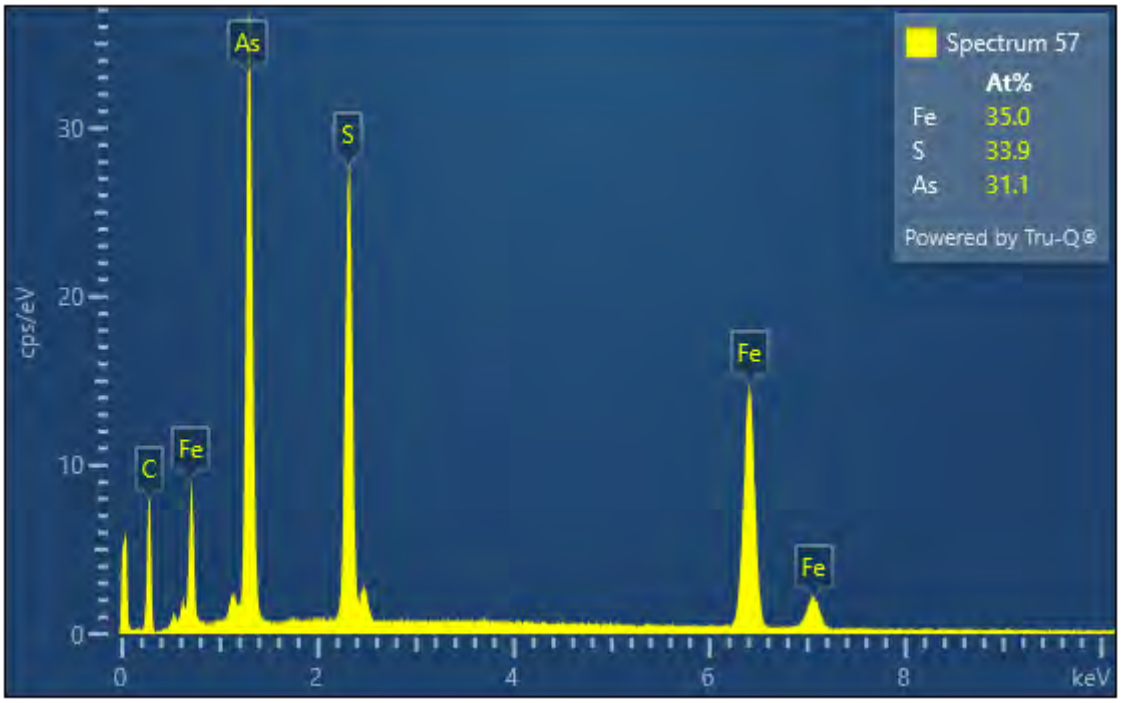
Electron Image 14 (Input1)



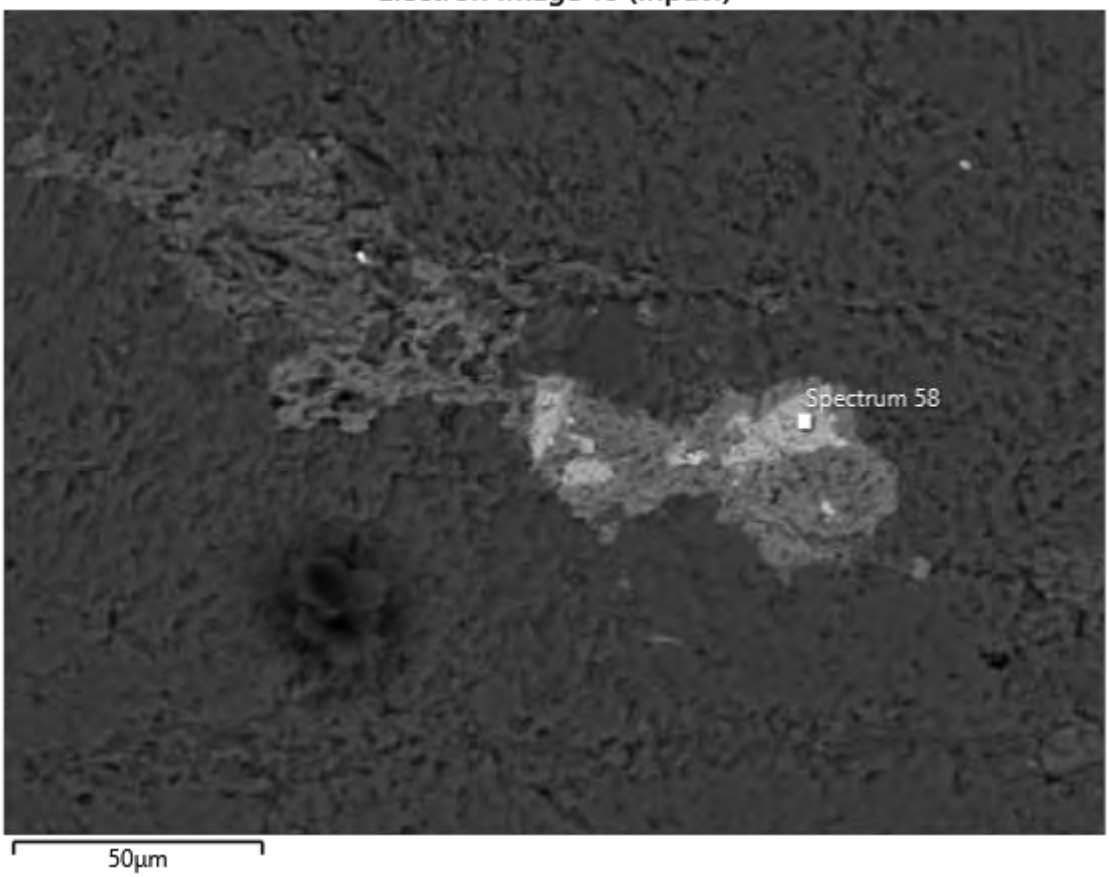


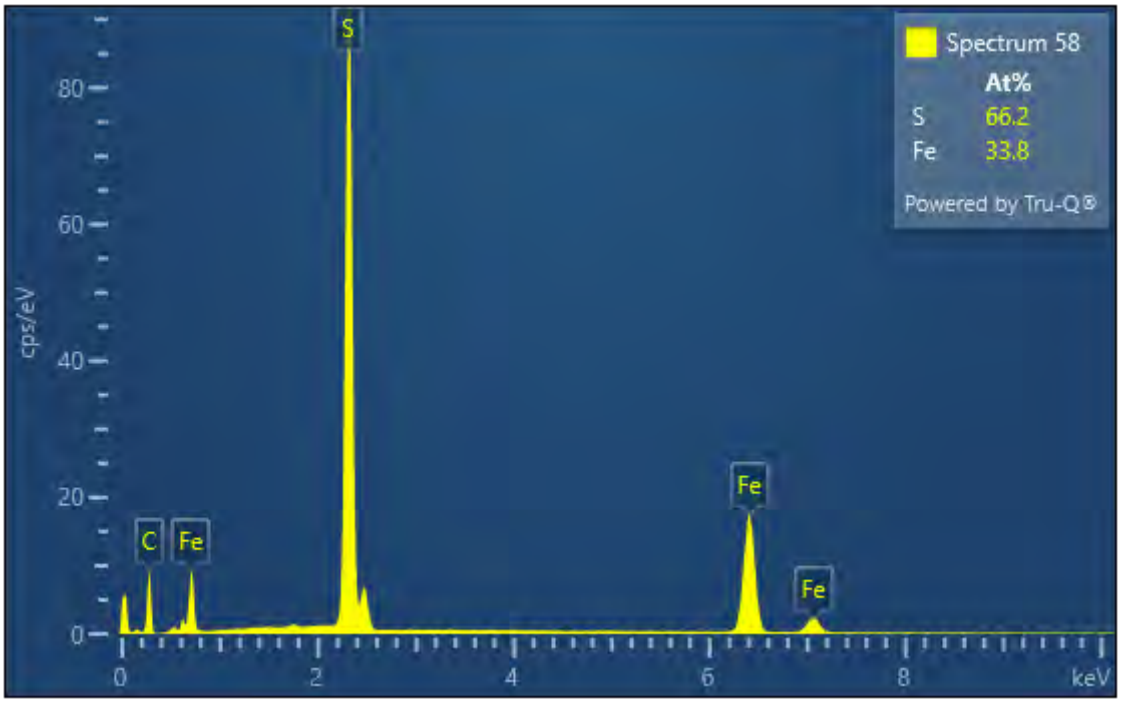
Electron Image 15 (Input1)





Electron Image 16 (Input1)





5 Alvan Street
Mount Lawley
WA 6050

Client:	Mine Waste Management NZ	**Date received:**	27/11/2024
Client address:	5 Sir William Pickering Drive BURNSIDE NZ 8053	**Date analysed:**	19/12/2024
Job number:	24_2171	**Date reported:**	20/12/2024
Lab ID:	24_2171_003		
Client ID:	**MG55795**		
Analysis:	Scanning electron microscopy (SEM) with elemental analysis by energy dispersive spectroscopy (EDS)		
Revision number:	0		
Comments:	None		

Sample preparation

The sample was supplied to Microanalysis Australia as a bulk drill core sample.

The sample was mounted in epoxy resin and polished to a flat surface before being carbon coated. Non-conducting samples require coating prior to SEM analysis to prevent charging whilst being analysed by the electron beam.

Analysis

The sample was analysed using a Carl Zeiss EVO50 scanning electron microscope (SEM) fitted with an Oxford INCA X-Max energy dispersive spectrometer (EDS).

EDS is a semi-quantitative technique (at best) on well prepared, optically flat samples. Factors such as sample unevenness may adversely bias elemental concentration interpretation. EDS has a spatial resolution of ~5 µm meaning spectra from particles less than this size may contain elemental concentrations biased by their surroundings. Analysis was conducted at 20 KeV unless otherwise stated.

No calibration standards (standardless quant) were used in the EDS detector standardization prior to analysis.

Summary

All images were acquired using backscatter electrons (BSE) unless otherwise specified. For BSE, image contrast is directly proportional to average atomic number i.e. the brighter the area, the higher the atomic number.

The mineralogy of particles identified has been summarised in the following table (**Table 1: Mineralogy summary of particles observed**) and have been listed in order of abundance i.e. major, minor or trace quantities of particles.

Analyst: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Reported: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Approved: Rick Hughes, B.Sc.(Hons)Physics, MAIP

Table 1: Mineralogy summary of sulfur-based particles observed

Compound/phase relative abundance[2]	Size range (µm)	Observed morphology	Observed composition (elements present)				Assumed compound/phase	Compound/phase confidence[1] (Likely/possible)
			Major	Minor	Trace	Varying		
Major	<5 - ~100	Angular and aggregated particulate	S, Fe	-	Ni	-	Iron sulfide (pyrite/pyrrhotite)	Likely
Minor	<5 - ~180	Angular and aggregated particulate	S, Zn	Na	Si, K	O, Fe (trace to minor)	Zinc sulfide (sphalerite)	Possible
Minor	<5 - ~100	Angular and aggregated particulate	S, Fe, Cu	-	Ca	O (trace to minor)	Iron-copper sulfide (chalcopyrite)	Likely
Trace	<5 - ~250	Angular and aggregated particulate	S, Fe, As	-	Si	-	Arsenic-iron sulfide (arsenopyrite)	Likely

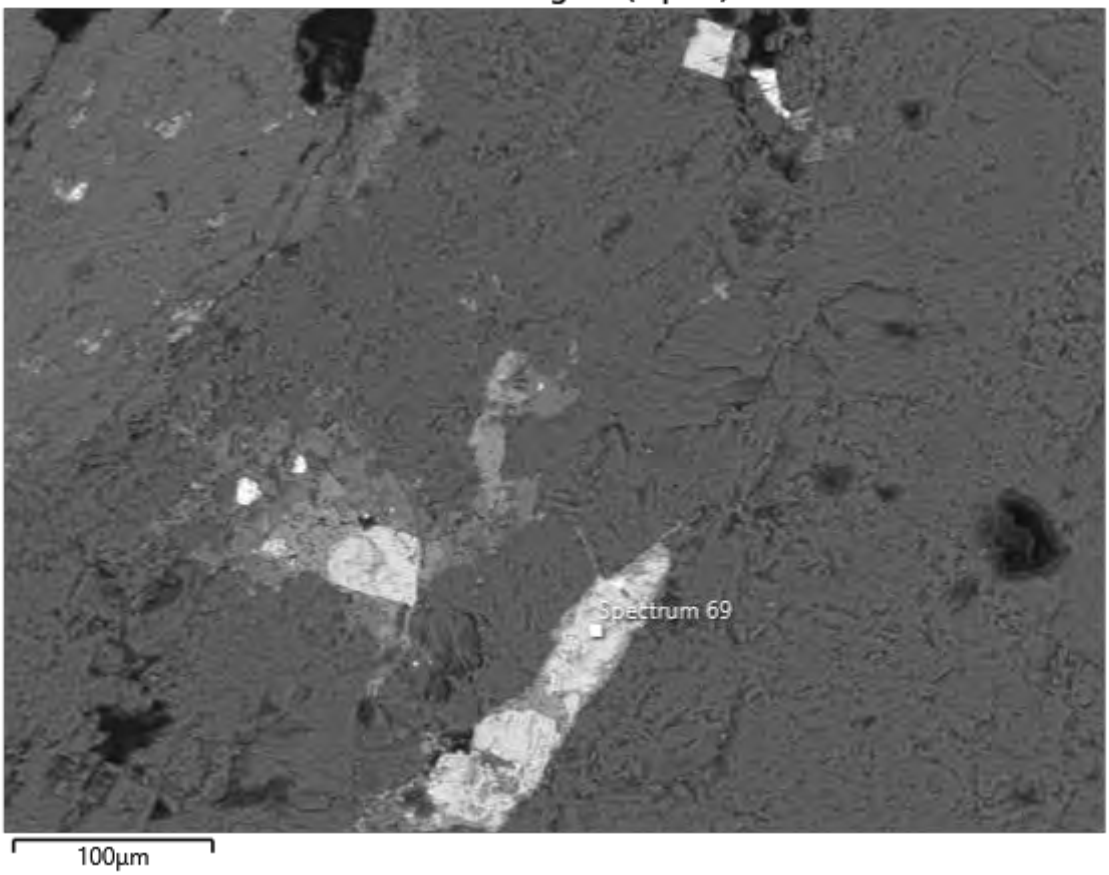
[1] indicates whether multiple options may be possible with similar stoichiometries. Confirmation by other techniques such as XRD or FTIR may be necessary for increased confidence. *Most of the sulfur-based minerals are surrounded by oxygen-containing minerals such as silica, iron oxides, and various aluminosilicates. The oxygen from the surrounding materials may interfere with the sulfur-containing particles, allowing oxygen to show as a trace or minor phase in the analysis of the sulfur particles. Most of the time this will be from the surrounding materials, however we assign a 'possible' confidence as to not rule out the possibility of partial oxidation of the sulfur mineral present.*

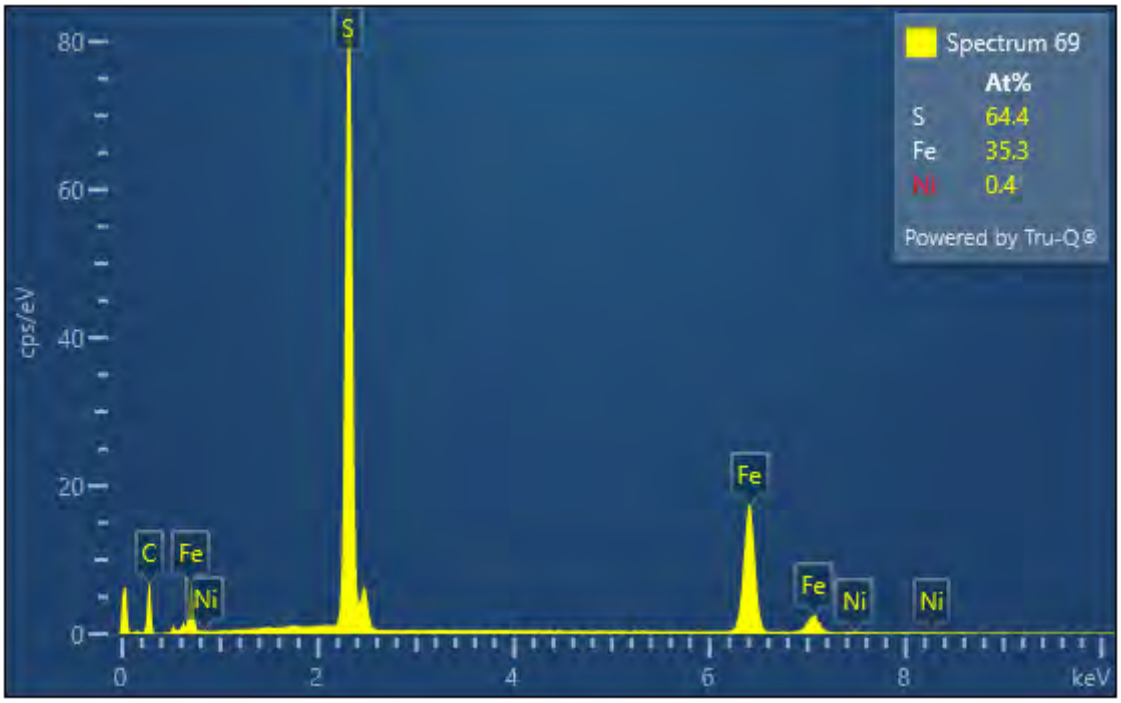
[2] The interpreted compound abundance qualifiers (major, minor, trace) are based on the following categories and are presented by number (count) of observed particles as opposed to wt% or ppm as would be reported by ICP/XRF. **All sulfur-based phases within the sample are trace. This is an abundance relative only to each other type of sulfur-based mineral present.**

Qualifier	***Approximate* range, number %**
Major	> ~30
Minor	~1 to ~30
Trace	< ~1

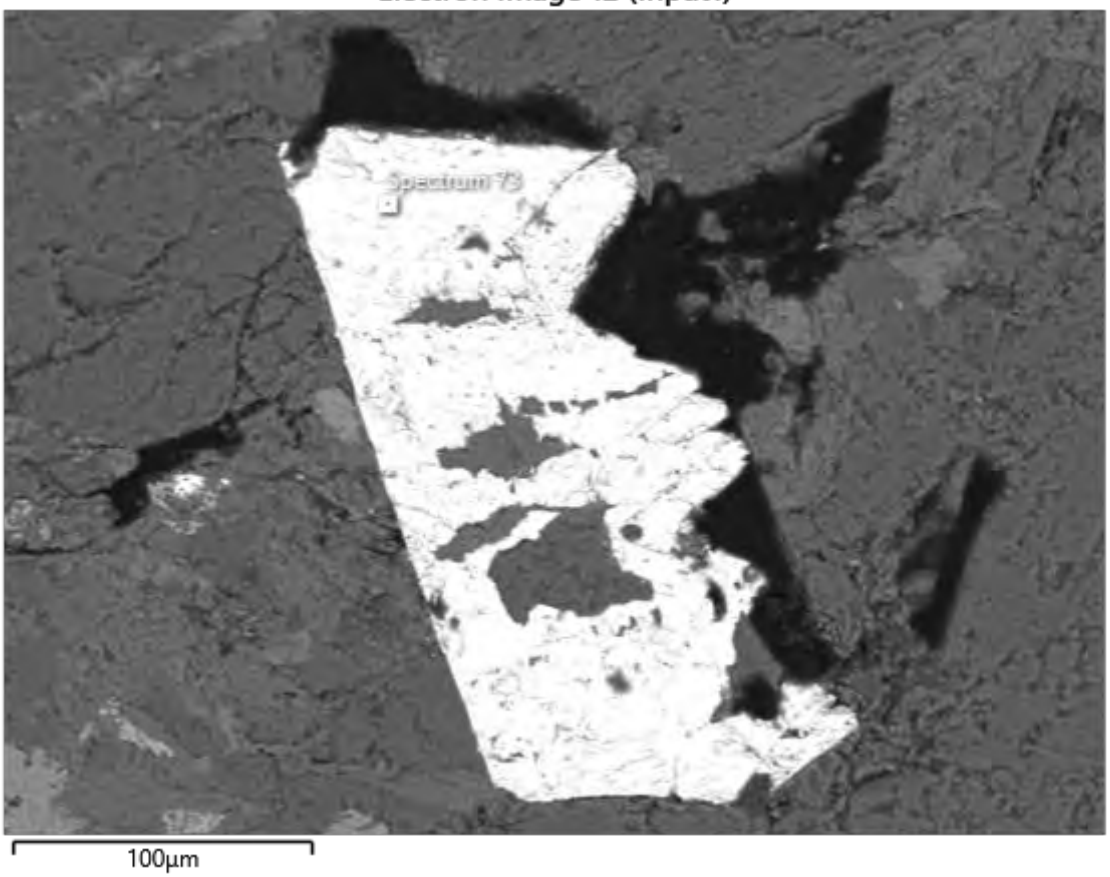
The range (above) is stated as '*Approximate*' as the technique is more a qualitative measure of relative abundance as opposed to a quantitative absolute abundance. The abundance is stated as number percent as no calculations have been made to transform geometric sizes into particle volumes, nor density values used to calculate weight fractions that would enable weight percentages to be quoted.

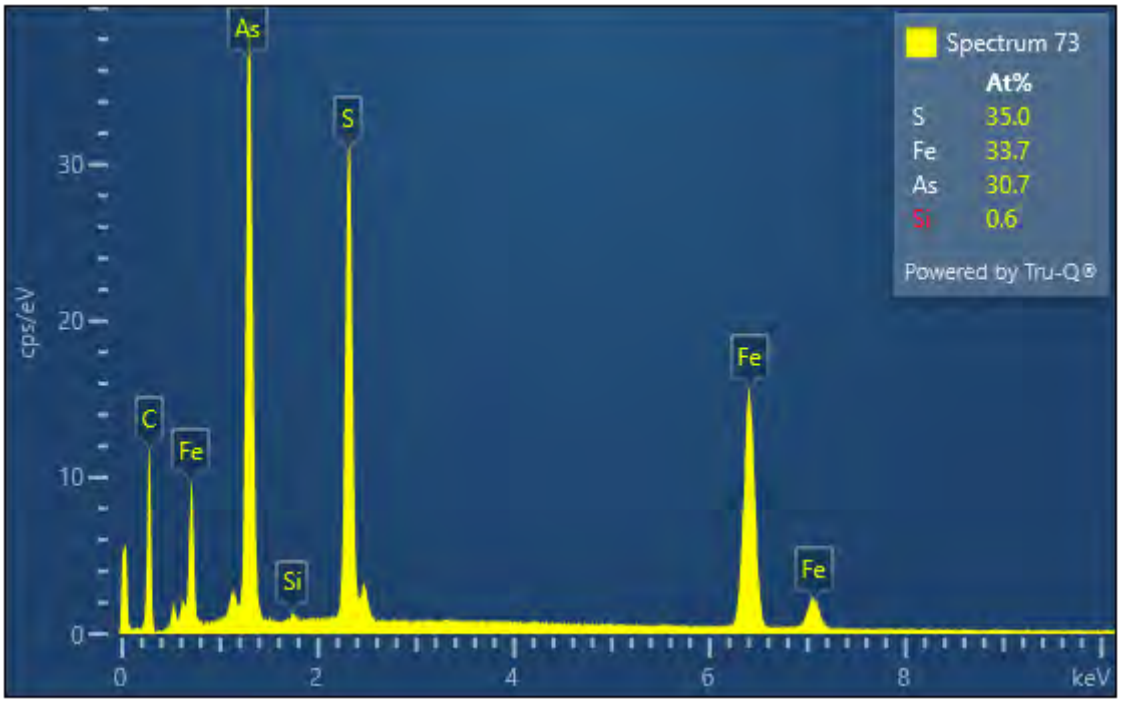
Electron Image 11 (Input1)



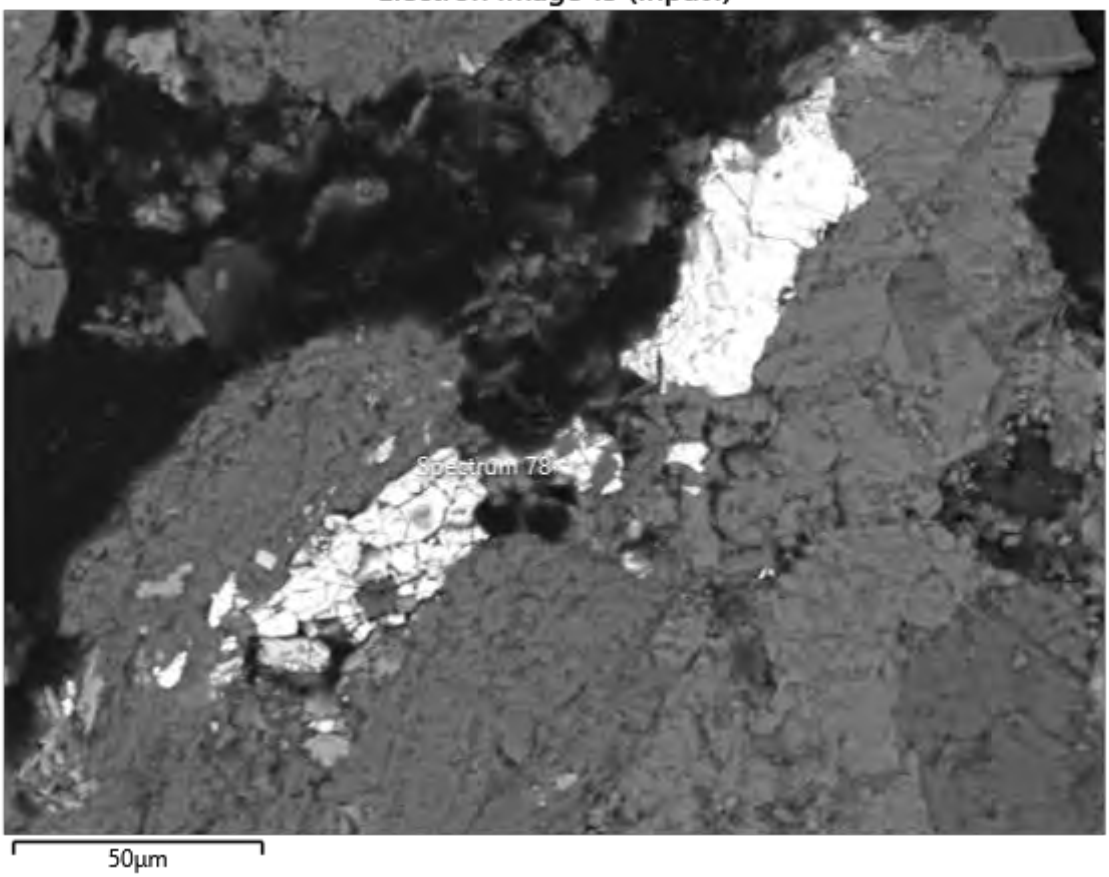


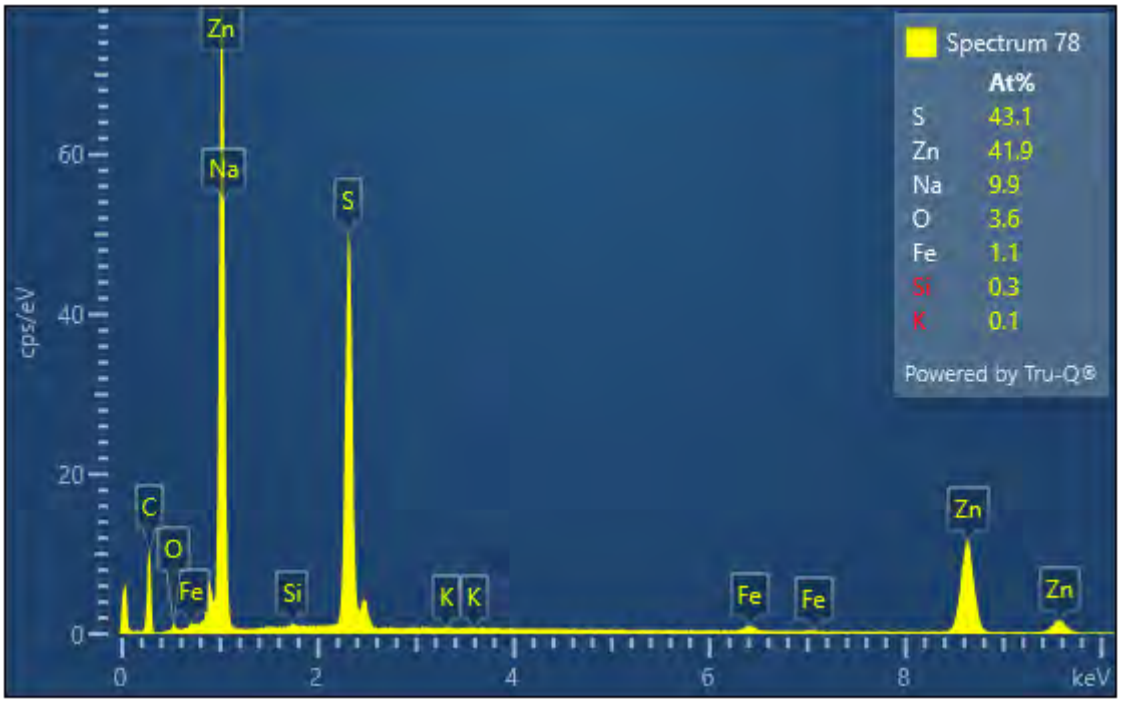
Electron Image 12 (Input1)



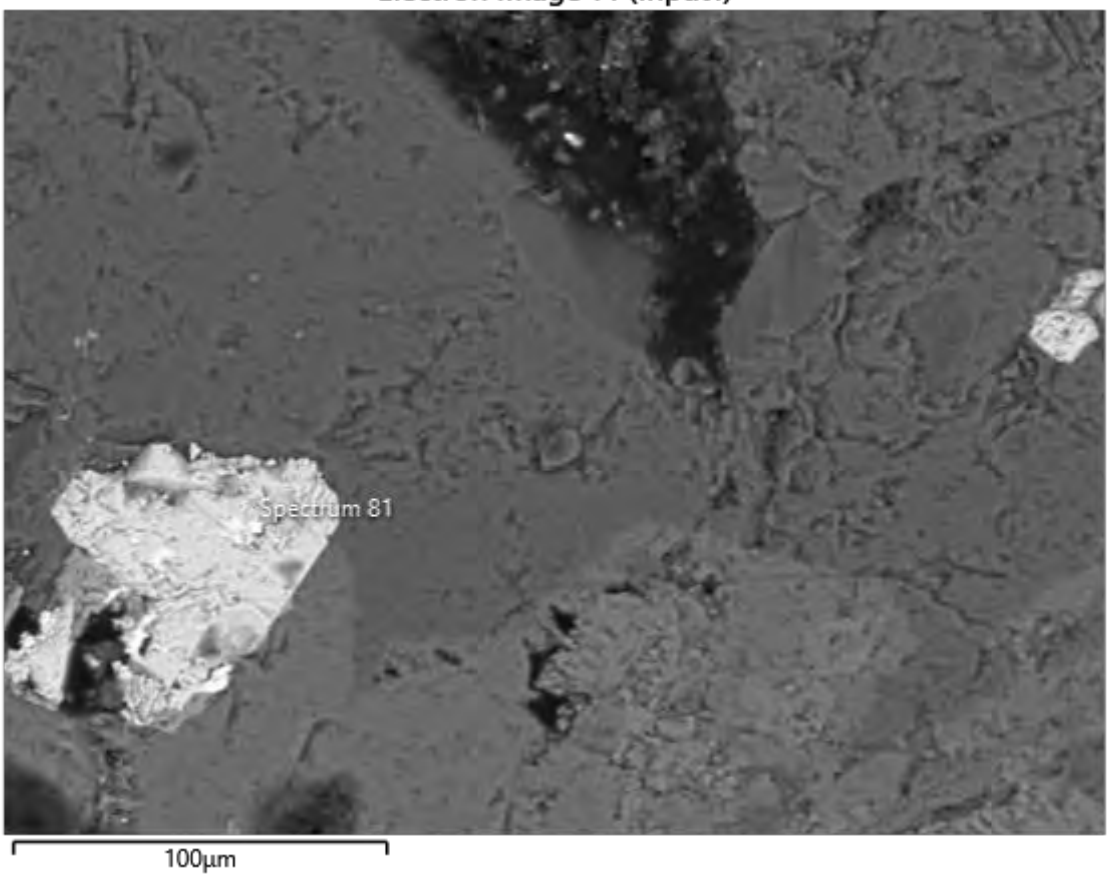


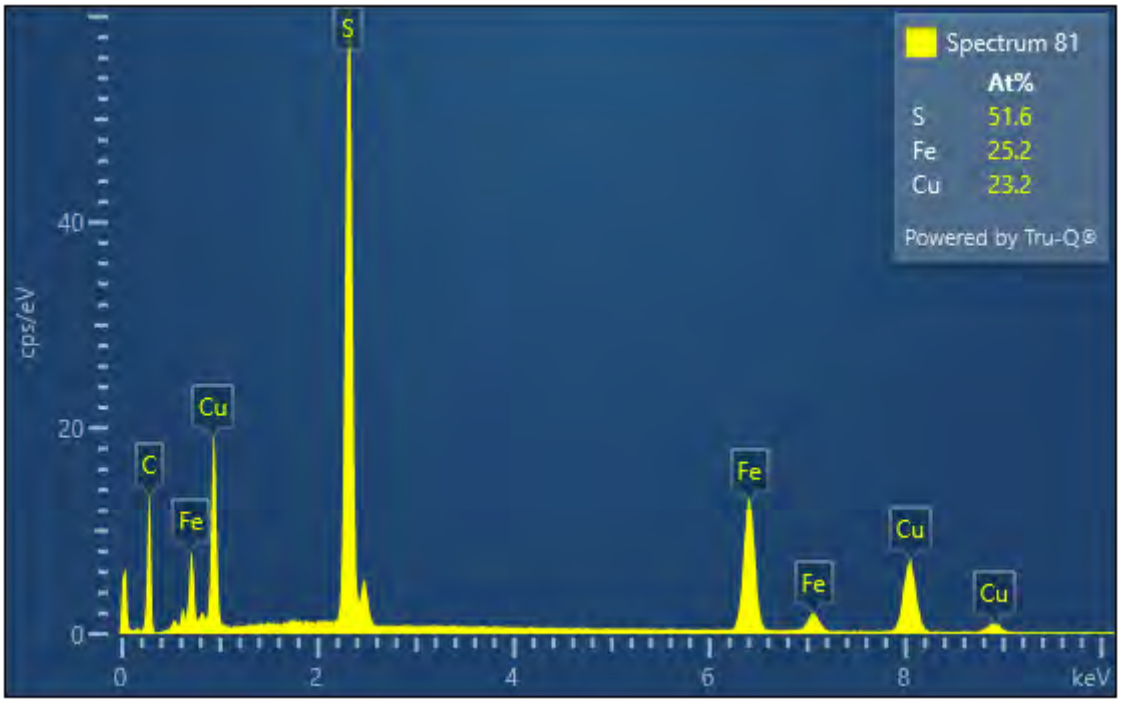
Electron Image 13 (Input1)



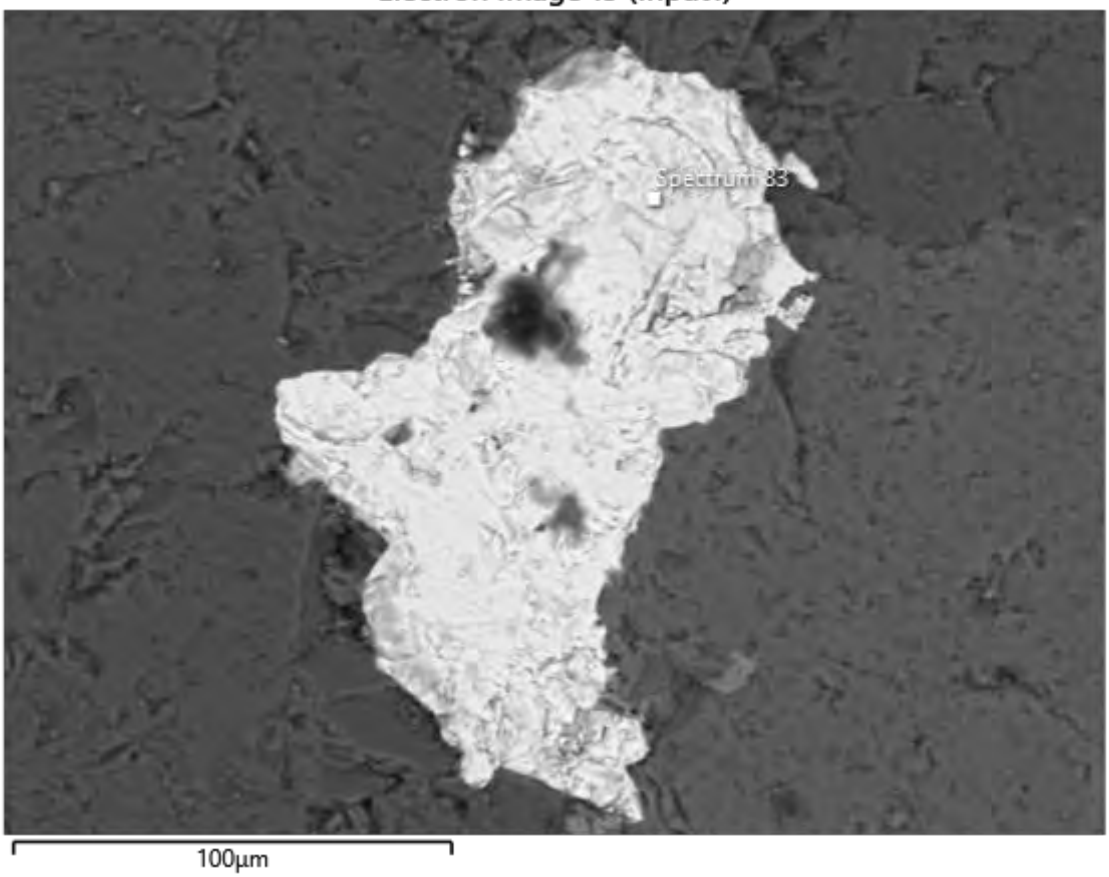


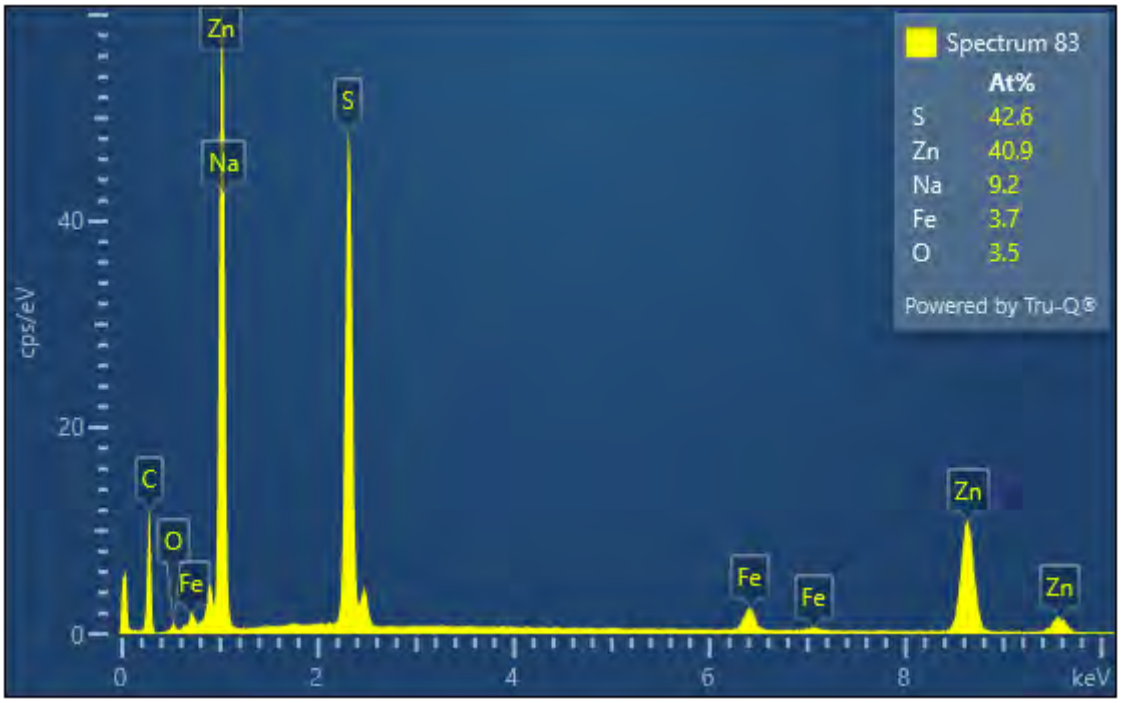
Electron Image 14 (Input1)



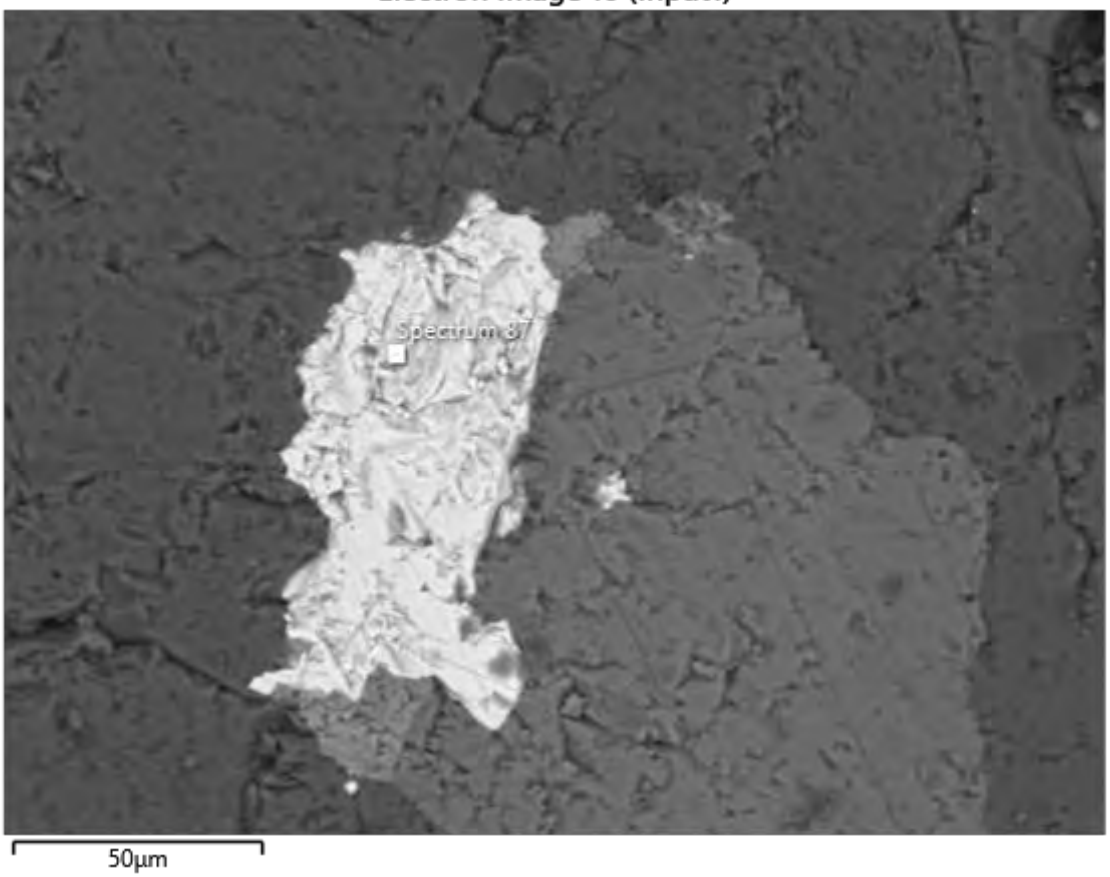


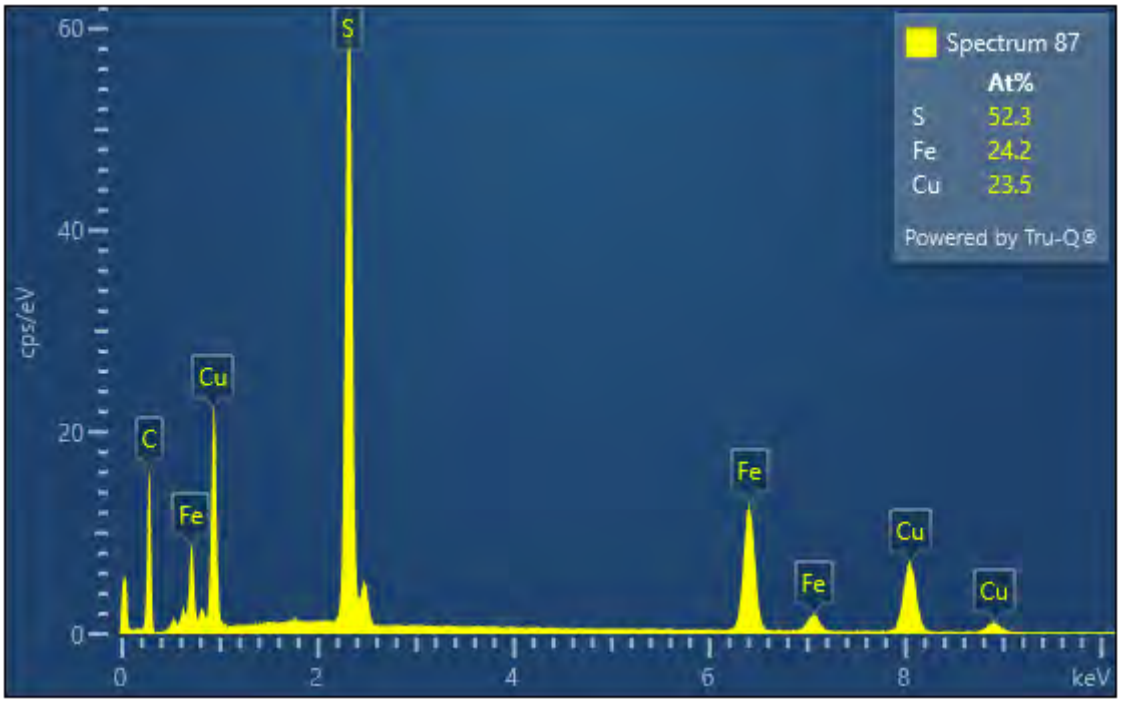
Electron Image 15 (Input1)



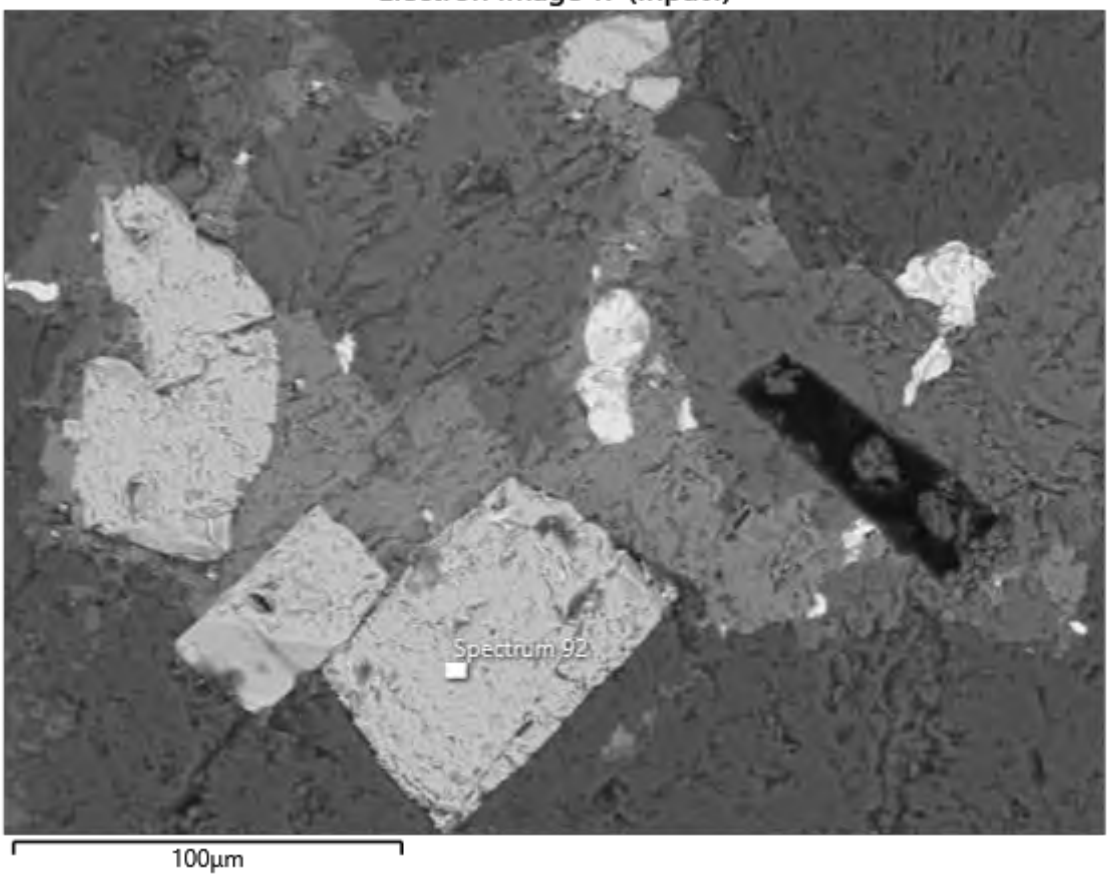


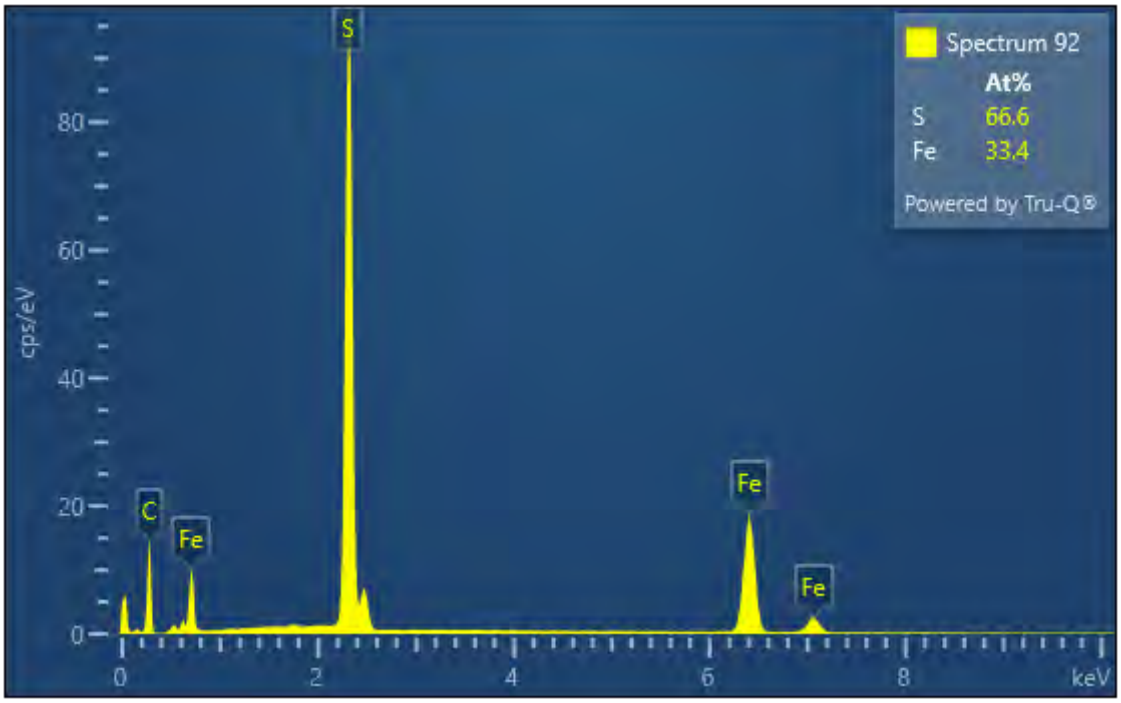
Electron Image 16 (Input1)



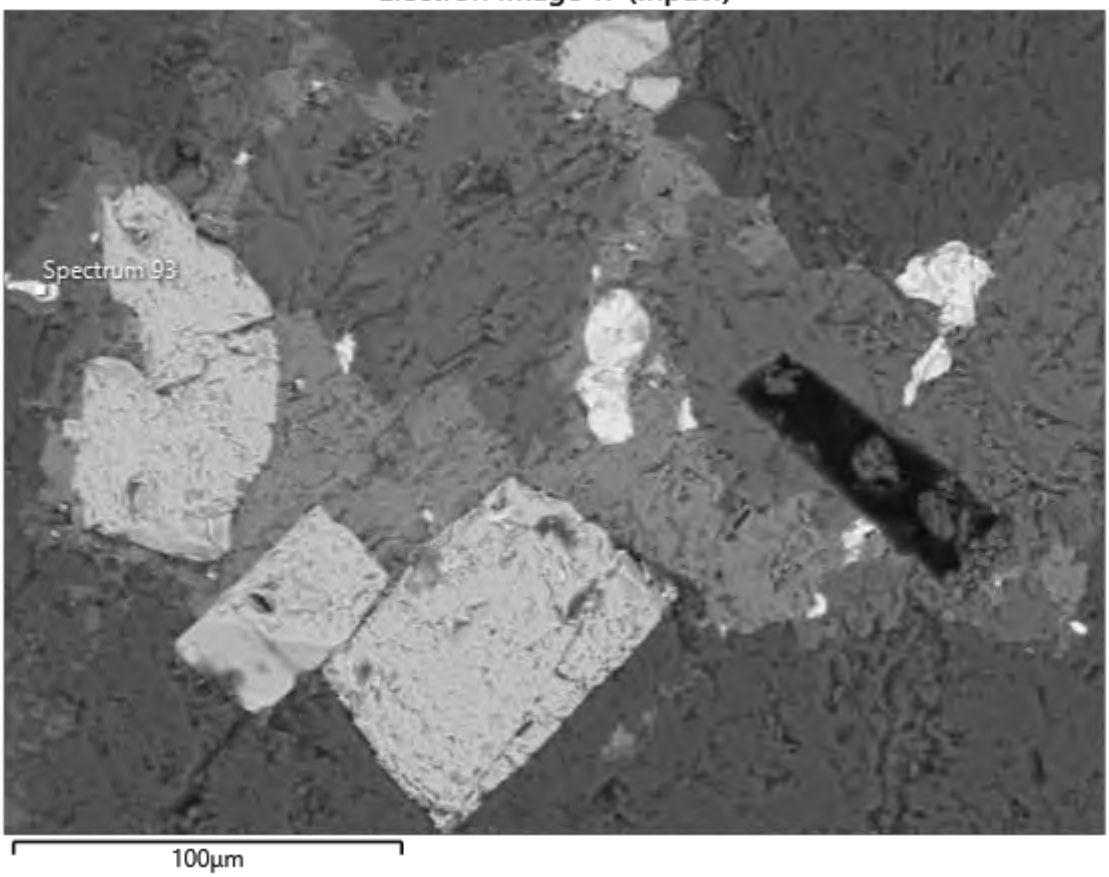


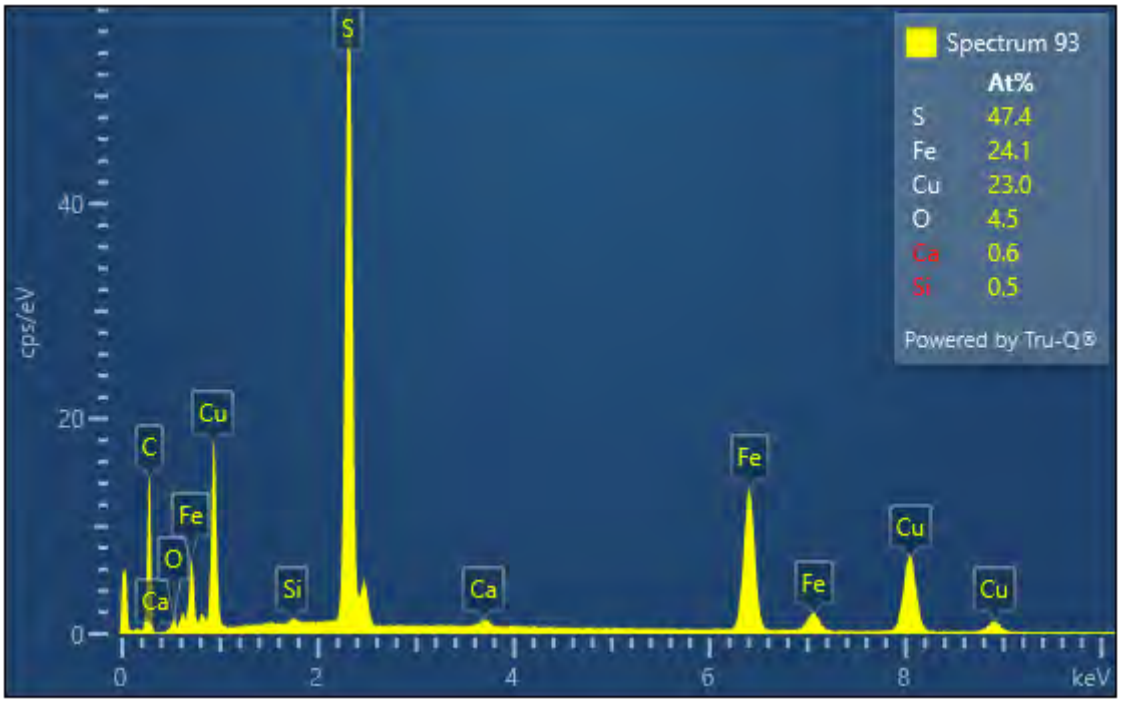
Electron Image 17 (Input1)





Electron Image 17 (Input1)





5 Alvan Street
Mount Lawley
WA 6050

Client:	Mine Waste Management NZ	**Date received:**	27/11/2024
Client address:	5 Sir William Pickering Drive BURNSIDE NZ 8053	**Date analysed:**	19/12/2024
Job number:	24_2171	**Date reported:**	20/12/2024
Lab ID:	24_2171_004		
Client ID:	**MG55796**		
Analysis:	Scanning electron microscopy (SEM) with elemental analysis by energy dispersive spectroscopy (EDS)		
Revision number:	0		
Comments:	None		

Sample preparation

The sample was supplied to Microanalysis Australia as a bulk drill core sample.

The sample was mounted in epoxy resin and polished to a flat surface before being carbon coated. Non-conducting samples require coating prior to SEM analysis to prevent charging whilst being analysed by the electron beam.

Analysis

The sample was analysed using a Carl Zeiss EVO50 scanning electron microscope (SEM) fitted with an Oxford INCA X-Max energy dispersive spectrometer (EDS).

EDS is a semi-quantitative technique (at best) on well prepared, optically flat samples. Factors such as sample unevenness may adversely bias elemental concentration interpretation. EDS has a spatial resolution of ~5 µm meaning spectra from particles less than this size may contain elemental concentrations biased by their surroundings. Analysis was conducted at 20 KeV unless otherwise stated.

No calibration standards (standardless quant) were used in the EDS detector standardization prior to analysis.

Summary

All images were acquired using backscatter electrons (BSE) unless otherwise specified. For BSE, image contrast is directly proportional to average atomic number i.e. the brighter the area, the higher the atomic number.

The mineralogy of particles identified has been summarised in the following table (**Table 1: Mineralogy summary of particles observed**) and have been listed in order of abundance i.e. major, minor or trace quantities of particles.

Analyst: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Reported: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Approved: Rick Hughes, B.Sc.(Hons)Physics, MAIP

Table 1: Mineralogy summary of sulfur-based particles observed

Compound/phase relative abundance[2]	Size range (µm)	Observed morphology	Observed composition (elements present)				Assumed compound/phase	Compound/phase confidence[1] (Likely/possible)
			Major	Minor	Trace	Varying		
Major	<5 - ~630	Angular particulate	S, Fe, As	-	Ca	-	Arsenic-iron sulfide (arsenopyrite)	Likely
Minor	<5 - ~250	Angular and aggregated particulate	S, Fe	-	Cu, Ni, As	-	Iron sulfide (pyrite/pyrrhotite)	Likely
Minor	<5 - ~35	Angular and aggregated particulate	S, Zn	Na	-	Fe, O (trace to minor)	Zinc sulfide (sphalerite)	Possible

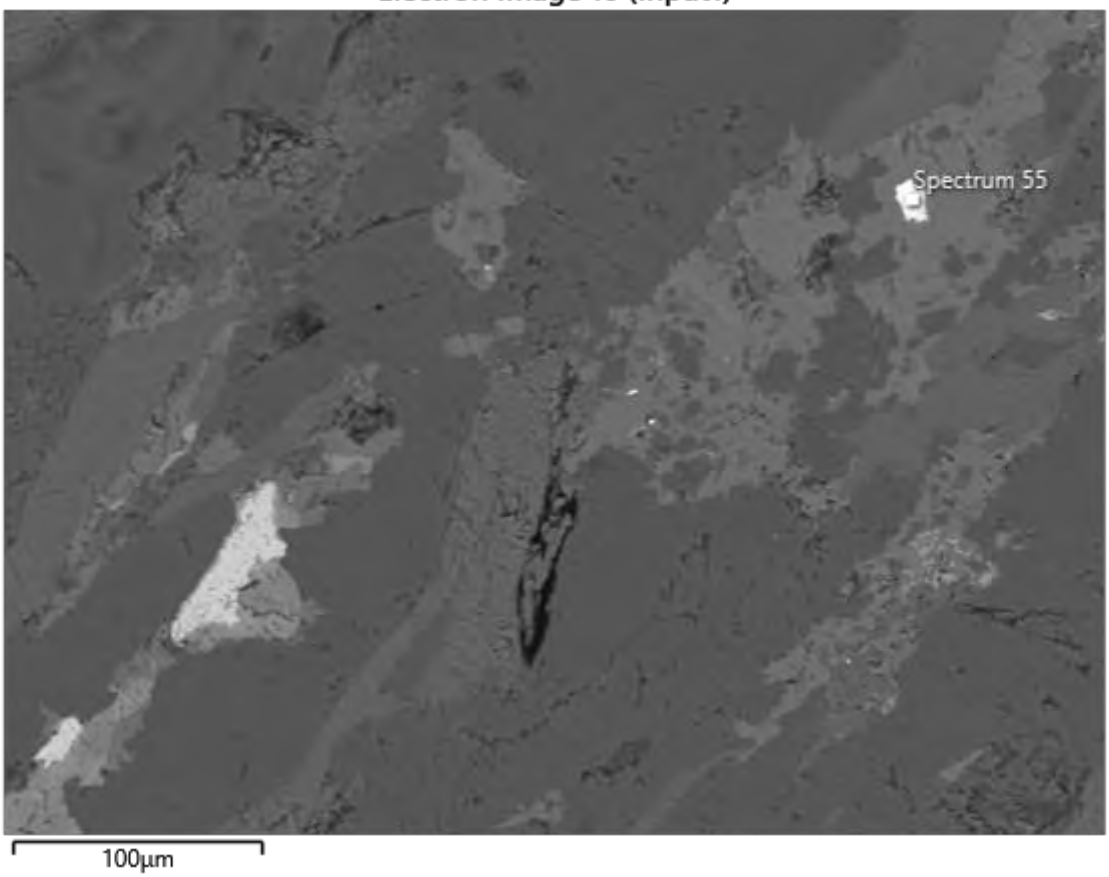
[1] indicates whether multiple options may be possible with similar stoichiometries. Confirmation by other techniques such as XRD or FTIR may be necessary for increased confidence. *Most of the sulfur-based minerals are surrounded by oxygen-containing minerals such as silica, iron oxides, and various aluminosilicates. The oxygen from the surrounding materials may interfere with the sulfur-containing particles, allowing oxygen to show as a trace or minor phase in the analysis of the sulfur particles. Most of the time this will be from the surrounding materials, however we assign a 'possible' confidence as to not rule out the possibility of partial oxidation of the sulfur mineral present.*

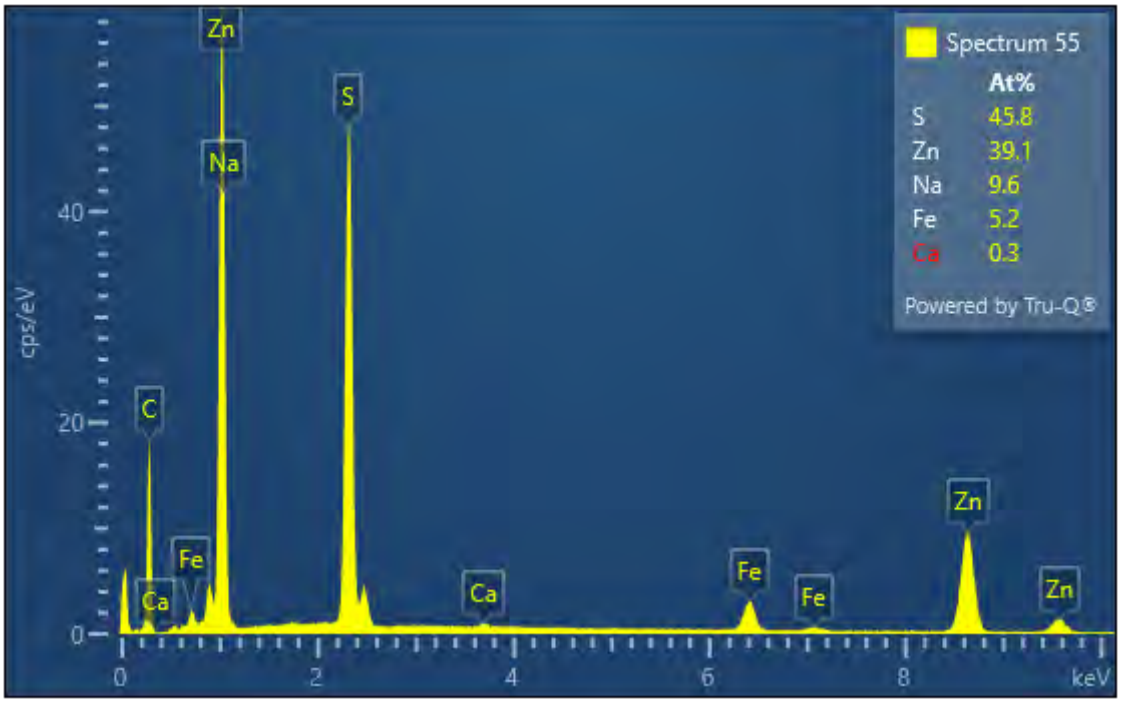
[2] The interpreted compound abundance qualifiers (major, minor, trace) are based on the following categories and are presented by number (count) of observed particles as opposed to wt% or ppm as would be reported by ICP/XRF. **All sulfur-based phases within the sample are trace. This is an abundance relative only to each other type of sulfur-based mineral present.**

Qualifier	***Approximate*** **range, number %**
Major	> ~30
Minor	~1 to ~30
Trace	< ~1

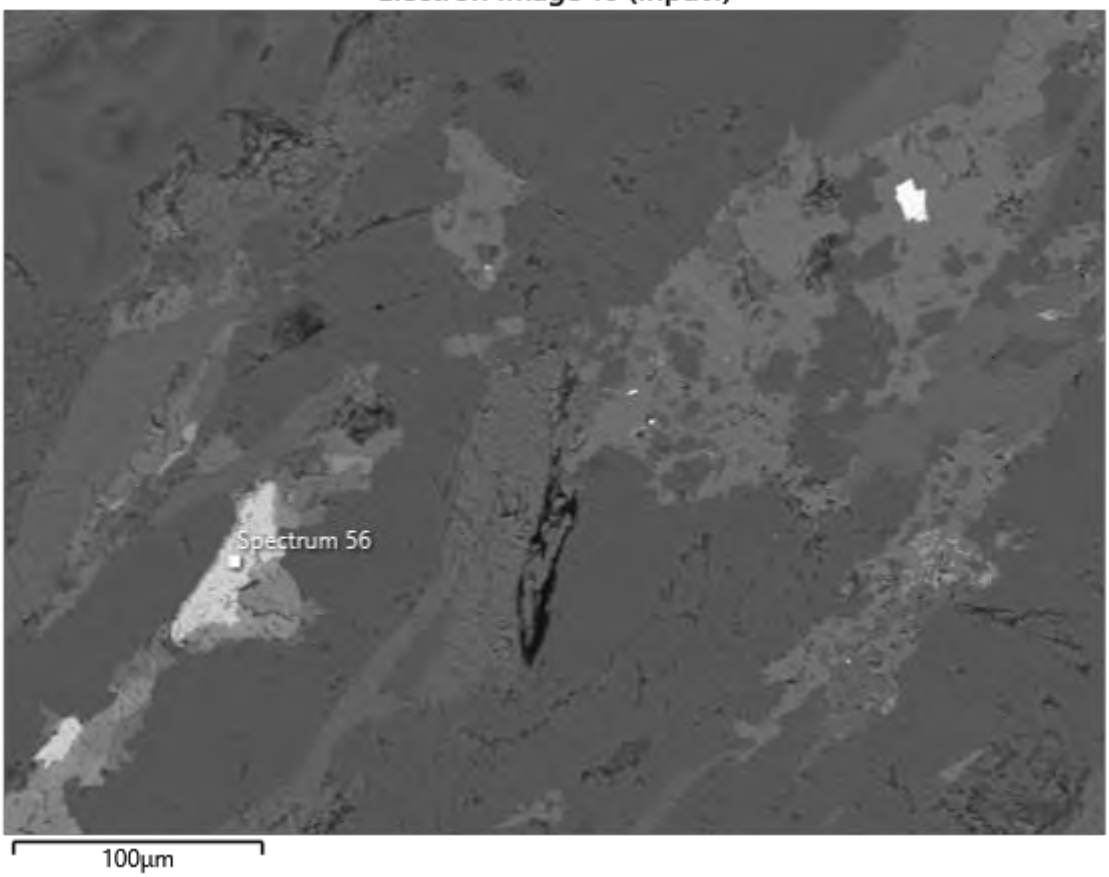
The range (above) is stated as '*Approximate*' as the technique is more a qualitative measure of relative abundance as opposed to a quantitative absolute abundance. The abundance is stated as number percent as no calculations have been made to transform geometric sizes into particle volumes, nor density values used to calculate weight fractions that would enable weight percentages to be quoted.

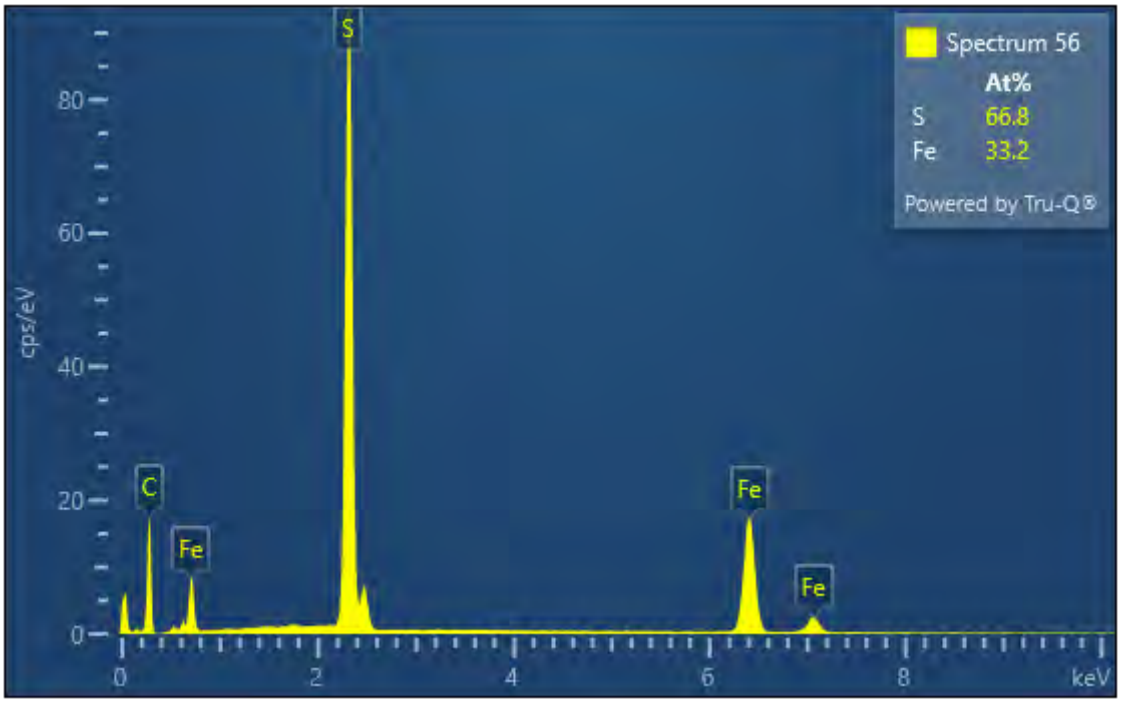
Electron Image 16 (Input1)



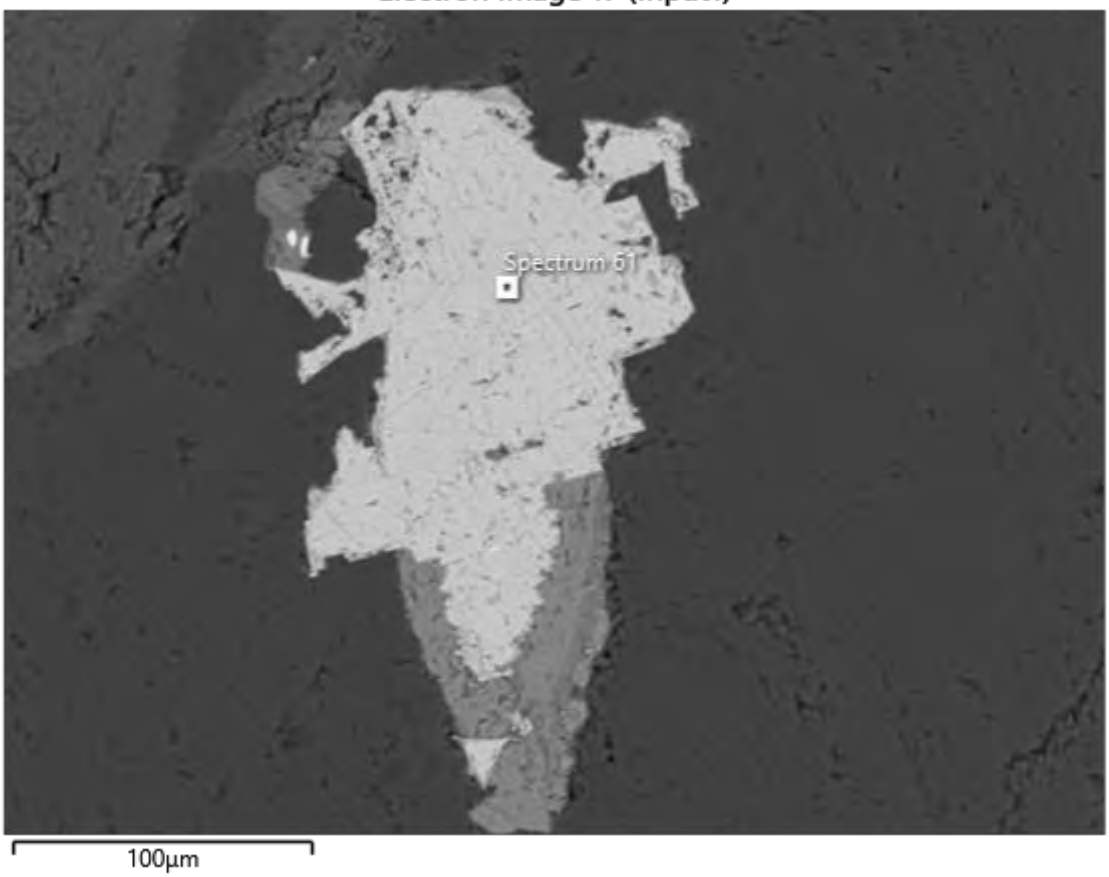


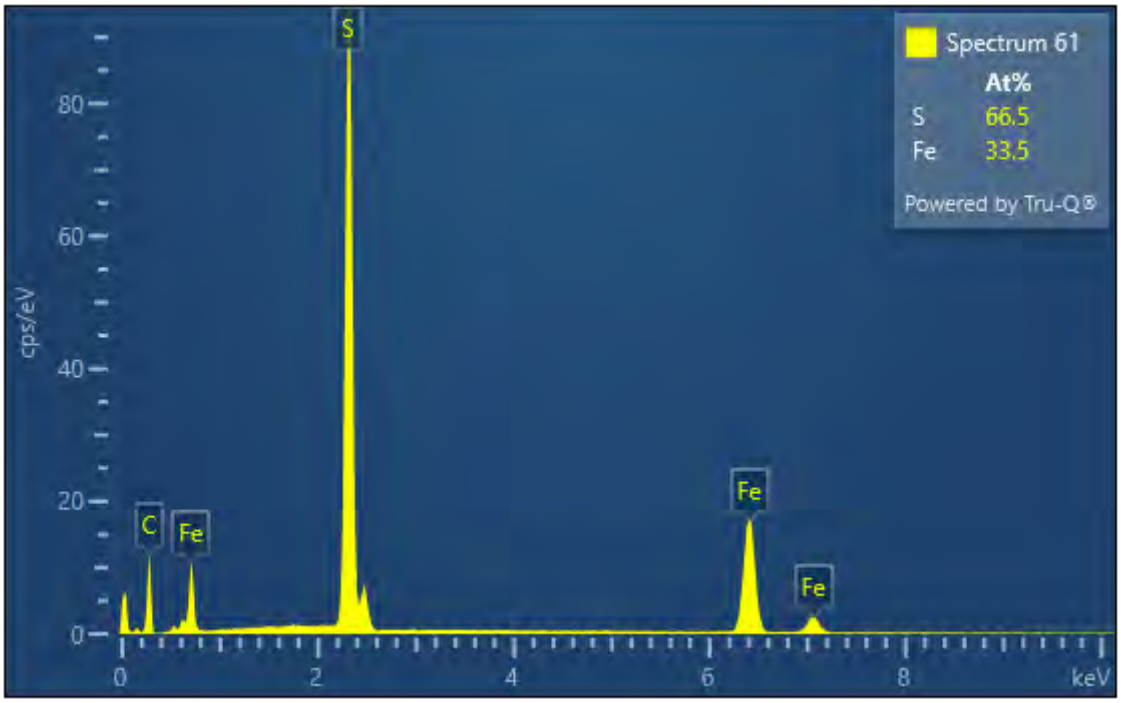
Electron Image 16 (Input1)



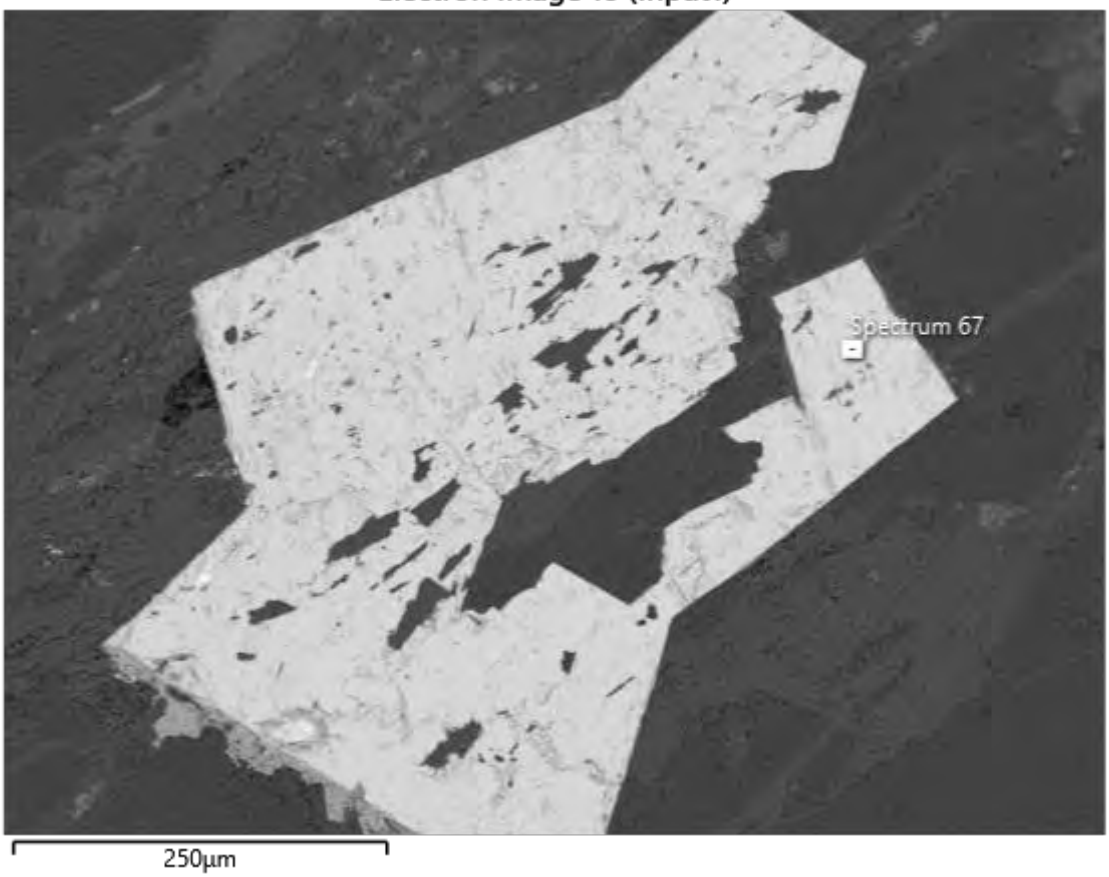


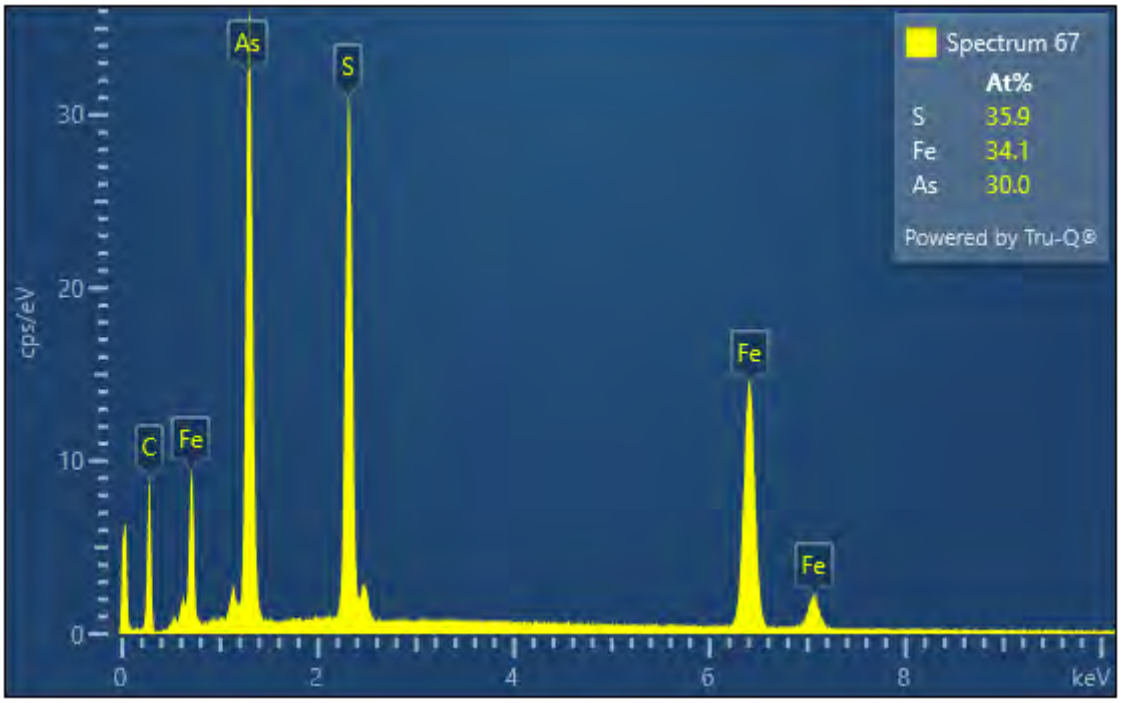
Electron Image 17 (Input1)



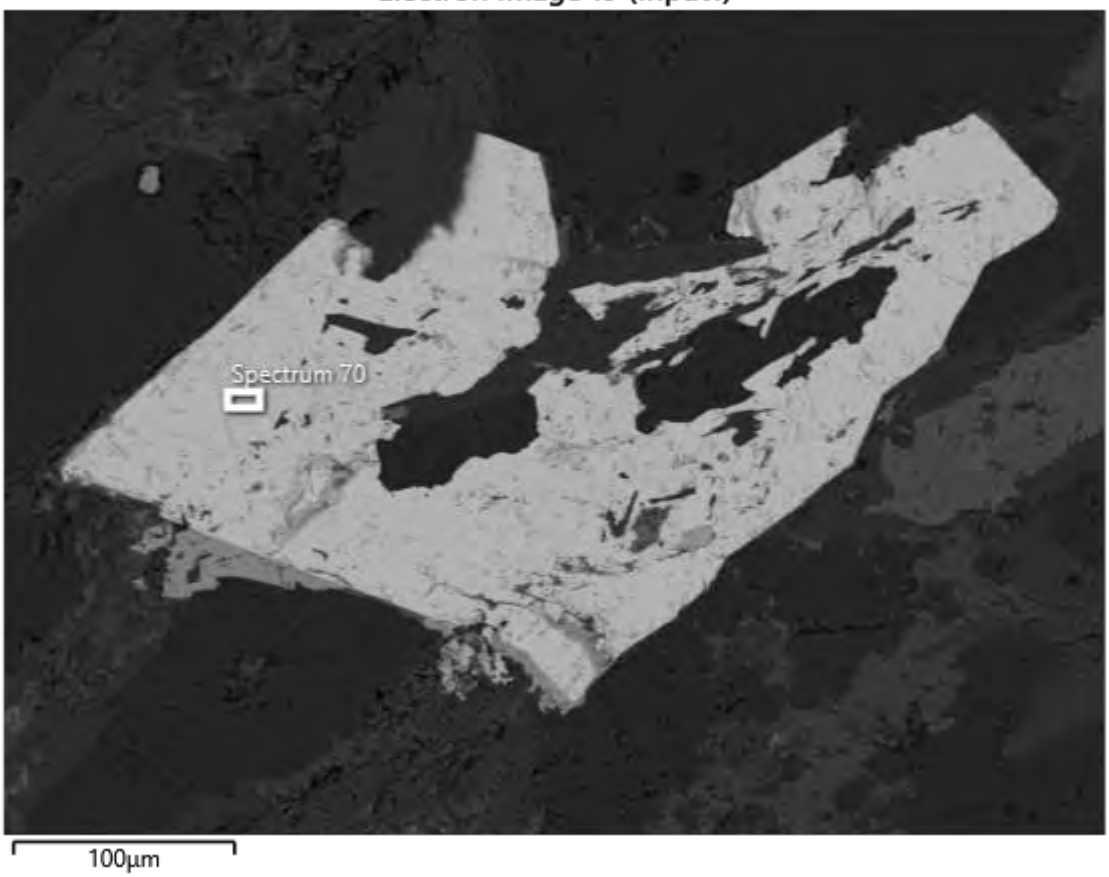


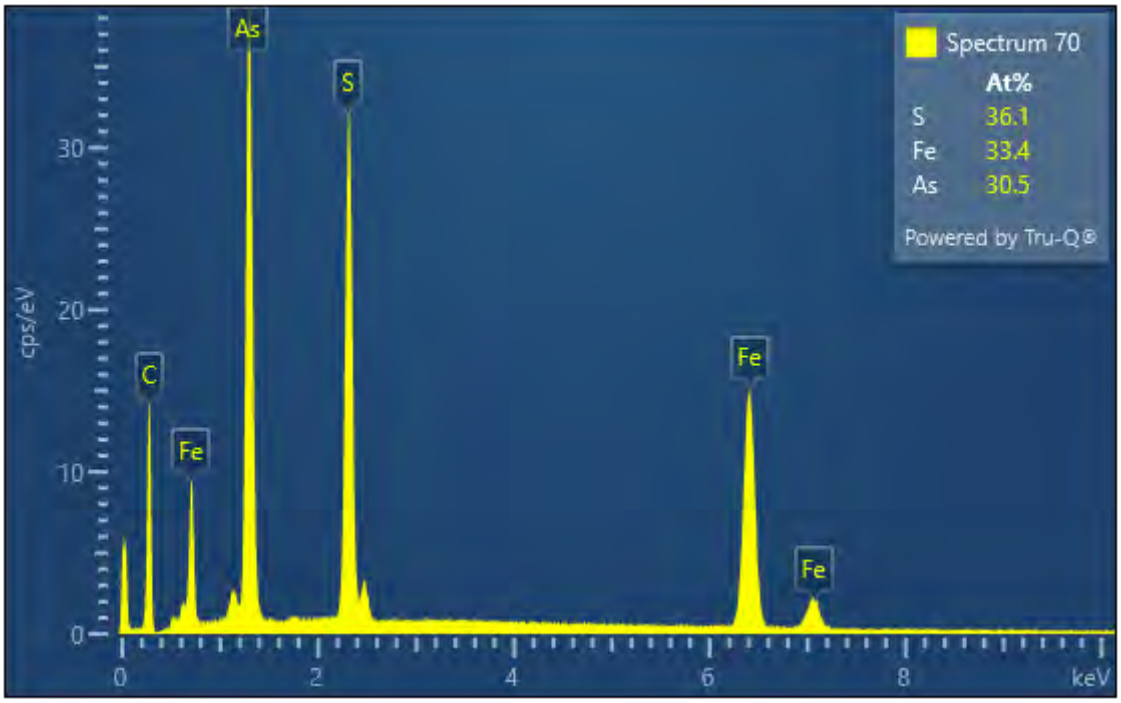
Electron Image 18 (Input1)



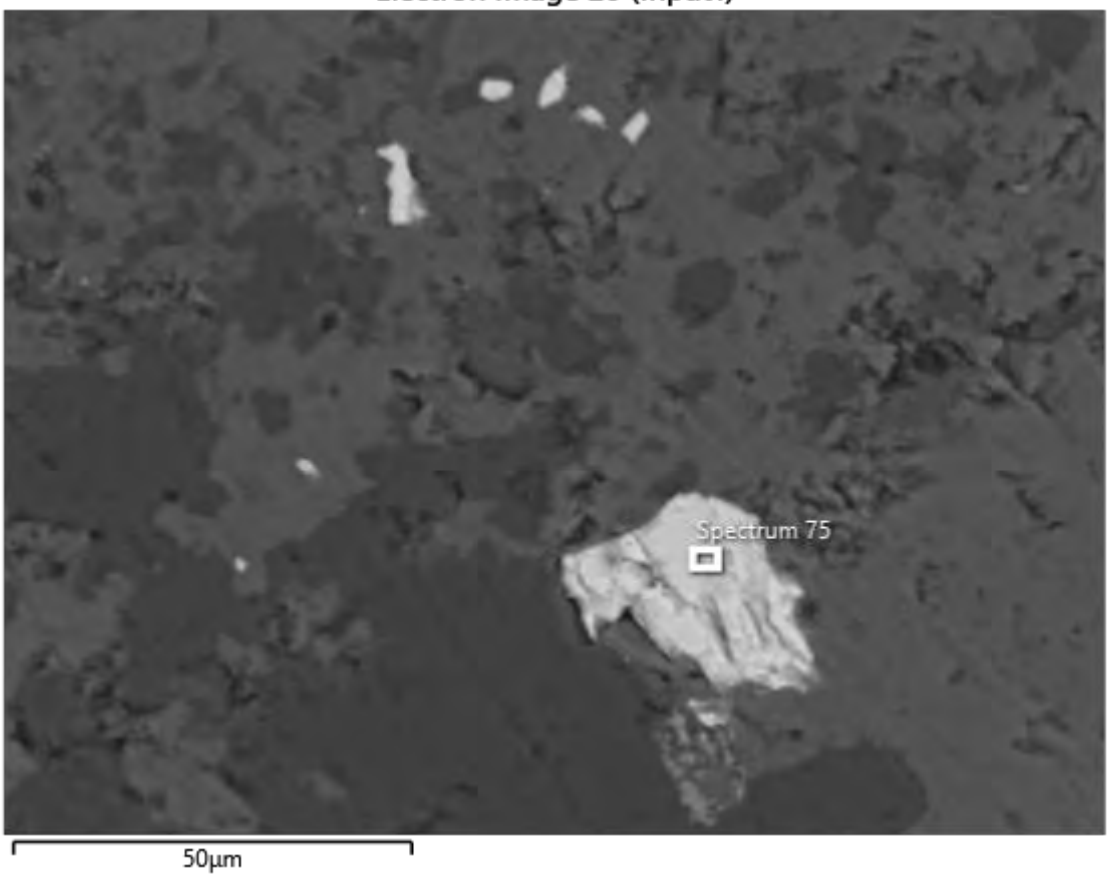


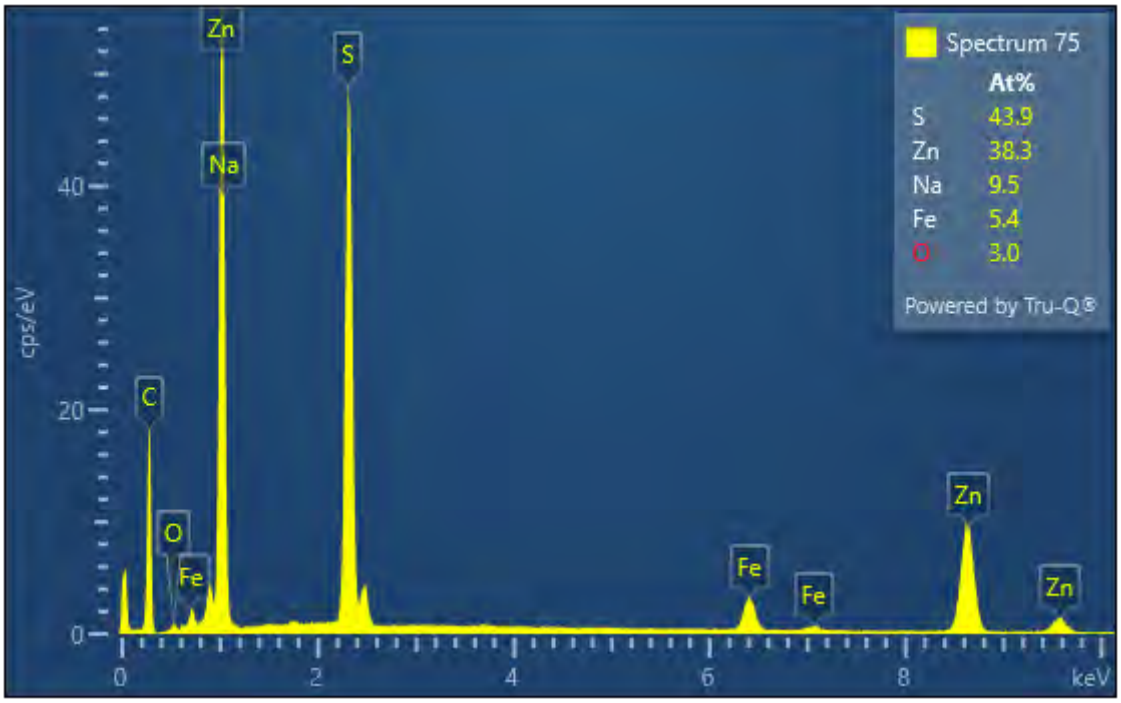
Electron Image 19 (Input1)



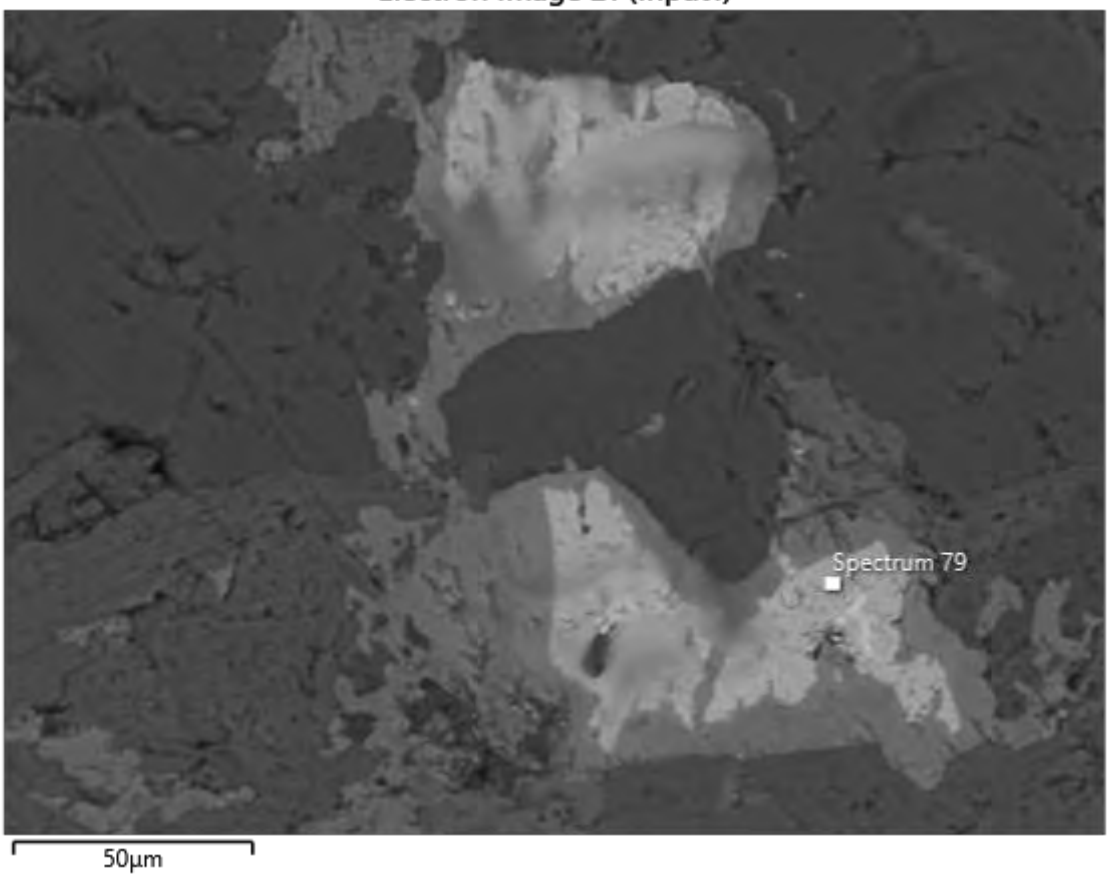


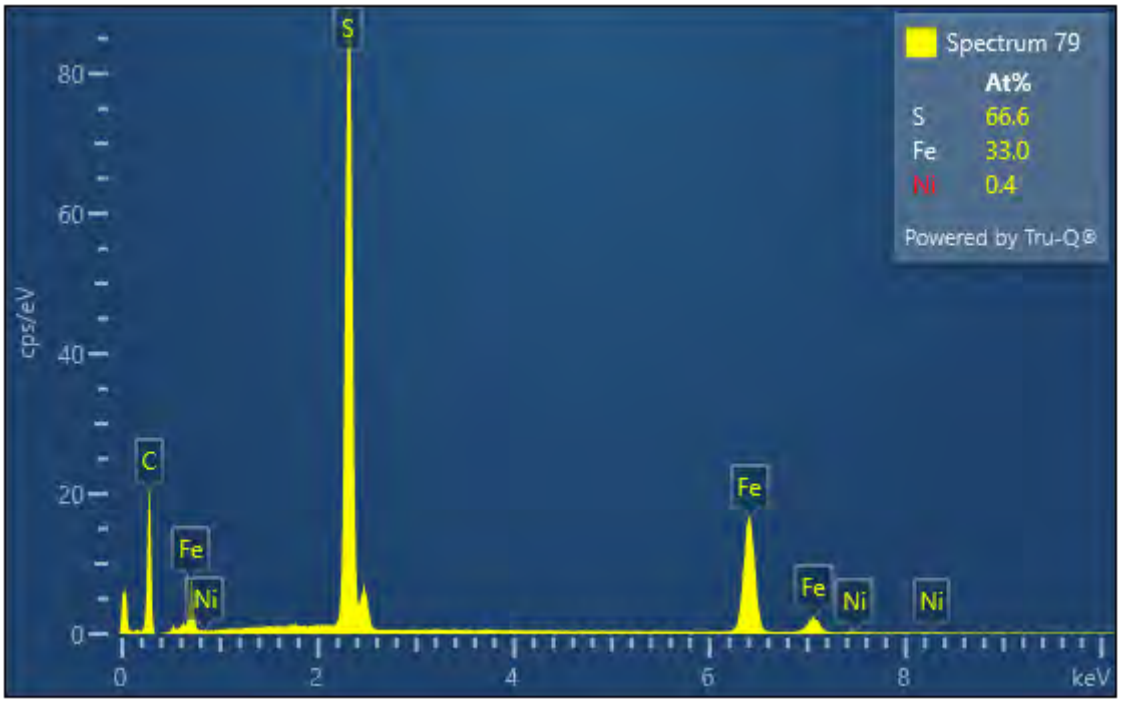
Electron Image 20 (Input1)



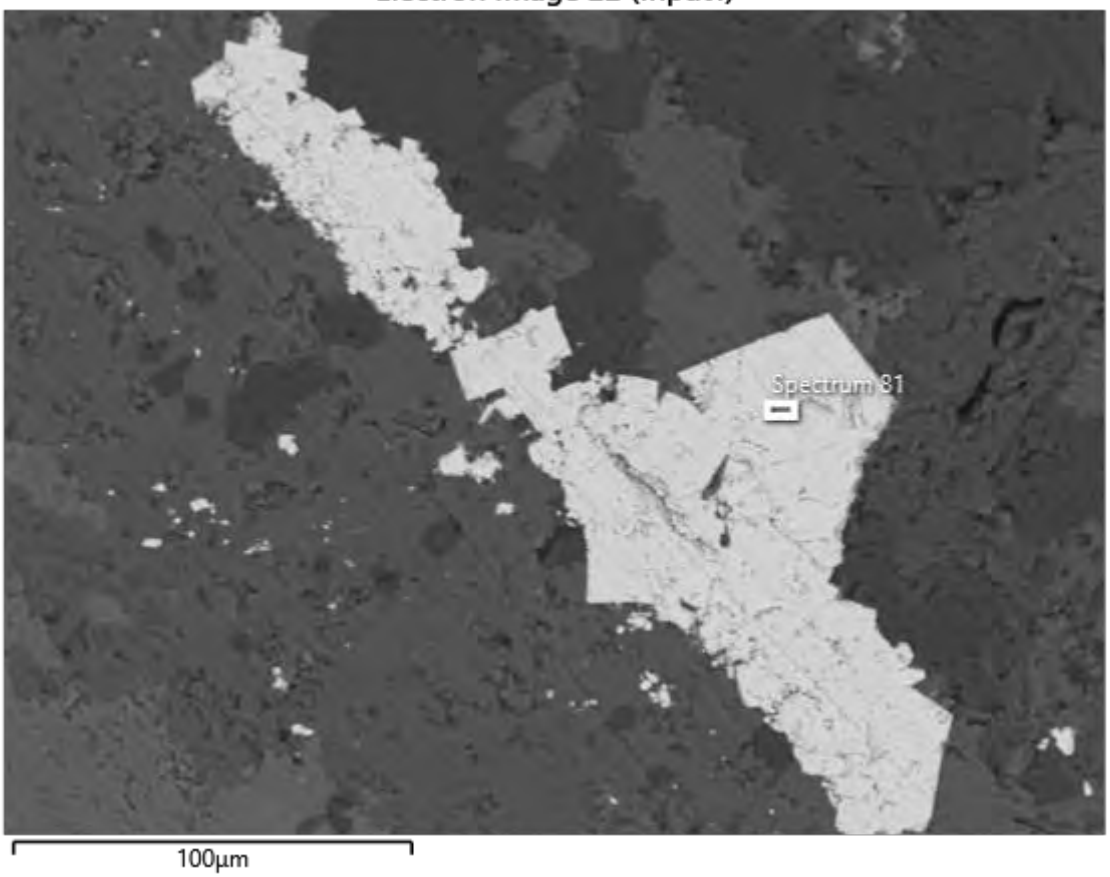


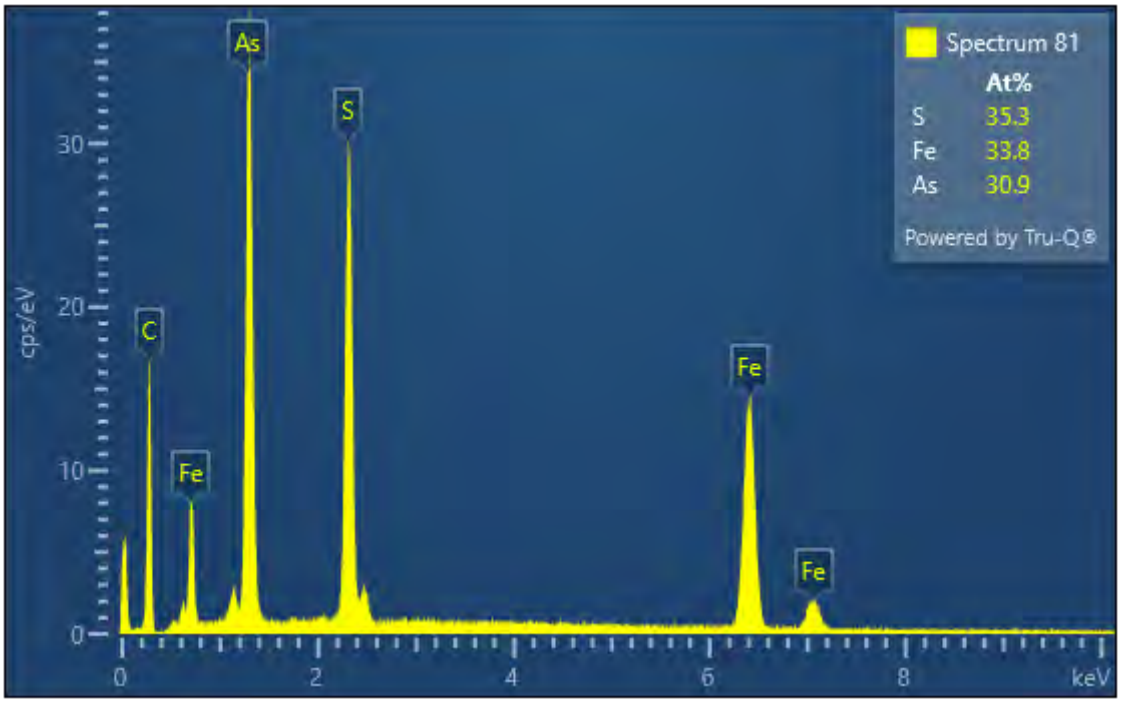
Electron Image 21 (Input1)



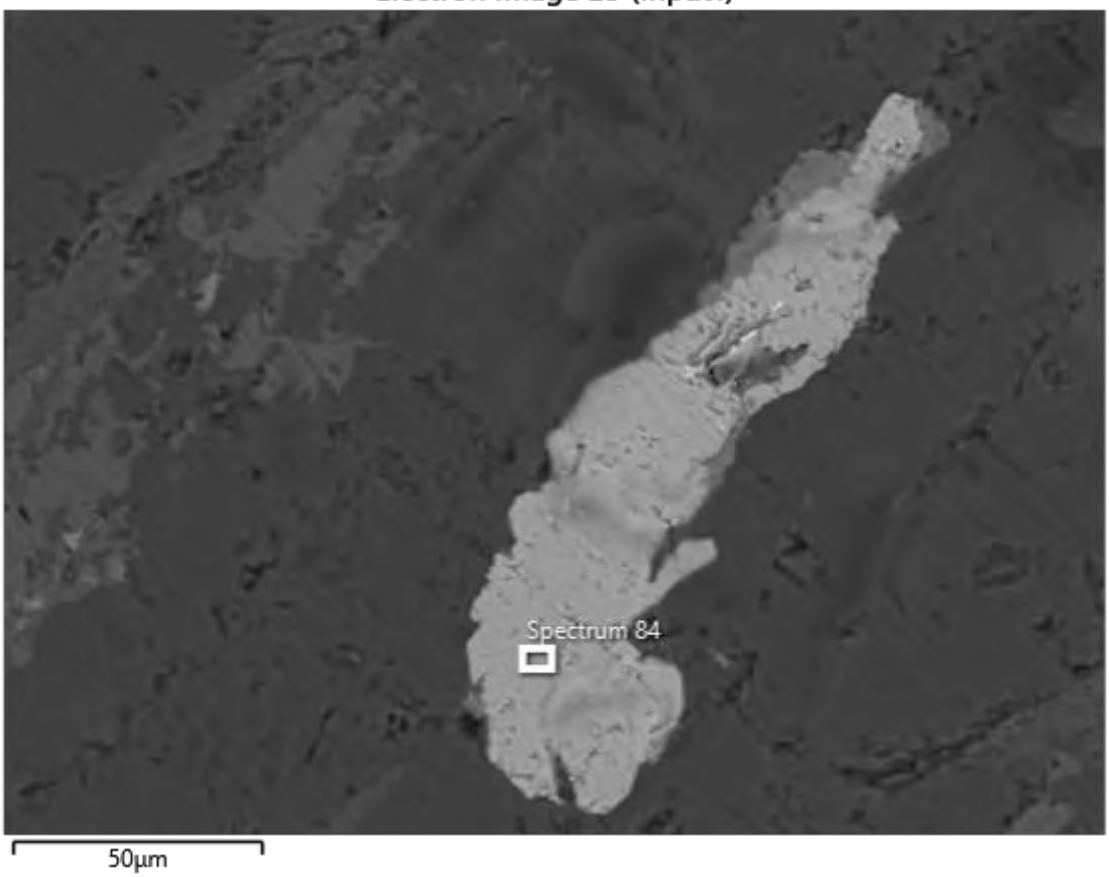


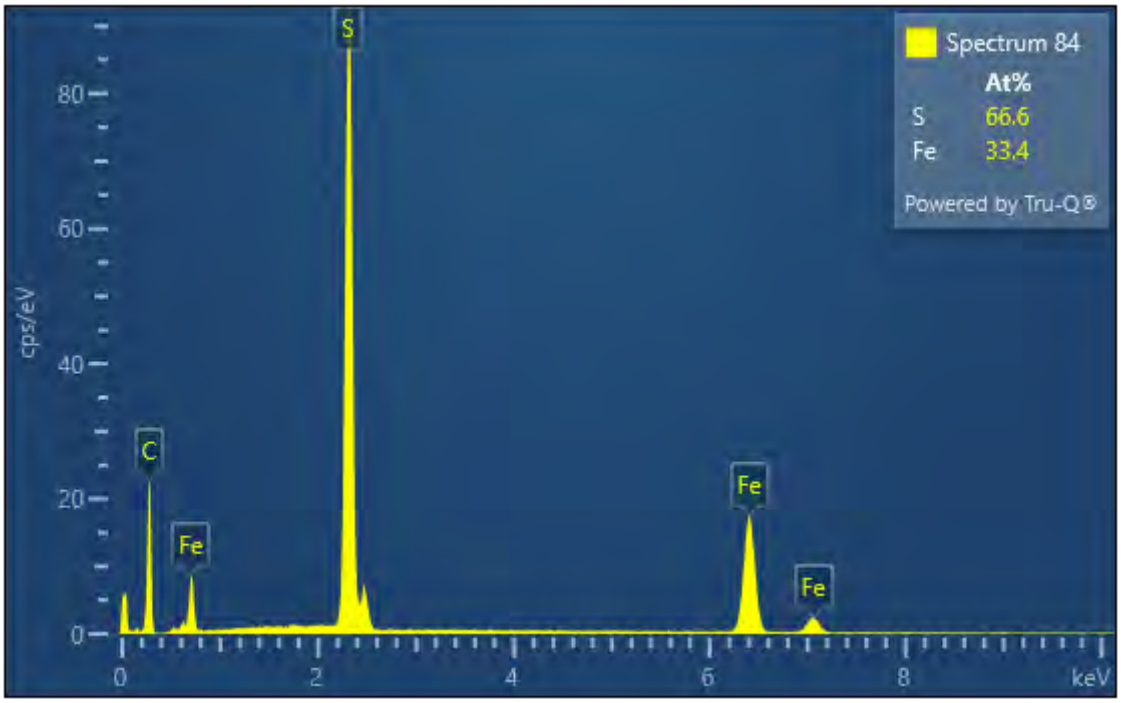
Electron Image 22 (Input1)





Electron Image 23 (Input1)





5 Alvan Street
Mount Lawley
WA 6050

Client:	Mine Waste Management NZ	**Date received:**	27/11/2024
Client address:	5 Sir William Pickering Drive BURNSIDE NZ 8053	**Date analysed:**	19/12/2024
Job number:	24_2171	**Date reported:**	23/12/2024
Lab ID:	24_2171_005		
Client ID:	**MG54045**		
Analysis:	Scanning electron microscopy (SEM) with elemental analysis by energy dispersive spectroscopy (EDS)		
Revision number:	0		
Comments:	None		

Sample preparation

The sample was supplied to Microanalysis Australia as a bulk drill core sample.

The sample was mounted in epoxy resin and polished to a flat surface before being carbon coated. Non-conducting samples require coating prior to SEM analysis to prevent charging whilst being analysed by the electron beam.

Analysis

The sample was analysed using a Carl Zeiss EVO50 scanning electron microscope (SEM) fitted with an Oxford INCA X-Max energy dispersive spectrometer (EDS).

EDS is a semi-quantitative technique (at best) on well prepared, optically flat samples. Factors such as sample unevenness may adversely bias elemental concentration interpretation. EDS has a spatial resolution of ~5 µm meaning spectra from particles less than this size may contain elemental concentrations biased by their surroundings. Analysis was conducted at 20 KeV unless otherwise stated.

No calibration standards (standardless quant) were used in the EDS detector standardization prior to analysis.

Summary

All images were acquired using backscatter electrons (BSE) unless otherwise specified. For BSE, image contrast is directly proportional to average atomic number i.e. the brighter the area, the higher the atomic number.

The mineralogy of particles identified has been summarised in the following table (**Table 1: Mineralogy summary of particles observed**) and have been listed in order of abundance i.e. major, minor or trace quantities of particles.

Analyst: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Reported: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Approved: Rick Hughes, B.Sc.(Hons)Physics, MAIP

Table 1: Mineralogy summary of sulfur-based particles observed

Compound/phase relative abundance[2]	Size range (µm)	Observed morphology	Observed composition (elements present)				Assumed compound/phase	Compound/phase confidence[1] (Likely/possible)
			Major	Minor	Trace	Varying		
Major	<5 - ~15	Angular and aggregated particulate	S, As, Co	Fe, Ni	Ti	O, Si, Al (trace to minor)	Arsenic-cobalt sulfide (cobaltite)	Possible
Trace	<5 - ~10	Irregular particulate	Pb, S	Fe, O	-	-	Lead sulfide (galena)	Possible
Trace	10 - ~15	Subangular particulate	Cu, S	Fe, O	Si, Al	-	Copper sulfide (chalcocite)	Possible

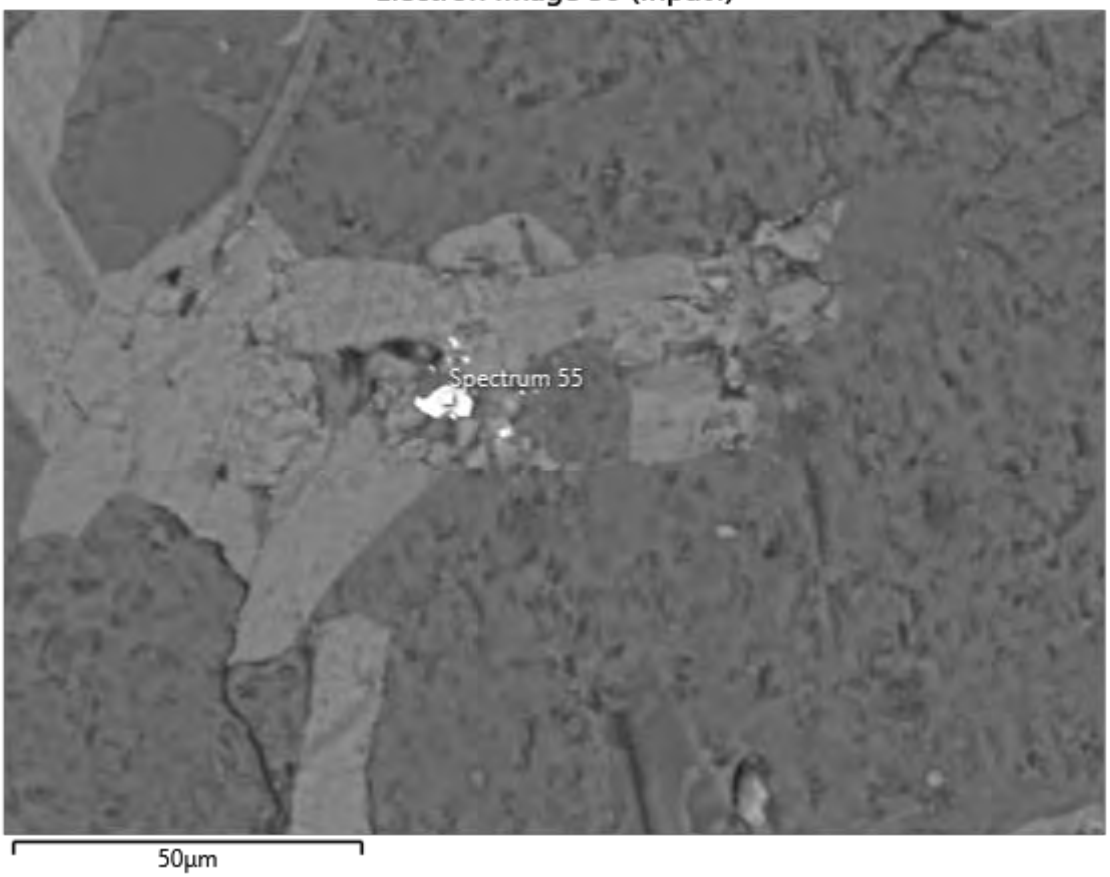
[1] indicates whether multiple options may be possible with similar stoichiometries. Confirmation by other techniques such as XRD or FTIR may be necessary for increased confidence. *Most of the sulfur-based minerals are surrounded by oxygen-containing minerals such as silica, iron oxides, and various aluminosilicates. The oxygen from the surrounding materials may interfere with the sulfur-containing particles, allowing oxygen to show as a trace or minor phase in the analysis of the sulfur particles. Most of the time this will be from the surrounding materials, however we assign a 'possible' confidence as to not rule out the possibility of partial oxidation of the sulfur mineral present.*

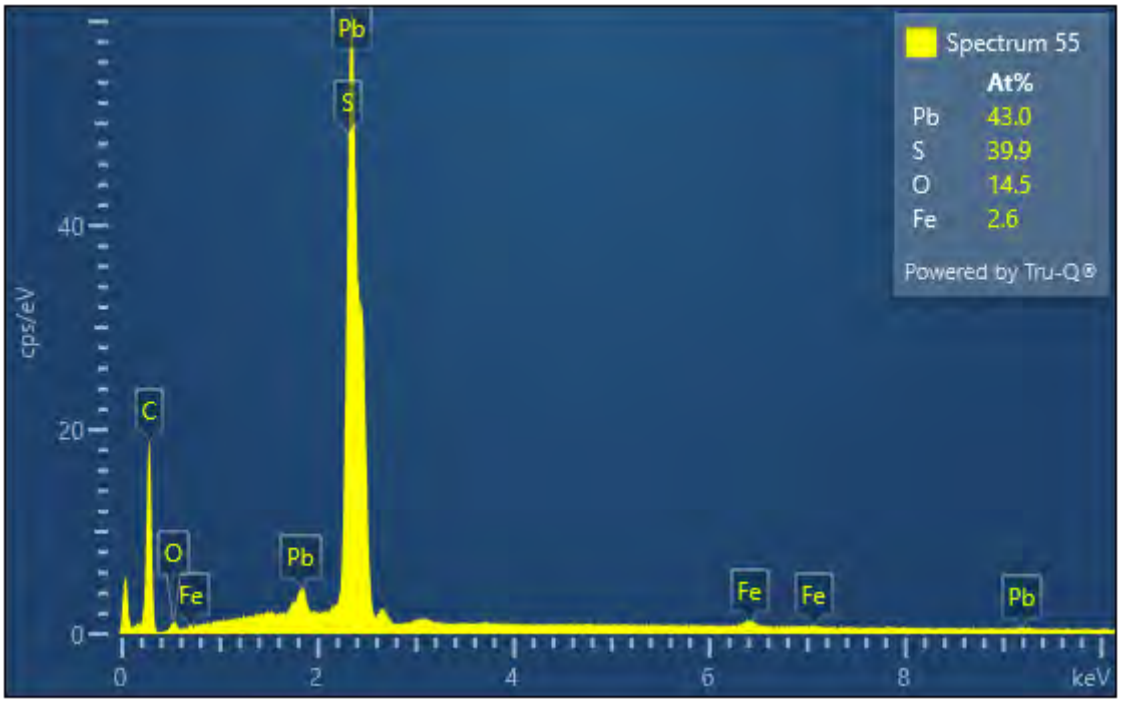
[2] The interpreted compound abundance qualifiers (major, minor, trace) are based on the following categories and are presented by number (count) of observed particles as opposed to wt% or ppm as would be reported by ICP/XRF. **All sulfur-based phases within the sample are trace. This is an abundance relative only to each other type of sulfur-based mineral present.**

Qualifier	***Approximate*** **range, number %**
Major	> ~30
Minor	~1 to ~30
Trace	< ~1

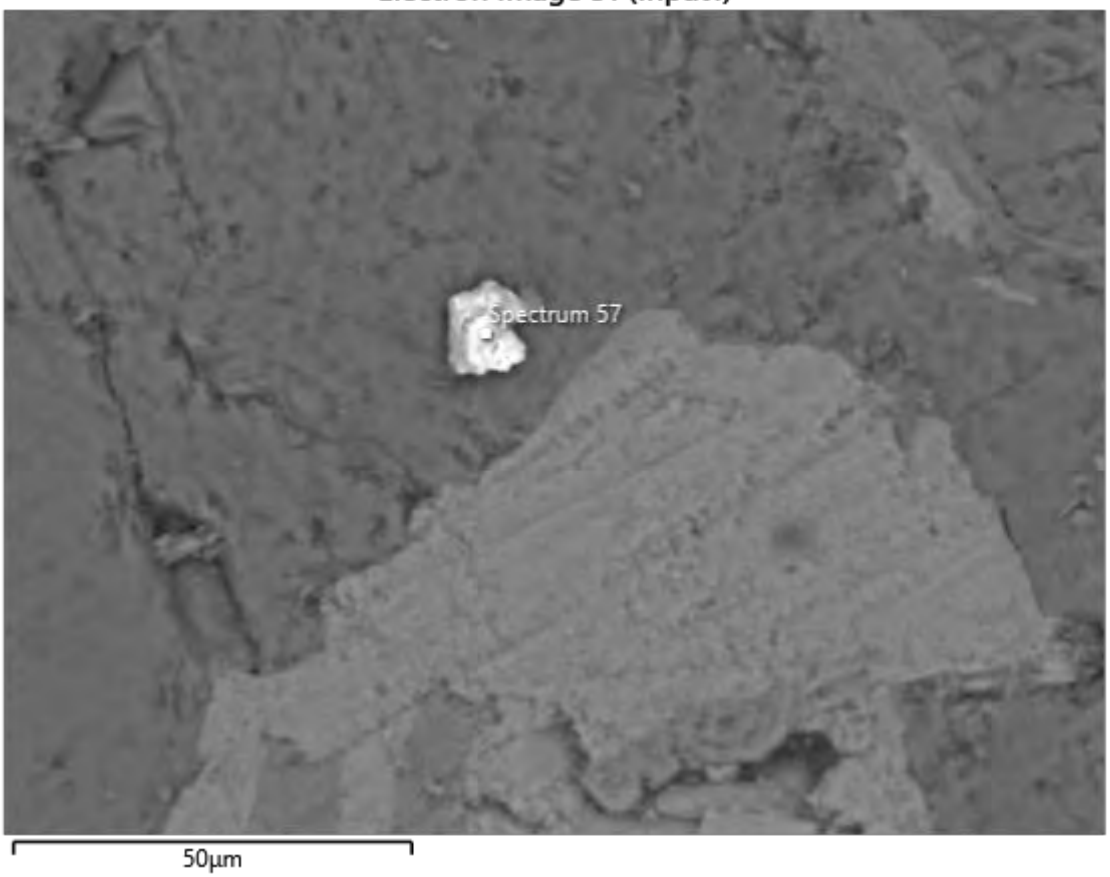
The range (above) is stated as '*Approximate*' as the technique is more a qualitative measure of relative abundance as opposed to a quantitative absolute abundance. The abundance is stated as number percent as no calculations have been made to transform geometric sizes into particle volumes, nor density values used to calculate weight fractions that would enable weight percentages to be quoted.

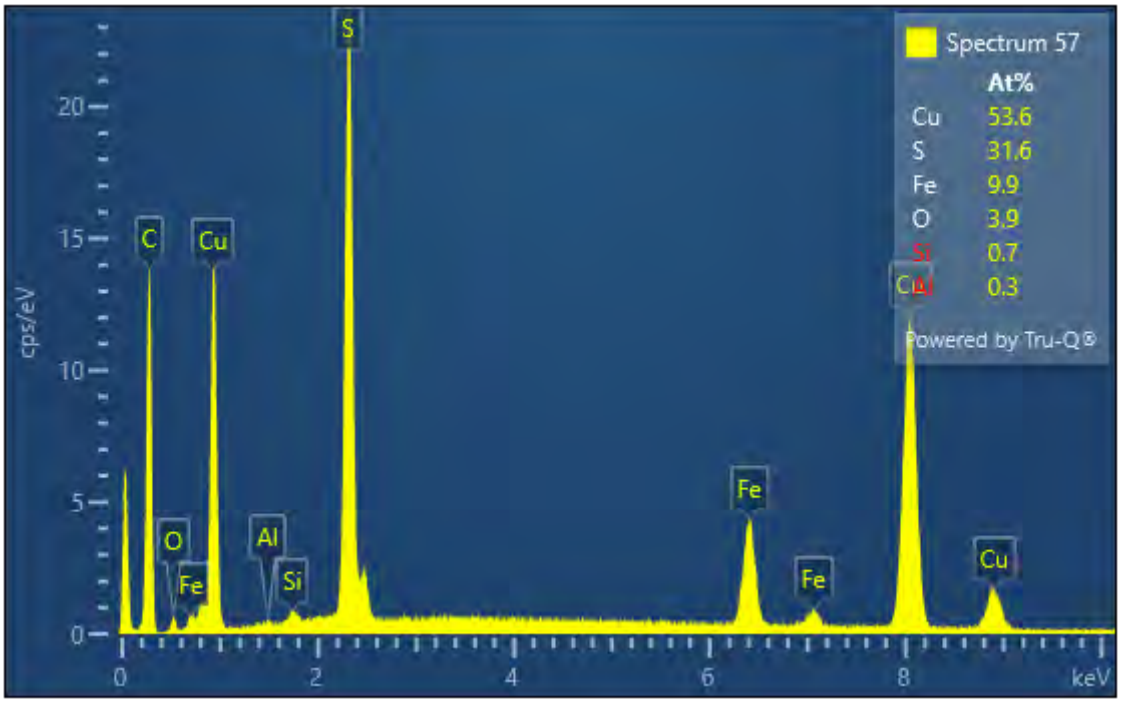
Electron Image 30 (Input1)



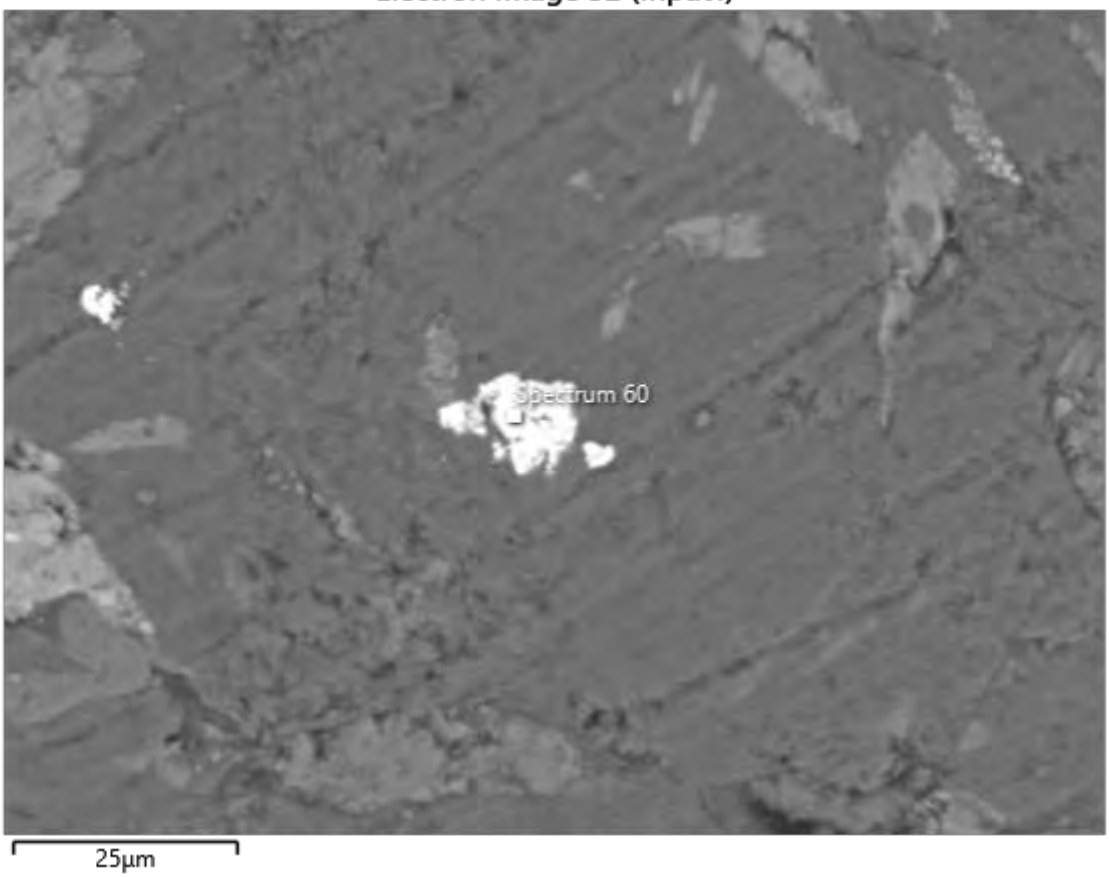


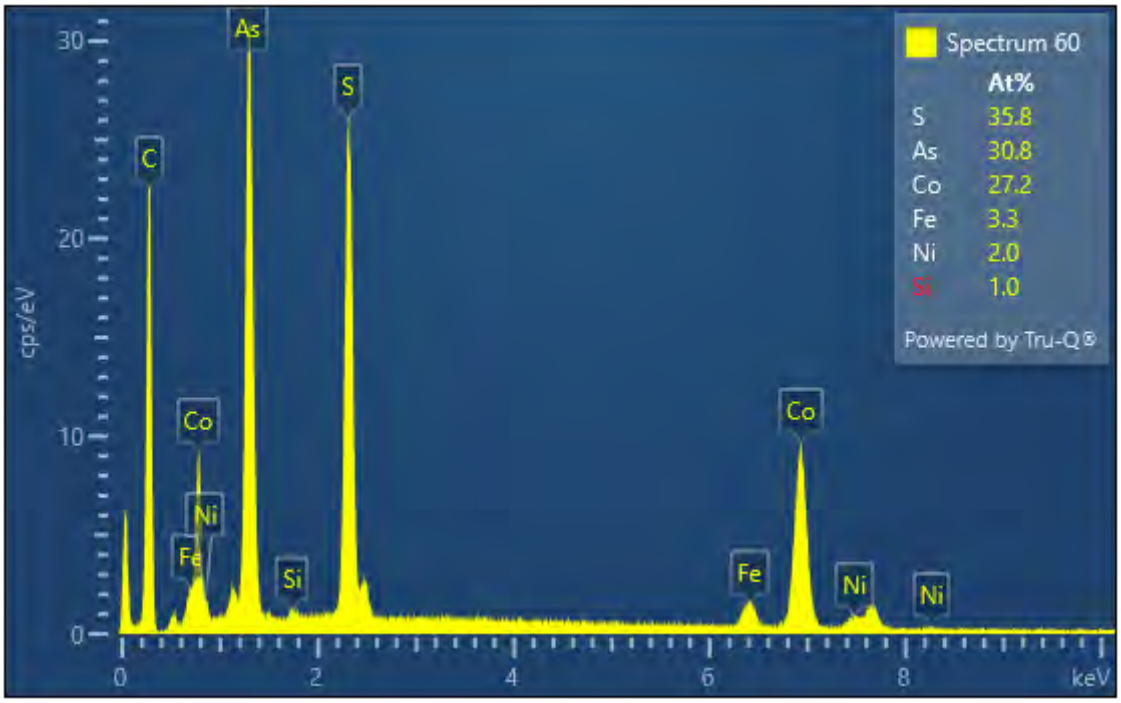
Electron Image 31 (Input1)



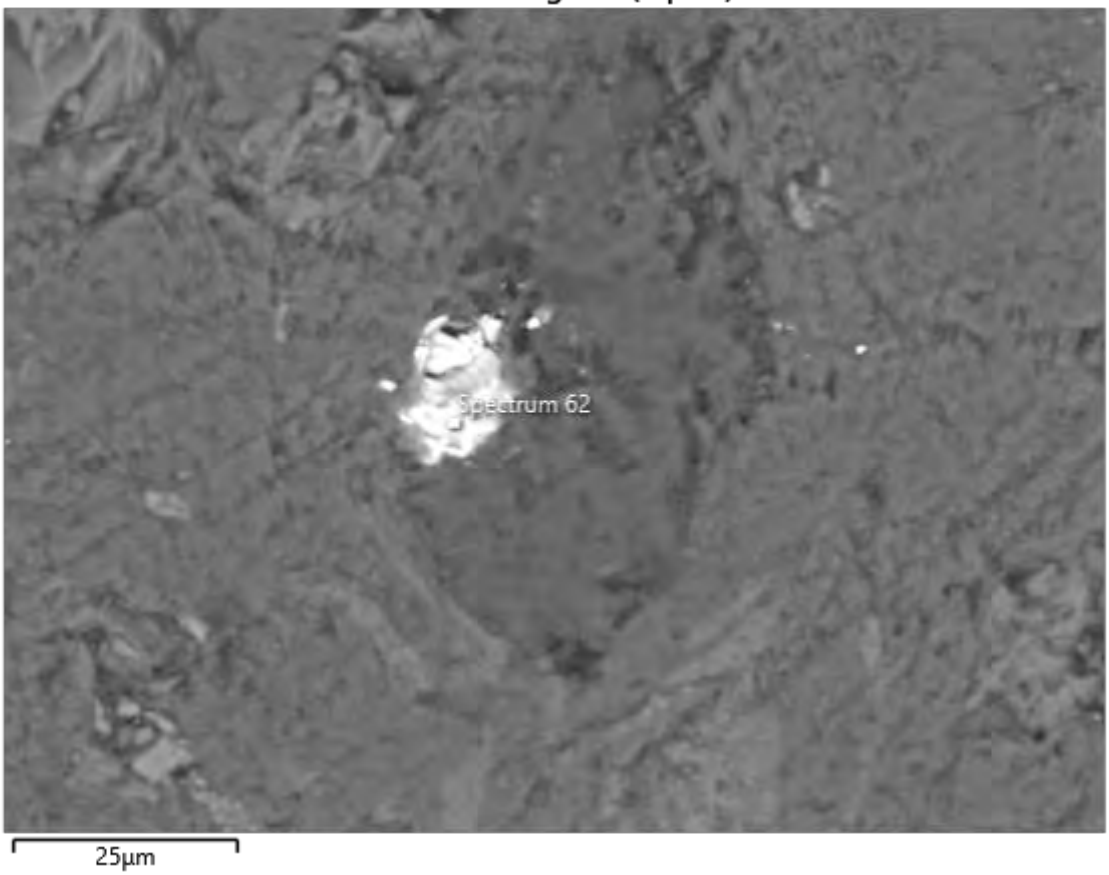


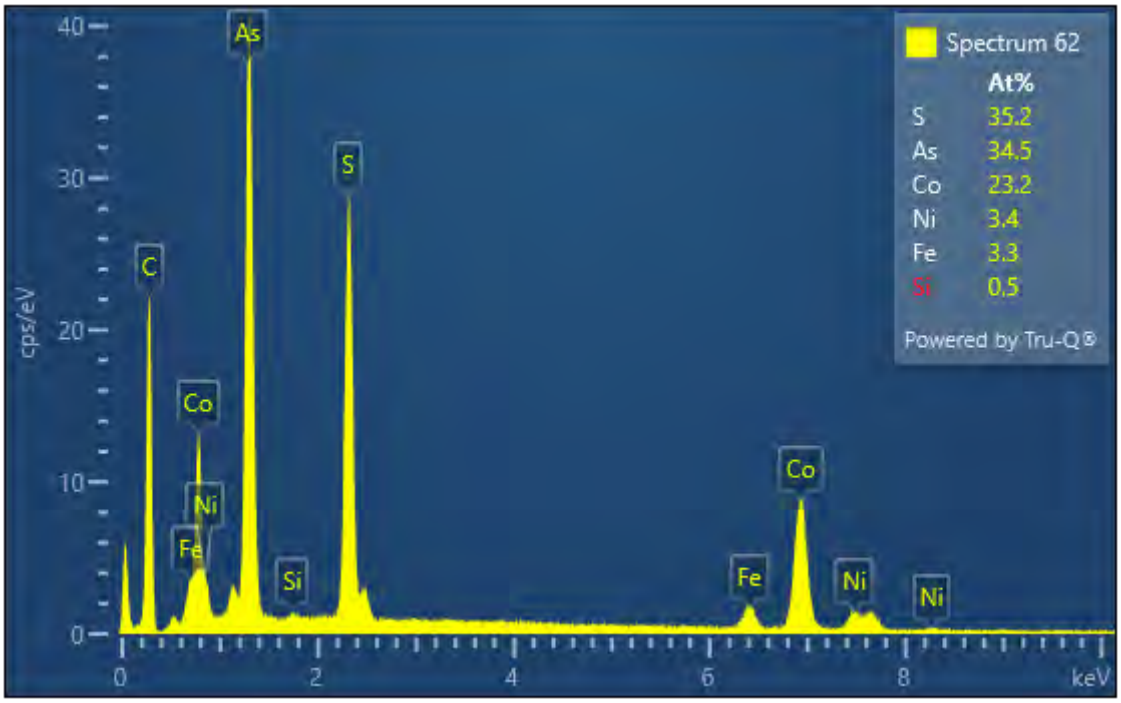
Electron Image 32 (Input1)



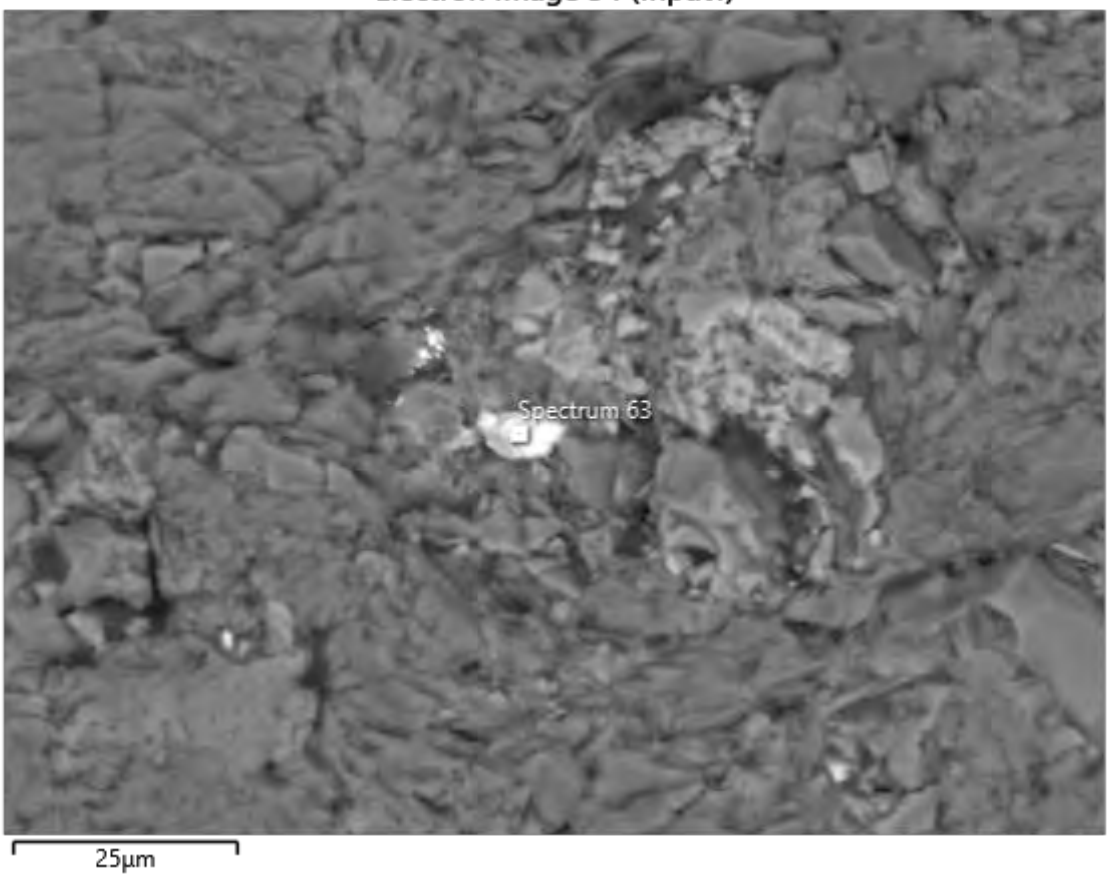


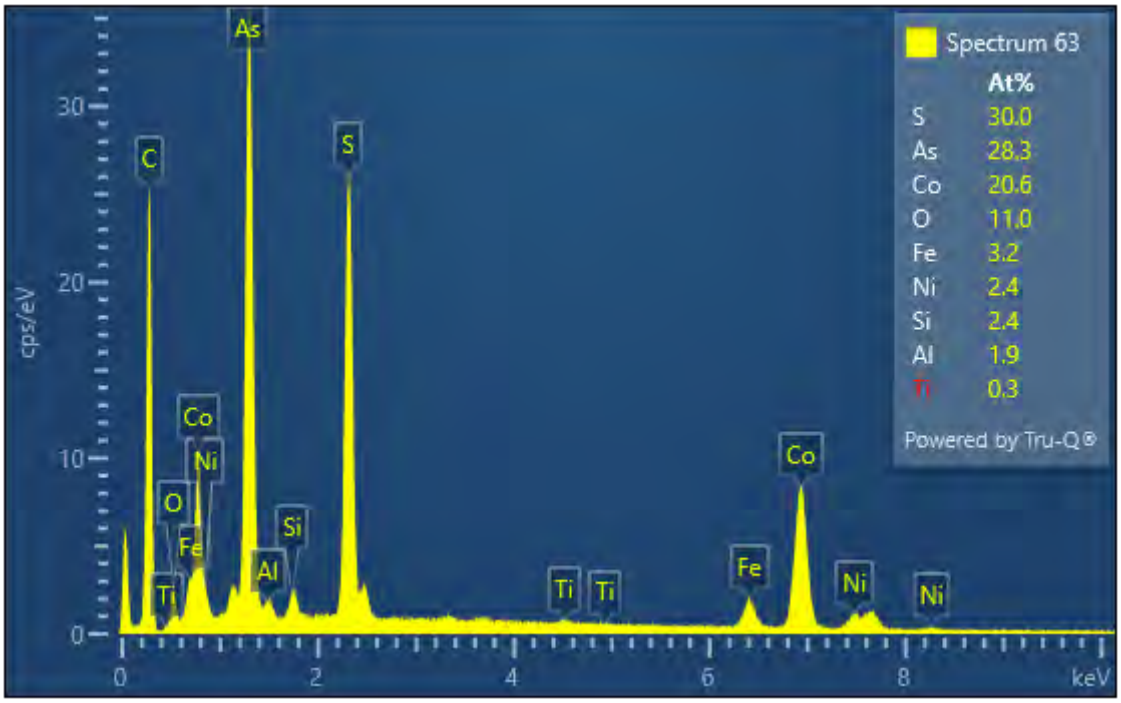
Electron Image 33 (Input1)





Electron Image 34 (Input1)





5 Alvan Street
Mount Lawley
WA 6050

Client:	Mine Waste Management NZ	**Date received:**	27/11/2024
Client address:	5 Sir William Pickering Drive BURNSIDE NZ 8053	**Date analysed:**	19/12/2024
Job number:	24_2171	**Date reported:**	23/12/2024
Lab ID:	24_2171_006		
Client ID:	**MG54046**		
Analysis:	Scanning electron microscopy (SEM) with elemental analysis by energy dispersive spectroscopy (EDS)		
Revision number:	0		
Comments:	None		

Sample preparation

The sample was supplied to Microanalysis Australia as a bulk drill core sample.

The sample was mounted in epoxy resin and polished to a flat surface before being carbon coated. Non-conducting samples require coating prior to SEM analysis to prevent charging whilst being analysed by the electron beam.

Analysis

The sample was analysed using a Carl Zeiss EVO50 scanning electron microscope (SEM) fitted with an Oxford INCA X-Max energy dispersive spectrometer (EDS).

EDS is a semi-quantitative technique (at best) on well prepared, optically flat samples. Factors such as sample unevenness may adversely bias elemental concentration interpretation. EDS has a spatial resolution of ~5 µm meaning spectra from particles less than this size may contain elemental concentrations biased by their surroundings. Analysis was conducted at 20 KeV unless otherwise stated.

No calibration standards (standardless quant) were used in the EDS detector standardization prior to analysis.

Summary

All images were acquired using backscatter electrons (BSE) unless otherwise specified. For BSE, image contrast is directly proportional to average atomic number i.e. the brighter the area, the higher the atomic number.

The mineralogy of particles identified has been summarised in the following table (**Table 1: Mineralogy summary of particles observed**) and have been listed in order of abundance i.e. major, minor or trace quantities of particles.

Analyst: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Reported: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Approved: Rick Hughes, B.Sc.(Hons)Physics, MAIP

Table 1: Mineralogy summary of sulfur-based particles observed

Compound/phase relative abundance[2]	Size range (µm)	Observed morphology	Observed composition (elements present)				Assumed compound/phase	Compound/phase confidence[1] (Likely/possible)
			Major	Minor	Trace	Varying		
Major	<5 - ~50	Angular and aggregated particulate	S, Fe	-	Ca, Si	-	Iron sulfide (pyrite/pyrrhotite)	Likely
Trace	<5 - ~10	Angular particulate	S, Fe, As	-	-	-	Arsenic-iron sulfide (arsenopyrite)	Likely
Trace	~10	Angular and aggregated particulate	S, Cu, Fe	Si, O, Sb	Al	-	Copper-iron sulfide (chalcopyrite)	Possible
Trace	<5 - ~15	Angular and aggregated particulate	S, As, Co	O, Fe	Si	-	Arsenic-cobalt sulfide (cobaltite)	Possible
Trace	<5	Angular particle	O, Pb, S	Si, Al, Na	Fe	-	Lead sulfate (anglesite)	Possible

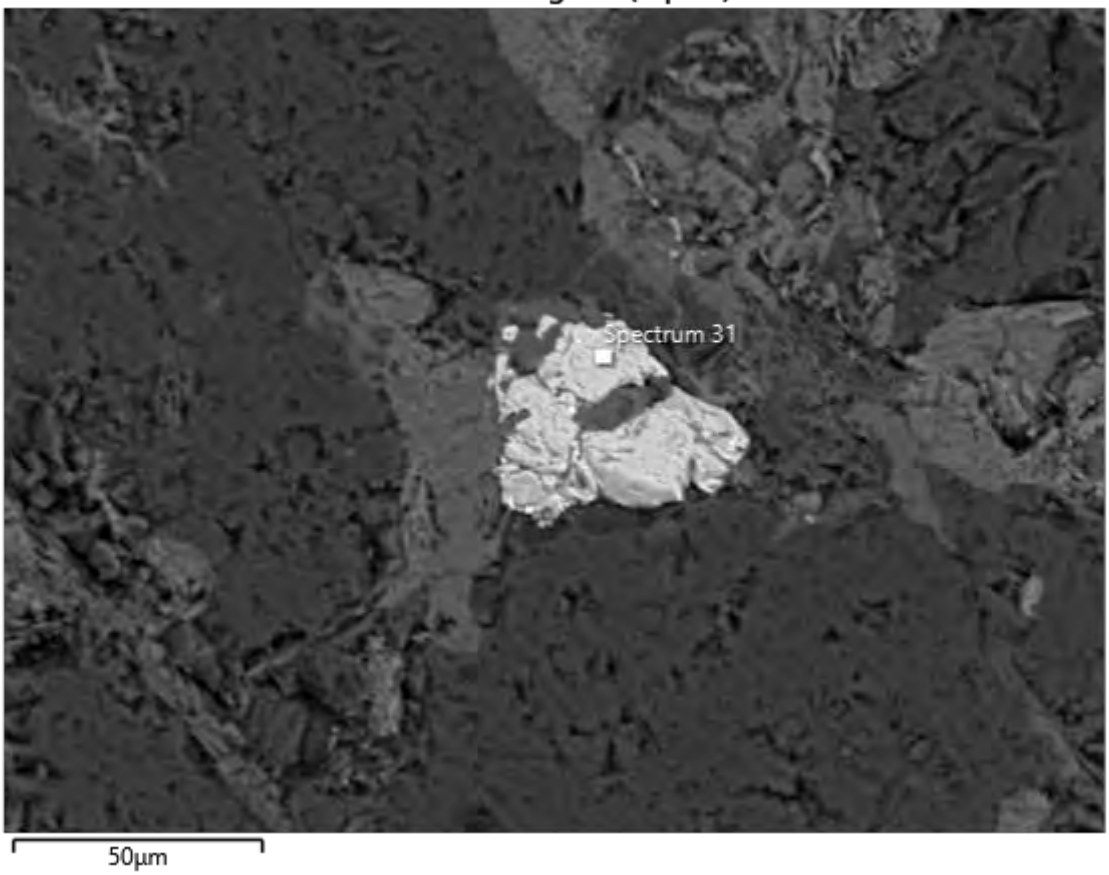
[1] indicates whether multiple options may be possible with similar stoichiometries. Confirmation by other techniques such as XRD or FTIR may be necessary for increased confidence. *Most of the sulfur-based minerals are surrounded by oxygen-containing minerals such as silica, iron oxides, and various aluminosilicates. The oxygen from the surrounding materials may interfere with the sulfur-containing particles, allowing oxygen to show as a trace or minor phase in the analysis of the sulfur particles. Most of the time this will be from the surrounding materials, however we assign a 'possible' confidence as to not rule out the possibility of partial oxidation of the sulfur mineral present.*

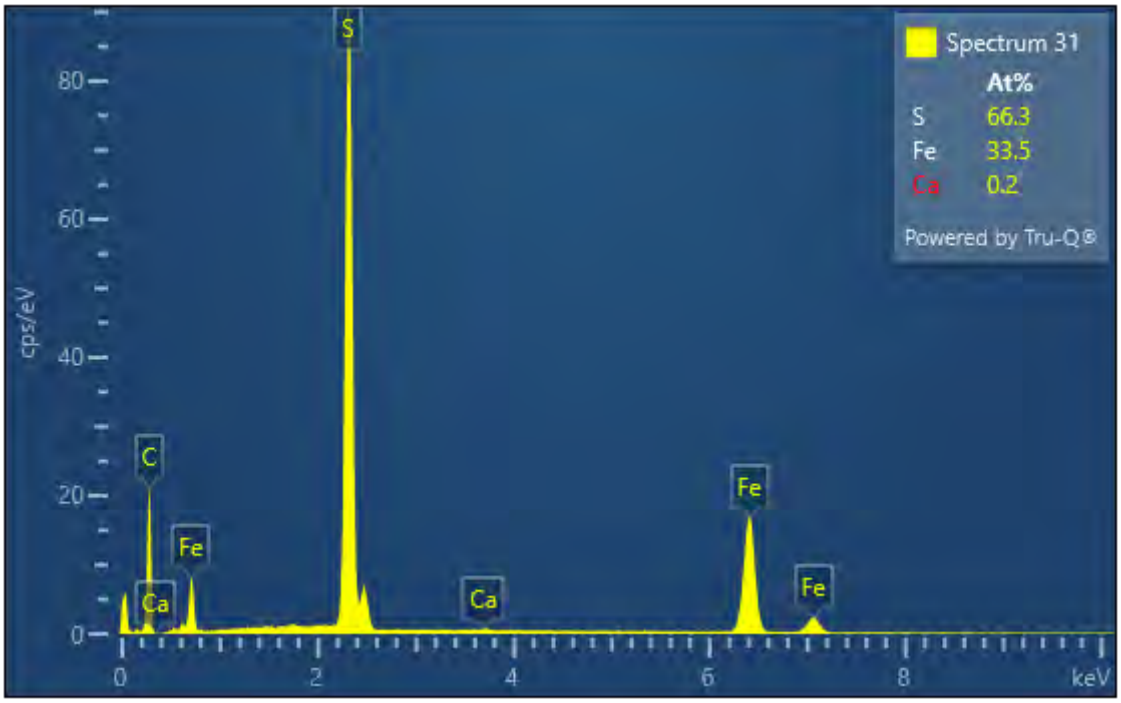
[2] The interpreted compound abundance qualifiers (major, minor, trace) are based on the following categories and are presented by number (count) of observed particles as opposed to wt% or ppm as would be reported by ICP/XRF. **All sulfur-based phases within the sample are trace. This is an abundance relative only to each other type of sulfur-based mineral present.**

Qualifier	***Approximate* range, number %**
Major	> ~30
Minor	~1 to ~30
Trace	< ~1

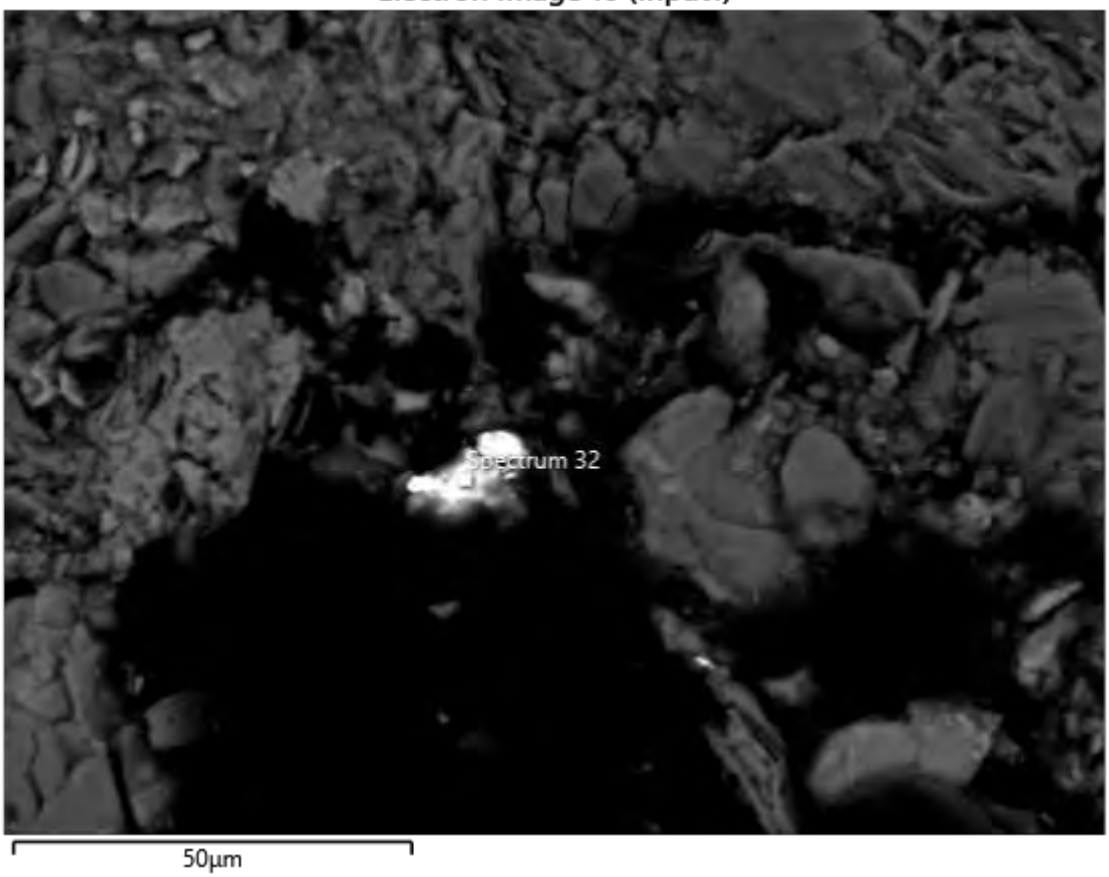
The range (above) is stated as '*Approximate*' as the technique is more a qualitative measure of relative abundance as opposed to a quantitative absolute abundance. The abundance is stated as number percent as no calculations have been made to transform geometric sizes into particle volumes, nor density values used to calculate weight fractions that would enable weight percentages to be quoted.

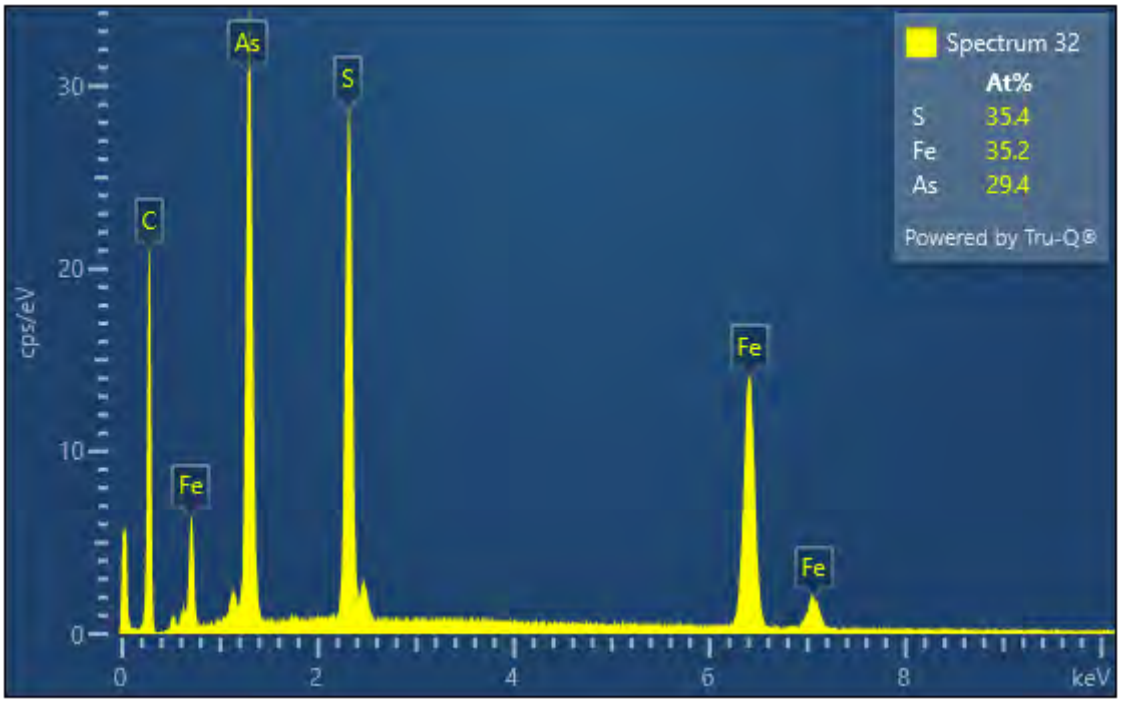
Electron Image 15 (Input1)



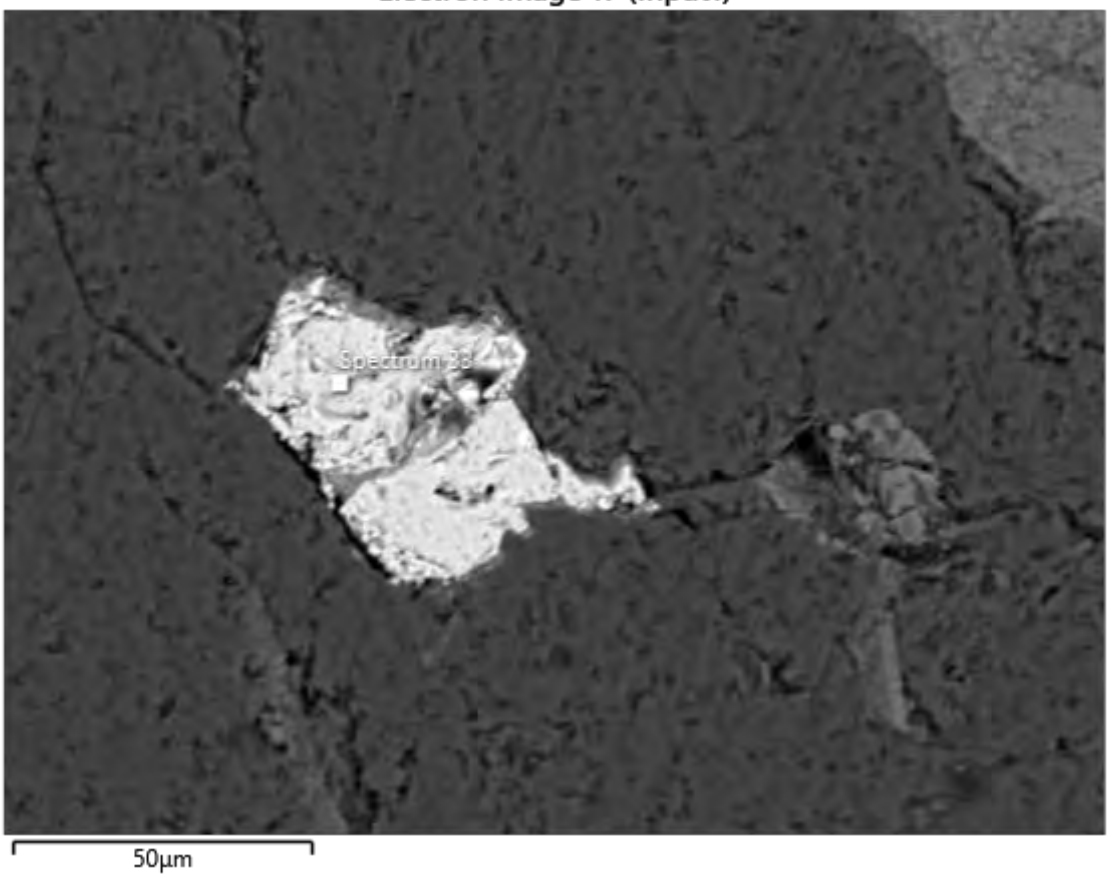


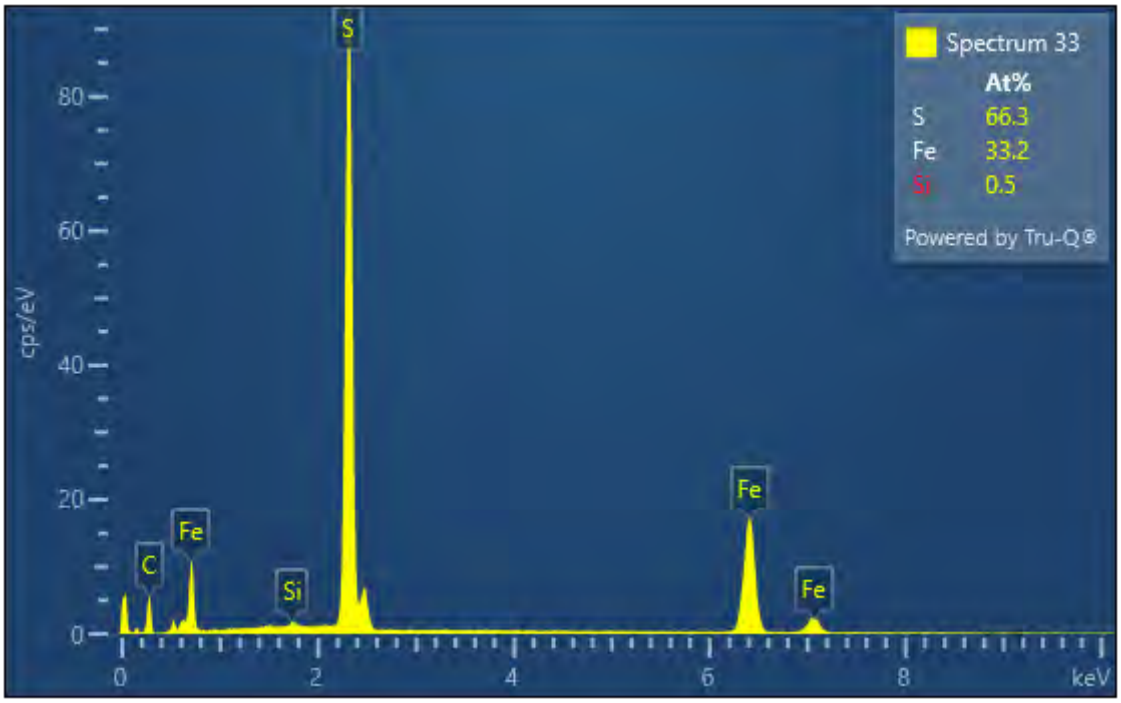
Electron Image 16 (Input1)



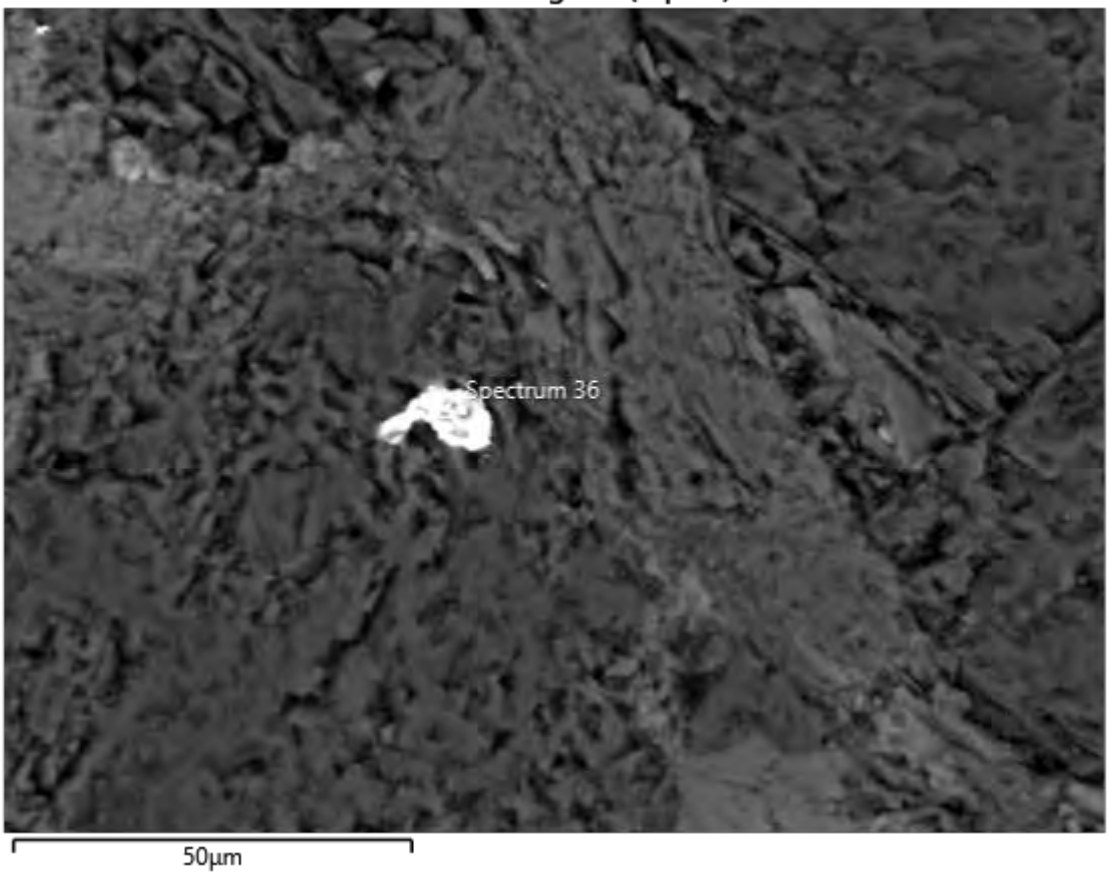


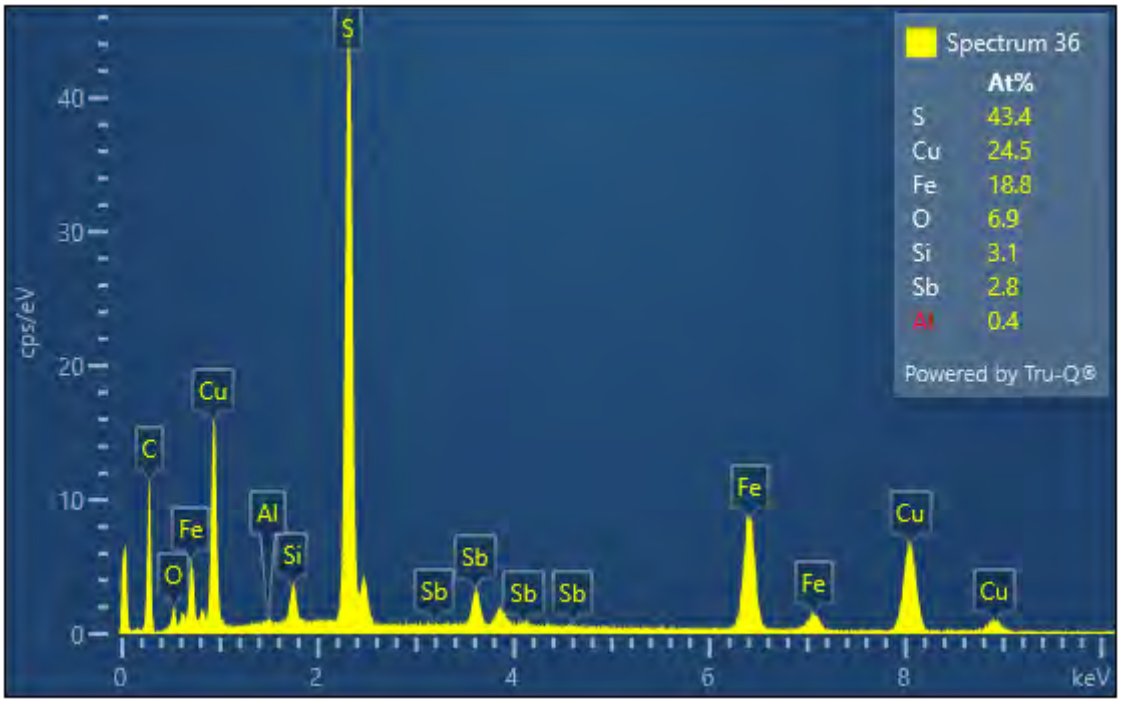
Electron Image 17 (Input1)



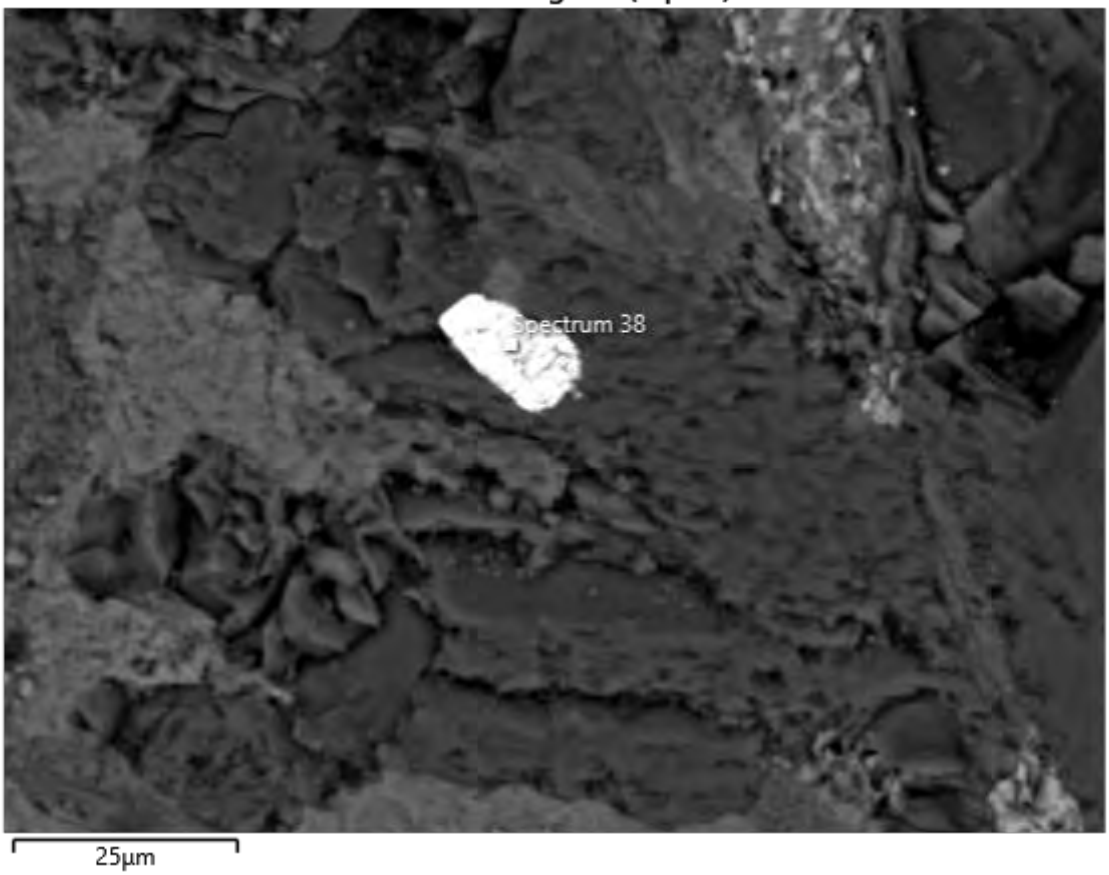


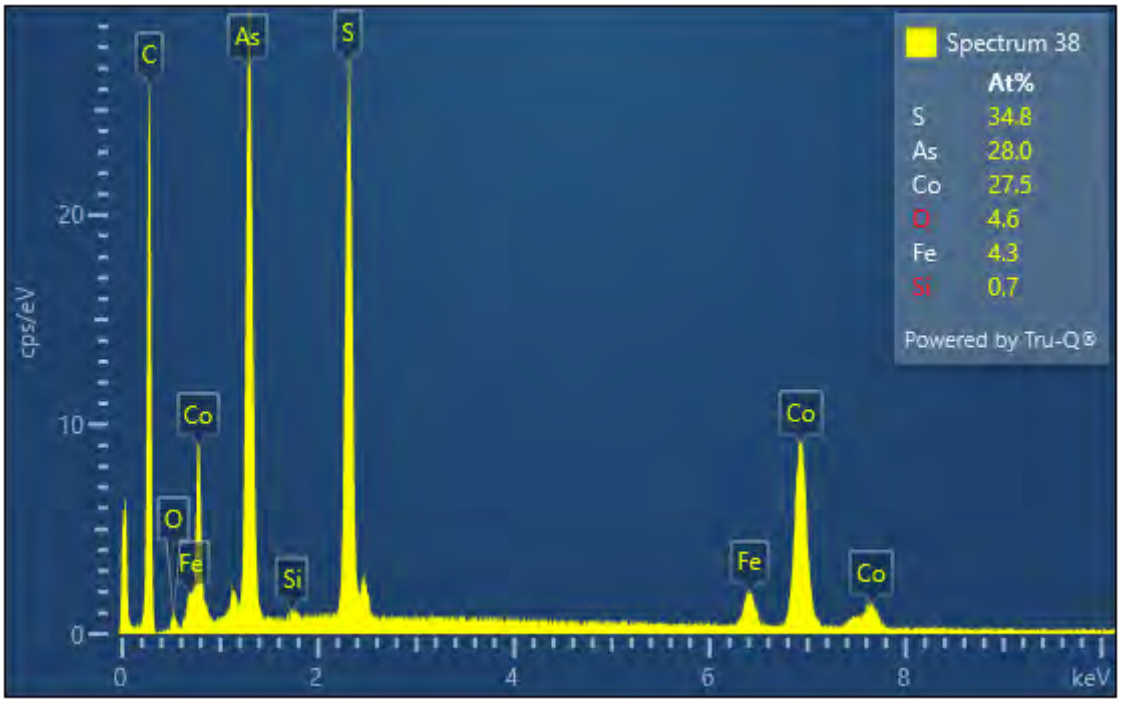
Electron Image 18 (Input1)



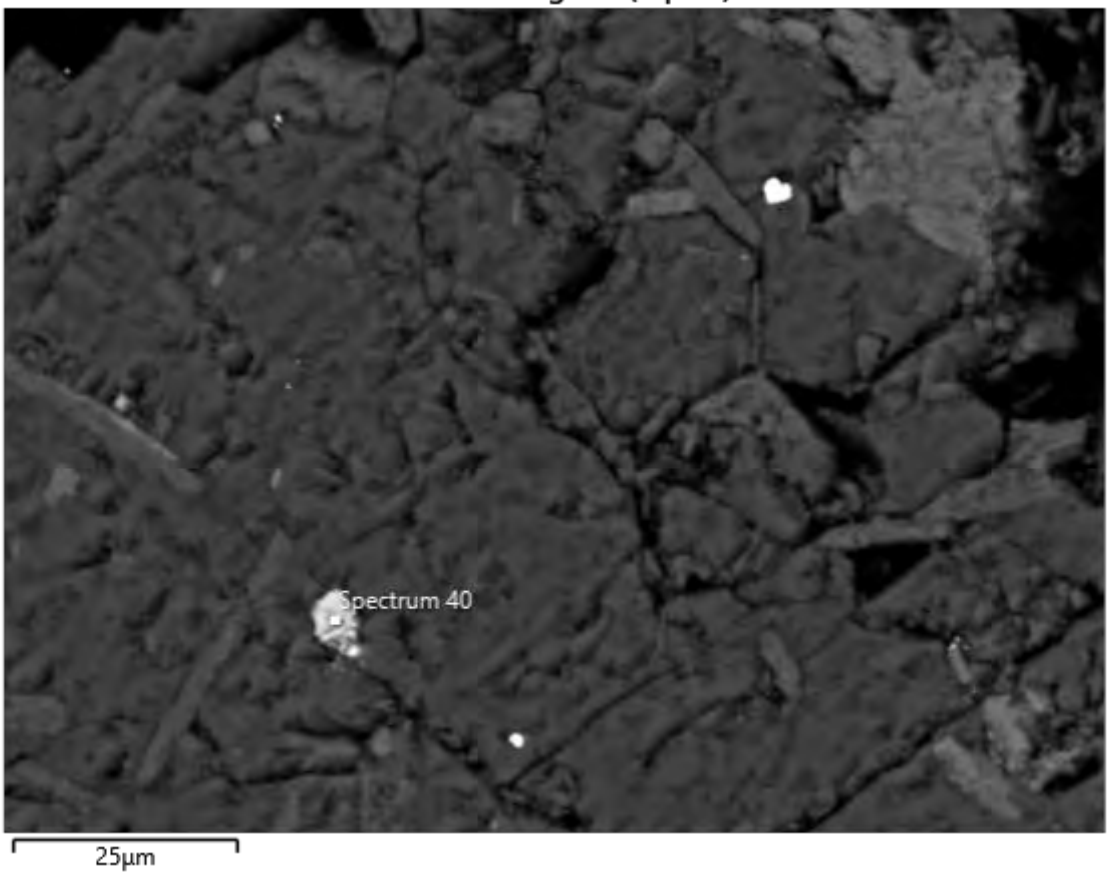


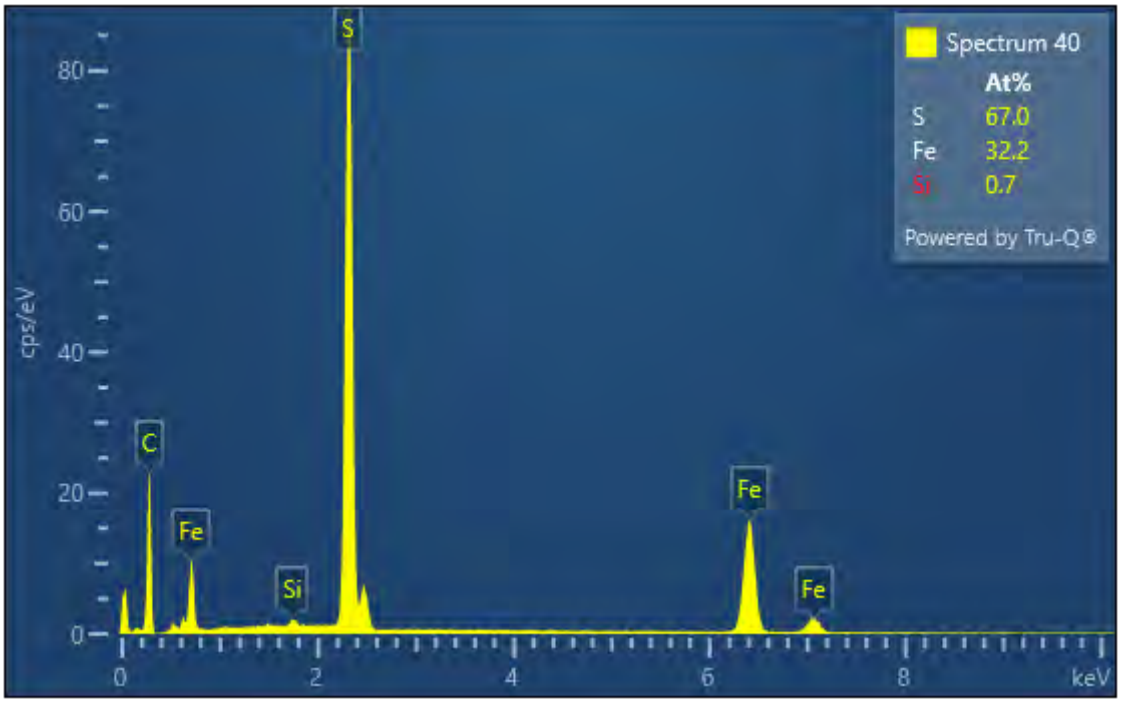
Electron Image 19 (Input1)



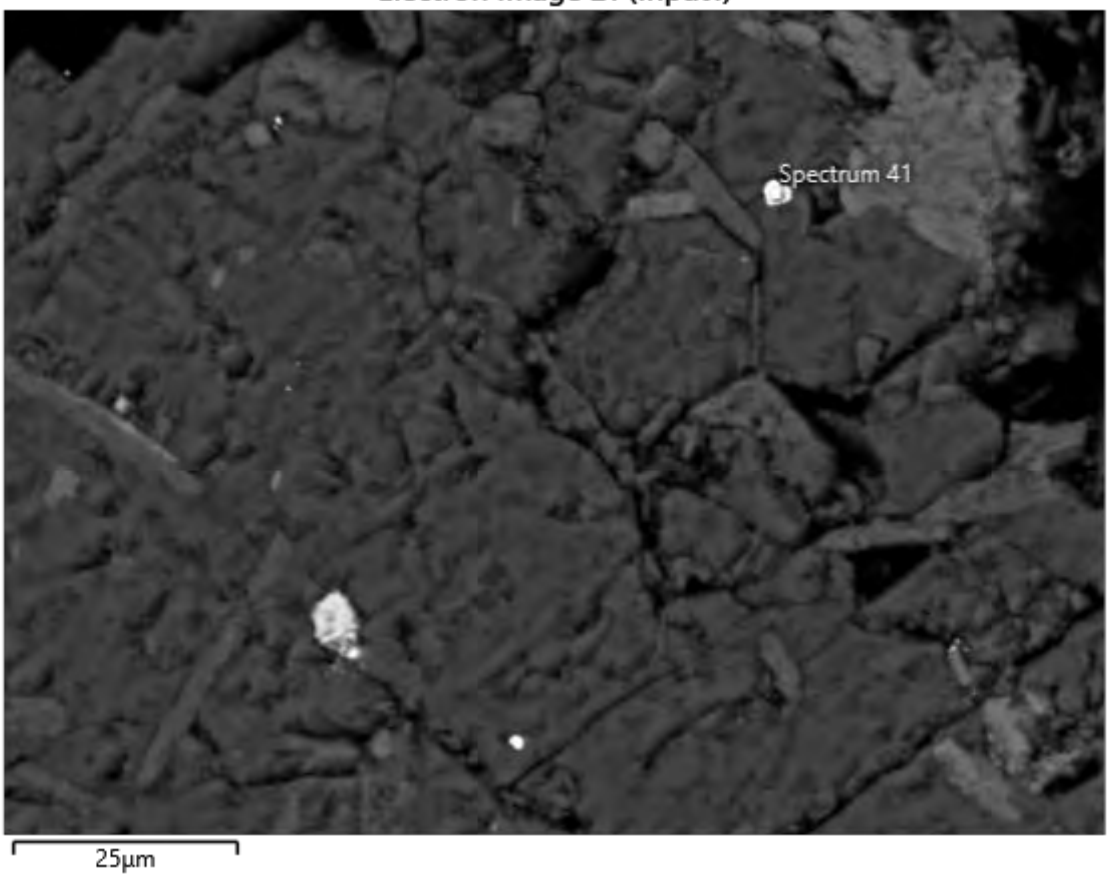


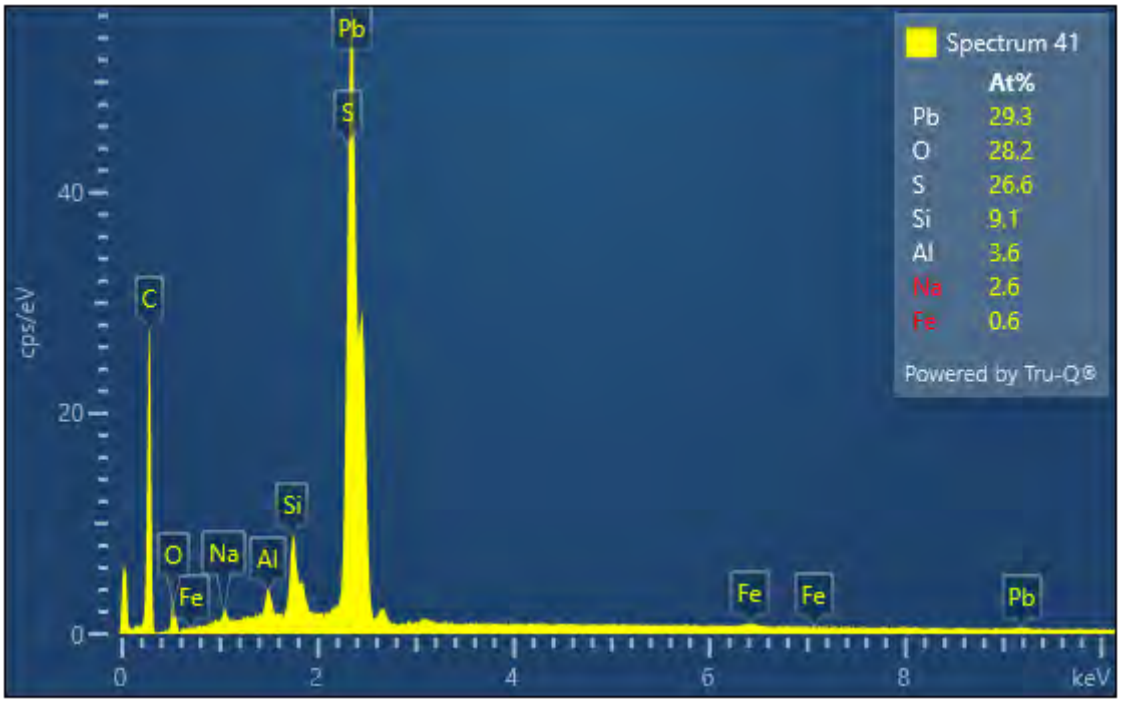
Electron Image 21 (Input1)





Electron Image 21 (Input1)





5 Alvan Street
Mount Lawley
WA 6050

Client:	Mine Waste Management NZ	**Date received:**	27/11/2024
Client address:	5 Sir William Pickering Drive BURNSIDE NZ 8053	**Date analysed:**	19/12/2024
Job number:	24_2171	**Date reported:**	23/12/2024
Lab ID:	24_2171_007		
Client ID:	**MG54047**		
Analysis:	Scanning electron microscopy (SEM) with elemental analysis by energy dispersive spectroscopy (EDS)		
Revision number:	0		
Comments:	None		

Sample preparation

The sample was supplied to Microanalysis Australia as a bulk drill core sample.

The sample was mounted in epoxy resin and polished to a flat surface before being carbon coated. Non-conducting samples require coating prior to SEM analysis to prevent charging whilst being analysed by the electron beam.

Analysis

The sample was analysed using a Carl Zeiss EVO50 scanning electron microscope (SEM) fitted with an Oxford INCA X-Max energy dispersive spectrometer (EDS).

EDS is a semi-quantitative technique (at best) on well prepared, optically flat samples. Factors such as sample unevenness may adversely bias elemental concentration interpretation. EDS has a spatial resolution of ~5 µm meaning spectra from particles less than this size may contain elemental concentrations biased by their surroundings. Analysis was conducted at 20 KeV unless otherwise stated.

No calibration standards (standardless quant) were used in the EDS detector standardization prior to analysis.

Summary

All images were acquired using backscatter electrons (BSE) unless otherwise specified. For BSE, image contrast is directly proportional to average atomic number i.e. the brighter the area, the higher the atomic number.

The mineralogy of particles identified has been summarised in the following table (**Table 1: Mineralogy summary of particles observed**) and have been listed in order of abundance i.e. major, minor or trace quantities of particles.

Analyst: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Reported: Damon Blakey, *B.Sc. (Forensic Biology and Toxicology)*

Approved: Rick Hughes, B.Sc.(Hons)Physics, MAIP

Table 1: Mineralogy summary of sulfur-based particles observed

Compound/phase relative abundance[2]	Size range (µm)	Observed morphology	Observed composition (elements present)				Assumed compound/phase	Compound/phase confidence[1] (Likely/possible)
			Major	Minor	Trace	Varying		
Major	<5 - ~40	Angular, subangular, and aggregated particulate	S, Fe, Cu	-	-	O, Si	Copper-iron sulfide (chalcopyrite)	Likely
Minor	<5 - ~40	Irregular particulate	Pb, S	-	-	O (minor to major) Se, Ca, Si, Fe, Cu (trace to minor)	Lead sulfate (anglesite)	Possible

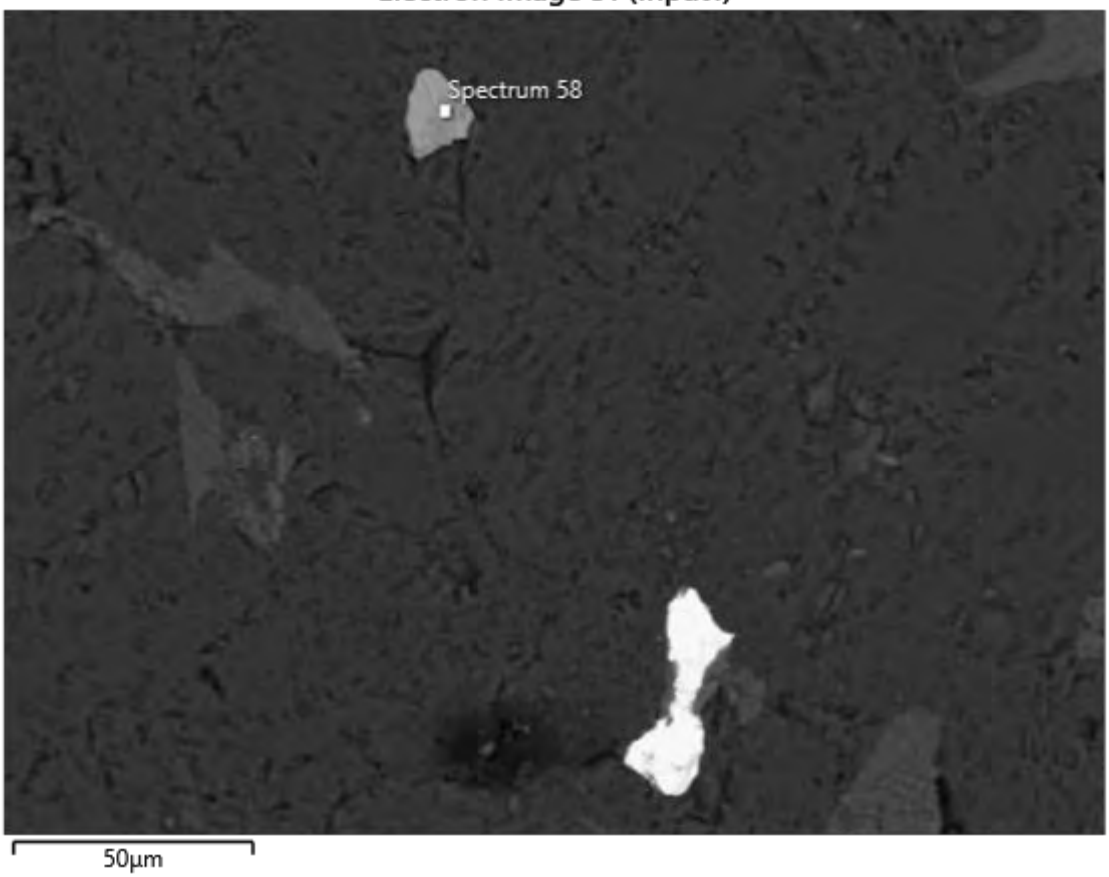
[1] indicates whether multiple options may be possible with similar stoichiometries. Confirmation by other techniques such as XRD or FTIR may be necessary for increased confidence. *Most of the sulfur-based minerals are surrounded by oxygen-containing minerals such as silica, iron oxides, and various aluminosilicates. The oxygen from the surrounding materials may interfere with the sulfur-containing particles, allowing oxygen to show as a trace or minor phase in the analysis of the sulfur particles. Most of the time this will be from the surrounding materials, however we assign a 'possible' confidence as to not rule out the possibility of partial oxidation of the sulfur mineral present.*

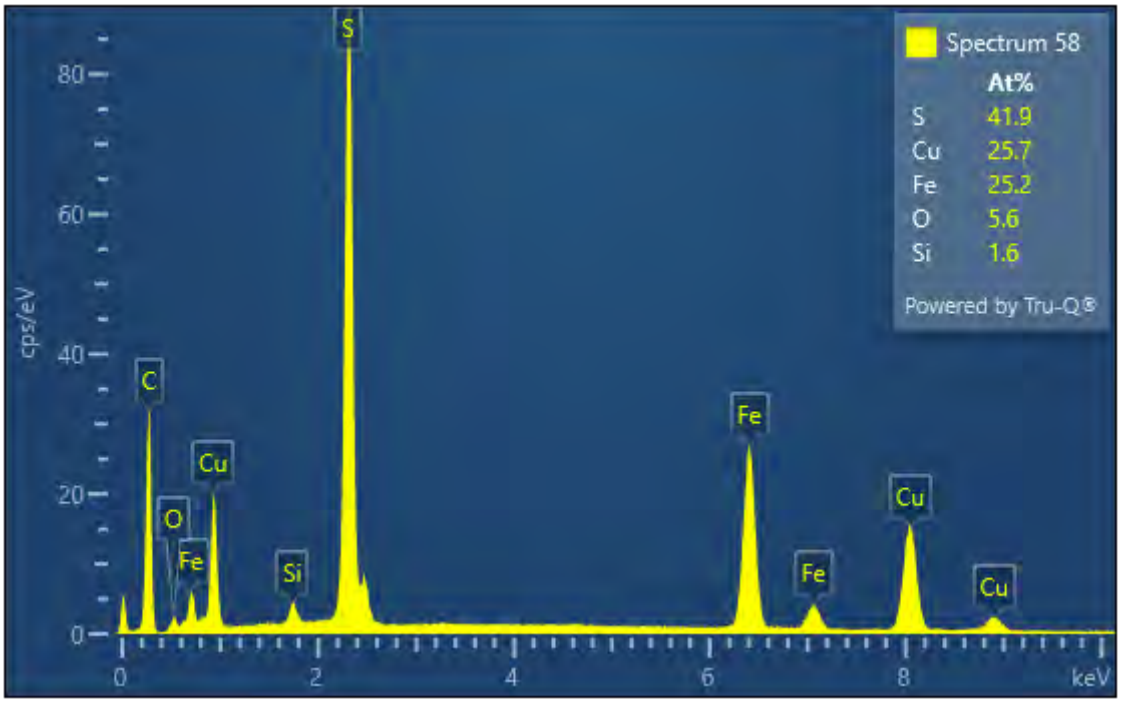
[2] The interpreted compound abundance qualifiers (major, minor, trace) are based on the following categories and are presented by number (count) of observed particles as opposed to wt% or ppm as would be reported by ICP/XRF. **All sulfur-based phases within the sample are trace. This is an abundance relative only to each other type of sulfur-based mineral present.**

Qualifier	***Approximate* range, number %**
Major	> ~30
Minor	~1 to ~30
Trace	< ~1

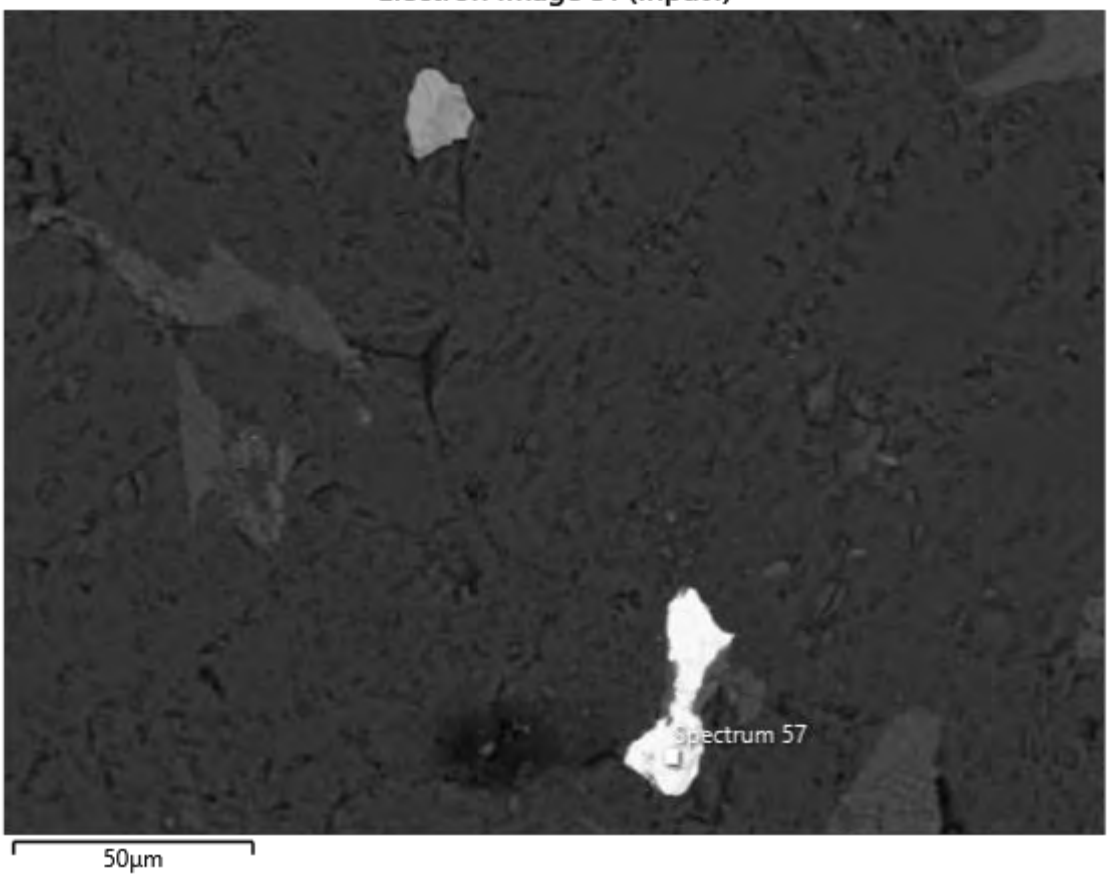
The range (above) is stated as '*Approximate*' as the technique is more a qualitative measure of relative abundance as opposed to a quantitative absolute abundance. The abundance is stated as number percent as no calculations have been made to transform geometric sizes into particle volumes, nor density values used to calculate weight fractions that would enable weight percentages to be quoted.

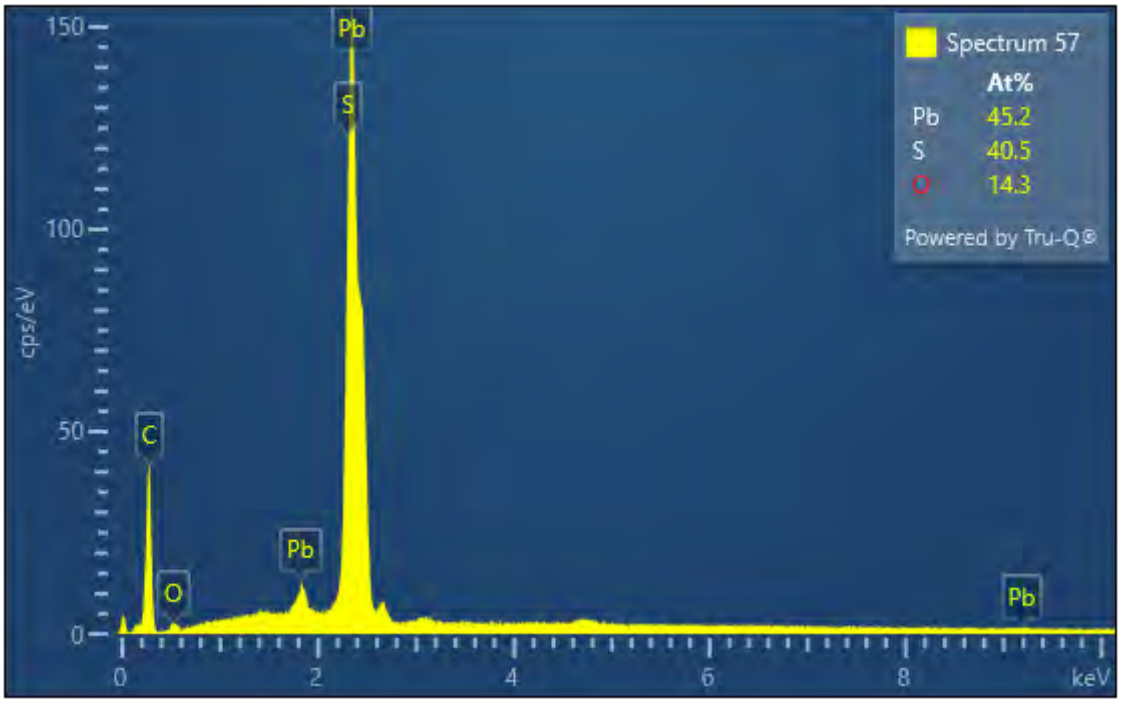
Electron Image 31 (Input1)



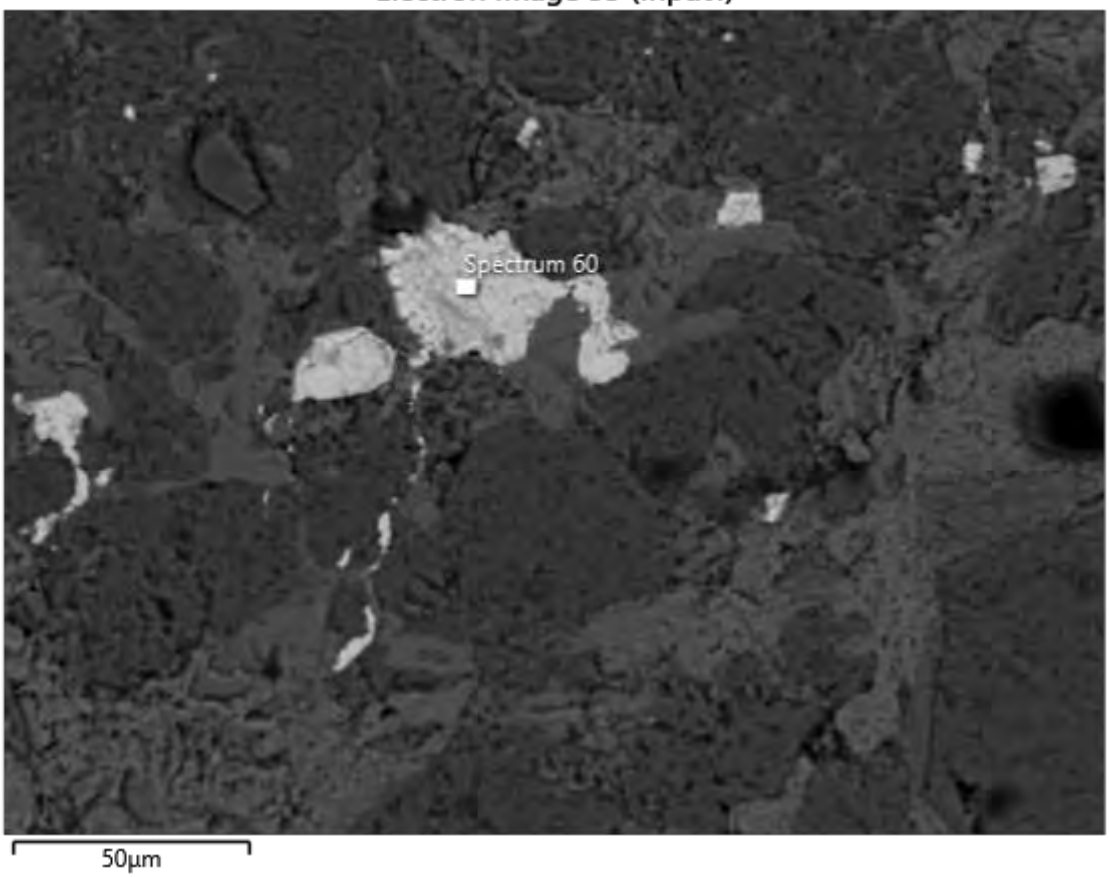


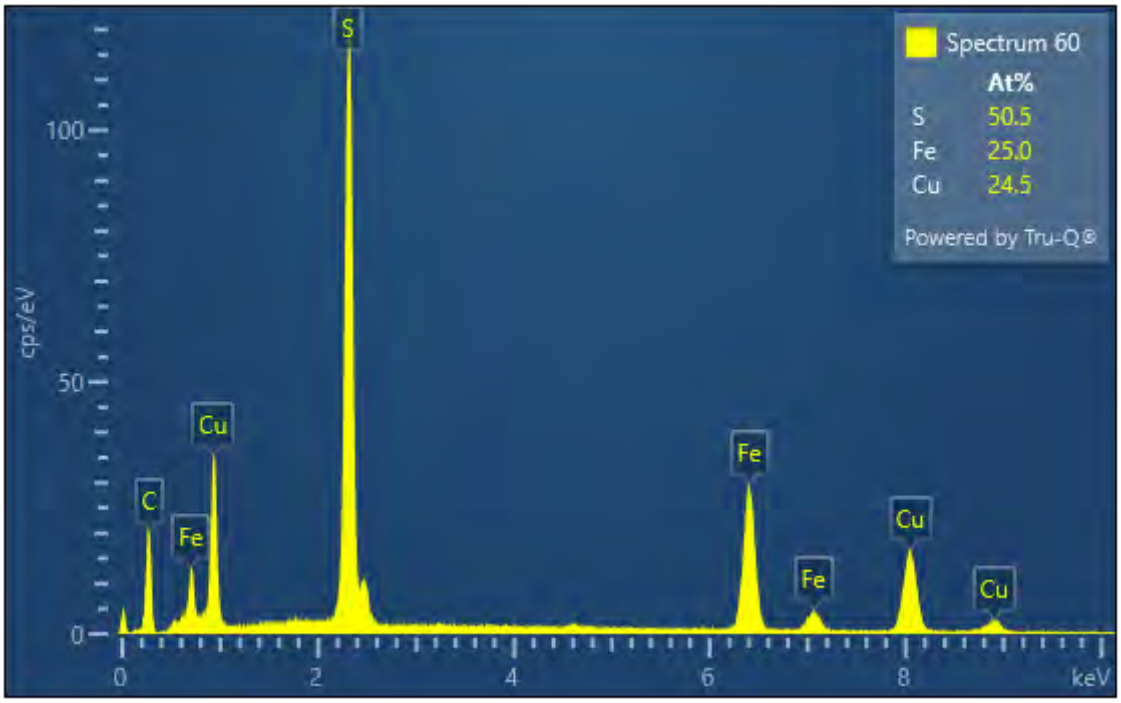
Electron Image 31 (Input1)



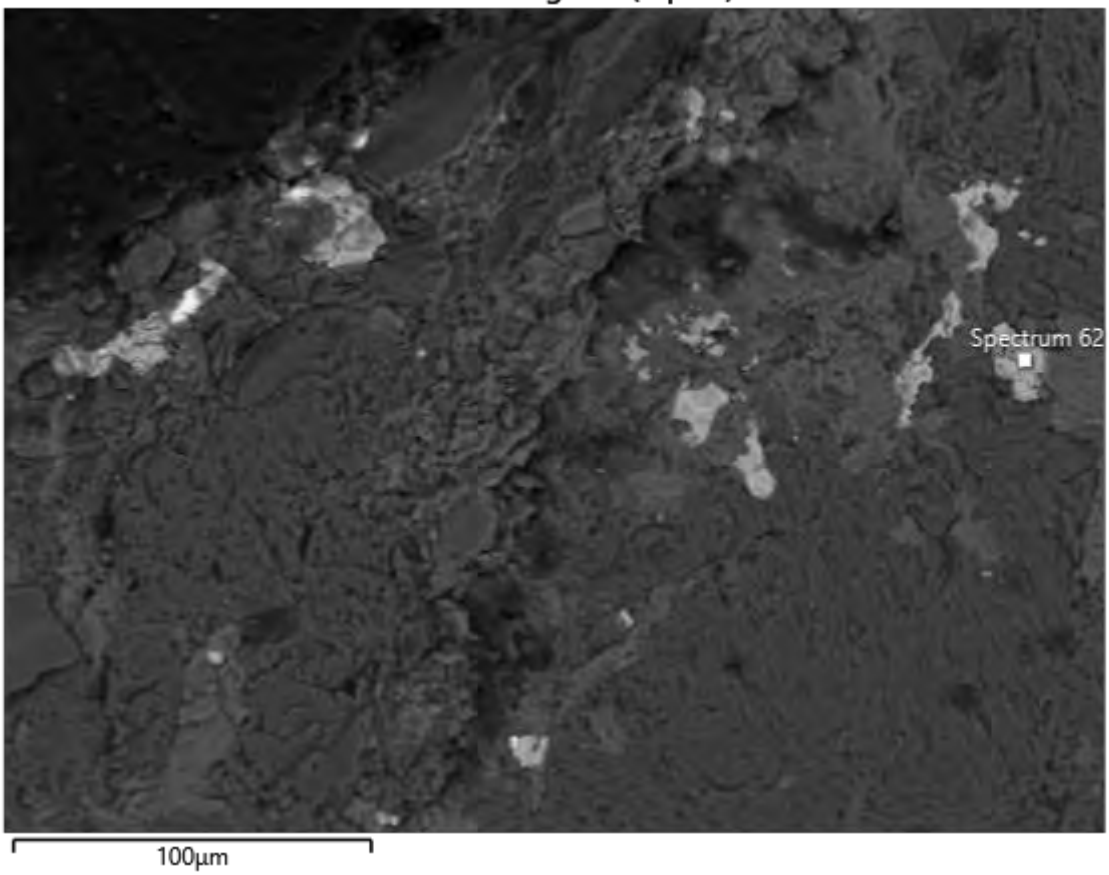


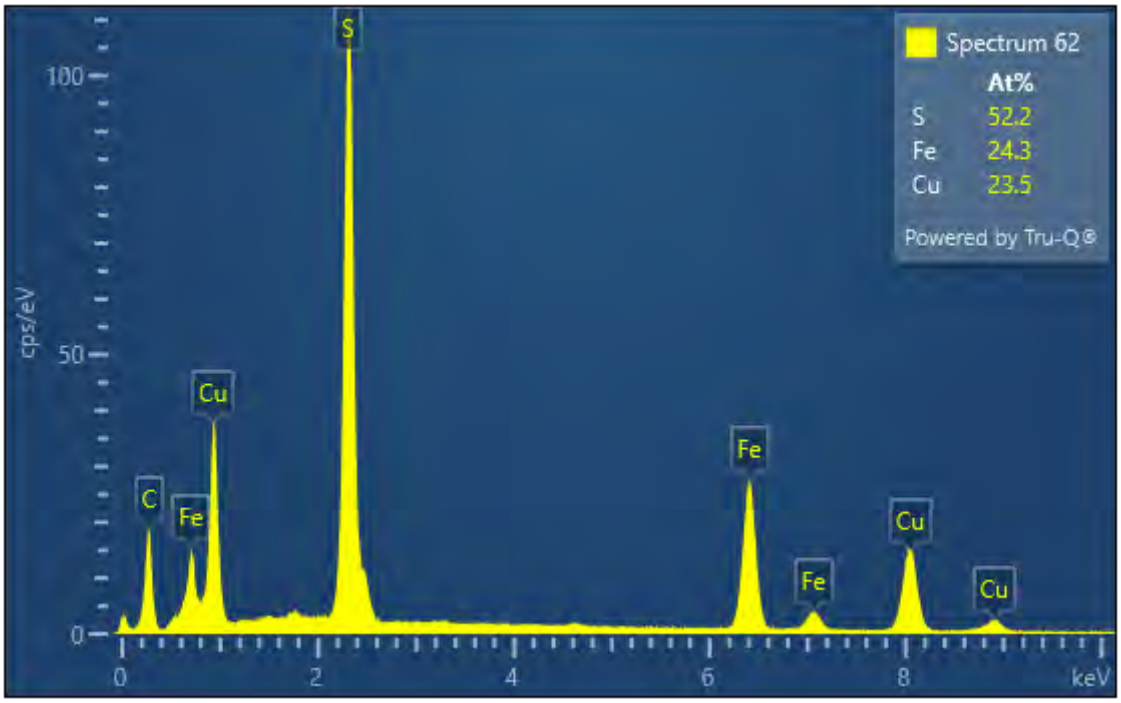
Electron Image 33 (Input1)



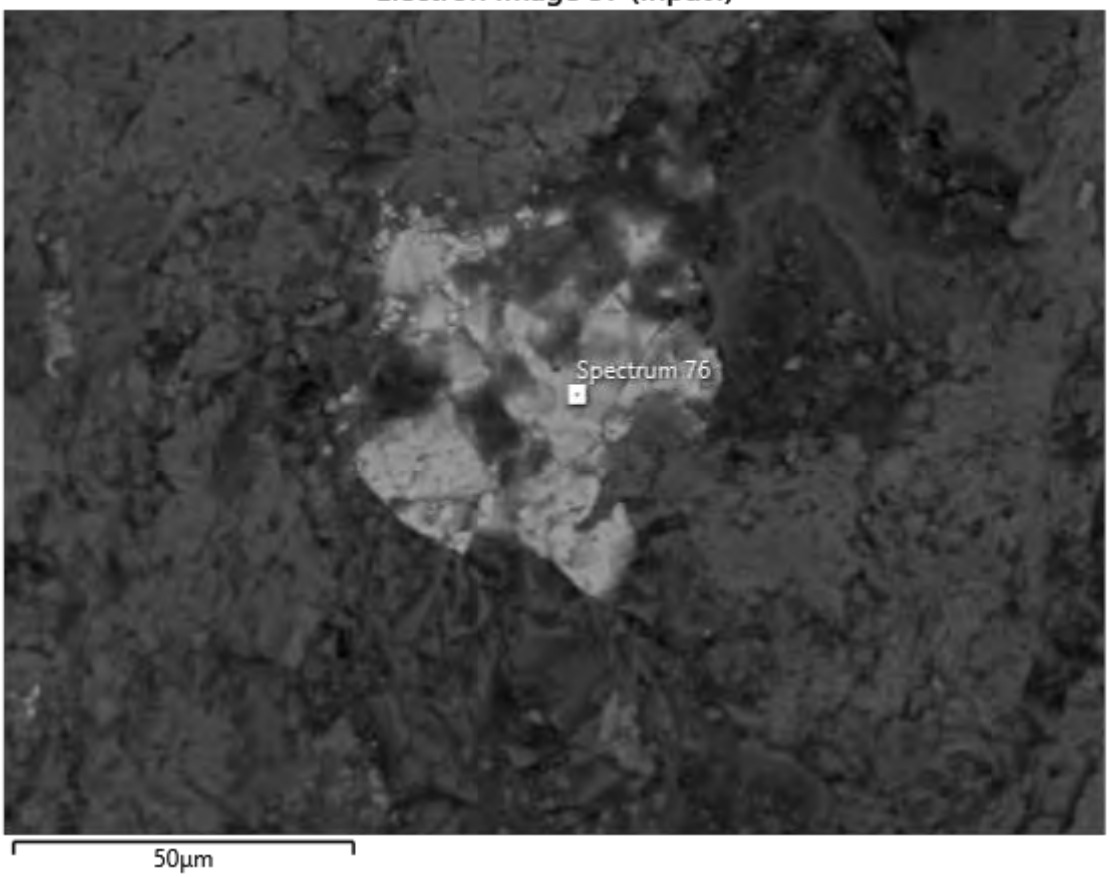


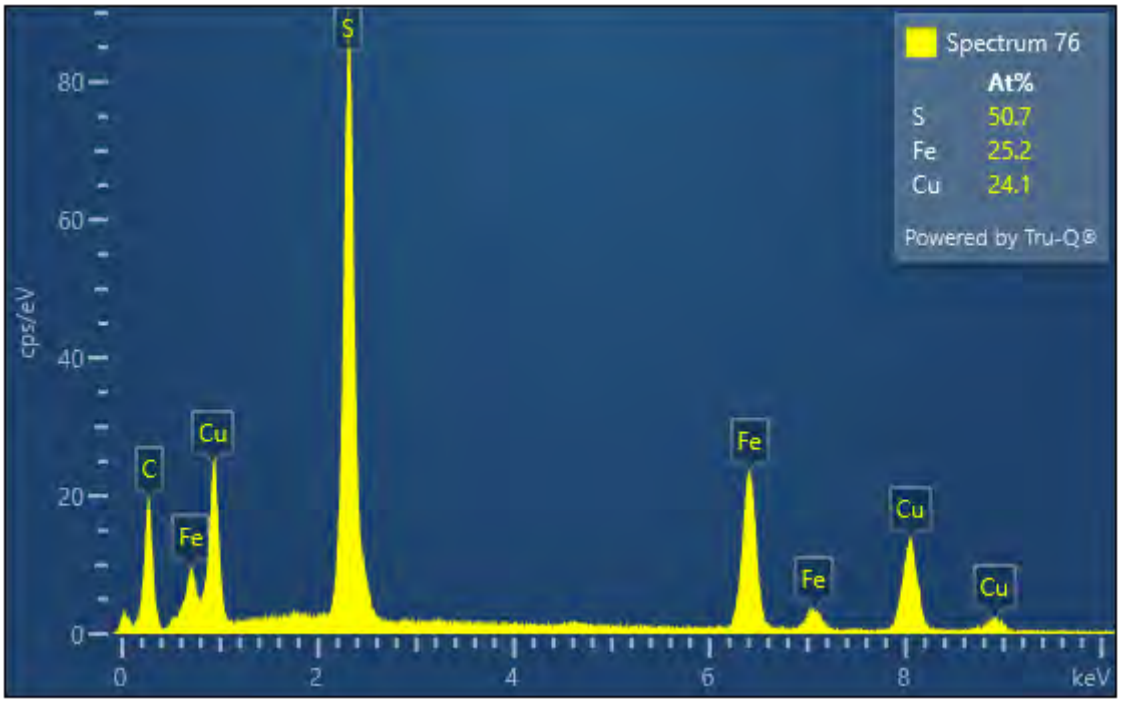
Electron Image 34 (Input1)





Electron Image 37 (Input1)





Electron Image 38 (Input1)

