



BACK RIVER PROJECT

2024 ANNUAL REPORT
FOR WATER LICENCE
2AM-BRP1831

DATE
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**Prepared by RainCoast Environmental Services Ltd.
for B2Gold Back River Corp.
Submitted to Nunavut Water Board**

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EXECUTIVE SUMMARY – ENGLISH

B2Gold Back River Corp. (B2Gold Nunavut) has filed its Annual Report on its activities during 2024 under Water Licence No. 2AM-BRP1831 (the Licence) issued by the Nunavut Water Board (NWB). As set out in Part B Item 2 and Schedule B of the Licence, the report includes information on the following topics:

- ◆ Information related to the dikes, dams, and structures constructed to withhold water or waste;
- ◆ Summaries of water use, Winter Ice Road activities, dewatering activities, and any updates to the water and load balance results;
- ◆ Summaries of geochemical monitoring results, ore stockpile quantities, seepage and runoff monitoring, and waste disposal;
- ◆ A list of unauthorized discharges and a summary of follow-up actions taken;
- ◆ A summary of modifications and/or major maintenance work carried out on all water and waste-related structures and facilities;
- ◆ Monitoring program results and interpretation;
- ◆ A summary of any progressive closure and reclamation work undertaken;
- ◆ An updated estimate of the current restoration liability;
- ◆ A summary of any studies requested by the Board that relate to water use, waste disposal or reclamation, and a brief description of any future studies planned;
- ◆ Any revisions to management plans, reports, or manuals;
- ◆ A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector;
- ◆ A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted; and
- ◆ Any other details on water use requested by the Board by the November 1 of the year being reported.

AULAPKAIYINI NAITTUQ – INUINNAQTUN

B2Gold Back River Corp. (B2Gold Nunavut) tuniyat Ukiumun Tuhaqhitaup huliniaqut atuqtitlugu 2024 malikhugu Imaqmun Laisa Nappaa 2AM-BRP1831 (tamna Laisa) tuniyat tapkuat Nunavut Imaligiyyit Katimayit. Taima ihuaqhihimaniagut talvani Ilanga B Titiraq 2 tamnal Atugakhaliq B talvani Laisami, tamna tuhaqhitaup ilalik tuhagakhat tahapkununga pityutitut:

- ◆ Tuhagakhat turangayut haputitut, hapuhiugaqut hanahimayutlu hanaugat imaqaqviuyukhat uvaluniit iqakut;
- ◆ Nainaqhimayut tuhaqhitaup Immap atuqniat, Ukiumi Hikukkuk Apqutit huliniit, imaiyainiqmun huliniit, kitutluliyak nutanguqut tapkununga Immap Hunaqaqniutlu Ihuaqhihimani qanuritnit;
- ◆ Nainaqhimani nunalitit qanuritnit munarini, havikhat qaliriktitaqut aktilangit, maqinit kuukviunitlu munarinit, tapkuatlu iqakut iqaqut;
- ◆ Tititit pilaqtitauphimaqtit kuvititut nainaqhimayutlu kinguagut huliniit piyauni;
- ◆ Nainaqhimayut Ihuaqhigiarutit tamnal/uvaluniit angiyut hanayauni havariyaunit tamaitnut Immap Iqakutlu-turangayut hanahimayut havagutailu;
- ◆ Munarini havagut qanuritnit tukiliurutailu;
- ◆ Nainaqhimayut kitutluliyak pivalianit Umiktirniat Halumaqtiqniatlu havariyaunit;
- ◆ Nutanguqhimayut mikhautnit taty ilitquhiraluaganut utiqtitnahuaqni akiliqtutaulat;
- ◆ Nainaqhimayut kitutluliyak naunaiyautit atuqyai tapkuat Katimayit turangayut Immap atuqniat, Iqakut iqaqni uvaluniit Halumaqtiqniat, nainaqhimayutlu unniqtut kitunuliyak hivunikhani naunaiyaqni parnaktauyut;
- ◆ Kitutluliyak nutanguqni tapkuat Aulatauni Parnautit, tuhaqhitaupit makpiraliugatlu;
- ◆ Nainaqhimani hulinit atuqtauyut hugiaqniat ihumaalutit uvaluniit iniqhimaqtit titiqni qauyihainiqmun tuhaqhitaupit tamnal/uvaluniit malikhaqni tuhaqhitaupit tuniya taphuma Qauyihaiyip;
- ◆ Nainaqhimayut inungnut uqaqatigiknit/piqataunit, unnirtuqni uqaqatigikni nunalikni timiuyut nunaluyutlu haniani nunaluyut, atuqtauhimaniqata;
- ◆ Kitutluliyak ahii unniqtutititit Immap atuqni pitquyayut Katimayinit qangiqtitnagu Nuvipa 1 ukiunganut tuhaqhitaupitayumun.

RÉSUMÉ EXÉCUTIF – FRANÇAIS

B2Gold Back River Corp. (B2Gold Nunavut) a déposé son rapport annuel sur ses activités de 2024 dans le cadre de la licence d'utilisation de l'eau n° 2AM-BRP1831 (la Licence) délivrée par l'Office des eaux du Nunavut (l'Office). Conformément à la partie B, article 2 et à l'annexe B de la Licence, le rapport comprend des informations sur les sujets suivants

- ◆ Information relative aux digues, barrages et structures construites pour retenir l'eau ou les déchets;
- ◆ Résumés de l'utilisation de l'eau, des activités de la route de glace hivernale, des activités d'assèchement et de toute mise à jour des résultats du bilan hydrique et de charge;
- ◆ Résumés des résultats de la surveillance géochimique, des quantités de stocks de minerai, de la surveillance des infiltrations et du ruissellement, et de l'élimination des déchets;
- ◆ Une liste des rejets non autorisés et un résumé des actions de suivi entreprises;
- ◆ Un résumé des modifications et/ou des travaux d'entretien majeurs effectués sur toutes les structures et installations liées à l'eau et aux déchets;
- ◆ Résultats et interprétation du programme de surveillance;
- ◆ Un résumé de tout travail de fermeture progressive et de remise en état entrepris;
- ◆ Une estimation mise à jour du passif actuel de restauration;
- ◆ Un résumé de toutes les études demandées par le Conseil et relatives à l'utilisation de l'eau, à l'élimination des déchets ou à la remise en état, et une brève description de toutes les études futures prévues;
- ◆ Toute révision des plans de gestion, des rapports ou des manuels;
- ◆ Un résumé des actions entreprises pour répondre aux préoccupations ou aux lacunes énumérées dans les rapports d'inspection et/ou les rapports de conformité déposés par un inspecteur;
- ◆ Un résumé de la consultation/participation publique, décrivant la consultation avec les organisations locales et les résidents des communautés voisines, si des consultations ont été menées; et
- ◆ Tout autre détail sur l'utilisation de l'eau demandé par le Conseil avant le 1er novembre de l'année faisant l'objet du rapport.

EXECUTIVE SUMMARY – ENGLISH	I
AULAPKAIYINI NAITTUQ – INUINNAQTUN	II
RÉSUMÉ EXÉCUTIF – FRANÇAIS	III
ACRONYMS AND ABBREVIATIONS	IV
	VIII
1. INTRODUCTION	1
2. ANNUAL REPORT PER PART B, ITEM 2	3
1. For the dikes, dams and structures constructed to withhold water or waste	3
a. An overview of methods and frequency used to monitor deformations, Seepage and geothermal responses	3
b. A comparison of measured versus predicted performance	3
c. A discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk	3
d. As-built drawings of all mitigation works undertaken	3
e. Any changes in the design and/or as-built condition and respective consequences of any changes to safety, Water balance and Water quality	3
f. Data collected from instrumentation used to monitor earthworks and an interpretation of that data	3
g. A summary of maintenance work undertaken as a result of settlement or deformation of dikes and dams	3
h. The monthly and annual quantities of Seepage from dikes and dams in cubic metres	3
2. Monthly and annual volume of fresh Water obtained from all sources	3
3. Summary of Interconnection Winter Ice Road plans implemented in accordance with Part E, Item 13	6
4. Summary of Dewatering Plans implemented in accordance with Part E, Item 14	7
5. Summary update to the Water and Load Balance results, if any, including an annual comparison of measured groundwater inflow rates to model predictions	7
6. Geochemical monitoring results including:	7
a. Operational acid/base accounting and associated test work used for Waste Rock designation (PAG and NPAG rock)	8
b. As-built volumes of Waste Rock used in construction and placed in the Waste Rock Storage Areas with estimated balance of acid generation to acid neutralization capacity in a given sample, as well as metal toxicity	8
c. All monitoring data with respect to geochemical analyses on site and related to roads and quarries	8

d.	Any Leaching observations and tests collected on pit slope and dike exposure	8
e.	Any geochemical outcomes or observations that could imply or lead to environmental impact	8
7.	Volumes of ore stockpiled	8
8.	Summary of quantities and analysis of Seepage and runoff monitoring from the Tailings Storage Facility, Waste Rock Storage Areas, Landfill(s) and associated dikes/berms	8
9.	A summary report of all general Waste disposal activities including monthly and annual quantities in cubic metres of Waste generated and location of disposal	8
10.	Reporting of Incinerator test results including the materials burned and the efficiency of the Incinerator in relation to effects on Water and the potential Deposit of Waste into Water	9
11.	A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken	9
12.	A summary of Modifications and/or major maintenance work carried out on all Water and Waste-related structures and facilities	9
13.	The results and interpretation of the Monitoring Program in accordance with Part I and Schedule I	10
14.	The results of monitoring related to the General and Aquatic Effects Monitoring Program in accordance with Part I Item 1	4
15.	A summary of any progressive Closure and Reclamation work undertaken, including photographic records of site conditions before and after completion of operations, and an outline of any work anticipated for the next year, including any changes to implementation and scheduling	4
16.	In the event of a short term closure or period of Care and Maintenance referred to in Part J, Item 3, the Licensee shall, within 30 days of notifying the Board, provide a Status Report on all planned Progressive Reclamation activities undertaken to date. The Report will identify those activities that remain incomplete due to the closure. The Status Report will be filed in addition to the Care and Maintenance Plan referred to in Part J, Item 4 and will include details on site conditions at the cessation of operations as outlined in Schedule J	5
17.	An updated estimate of the current reclamation liability based on Project development monitoring, results of restoration research and any changes or modifications to the Appurtenant Undertaking	5
18.	Progressive Reclamation Work Plan (PRWP), one (1) year following the commencement of operations. The PRWP will provide a breakdown of the progressive reclamation activities planned to be completed that year in accordance with the criteria set in Schedule J.	5
19.	A summary of any studies requested by the Board that relate to Water use, Waste disposal or Progressive or Final reclamation, and a brief description of any future studies planned	5
20.	Where applicable, revisions as Addenda, with an indication of where changes have been made, for plans, reports, and manuals	5
21.	An executive summary in English, Inuktitut, Inuinnaqtun and French of all plans, reports, or studies conducted under this Licence	6
22.	A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector	6

23.	A summary of public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events and information sessions	7
24.	Any other details on Water use or Waste disposal requested by the Board by November 1 of the year being reported	7
3.	REFERENCES	8

LIST OF TABLES

Table 2.2-1	Monthly and Annual Freshwater Water Use for 2023/2024 Winter Ice Road	4
Table 2.2-2	Monthly and Annual Freshwater Water Use for Goose Mine Site 2024	5
Table 2.13-1	Water Quality Data for BRP-G-01 Compared to Effluent Quality Limits	10
Table 2.13-2	Water Quality Data for BRP-G-02 Compared to Effluent Quality Limits	10
Table 2.13-3	Water Quality Data for BRP-G-03 Compared to Effluent Quality Limits	11
Table 2.13-4	Water Quality Data for BRP-15 Compared to Effluent Quality Limits	1
Table 2.13-5	Monthly STP Discharge Volumes	1
Table 2.13-6	Water Quality Data for BRP-17 Compared to Effluent Quality Limits	2
Table 2.13-7	Monthly Greywater Discharge Volumes at the MLA	3
Table 2.13-8	Water Quality Data for BRP-43 Compared to Effluent Quality Limits	4
Table 2.20-1	Plans Submitted to NWB in 2024 or as an Appendix to this Report	6

LIST OF APPENDICES

Appendix A	Winter Ice Road Water Use
Appendix B	Waste Disposal
Appendix C	Monitoring Program Activity Overview by Station
Appendix D	Water Quality Analytical Results
Appendix E	2024 Baseline Surface Water Quality Report
Appendix F	Geochemical Monitoring Results
Appendix G	Landfill and Waste Management Plan
Appendix H	Engagement Record
Appendix I	Reportable Spills Record

ACRONYMS AND ABBREVIATIONS

B2Gold Nunavut	B2Gold Back River Corporation
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
Inspector	CIRNAC Inspector
KIA	Kitikmeot Inuit Association
the Licence	Water Licence 2AM-BRP1831
MLA	Marine Laydown Area
NIRB	Nunavut Impact Review Board
NT	Northwest Territories
NU	Nunavut
NWB	Nunavut Water Board
the Project	Back River Project
STP	Sewage Treatment Plant
WIR	Winter ice road
WRSA	Waste Rock Storage Area

1. INTRODUCTION

This report to the Nunavut Water Board (NWB) summarizes activities and monitoring undertaken at B2Gold Back River Corporation's (B2Gold Nunavut's) Back River Project (the Project) Marine Laydown Area (MLA) and Goose Lake project areas in accordance with Part B, Item 2 of Water Licence 2AM-BRP1831 (the Licence). This License was issued on September 21, 2018, and will expire on December 31, 2031.

The Back River Project is a gold mining project located within the western Kitikmeot Region of southwestern Nunavut. It is situated approximately 400 km southwest of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet (Kingaok), and 520 km northeast of Yellowknife, Northwest Territories. The Project is located predominantly within the Queen Maud Gulf Watershed (Nunavut Water Regulations, Schedule 4).

The Project is comprised of two main areas; the MLA situated along the western shore of southern Bathurst Inlet and the Goose Lake Area south of the MLA where the gold deposits are located. These areas are connected seasonally by an approximately 160 km long winter ice road (WIR). The majority of annual resupply is brought in by water to the MLA and necessary materials are transferred via WIR to the Goose Property.

Project development works, which began in 2018 and continued through 2023, has included the construction of pad areas, all-weather access roads, and an airstrip at the MLA; as well as the construction of a tent camp, bulk fuel tank and containment area, and barge off-loading area for the receipt, storage, and transfer of materials necessary to support construction activities via sealift and WIR. Development at the Goose Property through 2023 included the construction of pads, all-weather roads, and bulk fuel storage; an upgrade to the Rascal Stream crossing to accommodate haul traffic; earthworks to extend the Goose airstrip to 5,000 feet; Phase 1 of the accommodations complex (sleeping quarters and kitchen), which added 310 beds to the existing 160 beds of the exploration camp; commissioning of the Goose Property sewage treatment plant (STP), concrete batch plant, and fully automated rebar cutting and bending machines; ongoing construction of the plant site, mill, truck shop, and Vault Underground decline; continued pre-stripping of Echo Pit; and initiating construction of the primary pond. See the 2018 and 2019 Annual Reports for Water Licence 2BC-BRP1819 and the 2020 through 2023 Annual Reports for Water Licence 2AM-BRP1831 for further details.

The following activities were completed in 2024, in support of future Project construction and operation:

- ◆ Ongoing construction of the plant site, mill, and truck shop at the Goose Property.
- ◆ The concrete batch plant and a fully automated rebar cutting and bending machines poured 90% of the concrete needed for the Goose Site Process Plant.
- ◆ The majority of Goose Site Process Plant structures were cladded to allow heated indoor work through the winter, mechanical and structural are well advanced, and the ball mill installation was completed ahead of schedule.
- ◆ Phase 2 of the accommodations complex at the Goose Property was completed in May 2024. expanding the camp to approximately 600 beds.
- ◆ Continued construction of the primary pond at the Goose Property nearing completion.

- ◆ Echo Pit pre-stripping was completed and mining commenced.
- ◆ Umwelt Pit pre-stripping commenced.
- ◆ Continuing advancement of the Vault Underground decline.
- ◆ Approximately 1,560 return supply transport trips were made on the WIR in 2023/2024.
- ◆ The fuel tank containment area at the MLA was enlarged to facilitate additional storage, and initial construction for similar storage at Goose commenced.
- ◆ The MLA was reorganized to maximize space for the 2024 sealift unload.
- ◆ All major equipment and materials required for construction have been delivered to the MLA and are awaiting transportation down the WIR to Goose.
- ◆ Environmental monitoring and baseline programs including atmospheric, archaeology, water quality, fisheries, wildlife, geochemical/geotechnical, and vegetation programs.

The construction of mine waste or water management facilities will be documented as they are completed in construction reports filed with the NWB, as required by the Licence. As these facilities are developed and put into use, appropriate additional information will be included in this Annual Report. For 2024, use of exploration waste and water management facilities are reported in the Annual Report for Water Licence 2BE-GOO2028, and use of mine-related water and waste facilities are reported in this report.

2. ANNUAL REPORT PER PART B, ITEM 2

This section of the report has been constructed to address the requirements of Part B, Item 2 and Schedule B of the Licence. For ease of comparison, each subheading within this section corresponds directly with the identically numbered subheading of Schedule B of the Licence.

CONSTRUCTION

1. For the dikes, dams and structures constructed to withhold water or waste

Information related to this section and the subsections below will be provided in the Annual Geotechnical Inspection Report, which will be provided separately following submission of this Annual Report.

- a. An overview of methods and frequency used to monitor deformations, Seepage and geothermal responses
- b. A comparison of measured versus predicted performance
- c. A discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk
- d. As-built drawings of all mitigation works undertaken
- e. Any changes in the design and/or as-built condition and respective consequences of any changes to safety, Water balance and Water quality
- f. Data collected from instrumentation used to monitor earthworks and an interpretation of that data
- g. A summary of maintenance work undertaken as a result of settlement or deformation of dikes and dams
- h. The monthly and annual quantities of Seepage from dikes and dams in cubic metres

WATER

2. Monthly and annual volume of fresh Water obtained from all sources

Water use allotments under the Licence are 992,450 m³ annually for the Goose Property, with up to 608,700 m³ of this to be from Goose Lake and up to 273,750 m³ from Big Lake. An additional 1,400,000 m³

annually is allowed for dewatering; 110,000 m³ annually is allowed to be obtained from MLA Pond S1, Pond S2, Lake 3, and Lake 4; and 2,0225 m³/km per year is allowed for WIR development and maintenance.

Details on freshwater use, including annual, monthly, and per kilometre (for the WIR) totals are provided below for the WIR and Goose Mine Site. In 2024, no dewatering was undertaken, and no freshwater was used at the MLA. Water for MLA use was instead supplied by the desalination of seawater from Bathurst Inlet. Please refer to the 2024 Annual Report for 2BE-GOO2028 for more detail on water usage related to the Goose exploration camp and project.

WIR Water Use

Table 2.2-1 presents the monthly and annual volume of fresh water used for the WIR for the 2023/2024 winter season; this includes water use at the MLA and Goose Forward camps during the 2023/2024 WIR season and water use at the MLA Forward Camp when it was open during summer (July 26 to August 30, 2024). Appendix A provides monthly and annual water use by water source and a comparison to the available water capacity of each source. During the 2023/2024 WIR season, some water sources not identified in the 2024 WIR Technical Memorandum for the Project submitted to NWB prior to the 2023/2024 WIR construction were used in error. This error was discovered in spring of 2024 and affected both the 2022/23 and 2023/24 ice roads. As done in the 2023 Annual Report, a retroactive analysis of the available water capacity of these sources was conducted to determine whether these withdrawals could have posed an environmental risk to the unauthorized waterbodies used. To calculate available water capacities, the surface area of the water source (as determined by available GIS data) was multiplied by 10 cm. This simplified calculation is considered protective of the lake habitat and has been previously used to determine water withdrawal capacity in both Nunavut and the Northwest Territories. In addition, a total of 1,127 m³, or about 1% of water withdrawn over the 2023/2024 WIR season, was withdrawn from unknown water sources. This water appears to have been taken from at least eight different lakes. The 2023/2024 WIR Technical Memo presented the calculated volume of water that could be withdrawn from 55 area lakes, while maintaining nil risk of habitat loss; this volume ranged from 683 to 32,516,148 m³, depending on the size of the water source. Based on this analysis and information, it was determined that all withdrawals were unlikely to have posed any environmental risk to the waterbodies; no waterbody-specific calculated available water capacities were exceeded during the 2023/2024 WIR season. Calculated available capacities have been included in Appendix A, along with cumulative winter withdrawal quantities for each waterbody.

Available total WIR water use per kilometre during the 2023/2024 winter season was 610 m³/km of road and did not exceed the cumulative Licence allotment of 2,0225 m³/km. Apart from withdrawing water from unauthorized and potentially unauthorized (i.e., unknown) water sources water withdrawal protocols followed the 2024 WIR Technical Memorandum for the Project, which was submitted to NWB prior to the 2023/2024 WIR construction.

Table 2.2-1 Monthly and Annual Freshwater Water Use for 2023/2024 Winter Ice Road

Month	Freshwater Volume Used (m ³)
December 2023	10,185

Month	Freshwater Volume Used (m ³)
January 2024	16,718
February 2024	29,755
March 2024	33,065
April 2024	7,627
May 2024	140
July 2024	14*
August 2024	70*
2023/2024 Total	97,574 m³
2023/2024 Total per km	610 m³/km

Note:

*Estimated as 2.3.3 m³ per day for days when the camp was in use in July, and 2 m³ per day in August.

Goose Mine Water Use

In 2024, water was used for the following purposes at the Goose Mine site:

- ◆ To supply potable water for the Goose Mine Camp,
- ◆ To support underground activities,
- ◆ Batch Plant operations,
- ◆ Dust control, and
- ◆ Other miscellaneous activities (e.g., washing vehicles).

All water used at the Goose Mine Site was withdrawn from Goose Lake. Water use by month in 2024 is provided in Table 2.2-2. Total 2024 water use from Goose Lake was 41,230.2 m³, which did not exceed the Licence allotment of 992,450 m³.

Table 2.2-2 Monthly and Annual Freshwater Water Use for Goose Mine Site 2024

Month	Freshwater Volume Used (m ³)
January	1,790.5
February	1,434.7
March	2,119.8
April	2,624.6
May	4,249.7
June	3,844.2
July	3,270.6
August	3,346.3

Month	Freshwater Volume Used (m ³)
September	3,391.7
October	4,962.6
November	4,583.2
December	5,612.3
Total	41,230.2

3. Summary of Interconnection Winter Ice Road plans implemented in accordance with Part E, Item 13

As per Part E, Item 13 of the Licence, B2Gold Nunavut submitted the 2024 WIR Technical Memorandum to the Board for review prior to the construction of the 2023/2024 WIR. The memorandum described the projected WIR routing and schedule (subject to changes year to year based on construction and operational conditions), as well as the plan for construction, operations, and closure of the WIR, including potential water use (i.e., bathymetry, depth, potential locations of possible water withdrawal, proposed volumes to be extracted [including for the WIR service/emergency camps], and anticipated water level decreases). No significant route deviations or alterations were made over the 2023/2024 WIR season relative to that described in the memorandum. A total of 1560 loads were transported on the WIR during the 2023/2024 season.

On July 14, 2024, B2Gold Nunavut completed a survey of the terrain along the WIR route between Bathurst Inlet and Bathurst Lake to address the concern identified by the Kitikmeot Inuit Association (KIA) that there may be changes in surface drainage conditions and associated impacts. At the time of the survey only one natural drainage was observed to be flowing (Photo 1) with clear runoff observed. B2Gold Nunavut proposes that allowing the natural drainage to continue without modification is the best course of action.



Photo 1: Surface Drainage Observed on WIR Route during Summer 2024 Survey

4. Summary of Dewatering Plans implemented in accordance with Part E, Item 14

No dewatering activities have occurred to date. A Dewatering Plan was provided to the NWB on February 23, 2024, in accordance with Part E Item 14 of the Licence, which requires a dewatering plan be provided at least 60 days prior to initiation of dewatering. The Dewatering Plan was subsequently revised and resubmitted on April 12, 2024 (Version 1.1), and was approved by the NWB on May 22, 2024.

5. Summary update to the Water and Load Balance results, if any, including an annual comparison of measured groundwater inflow rates to model predictions

B2Gold Nunavut provided an updated Water and Load Balance Model Report and Hydrodynamic Model to the NWB on August 31, 2022. No further updates have been made to these models since that time.

WASTE

6. Geochemical monitoring results including:

Please see Appendix F attached for geochemical monitoring results addressing requirements of this section.

- a. Operational acid/base accounting and associated test work used for Waste Rock designation (PAG and NPAG rock)
- b. As-built volumes of Waste Rock used in construction and placed in the Waste Rock Storage Areas with estimated balance of acid generation to acid neutralization capacity in a given sample, as well as metal toxicity
- c. All monitoring data with respect to geochemical analyses on site and related to roads and quarries
- d. Any Leaching observations and tests collected on pit slope and dike exposure
- e. Any geochemical outcomes or observations that could imply or lead to environmental impact

7. Volumes of ore stockpiled

In 2024 a total of 51,572 m³ of low-grade ore and 62,838 m³ of mid-grade ore was stockpiled. No high-grade ore was stockpiled.

8. Summary of quantities and analysis of Seepage and runoff monitoring from the Tailings Storage Facility, Waste Rock Storage Areas, Landfill(s) and associated dikes/berms

In 2024 only one seep was observed in 2024 (BRP-S-01), which is located on the northeast side of the quarry. Water quality samples were collected on August 14 and September 30, 2024; results are provided in Appendix D. Flow was discontinuous and, due to its small size (< 10 cm wide) and very low rate of flow, the discharge was too small to be measured or quantified.

9. A summary report of all general Waste disposal activities including monthly and annual quantities in cubic metres of Waste generated and location of disposal

Quantities and types of wastes backhauled from the Goose and MLA properties to KBL Environmental in Yellowknife are provided in Appendix B (Tables B-1 and B-2, respectively). These backhauled wastes are categorized as dangerous goods or non-dangerous goods. KBL Environmental provides waste management services and transfer of Project wastes to approved disposal facilities outside of Nunavut.

Wastes incinerated, open burned, and waste oil used for heating (waste oil to furnace) at the Goose and MLA properties are also provided in Appendix B (Tables B-3 and B-4, respectively). Due to an oversight which has now been corrected, only one month of data were tracked for the MLA in 2024. All samples met Nunavut Environmental Guidelines for Used Oil and Waste Fuel (GN DOE 2012).

Non-hazardous wastes identified as being suitable for landfilling on site per the Project's Landfill and Waste Management Plan were sent to the Waste Rock Storage Area (WRSA) landfill. Loads to the WRSA landfill were inadvertently not tracked in 2024 and are estimated as 20 m³ per day (~608 m³/month) for a total estimate of 7,300 m³ of waste to the landfill in 2024.

A summary of estimated greywater discharge from the MLA and Goose Forward camps is provided in Appendix B, Tables B-5 and B-6, respectively. Greywater discharge volumes at both forward camps were estimated as 100% of freshwater used. In alignment with Water Licence Part F, Item 23, greywater from WIR/Service/Emergency camps is discharged to a location at least 31 m from the ordinary high water mark where direct flow into a water body is not possible and no additional impact is created.

A summary of waste rock disposed of by month is provided in Appendix B, Table B-7. For information on waste rock disposal locations and geochemical results please refer to Section 2.6 of this report.

Please also see Section 2.13 of this report for monthly and annual quantities of other wastes discharged, including treated STP effluent, greywater, and discharges from fuel storage facilities.

10. Reporting of Incinerator test results including the materials burned and the efficiency of the Incinerator in relation to effects on Water and the potential Deposit of Waste into Water

No incinerator testing was conducted in 2024.

SPIILLS

11. A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken

All spills are recorded for adaptive management purposes at the Project. Appendix I presents the spills meeting or exceeding the Northwest Territories/Nunavut (NT/NU) spill reporting thresholds that occurred in relation to the Licence in 2024.

MODIFICATIONS

12. A summary of Modifications and/or major maintenance work carried out on all Water and Waste-related structures and facilities

Design modifications to the MLA and Goose tanks farms were submitted to the NWB and implemented in 2024 (see Section 2.1e). Improvements were also made to the treatment process and tundra discharge location of the STP to improve treatment efficacy and maximize over land treatment. These included:

- ◆ Installation of 2000 ft of 4 in HDPE effluent line for tundra discharge,
- ◆ Installation of 4 x 100 barrel tank farm for additional storage and redundancy,

- ◆ Initiate upgrading the PLC system to control the system in a more automatic fashion, and
- ◆ Installation of various analog and discreet control valves as well as flow meters and level transmitters.

These improvements successfully reduced ammonia concentrations to below discharge limits at BRP-17 (see discussion for BRP-17 in Section 13 below).

MONITORING

13. The results and interpretation of the Monitoring Program in accordance with Part I and Schedule I

A high-level monitoring summary outlining activity related to each monitoring station indicated in Part I and Schedule I of the Licence is provided in Appendix C along with a map depicting sampling locations. Monitoring details are provided below for monitoring stations that were active in 2024.

Water use and waste deposition related to operation of the Goose exploration camp is reported in the 2BE-GOO2028 annual report.

BRP-G General Site Runoff

In 2024, road runoff was observed entering Goose Lake during freshet (see Appendix C, Figure C-1 for sampling locations). All samples met effluent quality limits for Project related surface runoff (Tables 2-13-1 to 2.13-3).

Table 2.13-1 Water Quality Data for BRP-G-01 Compared to Effluent Quality Limits

Parameter	Unit	Effluent Quality Limit		10-May-24	17-May-24	24-May-24
		Maximum Average Concentration	Maximum Concentration of Any Grab Sample			
pH	pH units	6 - 9.5	6 - 9.5	6.49	6.4	6.72
Total Suspended Solids	mg/L	50	100	3.3	14.3	6.3
Total Oil and Grease	mg/L	No visible sheen	No visible sheen	<5.0	<5.0	<5.0

Table 2.13-2 Water Quality Data for BRP-G-02 Compared to Effluent Quality Limits

Parameter	Unit	Effluent Quality Limit		10-May-24	24-May-24
		Maximum Average Concentration	Maximum Concentration of Any Grab Sample		
pH	pH units	6 - 9.5	6 - 9.5	6.03	6.6
Total Suspended Solids	mg/L	50	100	3.1	<3.0

Total Oil and Grease	mg/L	No visible sheen	No visible sheen	<5.0	<5.0

Table 2.13-3 Water Quality Data for BRP-G-03 Compared to Effluent Quality Limits

Parameter	Unit	Effluent Quality Limit		10-May-24	17-May-24	24-May-24
		Maximum Average Concentration	Maximum Concentration of Any Grab Sample			
pH	pH units	6 - 9.5	6 - 9.5	6.08	6.48	6.49
Total Suspended Solids	mg/L	50	100	15.3	5.7	9.5
Total Oil and Grease	mg/L	No visible sheen	No visible sheen	No visible sheen, <5.0	No visible sheen, <5.0	No visible sheen, <5.0

BRP-S General Seeps

In 2024 only one seep was observed (BRP-S-01), which is located on the northeast side of the quarry. Water quality samples were collected on August 14 and September 30, 2024; results are provided in Appendix D. Flow was discontinuous and due to its small size (< 10 cm wide) and very low rate of flow, the discharge was too small to be measured or quantified.

BRP-15 Goose Fuel Tank Farm

Water was discharged from the Goose Fuel Tank Farm to the Plant Site on two occasions in 2024. Notifications were provided to CIRNAC prior to discharge on both occasions (notifications dated May 24 and October 1, 2024, and corresponding water samples dated May 16 and September 22, 2024, respectively). Discharge volumes were estimated at 20 m³ and 96 m³. Discharge water quality met the required effluent quality limits except for total suspended solids in the May 16 sample (Table 2.13-4). Given that the water was to be discharged to the Plant Site it was not expected to adversely affect the tundra or enter a freshwater environment.

On October 3, 2024, a third notification was submitted notifying CIRNAC of plans to discharge water from the Goose Exploration Fuel Tank Farm to ground at the Goose exploration area following treatment with organoclay media (sample data from September 26, 2024). The estimated volume to be discharged was 130 m³. Treated discharge water quality met the required effluent quality limits (Table 2.13-4), however, no response was received from CIRNAC in time to discharge and this water froze. As such, it was left in place and will be treated again in 2025 when conditions are more favourable.

Results for all analysed parameters are provided in Appendix D.

Table 2.13-4 Water Quality Data for BRP-15 Compared to Effluent Quality Limits

Parameter	Unit	Effluent Quality Limit		16-May-2024*	22-Sep-2024*	26-Sep-2024*	26-Sep-2024*	26-Sep-2024*
		Maximum Average Concentration	Maximum Concentration of Any Grab Sample			Raw	Treated	Treated Duplicate
				Goose Fuel Tank Farm	Goose Fuel Tank Farm	Goose Exploration Tank Farm		
pH	pH units	6 - 9.5	6 - 9.5	7.46	6.71	5.63	6.56	6.73
Total Suspended Solids	mg/L	15	30	38.3	6.5	22	<1	<1
Total Oil and Grease	mg/L	5, no visible sheen	5, no visible sheen	<5.0	<2.0	44	<2.0	<2.0
Benzene	mg/L	0.370	0.370	<0.0005	<0.0004	<0.0004	<0.0004	<0.0004
Toluene	mg/L	0.002	0.002	<0.00050	<0.0004	<0.0004	<0.0004	<0.0004
Ethylbenzene	mg/L	0.09	0.09	<0.0005	<0.0004	<0.0004	<0.0004	<0.0004
Lead	mg/L	0.1	0.1	0.00391	0.000594	0.00088	<0.0002	<0.0002

Note:

Shaded cells indicate values were outside of effluent quality limits.

**This water was not discharged to the environment.*

BRP-17 Goose Property Sewage Treatment Plant

The Goose Property STP was put into use in August of 2023 with treated effluent being discharged to land in a manner to allow further over land treatment of the effluent prior to entering the freshwater receiving environment. Plant commissioning and calibration continued into 2024, with changes made to the treated effluent tundra discharge point, in discussion with the Inspector, to maximize over-land treatment benefits. Approximately 31,891 m³ of treated sewage effluent was discharged to the tundra during 2024 (Table 2.13-5). Water was not available for sampling during the frozen winter months (January through May and October through December) and the STP drainage pathway was not located or visible until September 2024. Water quality data collected downslope of the treated effluent discharge point and immediately prior to entry of effluent into the freshwater receiving environment at BRP-17 are provided in Table 2.13-6 for parameters with effluent quality limits. Tables indicating results for all parameters analysed are provided in Appendix D. Initial BRP-17 sampling indicated a slight exceedance of ammonia (9.6 mg/L in the grab sample vs. discharge criteria of 8.0 mg/L) and elevated total coliforms (3,130 MPN/100 mL) compared to the fecal coliform (a subset of fecal coliforms) discharge criteria of 1,000 CFU/100 mL. Adjustments were subsequently made to the STP treatment process and subsequent sampling indicated these issues had been addressed by the following sampling event (Sept 16, 2024), although pH was slightly below discharge criteria (5.79 vs a discharge range of 6 to 9). After further adjustments, the subsequent and final 2024 sampling event (September 22, 2024) prior to freeze-up indicated all parameters were within discharge criteria.

Table 2.13-5 Monthly STP Discharge Volumes

Month	Volume (m ³)
January	1,836
February	1,434
March	1,751
April	2,153
May	2,104
June	2,811
July	3,143
August	3,207
September	3,210
October	3,216
November	3,387
December	3,639
Total	31,891

Table 2.13-6 Water Quality Data for BRP-17 Compared to Effluent Quality Limits

Parameter	Unit	Effluent Quality Limit		02-Sep-2024	16-Sep-2024	22-Sep-2024
		Maximum Average Concentration	Maximum Concentration of Any Grab Sample			
Biochemical oxygen demand (BOD)	mg/L	30	-	4.4	<2	<2
Total Suspended Solids	mg/L	35	-	8.5	1.9	1.3
Fecal Coliform*	CFU/100 mL	1,000	-	3,130	345	172
Ammonia	mg/L	4	8	9.6	1.8	1.9
Phosphorus	mg/L	4	8	0.085	0.0041	0.0046
Total Oil and Grease	mg/L	No visible sheen	-	<2	<2	<2
pH	pH units	6 - 9.5	-	6.44	5.79	6.1

Notes:

Shaded cells indicate values were outside of effluent quality limits.

*Effluent quality limit is for fecal coliforms (CFU/100 mL), data are for total coliforms (MPN/100 mL) and are a conservative comparison to the effluent quality limit.

BRP-40 and 41 MLA Bathurst Inlet Desalination Intake and Discharge

Information on desalination water sampling results are provided in the Marine Monitoring Report included in B2Gold Nunavut's 2024 Annual Report to the Nunavut Impact Review Board. This marine-environment-related report has not additionally been submitted again here but is posted to the Nunavut Impact Review Board (NIRB) public registry for review.

BRP-42 MLA Greywater

Approximately 5,647 m³ of greywater was discharged to the tundra from the MLA camp at a monthly rate approximately 80% equivalent to the quantity of desalinated water produced at the MLA (Table 2.13-7). No flow or water was available for sampling downstream of the discharge point (i.e., at BRP-42), likely due to the limited daily volumes discharged combined with the long over-land transit and uptake of this water between the discharge point and its drainage point into Bathurst Inlet.

Table 2.13-7 Monthly Greywater Discharge Volumes at the MLA

Month	Greywater Volume Discharged (m ³)
January	445
February	971
March	551*
April	580*
May	363
June	416
July	364
August	290
September	408
October	448
November	387
December	425*
Total	5,647

Notes:

Greywater discharge at the MLA was estimated as 80% of water desalinized. For dates where the volume of water desalinized was not available, volumes of desalinized water were estimated as the average per capita volume of water desalinized based on available data for the rest of that month and this was multiplied by the number of people occupying the MLA camp each day.

**Volumes of water desalinized were not available for March, April, or December. For those months volumes of water desalinized were estimated as the average volume desalinized per person over the remainder of the year multiplied by the number of people occupying the MLA camp each day.*

BRP-43 MLA Fuel Tank Farm

A notification was submitted to CIRNAC on May 27, 2024, outlining B2Gold Nunavut's plan to discharge approximately 25 m³ of water from the MLA Tank Farm (BRP-43) to the Plant Site. The water quality met the required effluent quality limits (Table 2.13-8). Prior to seasonal freeze-up in October, accumulated rainwater was transferred from the MLA Tank Farm to two (2) instabermes for the purpose of protecting the tank farm's pedestals. A water sample was collected and submitted for analysis. The analysis indicated the absence of contaminants of concern (e.g., petroleum hydrocarbons), however, the total suspended solids (TSS) concentrations exceeded the applicable discharge criteria. The water was used for construction (concrete) and dust suppression (watering roads and gravel infill areas). Monitoring was conducted throughout this process for the purpose of confirming that no sediment-laden water migrated off the gravel infill areas and onto tundra or entered any freshwater receiving environment. A table indicating results for all parameters analysed are provided in Appendix D.

Table 2.13-8 Water Quality Data for BRP-43 Compared to Effluent Quality Limits

Parameter	Unit	Effluent Quality Limit		21-May-2024	1-Oct-2024
		Maximum Average Concentration	Maximum Concentration of Any Grab Sample		
pH	pH units	6 - 9.5	6 - 9.5	7.38	6.44
Total Suspended Solids	mg/L	15	30	15.1	210
Total Oil and Grease	mg/L	5, no visible sheen	5, no visible sheen	<5.0	<2.0
Benzene	mg/L	0.370	0.370	<0.00050	<0.00050
Toluene	mg/L	0.002	0.002	<0.00050	<0.00050
Ethylbenzene	mg/L	0.09	0.09	<0.00050	<0.00050
Lead	mg/L	0.1	0.1	0.000466	0.000466

BRP-I Interconnection Winter Ice Road Proximal Water Bodies

Appendix A presents the volumes of fresh water used from each water body for the WIR during the 2023/2024 winter season.

14. The results of monitoring related to the General and Aquatic Effects Monitoring Program in accordance with Part I Item 1

Aquatic Effects Monitoring has not yet commenced for the Project, this monitoring is scheduled to start in parallel with dewatering activities. The 2024 Surface Water Quality Report is provided in Appendix E.

CLOSURE

15. A summary of any progressive Closure and Reclamation work undertaken, including photographic records of site conditions before and after completion of operations, and an outline of any work anticipated for the next year, including any changes to implementation and scheduling

Photographic records of pre-construction site conditions have been taken and are maintained by B2Gold Nunavut for comparison with photos to be taken after completion of Operations. No progressive reclamation activities have been undertaken to date. B2Gold Nunavut anticipates that these activities will commence once areas are determined to be no longer in use and subject to further impact.

16. In the event of a short term closure or period of Care and Maintenance referred to in Part J, Item 3, the Licensee shall, within 30 days of notifying the Board, provide a Status Report on all planned Progressive Reclamation activities undertaken to date. The Report will identify those activities that remain incomplete due to the closure. The Status Report will be filed in addition to the Care and Maintenance Plan referred to in Part J, Item 4 and will include details on site conditions at the cessation of operations as outlined in Schedule J

No short-term closure or period of care and maintenance occurred in 2024 and none are currently planned.

17. An updated estimate of the current reclamation liability based on Project development monitoring, results of restoration research and any changes or modifications to the Appurtenant Undertaking

No updates were made to the reclamation liability estimates for the approved Project in 2024.

18. Progressive Reclamation Work Plan (PRWP), one (1) year following the commencement of operations. The PRWP will provide a breakdown of the progressive reclamation activities planned to be completed that year in accordance with the criteria set in Schedule J.

Not yet applicable Project phase; the operations phase has not yet commenced.

PLANS/REPORTS/STUDIES

19. A summary of any studies requested by the Board that relate to Water use, Waste disposal or Progressive or Final reclamation, and a brief description of any future studies planned

No studies were requested by the Board in 2024.

20. Where applicable, revisions as Addenda, with an indication of where changes have been made, for plans, reports, and manuals

Plans submitted to the NWB in 2024 or as appendices to this report that are applicable to this Licence are summarized in Table 2.20-1. A 2024 Baseline Surface Water Quality Report is also being provided to the NWB with this report (Appendix E) and a 2024 Annual Geotechnical Inspection Report will be submitted in the near future.

Table 2.20-1 Plans Submitted to NWB in 2024 or as an Appendix to this Report

Plan	Plan Date	NWB Approval
Landfill and Waste Management Plan (Appendix G of this Report)	March 2025	Pending
Ground Thermal Monitoring Plan	April 2024	Pending
Water Management Plan	May 2024	Approved
Llama and Umwelt Lake Dewatering Plan, Versions 1.0 and 1.1	February and April 2024	Approved

21. An executive summary in English, Inuktitut, Inuinnaqtun and French of all plans, reports, or studies conducted under this Licence

Executive summaries of this report are provided in Inuktitut, Inuinnaqtun, English, and French at the start of this report.

GENERAL

22. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector

An inspection of both Goose Lake Camp and MLA occurred in July 2024 and an inspection of only Goose Lake Camp occurred in November 2024. These inspection reports are available on the NWB public registry. In the July inspection report a total of six actions were identified for Goose Lake Camp and four actions for the MLA. In the November inspection report a total of four actions were identified for the Goose Lake Camp. Actions identified in the July and November inspections reports were addressed in 2024 to the most practical extent possible. Items identified included comments around secondary containment capacity and waste management practices within the landfill. Landfill design figures were provided to CIRNAC in response as well as clarification on appropriate landfill material as per the approved Landfill and Waste Management Plan. On December 31st, 2024, B2Gold Nunavut submitted a detailed engineering design report regarding the construction of a tote storage facility for Goose Lake Camp, as requested by CIRNAC, which stated that the proposed works would occur in the summer of 2025. Additionally, Instaberms around the Project site that are being utilized in advance of the above tote storage facility were repaired if necessary. These actions were also conducted to address CIRNAC's concerns with the storage and containment of hazardous waste as noted in CIRNAC's 2023 inspection reports.

OTHER

23. A summary of public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events and information sessions

B2Gold Nunavut's Project 2024 engagement record is provided in Appendix H. In 2025, B2Gold Nunavut anticipates attending the Kitikmeot tradeshow in February, quarterly KIA Board meetings, and KIA Annual General Meeting in October. Additionally, B2Gold Nunavut is planning an annual community tour of Kitikmeot communities in August; and various Project site visits throughout the year, including a Goose Grand Opening in September. Meetings of the IIBA Implementation Committee, Inuit Employment Working Group, KSEMC, and IEAC, amongst others, are also anticipated to be held in 2025.

24. Any other details on Water use or Waste disposal requested by the Board by November 1 of the year being reported

No additional sampling or details on water use or waste disposal activities related to this Licence was requested by the Board in by November 1 of 2024.

3. REFERENCES

Government of Nunavut Department of Environment (GN DOE). 2012. Environmental Guideline for Used Oil and Waste Fuel. June 2012.

APPENDIX A WINTER ICE ROAD WATER USE

Table A-1 Winter Ice Road Water Use by Lake and Month for 2023/2024 WIR Season

Water Source Lake ID	2023	2024							Total Use (m³)	Available Capacity (m³)
	December	January	February	March	April	May	July	August		
1	837	406	-	42	14	-	-	-	1,299	39,603
10	-	1,484	14	308	91	-	-	-	1,897	29,503*
10A	-	312	28	-	-	-	-	-	340	4,763*
11	-	322	408	56	112	-	-	-	898	98,188
12	-	-	889	98	210	-	-	-	1,197	213,902*
12B	-	-	42	-	-	-	-	-	42	N/A
13	-	-	2,447	224	336	-	-	-	3,007	148,482*
13A	-	-	84	-	-	-	-	-	84	15,112
13B	-	-	196	-	-	-	-	-	196	N/A
14	-	-	3,948	672	154	-	-	-	4,774	214,666*
14A	-	-	42	-	-	-	-	-	42	359,780
14B	-	-	84	-	-	-	-	-	84	13,005*
14C	-	-	1,299	224	84	-	-	-	1,607	9,151*
15	-	-	1,320	126	532	-	-	-	1,978	237,327
15B	-	-	-	-	56	-	-	-	56	34,749*
16	-	-	637	157	56	-	-	-	850	447,685
16B	-	-	140	-	-	-	-	-	140	6,297*
17	-	-	546	287	-	-	-	-	833	1,239,167
18	-	-	1,233	903	140	-	-	-	2,276	128,478
18B	-	-	-	175	-	-	-	-	175	N/A

Water Source Lake ID	2023	2024							Total Use (m³)	Available Capacity (m³)
	December	January	February	March	April	May	July	August		
19	-	-	189	3,019	480	-	-	-	3,688	9,827
19A	-	-	-	56	-	-	-	-	56	9,193*
19B	-	-	-	14	-	-	-	-	14	N/A
2	776	322	-	-	-	-	-	-	1,098	53,507
20	-	-	-	2,526	409	-	-	-	2,935	1,060,454
20A	-	-	-	329	-	-	-	-	329	12,160*
21	-	-	-	1,607	134	-	-	-	1,741	54,345*
21A	-	-	-	49	-	-	-	-	49	4,106*
22	-	-	-	743	42	-	-	-	785	91,867*
23	-	-	-	2,396	186	-	-	-	2,582	39,637
24	46	-	231	2,138	93	-	-	-	2,508	59,995
25	-	-	1,183	1,382	177	42	-	-	2,784	80,746
26	-	-	-	23	-	-	-	-	23	6,992
27	-	-	1,975	1,081	314	-	-	-	3,370	7,438*
28	-	-	1,462	1,288	37	-	-	-	2,787	23,951
28A	-	-	1,070	148	-	-	-	-	1,218	4,009*
29	-	-	1,514	296	125	-	-	-	1,935	211,044
2A	302	196	-	-	-	-	-	-	498	8,600*
2B	158	70	-	-	-	-	-	-	228	10,549*
2C	588	142	-	56	-	-	-	-	786	8,149*
3	1,332	803	-	182	238	-	-	-	2,555	79,375

Water Source Lake ID	2023	2024							Total Use (m³)	Available Capacity (m³)
	December	January	February	March	April	May	July	August		
30	-	-	2,936	929	306	98	-	-	4,269	56,674
32	275	1,288	3,511	3,465	265	-	-	-	8,803	868,067
32 Pond 1	273	-	-	-	-	-	-	-	273	2,766*
34 (Bathurst Lake)	4,690	581	2,121	5,084	1,963	-	14	70	14,523	32,516,148
3A	-	42	-	-	-	-	-	-	42	5,997*
4	551	771	-	154	28	-	-	-	1,504	19,379
4A	181	246	-	-	-	-	-	-	427	74,890*
4B	-	56	-	-	-	-	-	-	56	N/A
5	42	530	-	203	28	-	-	-	803	22,275*
5A	-	195	-	-	-	-	-	-	195	396,107*
6	-	1,209	-	462	126	-	-	-	1,797	25,362
7	-	98	-	-	-	-	-	-	98	424,972
8	-	1,563	-	882	364	-	-	-	2,809	113,798
8A	-	1,751	28	-	-	-	-	-	1,779	5,502*
8B	-	1,224	-	-	-	-	-	-	1,224	5,651*
9	-	1,106	-	1,176	350	-	-	-	2,632	53,703
9A	-	298	-	-	-	-	-	-	298	3,892*
9B	-	1,285	-	-	-	-	-	-	1,285	6,927*
Goose Lake	122	-	-	-	-	-	-	-	122	608,700*
No Name Lake	-	252	-	-	-	-	-	-	252	3,227*
Small Lake	-	126	-	-	-	-	-	-	126	N/A

Water Source Lake ID	2023	2024							Total Use (m ³)	Available Capacity (m ³)
	December	January	February	March	April	May	July	August		
Waterfall Lake	-	-	154	-	-	-	-	-	154	N/A
Unknown	12	42	28	91	70	-	-	-	364	N/A
Total	10,185	16,718	29,755	33,065	7,627	140	14	70	97,574	

Notes:

**Available capacities of these lakes were calculated based on lake surface area multiplied by 10 cm. Capacity shown for Goose Lake is the total allowable water use for all purposes as defined in the Licence.*

N/A = available capacities could not be calculated because the location and surface area of the waterbody could not be verified.

For all other lakes available capacity was that outlined in the WIR Technical Memorandum.

APPENDIX B WASTE DISPOSAL

Table B-1 Goose Waste Backhauled

Date Shipped	Description	Quantity	Container Type	Weight	Dangerous Goods (Y/N)
				(Lbs)	
29-Jan-24	Ash/aerosol	4	Pallet	3,782	N
13-Feb-24	Ash	1	Pallet	412	N
1-Mar-24	Waste oil	8	Pallet	17,270	N
9-Mar-24	Grocery blankets	1	Skid	374	N
12-Apr-24	Waste oil	11	Tote	22,000	Y
15-Apr-24	Waste oil	8	Tote	16,000	Y
21-Apr-24	Ash/rocks	7	Pallet	11,834	N
21-Apr-24	Ash/rocks	7	Pallet	8,228	N
23-Apr-24	Waste oil	11	Tote	15,837	Y
13-May-24	Megabags/totes	6	Bags/totes	6,480	N
15-May-24	WWR	3	Tote	2,940	N
15-May-24	Drums	6	Pallet	4,452	N
23-May-24	Contaminated soil, cans	4	Pallet	3,452	N
23-May-24	Ash, contaminated fuel	6	Pallet	6,224	Y
23-May-24	Waste product	7	Pallet	5,674	Y
30-May-24	Waste product	5	Pallet	2,723	N
30-May-24	Ash	5	Pallet	5,552	N
30-May-24	Contaminated soil	4	Pallet	11,098	N
3-Jul-24	Used oil, hydraulic fluids	2	Tote	4,184	Y
3-Jul-24	Used oil	5	Tote	9,988	Y
4-Jul-24	Contaminated soil	4	Megabag	7,066	N
6-Jul-24	Contaminated soil	2	Megabag	4,622	N
8-Jul-24	Contaminated soil	3	Megabag	9,136	N
8-Jul-24	Contaminated soil	1	Megabag	2,648	N
13-Jul-24	Ash	5	Pallet	4,842	N
13-Jul-24	Contaminated soil	5	Megabag	9,892	N
13-Jul-24	Contaminated soil	2	Megabag	7,188	N
16-Jul-24	Contaminated soil	4	Megabag	7,542	N
29-Jul-24	Ash, contaminated waste	8	Skid	7,646	Y
12-Aug-24	Waste water	1	Pallet	2,128	N
12-Aug-24	Waste water	7	Pallet	14,180	N
17-Aug-24	Ash	3	Pallet	3,330	N
19-Aug-24	Contaminated soil	3	Megabag	7,768	N
20-Aug-24	Contaminated soil	3	Megabag	9,110	N
26-Aug-24	Contaminated soil	3	Pallet/tote	4,120	N
26-Aug-24	Ash, used hoses, oil filters	6	Pallet/tote	6,137	N
16-Sep-24	Contaminated soil	3	BAGS	5,518	Y

Date Shipped	Description	Quantity	Container Type	Weight	Dangerous Goods (Y/N)
				(Lbs)	
5-Oct-24	Waste copper	5	Pallet	2,288	N
5-Oct-24	Ash	5	Pallet	5,749	N
2-Nov-24	Contaminated soil, hoses, filters	10	Megabag/pallet	8,894	N
4-Nov-24	Ash, contaminated soil	8	Megabag/pallet	11,850	Y
5-Nov-24	Contaminated soil	2	Megabag	3,338	Y
5-Nov-24	Ash	2	Drum	2,107	N
8-Nov-24	Fuel contaminated water, ash	12	Pallet/tote	7,812	Y
9-Nov-24	Fuel contaminated water, oil filters	12	Megabag/tote	11,954	Y
11-Nov-24	Megabags, contaminated oil	8	Skid	8,698	Y
11-Nov-24	Used hydraulic, oil filters	10	Tote	6,986	Y
15-Nov-24	Used hydraulic, oil filters	8	Megabag/tote	8,238	N

Table B-2 MLA Waste Backhauled

Date Shipped	Description	Quantity	Container Type	Weight	Dangerous Goods (Y/N)
				(Lbs)	
13-Jun-24	Waste coolant	1	Tote	2,333	Y
8-Aug-24	Ash	1	Pallet	1,244	N
8-Aug-24	Used grease injectors	1	Pallet	196	Y
8-Aug-24	Used hydraulic hoses	1	Pallet	1,182	Y
8-Aug-24	Used oil filters	1	Pallet	1,015	Y
26-Aug-24	Ash	4	Drum	1,039	N
11-Sep-24	Ash	1	Pallet	1,170	N
20-Sep-24	Contaminated soil	1	Megabag	3,110	N
20-Sep-24	Contaminated soil	1	Megabag	2,275	N
20-Sep-24	Ash	1	Pallet	895	N
21-Sep-24	Waste coolant	4	Pallet	1,500	N
21-Sep-24	Contaminated waste fuel	4	Pallet	1,675	N
21-Sep-24	Waste coolant	4	Pallet	2,200	N
6-Oct-24	Ash	1	Pallet	1,274	N

Table B-3 Goose Incinerator, Open Burn, and Waste Oil to Furnace Log

Incinerator*				Ash (lbs)	Open Burn (m³) [†]	Waste Oil to Furnace (L) [‡]
Month	Food (lbs)	Human Waste (lbs)	Miscellaneous (lbs)			
January	29,418	32,836	26,884	5,010	59	0
February	25,844	43,505	21,910	5,138	0	0
March	30,320	28,541	18,030	6,644	324	0
April	30,023	16,685	26,250	4,943	195	0
May	55,593	9,244	14,141	5,235	126	0
June	40,784	6,973	16,906	8,311	310	0
July	36,259	8,404	21,195	7,930	300	0
August	41,500	6,708	17,513	3,638	362	0
September	42,794	5,952	20,810	4,352	375	0
October	41,683	6,554	28,709	5,177	210	4,000
November	45,393	7,986	32,016	3,651	1,687	6,450
December	79,408	5,060	25,603	1,020	1,149	10,650
Annual Total	499,018	178,448	269,967	61,047	5,098	21,100

Notes:

*No incinerator log was available for 3 days in January, 23 days in February, 3 days in May, and 1 day in October; amounts of waste incinerated on those days were estimated as the average of available data for the remainder of the month.

[†]The volume of material open burned on some days in March and May to December was not recorded; amounts of material open burned on these days were estimated as the average of available data for the remainder of the month. Volumes were not recorded for any open burns in October; amounts of material open burned on these days were estimated as the average of available data for the year.

[‡]Waste oil to furnace quantities represent waste oil recycled by using it to power waste oil-fueled heating units.

Table B-4 MLA Incinerator and Open Burn Log

Incinerator					Ash (lbs)	Open Burn (m³)
Month	Food (lbs)	Human Waste (lbs)	Miscellaneous (lbs)	Waste Water (L)		
April	13,329	13,041	9,391	3,027	5,236	0

Note:

Due to an oversight, the incinerator log for the MLA was only recorded in April.

Table B-5 Greywater Discharge Volumes at the MLA Forward Camp

Month	Greywater Volume Discharged (m ³)
January	35
February	56
March	89
April	98
May	6*
June	0
July	14
August	70
September	0
October	0
November	0
December	97*
Total	465

Notes:

*Greywater estimated as 100% of freshwater supplied to the camp. *These values calculated based on average per-capita greywater discharge for months with available data, multiplied by camp occupancy.*

Table B-6 Greywater Discharge Volumes at the Goose Forward Camp

Month	Greywater Volume Discharged (m ³)
January	105
February	42
March	42
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	189

Note:

Greywater discharge estimated as 100% of freshwater supplied to the camp.

Table B-7 Waste Rock Disposal

Month	Echo Pit WRSA (m ³)	NAG Stockpile (m ³)
January	-	-
February	-	-
March	-	-
April	-	-
May	115,642	-
June	231,541	-
July	219,531	11,218
August	103,093	10,350
September	222,333	39,500
October	202,593	63,400
November	213,826	111,823
December	214,775	126,500
Total	1,523,334	N/A*

Note:

**NAG stockpile volume is reported at the beginning of each month, cumulative volume is not tracked.*

APPENDIX C MONITORING PROGRAM ACTIVITY OVERVIEW BY STATION

Table C-1 2024 Monitoring Activity Overview by Station

Monitoring Program Station	Monitoring Type	Description	Mine Phase	Group Code*	Frequency	Monitoring Activity
BRP-G-01 to BRP-G-TBD	Regulated Monitoring	General Site Runoff Surficial runoff anywhere at both Goose Property and MLA, including quarries; monitoring for erosion and sedimentation.	Construction	C	Weekly if flow enters a waterbody	Flows were observed entering Goose Lake during freshet 2024, samples collected from BRP-G-01, 02, and 03
BRP-S-01 to BRP-S-TBD	General Monitoring	General Seeps Seepage or runoff from excavated and/or stockpiled material anywhere at both Goose Property and MLA, including quarries, that does not gather into a collection system or the site is reclaimed.	Construction and Operations	A, D	Monthly during flow, or as found	BRP-S-01 sampled twice in 2024
BRP-01	Regulated Monitoring	Goose Lake Discharge (discharge point for release of dewatering effluent with or without treatment)	Construction	A, B, G	Weekly during dewatering	N/A – dewatering activities have not been initiated
				D	Four times during dewatering, at the same time as the weekly samples	
				H	Once per month during dewatering, at the same time as Group D	
				I	One time during dewatering, at the same time as Group D	
BRP-02	General Monitoring	Llama Lake (intake point for dewatering, triggers need for treatment prior to discharge at BRP-01)	Construction	C (TSS only)	Weekly if treatment is required; no sample if treatment is not required	N/A – dewatering activities have not been initiated
BRP-03	Verification Monitoring	Llama Pit (representative of collected pit water prior to transfer to tailings management facility)	Operations Stage 1 to Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated, N/A mine phase

Monitoring Program Station	Monitoring Type	Description	Mine Phase	Group Code*	Frequency	Monitoring Activity
BRP-04	General Monitoring	Llama Pit Lake (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure* to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated, N/A mine phase
BRP-05	Verification Monitoring	Llama WRSA Pond (representative of collected water quality)	Operations Stage 1 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated, N/A mine phase
BRP-06	General Monitoring	Umwelt Lake (intake point for dewatering, triggers need for treatment prior to discharge at BRP-01)	Construction	C (TSS only)	Weekly if treatment is required; no sample if treatment is not required	N/A – dewatering activities have not been initiated
BRP-07	Verification Monitoring	Umwelt Pit (representative of collected pit water prior to transfer to tailings management facility)	Construction to Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-08	General Monitoring	Umwelt Pit Lake (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated, N/A mine phase
BRP-09	Verification Monitoring	Umwelt WRSA Pond (representative of collected water quality, including landfill seepage/runoff)	Construction to Closure (early)*	A, G	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-10	Verification Monitoring	Primary Water Pond (representative of collected water quality)	Construction to Closure (early)	A, D	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-11	Verification Monitoring	Saline Water Pond (representative of stored water quality)	Construction (late) to Closure (early)	A, D	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-12	General Monitoring	Big Lake Intake (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Four times per year	N/A – facility construction has not been initiated
				B	Weekly	
BRP-13	Verification Monitoring	Ore Stockpile Pond (representative of collected water quality)	Construction to Closure (early)	A, D	At Licensee's discretion	N/A - facility still in construction in 2024

Monitoring Program Station	Monitoring Type	Description	Mine Phase	Group Code*	Frequency	Monitoring Activity
BRP-14	Verification Monitoring	ANFO Plant (representative of collected water quality)	Construction to Closure	A, E	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-15	Regulated Monitoring	Goose Fuel Tank Farm (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	Sampled prior to discharge at Goose Fuel Tank Farm and Goose Lake Exploration Fuel Tank Farm
BRP-16	Regulated Monitoring	Goose Hazardous Waste Management Area (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-17	Regulated Monitoring	Goose Property Sewage Treatment Plant (treated sewage discharge/drainage immediately prior to the point of entry into freshwater)	Construction to Closure	A, F	Monthly	Sampled when water was available three times in September
BRP-17A	Regulated Monitoring	Goose Property Sewage Treatment Plant (discharge point for treated sewage into Tailings Storage Facility or Tailing Facility)	Construction to Closure*	A, F	Prior to discharge	N/A – discharge only occurred on the tundra in 2024; the TSF is not yet constructed
BRP-18	General Monitoring	Llama Watershed Outflow (representative of non-contact water, PN04 from Water and Load Balance)	Operations Stage 1 to Closure	A, D	Once during freshet and monthly during upstream construction while visible flow is present at the stations	N/A - mine phase
BRP-19	General Monitoring	Echo Outflow (representative of non-contact water). PN09 from water and load balance	Operations Stage 1 to Closure	A, D	Once during freshet and monthly during upstream construction while visible flow is present at the stations	N/A - mine phase
BRP-20	Verification Monitoring	Echo Pit (representative of collected pit water prior to transfer to tailings management facility)	Operations Stage 2	A, G	At Licensee's discretion	N/A - initial construction has occurred; no transfer or discharge of

Monitoring Program Station	Monitoring Type	Description	Mine Phase	Group Code*	Frequency	Monitoring Activity
						water required in 2024
BRP-21	General Monitoring	Echo Pit Lake (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated, N/A mine phase
BRP-22	Verification Monitoring	Echo WRSA Pond (representative of collected water quality)	Operations Stage 2 to Closure (early)	A, G	At Licensee's discretion	N/A – facility construction has not been initiated, N/A mine phase
BRP-23	General Monitoring	Gander Pond Outflow (representative of non-contact water, PN07 from Water and Load Balance)	Operations Stage 1 to Closure	A, D	Once during freshet and monthly during upstream construction while visible flow is present at the stations	N/A - mine phase
BRP-24	General Monitoring	Goose Lake Intake (intake point for potable and industrial water withdrawal)	Operations Stage 1 to Closure (early)	B	Weekly	N/A- no water withdrawn under this Licence in 2024
BRP-25	Verification Monitoring	Goose Pit (representative of collected pit water prior to transfer to tailings management facility)	Operations Stage 1 to Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated, N/A mine phase
BRP-26	General Monitoring	Goose Pit Lake (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure* to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated, N/A mine phase
BRP-27	Verification Monitoring	Goose Main Tailings Facility (intake point for water treatment, represents pre-treatment water quality)	Operations Stage 3 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated, N/A mine phase
BRP-28	Verification Monitoring	Goose Main Tailings Facility (discharge point for water treatment, represents post-treatment water quality)	Operations Stage 3 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated, N/A mine phase

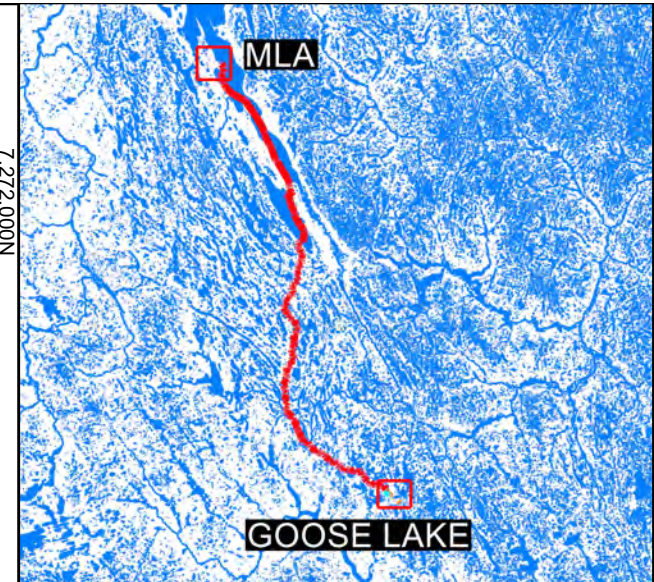
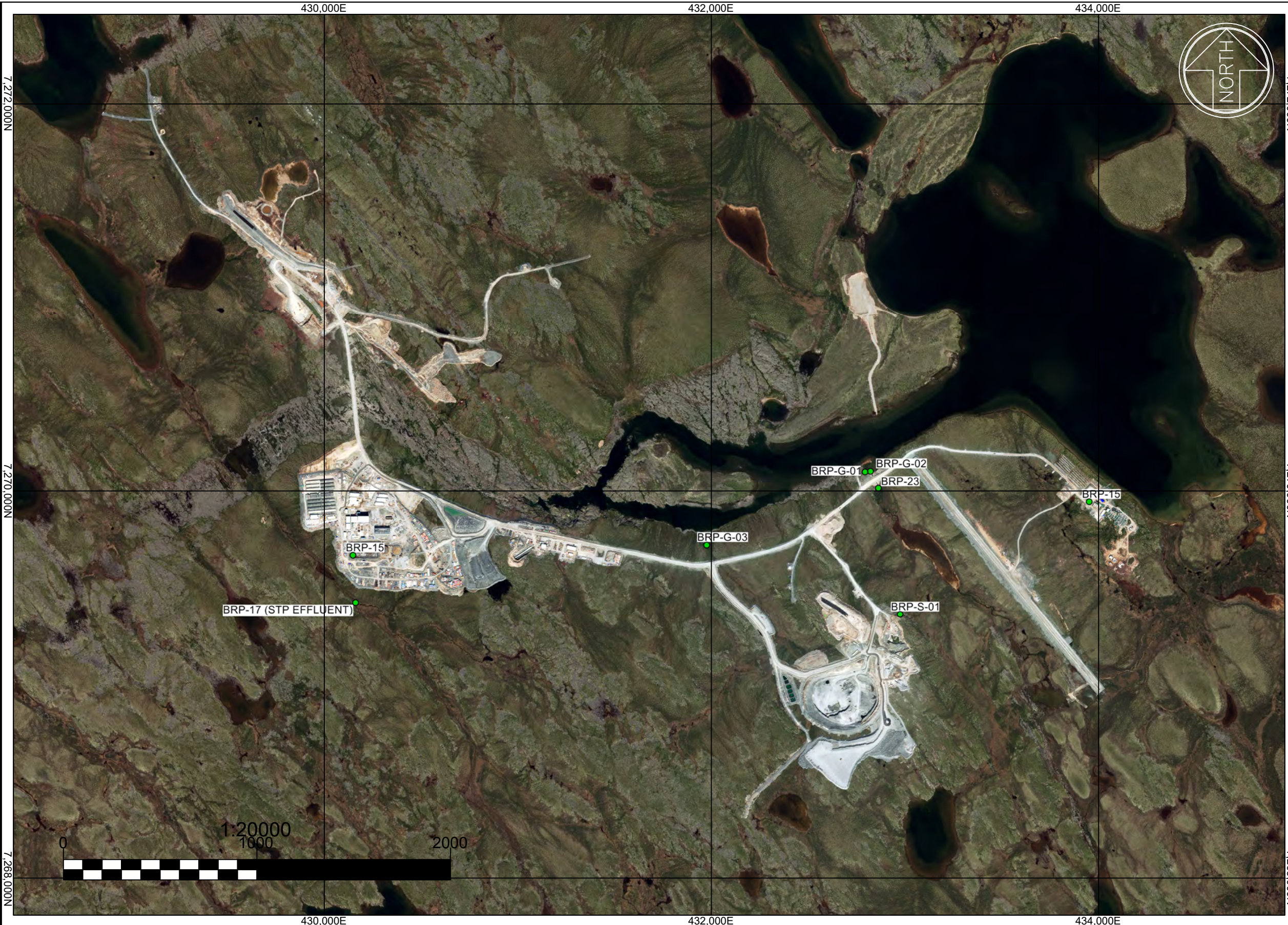
Monitoring Program Station	Monitoring Type	Description	Mine Phase	Group Code*	Frequency	Monitoring Activity
BRP-29	Verification Monitoring	TSF WRSA Pond (representative of collected water quality, including landfill seepage/runoff)	Operations Stage 1 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated, N/A mine phase
BRP-30	General Monitoring	Goose Southeast Inflow (representative of non-contact water, PN06 from Water and Load Balance)	Operations Stage 1 to Closure	A, D	Once during freshet	N/A - mine phase
BRP-40	General Monitoring	Bathurst Inlet Intake (intake point in marine environment for potable and industrial water withdrawal)	Construction to Closure	A, D, B	At Licensee's discretion	Two samples collected in 2024
BRP-41	General Monitoring	Bathurst Inlet Discharge (discharge point in marine environment for effluent from desalinization plant)	Construction to Closure	A, J	At Licensee's discretion	Two samples collected in 2024
BRP-42	Regulated Monitoring	MLA Greywater (representative drainage at point of entry to the marine receiving environment)	Construction to Closure	A, F	Prior to discharge or transfer of water	N/A - greywater was discharged at the MLA in 2024 but no water was available for sampling at BRP-42
BRP-43	Regulated Monitoring	MLA Fuel Tank Farm (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	Sampled prior to discharge
BRP-44	Regulated Monitoring	MLA Landfarm (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-45	Regulated Monitoring	MLA Hazardous Waste Management Area (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-49	Regulated Monitoring	MLA Temporary Fuel Storage Facility (representative of collected water quality)	Construction	A, E	Prior to discharge or transfer of water	N/A - no water was discharged from this facility
BRP-51	Regulated Monitoring	Goose Landfarm (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A - no water was discharged from this facility

Monitoring Program Station	Monitoring Type	Description	Mine Phase	Group Code*	Frequency	Monitoring Activity
BRP-52	General Monitoring	MLA Pond S1 (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	N/A - no water was withdrawn from this location in 2024
				B	Weekly when in use	
BRP-53	General Monitoring	MLA Pond S2 (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	N/A - no water was withdrawn from this location in 2024
				B	Weekly when in use	
BRP-54	General Monitoring	MLA Lake 3 (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	N/A - no water was withdrawn from this location in 2024
				B	Weekly when in use	
BRP-55	General Monitoring	MLA Lake 4 (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	N/A - no water was withdrawn from this location in 2024
				B	Weekly when in use	
BRP-56	General Monitoring	Llama Tailings Facility (collected at "inlet" to treatment facility Pre-treatment quality)	Operations to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated, N/A mine phase
BRP-57	General Monitoring	Llama Tailings Facility (after treatment; collected at "outlet" of treatment facility; no discharge to the receiving environment Post-treatment quality to confirm treatment efficiency)	Operations to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated, N/A mine phase
BRP-58a to BRP-58xx (TBD)	Regulated Monitoring	Final Discharge Point Goose Lake			As per Part F, Item 16	N/A - no discharge occurred from this location in 2024
BRP-I-01 to BRP-I-TBD	General Monitoring	Interconnection Winter Ice Road Proximal Water Bodies (intake points for fresh water used in the construction of the Interconnection Winter Ice	Construction to Closure	B	Weekly when in use	Water withdrawn from various lakes on WIR. Flows tracked. No samples required.

Monitoring Program Station	Monitoring Type	Description	Mine Phase	Group Code*	Frequency	Monitoring Activity
		Road and WIR Service/Emergency Camps)				

Note:

** Refers to Group Code from Water Licence 2AM-BRP1831 Schedule I Table 1.*



LEGEND

ACTIVE SAMPLE LOCATIONS

- BRP-15 *FUEL TANK FARM* (MAIN CAMP AND EXPLORATION)
- BRP-17 *EFFLUENT DISCHARGE - LAND* (STP EFFLUENT)
- BRP-23 *GANDER POND OUTFLOW*
- BRP-G-01 *GENERAL RUNOFF*
- BRP-G-02 *GENERAL RUNOFF*
- BRP-G-03 *GENERAL RUNOFF*
- BRP-S-01 *GENERAL SEEPAGE*

ENVIRONMENTAL SAMPLING

2AM-BRP1831 WATER SAMPLES

Drawn By:	Date:	Scale:
Kristopher.Fife	2025-03-27	1:20000



APPENDIX D WATER QUALITY ANALYTICAL RESULTS

Table D-1 Water Quality Data for General Site Runoff, Site BRP-G-01

Date	Lowest Detection Limit	Unit	10-May-2024	17-May-2024	24-May-2024
Time			10:30:00	10:41:00	10:08:00
Station			BRP-G-01	BRP-G-01	BRP-G-01
Lab Job Number			YL2400406	YL2400441	YL2400502
Sample ID			YL2400406-001	YL2400441-001	YL2400502-001
Parameter					
pH	0.1	pH Units	6.49	6.4	6.72
Total Oil and Grease	5	mg/L	<u>5</u>	<u>5</u>	<u>5</u>
Total Suspended Solids	3	mg/L	3.3	14.3	6.3

Note:

Underlined values were equal to or below the detection limit; values are shown as the detection limit.

Table D-2 Water Quality Data for General Site Runoff, Site BRP-G-02

Date	Lowest Detection Limit	Unit	10-May-2024	24-May-2024
Time			10:30:00	10:21:00
Station			BRP-G-02	BRP-G-02
Lab Job Number			YL2400406	YL2400502
Sample ID			YL2400406-002	YL2400502-002
Parameter				
pH	0.1	pH Units	6.03	6.6
Total Oil and Grease	5	mg/L	<u>5</u>	<u>5</u>
Total Suspended Solids	3	mg/L	3.1	<u>3</u>

Note:

Underlined values were equal to or below the detection limit; values are shown as the detection limit.

Table D-3 Water Quality Data for General Site Runoff, Site BRP-G-03

Date	Lowest Detection Limit	Unit	10-May-2024	17-May-2024	24-May-2024
Time			11:00:00	10:59:00	10:36:00
Station			BRP-G-03	BRP-G-03	BRP-G-03
Lab Job Number			YL2400406	YL2400441	YL2400502
Sample ID			YL2400406-003	YL2400441-002	YL2400502-003
Parameter					
pH	0.1	pH Units	6.08	6.48	6.49
Total Oil and Grease	5	mg/L	No visible sheen, <u>5</u>	No visible sheen, <u>5</u>	No visible sheen, <u>5</u>
Total Suspended Solids	3	mg/L	15.3	5.7	9.5

Note:

Underlined values were equal to or below the detection limit; values are shown as the detection limit.

Table D-4 Water Quality Data for General Seeps

Date	Lowest Detection Limit	Unit	14-Aug-2024	30-Sep-2024
Time			14:30:00	16:30:00
Station			BRP-S-01	BRP-S-01
Lab Job Number			C463504	C479172
Sample ID			CTN584	CXA047
Parameter				
Alkalinity (PP as CaCO ₃)	0.5	mg/L	<u>0.5</u>	<u>0.5</u>
Alkalinity (Total as CaCO ₃)	0.5	mg/L	73	70.8
Aluminum (Al)-Dissolved	0.0005	mg/L	0.00625	0.0333
Aluminum (Al)-Total	0.0025	mg/L	1.17	0.104
Ammonia (N)-Total	0.13	mg/L	32	27
Antimony (Sb)-Dissolved	0.00002	mg/L	0.00954	0.00388
Antimony (Sb)-Total	0.00002	mg/L	0.00911	0.0041
Arsenic (As)-Dissolved	0.00002	mg/L	0.00853	0.00501
Arsenic (As)-Total	0.00002	mg/L	0.0124	0.0069
Barium (Ba)-Dissolved	0.00002	mg/L	0.0749	0.037
Barium (Ba)-Total	0.00005	mg/L	0.075	0.0404
Beryllium (Be)-Dissolved	0.00001	mg/L	<u>0.00001</u>	<u>0.00005</u>
Beryllium (Be)-Total	0.00001	mg/L	0.000028	<u>0.00005</u>
Bicarbonate (HCO ₃)	0.5	mg/L	89	86.3
Bismuth (Bi)-Dissolved	0.000005	mg/L	<u>0.000005</u>	<u>0.000025</u>
Bismuth (Bi)-Total	0.00001	mg/L	0.00002	<u>0.000025</u>
Boron (B)-Dissolved	0.01	mg/L	0.16	0.12
Boron (B)-Total	0.01	mg/L	0.172	0.12
Cadmium (Cd)-Dissolved	0.000005	mg/L	0.000238	0.000107
Cadmium (Cd)-Total	0.000005	mg/L	0.000251	0.000142
Calcium (Ca)-Dissolved	0.25	mg/L	215	111
Calcium (Ca)-Total	0.25	mg/L	208	111
Carbonate (CO ₃)	0.5	mg/L	<u>0.5</u>	<u>0.5</u>
Chloride (Cl)-Dissolved	0.5	mg/L	210	70
Chromium (Cr)-Dissolved	0.0001	mg/L	0.00316	0.00105
Chromium (Cr)-Total	0.0001	mg/L	0.00695	0.00139

Date	Lowest Detection Limit	Unit	14-Aug-2024	30-Sep-2024
Time			14:30:00	16:30:00
Station			BRP-S-01	BRP-S-01
Lab Job Number			C463504	C479172
Sample ID			CTN584	CXA047
Parameter				
Cobalt (Co)-Dissolved	0.000005	mg/L	0.0166	0.0187
Cobalt (Co)-Total	0.00001	mg/L	0.0182	0.0187
Conductivity	1	µS/cm	2250	1420
Copper (Cu)-Dissolved	0.00005	mg/L	0.0133	0.0211
Copper (Cu)-Total	0.0001	mg/L	0.0191	0.0245
Cyanide (CN)-Free	0.002	mg/L	0.0045	0.12
Cyanide (CN)-Strong Acid Dissoc.	0.0005	mg/L	0.0726	0.147
Cyanide (CN)-Weak Acid Dissoc.	0.0005	mg/L	0.056	0.112
Field Temperature	-	deg. C	10.7	4.9
Fluoride (F)	0.01	mg/L	0.246	0.178
Hardness (CaCO ₃)-Dissolved	0.5	mg/L	812	547
Hardness (CaCO ₃)-Total	0.5	mg/L	773	547
Hydroxide (OH)	0.5	mg/L	<u>0.5</u>	<u>0.5</u>
Iron (Fe)-Dissolved	0.001	mg/L	0.0099	0.0753
Iron (Fe)-Total	0.005	mg/L	1.64	0.271
Lead (Pb)-Dissolved	0.000005	mg/L	0.000104	0.000159
Lead (Pb)-Total	0.00002	mg/L	0.00209	0.00101
Lithium (Li)-Dissolved	0.0005	mg/L	0.0444	0.0288
Lithium (Li)-Total	0.0005	mg/L	0.0431	0.0292
Magnesium (Mg)-Dissolved	0.05	mg/L	66.8	65.4
Magnesium (Mg)-Total	0.25	mg/L	61.8	65.7
Manganese (Mn)-Dissolved	0.00005	mg/L	0.718	0.876
Manganese (Mn)-Total	0.0001	mg/L	0.736	0.899
Mercury (Hg)-Dissolved	0.0000019	mg/L	<u>0.0000019</u>	<u>0.0000019</u>
Mercury (Hg)-Total	0.0000019	mg/L	0.0000027	<u>0.0000019</u>
Molybdenum (Mo)-Dissolved	0.00005	mg/L	0.0119	0.0111
Molybdenum (Mo)-Total	0.00005	mg/L	0.0111	0.011

Date	Lowest Detection Limit	Unit	14-Aug-2024	30-Sep-2024
Time			14:30:00	16:30:00
Station			BRP-S-01	BRP-S-01
Lab Job Number			C463504	C479172
Sample ID			CTN584	CXA047
Parameter				
Nickel (Ni)-Dissolved	0.00002	mg/L	0.0757	0.136
Nickel (Ni)-Total	0.0001	mg/L	0.0755	0.136
Nitrate (as N)	1.2	mg/L	130	71
Nitrate (NO ₃)-Dissolved	5.3	mg/L	560	310
Nitrate plus Nitrite (N)	1.2	mg/L	130	72
Nitrite (as N)	0.01	mg/L	4.8	1.4
Nitrite (NO ₂)-Dissolved	0.033	mg/L	16	4.5
Nitrogen (N)-Total	2	mg/L	160	110
Organic Carbon (C)-Dissolved	0.2	mg/L	7.8	8.3
Organic Carbon (C)-Total	0.2	mg/L	6.4	7.1
pH	-	pH units	7.63	6.79
pH-Field	-	pH	6.88	7.17
Phosphorus (P)-Total	0.001	mg/L	0.0767	<u>0.01</u>
Phosphorus(P)-Dissolved	0.002	mg/L	0.0149	<u>0.01</u>
Potassium (K)-Dissolved	0.05	mg/L	39.8	23
Potassium (K)-Total	0.25	mg/L	33.3	23.1
Selenium (Se)-Dissolved	0.00004	mg/L	0.0028	0.00335
Selenium (Se)-Total	0.00004	mg/L	0.00336	0.0032
Silicon (Si)-Dissolved	0.05	mg/L	3.51	3.5
Silicon (Si)-Total	0.05	mg/L	4.29	3.59
Silver (Ag)-Dissolved	0.000005	mg/L	0.000106	0.000085
Silver (Ag)-Total	0.00001	mg/L	0.000128	0.000094
Sodium (Na)-Dissolved	0.05	mg/L	50.5	20.1
Sodium (Na)-Total	0.25	mg/L	46.5	20.3
Strontium (Sr)-Dissolved	0.00005	mg/L	1.37	0.516
Strontium (Sr)-Total	0.00005	mg/L	1.53	0.507
Sulphate (SO ₄)-Dissolved	2.5	mg/L	250	250

Date	Lowest Detection Limit	Unit	14-Aug-2024	30-Sep-2024
Time			14:30:00	16:30:00
Station			BRP-S-01	BRP-S-01
Lab Job Number			C463504	C479172
Sample ID			CTN584	CXA047
Parameter				
Sulphur (S)-Dissolved	3	mg/L	75.6	93
Sulphur (S)-Total	3	mg/L	83.1	91
Thallium (Tl)-Dissolved	0.000002	mg/L	0.000141	0.000068
Thallium (Tl)-Total	0.000002	mg/L	0.000103	0.000071
Thorium (Th)-Dissolved	0.00005	mg/L	<u>0.00005</u>	<u>0.00025</u>
Thorium (Th)-Total	0.00005	mg/L	0.00026	<u>0.00025</u>
Tin (Sn)-Dissolved	0.0002	mg/L	0.00041	<u>0.001</u>
Tin (Sn)-Total	0.0002	mg/L	0.00052	<u>0.001</u>
Titanium (Ti)-Dissolved	0.0005	mg/L	<u>0.0005</u>	<u>0.0025</u>
Titanium (Ti)-Total	0.002	mg/L	0.0415	0.0029
Total Dissolved Solids	10	mg/L	1400	880
Total Kjeldahl Nitrogen (Calc)	2	mg/L	24	42
Total Suspended Solids	1	mg/L	40	5.1
Turbidity	0.1	NTU	18	8.9
Un-Ionized Ammonia	0.0005	mg/L	0.37	0.049
Uranium (U)-Dissolved	0.000002	mg/L	0.00613	0.00346
Uranium (U)-Total	0.000005	mg/L	0.00596	0.00343
Vanadium (V)-Dissolved	0.0002	mg/L	0.00025	<u>0.001</u>
Vanadium (V)-Total	0.0002	mg/L	0.00312	<u>0.001</u>
Zinc (Zn)-Dissolved	0.0001	mg/L	0.00839	0.0299
Zinc (Zn)-Total	0.0005	mg/L	0.0155	0.0324
Zirconium (Zr)-Dissolved	0.0001	mg/L	<u>0.0001</u>	<u>0.0005</u>
Zirconium (Zr)-Total	0.0001	mg/L	0.00112	<u>0.0005</u>

Note:

Underlined values were equal to or below the detection limit; values are shown as the detection limit.

Table D-5 Water Quality Data for Goose Fuel Tank Farm and Goose Exploration Tank Farm

Date	Lowest Detection Limit	Unit	16-May-2024*	22-Sep-2024*	26-Sep-2024*	26-Sep-2024*	26-Sep-2024*
Time			13:51:00	17:10:00	16:10:00	16:30:00	16:35:00
Station			BRP-15	BRP-15	BRP-15 RAW	BRP-15 TREATED	BRP-15 DUP
Lab Job Number			YL2400433	C476856	C477898	C477898	C477898
Sample ID			YL2400433-001	CWM319	CWT216	CWT217	CWT218
Parameter			Goose Fuel Tank Farm	Goose Fuel Tank Farm	Goose Lake Exploration Tank Farm		
1,1-dichloroethane	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
1,1-dichloroethene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
1,1,1-trichloroethane	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
1,1,1,2-tetrachloroethane	1	ug/L	-	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
1,1,2-trichloroethane	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
1,1,2,2-tetrachloroethane	2	ug/L	-	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
1,2-dibromoethane	0.2	ug/L	-	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>
1,2-dichlorobenzene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
1,2-dichloroethane	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
1,2-dichloropropane	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
1,2,3-trichlorobenzene	1	ug/L	-	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
1,2,4-trichlorobenzene	1	ug/L	-	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
1,2,4-trimethylbenzene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>

Date	Lowest Detection Limit	Unit	16-May-2024*	22-Sep-2024*	26-Sep-2024*	26-Sep-2024*	26-Sep-2024*
Time			13:51:00	17:10:00	16:10:00	16:30:00	16:35:00
Station			BRP-15	BRP-15	BRP-15 RAW	BRP-15 TREATED	BRP-15 DUP
Lab Job Number			YL2400433	C476856	C477898	C477898	C477898
Sample ID			YL2400433-001	CWM319	CWT216	CWT217	CWT218
Parameter			Goose Fuel Tank Farm	Goose Fuel Tank Farm	Goose Lake Exploration Tank Farm		
1,3-dichlorobenzene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
1,3,5-trichlorobenzene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
1,3,5-trimethylbenzene	0.5	ug/L	-	<u>0.5</u>	0.72	<u>0.5</u>	<u>0.5</u>
1,4-dichlorobenzene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Alkalinity (PP as CaCO3)	0.5	mg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Alkalinity (Total as CaCO3)	0.5	mg/L	-	41.3	5.48	12.7	13.3
Aluminum (Al)-Total	0.0005	mg/L	-	0.194	0.138	0.0193	0.0277
Ammonia (N)-Total	0.005	mg/L	0.272	0.14	0.65	0.14	0.13
Antimony (Sb)-Total	0.00002	mg/L	-	0.00094	<u>0.0005</u>	<u>0.0005</u>	<u>0.0005</u>
Arsenic (As)-Total	0.00002	mg/L	0.0181	0.0048	0.00233	0.0005	0.00054
Barium (Ba)-Total	0.00002	mg/L	-	0.0268	0.026	0.012	0.0119
Benzene	0.0004	mg/L	<u>0.0005</u>	<u>0.0004</u>	<u>0.0004</u>	<u>0.0004</u>	<u>0.0004</u>
Beryllium (Be)-Total	0.00001	mg/L	-	0.000015	<u>0.0001</u>	<u>0.0001</u>	<u>0.0001</u>
Bicarbonate (HCO3)	0.5	mg/L	-	50.4	6.69	15.5	16.2
Bismuth (Bi)-Total	0.000005	mg/L	-	0.0000094	<u>0.001</u>	<u>0.001</u>	<u>0.001</u>

Date	Lowest Detection Limit	Unit	16-May-2024*	22-Sep-2024*	26-Sep-2024*	26-Sep-2024*	26-Sep-2024*
Time			13:51:00	17:10:00	16:10:00	16:30:00	16:35:00
Station			BRP-15	BRP-15	BRP-15 RAW	BRP-15 TREATED	BRP-15 DUP
Lab Job Number			YL2400433	C476856	C477898	C477898	C477898
Sample ID			YL2400433-001	CWM319	CWT216	CWT217	CWT218
Parameter			Goose Fuel Tank Farm	Goose Fuel Tank Farm	Goose Lake Exploration Tank Farm		
Boron (B)-Total	0.01	mg/L	-	0.035	<u>0.05</u>	<u>0.05</u>	<u>0.05</u>
Bromodichloromethane	0.5	µg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Bromofluorobenzene, 4-	1	%	84	-	-	-	-
Bromoform	0.5	µg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Bromomethane	2	ug/L	-	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
BTEX, total	1	µg/L	<u>1</u>	-	-	-	-
Cadmium (Cd)-Total	0.000005	mg/L	-	0.0000722	0.000099	<u>0.00001</u>	<u>0.00001</u>
Calcium (Ca)-Total	0.05	mg/L	-	70.1	8.75	19.8	18.1
Carbon tetrachloride	0.5	µg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Carbonate (CO3)	0.5	mg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Chloride (Cl)-Dissolved	0.5	mg/L	-	7.4	5.6	81	73
Chlorobenzene	0.5	µg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Chloroethane	1	µg/L	-	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Chloroform	0.5	µg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Chloromethane	2	µg/L	-	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>

Date	Lowest Detection Limit	Unit	16-May-2024*	22-Sep-2024*	26-Sep-2024*	26-Sep-2024*	26-Sep-2024*
Time			13:51:00	17:10:00	16:10:00	16:30:00	16:35:00
Station			BRP-15	BRP-15	BRP-15 RAW	BRP-15 TREATED	BRP-15 DUP
Lab Job Number			YL2400433	C476856	C477898	C477898	C477898
Sample ID			YL2400433-001	CWM319	CWT216	CWT217	CWT218
Parameter			Goose Fuel Tank Farm	Goose Fuel Tank Farm	Goose Lake Exploration Tank Farm		
Chromium (Cr)-Total	0.0001	mg/L	-	0.00124	<u>0.001</u>	<u>0.001</u>	<u>0.001</u>
cis-1,2-dichloroethene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
cis-1,3-dichloropropene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Cobalt (Co)-Total	0.000005	mg/L	-	0.00655	0.0116	<u>0.0002</u>	<u>0.0002</u>
Conductivity	1	µS/cm	-	657	93	384	348
Copper (Cu)-Total	0.00005	mg/L	0.0144	0.00635	0.00582	<u>0.0005</u>	<u>0.0005</u>
Dibromochloromethane	1	µg/L	-	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Dichloromethane	2	µg/L	-	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
Difluorobenzene, 1,4-	1	%	98.2	-	-	-	-
Ethylbenzene	0.0004	mg/L	<u>0.0005</u>	<u>0.0004</u>	<u>0.0004</u>	<u>0.0004</u>	<u>0.0004</u>
F1 (C6-C10)	100	µg/L	-	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
F1 (C6-C10) - BTEX	0.1	mg/L	-	<u>0.1</u>	<u>0.1</u>	<u>0.1</u>	<u>0.1</u>
Field Temperature	-	deg. C	-	6	7.4	8	8
Fluoride (F)	0.01	mg/L	-	0.195	0.025	0.056	0.058
Hardness (CaCO3)-Total	0.5	mg/L	-	269	31.7	69.8	64.6

Date	Lowest Detection Limit	Unit	16-May-2024*	22-Sep-2024*	26-Sep-2024*	26-Sep-2024*	26-Sep-2024*
Time			13:51:00	17:10:00	16:10:00	16:30:00	16:35:00
Station			BRP-15	BRP-15	BRP-15 RAW	BRP-15 TREATED	BRP-15 DUP
Lab Job Number			YL2400433	C476856	C477898	C477898	C477898
Sample ID			YL2400433-001	CWM319	CWT216	CWT217	CWT218
Parameter			Goose Fuel Tank Farm	Goose Fuel Tank Farm	Goose Lake Exploration Tank Farm		
Hydroxide (OH)	0.5	mg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Iron (Fe)-Total	0.001	mg/L	-	0.229	4.51	0.015	0.023
Lead (Pb)-Total	0.000005	mg/L	0.00391	0.000594	0.00088	<u>0.0002</u>	<u>0.0002</u>
Lithium (Li)-Total	0.0005	mg/L	-	0.00377	<u>0.002</u>	0.0034	0.0034
Magnesium (Mg)-Total	0.05	mg/L	-	22.9	2.38	4.94	4.74
Manganese (Mn)-Total	0.00005	mg/L	-	0.29	0.445	0.0063	0.0062
Mercury (Hg)-Total	0.0000019	mg/L	-	-	<u>0.0000019</u>	<u>0.0000019</u>	<u>0.0000019</u>
Methyl methacrylate	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Methyl-tert-butyl ether (MTBE)	0.5	ug/L	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Molybdenum (Mo)-Total	0.00005	mg/L	-	0.00273	<u>0.001</u>	<u>0.001</u>	<u>0.001</u>
Nickel (Ni)-Total	0.00002	mg/L	0.0384	0.0282	0.0121	<u>0.001</u>	<u>0.001</u>
Oxidation-reduction potential [ORP]	-	mV	-	-	99.2	66.5	66.5
pH	-	pH Units	7.46	6.71	5.63	6.56	6.73

Date	Lowest Detection Limit	Unit	16-May-2024*	22-Sep-2024*	26-Sep-2024*	26-Sep-2024*	26-Sep-2024*
Time			13:51:00	17:10:00	16:10:00	16:30:00	16:35:00
Station			BRP-15	BRP-15	BRP-15 RAW	BRP-15 TREATED	BRP-15 DUP
Lab Job Number			YL2400433	C476856	C477898	C477898	C477898
Sample ID			YL2400433-001	CWM319	CWT216	CWT217	CWT218
Parameter			Goose Fuel Tank Farm	Goose Fuel Tank Farm	Goose Lake Exploration Tank Farm		
pH-Field	-	pH	-	7.5	5.64	8.32	8.32
Phosphorus (P)-Total	0.002	mg/L	-	0.0097	-	-	-
Potassium (K)-Total	0.05	mg/L	-	11.2	2.54	12.7	12.6
Selenium (Se)-Total	0.00004	mg/L	-	0.000337	<u>0.0001</u>	0.00013	0.00014
Silicon (Si)-Total	0.05	mg/L	-	3.67	1.38	2.27	2.16
Silver (Ag)-Total	0.000005	mg/L	-	<u>0.000005</u>	<u>0.00002</u>	<u>0.00002</u>	<u>0.00002</u>
Sodium (Na)-Total	0.05	mg/L	-	6.92	2.82	30.2	30.3
Strontium (Sr)-Total	0.00005	mg/L	-	0.221	0.0327	0.0912	0.0881
Styrene	0.5	µg/L	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Sulphate (SO4)-Dissolved	0.5	mg/L	-	190	3.6	29	26
Sulphur (S)-Total	3	mg/L	-	63.3	<u>3</u>	9.2	9
Tetrachloroethene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Thallium (Tl)-Total	0.000002	mg/L	-	0.0000288	<u>0.00001</u>	<u>0.00001</u>	<u>0.00001</u>
Thorium (Th)-Total	0.00005	mg/L	-	0.000056	-	-	-
Tin (Sn)-Total	0.0002	mg/L	-	<u>0.0002</u>	<u>0.005</u>	<u>0.005</u>	<u>0.005</u>

Date	Lowest Detection Limit	Unit	16-May-2024*	22-Sep-2024*	26-Sep-2024*	26-Sep-2024*	26-Sep-2024*
Time			13:51:00	17:10:00	16:10:00	16:30:00	16:35:00
Station			BRP-15	BRP-15	BRP-15 RAW	BRP-15 TREATED	BRP-15 DUP
Lab Job Number			YL2400433	C476856	C477898	C477898	C477898
Sample ID			YL2400433-001	CWM319	CWT216	CWT217	CWT218
Parameter			Goose Fuel Tank Farm	Goose Fuel Tank Farm	Goose Lake Exploration Tank Farm		
Titanium (Ti)-Total	0.0005	mg/L	-	0.00327	<u>0.005</u>	<u>0.005</u>	<u>0.005</u>
Toluene	0.0004	mg/L	<u>0.0005</u>	<u>0.0004</u>	<u>0.0004</u>	<u>0.0004</u>	<u>0.0004</u>
Total Oil and Grease	2	mg/L	<u>5</u>	<u>2</u>	44	<u>2</u>	<u>2</u>
Total Suspended Solids	1	mg/L	38.3	6.5	22	<u>1</u>	<u>1</u>
Total Trihalomethanes	1.3	ug/L	-	<u>1.3</u>	<u>1.3</u>	<u>1.3</u>	<u>1.3</u>
trans-1,2-dichloroethene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
trans-1,3-dichloropropene	0.5	ug/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Trichloroethene	0.2	ug/L	-	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>
Trichlorofluoromethane	0.5	µg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Turbidity	0.1	NTU	-	12	45	1.1	1.5
Un-Ionized Ammonia	0.0005	mg/L	0.0021	0.00061	<u>0.0005</u>	0.0044	0.0043
Uranium (U)-Total	0.000002	mg/L	-	0.00133	<u>0.0001</u>	<u>0.0001</u>	<u>0.0001</u>
Vanadium (V)-Total	0.0002	mg/L	-	0.00048	<u>0.005</u>	<u>0.005</u>	<u>0.005</u>
Vinyl chloride	0.5	µg/L	-	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Xylene, m+p-_Concentration	0.0004	mg/L	<u>0.0004</u>	<u>0.0008</u>	<u>0.0008</u>	<u>0.0008</u>	<u>0.0008</u>

Date	Lowest Detection Limit	Unit	16-May-2024*	22-Sep-2024*	26-Sep-2024*	26-Sep-2024*	26-Sep-2024*
Time			13:51:00	17:10:00	16:10:00	16:30:00	16:35:00
Station			BRP-15	BRP-15	BRP-15 RAW	BRP-15 TREATED	BRP-15 DUP
Lab Job Number			YL2400433	C476856	C477898	C477898	C477898
Sample ID			YL2400433-001	CWM319	CWT216	CWT217	CWT218
Parameter			Goose Fuel Tank Farm	Goose Fuel Tank Farm	Goose Lake Exploration Tank Farm		
Xylene, o-_Concentration	0.0003	mg/L	<u>0.0003</u>	<u>0.0004</u>	0.0011	<u>0.0004</u>	<u>0.0004</u>
Xylenes, total	0.5	µg/L	<u>0.5</u>	<u>0.89</u>	1.1	<u>0.89</u>	<u>0.89</u>
Zinc (Zn)-Total	0.0001	mg/L	0.0748	0.144	0.119	<u>0.005</u>	<u>0.005</u>
Zirconium (Zr)-Total	0.0001	mg/L	-	0.00019	0.00012	<u>0.0001</u>	<u>0.0001</u>

Notes:

Underlined values were equal to or below the detection limit; values are shown as the detection limit.

**This water was not discharged to the environment.*

Table D-6 Water Quality Data for Goose Property Sewage Treatment Plant

Date	Lowest Detection Limit	Unit	02-Sep-2024	16-Sep-2024	22-Sep-2024
Time			07:05:00	07:15:00	16:30:00
Station			BRP-17	BRP-17	BRP-17
Lab Job Number			C468915	C473812	C476874
Sample ID			CUQ787	CVT036	CWM379
Parameter					
Alkalinity (PP as CaCO ₃)	0.5	mg/L	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Alkalinity (Total as CaCO ₃)	0.5	mg/L	16.2	7.85	7.31
Ammonia (N)-Total	0.005	mg/L	9.6	1.8	1.9
Bicarbonate (HCO ₃)	0.5	mg/L	19.8	9.58	8.92
Biochemical oxygen demand [BOD]	2	mg/L	4.4	2	2
Carbonate (CO ₃)	0.5	mg/L	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Chloride (Cl)-Dissolved	0.5	mg/L	60	11	14
Conductivity	1	µS/cm	555	174	189
Field Temperature	-	deg. C	8	5.5	5.4
Fluoride (F)	0.01	mg/L	0.058	0.03	0.032
Hydroxide (OH)	0.5	mg/L	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Nitrate (as N)	0.002	mg/L	11	2.8	2.8
Nitrate (NO ₃)-Dissolved	0.0089	mg/L	57	13	12
Nitrate plus Nitrite (N)	0.0022	mg/L	12	2.9	3.1
Nitrite (as N)	0.001	mg/L	1	0.13	0.34
Nitrite (NO ₂)-Dissolved	0.0033	mg/L	3.3	0.44	1.1
Nitrogen (N)-Total	0.2	mg/L	23	5.3	5.9
Organic Carbon (C)-Dissolved	0.2	mg/L	25	6.3	5.4
Organic Carbon (C)-Total	0.2	mg/L	26	5.1	4.8
Oxidation-reduction potential [ORP]	-	mV		105	148
pH	-	pH Units	6.44	5.79	6.1
pH-Field	-	pH	6.22	6.42	6.81
Phosphorus (P)-Total	0.001	mg/L	0.085	0.0041	0.0046
Total Coliforms	1	MPN/100mL	3,130	345	172
Sulphate (SO ₄)-Dissolved	0.5	mg/L	110	39	50

Date	Lowest Detection Limit	Unit	02-Sep-2024	16-Sep-2024	22-Sep-2024
Time			07:05:00	07:15:00	16:30:00
Station			BRP-17	BRP-17	BRP-17
Lab Job Number			C468915	C473812	C476874
Sample ID			CUQ787	CVT036	CWM379
Parameter					
Total Dissolved Solids	10	mg/L	330	110	110
Total Kjeldahl Nitrogen (Calc)	0.2	mg/L	9.1	2.2	2.8
Total Oil and Grease	2	mg/L	<u>2</u>	<u>2</u>	<u>2</u>
Total Suspended Solids	1	mg/L	8.5	1.9	1.3
Turbidity	0.1	NTU	8.1	1	1.5
Un-Ionized Ammonia	0.0005	mg/L	0.0025	0.00063	0.0016

Note:

Underlined values were equal to or below the detection limit; values are shown as the detection limit.

Table D-7 Water Quality Data for MLA Fuel Tank Farm

Date	Lowest Detection Limit	Unit	21-May-2024	01-Oct-2024
Time			09:20:00	08:30:00
Station			BRP-43	NWTANKFARM BRP-43
Lab Job Number			YL2400449	C479162
Sample ID			YL2400449-001	CXA030
Parameter				
Ammonia (N)-Total	0.005	mg/L	0.0355	0.034
Arsenic (As)-Total	0.0001	mg/L	0.00182	0.00397
Benzene	0.5	µg/L	<u>0.50</u>	<4
Bromofluorobenzene, 4-	1	%	81.1	-
BTEX - Total	1	µg/L	<u>1.0</u>	<1
Copper (Cu)-Total	0.0005	mg/L	0.00408	0.00629
Difluorobenzene, 1, 4-	1	%	98.3	-
Ethylbenzene	0.5	µg/L	<u>0.50</u>	<0.4
Lead (Pb)-Total	0.00005	mg/L	0.000466	0.00560
Methyl-tert-butyl ether (MTBE)	0.5	µg/L	<u>0.50</u>	<0.5
Nickle (Ni)-Total	0.0005	mg/L	0.00112	0.0054
Oil and Grease	5	mg/L	<u>5.0</u>	<2.0
pH	0.1	pH units	7.38	6.44
Styrene	0.5	µg/L	<u>0.50</u>	<0.5
Toluene	0.5	µg/L	<u>0.50</u>	<0.5
Total Suspended Solids	3	mg/L	15.1	210
Un-Ionized Ammonia	0.001	mg/L	<u>0.001</u>	-
Xylene, m+p-	0.4	µg/L	<u>0.40</u>	<0.00040
Xylene, o-	0.3	µg/L	<u>0.30</u>	<0.00040
Xylenes-Total	0.5	µg/L	<u>0.50</u>	<0.00089
Zinc (Zn)-Total	0.003	mg/L	0.0064	0.0132

Note:

Underlined values were equal to or below the detection limit; values are shown as the detection limit.

APPENDIX E 2024 BASELINE SURFACE WATER QUALITY REPORT



REPORT

B2Gold Back River Project - 2024 Surface Water Quality Report

Submitted to:

B2Gold Back River Corp.

Submitted by:

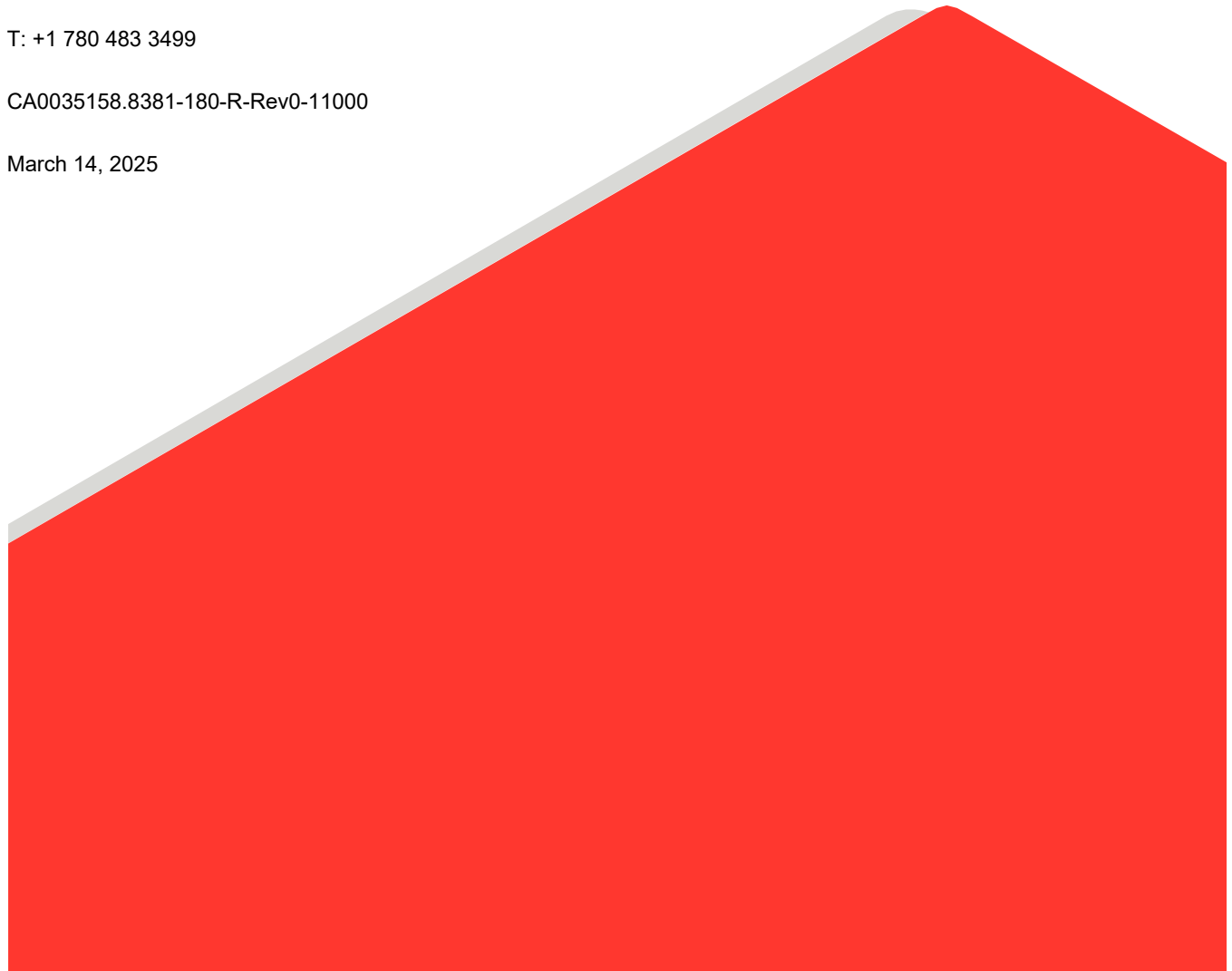
WSP Canada Inc.

16820 107 Avenue Edmonton, Alberta T5P 4C3 Canada

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CA0035158.8381-180-R-Rev0-11000

March 14, 2025



Distribution List

1 electronic copy - B2Gold Back River Corp.

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Table of Contents

1.0 INTRODUCTION 1

2.0 METHODS..... 1

 2.1 Lake Sampling Locations 1

 2.2 Stream Sampling Locations 4

 2.3 Field Methods 4

 2.4 Quality Assurance and Quality Control 5

 2.5 Laboratory Methods 6

 2.6 Data Analysis 6

3.0 RESULTS 7

 3.1 Quality Assurance and Quality Control 7

 3.2 Goose Lake and Reference B Lake Water Quality 7

 3.3 Stream Water Quality 9

4.0 SUMMARY AND CONCLUSIONS 10

5.0 REFERENCES 13

TABLES

Table 2-1: Goose Lake Water Quality Sampling Locations, 2024 2

Table 2-2: Stream Water Quality Sampling Locations, 2024 4

FIGURES

Figure 2-1: Surface Water Quality Sampling Stations, 2024..... 3

APPENDICES

APPENDIX A

2024 Quality Assurance and Quality Control Methods and Results

APPENDIX B

2024 Water Quality – Depth Profile Tables and Graphs

APPENDIX C

2024 Water Quality – Chlorophyll *a* data analysis

APPENDIX D

2024 Water Quality – Analytical Chemistry Results

APPENDIX E

2024 Water Quality – Time Series Plots

1.0 INTRODUCTION

The Back River Project (the Project) is a gold project formerly owned by Sabina Gold & Silver Corp, now owned by B2Gold Back River Corp. (B2Gold Nunavut). The Project is located within the West Kitikmeot region of southwestern Nunavut. It is situated approximately 400 km southwest of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet, and 520 km northeast of Yellowknife, Northwest Territories.

Field programs were undertaken in 2024 to support the Aquatic Effects Management Plan (AEMP) and the hydrodynamic (HD) model and consisted of field measurements and water quality sample collection from Goose Lake (including six lake inflows and the outflow) and Reference B Lake.

This annual report summarizes baseline water quality data collected in 2024 during five field programs (one under ice-cover conditions and four during open-water season). Water quality data were collected from Goose and Reference B lakes during ice-cover conditions in April and during open-water conditions in August and September. Goose Lake inflows and the outflow were sampled during four open-water programs (May, June, July, and September).

The collection of water quality samples followed the methods described in the updated AEMP study design for the Project (B2Gold Nunavut 2024).

2.0 METHODS

2.1 Lake Sampling Locations

Water quality sampling at Goose Lake occurred at the sampling locations presented in Table 2-1 and Figure 2-1. The ice-cover water quality sampling was conducted in April 2024 and consisted of collection of water quality samples and depth profiles of in situ field parameters in two AEMP lakes (i.e., Goose Lake and Reference B Lake). Sampling locations consisted of four areas within Goose Lake (i.e., West Basin, Central Basin, Southeast Basin, and Tail) and one area in Reference B Lake. Additional water samples were collected at multiple depths within the water column (i.e., top, middle, and bottom) at the four Goose Lake areas to support the HD model (Table 2-1).

The open-water sampling programs were conducted in August and September 2024 and consisted of the collection of water quality samples and depth profiles of in situ field measurements at Reference B Lake and Goose Lake West Basin and Central Basin to provide baseline data for the AEMP. In addition, manual water level survey and level datalogger records were completed at Goose Lake hydrometric stations, which are described in the 2024 Annual Hydrology Monitoring Report (WSP 2024a).

Table 2-1: Goose Lake Water Quality Sampling Locations, 2024

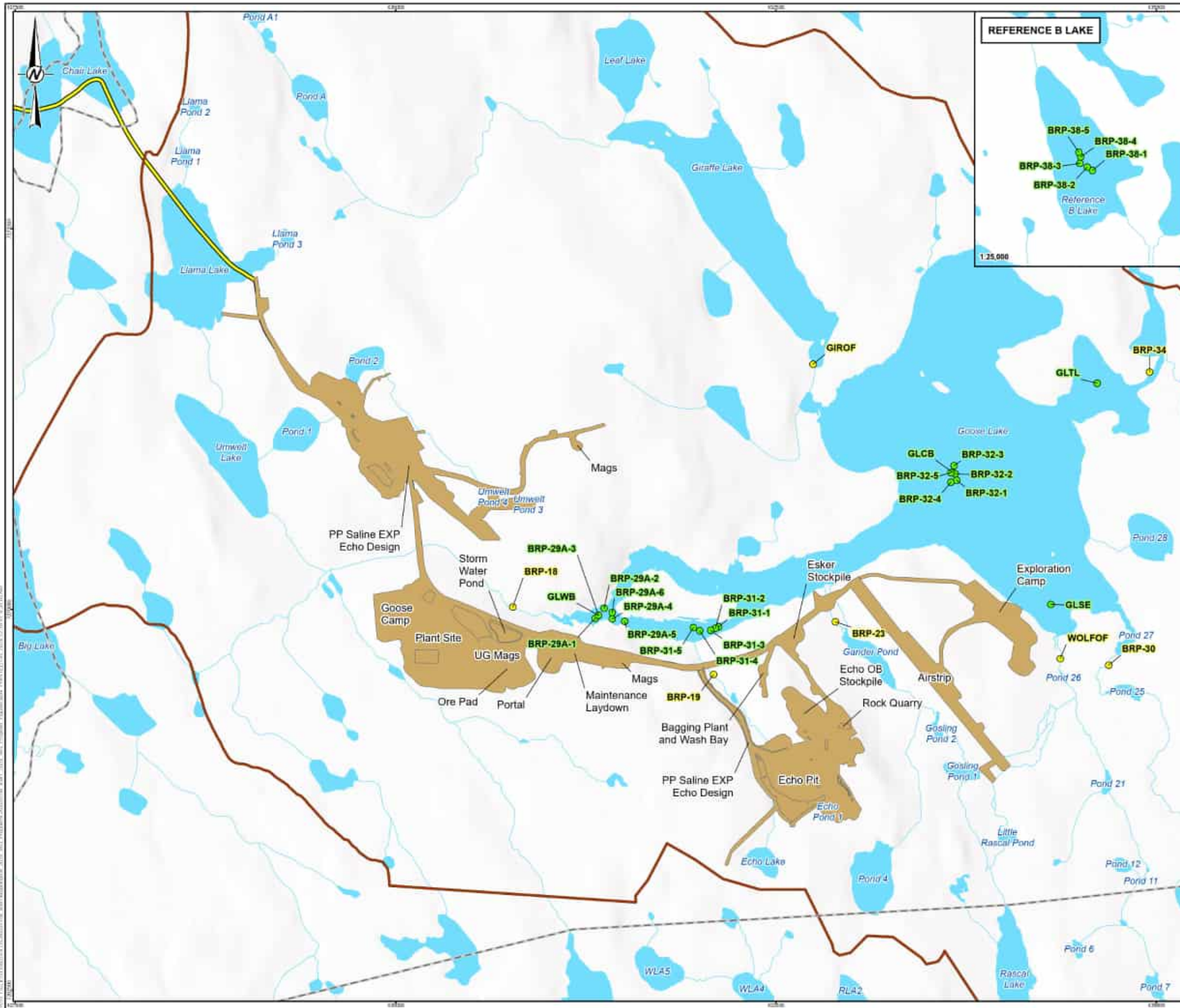
Lake Area	Baseline Program	Sample ID	UTM Coordinates ^(a) (Zone 13N, NAD 83)		Water Samples and Depth Profiles
			Easting (m)	Northing (m)	
Goose Lake West Bay (GLWB)	HD model	GLWB-T	431335	7269961	April
		GLWB-M			April
		GLWB-B			April
	AEMP	BRP-29A-1	431313	7269941	April
		BRP-29A-2	431372	7270008	April
		BRP-29A-3	431335	7269962	April
		BRP-29A-4	431425	7269938	April
		BRP-29A-5	431507	7269922	April
		BRP-29A-6	431425	7269980	April ^(b)
		BRP-31-1	432124	7269886	August / September ^(c)
		BRP-31-2	432103	7269877	August / September ^(c)
		BRP-31-3	432072	7269863	August / September ^(c)
		BRP-31-4	432000	7269860	August / September ^(c)
		BRP-31-5	431958	7269881	August / September ^(c)
Goose Lake Central Basin (GLCB)	HD model	GLCB-T	433664	7270900	April
		GLCB-M			April
		GLCB-B			April
	AEMP	BRP-32-1	433690	7270849	April / August / September ^(c)
		BRP-32-2	433681	7270890	April / August / September ^(c)
		BRP-32-3	433673	7270944	April / August / September ^(c)
		BRP-32-4	433652	7270835	April / August / September ^(c)
		BRP-32-5	433653	7270898	April / August / September ^(c)
Goose Lake Southeast Basin (GLSE)	HD model	GLSE-T	434308	7270033	April
		GLSE-M			April
		GLSE-B			April
Goose Lake Tail (GLTL)		GLTL-T	434612	7271485	April
		GLTL-M			April
		GLTL-B			April
Reference B Lake (REFB)	AEMP	BRP-38-1	442060	7258569	April / August / September ^(c)
		BRP-38-2	442026	7258591	April / August / September ^(c)
		BRP-38-3	441978	7258616	April / August / September ^(c)
		BRP-38-4	441983	7258658	April / August / September ^(c)
		BRP-38-5	441971	7258689	April / August / September ^(c)

Notes: T = top, M = middle, B = bottom. HD = hydrodynamic; AEMP = Aquatic Effects Management Plan.

(a) Target coordinates. Field coordinates are presented in Appendix D (Tables D-1 to D-5).

(b) No water quality samples were collected for station BRP-29A-6; only depth profile was measured.

(c) Samples for chlorophyll *a* analysis were collected in open water conditions (August and September) at BRP-31, BRP-32, and BRP-38.



REFERENCE B LAKE



- LEGEND
- LAKE WATER QUALITY STATION
 - STREAM WATER QUALITY STATION
 - WATERCOURSE
 - WINTER ICE ROAD
 - INUIT OWNED LAND
 - JUNE 2024 AS-BUILT FOOTPRINT
 - POTENTIAL DEVELOPMENT AREA (GOOSE PROPERTY AREA)
 - WATERBODY



REFERENCE(S)
PROJECT DATA OBTAINED FROM CLIENT. INUIT OWNED LANDS DATA OBTAINED FROM NIT, ©
NUNAVUT TUNNGAVIK INC. HYDROGRAPHY DATA OBTAINED FROM GEOGRAPHIC, ©
DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED. UPDATED BY WSP.
PROJECT COORDINATE SYSTEM: NAD 1983 UTM ZONE 13N

CLIENT
B2GOLD BACK RIVER CORP.

PROJECT
B2GOLD BACK RIVER PROJECT

TITLE
SURFACE WATER QUALITY SAMPLING STATIONS, 2024

CLIENT	YYYY-MM-DD	2024-12-11
DESIGNED	BCF	
PREPARED	PMT	
REVIEWED	BCF	
APPROVED	KS	

PROJECT NO. CA0035158.8381
REV. 0
FIGURE 2-1

2.2 Stream Sampling Locations

Water quality samples and in situ physico-chemical measurements were collected from Goose Lake inflows and the outflow in 2024 during four open-water programs (May, June, July, and September). Water level and discharge measurements were also recorded at these streams and results are described in the 2024 Annual Hydrology Monitoring Report (WSP 2024a). The stream water quality and hydrology program in May targeted freshet conditions and the June, July, and September programs targeted spring, summer and late summer conditions, respectively (Table 2-2 and Figure 2-1).

Table 2-2: Stream Water Quality Sampling Locations, 2024

Stream Description	Station ID	UTM Coordinates ^(a) (Zone 13N, NAD 83)		Water Samples
		Easting (m)	Northing (m)	
Goose Lake Inflow from Llama Watershed ^(b)	BRP-18	430772	7270016	May / June / July / September
Goose Lake Inflow to the Southeast Basin	BRP-30	434688	7269634	May / June / July / September
Goose Lake Inflow from Giraffe Lake	GIROF	432744	7271610	May / June / July / September
Goose Lake Inflow from Wolf Lake	WOLFOF	434370	7269677	May / June / July / September
Goose Lake Inflow from Gander Pond	BRP-23	432891	7269919	May / June / July / September
Goose Lake Inflow from Echo Lake	BRP-19	432091	7269573	May / June / July / September
Goose Lake Outflow	BRP-34	434956	7271559	May / June / July / September

(a) Target coordinates. Field coordinates are presented in Appendix D (Table D-6).

(b) Goose Lake inflow from Llama Lake and Umwelt Lake.

2.3 Field Methods

Water sample collection followed the procedures detailed in the AEMP study design (B2Gold Nunavut 2024) and methods published by the Canadian Council of Ministers of the Environment (CCME 2011).

Water samples were processed on site, and those requiring filtration were filtered through a syringe with a 0.45 µm filter head supplied by the laboratory before being preserved (if needed) with laboratory-provided preservative based on the required analysis as instructed by the laboratory. Samples for low-level metals and mercury analyses were not preserved in the field (they were preserved by the laboratory upon receipt). Processed samples were kept on site in a designated refrigerator before shipping; ice packs were added to the coolers to keep the samples as cool as possible (without freezing) during shipping. Samples were shipped by air to ALS Yellowknife as soon as practical after sample collection and processing, taking into consideration the parameter-specific holding times recommended by the laboratory. Filters for chlorophyll *a* analysis were kept frozen until the end of the program and delivered to ALS Yellowknife for analysis.

Lake Sampling

One discrete water quality sample was collected at each lake sampling station for the AEMP baseline program. Samples were collected at 1 m below the water or ice surface. For the HD model baseline program, three water samples were collected at each lake sampling station: near the top (30 cm below the water or ice surface), mid-depth, and bottom (30 cm above the sediment).

During the ice-cover program, an ice auger was used to drill the sampling hole, and snow and loose ice were cleared from the hole using a stainless-steel slotted spoon prior sampling. Snow cover depth (m), ice thickness (m), and effective water depth (m) were recorded at each station. Effective water depth (water depth under the ice

layer) was measured using a sounding line lowered in a slow and controlled manner to minimize disturbance of the water column or mobilizing of fine sediment from the lake bottom into the water column prior to profiling and sampling. Ice thickness was measured at each station from the bottom of the ice to the top (excluding the snowpack) using a measuring stick or tape.

During open-water conditions, field measurements and lake samples were collected from a boat. Total water depth (m), Secchi depth (m), sample depth (m), and field depth profiles were recorded at each sampling station. Turbidity measurements were also collected in the field using a calibrated LaMotte 2020 turbidity meter.

Samples were collected as grabs using a Kemmerer sampler. A polyvinyl Kemmerer sampler was used to sample water for most analyses, with the exception of low-level metals and low-level mercury, which were collected using a Teflon Kemmerer sampler. The sampler was rinsed with lake water, lowered to the required depth, triggered by the messenger to collect a sample, retrieved to the surface, and used to fill the laboratory sample bottles and for measuring turbidity. After filling the sample bottles, three turbidity measurements were made on the remaining sample water, and the average was recorded.

During open-water conditions, samples for chlorophyll *a* analysis were collected in triplicate using dark/amber bottles and processed (filtered) at the end of the day, back at camp. Chlorophyll *a* samples were kept in dark, away from sunlight, and maintained at low temperature. Each triplicate chlorophyll *a* sample consisted of a minimum of 0.25 L and a maximum of 1 L of water. Water collected for chlorophyll *a* analysis was filtered using an electric pump and 0.45 micrometre (μm) cellulose membrane filters (August and September) and 1.2 μm Whatman GF/C filters (August). Filters were then placed in black tubes provided by the laboratory, labelled with the sample ID, date and time, and kept frozen until the end of the program when they were delivered to the ALS Canada Ltd. (ALS) in Yellowknife for analysis. The chlorophyll *a* results are presented in Appendix D (Table D-7) and an interpretation of results obtained using different pore size filters is included in Appendix C.

Lake Depth Profiles

Depth profile measurements were made at each location before collecting water samples. These measurements consisted of specific conductivity, pH, water temperature, and dissolved oxygen (concentration and percent saturation) measured every 0.5 m. Measurements were taken only on the way down, moving slowly to allow the sensors to stabilize prior recording the measurements. During the ice-cover season program, the depth profile started at 0.3 m below the bottom of the ice layer following a brief period (i.e., 10 minutes approximately) of equilibration after ice augering. During open-water conditions, the depth profile started just below the water surface, at 0.3 m in September and 0.5 m in August.

Stream Sampling

In situ physico-chemical measurements of specific conductivity, pH, temperature, dissolved oxygen, turbidity, and water samples were collected from Goose Lake inflows and the outflow. Field measurements and stream samples were collected as grabs from the middle of the stream and at mid-depth.

2.4 Quality Assurance and Quality Control

Quality Assurance (QA) encompasses management and technical practices designed to generate data of known and appropriate quality, and quality control (QC) is a specific aspect of the QA process that incorporates internal techniques used to measure and assess data quality. The QA/QC procedures, assessment criteria, and QC results are presented in Appendix A.

QA/QC procedures were applied to field sampling, laboratory analysis, data entry, data analysis, and report preparation. Specific work instructions outlining each field task in detail were provided to field personnel and a pre-field meeting was held to review the instructions for the field data collection, and to confirm that all field personnel were familiar with the expectations of the sampling plan. Field equipment was calibrated throughout the field program following the manufacturers' specifications and samples were collected by appropriately trained and experienced personnel. Detailed field notes were recorded in waterproof field books and on pre-printed waterproof field datasheets. Datasheets and sample labels were checked at the end of each field day for completeness and accuracy, and were scanned to create electronic copies at the completion of the field program. Samples were labelled, filtered, preserved, and shipped according to standard protocols. Chain of custody forms were used to track shipment and receipt of samples. Upon entry of the field data into electronic database, the data were checked against field datasheets by a reviewer to verify the accuracy of data entry and to check for transcription errors.

Quality control samples collected during the 2024 water sampling programs consisted of seven travel blanks, seven field blanks, and seven duplicate samples, which accounted for 24% of the total number of water samples collected. Quality control samples were collected following the QA/QC procedures described in the AEMP study design (B2Gold Nunavut 2024).

2.5 Laboratory Methods

Sample bottles were provided by ALS Canada Ltd. (Yellowknife), an analytical laboratory accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA). Water quality samples were analyzed for:

- conventional parameters (i.e., specific conductivity, hardness, laboratory pH, total suspended solids [TSS], total organic carbon [TOC], dissolved organic carbon [DOC], total dissolved solids [TDS] measured and by calculation, alkalinity)
- major ions (i.e., bicarbonate, calcium, carbonate, chloride, fluoride, hydroxide, potassium, magnesium, sodium, sulphate, sulphide, and reactive silica)
- nutrients (i.e., nitrite, nitrate, total ammonia, total Kjeldahl nitrogen, orthophosphate, total dissolved phosphorus [TDP], total phosphorus [TP])
- low-level total and dissolved metals (i.e., aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, chromium, cobalt, copper, iron, lead, lithium, manganese, mercury, molybdenum, nickel, selenium, silicon, silver, strontium, sulphur, thallium, tin, titanium, uranium, vanadium, zinc, and zirconium)
- cyanides (total cyanide, free cyanide, and weak acid dissociable [WAD] cyanide)
- radium-226 (open-water, for lakes only)
- chlorophyll a (open-water, for lakes only)

2.6 Data Analysis

In situ and laboratory water quality data were summarized in tables and plots. Data were compared to the acute and chronic Canadian water quality guidelines for the protection of freshwater aquatic life (CCME 1999), federal environmental quality guidelines (FEQGs; GOC 2024), Canadian drinking water quality guidelines (Health Canada 2024), and site-specific water quality objectives (SSWQOs) for total arsenic and copper (Sabina 2017). In

addition, time series plots were prepared for selected water quality parameters using data collected for the project since 2011.

3.0 RESULTS

Depth profiles measured at lake stations are presented in tables and graphs in Appendix B. Water chemistry data collected at lakes and streams in 2024 are presented in tables in Appendix D, which also includes comparisons to regulatory water quality guidelines to identify exceedances that existed prior to mine development. Time series plots for selected water quality parameters are provided in Appendix E.

3.1 Quality Assurance and Quality Control

The QC results indicate that the water quality data collected in 2024 were acceptable, and results reported are considered reliable for use in future data analyses (Appendix A). Further details of the data quality review are provided in Appendix A.

3.2 Goose Lake and Reference B Lake Water Quality

Depth profiles recorded in 2024 showed vertical variability in field-measured parameters during the ice-cover season (April) and no variability during the open-water season (August and September) (Appendix B).

Under ice-cover conditions, water temperature increased with depth from near 0°C at the surface to 4°C at the bottom in the deep area of Goose Lake West Bay (BRP-29A-6) and up to 3°C in the rest of the Goose Lake areas and Reference B Lake. Dissolved oxygen concentration and pH declined vertically, which was most evident in the deep area of Goose Lake West Bay. Values of pH declined with depth from pH 7 to near pH 4.5 in the deep area of Goose Lake West Bay and by half of a pH unit in the rest of Goose Lake sampling areas and Reference B Lake. Dissolved oxygen concentration decreased with depth from about 13 mg/L near the surface to 3 mg/L near the bottom in the deep area of Goose Lake West Bay and in the tail area (GLTL), and to 4 mg/L near the bottom in the Southeast Basin (GLSE). Dissolved oxygen in Reference B Lake was about 15 mg/L near the surface and about 3 to 5 mg/L near the bottom. Specific conductivity was less variable with depth than other in situ parameters, but more variable among areas and stations. At the deep station in Goose Lake West Bay, there was a notable increase in specific conductivity between approximately 20 and 25 m from approximately 170 to 330 $\mu\text{S}/\text{cm}$.

During the open-water season, all in situ parameters had consistent values through the water column, with an expected trend of highest water temperatures during the August program (Appendix B). Depth profile was not collected at deep area of Goose Lake West Bay (BRP-29A-6) during open-water, which was strongly stratified during ice-cover conditions. Reference B Lake had similar pH, temperature and dissolved oxygen values, and lower specific conductivity compared to Goose Lake. Dissolved oxygen concentrations were all above 6.5 mg/L (the water quality guideline for the protection of freshwater aquatic life) in both lakes throughout the open-water season and pH values were above or only slightly below the minimum water quality guideline of pH 6.5.

Similar values and trends in the field profiles were observed in previous years (Golder 2022 and WSP 2023, 2024b), with exception of specific conductivity values at Goose Lake BRP-31 area in September, which were higher than in previous programs (see time series plot in Appendix E).

Water chemistry data collected at Goose Lake are provided in Appendix D (Tables D-1 to D-6), including a comparison of the 2024 dataset to relevant water quality guidelines and SSWQOs. Water quality parameters with concentrations above water quality guidelines/objectives were:

- Field and laboratory pH values were outside the lower limit of the recommended aesthetic guideline range (between 7.0 and 11; Health Canada 2024) in 74% and 20% of the samples at Goose Lake and Reference B Lake, respectively, and outside chronic guideline for the protection of aquatic life (between 6.5 and 9.0; CCME 1999) in 36% of samples at Goose Lake only.
- Nitrate concentrations at Goose Lake BRP-31 stations in September (open-water) were above the chronic guideline for the protection of freshwater aquatic life of 2.9 mg-N/L (CCME 1999).
- Nitrite concentrations at stations BRP-29A (except BRP-29A-4), GLWB, BRP-32, GLCB, and GLTL (except GLTL-T) in Goose Lake under ice-cover conditions were above the chronic guideline for the protection of freshwater aquatic life of 0.06 mg-N/L (CCME 1999).
- Total aluminum concentrations in samples collected at BRP-29A (except BRP-29A-2), GLWB, BRP-32 (except BRP-32-1 and BRP-32-4), GLCB-B, and GLTL (except GLTL-T) stations during the ice-cover season, and BRP-31 stations during open-water condition in September at Goose Lake were above the chronic guideline for the protection of freshwater aquatic life (pH dependent; CCME 1999).
- Total cobalt concentrations in samples collected at BRP-29A and GLWB stations during ice-cover season and BRP-31 stations during open-water conditions in September at Goose Lake were above the FEQG of 0.78 µg/L (hardness dependent; Environment Canada 2017).
- Total copper concentrations in samples collected at BRP-29A, GLWB, BRP-32-1, BRP-32-2, GLCB-B, GLCB-T, GLSE, GLTL-M, and GLTL-T stations under ice-cover conditions and BRP-31 stations in September under open-water season at Goose Lake were above chronic guideline for the protection of aquatic life of 2 µg/L (hardness dependent; CCME 1999).
- Dissolved copper concentrations at all stations in Goose Lake (except for GLSE-T) and stations BRP-38-2, BRP-38-3, and BRP-38-5 in Reference B Lake during the ice-cover conditions were above the FEQG range of between 0.2 and 2.9 µg/L (temperature, pH, DOC and hardness dependent; ECCC 2021).

Similar guidelines exceedances at the lakes were observed in previous years; however, some parameters that exceeded guidelines in 2024 (i.e., nitrate, nitrite, total aluminium and total cobalt) were measured at concentrations higher than in the past.

Several water quality parameters such as nitrate, ammonia, sulphate, chloride, calcium, magnesium, total dissolved solids, and metals (i.e., total and dissolved aluminum, arsenic, barium, cadmium, cobalt, manganese, nickel, selenium, sulphur, strontium, uranium, and zinc) measured in the Goose Lake West Bay area showed an increasing trend in concentrations in 2024. Goose Lake West Bay area had the highest concentrations of these parameters in September 2024, followed by April 2024, compared to the other Goose Lake areas, Reference B Lake, and to previous years (Golder 2022, WSP 2023, 2024b). Concentrations in August 2024 at all Goose Lake areas and Reference B Lake were similar to those observed in previous years. For some of these parameters (e.g., nitrate, ammonia, chloride, calcium, magnesium, total and dissolved aluminum, barium, cadmium, cobalt, manganese nickel, strontium, and zinc) an initial increase in concentrations compared to the previous years and other lake area was first observed in September 2023 and were in general lower than those observed in September 2024 (Appendix E). Total phosphorus concentrations in Goose and Reference B lakes were similar to

previous years and chlorophyll *a* concentrations were slightly higher in 2024 in both lakes than in previous years but all concentrations (historical and 2024) were within the oligotrophic range (Appendix D).

3.3 Stream Water Quality

Goose Lake inflows and the outflow had field pH ranging from pH 5.1 to 7.8 and about 15% of results were outside the recommended chronic pH range for the protection of freshwater aquatic life (between 6.5 and 9.0; CCME 1999) and 50% of the results were outside the drinking water aesthetic objective (between 7.0 and 11; Health Canada 2024). The pH values outside the water quality guideline and aesthetic objective in streams have been observed in past years (Golder 2022 and WSP 2023, 2024b).

Concentrations above water quality guidelines were observed for other parameters in samples collected at streams in 2024 (also presented in Appendix D; Table D-6):

- The total cyanide concentration at Goose Lake Inflow from Echo Lake (BRP-19) and Goose Lake Inflow from Gander Pond (BRP-23) in September were above the chronic guideline for the protection of freshwater aquatic life of 0.005 mg/L (CCME 1999).
- Nitrate concentrations at Goose Lake inflow from Llama watershed (BRP-18) in July and September, and at BRP-19 in May, June, and September were above the chronic guideline for the protection of freshwater aquatic life of 2.9 mg-N/L (CCME 1999). Nitrate concentration at BRP-19 in September was also above the drinking water Health Canada guideline of 10 mg-N/L (Health Canada 2024).
- Nitrite concentrations at BRP-19 in July and September were above the chronic guideline for the protection of freshwater aquatic life of 0.06 mg-N/L (CCME 1999).
- Total aluminum concentrations at BRP-18 in July and September, at BRP-19 in all samples, and at Goose Lake Inflow to the Southeast Basin (BRP-30) in May and September were above the calculated chronic guideline for the protection of freshwater aquatic life (5 µg/L at pH <6.5 and 100 µg/L at pH ≥6.5; CCME 1999). Total aluminum values at BRP-19 in May, June, and July were also above the sample-specific FEQGs of between 140 and 1,000 µg/L (temperature, pH, DOC and hardness dependent; ECCC 2022).
- Total arsenic concentration at BRP-19 in July was above the chronic guideline for the protection of freshwater aquatic life of 5.0 µg/L (CCME 1999).
- Total cadmium concentration at BRP-18 in July was above the calculated chronic guideline for the protection of freshwater aquatic life of 0.26 µg/L (hardness dependent; CCME 1999).
- Total chromium concentrations at BRP-19 in May, June, and July were above the calculated chronic guideline for the protection of freshwater aquatic life of 1.0 µg/L (guideline for chromium VI; CCME 1999).
- Total cobalt concentrations at BRP-18 in July and September, at BRP-19 in all samples, at Goose Lake Inflow from Gander Pond (BRP-23) in September, at Goose Lake Inflow from Giraffe Lake (GIROF) in May and September, and at Goose Lake Outflow (BRP-34) in May were above the FEQG of between 0.78 and 1.3 µg/L (hardness dependent; ECCC 2017).
- Total copper concentrations at BRP-18 in May and September, at BRP-19 in all samples, at BRP-30 in June, July, and September, at GIROF in May, June, and September, and at Goose Lake Inflow from Wolf Lake (WOLFOF) in July were above the calculated chronic guideline for the protection of freshwater aquatic life, of

between 2.0 µg/L and 3.9 µg/L (hardness dependent; CCME 1999). Total copper concentrations at BRP-19 in all monitoring periods were above the SSWQO of 4.2 µg/L (Sabina 2017).

- Dissolved copper values at all the monitoring stations, except for BRP-23 (May, June, and July), BRP-30 (June), and BRP-34 (July) were above the FEQG range of 0.2 to 3.3 µg/L (temperature, pH, DOC and hardness dependent; ECCC 2021).
- Total iron concentrations at BRP-19 in all samples, at BRP-23 in July, at BRP-30 in June and July, and at WOLFOF in July were above the chronic guideline for the protection of freshwater aquatic life of 300 µg/L (CCME 1999) and the drinking water aesthetic objective of 300 µg/L (Health Canada 2024). Total iron values at BRP-19 in June and July and at BRP-30 and WOLFOF in July were also above the FEQG range of between 290 and 800 µg/L (pH and DOC dependent; ECCC 2024).
- Total manganese concentrations at BRP-18 in July and at BRP-19 in July and September were above the drinking water Health Canada guideline of 120 µg/L (Health Canada 2024).

Water quality guideline exceedances at Goose Lake inflows were also observed in the past; however, concentrations of most parameters that exceeded guidelines in 2024 were higher than in the past, and some parameters such as total copper and total arsenic exceeded guidelines or SSWQOs for first time in 2024.

Goose Lake inflow from Echo Lake (BRP-19) and the inflow from Llama watershed (BRP-18) had higher concentrations in 2024 than other inflows (Appendix D, Table D-6) and also compared to previous years (Appendix E). Water samples collected at BRP-19 had the highest concentrations of total dissolved solids, ammonia, nitrite and nitrate, turbidity, cyanide, magnesium, potassium, sodium, sulphate and most metals (total and dissolved aluminium, antimony, arsenic, chromium, cobalt, copper, lead, lithium, manganese, molybdenum, nickel, selenium, silicon, sulphur, uranium vanadium, and zirconium) in 2024 compared to previous years or other Goose Lake inflow. Higher than background concentrations of most of these parameters were also noted at BRP-18 (i.e., total dissolved solids, nitrate, chloride, calcium, magnesium, sodium, total and dissolved barium, cadmium, cobalt, lead, lithium, manganese, nickel, selenium, silicon, strontium, and zinc). This inflow had highest concentrations in September 2023 and concentrations continued to be high in 2024 but were overall slightly lower than those measured at BRP-19.

Goose Lake inflow to the Southeast basin (BRP-30) had increasing trends in concentrations of total and dissolved chromium, iron, silicon, and vanadium starting in 2023, which continued in 2024 (Appendix E). Additionally, concentrations of total phosphorus at most stream locations in 2024 were slightly higher than in previous years.

4.0 SUMMARY AND CONCLUSIONS

In 2024, five water quality sampling programs were completed for the Project (one under ice-cover conditions and four during open-water season). Water quality sample and field measurements were collected from four areas within the Goose Lake, one area in Reference B Lake, six inflows to Goose Lake, and the Goose Lake outflow.

Water quality data collected at Goose Lake and streams and Reference B Lake in 2024 were generally consistent with previous years data, although increasing trends for some parameters were evident. Depth profiles of field-measured parameters in the lakes showed some stratification for water temperature, pH, and dissolved oxygen under ice-cover conditions and generally well mixed conditions during open-water season, with the exception of strong stratification under ice at deep station BRP-29A-6 in Goose Lake West Bay (open-water profile data were not collected at this station in 2024). Similar values and trends in the field profiles were observed in previous years, except for specific conductivity at the BRP-31 area in Goose Lake in September, where concentrations of

some parameters were higher than in previous programs. Several water quality parameters in some Goose Lake samples exceeded water quality guidelines and/or SSWQOs for pH, nitrate, nitrite, total aluminium, total cobalt, total and dissolved copper, and total manganese. Some pH and dissolved copper exceedances of water quality guidelines were also noted at Reference B Lake.

Similar guideline exceedances at the lakes were observed in previous years; however, some parameters that exceeded guidelines in 2024 were measured at higher concentrations than in the past.

Several water quality parameters such as nitrate, ammonia, sulphate, chloride, calcium, magnesium, total dissolved solids, and metals (i.e., total and dissolved aluminum, arsenic, barium, cadmium, cobalt, manganese, nickel, selenium, sulphur, strontium, uranium, and zinc) measured in the Goose Lake West Bay area showed an increasing trend in concentrations in 2024. Goose Lake West Bay area had the highest concentrations of these parameters in September 2024, followed by April 2024, compared to the other Goose Lake areas, Reference B Lake, and compared to previous years (Golder 2022, WSP 2023, 2024b). Concentrations in August 2024 at all Goose Lake areas and in Reference B Lake were similar to those observed in previous years. For some of these parameters (e.g., nitrate, ammonia, chloride, calcium, magnesium, total and dissolved aluminum, barium, cadmium, cobalt, manganese nickel, strontium, and zinc) an initial increase in concentrations relative to previous years and other lake areas was first observed in September 2023, and concentrations continued to increase in 2024. Total phosphorus concentrations in Goose and Reference B lakes were similar to previous years and chlorophyll *a* concentrations were slightly higher in 2024 in both lakes than in previous years but all concentrations (historical and 2024) were within the oligotrophic range.

Water quality samples collected at Goose Lake streams had a greater number of parameters that exceeded water quality guidelines and/or SSWQOs, and overall higher concentrations, compared to the lake water samples. Parameters that exceeded guidelines at streams in 2024 were total cyanide, nitrate, nitrite, total metals (aluminium, arsenic, cadmium, chromium, cobalt, copper, iron, and manganese) and dissolved copper. Similar guideline exceedances were also observed in the past; however, concentrations of these parameters were generally higher than in the past, and some parameters such as total copper and total arsenic exceeded guidelines or objectives for first time in 2024.

The Goose Lake inflow from Echo Lake (BRP-19) and the inflow from Llama watershed (BRP-18) had higher concentrations in 2024 than other inflows, and compared to previous years' results at these locations. Water samples collected at BRP-19 had the highest concentrations of total dissolved solids, ammonia, nitrite and nitrate, turbidity, cyanide, magnesium, potassium, sodium, sulphate and most metals (total and dissolved aluminium, antimony, arsenic, chromium, cobalt, copper, lead, lithium, manganese, molybdenum, nickel, selenium, silicon, sulphur, uranium vanadium, and zirconium) in 2024 compared to all previous monitoring years, and other Goose Lake inflows. Higher than background concentrations of most of these parameters were also noted at BRP-18 (i.e., total dissolved solids, nitrate, chloride, calcium, magnesium, sodium, total and dissolved barium, cadmium, cobalt, lead, lithium, manganese, nickel, selenium, silicon, strontium, and zinc). This inflow had the highest concentrations in September 2023, and concentrations continued to be elevated in 2024 but were overall slightly lower than those measured at BRP-19.

The inflow to the Southeast basin of Goose Lake (BRP-30) had an increasing trend in concentrations of total and dissolved chromium, iron, silicon, and vanadium starting in 2023, which continued in 2024, and most stream locations in 2024 had slightly higher concentrations of total phosphorus than in previous years.

These 2024 data provide additional information to support the AEMP and the HD model.

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APPENDIX A

**2024 Quality Assurance and
Quality Control Methods and Results**

Table of Contents

1.0 INTRODUCTION	1
2.0 QUALITY ASSURANCE	1
2.1 Field Operations	1
2.2 Laboratory Analyses	2
2.3 Office Operations	2
3.0 QUALITY CONTROL	2
3.1 Field Operations	2
3.2 Laboratory Analysis	3
3.3 Office Operations	3
3.3.1 Laboratory Data Screening	3
3.3.2 Quality Control Data Evaluation	4
4.0 RESULTS	5
4.1 Water Quality Field Measurements	5
4.2 Laboratory Report Review	5
4.3 Holding Time Exceedances	5
4.4 Field Quality Control Results	6
4.4.1 Travel Blanks	6
4.4.2 Field Blanks	7
4.4.3 Duplicate Samples	8
4.5 Dissolved to Total Results Comparison	8
5.0 CONCLUSIONS	9
6.0 REFERENCES	10

TABLES

Table A-1: Travel Blank Sample Results, 2024

Table A-2: Field Blank Sample Results, 2024

Table A-3: Summary of Field Duplicate Sample Results, 2024

Table A-4: Comparison of Total and Dissolved Parameters in Water, 2024

1.0 INTRODUCTION

This appendix describes the quality assurance (QA) and quality control (QC) procedures implemented during the 2024 water quality program completed to support the Aquatic Effects Management Plan (AEMP) program and the hydrodynamic (HD) model for Goose Lake for the B2Gold Back River Project. An evaluation of the QC data and implications for the interpretation of results is also included.

Data integrity is determined by the QA/QC procedures that are applied during all aspects of a sampling program, from sample collection to data analysis and reporting. Quality assurance procedures include training of personnel, data management, and other technical practices designed to confirm that data generated are consistently of appropriate quality. Quality control procedures include steps to measure and evaluate data quality, as well as the corrective actions that are applied when data quality objectives are not achieved.

2.0 QUALITY ASSURANCE

Quality assurance procedures implemented during the 2024 water quality sampling program are classified into three categories: field operations, laboratory analyses, and office operations.

2.1 Field Operations

Quality assurance procedures for field operations involve field crew training, pre-field meetings, use of standardized methods, and providing clear instructions for collecting and handling field data. Field staff for the field program were trained to be proficient in standardized sampling procedures, data recording, and equipment operation. Field work was completed according to approved specific work instructions (SWI) that were developed for the project based on standardized technical procedures developed by WSP Canada Inc. (WSP). WSP's technical procedures are consistent with field protocols described in relevant scientific literature (e.g., CCME 2011). The SWI for the water sampling programs included the exact locations of sampling stations and detailed step-by-step instructions for field tasks such as sample collection, handling, preservation, labelling, storage, shipping, record keeping, and sample tracking.

A multi-probe meter (i.e., AquaTROLL during the ice-cover program, YSI during the open-water programs) were used to collect in-situ measurements of water temperature, pH, dissolved oxygen (concentration and percent saturation), and specific conductivity throughout the water column at each lake sampling station, and at the sample depth at each stream station. Turbidity measurements were taken on a subsample of the water sample, using a LaMotte 2020 turbidity meter (due to variability in turbidity readings, the value recorded is the average of three consecutive readings). The field meters were calibrated by the manufacturer once per year and by the field crew at the beginning of each field program. Calibration of the meters was then verified daily using standard calibration solutions. Calibration checks were also done when readings were outside of expected ranges. Calibration records were documented in the field and saved in the project file.

Field data were recorded on standardized field data sheets or in a bound field notebook. Chain-of-custody forms included the list of parameters requested for analysis, sample identification information, date and time of sample collection, information regarding field filtering and preservation, and names of the sampler. After delivery to the laboratory, a tracking system was used to confirm all samples were sent and received by the laboratory. The crew lead was responsible for tracking samples, to confirm that all required samples were collected, chain-of-custody and analytical request forms were complete and correct, and that labelling and documentation procedures were followed. Field crews checked in with component leads as needed and submitted daily reports to provide updates on completed tasks. Contact information for members of the project team and the analytical laboratory were included in the SWI, along with references to applicable technical procedures.

Quality assurance procedures also included pre-field meetings held with the field crew and project/component manager prior to the start of each field program. Objectives of the field program, health and safety protocols, the role of each crew member, specific details of the SWI, equipment needs, field logistics, and contingency plans were discussed at each meeting.

2.2 Laboratory Analyses

Water samples collected in 2024 were submitted for analysis to ALS Environmental (ALS), a laboratory accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for the analytical suite for this project; therefore, confidence in the reliability of the analytical data produced by the laboratory is considered high. To receive accreditation, a laboratory must pass an evaluation of its internal procedures, analytical methods, and QA/QC processes. Parameters were analyzed by the laboratory using standard methods published by internationally recognized agencies, such as the American Public Health Association (APHA) and the United States Environmental Protection Agency (US EPA).

2.3 Office Operations

Quality assurance procedures implemented for office-based tasks included the following:

- having trained personnel complete data management, analysis, and reporting tasks
- using standardized data storage, manipulation, and summary tools, as required
- establishing a data management system to support consistency, data review processes, and data storage and retrieval
- reviewing deliverables by senior staff at appropriate milestones.

A designated member of the project team was responsible for liaising with the laboratory. Analytical results were uploaded to the EQulS database directly by the laboratory. Data exports from the EQulS database were reviewed to identify errors or gaps and corrected, as needed. Laboratory certificates, field forms, and field notes were stored in the project file.

3.0 QUALITY CONTROL

Similar to QA procedures, QC procedures implemented during the 2024 water quality sampling program can be classified into three categories: field operations, laboratory analyses, and office operations.

3.1 Field Operations

Quality control procedures implemented during field operations included the collection of QC samples that are defined as follows:

- **Travel blanks:** These samples were used to detect sample contamination that could have resulted from bottles or caps and while traveling to and from site. Travel blanks were provided by the laboratory and consisted of sealed sample bottles filled with deionized water. They accompanied the water samples during all stages of storage and transportation but remained unopened.
- **Field blanks:** These samples were prepared as separate samples in the field using laboratory-provided deionized water to fill a set of sample bottles using similar sampling and handling procedures as the water samples collected from sampling stations. Field blanks are used to detect potential sample contamination during sample collection, handling, shipping, and analysis.
- **Duplicate samples:** These samples were used to check the precision of field sampling methods and laboratory analyses. Duplicate samples consisted of paired water samples collected at the same time (separate grabs) and location, using the same methods.

Quality control samples were submitted “blind” to the analytical laboratory and analyzed for the same set of parameters as the other water samples.

During the 2024 water sampling program, a total of 14 blank samples (seven travel blanks and seven field blanks) and seven duplicate samples were collected. Quality control samples collected in 2024 represented approximately 24% the total number of water samples submitted for analysis.

3.2 Laboratory Analysis

Internal QC samples were prepared by the analytical laboratory and analyzed along with the field-collected samples to confirm the quality and reliability of the analytical results. Quality control sample types included duplicate samples, spiked samples, and method blanks. The laboratory QC results were reviewed to confirm the quality of the data and to determine if the laboratory identified any questionable results.

3.3 Office Operations

Quality control operations implemented in the office focussed on evaluating the quality of in-situ measurement data and analytical results, completeness of data, verifying the quality of data through assessment of QC samples and through summary statistics and plots. Field data entered into the project database were compared against the field data sheets and field notebook to confirm their accuracy. Unaltered data files from the laboratory were saved to the project file and used as a reference to confirm the accuracy of the data entered into the project EQUIS database. Laboratory data were also screened for quality (Section 3.3.1). Backup files were created before each major data analysis operation and calculations were reviewed to confirm the accuracy of the results.

3.3.1 Laboratory Data Screening

A series of standard data screening steps were completed upon receipt of water chemistry results from the analytical laboratory to identify potential data quality issues:

- verification that all requested parameters and samples were analyzed
- verification that the appropriate detection limits (DLs) were used and data were reported in the appropriate units
- verification of holding time exceedances and follow-up discussions with the laboratory
- data logic checks (e.g., comparison of measured and calculated results for total dissolved solids; comparison of dissolved to total metals)
- calculation of total dissolved solids using the APHA (2012) equation¹ and comparison to the calculated total dissolved solids results provided by the laboratory
- identification of anomalous values
- review of blank samples for evidence of contamination
- review of duplicate sample results for unacceptable variation
- review of laboratory QC results (i.e., sample temperature and integrity of containers upon receipt, holding times, laboratory blanks and recoveries from spiked samples, internal duplicates, review of laboratory qualifiers and notes)
- follow-ups with the laboratory on unexpected values and trends

¹ $TDS_{calc} \left(\frac{mg}{L} \right) = \Sigma [Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, F^-, SO_4^{2-}, 4.42 * NO_3^- (as\ nitrogen), 0.6 * total\ alkalinity\ (as\ CaCO_3)]$

Prompt completion of the screening steps allowed for potential re-analysis of samples by the laboratory to verify questionable data or generate data for missing parameters. If samples were re-analyzed by the laboratory and the data were still considered questionable, qualifiers for consideration during data summary and analysis steps were added to the dataset.

3.3.2 Quality Control Data Evaluation

3.3.2.1 Water Blanks

Analytical results for travel and field blanks were reviewed and considered notable if concentrations were greater than or equal to five times the corresponding DL. This criterion is based on the US EPA Practical Quantitation Limit, which accounts for the potential for reduced accuracy when concentrations approach or are below the DL (US EPA 2000). This criterion was not applied to all parameters (e.g., not applied to pH or specific conductivity).

In the event that concentrations in the blanks exceeded five times the DL, the results were examined to determine if:

- the concentration in a blank QC sample was higher than the concentrations measured in corresponding surface water samples
- the notable result was limited to a single blank sample or if it was apparent in corresponding water samples
- there was a consistent bias in the results for the parameter across all samples
- if the notable result was severe enough to warrant invalidation of the affected data

3.3.2.2 Duplicate Samples

Differences between concentrations measured in duplicate water and sediment samples were evaluated based on the relative percent difference (RPD):

$$RPD = \frac{|C1 - C2|}{\left[\frac{(C1 + C2)}{2} \right]} * 100$$

Where: RPD is relative percent difference

C1 is the concentrations in the first sample

C2 is the concentration in the second (or duplicate) sample

The RPD was only calculated if one or more of the paired concentrations in the duplicate samples are greater than five times the DL. The RPD for a given water quality parameter was considered notable and flagged if it was greater than 20% (US EPA 2017). The number of flagged parameters was compared to the total number of analyzed parameters to evaluate analytical precision. Results of the duplicate samples were also used to assess within-station variability and field sampling precision. Analytical precision was rated as follows:

- *high*, if less than 10% of parameters included in the duplicate sample analysis were notably different from one another
- *moderate*, if 10 to 30% of parameters included in the duplicate sample analysis were notably different from one another
- *low*, if more than 30% of parameters included in the duplicate sample analysis were notably different from one another

3.3.2.3 Dissolved and Total Concentrations

Dissolved nutrient and metal concentrations in water samples were compared to their corresponding total concentrations as a measure of analytical precision. Where results of the total and dissolved concentrations were more than five times the DL and the RPD between the dissolved and total concentration was more than or equal to 20%, the dissolved concentration was considered notable.

4.0 RESULTS

4.1 Water Quality Field Measurements

In-situ field measurements were collected during each field program in 2024 using a calibrated multi-probe water quality meter (i.e., AquaTROLL, YSI) and a LaMotte 2020 turbidity meter. Calibration records were documented in the project file. No issues with the field meters were encountered during the 2024 water quality programs.

4.2 Laboratory Report Review

Required parameters were analyzed by the laboratory using standard analytical methods and DLs required by the AEMP design plan (B2Gold 2024). Detection limits of water quality results were generally adequate. Total dissolved solids (measured), sulphate, total ammonia, and sulphide had DLs greater than the target DLs in some samples collected in 2024, but DLs were below relevant water quality guidelines.

Concentrations of free cyanide, total manganese, and dissolved manganese for work order YL2400298, total magnesium for work order YL2400317, and total beryllium, boron, and lithium for work order YL2400500 did not meet internal laboratory data quality objectives (DQOs) (i.e., method blank exceeded the laboratory DQO), but the results for samples associated with these quality control analyses were validated by the laboratory.

Copies of the analytical reports (certificates of analysis), with a statement of methods and summaries of laboratory quality control results are presented as attachment to Appendix D.

4.3 Holding Time Exceedances

To maintain sample integrity, water samples for laboratory analyses were submitted as soon as possible after collection. Holding times were exceeded for several parameters in water samples sent to ALS mainly due to logistical constraints when shipping samples from a remote area (longer shipping times), or due to the laboratory's inability to initiate testing promptly following sample receipt. A total of 9 parameters had holding time exceedances during the 2024 program: laboratory pH, nitrate, nitrite, dissolved orthophosphate, turbidity, cyanide (total, free and weak acid dissociable [WAD]), sulfide, total suspended solids (TSS), and total dissolved solids (TDS) (Table 4.3-1).

Table 4.3-1: Summary of Holding Time Exceedances in 2024

Parameter	Holding Time ^(a)	Holding Time Exceedances (Days)			Sample Count ^(c)	Percent (%) of Samples
		Minimum ^(b)	Maximum ^(b)	Average ^(b)		
pH	15 minutes	— ^(d)	— ^(d)	— ^(d)	— ^(d)	— ^(d)
Nitrate	3 days	1	7	4.0	103	96%
Nitrite	3 days	1	7	4.0	103	96%
Dissolved Orthophosphate	3 days	1	7	4.0	104	97%
Turbidity	3 days	2	11	6.5	93	87%
Cyanide	14 days	5	6	5.5	10	9%
Sulfide	7 days	1	5	3	21	20%
Total Suspended Solids	7 days	1	3	2	21	20%
Total Dissolved Solids	7 days	1	1	1	22	21%

a) Laboratory recommended holding times.

b) Minimum, maximum, and average lengths of time (e.g., days) that holding times were exceeded for each parameter.

c) Number of samples that exceeded holding times for each parameter.

d) Holding time for pH was exceeded in all samples; however, field pH measurements were recorded and used as the preferred method for assessing pH in water samples.

During all field programs for the project, pH and turbidity values were measured in the field (i.e., *in-situ*) using calibrated probes. For these parameters, field measurements were used as the preferred method for water quality assessment for the project.

The recommended holding time for nitrate, nitrite, and dissolved orthophosphate (3 days) was exceeded in 96% to 97% of samples collected from 2024. A guidance document published by the Canadian Council of the Ministers of the Environment (CCME) acknowledges that three days holding time for these parameters might not be practically achievable, particularly for remote locations, and although analysis beyond the holding time increases uncertainty, it does not necessarily imply the data will be compromised (CCME 2016).

Holding time exceedances for nitrite, nitrate, and dissolved orthophosphate ranged from one to seven days. An assessment on nitrite and nitrate holding time exceedances for samples collected from regional lakes at the Snap Lake Mine concluded that nitrate and nitrite concentrations did not change significantly when analyzed up to 21 days after the samples had arrived at the laboratory (Love et al. 2016).

The recommended holding time for sulfide, TSS, and TDS (7 days) was exceeded less frequently, in 20% to 21% of samples collected in 2024, and exceedances were between one to five days. Cyanide (total, WAD and free) exceeded holding time of 14-days for 9% of samples. Cyanides were below the laboratory detection limits for all samples.

Analytical results of samples that exceeded holding times were reviewed for patterns and deviations from expected values based on historical data. Data associated with exceedance of holding times were similar to data analyzed within recommended times.

The following measures are being applied to mitigate holding time exceedances:

- designing the workplan and developing shipping procedures to minimize delays in sample shipment post-collection
- coordinating with scheduled charter flights and couriers to minimize delays in sample transport prior to delivery to the laboratory
- coordinating with the laboratory to minimize delays in sample analysis after receipt of samples
- continuing discussions with the laboratory regarding potential sample processing techniques (e.g., filtration, preservation) to extend sample holding times
- consulting with other laboratories regarding opportunities to reduce holding times
- continued vigilance and communications with the laboratory to ensure samples are analyzed as soon as possible after receipt

4.4 Field Quality Control Results

During the 2024 water quality programs, seven travel blank samples, seven field blank samples, and seven field duplicate samples were collected (at least one type during each sampling program).

4.4.1 Travel Blanks

Travel blank samples collected during the 2024 water quality programs were analyzed for the same parameters as field samples (Table A-1). Most results of the blank samples were non-detect. Concentrations above the corresponding DLs in travel blanks were reviewed individually. The following parameters were detected in the trip blank samples:

- total aluminium, chromium, manganese, mercury, zinc and dissolved zinc during the April (under-ice) program

- total and dissolved zinc during the May program
- silica, total and dissolved phosphorus during the September program

Among these parameters, only total zinc in the April sample was detected at a concentration higher than five times its respective DL. After the program was completed, the laboratory informed WSP that the travel blank bottles sent in the field for metals samples were regular metals bottles and not precleaned containers used for analysis of trace level metals. The detected concentration of total zinc in the travel blank sample (0.56 µg/L) was lower than concentrations measured in the April field samples, with exception of two samples that had the same (0.56 µg/L at BRP-38-3) and slightly lower (0.52 µg/L at BRP-38-5) zinc concentrations. Total zinc concentrations measured during the April program were within the ranges of previous years (2011-2023) data. The detected zinc concentration in the April travel blank was not considered to have a perceivable influence on the field results.

Overall, parameters in travel blank samples with detected concentrations accounted for less than 1% of all results of travel blank samples which typically are acceptable if there are less than or equal to 5% of blanks with values greater than the DLs (CCME 2011).

4.4.2 Field Blanks

Field blank samples collected during the 2024 water quality programs were analyzed for the same parameters as field samples (Table A-2). Most results of the blank samples were non-detect. Concentrations above the corresponding DLs in field blanks were reviewed individually. The following parameters were detected in the field blank samples:

- total zinc and dissolved zinc in the April blank sample
- dissolved phosphorus, total aluminium, manganese, and zinc, dissolved copper, manganese, and zinc in one or both blank samples during the May program
- total dissolved solids, dissolved organic carbon, magnesium, potassium, sodium, total aluminium and chromium, dissolved aluminium, barium, chromium, iron, lead, manganese, mercury, rubidium, strontium, titanium, and zinc in the June blank sample
- total ammonia in the July blank sample
- dissolved organic carbon in the August blank sample

Among these parameters, detected concentrations of dissolved aluminum (1.69 µg/L), dissolved iron (3.17 µg/L), and dissolved manganese (0.0604 µg/L) in the June field blank sample were higher than five times their respective DLs. These detected concentrations were lower than the concentrations measured in the June field samples, with exception of dissolved iron in one field sample (4.95 µg/L at BRP-18). During collection of this field blank sample in June at station BRP-19 it was noted that wind was blowing in dust from a nearby haul road, which could have had a potential to influence parameters concentrations in samples collected at this location. Detections in the field blank samples were not considered to affect the interpretation of field sample results.

Parameters in field blank samples with detected concentrations accounted for 3% of all results of field blank samples and concentrations found to be five times greater than their respective DLs were observed for less than 1% of parameters analyzed in blank samples. In general, concentration levels are acceptable if there are less than or equal to 5% of blanks with values greater than the DLs (CCME 2011).

4.4.3 Duplicate Samples

Seven duplicate samples were collected during the 2024 water quality program (Table A-3). The June duplicate and one of the September duplicates, had RPDs lower than 20% for all parameters. The rest of the duplicates had between 1.6% and 4.1% of parameters with notable RPDs and consisted of:

- nitrite, total cobalt, total iron, and total uranium in the April duplicate (RPDs ranging from 21% to 29%)
- total Kjeldahl nitrogen and total phosphorous in the May duplicate (RPDs were 23% to 38%)
- total Kjeldahl nitrogen, total phosphorous and total titanium in the July duplicate (RPDs ranging from 28% to 38%)
- total dissolved solids, dissolved organic carbon, and dissolved antimony in the August duplicate (RPDs ranged from 23% to 77%)
- dissolved organic carbon and total ammonia in one of the September duplicates (RPDs were 24% and 105%)

Overall, the total notable RPDs for the 2024 programs accounts for less than 2% of the total individual results, which based on the assessment criteria described in Section 3.3.2.2, the 2024 sample results had *high* analytical precision.

4.5 Dissolved to Total Results Comparison

It is reasonable to assume that where total and dissolved parameter concentrations are measured in a water sample, the dissolved fraction should be less than or equal to the corresponding total concentration. However, there are instances when the dissolved concentration of a parameter may be higher than the total concentration. These can be attributed to low concentrations, analytical variation and sensitivity, inconsistency or inadequate sampling, and sample handling processes (e.g., filtering and preserving outside the required timeframe, or filtering-related contamination).

During the 2024 water quality sampling programs, approximately 1% of the metals results in the dataset did not meet this quality criteria (i.e., total and dissolved concentrations were more than five times the DL and dissolved concentrations were more than 20% higher than total concentrations; Table A-4). This was predominantly observed for zinc in 11% of the samples and was noted throughout the year. The laboratory confirmed zinc results for monitoring programs by re-analysis or checks. Other metals such as antimony, cadmium, chromium, cobalt, lead, manganese, and thorium had occasional (typically single instances) of dissolved concentrations above the total concentrations.

For organic carbon, 18% of dissolved organic carbon concentrations were greater than total organic carbon concentrations and most of these results were noted in the August program (11%). For the other monitoring programs, the dissolved organic carbon had occasional of dissolved concentrations above the total concentrations. The laboratory verified dissolved organic carbon results by re-analysis or checks.

In 2024, dissolved metals samples were filtered in the field using syringes and filter heads provided by laboratory and were preserved in the laboratory upon sample receipt.

5.0 CONCLUSIONS

Review of field and laboratory data indicated that field measurements and laboratory data are of high quality. Key findings from the 2024 QA/QC results are as follows:

- Samples were received by the laboratory in good condition and were analyzed for all specified parameters.
- No issues were identified in analytical methods used or DLs reported by the laboratory; though total dissolved solids (measured), sulphate, total ammonia, and sulphide had DLs greater than the target DLs in some samples, but DLs were below relevant water quality guidelines.
- Holding times recommended by the laboratory were exceeded for some parameters (i.e., pH, nitrite, nitrate, dissolved orthophosphate, turbidity, cyanide [total, free and WAD], sulfide, TSS and TDS) due to logistical constraints and/or laboratory inability to initiate testing promptly following sample receipt. The holding time exceedances were of a minimum of one day (most parameters) to a maximum of 11 days (turbidity) duration, and although this should be taken into consideration during interpretation of the results, it is not expected to negatively affect data quality.
- Detected concentrations of total zinc in the travel blank sample collected in April was five times greater than its respective DL. The concentration of total zinc in the travel blank was lower than concentrations measured in the April field samples and it was within the ranges of previous years data. Detection of zinc in the April travel blank sample was limited to the blank and was not considered to influence the field water quality samples.
- Detected concentrations of dissolved aluminum, dissolved iron, and dissolved manganese in the June field blank sample were higher than five times their respective DLs. These detected concentrations were lower than the concentrations measured in the June field samples, with exception of dissolved iron in one field sample. During collection of this field blank sample, it was noted that wind was blowing in dust from a nearby haul road, which could have had a potential to influence parameters concentrations in samples collected at this location. Detections in the field blank samples were not considered to affect the interpretation of field sample results.
- Duplicate samples had low numbers of notable RPDs, ranging from 0% to 4.1%, indicating a *high* analytical precision.
- Dissolved concentrations were notably greater than the corresponding total concentrations for less than 1% of the metals results, with zinc (i.e., for 11% of the zinc results) and organic carbon (i.e., for 18% of the organic carbon results) failing to meet this quality criteria more frequently than other parameters.
- The overall quality of the water quality data was acceptable, and results reported are considered reliable for use in future data analyses.

6.0 REFERENCES

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TABLES

Table A-1: Travel Blank Sample Results, 2024

Table A-2: Field Blank Sample Results, 2024

Table A-3: Summary of Field Duplicate
Sample Results, 2024

Table A-4: Comparison of Total and Dissolved
Parameters in Water, 2024

Table A-1: Travel Blank Sample Results, 2024

Parameter	Unit	DL	Travel Blank	Travel Blank	Travel Blank	Travel Blank	Travel Blank	Travel Blank	Travel Blank
			TB	TB ^(b)	TB	TB2	TB	TB	TB
			17-Apr-24	26-May-24	26-May-24	26-Jun-24	24-Jul-24	2-Aug-24	20-Sep-24
Conventional Parameters									
pH	-	0.1	5.35	-	5.46	5.46	5.22	5.45	5.49
Hydrogen sulfide	mg/L	0.0016	<0.0016	-	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Specific conductivity	µS/cm	2	<2	-	<2	<2	<2	<2	<2
Hardness, as CaCO3	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total alkalinity, as CaCO3	mg/L	1	<1	-	<1	<1	<1	<1	<1
Alkalinity, Phenolphthalein as CaCO3	mg/L	1	<1	-	<1	<1	<1	<1	<1
Total dissolved solids (measured)	mg/L	10	<10	-	<10	<10	<10	<10	<10
Total dissolved solids (calculated)	mg/L	1	<1	-	<1	<1	<1	<1	<1
Total suspended solids	mg/L	3	<3	-	<3	<3	<3	<3	<3
Total organic carbon	mg/L	0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved organic carbon	mg/L	0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5
Turbidity	NTU	0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Major Ions									
Bicarbonate, as CaCO ₃	mg/L	1	<1	-	<1	<1	<1	<1	<1
Bromide	mg/L	0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05
Calcium	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Carbonate, as CaCO ₃	mg/L	1	<1	-	<1	<1	<1	<1	<1
Chloride	mg/L	0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5
Total cyanide	mg/L	0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (free)	mg/L	0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (WAD)	mg/L	0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	0.02	<0.02	-	<0.02	<0.02	<0.02	<0.02	<0.02
Hydroxide, as CaCO ₃	mg/L	1	<1	-	<1	<1	<1	<1	<1
Magnesium	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Potassium	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sulphate	mg/L	0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3
Sulphide	mg/L	0.0015	<0.0015	-	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Silica	mg/L	0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.54
Nutrients									
Nitrate	mg-N/L	0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrite	mg-N/L	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001
Total ammonia	mg-N/L	0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005
Total Kjeldahl Nitrogen	mg-N/L	0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05
Total phosphorus	mg-P/L	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	0.0012
Dissolved phosphorus	mg-P/L	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	0.0014
Orthophosphate	mg-P/L	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001
Total Metals									
Aluminum	µg/L	0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Antimony	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Barium	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Calcium	µg/L	10	<10	<10	<10	<10	<10	<10	<10
Cesium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	µg/L	0.04	0.049	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Cobalt	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Gallium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lanthanum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lithium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	0.005	0.0067	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	µg/L	0.0005	0.00055	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Molybdenum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Niobium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Potassium	µg/L	5	<5	<5	<5	<5	<5	<5	<5
Rhenium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Selenium	µg/L	0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Silicon	µg/L	50	<50	<50	<50	<50	<50	<50	<50
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Sodium	µg/L	10	<10	<10	<10	<10	<10	<10	<10
Strontium	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sulphur	µg/L	500	<500	<500	<500	<500	<500	<500	<500
Tantalum	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thorium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tungsten	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Yttrium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	µg/L	0.1	0.56 ^(a)	0.18	<0.1	<0.1	<0.1	<0.1	<0.1
Zirconium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table A-1: Travel Blank Sample Results, 2024

Parameter	Unit	DL	Travel Blank	Travel Blank	Travel Blank	Travel Blank	Travel Blank	Travel Blank	Travel Blank	
			TB	TB ^(b)	TB	TB2	TB	TB	TB	TB-2
			17-Apr-24	26-May-24	26-May-24	26-Jun-24	24-Jul-24	2-Aug-24	20-Sep-24	
Dissolved Metals										
Aluminum	µg/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Antimony	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Arsenic	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Barium	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	
Cadmium	µg/L	0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
Cesium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Chromium	µg/L	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	
Cobalt	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Copper	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Gallium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Iron	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Lanthanum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Lead	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Lithium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Manganese	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Mercury	µg/L	0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
Molybdenum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Nickel	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Niobium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Rhenium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Rubidium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Selenium	µg/L	0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	
Silicon	µg/L	50	<50	<50	<50	<50	<50	<50	<50	
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Strontium	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Sulphur	µg/L	500	<500	<500	<500	<500	<500	<500	<500	
Tantalum	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Tellurium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Thallium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Thorium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Tin	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Titanium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Tungsten	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Uranium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Vanadium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Yttrium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	µg/L	0.1	0.13	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	
Zirconium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Ungrouped Analytes										
Radium-226	Bq/L	0.005	-	-	-	-	-	<0.005	<0.005	
Calculated Quantities										
Values over five times the DL	%	-	0.8	0	0	0	0	0	0	

Notes:

^(a) Value is greater than five times the method detection limit.

^(b) Travel Blank bottles for metals provided by the laboratory for this sampling event were not precleaned containers for trace level metals.

The percentage of values over five times the DL for the entire dataset is 0.1%.

DL = detection limit; µS/cm = microsiemens per centimetre; mg/L = milligrams per litre; NTU= nephelometric turbidity unit; mg-N/L = milligrams per litre as nitrogen; mg-P/L = milligrams per litre as phosphorus; µg/L = micrograms per litre; WAD = weak acid dissociable; - = no data.

Table A-2: Field Blank Sample Results, 2024

Parameter	Unit	DL	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank
			FB	FB-1	FB-2	FB-02	FB	FB	FB-2
			20-Apr-24	25-May-24	28-May-24	26-Jun-24	24-Jul-24	3-Aug-24	19-Sep-24
Conventional Parameters									
pH	-	0.1	5.39	5.32	-	5.39	5.25	5.5	5.25
Hydrogen sulfide	mg/L	0.0016	<0.0016	<0.0016	-	<0.0016	<0.0016	<0.0016	<0.0016
Specific conductivity	µS/cm	2	<2	<2	-	<2	<2	<2	<2
Hardness, as CaCO3	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total alkalinity, as CaCO3	mg/L	1	<1	<1	-	<1	<1	<1	<1
Alkalinity, Phenolphthalein as CaCO3	mg/L	1	<1	<1	-	<1	<1	<1	<1
Total dissolved solids (measured)	mg/L	10	<10	<10	-	<10	<10	<10	<10
Total dissolved solids (calculated)	mg/L	1	<1	<1	-	2	<1	<1	<1
Total suspended solids	mg/L	3	<3	<3	-	<3	<3	<3	<3
Total organic carbon	mg/L	0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Dissolved organic carbon	mg/L	0.5	<0.5	<0.5	-	1.98	<0.5	0.55	<0.5
Turbidity	NTU	0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
Major Ions									
Bicarbonate, as CaCO ₃	mg/L	1	<1	<1	-	<1	<1	<1	<1
Bromide	mg/L	0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05
Calcium	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Carbonate, as CaCO ₃	mg/L	1	<1	<1	-	<1	<1	<1	<1
Chloride	mg/L	0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Total cyanide	mg/L	0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005
Cyanide (free)	mg/L	0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005
Cyanide (WAD)	mg/L	0.005	<0.01	<0.005	-	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	0.02	<0.02	<0.02	-	<0.02	<0.02	<0.02	<0.02
Hydroxide, as CaCO ₃	mg/L	1	<1	<1	-	<1	<1	<1	<1
Magnesium	mg/L	0.001	<0.001	<0.001	<0.001	0.0013	<0.001	<0.001	<0.001
Potassium	mg/L	0.005	<0.005	<0.005	<0.005	0.0072	<0.005	<0.005	<0.005
Sodium	mg/L	0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01
Sulphate	mg/L	0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3
Sulphide	mg/L	0.0015	<0.0015	<0.0015	-	<0.0015	<0.0015	<0.0015	<0.0015
Silica	mg/L	0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Nutrients									
Nitrate	mg-N/L	0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005
Nitrite	mg-N/L	0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001
Total ammonia	mg-N/L	0.005	<0.005	<0.005	-	<0.005	0.0195	<0.005	<0.005
Total Kjeldahl Nitrogen	mg-N/L	0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05
Total phosphorus	mg-P/L	0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001
Dissolved phosphorus	mg-P/L	0.001	<0.001	0.002	-	<0.001	<0.001	<0.001	<0.001
Orthophosphate	mg-P/L	0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001
Total Metals									
Aluminum	µg/L	0.2	<0.2	0.71	<0.2	0.21	<0.2	<0.2	<0.2
Antimony	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Barium	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Calcium	µg/L	10	<10	<10	<10	<10	<10	<10	<10
Cesium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	µg/L	0.04	<0.04	<0.04	<0.04	0.132	<0.04	<0.04	<0.04
Cobalt	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Gallium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lanthanum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lithium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	0.005	<0.005	0.0112	0.0084	<0.005	<0.005	<0.005	<0.005
Mercury	µg/L	0.0005	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Molybdenum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Niobium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Potassium	µg/L	5	<5	<5	<5	<5	<5	<5	<5
Rhenium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Selenium	µg/L	0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Silicon	µg/L	50	<50	<50	<50	<50	<50	<50	<50
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Sodium	µg/L	10	<10	<10	<10	<10	<10	<10	<10
Strontium	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sulphur	µg/L	500	<500	<500	<500	<500	<500	<500	<500
Tantalum	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thorium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tungsten	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Yttrium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	µg/L	0.1	0.12	0.36	<0.1	<0.1	<0.1	<0.1	<0.1
Zirconium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table A-2: Field Blank Sample Results, 2024

Parameter	Unit	DL	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank
			FB	FB-1	FB-2	FB-02	FB	FB	FB-2
			20-Apr-24	25-May-24	28-May-24	26-Jun-24	24-Jul-24	3-Aug-24	19-Sep-24
Dissolved Metals									
Aluminum	µg/L	0.2	<0.2	<0.2	<0.2	1.69 ^(a)	<0.2	<0.2	<0.2
Antimony	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Barium	µg/L	0.02	<0.02	<0.02	<0.02	0.031	<0.02	<0.02	<0.02
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cesium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	µg/L	0.04	<0.04	<0.04	<0.04	0.072	<0.04	<0.04	<0.04
Cobalt	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	µg/L	0.05	<0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05
Gallium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	µg/L	0.5	<0.5	<0.5	<0.5	3.17 ^(a)	<0.5	<0.5	<0.5
Lanthanum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	µg/L	0.005	<0.005	<0.005	<0.005	0.0106	<0.005	<0.005	<0.005
Lithium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Manganese	µg/L	0.005	<0.005	0.008	0.0054	0.0604 ^(a)	<0.005	<0.005	<0.005
Mercury	µg/L	0.0005	<0.0005	<0.0005	-	0.00053	<0.0005	<0.0005	<0.0005
Molybdenum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Niobium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Rhenium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium	µg/L	0.005	<0.005	<0.005	<0.005	0.0101	<0.005	<0.005	<0.005
Selenium	µg/L	0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Silicon	µg/L	50	<50	<50	<50	<50	<50	<50	<50
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Strontium	µg/L	0.02	<0.02	<0.02	<0.02	0.025	<0.02	<0.02	<0.02
Sulphur	µg/L	500	<500	<500	<500	<500	<500	<500	<500
Tantalum	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thorium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	0.05	<0.05	<0.05	<0.05	0.055	<0.05	<0.05	<0.05
Tungsten	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Yttrium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	µg/L	0.1	0.29	0.19	<0.1	0.23	<0.1	<0.1	<0.1
Zirconium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ungrouped Analytes									
Radium-226	Bq/L	0.005	-	-	-	-	-	<0.005	<0.005
Calculated Quantities									
Values over five times the DL	%	-	0	0	0	2.5	0	0	0

Notes:

^(a) Value is greater than five times the method detection limit.

The percentage of values over five times the DL for the entire dataset is 0.36%.

DL = detection limit; µS/cm = microsiemens per centimetre; mg/L = milligrams per litre; NTU= nephelometric turbidity unit; mg-N/L = milligrams per litre as nitrogen; mg-P/L = milligrams per litre as phosphorus; µg/L = micrograms per litre; WAD = weak acid dissociable; - = no data.

Table A-3: Summary of Field Duplicate Sample Results, 2024

Parameter	Unit	DL	BRP-29-5		RPD	BRP-23		RPD	BRP-34		RPD	BRP-23		RPD	BRP-31-1		RPD	BRP-32-1		RPD	BRP-23		RPD
			Sample	Duplicate		Sample	Duplicate		Sample	Duplicate		Sample	Duplicate		Sample	Duplicate		Sample	Duplicate				
			19-Apr-24	19-Apr-24		27-May-24	27-May-24		27-Jun-24	27-Jun-24		25-Jul-24	25-Jul-24		4-Aug-24	4-Aug-24		18-Sep-24	18-Sep-24		22-Sep-24	22-Sep-24	
Conventional Parameters																							
pH	-	0.1	6.98	6.85	0.1%	7.13	7.14	2.3%	6.94	6.94	0.0%	7.25	7.24	2.3%	6.92	6.95	6.9%	7.04	6.97	16.1%	7.12	7.14	4.6%
Hydrogen sulfide	mg/L	0.0016	<0.0016	<0.0016	-	0.0018	0.0023	-	<0.0016	0.0017	-	<0.0016	<0.0016	-	<0.0016	0.0017	-	<0.0016	<0.0016	-	<0.0016	0.002	-
Specific conductivity	µS/cm	2	185	183	1.1%	37.6	37.3	0.8%	53.8	53.7	0.2%	72.3	73.2	1.2%	84.6	85.2	0.7%	72	70.6	2.0%	104	102	1.9%
Hardness, as CaCO ₃	mg/L	0.5	69.6	67.6	2.9%	15.8	15.5	1.9%	19.4	20.3	4.5%	26.3	26.2	0.4%	29.6	29.9	1.0%	26.6	26.9	1.1%	35.1	35.6	1.4%
Total alkalinity, as CaCO ₃	mg/L	1	6.1	4.6	-	7.5	7.5	0.0%	5	4.8	-	12.4	12.5	0.8%	5	5.1	-	6.6	5.6	16.4%	8.2	8	2.5%
Alkalinity, Phenolphthalein as CaCO ₃	mg/L	1	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Total dissolved solids (measured)	mg/L	10	139	144	3.5%	23	30	-	34	42	-	52	49	-	72	57	23.3%	45	41	-	71	77	8.1%
Total dissolved solids (calculated)	mg/L	1	106	103	2.9%	29.3	27.9	4.9%	31.9	32.7	2.5%	42.9	41.5	3.3%	44.7	47.1	5.2%	43.4	41.4	4.7%	66.7	67.6	1.3%
Total suspended solids	mg/L	3	<3	<3	-	3	3	-	<3	<3	-	<3	<3	-	<3	<3	-	<3	<3	-	<3	<3	-
Total organic carbon	mg/L	0.5	6.89	5.66	19.6%	7.76	9.05	15.3%	4.48	4.66	3.9%	6.94	6.02	14.2%	4.4	3.69	17.6%	5.32	5.42	1.9%	8.4	8.55	1.8%
Dissolved organic carbon	mg/L	0.5	6.79	6.4	5.9%	8.42	7.05	17.7%	4.95	5.64	13.0%	8.25	7.04	15.8%	4.54	6.97	42.2%	6.22	4.9	23.7%	8.18	8.96	9.1%
Turbidity	NTU	0.1	0.15	0.22	-	1.04	1.05	1.0%	0.29	0.35	-	1.39	1.28	8.2%	0.37	0.36	-	0.73	0.69	5.6%	0.72	0.74	2.7%
Major Ions																							
Bicarbonate, as CaCO ₃	mg/L	1	6.1	4.6	-	7.5	7.5	0.0%	5	4.8	-	12.4	12.5	0.8%	5	5.1	-	6.6	5.6	16.4%	8.2	8	2.5%
Bromide	mg/L	0.05	0.164	0.168	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	0.052	0.054	-	<0.05	<0.05	-	<0.05	<0.05	-
Calcium	mg/L	0.01	16.8	16.4	2.4%	2.95	2.91	1.4%	4.09	4.23	3.4%	5.56	5.56	0.0%	6.86	6.98	1.7%	5.76	5.81	0.9%	6.97	7.06	1.3%
Carbonate, as CaCO ₃	mg/L	1	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Chloride	mg/L	0.5	24.5	25.2	2.8%	1.04	1.02	-	4.55	4.56	0.2%	5.64	5.57	1.2%	10	9.93	0.7%	6.59	6.59	0.0%	4.2	4.2	0.0%
Total cyanide	mg/L	0.005	<0.01	<0.01	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	0.0056	0.0063	-
Cyanide	mg/L	0.005	<0.01	<0.01	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-
Cyanide	mg/L	0.005	<0.01	<0.01	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-
Fluoride	mg/L	0.02	0.025	0.024	-	<0.02	<0.02	-	0.022	0.022	-	0.027	0.025	-	0.029	0.027	-	0.024	0.024	-	0.03	0.03	-
Hydroxide, as CaCO ₃	mg/L	1	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Magnesium	mg/L	0.001	6.71	6.47	3.6%	2.05	2.01	2.0%	2.24	2.36	5.2%	3.02	3	0.7%	3.03	3.04	0.3%	2.98	3.01	1.0%	4.29	4.36	1.6%
Potassium	mg/L	0.005	1.26	1.18	6.6%	0.463	0.462	0.2%	0.48	0.489	1.9%	0.573	0.561	2.1%	0.673	0.671	0.3%	0.645	0.666	3.2%	1.02	1.03	1.0%
Sodium	mg/L	0.01	2.05	1.9	7.6%	0.749	0.745	0.5%	0.774	0.797	2.9%	1.06	1.08	1.9%	1.01	1	1.0%	1.03	1.04	1.0%	1.56	1.58	1.3%
Sulphate	mg/L	0.3	28.6	27.4	4.3%	7.25	7.32	1.0%	10.2	10.2	0.0%	9.36	9.2	1.7%	12.6	12.5	0.8%	13.2	13.2	0.0%	20.3	20.3	0.0%
Sulphide	mg/L	0.0015	<0.0015	<0.0015	-	0.0017	0.0022	-	<0.0015	0.0016	-	0.0015	<0.0015	-	<0.0015	0.0016	-	<0.0015	<0.0015	-	<0.0015	0.0019	-
Silica	mg/L	0.5	3.51	3.36	4.4%	0.99	0.99	-	0.54	0.55	-	<0.5	<0.5	-	<0.5	<0.5	-	0.65	0.66	-	2.54	2.55	0.4%
Nutrients																							
Nitrate	mg-N/L	0.005	2.13	2.27	6.4%	0.111	0.11	0.9%	0.184	0.182	1.1%	0.284	0.28	1.4%	0.556	0.545	2.0%	0.428	0.427	0.2%	2.4	2.39	0.4%
Nitrite	mg-N/L	0.001	0.104	0.0794	26.8%	<0.001	<0.001	-	0.0011	0.0012	-	0.0018	0.002	-	0.0025	0.0022	-	0.0038	0.0037	-	0.0225	0.0226	0.4%
Total ammonia	mg-N/L	0.005	0.28	0.298	6.2%	0.0678	0.0755	10.7%	0.0141	0.0101	-	0.0428	0.0394	8.3%	0.0344	0.0351	2.0%	0.28	0.0877	104.6%	0.944	0.969	2.6%
Total Kjeldahl Nitrogen	mg-N/L	0.05	0.761	0.761	0.0%	0.364	0.457	22.7%	0.201	0.238	-	0.532	0.402	27.8%	0.315	0.235	-	0.318	0.342	7.3%	1.28	1.37	6.8%
Total phosphorus	mg-P/L	0.001	0.0029	0.0033	-	0.0139	0.0204	37.9%	0.003	0.003	-	0.0103	0.0076	30.2%	0.0043	0.0024	-	0.004	0.0039	-	0.004	0.0037	-
Dissolved phosphorus	mg-P/L	0.001	0.0025	0.002	-	0.0034	0.0036	-	0.0012	0.0015	-	0.004	0.0014	-	<0.001	<0.001	-	0.0039	0.001	-	0.0018	0.0023	-
Orthophosphate	mg-P/L	0.001	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-
Total Metals																							
Aluminum	µg/L	0.2	42.3	44	3.9%	32	32.3	0.9%	14.4	15.5	7.4%	32.5	32.5	0.0%	11.5	10.9	5.4%	16.3	15.7	3.8%	29.3	30	2.4%
Antimony	µg/L	0.005	0.0205	0.0144	-	0.0145	0.0144	-	0.009	0.0084	-	0.0255	0.0257	0.8%	0.0117	0.0117	-	0.021	0.0169	-	0.0784	0.0797	1.6%
Arsenic	µg/L	0.01	0.307	0.299	2.6%	0.258	0.269	4.2%	0.214	0.216	0.9%	0.656	0.669	2.0%	0.296	0.286	3.4%	0.28	0.278	0.7%	0.37	0.396	6.8%
Barium	µg/L	0.02	35.1	32.4	8.0%	6.09	6.08	0.2%	7.62	7.58	0.5%	8.21	8.26	0.6%	11.7	11.7	0.0%	9.4	9.2	2.2%	9.23	9.3	

Table A-3: Summary of Field Duplicate Sample Results, 2024

Parameter	Unit	DL	BRP-29-5		RPD	BRP-23		RPD	BRP-34		RPD	BRP-23		RPD	BRP-31-1		RPD	BRP-32-1		RPD	BRP-23		RPD	
			Sample	Duplicate		Sample	Duplicate		Sample	Duplicate		Sample	Duplicate		Sample	Duplicate		Sample	Duplicate					
			19-Apr-24	19-Apr-24		27-May-24	27-May-24		27-Jun-24	27-Jun-24		25-Jul-24	25-Jul-24		4-Aug-24	4-Aug-24		18-Sep-24	18-Sep-24		22-Sep-24	22-Sep-24		
Sodium	µg/L	10	2020	1980	2.0%	902	900	0.2%	781	814	4.1%	1180	1100	7.0%	979	948	3.2%	1020	1000	2.0%	1560	1610	3.2%	
Strontium	µg/L	0.02	104	104	0.0%	13.3	13.3	0.0%	21.5	22.4	4.1%	31.8	31.8	0.0%	39.2	37.4	4.7%	32.2	33	2.5%	34.2	35.4	3.4%	
Sulphur	µg/L	500	9730	9320	4.3%	2860	2870	0.3%	3600	3550	1.4%	3250	3270	0.6%	4090	4100	0.2%	4380	4380	0.0%	6520	6810	4.4%	
Tantalum	µg/L	0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	
Tellurium	µg/L	0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	
Thallium	µg/L	0.001	0.0051	0.0052	1.9%	0.0022	0.0021	-	0.0015	0.0013	-	0.004	0.0043	-	0.0035	0.003	-	0.0025	0.002	-	0.0031	0.0033	-	
Thorium	µg/L	0.005	0.027	0.0272	0.7%	0.0103	0.0124	-	0.0086	0.0088	-	0.0191	0.0213	-	<0.005	<0.005	-	0.0096	0.0102	-	0.0271	0.0259	4.5%	
Tin	µg/L	0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	
Titanium	µg/L	0.05	0.193	0.342	-	0.755	0.669	12.1%	0.115	0.136	-	0.642	0.438	37.8%	0.103	<0.05	-	0.209	0.242	-	0.36	0.338	6.3%	
Tungsten	µg/L	0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	
Uranium	µg/L	0.001	0.0118	0.0148	22.6%	0.0061	0.0056	8.5%	0.0067	0.0064	4.6%	0.0102	0.011	7.5%	0.0064	0.0063	1.6%	0.0084	0.0077	8.7%	0.0272	0.0268	1.5%	
Vanadium	µg/L	0.01	0.046	0.04	-	0.134	0.129	3.8%	0.036	0.036	-	0.307	0.301	2.0%	0.028	0.029	-	0.06	0.062	3.3%	0.095	0.092	3.2%	
Yttrium	µg/L	0.01	0.291	0.321	9.8%	0.064	0.067	4.6%	0.052	0.051	1.9%	0.103	0.101	2.0%	0.052	0.051	1.9%	0.057	0.058	1.7%	0.13	0.131	0.8%	
Zinc	µg/L	0.1	8.55	7.69	10.6%	0.77	0.78	1.3%	0.63	0.63	0.0%	0.9	0.76	16.9%	1.05	1.04	1.0%	0.87	1.04	17.8%	1.03	1.03	0.0%	
Zirconium	µg/L	0.01	0.118	0.114	3.4%	0.053	0.05	-	0.029	0.031	-	0.082	0.083	1.2%	0.025	0.025	-	0.038	0.079	-	0.182	0.177	2.8%	
Dissolved Metals																								
Aluminum	µg/L	0.2	37.5	39.8	6.0%	14	14.1	0.7%	8.74	9.1	4.0%	19.5	20	2.5%	8.85	7.77	13.0%	8.96	8.9	0.7%	22.3	22.3	0.0%	
Antimony	µg/L	0.005	0.018	0.0159	-	0.0141	0.0145	-	0.0084	0.0078	-	0.0237	0.0244	-	0.0843	0.0376	76.6%	0.0158	0.0153	-	0.0825	0.0818	0.9%	
Arsenic	µg/L	0.01	0.309	0.268	14.2%	0.24	0.248	3.3%	0.204	0.193	5.5%	0.604	0.605	0.2%	0.291	0.268	8.2%	0.263	0.254	3.5%	0.35	0.362	3.4%	
Barium	µg/L	0.02	33	31.7	4.0%	6.09	6.04	0.8%	7.39	7.46	0.9%	7.92	7.89	0.4%	11.7	11.5	1.7%	9.68	8.75	10.1%	9.36	9	3.9%	
Beryllium	µg/L	0.002	0.0126	0.0151	18.1%	<0.002	<0.002	-	<0.002	0.0024	-	<0.002	<0.002	-	<0.002	0.0023	-	0.0021	<0.002	-	0.0039	0.0034	-	
Bismuth	µg/L	0.001	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	
Boron	µg/L	5	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	
Cadmium	µg/L	0.0025	0.0634	0.0676	6.4%	0.0048	0.0028	-	0.0037	0.004	-	0.0067	0.0058	-	0.0099	0.0102	-	0.007	0.007	-	0.0085	0.0055	-	
Cesium	µg/L	0.005	0.0294	0.0295	0.3%	<0.005	<0.005	-	0.0061	0.0063	-	0.0077	0.0078	-	0.0133	0.0127	-	0.011	0.0103	-	0.0128	0.0126	-	
Chromium	µg/L	0.04	0.138	-	0.136	-	0.152	0.086	-	0.095	0.055	-	0.155	0.163	-	0.058	0.055	-	0.07	0.071	-	0.178	0.184	-
Cobalt	µg/L	0.005	1.49	1.81	19.4%	0.214	0.215	0.5%	0.133	0.13	2.3%	0.391	0.401	2.5%	0.234	0.232	0.9%	0.306	0.291	5.0%	0.764	0.767	0.4%	
Copper	µg/L	0.05	3.06	2.88	6.1%	0.96	0.945	1.6%	1.32	1.31	0.8%	1.64	1.67	1.8%	1.58	1.54	2.6%	1.45	1.54	6.0%	1.56	1.57	0.6%	
Gallium	µg/L	0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	
Iron	µg/L	0.5	15.7	14.6	7.3%	58.9	60.2	2.2%	22.5	23	2.2%	349	369	5.6%	20.5	18.3	11.3%	16.2	16	1.2%	87.5	88.3	0.9%	
Lanthanum	µg/L	0.01	0.607	0.66	8.4%	0.121	0.127	4.8%	0.086	0.086	0.0%	0.165	0.166	0.6%	0.088	0.093	5.5%	0.097	0.091	6.4%	0.218	0.208	4.7%	
Lead	µg/L	0.005	0.0078	-	0.0059	-	0.0058	0.0059	-	<0.005	0.0058	-	0.0226	0.0232	-	0.0155	<0.005	-	0.009	0.0065	-	0.0086	0.0083	-
Lithium	µg/L	0.1	1.97	2.01	2.0%	0.59	0.6	1.7%	0.79	0.82	3.7%	1.1	1.09	0.9%	1.03	1.01	2.0%	1.06	1.02	3.8%	1.6	1.56	2.5%	
Manganese	µg/L	0.005	24.8	28.2	12.8%	4.71	4.7	0.2%	3.66	3.81	4.0%	10.9	11.2	2.7%	4.81	4.76	1.0%	4.88	4.97	1.8%	20.8	21.2	1.9%	
Mercury	µg/L	0.0005	0.00083	0.00084	-	0.00155	0.00162	-	0.00117	0.00108	-	0.00123	0.00118	-	<0.0005	<0.0005	-	0.00083	<0.0005	-	0.0009	0.00092	-	
Molybdenum	µg/L	0.01	0.013	0.02	-	0.01	<0.01	-	0.01	<0.01	-	0.019	0.02	-	0.015	0.015	-	0.027	0.022	-	0.177	0.175	1.1%	
Nickel	µg/L	0.02	19	18.7	1.6%	3.43	3.45	0.6%	3.49	3.54	1.4%	3.11	3.16	1.6%	4.39	4.16	5.4%	4.27	4.23	0.9%	4.9	4.88	0.4%	
Niobium	µg/L	0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	
Rhenium	µg/L	0.005	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	
Rubidium	µg/L	0.005	3.21	3.08	4.1%	1.19	1.18	0.8%	1.14	1.														

Table A-4: Comparison of Total and Dissolved Parameters in Water, 2024

Parameter	Unit	DL	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4	BRP-29-5	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5	BRP-40-1	BRP-40-2	BRP-40-3	BRP-40-4	BRP-40-5	GLCB-B	GLCB-M	GLCB-T	GLSE-B	GLSE-M	GLSE-T	GLTL-B	GLTL-M	GLTL-T	GLWB-B
			2024-04-19	2024-04-19	2024-04-19	2024-04-19	2024-04-19	2024-04-20	2024-04-20	2024-04-20	2024-04-20	2024-04-20	2024-04-18	2024-04-18	2024-04-18	2024-04-18	2024-04-18	2024-04-21	2024-04-21	2024-04-21	2024-04-17	2024-04-17	2024-04-17	2024-04-17	2024-04-17	2024-04-17	2024-04-21
			Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
Total Nutrients																											
Total organic carbon	mg/L	0.5	7.01	6.81	6.77	6.46	6.89	6.1	6.7	6.05	6.54	5.93	5.52	5.37	5.88	5.94	5.65	5.54	5.78	8.07	5.86	5.89	5.98	6.16	6.03	6.15	6.49
Phosphorus	mg-P/L	0.001	0.0051	0.0027	0.0032	0.0032	0.0029	0.0015	0.0022	0.0036	0.0021	0.0026	0.0057	0.004	0.0036	0.0042	0.0049	0.0023	0.002	0.0035	0.0057	0.0029	0.0034	0.0053	0.0049	0.0043	0.0039
Dissolved Metals																											
Aluminum	µg/L	0.2	41.4	40.8	47.6	40.8	42.3	13.5	14.2	13.5	13.3	13.4	2.45	3.79	1.36	1.51	1.9	44.6	14.6	15.1	14.1	12.8	14.2	10.9	12.5	13	68.2
Antimony	µg/L	0.005	0.0148	0.0193	0.0258	0.0146	0.0205	0.0162	0.0188	0.015	0.0177	0.0153	0.0132	0.0205	0.0098	0.0082	0.0079	0.0155	0.0188	0.0238	0.0143	0.0161	0.0195	0.0136	0.0232	0.0258	0.018
Arsenic	µg/L	0.01	0.29	0.287	0.3	0.289	0.307	0.278	0.282	0.27	0.279	0.269	0.241	0.25	0.236	0.248	0.256	0.287	0.268	0.284	0.276	0.296	0.3	0.287	0.286	0.294	0.387
Barium	µg/L	0.02	32.5	32.1	33.5	32.6	35.1	16	15.7	15.2	16	14.9	7.19	7.08	7.33	7.24	7.69	15.5	15.3	15.5	17.5	16.2	16.7	17.1	16.7	16.4	32.6
Beryllium	µg/L	0.002	0.015	0.0134	0.0143	0.0149	0.0148	0.003	0.0035	0.0036	0.0044	0.0039	<0.002	<0.002	<0.002	<0.002	<0.002	0.0056	0.0035	0.0038	0.0038	0.0048	0.0034	0.0041	0.0034	0.0194	
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Cadmium	µg/L	0.0025	0.0627	0.0604	0.0657	0.0647	0.0599	0.0115	0.0105	0.0111	0.0098	0.0074	0.0027	0.0031	0.003	<0.0025	0.003	0.0111	0.0092	0.0116	0.0114	0.0115	0.0114	0.0125	0.01	0.0095	0.0688
Calcium	µg/L	10	15900	16200	16800	16400	16600	8300	8430	8200	8350	8080	3770	3860	3840	3860	4020	7470	7570	7700	8640	8160	8570	8460	8620	8410	15900
Cesium	µg/L	0.005	0.0298	0.0289	0.031	0.0303	0.0299	0.0156	0.0157	0.0151	0.0156	0.0149	0.005	0.005	<0.005	<0.005	0.0053	0.0166	0.0152	0.016	0.0146	0.0155	0.0163	0.0164	0.016	0.0168	0.0323
Chromium	µg/L	0.04	0.127	0.134	0.15	0.128	0.149	0.101	0.105	0.108	0.095	0.102	0.048	0.056	0.04	0.046	0.047	0.138	0.098	0.108	0.116	0.111	0.123	0.111	0.123	0.137	0.17
Cobalt	µg/L	0.005	1.76	1.75	1.9	1.77	1.51	0.132	0.127	0.118	0.126	0.117	0.0739	0.0497	0.118	0.0649	0.0624	0.229	0.133	0.126	0.39	0.149	0.153	0.212	0.125	0.125	1.95
Copper	µg/L	0.05	2.9	2.88	3.36	2.89	3.28	2.03	2.03	1.91	1.97	1.93	0.761	0.982	0.716	0.795	0.787	2.17	2	2.21	2.01	2.02	2.19	1.93	2.15	2.11	3.46
Gallium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Iron	µg/L	0.5	23.5	22.1	27.1	18.5	19	7.24	7.36	7.18	7.39	7.05	1.52	1.55	1.54	1.62	1.74	7.11	7.11	7.54	7.86	6.72	6.69	6.74	6.74	18.8	
Lanthanum	µg/L	0.01	0.772	0.663	0.712	0.682	0.646	0.207	0.2	0.198	0.204	0.196	0.021	0.022	0.02	0.021	0.022	0.556	0.204	0.212	0.239	0.219	0.214	0.166	0.161	1.12	
Lead	µg/L	0.005	0.0111	0.0201	0.054	0.0084	0.0309	0.0128	0.0154	0.0062	0.0058	0.0087	0.0461	0.0808	0.0279	0.0186	0.0102	0.0423	0.0175	0.0242	0.0065	0.0207	0.0417	0.0064	0.0463	0.0462	0.0613
Lithium	µg/L	0.1	2.02	1.98	2.08	2.06	2.02	1.31	1.33	1.31	1.37	1.32	0.73	0.75	0.76	0.75	0.76	1.18	1.22	1.27	1.14	1.22	1.27	1.16	1.22	1.18	2.09
Magnesium	µg/L	1	6480	6550	6840	6630	6930	4250	4240	4160	4260	4070	2880	2930	2920	2980	3120	5000	5030	5180	4380	4120	4410	4300	4430	4430	8560
Manganese	µg/L	0.005	27.3	27.2	29.4	27.2	24.7	5.06	4.61	4.39	4.75	4.22	11.6	7.22	15.9	9.14	9.31	9	5.84	4.41	15.3	3.68	22.2	12.6	10.7	31.1	
Mercury	µg/L	0.0005	0.00106	0.00206	0.0012	0.00106	0.00107	0.00091	0.00063	0.00089	0.00074	0.00066	<0.0005	<0.0005	<0.0005	<0.0005	0.00078	0.00076	0.00131	0.00127	0.00136	0.00091	0.00196	0.00162	0.00147	0.0106	
Molybdenum	µg/L	0.01	0.011	0.011	0.016	<0.01	0.016	0.017	0.016	0.015	0.017	0.015	<0.01	<0.01	<0.01	0.027	0.017	0.018	0.018	0.013	0.015	0.023	0.013	0.02	0.019	0.014	
Nickel	µg/L	0.02	18.4	18.2	19.1	18.5	19	7.24	7.36	7.18	7.39	7.05	1.52	1.55	1.54	1.62	1.74	7.11	7.11	7.54	7.86	6.72	6.69	6.74	6.74	18.8	
Niobium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Potassium	µg/L	5	1090	1120	1170	1130	1190	816	827	793	808	779	577	599	587	594	624	759	765	793	839	805	869	848	887	883	1180
Rhenium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Rubidium	µg/L	0.005	3.02	3.02	3.15	3.07	3.18	2.09	2.12	2.05	2.11	1.99	1.48	1.49	1.5	1.52	1										

Table A-4: Comparison of Total and Dissolved Param

Parameter	Unit	DL	GLWB-M	GLWB-T	BRP-18	BRP-19	BRP-23	BRP-30	BRP-34	GIROF	GIROF	WOLFOF	BRP-18	BRP-19	BRP-23	BRP-30	BRP-34	GIROF	WOLFOF	BRP-18	BRP-19	BRP-23	BRP-30	BRP-34	GIROF	WOLFOF	BRP-31-1	
			2024-04-21 Sample	2024-04-21 Sample	2024-05-25 Sample	2024-05-25 Sample	2024-05-27 Sample	2024-05-27 Sample	2024-05-27 Sample	2024-05-26 Sample	2024-05-29 Sample	2024-05-27 Sample	2024-06-26 Sample	2024-06-26 Sample	2024-06-26 Sample	2024-06-27 Sample	2024-06-27 Sample	2024-06-27 Sample	2024-06-26 Sample	2024-07-25 Sample	2024-07-25 Sample	2024-07-25 Sample	2024-07-24 Sample	2024-07-24 Sample	2024-07-24 Sample	2024-07-24 Sample	2024-08-04 Sample	
Total Nutrients																												
Total organic carbon	mg/L	0.5	6.42	6.39	6.61	8.95	7.76	10	6.64	6.58	-	7.52	2.91	9.25	4.21	15	4.48	3.94	4.13	3.07	24.3	6.94	22.7	5.39	4.74	7.11	4.4	
Phosphorus	mg-P/L	0.001	0.003	0.0043	0.009	0.022	0.0139	0.0149	0.0092	0.0111	-	0.0108	<0.001	0.0165	0.0043	0.003	0.0064	0.0026	0.002	0.024	0.0103	0.0242	0.0198	0.0061	0.0088	0.0043		
Total Metals																												
Aluminum	µg/L	0.2	40.3	43	56.8	519	32	63.2	73.4	-	62	32.6	18.4	741	25.6	54	14.4	39.2	41	66.4	926	32.5	92.4	7.65	18.5	22.7	11.5	
Antimony	µg/L	0.005	0.0169	0.0193	0.0116	0.0516	0.0145	0.0072	0.0142	-	0.0067	0.009	0.0114	0.0789	0.0134	0.0092	0.009	0.0131	0.008	0.0109	0.0882	0.0255	0.0146	0.0108	0.0083	0.0139	0.0117	
Arsenic	µg/L	0.01	0.302	0.289	0.32	2.57	0.258	0.228	0.318	-	0.214	0.292	0.187	4.35	0.291	0.598	0.214	0.247	0.438	0.187	8.73	0.656	1.05	0.261	0.271	1.56	0.296	
Barium	µg/L	0.02	32.4	33.2	10.2	25.5	6.09	5.51	10.7	-	4.87	5.59	36.6	5.32	11.8	7.62	4.98	4.78	96.9	39.8	8.21	13.7	7.09	4.89	8.2	11.7		
Beryllium	µg/L	0.002	0.0142	0.0144	0.0058	0.0221	0.0024	0.0042	0.0085	-	0.0074	0.0022	0.0036	0.0022	0.0079	0.0022	0.0065	0.003	0.0366	0.0436	0.0025	0.0092	<0.002	0.0024	0.0026	<0.002		
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	0.0098	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.0156	<0.001	0.0014	<0.001	0.0012	<0.001	0.0211	<0.001	0.0023	<0.001	0.0023	<0.001	<0.001		
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	5.7	<5	<5	<5	<5	<5	6.3	<5	<5	<5	<5	<5	<5		
Cadmium	µg/L	0.0025	0.0527	0.0639	0.02	0.0313	0.0038	0.0061	0.0128	-	0.0123	0.0033	0.0218	0.0327	0.004	0.0104	0.0038	0.0089	0.0026	0.29	0.0465	0.0086	0.0204	0.0042	0.0054	0.0115	0.0109	
Calcium	µg/L	10	15800	16100	4760	6460	3400	1530	4900	-	2730	3000	9100	12400	3050	3700	4220	2900	2600	47100	15000	5820	4510	3890	2810	5510	6890	
Cesium	µg/L	0.005	0.0314	0.0326	0.0113	0.0607	<0.005	<0.005	0.0114	-	0.0073	<0.005	0.01	0.085	0.0053	<0.005	0.0067	0.0067	0.0085	0.044	0.0911	0.0083	0.0065	0.0088	0.0075	0.0133	0.013	
Chromium	µg/L	0.04	0.136	0.14	0.186	1.19	0.146	0.262	0.255	-	0.122	0.401	0.137	1.75	0.167	0.728	0.136	0.133	0.258	0.16	2.26	0.192	0.967	0.052	0.068	0.17	0.058	
Cobalt	µg/L	0.005	1.75	1.89	0.681	4	0.27	0.334	0.849	-	1.92	0.161	0.437	4.7	0.253	0.888	0.19	0.621	0.174	5.95	10.1	0.455	0.679	0.342	0.218	0.677	0.304	
Copper	µg/L	0.05	2.93	3.1	2.23	4.83	1.17	1.6	1.85	-	2.2	1.16	1.9	5.79	1.19	2.61	1.31	2.29	1.37	2.43	12.2	1.82	3.06	1.35	1.9	2.53	1.57	
Gallium	µg/L	0.05	<0.05	<0.05	<0.05	0.035	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.0339	<0.05	0.004	<0.05	<0.05	<0.05	0.0195	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Iron	µg/L	0.5	505	22.9	50.6	127	144	100	112	-	112	968	129	686	49.7	179	508	2790	549	179	2790	549	179	2790	549	179	2790	
Lanthanum	µg/L	0.01	0.679	0.712	0.577	1.33	0.175	0.146	0.362	-	0.596	0.161	0.36	1.62	0.169	0.362	0.122	0.55	0.215	1.34	0.264	0.625	0.088	0.201	0.462	0.131		
Lead	µg/L	0.005	0.014	0.0209	0.0098	0.454	0.0178	0.0339	0.0339	-	0.018	0.0183	0.0167	0.522	0.0207	0.0365	0.008	0.032	0.0486	0.0262	0.834	0.038	0.0757	0.0054	0.0107	0.0918	0.0068	
Lithium	µg/L	0.1	1.94	1.98	0.71	2.47	0.62	0.36	0.88	-	0.77	0.58	1.17	4.62	0.67	0.8	0.83	0.87	0.68	3.2	5.28	1.11	1	0.84	1	0.82	0.98	
Magnesium	µg/L	1	8460	8400	2070	5220	2410	1030	2720	-	2220	2040	10000	1930	2620	2240	2280	1790	15600	12800	3070	3300	2180	2370	3550	2980		
Manganese	µg/L	0.005	28.2	29.6	10.5	61.3	5.74	2.59	23.8	-	28.1	3.39	7.74	74.2	6.14	6.28	5.12	7.44	3.46	123	257	7.53	11.6	3.74	35.6	6.03		
Mercury	µg/L	0.0005	0.00103	0.00113	0.00273	0.00348	0.00242	0.00392	0.00219	0.00301	-	0.0023	0.00336	0.00228	0.001	0.00304	0.00095	0.00328	0.00087	0.00088	0.00639	0.00171	0.00509	0.00096	0.00082	0.00223	0.0007	
Molybdenum	µg/L	0.01	0.013	0.012	0.016	0.117	0.013	0.019	0.017	-	0.011	0.016	0.011	0.145	<0.01	0.019	0.012	0.019	0.013	<0.01	0.414	0.02	0.019	0.013	0.015	0.06	0.012	
Nickel	µg/L	0.02	18.3	18.8	5.85	12	4.06	3.24	3.24	-	10.9	3.83	6.61	17.7	2.1	6.27	3.59	6.96	2.8	46.5	34.7	5.34	1.59	4.23	1.59	4.23		
Niobium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Potassium	µg/L	5	1160	1150	650	2460	542	364	620	-	410	490	839	4480	374	226	488	387	378	2280	5720	602	244	507	409	757	670	
Rhenium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.006	<0.005	<0.005	<0.005	<0.005	<0.006	0.0126	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Rubidium	µg/L	0.005	3.11	3.13	1.69	5.27	1.4	1	1.46	-	0.812	1.27	1.79	8.22	0.97	0.761	1.16	0.748	0.999	6.28	9.92	1.65	0.945	1.33	0.891	2.22	1.69	
Selenium	µg/L	0.025	0.051	0.069	0.027	0.117	0.034	<0.025	0.027	-	0.03	0.034	0.037	0.278	<0.025	0.048	<0.025	<0.025	<0.025	0.189	0.385	0.058	0.076	0.035	0.035	0.058	0.033	
Silicon	µg/L	50	1720	1720	575	1720	465	612	753	-	583	466	604	1770	56	65	258	333	135	1680	3290	85	254	95	273	585	162	
Silver	µg/L	0.002	<0.002	<0.002	0.0022	0.0062	<0.002	0.0024	0.0025	-	0.0021	0.0036	<0.002	0.0085	<0.002	0.0052	<0.002	0.0025	0.0032	0.0026	0.0024	0.0063	<0.002	0.0022	0.0038	<0.002		
Sodium	µg/L	10	1390	1390	980	1390	980	1390	980	-	739	2450	980	2450	980	2450	980	2450	980	2450	980	2450	980	2450	980	2450	980	
Strontium	µg/L	0.02	101	103	23.3	52.8	13.3	6.23	25.3	-	10.9	12.2	45.7	58.6	13.2	21.5	11.8	10.8	246	70.9	31.8	12.1	23.7	39.2	39.2	39.2		
Sulphur	µg/L	500	9250	9130	2710	5760	2860	1100	3630	-	3310	2540	4500	14800	2760	2770	3600	4100	2650	15000	19300	3250	2040	3420	3050	4090		
Tantalum	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Tellurium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Thallium	µg/L	0.001	0.005	0.0054	0.0031	0.0185	0.0022	0.0023	0.0031	-	0.0023	0.002	0.0026	0.0201	0.0018	0.0015	0.0017	0.0014	0.0166	0.0293	0.004	0.0043	0.0022	0.002	0.0041	0.0035		
Thorium	µg/L	0.005	0.0202	0.014	0.0201	0.128	0.0103	0.0265	0.0216	-	0.0124	0.0124	0.0086	0.242	0.0127	0.0876	0.0072	0.0149	0.0057	0.445	0.0191	0.0948	<0.005	<0.005	0.0232	<0.005		
Tin	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Titanium	µg/L	0.05	0.122	0.152	0.455	14.8	0.152	0.315	0.895	-	1.61	0.432	0.089	18.6	1.36	1.28	0.115	0.645	0.797	0.066	23.3	0.642	3.05	0.066	0.325	0.515	0.103	
Tungsten	µg/L	0.01	<0.01	<0.01	<0.01	0.022	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.048	<0.01	0.011	<0.01						

Parameter	Unit	DL	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	BRP-18	BRP-19	BRP-23	BRP-30	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5	BRP-32-1	BRP-32-2	
			2024-08-04	2024-08-04	2024-08-04	2024-08-04	2024-08-03	2024-08-03	2024-08-03	2024-08-03	2024-08-03	2024-08-03	2024-08-02	2024-08-02	2024-08-02	2024-08-02	2024-08-02	2024-09-21	2024-09-22	2024-09-22	2024-09-21	2024-09-19	2024-09-19	2024-09-19	2024-09-19	2024-09-19	2024-09-18	2024-09-18
			Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
Total Nutrients																												
Total organic carbon	mg/L	0.5	3.88	3.74	4.1	4.03	4.13	4.3	4.18	3.75	3.77	3.68	3.73	3.77	3.61	3.56	7.3	15.9	8.4	14.6	6.96	7.52	7.52	7.38	7.18	5.32	5.22	
Phosphorus	mg-P/L	0.001	0.0028	0.0036	0.0033	0.0041	0.0046	0.0036	0.0032	0.0028	0.0033	0.0035	0.011	0.0035	0.0036	0.0034	0.0031	0.0078	0.004	0.0028	0.0046	0.0045	0.0046	0.0045	0.0062	0.004	0.0029	
Total Metals																												
Aluminum	µg/L	0.2	9.79	10.5	9.96	10.2	9.41	9.3	8.9	9.29	8.72	2.35	2.82	2.51	2.44	2.54	74.7	162	29.3	106	104	101	97.2	103	91.8	16.3	15.4	
Antimony	µg/L	0.005	0.0082	0.0083	0.009	0.0088	0.0103	0.0085	0.0091	0.0084	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	0.0127	0.0876	0.0784	0.013	0.0238	0.0196	0.0201	0.02	0.019	0.021	0.0144	
Arsenic	µg/L	0.01	0.287	0.285	0.278	0.281	0.241	0.244	0.247	0.254	0.252	0.176	0.178	0.179	0.175	0.18	0.283	1.78	0.37	0.329	0.529	0.512	0.565	0.492	0.479	0.28	0.282	
Barium	µg/L	0.02	11.2	11.3	11	11	7.61	7.63	7.56	7.62	7.48	3.23	3.27	3.2	3.17	3.22	31.5	47.3	9.23	15.8	40.7	41.9	40.9	40.2	40.6	9.4	8.98	
Beryllium	µg/L	0.002	0.0024	0.0024	0.002	0.0022	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0152	0.0128	0.0035	0.0074	0.0244	0.0239	0.0237	0.024	0.0259	0.0029	0.0025	
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0036	<0.001	<0.001	0.0014	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	15.6	<5	<5	5.5	5.3	5.3	5.2	<5	<5	<5	
Cadmium	µg/L	0.0025	0.01	0.0096	0.0106	0.0083	0.0033	0.0043	0.0049	0.0041	0.0034	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0803	0.0414	0.0075	0.0051	0.0599	0.1111	0.107	0.101	0.092	0.0968	0.0968	
Calcium	µg/L	0.01	6510	6410	6420	6410	419	420	420	420	420	1920	1920	1920	1920	1920	1870	22400	22400	22400	2240							

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Table A-4: Comparison of Total and Dissolved Parame

Parameter	Unit	DL	BRP-32-3	BRP-32-4	BRP-32-5	BRP-34	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	GIROF	WOLFOF	BRP-29-5	BRP-23	BRP-34	BRP-23	BRP-31-1	BRP-32-1	BRP-23
			2024-09-18 Sample	2024-09-18 Sample	2024-09-18 Sample	2024-09-22 Sample	2024-09-20 Sample	2024-09-20 Sample	2024-09-20 Sample	2024-09-20 Sample	2024-09-20 Sample	2024-09-22 Sample	2024-09-21 Sample	2024-04-19 Duplicate	2024-05-27 Duplicate	2024-06-27 Duplicate	2024-07-25 Duplicate	2024-08-04 Duplicate	2024-09-18 Duplicate	2024-09-22 Duplicate
Total Nutrients																				
Total organic carbon	mg/L	0.5	5.26	5.17	5.23	5.51	5.3	4.77	4.78	4.96	5.04	6.55	8.78	5.66	9.05	4.66	6.02	3.69	5.42	8.55
Phosphorus	mg-P/L	0.001	0.0038	0.0047	0.0057	0.0041	0.003	0.003	0.0028	0.0035	0.009	0.0028	0.0041	0.0033	0.0204	0.003	0.0076	0.0024	0.0039	0.0037
Total Metals																				
Aluminum	µg/L	0.2	15.6	14.2	14.8	16.6	5.65	5.33	5.39	5.33	5.65	30.7	34.3	44	32.3	15.5	32.5	10.9	15.7	30
Antimony	µg/L	0.005	0.014	0.0145	0.0138	0.0161	<0.005	<0.005	<0.005	<0.005	<0.005	0.0095	0.01	0.0144	0.0144	0.0084	0.0257	0.0117	0.0169	0.0797
Arsenic	µg/L	0.01	0.263	0.272	0.282	0.263	0.191	0.185	0.175	0.183	0.184	0.263	0.35	0.299	0.269	0.216	0.669	0.286	0.278	0.396
Barium	µg/L	0.02	9.22	9.17	9.22	9.82	3.58	3.6	3.53	3.57	3.55	7.08	7.83	32.4	6.08	7.58	8.26	11.7	9.2	9.3
Beryllium	µg/L	0.002	0.0027	0.0024	0.0021	0.0034	<0.002	<0.002	<0.002	<0.002	<0.002	0.0072	0.0031	0.0181	0.0029	0.0024	0.0024	0.002	<0.002	0.0035
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	0.0068	0.0076	0.0045	0.007	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0084	0.0042	0.0676	0.0028	0.004	0.0058	0.0102	0.007	0.0055
Calcium	µg/L	10	5580	5740	5670	5920	2330	2330	2290	2250	2310	4850	5130	16500	3370	4380	5780	6520	5880	7390
Cesium	µg/L	0.005	0.0112	0.011	0.0112	0.0136	0.0064	0.0061	0.0059	0.0054	0.0055	0.0081	0.0064	0.0302	<0.005	0.0066	0.009	0.0131	0.0106	0.0156
Chromium	µg/L	0.04	0.079	0.085	0.081	0.084	0.079	<0.04	0.042	<0.04	0.081	0.126	0.239	0.138	0.145	0.231	0.195	0.055	0.089	0.2
Cobalt	µg/L	0.005	0.342	0.334	0.353	0.331	0.0729	0.0748	0.067	0.0711	0.0718	0.807	0.227	1.86	0.27	0.19	0.46	0.287	0.356	0.8
Copper	µg/L	0.05	1.54	1.52	1.5	1.52	0.671	0.675	0.687	0.66	0.683	2.62	1.79	2.96	1.16	1.38	1.82	1.55	1.58	1.71
Gallium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	µg/L	0.5	44.9	39.5	45.3	47.4	67.1	65.9	69.5	62.6	69.9	129	34.5	59	129	50.4	556	37.2	48.1	126
Lanthanum	µg/L	0.01	0.137	0.122	0.133	0.139	0.057	0.052	0.051	0.053	0.051	0.54	0.302	0.723	0.184	0.115	0.259	0.13	0.13	0.259
Lead	µg/L	0.005	0.0114	0.009	0.009	0.0078	0.0053	0.0052	0.0058	0.0053	0.0057	0.0116	0.015	0.0133	0.0192	0.0077	0.0362	0.0072	0.0154	0.0157
Lithium	µg/L	0.1	1.02	1.02	1.02	0.99	0.46	0.47	0.47	0.48	0.48	1.15	0.95	1.98	0.59	0.76	1.08	1	1.01	1.49
Magnesium	µg/L	1	2930	2910	2930	3110	1840	1830	1810	1820	1870	3850	3060	6710	2410	2360	3030	2890	2990	4400
Manganese	µg/L	0.005	5.85	5.72	6.01	5.42	2.96	2.92	2.66	2.76	2.78	3.44	4.68	29.1	5.68	5.14	12.6	5.68	6.19	22.3
Mercury	µg/L	0.0005	0.00065	0.00064	0.00078	0.00067	<0.0005	<0.0005	<0.0005	0.00051	<0.0005	0.00101	0.00151	0.00117	0.00234	0.00092	0.00172	0.00058	0.00067	0.00127
Molybdenum	µg/L	0.01	0.022	0.022	0.023	0.022	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	0.013	0.01	0.011	0.011	0.022	0.013	0.025	0.187
Nickel	µg/L	0.02	4.29	4.33	4.39	4.46	1.05	1.05	1.06	1.08	1.08	11.5	4.55	19	4.04	3.63	3.39	4.22	4.51	5.01
Niobium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Potassium	µg/L	5	648	630	656	621	371	374	368	362	372	506	478	1150	542	514	597	648	680	1080
Rhenium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium	µg/L	0.005	1.57	1.55	1.57	1.61	0.98	0.997	0.975	0.956	0.987	1.04	1.19	3.1	1.4	1.21	1.68	1.59	1.65	2.2
Selenium	µg/L	0.025	0.036	0.044	0.036	0.039	<0.025	<0.025	<0.025	0.027	<0.025	0.033	0.025	0.061	<0.025	<0.025	0.057	0.027	0.04	0.1
Silicon	µg/L	50	269	284	276	338	234	238	234	242	237	960	1260	1680	474	257	88	162	270	1180
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0024	0.0033	<0.002	<0.002	<0.002	0.0024	<0.002	<0.002	0.0029
Sodium	µg/L	10	968	975	986	1030	650	660	660	650	660	1140	960	1140	960	814	1100	948	1000	1610
Strontium	µg/L	0.02	31.3	31.1	31.6	31.7	7.84	7.83	7.73	7.61	7.83	18.7	22.5	104	13.3	22.4	31.8	37.4	33	35.4
Sulphur	µg/L	500	4380	4470	4360	4390	1690	1690	1690	1720	1710	7290	4750	9320	2870	3550	3270	4100	4380	6810
Tantalum	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	µg/L	0.001	0.0023	0.0018	0.0024	0.0015	<0.001	<0.001	<0.001	<0.001	<0.001	0.0017	0.0014	0.0052	0.0021	0.0013	0.0043	0.003	0.002	0.0033
Thorium	µg/L	0.005	0.0125	0.0101	0.0122	0.0097	0.0054	0.0062	<0.005	<0.005	<0.005	0.022	0.0271	0.0272	0.0124	0.0088	0.0213	<0.005	0.0102	0.0259
Tin	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	0.05	0.2	0.167	0.221	0.169	0.128	0.07	0.079	0.073	0.073	0.374	1.39	0.342	0.669	0.136	0.438	<0.05	0.242	0.38
Tungsten	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	µg/L	0.001	0.0079	0.0061	0.007	0.0067	0.0037	0.0045	0.0041	0.0035	0.0032	0.0151	0.0127	0.0148	0.0056	0.0064	0.011	0.0063	0.0077	0.0268
Vanadium	µg/L	0.01	0.053	0.052	0.07	0.052	0.029	0.027	0.027	0.025	0.028	0.069	0.091	0.04	0.129	0.036	0.301	0.029	0.062	0.092
Yttrium	µg/L	0.01	0.056	0.055	0.058	0.061	0.024	0.024	0.024	0.024	0.024	0.231	0.149							

APPENDIX B

2024 Water Quality – Depth Profile Tables and Graphs

Table B-1: Field Profiles at Goose Lake West Bay at BRP-29A, April 2024

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth ^(a) (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-29A-1	19-Apr-24	2.5	1.0	0.3	86	11.8	1.1	6.6	175
				0.5	85	11.8	1.0	6.5	175
				1.0	91	12.6	0.8	6.4	179
				1.4	45	6.8	1.0	6.3	178
BRPA-29-2	19-Apr-24	4.1	1.1	0.3	85	11.7	1.5	7.3	176
				0.5	85	11.7	1.2	7.1	171
				1.0	85	11.8	1.0	6.9	170
				1.5	84	11.7	1.1	6.8	169
				2.0	83	11.5	1.2	6.7	168
				2.5	81	11.2	1.2	6.6	168
BRP-29A-3	19-Apr-24	4.4	1.1	2.9	79	10.9	1.3	6.5	167
				0.3	91	12.4	1.4	6.4	179
				0.5	90	12.5	1.0	6.3	177
				1.0	93	12.9	0.8	6.2	176
				1.5	91	12.6	0.9	6.1	172
				2.0	89	12.3	1.0	6.1	171
BRP-29A-4	19-Apr-24	7.5	1.0	2.5	87	12.0	1.2	6.0	169
				3.0	85	11.7	1.2	6.0	169
				0.3	86	12.2	0.4	6.5	175
				0.5	86	12.2	0.3	6.4	173
				1.0	89	12.6	0.4	6.3	173
				1.5	88	12.3	0.7	6.3	170
				2.0	86	12.0	0.9	6.2	168
				2.5	85	11.8	1.1	6.1	168
				3.0	84	11.6	1.2	6.1	167
				3.5	84	11.5	1.2	6.1	167
				4.0	83	11.4	1.3	6.0	167
				4.5	82	11.3	1.3	6.0	167
BRP-29A-5	19-Apr-24	3.5	1.6	5.0	82	11.3	1.3	6.0	167
				5.5	81	11.2	1.3	6.0	167
				6.0	81	11.1	1.3	5.9	167
				0.3	88	12.3	0.6	6.0	172
				0.5	87	12.2	0.6	6.0	172
				1.0	84	11.7	1.1	5.9	172
				1.5	75	10.2	1.6	5.9	169

Table B-1: Field Profiles at Goose Lake West Bay at BRP-29A, April 2024

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth ^(a) (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-29A-6	21-Apr-24	31.0	1.4	0.3	86	11.7	1.2	6.9	175
				0.5	86	11.8	0.9	6.8	176
				1.0	86	11.7	0.9	6.6	174
				2.0	83	11.3	1.1	6.5	172
				3.0	82	11.2	1.2	6.4	171
				4.0	81	11.0	1.3	6.3	171
				5.0	81	10.9	1.3	6.3	171
				6.0	81	11.0	1.4	6.2	172
				7.0	81	10.9	1.4	6.1	171
				8.0	80	10.9	1.4	6.1	171
				9.0	79	10.7	1.4	6.0	170
				10.0	79	10.6	1.4	6.0	170
				11.0	78	10.5	1.4	6.0	171
				12.0	77	10.5	1.4	5.9	171
				13.0	76	10.3	1.4	5.9	172
				14.0	76	10.2	1.5	5.9	171
				15.0	75	10.1	1.5	5.9	171
				16.0	74	10.0	1.6	5.8	171
				17.0	74	9.9	1.8	5.6	172
				18.0	74	9.9	2.0	5.3	177
				19.0	73	9.6	2.3	5.0	183
				20.0	67	8.7	2.7	4.9	211
				21.0	59	7.7	3.1	4.7	259
				22.0	54	6.9	3.5	4.7	295
				23.0	50	6.3	3.9	4.7	316
				24.0	45	5.7	4.0	4.6	325
				25.0	38	4.8	4.0	4.6	330
				26.0	28	3.6	4.0	4.5	334
				27.0	26	3.2	3.9	4.5	334
				28.0	25	3.2	3.9	4.5	334
				28.6	25	3.2	3.9	4.5	334

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

(a) depth starting from underneath the ice layer.

Table B-2: Field Profiles at Goose Lake Central Basin at BRP-32, April 2024

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth ^(a) (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-32-1	20-Apr-24	4.5	1.5	0.3	94	13.1	1.1	7.2	120
				0.5	94	13.1	1.0	7.2	113
				1.0	92	12.8	1.2	7.1	109
				1.5	88	12.1	1.6	7.0	106
				2.0	85	11.6	1.9	6.9	106
				2.5	82	11.1	2.1	6.8	106
BRP-32-2	20-Apr-24	5.0	1.5	0.3	92	12.8	1.1	6.3	107
				0.5	90	12.5	1.0	6.3	105
				1.0	87	12.1	1.3	6.2	104
				1.5	85	11.7	1.5	6.2	102
				2.0	78	10.5	1.8	6.2	101
				2.5	71	9.6	2.1	6.2	101
BRP-32-3	20-Apr-24	5.1	1.5	3.0	73	9.8	2.2	6.1	105
				0.3	93	13.0	1.0	6.2	109
				0.5	92	12.8	1.0	6.2	106
				1.0	90	12.4	1.3	6.2	104
				1.5	85	11.6	1.6	6.2	103
				2.0	75	10.2	1.9	6.2	102
BRP-32-4	20-Apr-24	4.6	1.5	2.5	67	9.1	2.1	6.1	102
				3.0	65	8.7	2.3	6.1	102
				3.5	64	8.5	2.4	6.1	106
				0.3	97	13.6	0.9	6.6	111
				0.5	96	13.5	0.9	6.6	110
				1.0	94	13.0	1.2	6.5	108
BRP-32-5	20-Apr-24	5.0	1.5	1.5	89	12.1	1.5	6.4	106
				2.0	85	11.6	1.9	6.4	104
				2.5	83	11.3	2.0	6.4	105
				3.0	80	10.8	2.2	6.3	108
				0.3	94	13.0	1.0	6.5	107
				0.5	93	13.0	1.0	6.4	106
BRP-32-5	20-Apr-24	5.0	1.5	1.0	89	12.4	1.3	6.4	104
				1.5	84	11.5	1.6	6.3	103
				2.0	78	10.6	1.8	6.3	101
				2.5	73	9.9	2.1	6.2	100
				3.0	68	9.2	2.2	6.2	101

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

(a) depth starting from underneath the ice layer.

Table B-3: Field Profiles at Reference B Lake at BRP-38, April 2024

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth ^(a) (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-38-1	18-Apr-24	3.8	1.5	0.3	109	14.8	2.0	7.6	55.0
				0.5	108	14.8	1.7	7.5	52.5
				1.0	98	13.2	2.2	7.4	46.6
				1.5	54	7.3	2.7	7.2	45.1
				2.0	36	4.7	2.9	7.0	44.8
BRP-38-2	18-Apr-24	3.8	1.5	0.3	109	15.2	1.4	6.9	54.0
				0.5	109	15.2	1.4	6.8	47.6
				1.0	100	13.6	2.0	6.8	45.1
				1.5	46	6.2	2.6	6.6	45.0
				2.0	37	4.9	2.8	6.5	48.3
BRP-38-3	18-Apr-24	4.1	1.5	0.3	111	15.2	1.7	7.1	49.1
				0.5	111	15.2	1.6	7.1	48.9
				1.0	101	13.7	2.0	7.0	45.3
				1.5	62	8.3	2.6	6.8	34.4
				2.0	39	5.1	3.0	6.7	46.4
				2.5	24	3.1	3.2	6.5	46.9
BRP-38-4	18-Apr-24	3.6	1.5	0.3	113	15.6	1.5	6.8	56.0
				0.5	111	15.4	1.5	6.8	49.0
				1.0	93	12.6	1.9	6.7	46.2
				1.5	58	7.8	2.5	6.6	45.1
				2.0	34	4.5	2.9	6.5	44.9
BRP-38-5	18-Apr-24	3.6	1.5	0.3	110	15.2	1.6	6.6	48.1
				0.5	109	15.0	1.5	6.5	47.0
				1.0	97	13.3	1.9	6.5	45.8
				1.5	62	8.3	2.5	6.4	44.6
				2.0	31	4.1	2.8	6.3	44.5

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

(a) depth starting from underneath the ice layer.

Table B-4: Field Profiles at Goose Lake Tail, April 2024

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth ^(a) (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
GLTL	17-Apr-24	5.7	1.5	0.3	84	11.7	1.6	6.6	49.9
				0.5	84	11.8	1.4	6.6	48.5
				1.0	90	11.2	1.6	6.6	45.6
				1.5	61	8.4	2.1	6.4	45.7
				2.0	48	6.5	2.4	6.4	47.1
				2.5	37	5.0	2.6	6.3	47.5
				3.0	31	4.1	2.7	6.2	48.3
				3.5	27	3.6	2.8	6.2	49.2
				4.0	22	2.9	2.9	6.2	49.9

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

(a) depth starting from underneath the ice layer.

Table B-5: Field Profiles at Goose Lake Southeast Basin, April 2024

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth ^(a) (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
GLSE	20-Apr-24	5.2	1.5	0.3	100	14.1	1.2	7.5	50.8
				0.5	99	13.9	1.1	7.4	51.1
				1.0	98	13.8	1.3	7.3	46.2
				1.5	95	13.2	1.5	7.2	45.8
				2.0	89	12.3	1.8	7.2	46.3
				2.5	80	11.0	1.9	7.0	46.1
				3.0	59	8.0	2.1	6.9	47.7
				3.5	33	4.4	2.4	6.7	47.3

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

(a) depth starting from underneath the ice layer.

Table B-6: Field Profiles at Goose Lake West Bay, April 2024

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth ^(a) (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
GLWB	20-Apr-24	4.8	1.3	0.3	90	12.3	0.9	6.2	174
				0.5	92	12.7	0.6	6.1	173
				1.0	92	12.7	0.7	6.1	178
				1.5	91	12.4	0.8	6.1	176
				2.0	89	12.2	1.0	6.0	175
				2.5	86	11.8	1.1	6.0	174
				3.0	82	11.2	1.2	6.0	176
				3.3	80	10.9	1.3	6.0	175

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

(a) depth starting from underneath the ice layer.

Table B-7: Field Profiles at Goose Lake Central Basin, April 2024

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth ^(a) (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
GLCB	20-Apr-24	5.2	1.5	0.3	96	13.0	1.2	6.8	95.9
				0.5	94	12.9	1.2	6.8	96.2
				1.0	91	12.3	1.4	6.7	91.5
				1.5	83	11.2	1.6	6.6	88.6
				2.0	74	9.8	1.9	6.6	87.8
				2.5	72	9.5	2.2	6.4	88.5
				3.0	66	8.8	2.3	6.3	90.6
				3.5	68	8.9	2.4	6.2	93.7

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

(a) depth starting from underneath the ice layer.

Table B-8: Field Profiles at Goose Lake at BRP-31, August 2024

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-31-1	04-Aug-24	3.1	3.1	0.5	95	9.9	13.5	6.8	80.4
				1.0	95	9.9	13.5	6.8	80.2
				1.5	95	9.9	13.5	6.8	80.4
				2.0	92	9.6	13.5	6.8	78.7
				2.1	96	10.0	13.5	6.8	78.9
BRP-31-2	04-Aug-24	3.3	3.3	0.5	93	9.6	13.5	7.0	79.3
				1.0	95	9.9	13.5	7.0	79.5
				1.5	96	10.0	13.5	7.0	79.4
				2.0	92	9.6	13.5	7.0	79.6
				2.3	95	10.0	13.5	6.9	79.4
BRP-31-3	04-Aug-24	3.9	3.9	0.5	95	9.9	13.5	7.1	78.5
				1.0	91	9.5	13.5	7.1	78.2
				1.5	94	9.8	13.5	7.1	78.6
				2.0	93	9.7	13.5	7.0	78.6
				2.5	93	9.7	13.5	7.1	78.6
				2.9	92	9.6	13.5	7.1	78.5
BRP-31-4	04-Aug-24	3.0	3.0	0.5	92	9.6	13.6	7.2	77.2
				1.0	94	9.8	13.6	7.1	77.1
				1.5	96	10.0	13.6	7.2	77.0
				2.0	93	9.6	13.6	7.1	77.0
BRP-31-5	04-Aug-24	3.6	3.6	0.5	95	9.9	13.7	7.2	77.3
				1.0	93	9.6	13.7	7.1	77.3
				1.5	94	9.8	13.6	7.1	77.3
				2.0	94	9.7	13.6	7.1	77.1
				2.5	92	9.5	13.6	7.1	76.9
				2.6	91	9.4	13.6	7.1	76.8

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

Table B-9: Field Profiles at Goose Lake Central Basin at BRP-32, August 2024

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-32-1	03-Aug-24	4.1	4.1	0.5	92	9.3	15.0	6.7	56.9
				1.0	91	9.2	15.0	6.8	56.9
				1.5	93	9.4	15.0	6.8	56.8
				2.0	91	9.2	15.0	6.8	56.8
				2.5	92	9.2	15.0	6.8	56.7
				3.0	92	9.3	14.9	6.8	56.7
				3.1	93	9.4	14.9	6.8	56.7
BRP-32-2	03-Aug-24	4.3	4.3	0.5	92	9.3	15.0	6.9	56.8
				1.0	94	9.5	15.0	6.9	56.8
				1.5	94	9.5	15.0	6.9	56.8
				2.0	93	9.4	15.0	6.9	56.8
				2.5	92	9.3	15.0	6.9	56.8
				3.0	94	9.5	15.0	6.9	56.7
				3.3	93	9.4	15.0	7.0	56.7
BRP-32-3	03-Aug-24	4.4	4.1	0.5	94	9.5	15.0	7.1	56.9
				1.0	94	9.5	15.0	7.1	56.8
				1.5	93	9.4	15.0	7.1	56.8
				2.0	94	9.5	15.0	7.1	56.8
				2.5	92	9.3	15.0	7.1	56.7
				3.0	94	9.5	15.0	7.1	56.7
				3.4	93	9.4	15.0	7.1	56.7
BRP-32-4	03-Aug-24	4.0	4.0	0.5	95	9.6	15.0	7.2	56.8
				1.0	95	9.5	15.0	7.3	56.8
				1.5	93	9.4	15.0	7.2	56.8
				2.0	96	9.7	15.0	7.2	56.8
				2.5	95	9.6	15.0	7.2	56.8
				3.0	95	9.6	15.0	7.2	56.8
BRP-32-5	03-Aug-24	4.4	3.6	0.5	94	9.4	15.1	7.2	56.8
				1.0	93	9.4	15.1	7.2	56.8
				1.5	94	9.5	15.1	7.2	56.8
				2.0	95	9.6	15.1	7.2	56.7
				2.5	94	9.5	15.1	7.2	56.7
				3.0	96	9.7	15.1	7.2	56.7
				3.4	94	9.4	15.1	7.2	56.7

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

Table B-10: Field Profiles at Reference B Lake at BRP-38, August 2024

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-38-1	02-Aug-24	3.7	3.7	0.5	94	9.6	13.9	7.3	29.1
				1.0	89	9.2	13.9	7.3	29.1
				1.5	90	9.3	13.9	7.3	29.1
				2.0	89	9.2	13.9	7.3	29.1
				2.5	91	9.4	13.9	7.3	29.1
				2.7	91	9.4	13.9	7.2	29.0
BRP-38-2	02-Aug-24	3.4	3.4	0.5	91	9.4	13.9	7.3	29.0
				1.0	91	9.4	13.9	7.3	29.1
				1.5	91	9.3	14.0	7.3	29.0
				2.0	90	9.3	13.9	7.3	29.1
				2.4	91	9.4	14.0	7.3	29.1
BRP-38-3	02-Aug-24	3.5	3.5	0.5	94	9.6	14.1	7.2	29.1
				1.0	93	9.6	14.1	7.3	29.2
				1.5	95	9.7	14.1	7.2	29.2
				2.0	92	9.5	14.1	7.2	29.1
				2.5	89	9.2	14.1	7.3	29.1
BRP-38-4	02-Aug-24	3.4	3.4	0.5	94	9.7	14.1	7.2	29.2
				1.0	91	9.3	14.1	7.3	29.2
				1.5	92	9.4	14.1	7.3	29.2
				2.0	91	9.4	14.1	7.3	29.2
				2.4	92	9.4	14.1	7.3	29.2
BRP-38-5	02-Aug-24	3.0	3.0	0.5	91	9.4	14.2	7.3	28.5
				1.0	94	9.6	14.2	7.3	28.7
				1.5	91	9.3	14.2	7.3	28.3
				2.0	89	9.2	14.2	7.3	29.1

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

Table B-11: Field Profiles at Goose Lake at BRP-31, September 2024

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-31-1	19-Sep-24	3.5	3.0	0.3	98	11.8	7.0	6.5	248
				0.5	97	11.7	7.0	6.5	248
				1.0	96	11.7	7.0	6.5	248
				1.5	96	11.6	7.0	6.5	249
				2.0	95	11.5	7.0	6.4	247
				2.5	94	11.4	7.0	6.4	249
BRP-31-2	19-Sep-24	3.5	3.0	0.3	98	11.9	7.0	6.5	249
				0.5	97	11.8	7.0	6.5	249
				1.0	95	11.6	7.0	6.5	249
				1.5	95	11.5	7.0	6.4	249
				2.0	94	11.4	7.0	6.4	249
				2.5	94	11.4	7.0	6.4	249
BRP-31-3	19-Sep-24	3.6	2.9	0.3	97	11.8	7.0	6.4	249
				0.5	96	11.6	7.0	6.4	249
				1.0	94	11.5	7.0	6.4	249
				1.5	95	11.5	7.0	6.4	249
				2.0	94	11.4	7.0	6.4	249
				2.5	95	11.5	7.0	6.4	249
				2.6	95	11.4	7.0	6.4	249
BRP-31-4	19-Sep-24	3.4	3.0	0.3	99	11.9	7.1	6.6	248
				0.5	98	11.8	7.0	6.5	248
				1.0	96	11.6	7.1	6.5	248
				1.5	95	11.6	7.1	6.5	248
				2.0	95	11.6	7.1	6.5	248
				2.4	95	11.5	7.1	6.4	248
BRP-31-5	19-Sep-24	3.7	3.0	0.3	97	11.7	7.1	6.4	246
				0.5	96	11.7	7.1	6.4	246
				1.0	95	11.5	7.1	6.4	247
				1.5	94	11.4	7.1	6.4	246
				2.0	94	11.3	7.1	6.4	246
				2.5	96	11.6	7.1	6.4	246
				2.7	93	11.3	7.1	6.4	247

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

Table B-12: Field Profiles at Goose Lake Central Basin at BRP-32, September 2024

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-32-1	18-Sep-24	4.2	4.2	0.3	87	10.4	7.7	6.8	73.1
				0.5	86	10.2	7.7	6.8	73.0
				1.0	87	10.4	7.7	6.8	73.0
				1.5	84	10.1	7.7	6.8	72.9
				2.0	85	10.1	7.7	6.8	72.9
				2.5	85	10.2	7.7	6.8	72.9
				3.0	84	10.1	7.7	6.8	73.1
				3.2	83	10.0	7.7	6.8	74.2
BRP-32-2	18-Sep-24	4.5	4.5	0.3	88	10.5	7.7	6.9	72.7
				0.5	86	10.3	7.7	6.9	72.8
				1.0	86	10.2	7.7	6.9	72.8
				1.5	87	10.4	7.7	6.9	72.7
				2.0	87	10.4	7.7	6.8	72.7
				2.5	86	10.4	7.7	6.8	72.8
				3.0	87	10.3	7.7	6.8	72.8
				3.5	86	10.2	7.7	6.8	72.7
BRP-32-3	18-Sep-24	4.6	4.5	0.3	87	10.4	7.7	6.9	72.5
				0.5	87	10.4	7.7	6.9	72.6
				1.0	87	10.4	7.7	6.8	72.6
				1.5	87	10.3	7.7	6.9	72.6
				2.0	86	10.3	7.7	6.9	72.6
				2.5	86	10.2	7.7	6.8	72.6
				3.0	86	10.3	7.7	6.8	72.6
				3.5	86	10.2	7.7	6.8	72.6
				3.6	87	10.3	7.7	6.8	72.6
BRP-32-4	18-Sep-24	4.2	4.2	0.3	89	10.6	7.7	6.9	72.8
				0.5	89	10.6	7.7	6.9	72.8
				1.0	87	10.4	7.7	6.9	72.9
				1.5	86	10.2	7.7	6.9	72.9
				2.0	88	10.4	7.7	6.9	72.9
				2.5	86	10.3	7.7	6.9	72.9
				3.0	87	10.4	7.7	6.9	73.3
				3.2	86	10.3	7.7	6.8	75.4

Table B-12: Field Profiles at Goose Lake Central Basin at BRP-32, September 2024

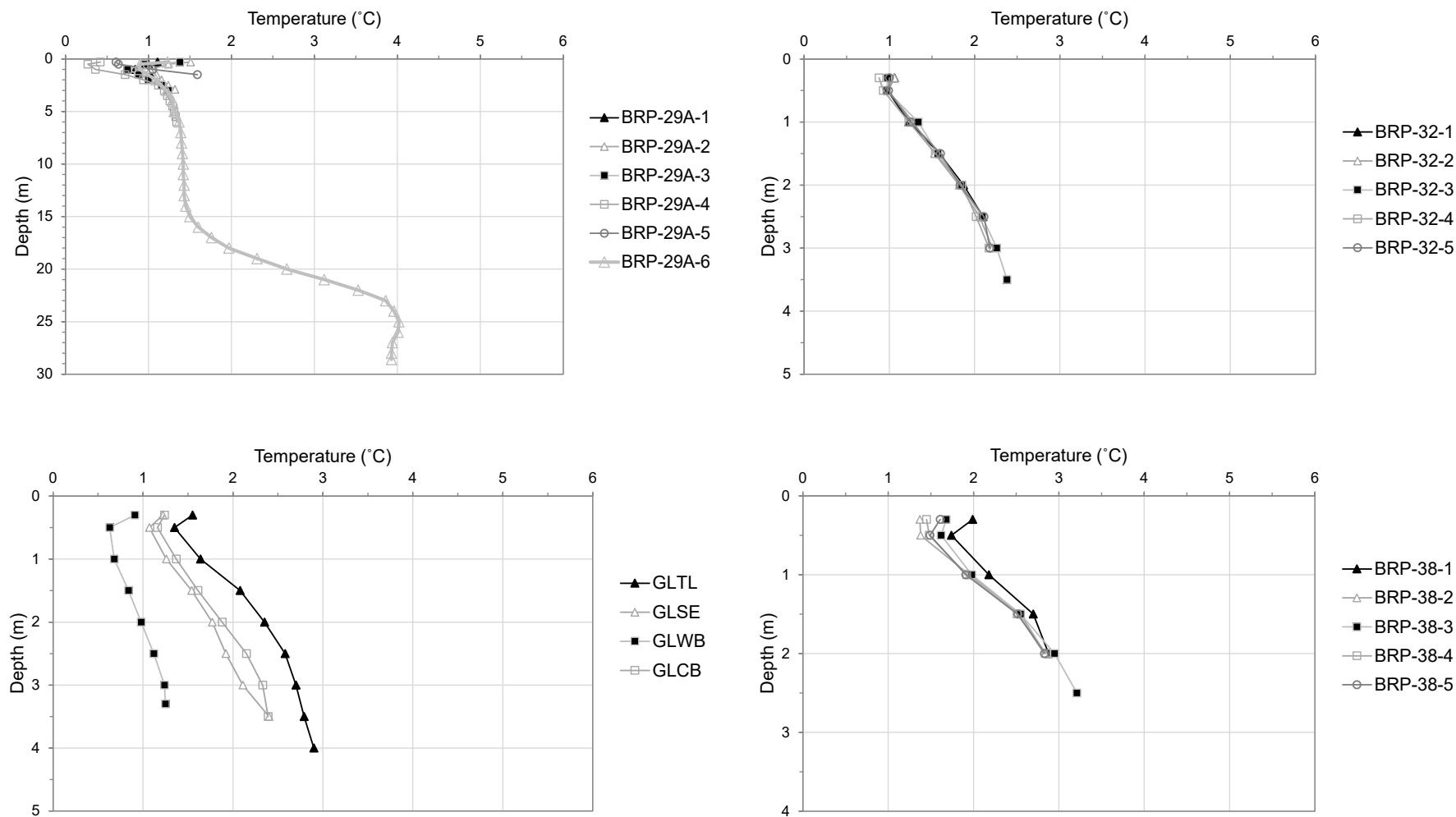
Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-32-5	18-Sep-24	4.5	4.0	0.3	92	11.0	7.7	7.0	72.5
				0.5	89	10.6	7.7	7.0	72.5
				1.0	89	10.6	7.7	6.9	72.7
				1.5	87	10.4	7.7	6.9	72.6
				2.0	87	10.4	7.7	6.9	72.6
				2.5	88	10.6	7.7	6.9	72.9
				3.0	87	10.5	7.7	6.9	73.2
				3.5	87	10.5	7.7	6.9	73.7

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

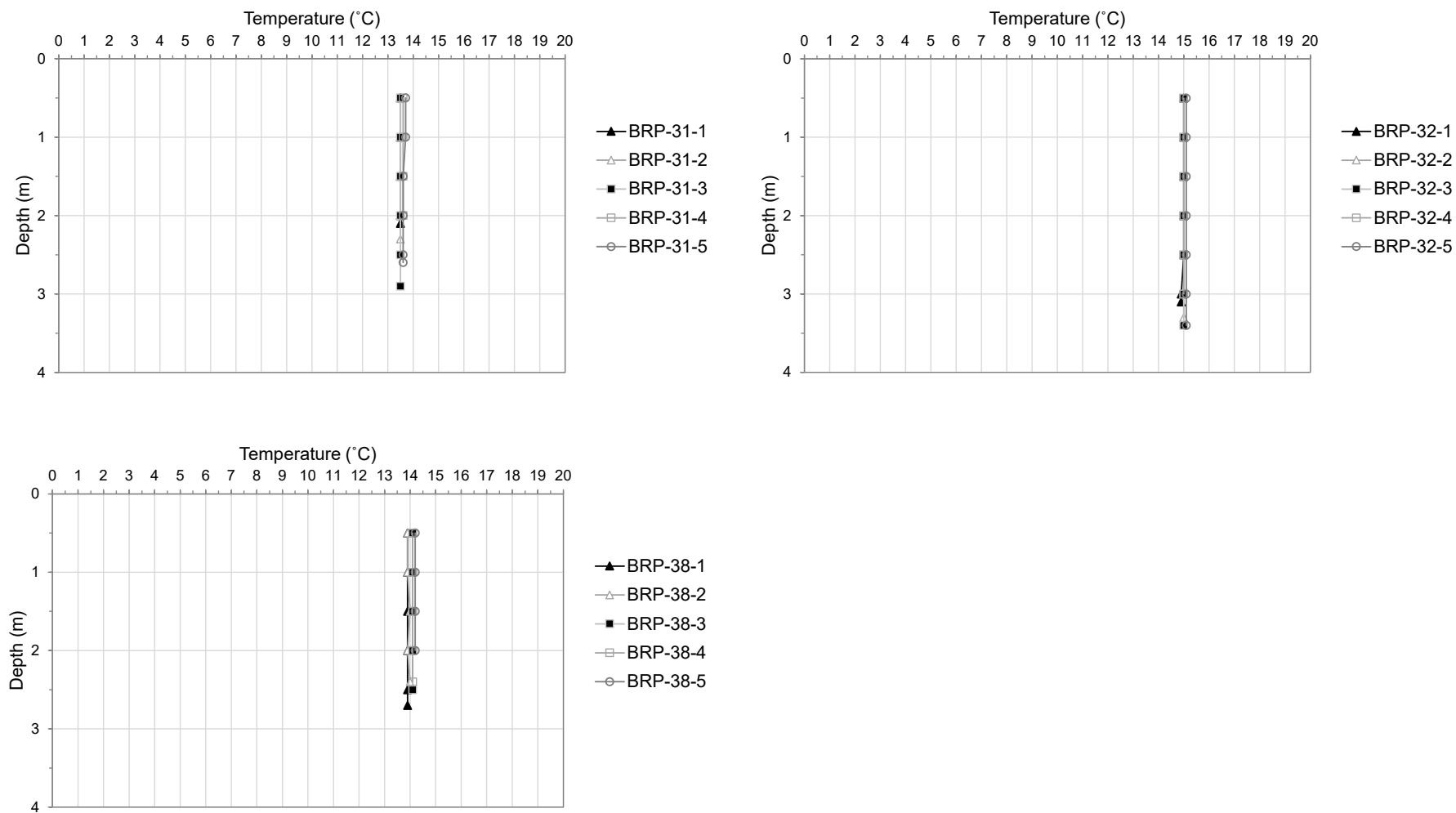
Table B-13: Field Profiles at Reference B Lake at BRP-38, September 2024

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water Temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-38-1	20-Sep-24	3.6	3.6	0.3	98	11.9	7.3	7.2	33.3
				0.5	98	11.9	7.3	7.2	33.3
				1.0	97	11.6	7.3	7.1	33.3
				1.5	97	11.6	7.3	7.1	33.3
				2.0	96	11.6	7.3	7.1	33.3
				2.5	95	11.4	7.3	7.1	33.3
				2.6	95	11.5	7.3	7.1	33.3
BRP-38-2	20-Sep-24	4.0	4.0	0.3	95	11.5	7.3	7.1	33.2
				0.5	94	11.4	7.3	7.0	33.2
				1.0	95	11.5	7.3	7.1	33.2
				1.5	95	11.5	7.3	7.0	33.2
				2.0	94	11.3	7.3	7.1	33.2
				2.5	92	11.1	7.3	7.1	33.2
				3.0	94	11.4	7.3	7.0	33.2
BRP-38-3	20-Sep-24	3.6	3.6	0.3	96	11.6	7.3	7.0	33.2
				0.5	94	11.3	7.3	7.1	33.2
				1.0	95	11.4	7.3	7.0	33.2
				1.5	94	11.4	7.3	7.0	33.2
				2.0	94	11.3	7.3	7.0	33.2
				2.5	93	11.3	7.3	7.0	33.2
				2.6	94	11.3	7.3	7.0	33.2
BRP-38-4	20-Sep-24	3.5	3.5	0.3	95	11.3	7.3	7.1	33.2
				0.5	95	11.4	7.3	7.1	33.2
				1.0	94	11.3	7.3	7.0	33.2
				1.5	94	11.2	7.3	7.0	33.2
				2.0	94	11.4	7.3	7.0	33.2
				2.5	92	11.1	7.3	7.0	33.2
BRP-38-5	20-Sep-24	3.3	3.3	0.3	96	11.5	7.3	7.0	33.3
				0.5	94	11.3	7.3	7.0	33.3
				1.0	94	11.3	7.3	7.0	33.2
				1.5	95	11.5	7.3	7.0	33.3
				2.0	93	11.2	7.3	7.0	33.3
				2.3	93	11.2	7.3	7.0	33.3

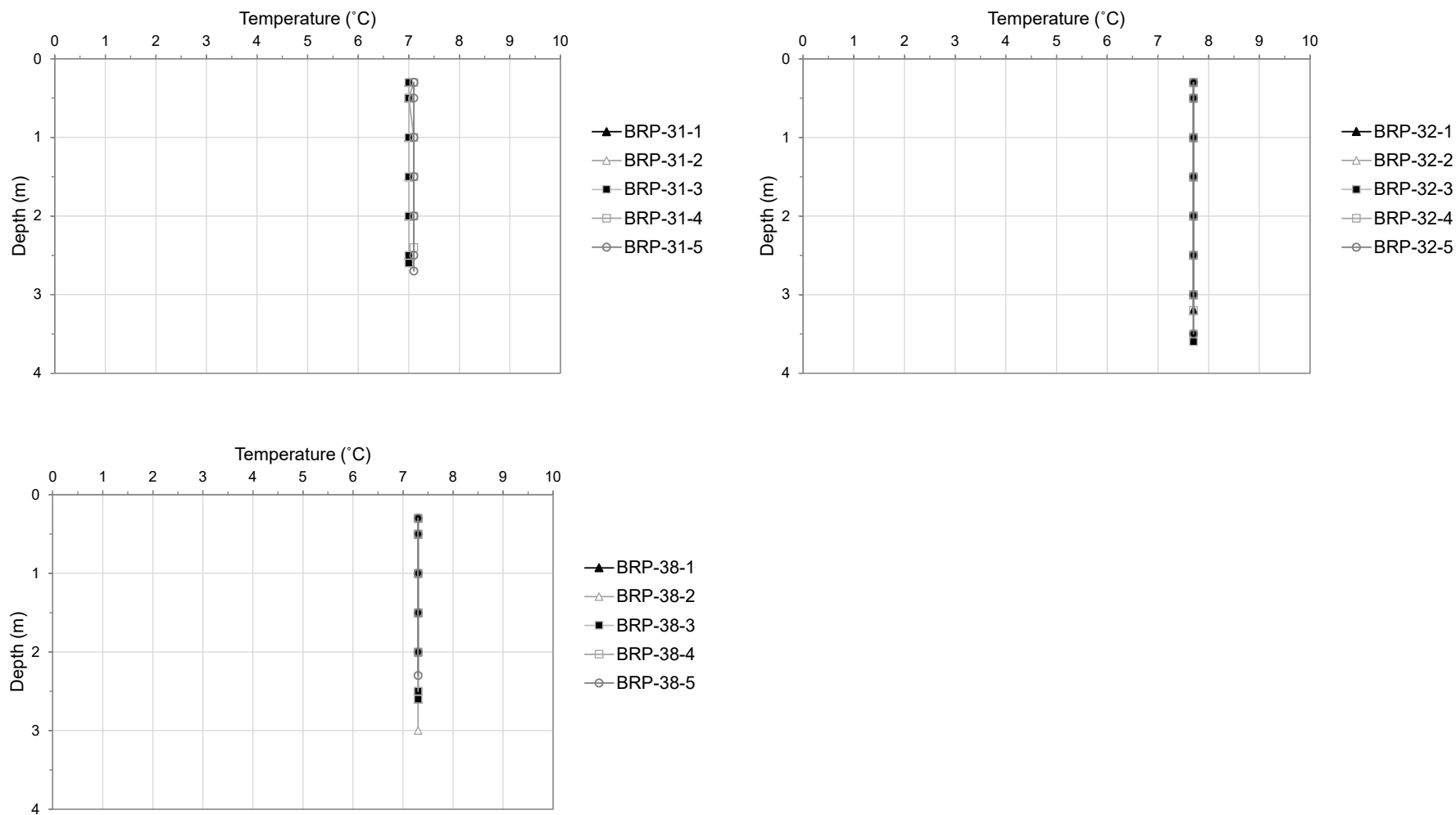
Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C = degrees Celsius; µS/cm = microsiemens per centimetre.

Figure B-1: Temperature Profiles for the Ice-cover Season (April) at Goose Lake and Reference B Lake, 2024

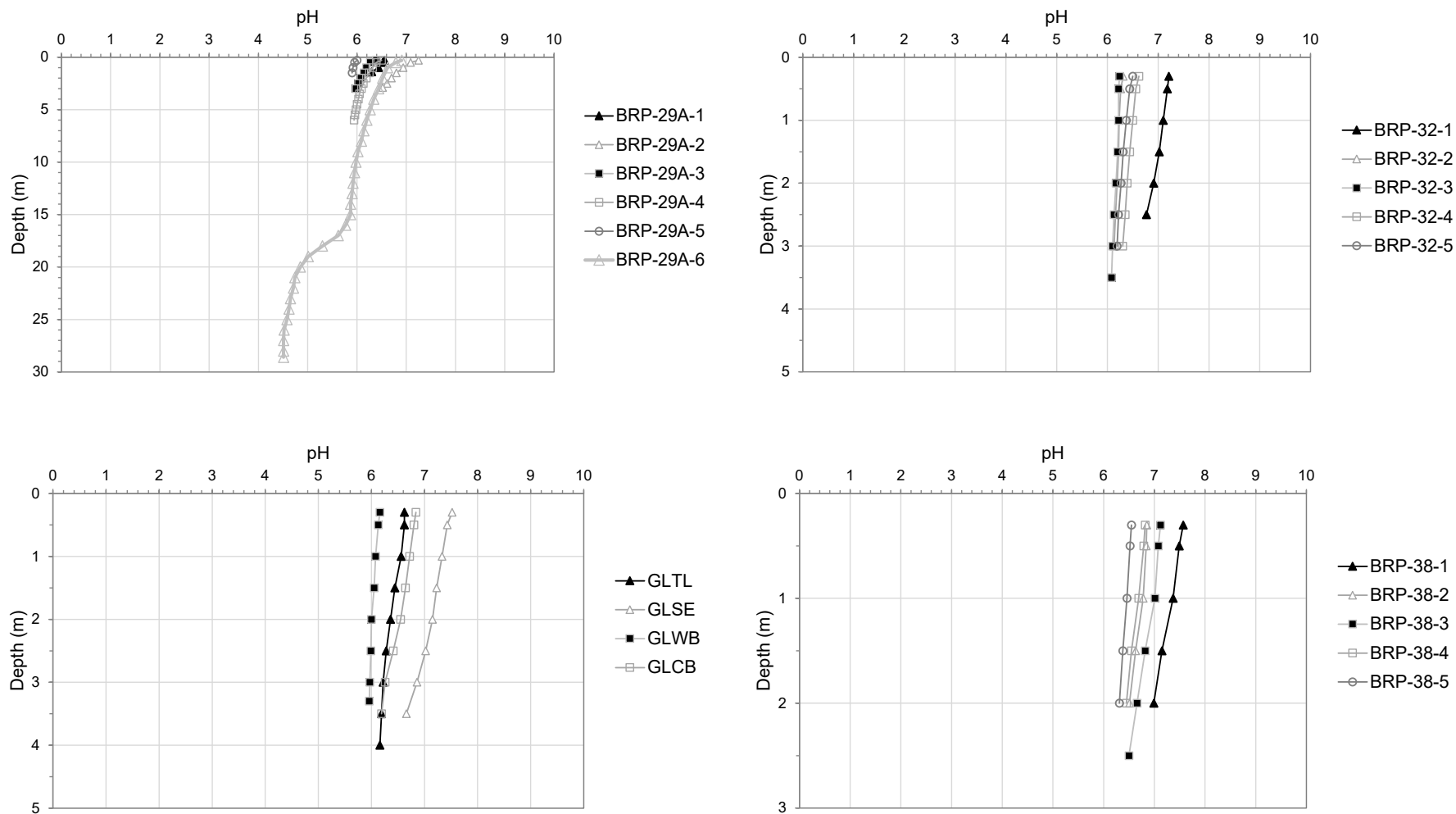
m = metre; °C = degree Celsius; depth starts from underneath the ice layer.

Figure B-2: Temperature Profiles for the Open-water Season (August) at Goose Lake and Reference B Lake, 2024

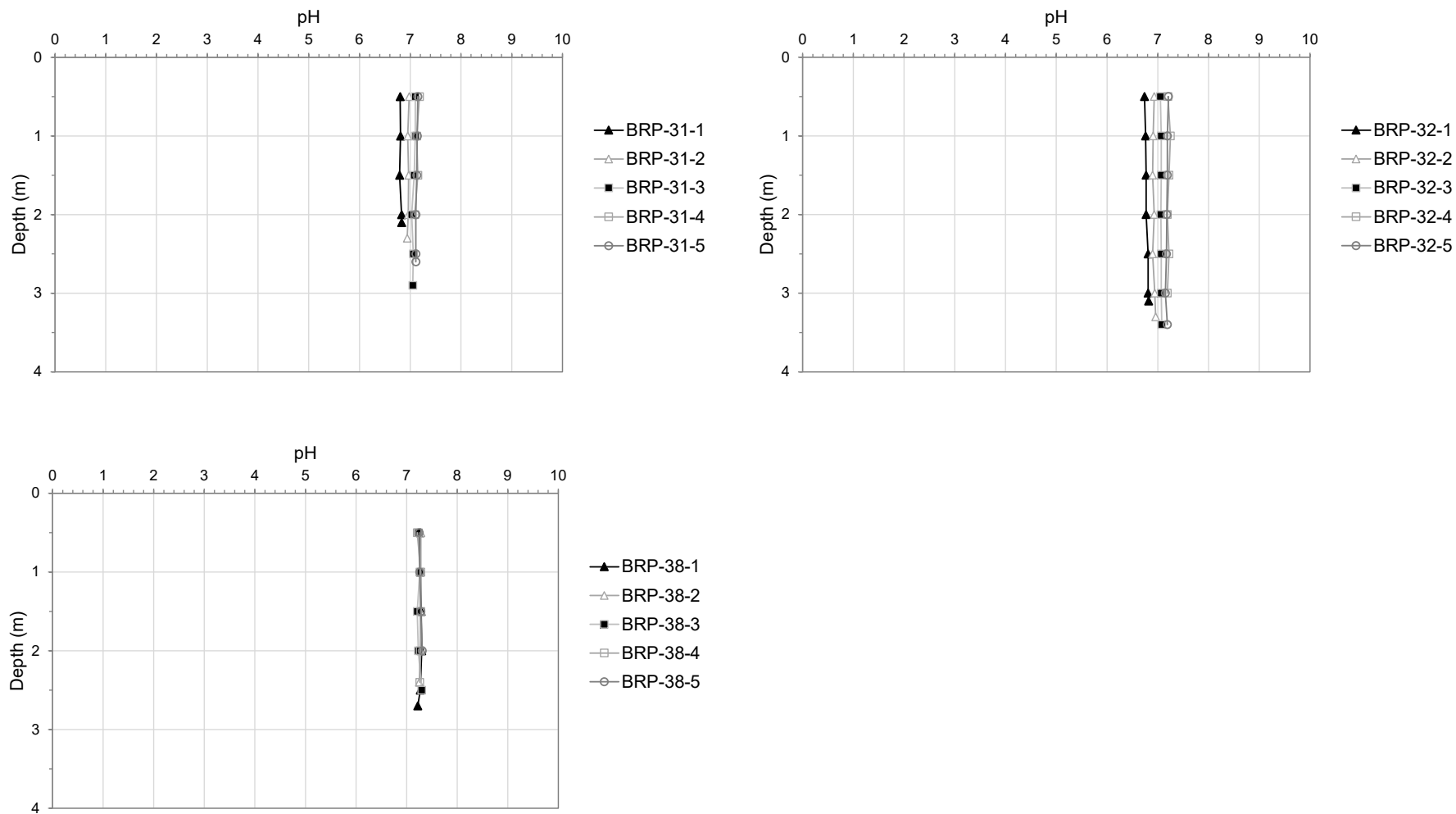
m = metre; °C = degree Celsius.

Figure B-3: Temperature Profiles for the Open-water Season (September) at Goose Lake and Reference B Lake, 2024

m = metre; °C = degree Celsius.

Figure B-4: pH Profiles for the Ice-cover Season (April) at Goose Lake and Reference B Lake, 2024

m = metre; depth starts from underneath the ice layer.

Figure B-5: pH Profiles for the Open-water Season (August) at Goose Lake and Reference B Lake, 2024

m = metre

Figure B-6: pH Profiles for the Open-water Season (September) at Goose Lake and Reference B Lake, 2024

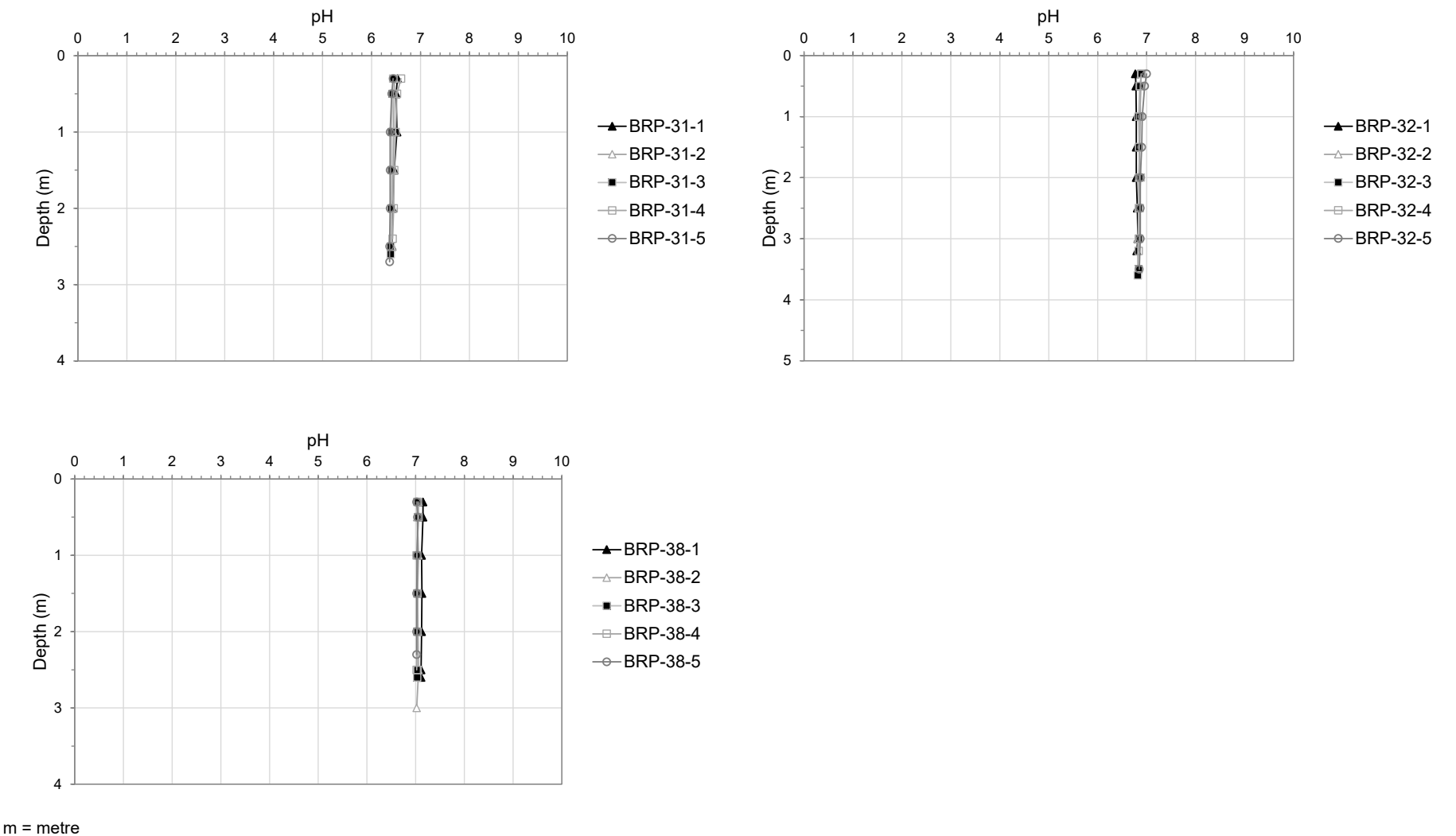
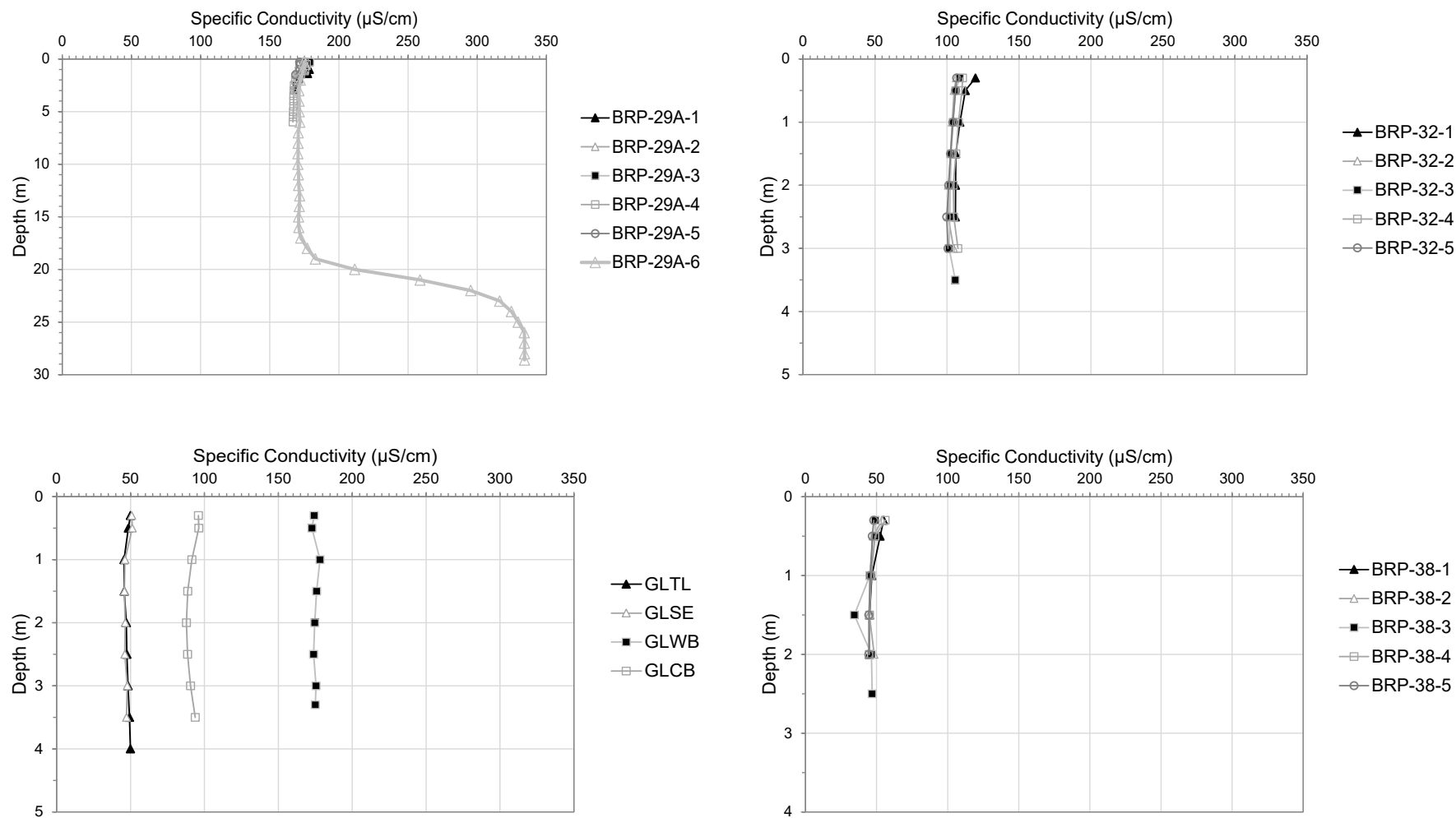
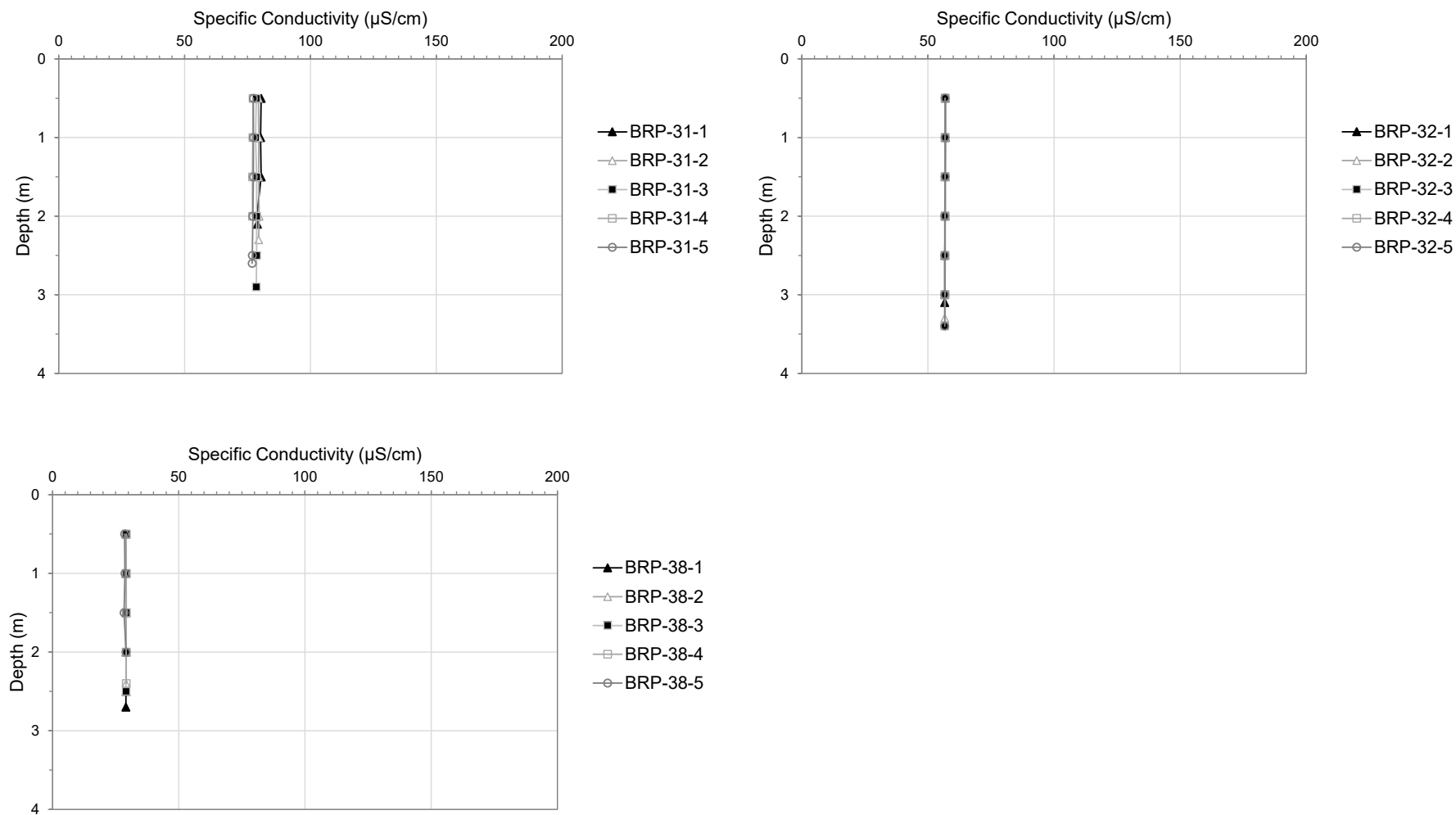
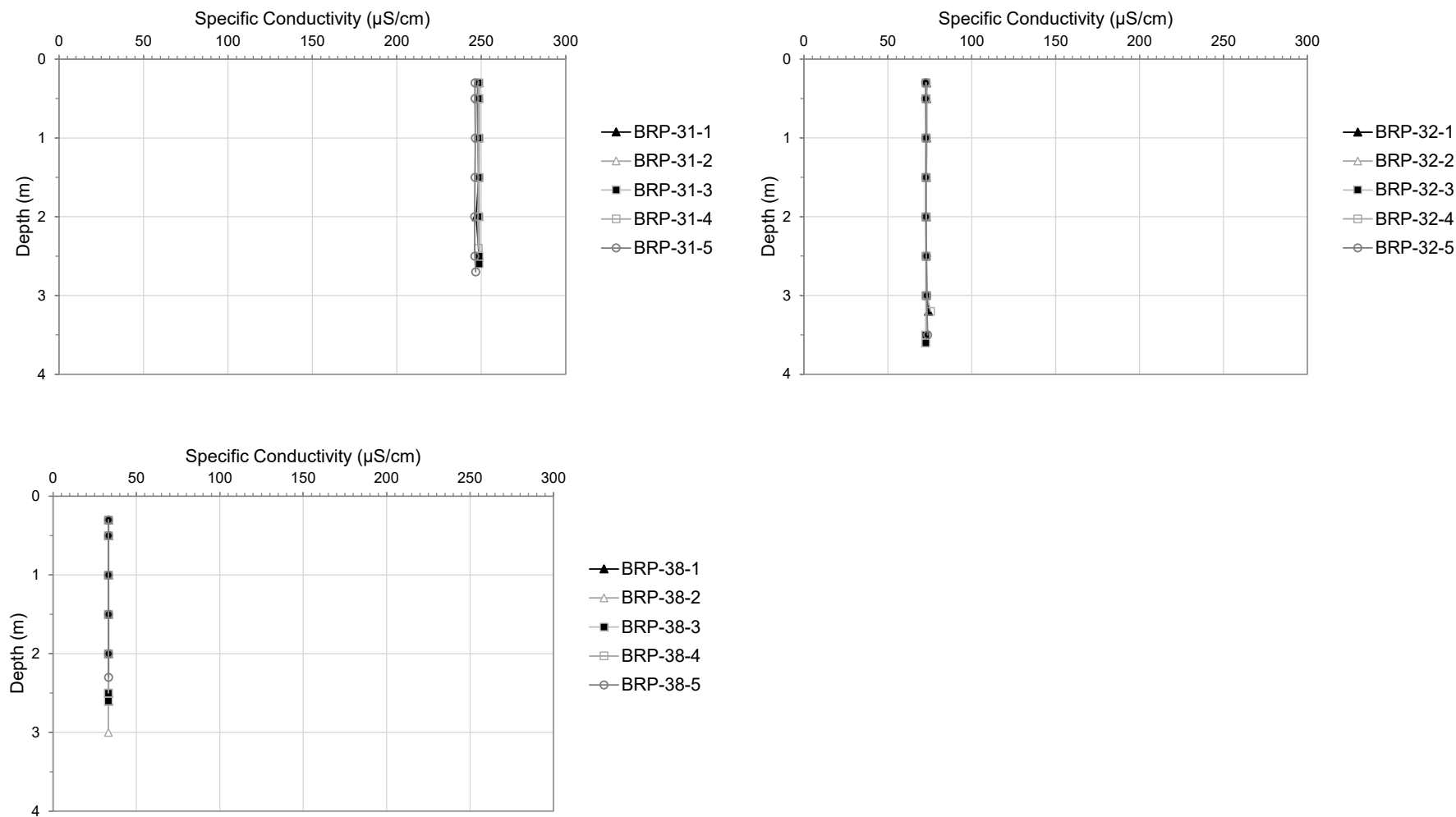


Figure B-7: Specific Conductivity Profiles for the Ice-cover Season (April) at Goose Lake and Reference B Lake, 2024

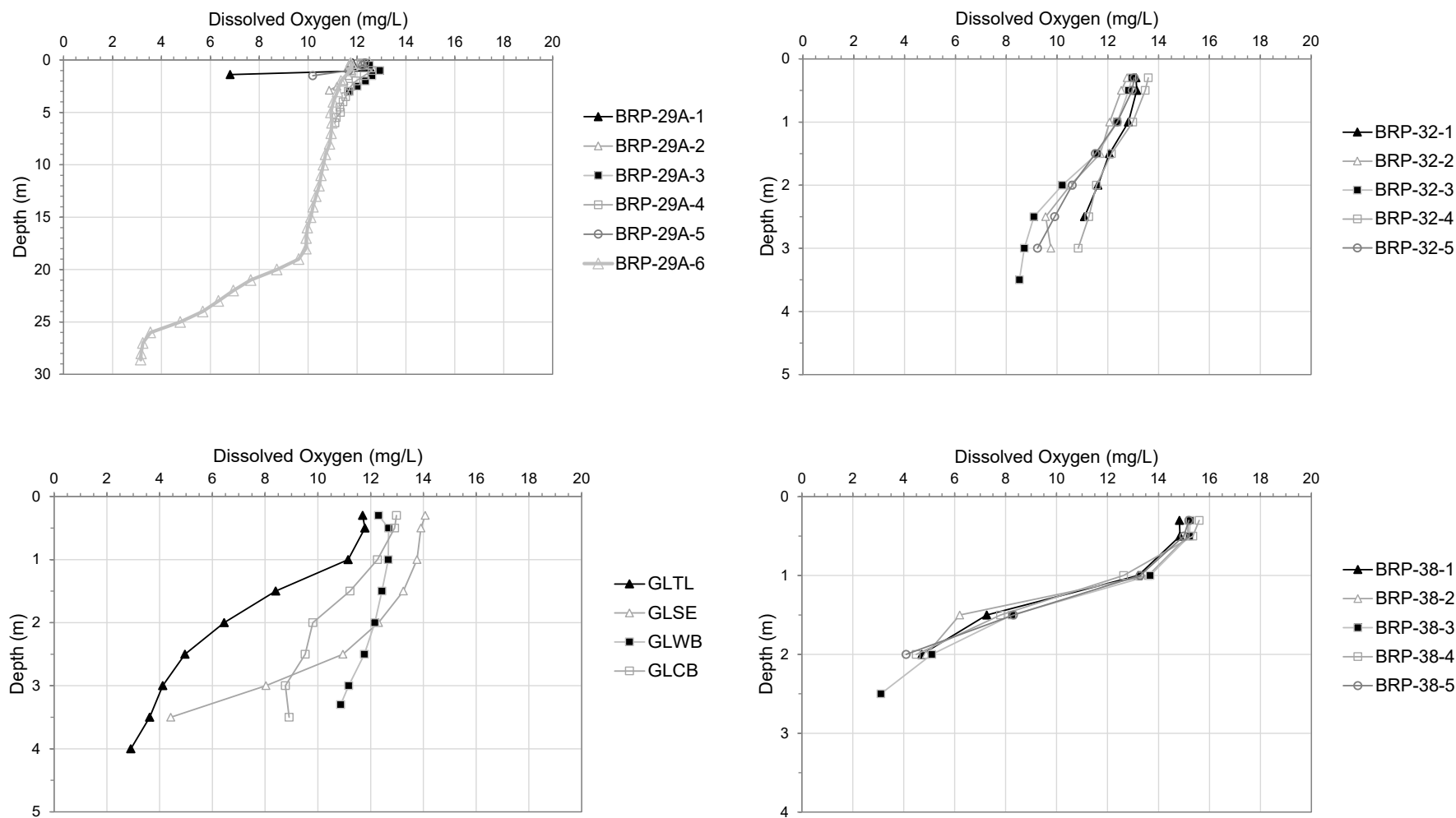
m = metre; µS/cm = microsiemens per centimetre; depth starts from underneath the ice layer.

Figure B-8: Specific Conductivity Profiles for the Open-water Season (August) at Goose Lake and Reference B Lake, 2024

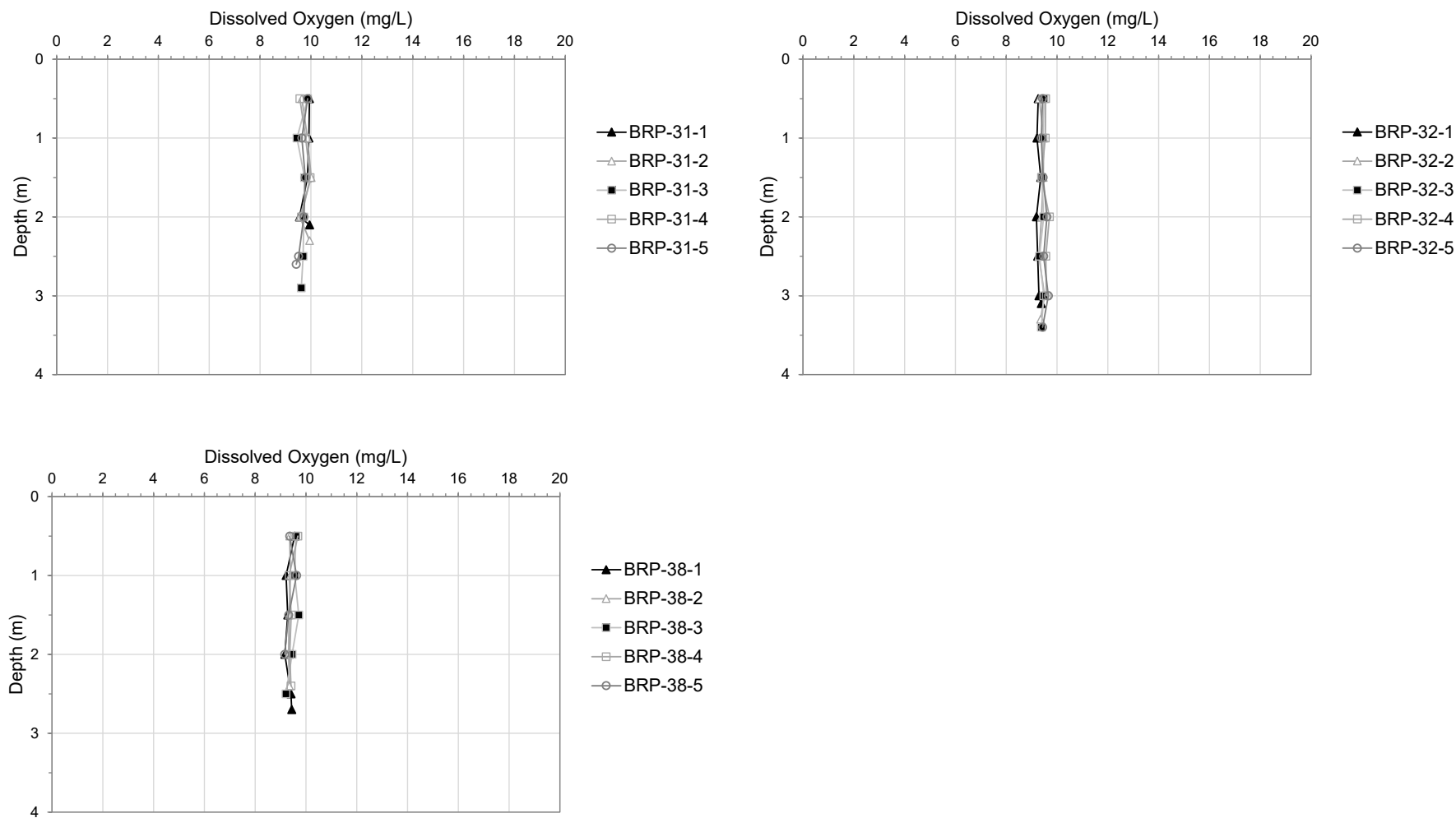
m = metre; $\mu\text{S/cm}$ = microsiemens per centimetre.

Figure B-9: Specific Conductivity Profiles for the Open-water Season (September) at Goose Lake and Reference B Lake, 2024

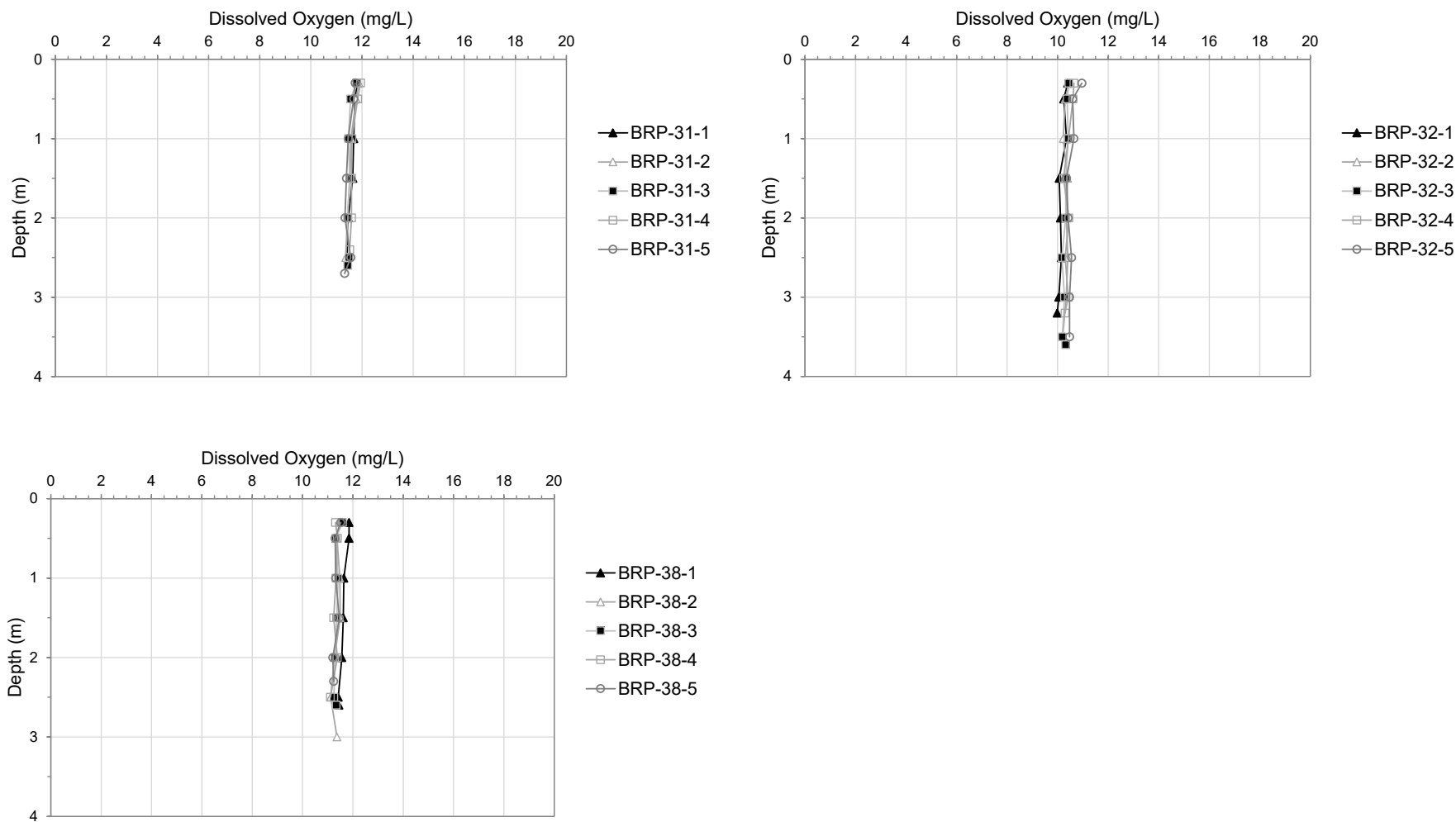
m = metre; μS/cm = microsiemens per centimetre.

Figure B-10: Dissolved Oxygen Concentration Profiles for the Ice-cover Season (April) at Goose Lake and Reference B Lake, 2024

m = metre; mg/L = milligrams per litre; depth starts from underneath the ice layer.

Figure B-11: Dissolved Oxygen Concentration Profiles for the Open-water Season (August) at Goose Lake and Reference B Lake, 2024

m = metre; mg/L = milligrams per litre.

Figure B-12: Dissolved Oxygen Concentration Profiles for the Open-water Season (September) at Goose Lake and Reference B Lake, 2024

m = metre; mg/L = milligrams per litre.

APPENDIX C

2024 Water Quality – Chlorophyll *a* data analysis

Table of Contents

1.0 INTRODUCTION 1

2.0 METHODS..... 1

 2.1 Sample Collection 1

 2.2 Statistical Analysis 1

 2.3 Comparison to Historical Chlorophyll a Data 2

3.0 RESULTS..... 4

 3.1 2024 Chlorophyll a 4

 3.2 Historical Chlorophyll a Summary 6

4.0 DISCUSSION 8

5.0 REFERENCES 9

TABLES

Table C-1: Summary of Chlorophyll a Sampling Methods Used in 2011 to 2024 3

Table C-2: Summary of Chlorophyll a Parameters by Filter Type (0.45 µm Cellulose Membrane Filter and 1.2 µm GF/C Filter), August 2024 5

Table C-3: Results of Statistical Tests Comparing Chlorophyll a Parameters between Filter Types (0.45 µm Cellulose Membrane Filter and 1.2 µm GF/C Filter), August 2024 6

FIGURES

Figure C-1: Chlorophyll a Parameters by Filter Type (0.45 µm Cellulose Membrane Filter and 1.2 µm GF/C Filter), August 2024 6

Figure C-2: Chlorophyll a Concentrations, 2011 to 2024 7

APPENDICES

ATTACHMENT C1

1.0 INTRODUCTION

Chlorophyll *a* is an indicator parameter used to classify the nutrient status and productivity of a waterbody. It is the primary photosynthetic pigment contained in phytoplankton, which is why it is widely used as a surrogate measure of phytoplankton biomass and primary productivity in lakes (Franklin et al. 2012). It is a required parameter of interest in the Aquatic Effects Management Plan (AEMP) for the B2Gold Back River Project (Project; B2Gold Nunavut 2024).

Historically, chlorophyll *a* has been measured for the Project by filtering up to one litre (1 L) of water through a 0.45 micrometre (µm) pore size cellulose membrane filter. However, in the field it usually requires a relatively long time to filter this volume of water through such a fine filter (up to 1 hour per sample) and sometimes multiple filters are needed to filter the target volume of 1 L because the filter becomes clogged. Other northern AEMPs (e.g., Meliadine Gold Mine, Nunavut) use a 1.2 µm pore size glass microfibre filter (i.e., 47 mm Whatman glass microfibre filter type C; GF/C) and have obtained good quality chlorophyll *a* data with this filter. To improve field efficiency and allow for faster field filtering of samples, the Project could switch to the GF/C filter type. However, this would be a change from historical procedures and thus may compromise comparability with the baseline dataset. Thus a comparison study was conducted to evaluate potential differences in chlorophyll *a* concentrations using the two different pore sizes. This appendix describes the results of this comparison study.

2.0 METHODS

2.1 Sample Collection

During the August program, water samples were collected for chlorophyll *a* analysis at all lake sampling stations. At select stations, two sets of triplicate water samples were collected: one set was collected and filtered using 0.45 µm cellulose membrane filters and a second set was collected and filtered using 1.2 µm GF/C filters. The second set of samples were collected at three of the five stations in Goose Lake West Bay, four of the five stations in Goose Lake Central Basin, and all five stations in Reference B Lake.

Consistent with the AEMP sampling methods, water samples were collected at 1 metre (m) below the water surface. Water samples were collected in amber bottles and filtered at the end of each day at camp. Each chlorophyll *a* sample consisted of 0.25 to 1 L of water. Water samples for chlorophyll *a* analysis were kept in the dark, away from sunlight, and maintained at a low temperature on ice in a cooler until filtered. Water collected for chlorophyll *a* analysis was filtered using an electric pump and either 0.45 µm cellulose membrane filters supplied by the analytical laboratory (GN Metricel® Membrane Disc Filters, supplied by Cytiva¹), or 1.2 µm glass microfibre filters (Whatman GF/C™ filters, supplied by Cytiva). Filters were placed in black tubes provided by the laboratory or wrapped in aluminum foil, labelled with the sample ID, date and time, and kept frozen until the end of the program, when they were delivered to ALS Canada Ltd. (ALS) in Yellowknife for analysis. These procedures were consistent with past sampling programs.

2.2 Statistical Analysis

Total chlorophyll *a* concentrations (µg/L), variability (as coefficient of variation; [CV]) among triplicates, and total water volume filtered (L) from the August 2024 field program were examined for statistical differences between results obtained using two different filter types (0.45 µm cellulose membrane filter and 1.2 µm GF/C filter). The CV was calculated as a percentage of the mean (i.e., standard deviation/mean × 100). This statistic provides insight into the distribution and consistency of the data among triplicates.

Prior to running the statistical analysis, data were checked for normality (R Core Team 2024; Function: shapiro.test). Statistical tests were run on the pooled August dataset (i.e., the three lakes' data combined), for the

¹ <https://www.avantorsciences.com/us/en/product/4679376/null>

stations having data obtained using both filter types, with data paired by station. An alpha (p -value) of 0.05 was used in these tests to assess significance. If the tests evaluating normality resulted in a p -value greater than 0.05 (i.e., not significant), then the data were considered to meet the assumptions of parametric statistical tests. A parametric paired t-test (two-tailed alpha = 0.05) was then performed to compare filter types (The jamovi project 2022; Function: ttestPS). If the data were not normally distributed, then they were $\log_{10}$ or square root transformed, and the assumptions were re-tested. If the transformed data were normally distributed, a parametric paired t-test (two-tailed alpha = 0.05) was performed. If assumptions were not met after transformation, a non-parametric paired Wilcoxon signed rank test (Salkind 2007) was performed (The jamovi project 2022; Function: wilcoxon). An alpha value of 0.05 was used for both parametric and nonparametric analyses to assess significance of pairwise statistical comparisons of data obtained using the different filter types. Statistical analyses were conducted using the R statistical software 4.4.2 (R Core Team 2024) and jamovi version 2.3 (The jamovi project 2022), and data were prepared for analysis using Microsoft Excel.

2.3 Comparison to Historical Chlorophyll a Data

The 2024 chlorophyll a data were compared graphically to the historical chlorophyll a data, which were collected between 2011 and 2021 (Rescan 2012a, 2012b, 2014; Golder 2018, 2019, 2022). Chlorophyll a data were not collected during the 2014, 2015, 2016, 2019, 2020, 2022, and 2023 programs. Filters used in the past programs were 0.45 μm cellulose membrane filters with the exception of the data collected in 2017, when 1.2 μm GF/C filter was used. Chlorophyll a sampling methods used in the Project are presented in Table C-1. Historical (2011 to 2021) chlorophyll a concentrations are provided in Attachment C1.

Table C-1: Summary of Chlorophyll a Sampling Methods Used in 2011 to 2024

Year	2011	2012	2013	2017	2018	2021	2024	
Sampling Month	August	April and August	April and July	August	April, July, August and September	August	August	August and September
Lake Sampled During Ice-Covered Conditions	-	Goose Lake ^(a) Propeller Lake ^(b)	Goose Lake ^(a) Reference B Lake	-	Goose Lake ^(a) Reference B Lake	-	-	-
Lake Sampled During Open-Water Conditions	Goose Lake ^(a) Reference B Lake	Goose Lake ^(a)	Goose Lake Propeller Lake ^(b) Reference B Lake	Goose Lake Reference B Lake	Goose Lake ^(a) Reference B Lake	Propeller Lake ^(b)	Goose Lake ^(a)	Goose Lake ^(a) Reference B Lake
Sampling Depth	1 m below the surface	1 m below the ice/surface	1 m below the ice/surface	Depth-integrated composite ^(c)	1 m below the ice/surface	1 m below the surface	1 m below the surface	1 m below the surface
Sampling Agency	Rescan Environmental Services Ltd.	Rescan Environmental Services Ltd.	Rescan Environmental Services Ltd.	Golder Associates Ltd.	Golder Associates Ltd.	Golder Associates Ltd.	WSP Canada Inc.	WSP Canada Inc.
Filter	0.45 µm pore size cellulose membrane filter	0.45 µm pore size cellulose membrane filter	0.45 µm pore size cellulose membrane filter	1.2 µm pore size filter Whatman glass microfibre type C filter	0.45 µm pore size cellulose membrane filter	0.45 µm pore size cellulose membrane filter	1.2 µm pore size filter Whatman glass microfibre type C filter	0.45 µm pore size cellulose membrane filter
Mean Volume Filtered ^(d)	-	-	-	0.5 L	0.67 L	1 L	0.99 L	0.44 L (August) and 0.56 L (September)
Analytical Laboratory	ALS Environmental	ALS Environmental	ALS Environmental	University of Alberta Biogeochemical Analytical Service Laboratory	ALS Environmental	ALS Environmental	ALS Environmental	ALS Environmental
Number of Samples ^(e)	n = 3	n = 6	n = 7	n = 10	n = 75	n = 10	n = 12	n = 30

- = not available.

Notes:

(a) Goose Lake was sampled in more than one sampling area.

(b) Propeller Lake was sampled for chlorophyll a in the South Basin in 2012, 2013, and 2021 and in the North Basin in 2021.

(c) Depth-integrated composite samples (composite of water from multiple depths from the euphotic zone, specifically 0.1 m, 1 m, 2 m or 0.1 m, 1 m, 2 m, and 3 m, depending on station depth) (Golder 2019).

(d) Volume filtered was not reported in the 2011, 2012, and 2013 baseline reports.

(e) In 2011, 2012, and 2013, samples were collected from one station in each sampling area during each sampling event. In 2017, 2018 and 2021, samples were collected from between three and five stations in each sampling area during each sampling event.

3.0 RESULTS

3.1 2024 Chlorophyll a

The August 2024 chlorophyll *a* measurements are provided in Table C-2. Mean chlorophyll *a* concentrations were higher using the 0.45 µm cellulose membrane filter compared to the 1.2 µm GF/C filter. Mean chlorophyll *a* concentrations were also slightly higher in Goose Lake Central Basin compared to Goose Lake West Bay and Reference B Lake.

Results of statistical comparisons between filter types (0.45 µm cellulose membrane filter and 1.2 µm filter) for the 2024 chlorophyll *a* data are provided in Figure C-1 and Table C-3. The paired t-test confirmed that mean chlorophyll *a* concentration was significantly higher in the samples collected using the 1.2 µm filter (mean ± standard deviation [SD] = 1.54 ± 0.27 µg/L) compared to 0.45 µm filter (mean ± SD = 1.02 ± 0.23 µg/L; paired t-test: t-value = -14.3, $p < 0.001$). The paired t-test indicated that overall variability (CV %) among triplicates was significantly higher for the 0.45 µm filter (mean ± SD = $13.2 \pm 9.3\%$) compared to the 1.2 µm filter (mean ± SD = $4.4 \pm 4.1\%$; paired t-test: t-value = 2.6, $p = 0.025$), indicating higher precision for samples collected using the 1.2 µm filter compared to the 0.45 µm filter. The paired Wilcoxon's signed rank test indicated that total volume filtered was significantly higher for the 1.2 µm filter (mean ± SD = 0.99 ± 0.01 L) compared to the 0.45 µm filter (mean ± SD = 0.44 ± 0.12 L; Wilcoxon's signed rank test: $V = 0$, $p = 0.002$), indicating that the 1.2 µm filter allowed more water filtration per sample, closer to the target volume of 1 L.

Regardless of the small differences between filter types, the measured chlorophyll *a* concentrations fall within the oligotrophic classification according to the scheme developed by Vollenweider and Kerekes (1982).

Table C-2: Summary of Chlorophyll a Parameters by Filter Type (0.45 µm Cellulose Membrane Filter and 1.2 µm GF/C Filter), August 2024

Location	Sample Name	Chlorophyll a (µg/L)											
		(0.45 µm cellulose membrane filter)						(1.2 µm GF/C filter)					
		Rep 1	Rep 2	Rep 3	Mean	CV (%)	Mean Volume Filtered (L)	Rep 1	Rep 2	Rep 3	Mean	CV (%)	Mean Volume Filtered (L)
Goose Lake West Bay	BRP-31-1	0.85	0.85	0.90	0.87	3.7	0.73	1.09	1.33	1.49	1.30	15.4	1.00
	BRP-31-2	0.76	0.85	0.86	0.82	6.6	0.50	1.34	1.33	1.36	1.34	1.1	1.00
	BRP-31-3	0.75	0.91	0.94	0.87	12.3	0.50	1.45	1.36	1.30	1.37	5.5	1.00
	BRP-31-4	0.86	1.04	0.90	0.93	9.8	0.50	-	-	-	-	-	-
	BRP-31-5	0.92	0.99	2.16	1.36	51.3	0.50	-	-	-	-	-	-
	Mean				1.0	16.7	0.55			Mean	1.3	7.4	1.00
Goose Lake Central Basin	BRP-32-1	0.81	1.58	1.24	1.21	31.9	0.40	1.95	1.94	1.89	1.93	1.7	1.00
	BRP-32-2	1.55	1.29	1.22	1.35	12.9	0.47	1.75	1.80	2.02	1.86	7.7	1.00
	BRP-32-3	1.19	1.54	1.35	1.36	13.1	0.40	1.83	1.92	2.06	1.94	6.0	1.00
	BRP-32-4	1.16	0.98	0.82	0.98	17.4	0.40	1.91	1.88	1.87	1.89	1.1	1.00
	BRP-32-5	1.49	1.26	1.39	1.38	8.1	0.50	-	-	-	-	-	-
	Mean				1.3	16.7	0.43			Mean	1.9	4.1	1.00
Reference B Lake	BRP-38-1	0.86	0.97	1.13	0.98	13.8	0.43	1.31	1.36	1.35	1.34	2.0	1.00
	BRP-38-2	1.03	0.91	1.05	0.99	7.4	0.50	1.35	1.46	1.39	1.40	4.0	1.00
	BRP-38-3	0.93	0.91	1.11	0.98	11.5	0.32	1.37	1.42	1.47	1.42	3.5	1.00
	BRP-38-4	0.82	0.77	1.25	0.94	28.0	0.30	1.35	1.40	1.42	1.39	2.7	0.97
	BRP-38-5	0.91	0.88	0.87	0.89	2.8	0.30	1.33	1.38	1.38	1.36	2.1	0.97
	Mean				1.0	12.7	0.37			Mean	1.4	2.8	0.99

CV = coefficient of variation.

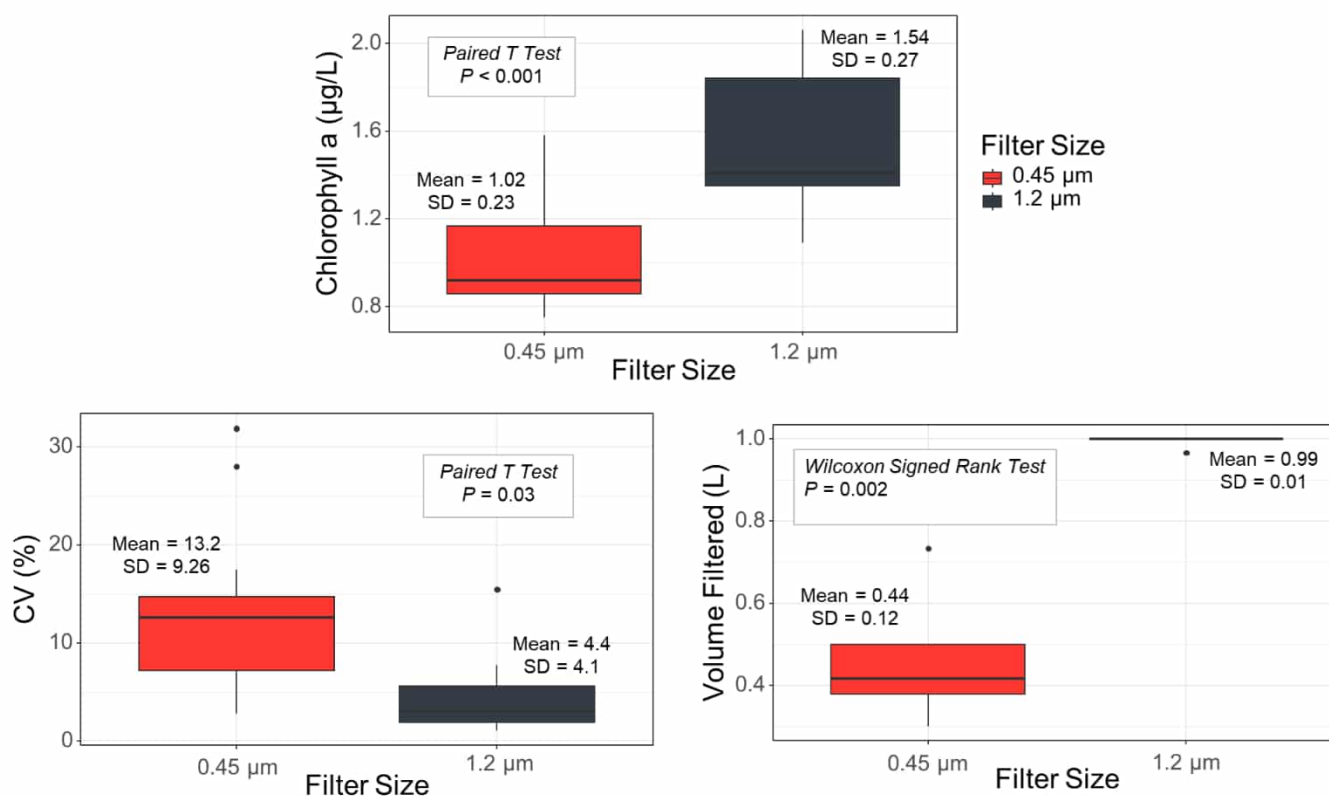


Figure C-1: Chlorophyll a Parameters by Filter Type (0.45 µm Cellulose Membrane Filter and 1.2 µm GF/C Filter), August 2024

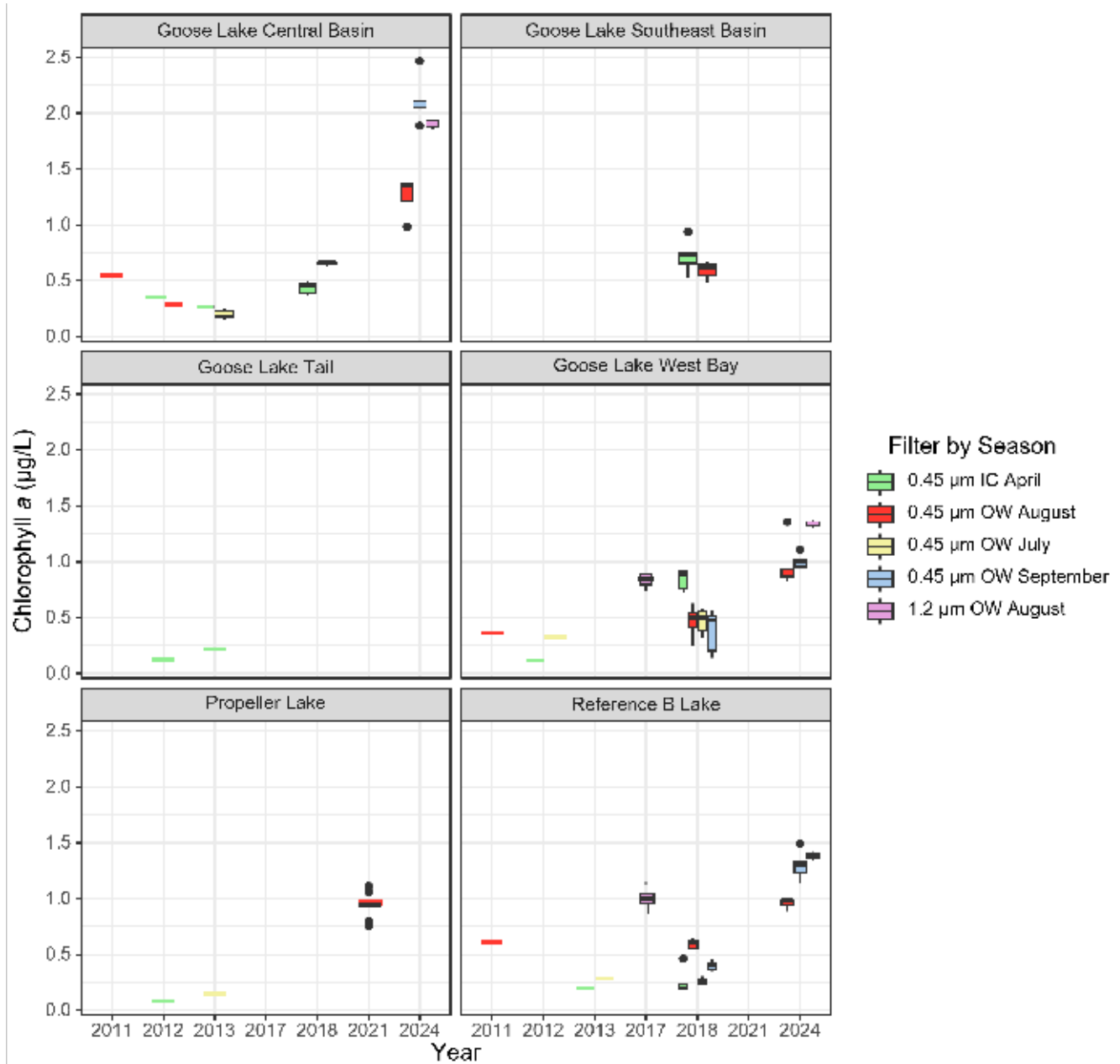
Table C-3: Results of Statistical Tests Comparing Chlorophyll a Parameters between Filter Types (0.45 µm Cellulose Membrane Filter and 1.2 µm GF/C Filter), August 2024

Parameter	Mean ± SD		Mean Difference	SE Difference	Test-value	p
	0.45 µm Filter	1.2 µm Filter				
Chlorophyll a (µg/L)	1.02 ± 0.23	1.54 ± 0.27	-0.522	0.04	-14.3	<0.001
Coefficient of Variation (%)	13.2 ± 9.3	4.4 ± 4.1	8.75	3.37	2.6	0.025
Volume Filtered (L)	0.44 ± 0.12	0.99 ± 0.01	-0.579	0.03	0	0.002

SD = standard deviation; p = probability.

3.2 Historical Chlorophyll a Summary

Chlorophyll a concentrations for all programs (2011 to 2024) are plotted in Figure C-2. Chlorophyll a concentrations were slightly higher in 2024 in both Goose and Reference B lakes than in previous years but all concentrations (historical and 2024) were within the oligotrophic range.



Note: Black dots represent extreme values.

Figure C-2: Chlorophyll a Concentrations, 2011 to 2024

4.0 DISCUSSION

Higher chlorophyll *a* concentrations were obtained using the 1.2 µm GF/C filter compared to the 0.45 µm cellulose membrane filter. The 1.2 µm GF/C filter also yielded data with lower variability (i.e., higher precision) among triplicate samples, and allowed more water to be filtered, which improved the overall estimate of the chlorophyll *a* concentration.

Glass microfibre filters, such as the 1.2 µm GF/C filters, are commonly used in primary productivity studies and for determining chlorophyll *a* concentrations (Morán et al. 1999). Glass microfibre filters were suggested by Vollenweider (1969), who developed the trophic classification scheme that uses chlorophyll *a* concentrations. It has been suggested that glass microfibre filters may not retain as many small cells (e.g., very small phytoplankton called picophytoplankton that are 0.2 to 2 µm in size) as finer membrane filters (Vollenweider 1969). However, further research has shown that depending on the conditions, there are no significant differences in chlorophyll *a* retention between glass microfibre filters and membrane filters made of polycarbonate, nylon, or cellulose ester (e.g., Venrick et al. 1987; Chavez et al. 1995; Morán et al. 1999). Other researchers such as Holm-Hansen and Riemann (1978) found that glass microfibre filters retained the same amount or more chlorophyll *a* than membrane filters, which is consistent with our comparison.

Morán et al. (1999) noted that glass microfibre filters have a trap-like matrix that can effectively retain more algal cells of a smaller diameter than expected based on the manufacturer's definition of filter pore size. Knefelkamp et al. (2007) also noted the difference in matrix structure among nylon membrane, polycarbonate membrane, and glass microfibre in electron micrographs of the filters.

In previous programs at the B2Gold Back River Project that used the 0.45 µm cellulose membrane filter, up to 1 hour per sample was required due to the clogging of the filter, and the full target filtering volume of 1 L was not achieved. The use of the 1.2 µm GF/C filter would result in less handling time during sampling, allow for the target filtering volume to be achieved, and allow more cost-effective field programs during future monitoring.

The results of this comparison study suggest that using 1.2 µm GF/C filters would benefit the AEMP by collecting scientifically defensible chlorophyll *a* data in a cost-effective manner. Although chlorophyll *a* concentrations generated using the 1.2 µm GF/C filters appear to be higher than those collected using the 0.45 µm cellulose membrane filters, which could pose the risk of inaccurate comparisons to historical data, the risk is low. Throughout the monitoring period, chlorophyll *a* concentrations, regardless of filter type, have been and continue to be within the oligotrophic range and the differences between the two filter types was approximately 30%. However, a normal range generated with the data may be skewed towards lower values, which could trigger false positive results in future monitoring (i.e., future years may show mean chlorophyll *a* concentrations above the normal range if the data are collected using the 1.2 µm GF/C filters). One option is to generate a conversion factor to adjust the historical 0.45 µm chlorophyll *a* data prior to calculating the normal range, but more data would be needed to derive an accurate conversion factor. For this reason, another round of chlorophyll *a* data collection is recommended using both 0.45 µm and 1.2 µm filters.

5.0 REFERENCES

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ATTACHMENT C1

Summary of Historical Chlorophyll a Parameters, 2011 to 2018

Location	Sample Name	Date	UTM (NAD 83, Zone 13V)		Chlorophyll a (µg/L)			Mean	CV (%)	Mean Volume Filtered (L)	Filter Size
			Northing (m)	Easting (m)	Rep 1	Rep 2	Rep 3				
Goose Lake West Bay	GOOSE NECK REP 1 (1M) LAKE	7-Aug-11	7270236	432555	0.54	0.11	0.41	0.35	61.6	-	0.45 µm
	GOOSE LAKE NECK (1M)	11-Apr-12	7270323	432944	0.12	0.16	0.20	0.16	22.9	-	0.45 µm
	GOOSE LAKE NECK (1M)	14-Aug-12	7270323	432944	0.54	0.19	0.24	0.32	58.1	-	0.45 µm
	BRP-31-01	5-Aug-17	7269884	432124	0.64	0.80	0.84	0.76	13.9	0.50	1.2 µm
	BRP-31-02	5-Aug-17	7269875	432099	0.86	0.86	0.84	0.85	1.4	0.50	1.2 µm
	BRP-31-03	7-Aug-17	7269866	432069	0.71	0.99	0.88	0.86	16.4	0.50	1.2 µm
	BRP-31-04	7-Aug-17	7269866	432006	0.90	0.81	0.99	0.90	10.0	0.50	1.2 µm
	BRP-31-05	7-Aug-17	7269864	431997	0.65	0.69	0.77	0.70	8.7	0.50	1.2 µm
	BRP-31-6	25-Apr-18	7269887	431700	0.77	0.72	0.79	0.76	5.2	0.50	0.45 µm
	BRP-31-7	25-Apr-18	7269880	431663	1.15	0.76	0.75	0.89	25.8	0.50	0.45 µm
	BRP-31-8	25-Apr-18	7269880	431681	0.98	0.87	0.90	0.91	6.2	0.50	0.45 µm
	BRP-31-9	25-Apr-18	7269853	431780	0.63	0.73	0.80	0.72	11.7	0.50	0.45 µm
	BRP-31-10	25-Apr-18	7269849	431829	1.28	0.68	0.80	0.92	34.4	1.00	0.45 µm
	BRP-31-1	11-Jul-18	7269886	432124	0.52	0.49	0.50	0.50	3.6	0.49	0.45 µm
	BRP-31-2	11-Jul-18	7269877	432103	0.47	0.44	0.35	0.42	15.4	0.70	0.45 µm
	BRP-31-3	12-Jul-18	7269863	432072	0.56	0.51	0.67	0.58	14.6	1.00	0.45 µm
	BRP-31-4	12-Jul-18	7269860	432000	0.66	0.51	0.57	0.58	13.5	1.00	0.45 µm
	BRP-31-5	12-Jul-18	7269881	431958	0.50	0.56	0.45	0.50	10.7	1.00	0.45 µm
	BRP-29-1	16-Jul-18	7269940	431294	0.35	0.37	0.34	0.36	4.4	0.50	0.45 µm
	BRP-29-2	16-Jul-18	7269998	431365	0.34	0.26	0.36	0.32	15.6	0.50	0.45 µm
	BRP-29-3	13-Jul-18	7269964	431331	0.64	0.62	0.50	0.59	13.3	0.83	0.45 µm
	BRP-29-4	16-Jul-18	7269937	431423	0.41	0.32	0.29	0.34	18.1	0.50	0.45 µm
	BRP-29-5	13-Jul-18	7269919	431504	0.52	0.56	0.52	0.53	4.0	0.50	0.45 µm
	BRP-29-6	13-Jul-18	7269973	431415	0.57	0.46	0.56	0.53	11.8	0.50	0.45 µm
	BRP-31-1	12-Aug-18	7269882	432144	0.46	0.52	0.52	0.50	6.2	0.58	0.45 µm
	BRP-31-2	12-Aug-18	7269869	432106	0.53	0.36	0.52	0.47	21.0	0.50	0.45 µm
	BRP-31-3	12-Aug-18	7269858	432063	0.50	0.35	0.34	0.40	21.8	0.53	0.45 µm

Location	Sample Name	Date	UTM (NAD 83, Zone 13V)		Chlorophyll a (µg/L)			Mean	CV (%)	Mean Volume Filtered (L)	Filter Size
			Northing (m)	Easting (m)	Rep 1	Rep 2	Rep 3				
Goose Lake West Bay	BRP-31-4	12-Aug-18	7269866	432006	0.48	0.35	0.44	0.42	16.4	0.58	0.45 µm
	BRP-31-5	12-Aug-18	7269875	431959	0.14	0.22	0.37	0.24	46.9	0.58	0.45 µm
	BRP-29-1	12-Aug-18	7269936	431310	0.56	0.53	0.55	0.55	3.0	0.56	0.45 µm
	BRP-29-2	12-Aug-18	7270000	431372	0.57	0.61	0.46	0.55	13.5	0.50	0.45 µm
	BRP-29-3	12-Aug-18	7269973	431338	0.08	0.51	0.45	0.35	67.1	0.57	0.45 µm
	BRP-29-4	13-Aug-18	7269945	431405	0.68	0.38	0.44	0.50	31.9	0.70	0.45 µm
	BRP-29-5	15-Aug-18	7269909	431522	0.60	0.67	0.53	0.60	11.6	0.60	0.45 µm
	BRP-29-6	15-Aug-18	7269961	431440	0.61	0.66	0.62	0.63	4.4	0.65	0.45 µm
	BRP-31-1	6-Sep-18	7269880	432132	0.19	0.19	0.04	0.14	61.4	1.00	0.45 µm
	BRP-31-2	6-Sep-18	7269875	432108	0.19	0.23	0.22	0.21	8.9	1.00	0.45 µm
	BRP-31-3	6-Sep-18	7269886	432073	0.21	0.19	0.21	0.20	6.4	1.00	0.45 µm
	BRP-31-4	6-Sep-18	7269856	432004	0.19	0.16	0.19	0.18	9.5	1.00	0.45 µm
	BRP-31-5	6-Sep-18	7269885	431959	0.22	0.22	0.24	0.23	3.1	1.00	0.45 µm
	BRP-29-1	7-Sep-18	7269941	431313	0.49	0.59	0.62	0.56	12.1	1.00	0.45 µm
	BRP-29-2	7-Sep-18	7270008	431372	0.55	0.55	0.33	0.48	27.3	1.00	0.45 µm
	BRP-29-3	7-Sep-18	7269962	431335	0.55	0.41	0.55	0.51	16.3	1.00	0.45 µm
	BRP-29-4	7-Sep-18	7269938	431425	0.49	0.48	0.54	0.50	6.6	1.00	0.45 µm
	BRP-29-5	7-Sep-18	7269922	431507	0.41	0.61	0.59	0.54	20.0	1.00	0.45 µm
	BRP-29-6	7-Sep-18	7269980	431425	0.43	0.59	0.54	0.52	15.7	1.00	0.45 µm
Goose Lake Central Basin	GOOSE CENTRAL SHALLOW (1M) LA	7-Aug-11	7270927	433825	0.54	0.65	0.46	0.55	17.4	-	0.45 µm
	GOOSE LAKE CENTRAL (1M)	11-Apr-12	7270990	433887	0.35	0.32	0.39	0.35	9.2	-	0.45 µm
	GOOSE LAKE CENTRAL (1M)	17-Aug-12	7270990	433887	0.30	0.34	0.23	0.29	18.8	-	0.45 µm
	GOOSECENT (1M)	13-Apr-13	7270916	434096	0.19	0.35	0.26	0.27	30.4	-	0.45 µm
	GOONECK (1M)	21-Jul-13	7270309	432913	0.11	0.13	0.23	0.16	43.3	-	0.45 µm
	GOOCENT (1M)	21-Jul-13	7271012	433913	0.34	0.25	0.16	0.25	34.6	-	0.45 µm
	GOOSECENT-1	28-Apr-18	7270990	433887	0.36	0.61	0.42	0.46	28.3	0.50	0.45 µm
	GOOSECENT-2	28-Apr-18	7271039	434026	0.46	0.45	0.52	0.48	8.6	0.50	0.45 µm
	GOOSECENT-3	28-Apr-18	7270973	434038	0.40	0.37	0.41	0.39	5.9	0.50	0.45 µm

Location	Sample Name	Date	UTM (NAD 83, Zone 13V)		Chlorophyll a (µg/L)			Mean	CV (%)	Mean Volume Filtered (L)	Filter Size
			Northing (m)	Easting (m)	Rep 1	Rep 2	Rep 3				
Goose Lake Central Basin	GOOSECENT-4	28-Apr-18	7270989	434054	0.43	0.31	0.38	0.37	16.9	0.50	0.45 µm
	GOOSECENT-5	28-Apr-18	7271011	434074	0.44	0.50	0.55	0.50	11.4	0.50	0.45 µm
	BRP-32-1	13-Aug-18	7270849	433690	0.46	0.78	0.66	0.63	25.1	0.63	0.45 µm
	BRP-32-2	13-Aug-18	7270890	433681	0.68	0.71	0.63	0.67	6.3	0.63	0.45 µm
	BRP-32-3	13-Aug-18	7270944	433673	0.69	0.57	0.69	0.65	10.6	0.70	0.45 µm
	BRP-32-4	13-Aug-18	7270835	433652	0.75	0.55	0.68	0.66	15.2	0.70	0.45 µm
	BRP-32-5	13-Aug-18	7270898	433653	0.73	0.56	0.71	0.67	14.2	0.68	0.45 µm
Goose Lake Southeast Basin	GOOSESTH-1	27-Apr-18	7270048	434332	0.94	0.91	0.97	0.94	3.1	0.50	0.45 µm
	GOOSESTH-2	27-Apr-18	7270080	434333	0.70	0.76	0.78	0.74	5.5	0.50	0.45 µm
	GOOSESTH-3	27-Apr-18	7270101	434305	0.69	0.63	0.65	0.65	4.8	0.50	0.45 µm
	GOOSESTH-4	28-Apr-18	7270131	434312	0.51	0.53	0.54	0.53	3.5	0.50	0.45 µm
	GOOSESTH-5	28-Apr-18	7270115	434330	0.72	0.73	0.76	0.74	2.6	0.50	0.45 µm
	BRP-33-3	9-Aug-18	7270005	434296	0.69	0.54	0.22	0.48	50.1	0.71	0.45 µm
	BRP-33-4	9-Aug-18	7270038	434245	0.56	0.68	0.62	0.62	9.1	0.93	0.45 µm
Goose Lake Tail	BRP-33-5	10-Aug-18	7270081	434259	0.65	0.63	0.73	0.67	7.8	0.80	0.45 µm
	GOOSE LAKE TAIL (1M)	11-Apr-12	7271418	434645	0.11	0.19	0.05	0.12	58.3	-	0.45 µm
	GOOSETAILNEW (1M)	14-Apr-13	7271418	434645	0.15	0.29	0.18	0.21	34.2	-	0.45 µm
Reference B Lake	REFERENCE B (1M) LAKE	8-Aug-11	7258465	442019	0.87	0.30	0.65	0.61	46.7	-	0.45 µm
	REFBLK (1M)	13-Apr-13	7258465	442019	0.20	0.38	0.02	0.20	92.2	-	0.45 µm
	REFBLK (1M)	17-Jul-13	7258460	442025	0.36	0.17	0.32	0.28	34.8	-	0.45 µm
	BRP-38-01	10-Aug-17	7258860	441915	0.74	0.87	1.06	0.89	18.1	0.50	1.2 µm
	BRP-38-02	10-Aug-17	7258835	441949	0.99	0.93	1.09	1.00	8.1	0.50	1.2 µm
	BRP-38-03	10-Aug-17	7258802	441991	1.08	1.14	1.18	1.13	4.4	0.50	1.2 µm
	BRP-38-04	10-Aug-17	7258776	442026	0.95	1.22	1.26	1.14	14.7	0.50	1.2 µm
	BRP-38-05	10-Aug-17	7258741	442056	1.18	0.18	1.04	0.80	67.7	0.50	1.2 µm
	REF-BLK-1	26-Apr-18	7258465	442019	0.55	0.46	0.39	0.47	16.6	0.50	0.45 µm
	REF-BLK-2	26-Apr-18	7258480	442064	0.09	0.22	0.24	0.18	45.8	0.50	0.45 µm

Location	Sample Name	Date	UTM (NAD 83, Zone 13V)		Chlorophyll a (µg/L)			Mean	CV (%)	Mean Volume Filtered (L)	Filter Size
			Northing (m)	Easting (m)	Rep 1	Rep 2	Rep 3				
Reference B Lake	REF-BLK-3	26-Apr-18	7258506	442025	0.24	0.22	0.26	0.24	8.4	0.50	0.45 µm
	REF-BLK-4	26-Apr-18	7258455	442047	0.20	0.19	0.21	0.20	5.9	0.50	0.45 µm
	REF-BLK-5	26-Apr-18	7258430	442022	0.23	0.22	0.14	0.20	23.9	0.50	0.45 µm
	BRP-40-1	15-Jul-18	7258569	442060	0.30	0.30	0.33	0.31	5.1	0.50	0.45 µm
	BRP-40-2	15-Jul-18	7258592	442027	0.21	0.24	0.28	0.24	13.8	0.30	0.45 µm
	BRP-40-3	15-Jul-18	7258708	441961	0.28	0.28	0.27	0.28	1.7	0.30	0.45 µm
	BRP-40-4	15-Jul-18	7258654	441983	0.24	0.24	0.25	0.24	4.3	0.30	0.45 µm
	BRP-40-5	15-Jul-18	7258708	441961	0.22	0.21	0.30	0.25	19.9	0.30	0.45 µm
	BRP-40-1	15-Aug-18	7258574	442059	0.74	0.68	0.53	0.65	16.8	0.63	0.45 µm
	BRP-40-2	15-Aug-18	7258588	442030	0.70	0.48	0.50	0.56	22.4	0.63	0.45 µm
	BRP-40-3	15-Aug-18	7258602	441989	0.62	0.50	0.54	0.55	11.2	0.71	0.45 µm
	BRP-40-4	15-Aug-18	7258645	441978	0.65	0.55	0.63	0.61	8.3	0.68	0.45 µm
	BRP-40-5	15-Aug-18	7258699	441990	0.67	0.55	0.63	0.62	9.3	0.72	0.45 µm
	BRP-40-1	8-Sep-18	7258570	442057	0.24	0.43	0.40	0.35	29.3	1.00	0.45 µm
	BRP-40-2	8-Sep-18	7258593	442026	0.39	0.37	0.32	0.36	10.2	1.00	0.45 µm
	BRP-40-3	8-Sep-18	7258607	441984	0.37	0.41	0.41	0.40	5.7	1.00	0.45 µm
	BRP-40-4	8-Sep-18	7258653	441977	0.46	0.48	0.43	0.46	5.1	1.00	0.45 µm
	BRP-40-5	8-Sep-18	7258713	441955	0.44	0.42	0.42	0.43	1.8	1.00	0.45 µm
Propeller Lake	PROPELLAR LAKE (1M)	12-Apr-12	7274437	435154	0.11	0.06	0.06	0.08	36.7	-	0.45 µm
	PROLK (1M)	19-Jul-13	7274446	435162	0.15	0.10	0.18	0.14	28.4	-	0.45 µm
	BRP-35-1	16-Aug-21	7272824	435261	0.95	0.90	0.93	0.93	2.8	1.00	0.45 µm
	BRP-35-2	16-Aug-21	7272857	435269	1.23	1.07	0.88	1.06	16.5	1.00	0.45 µm
	BRP-35-3	16-Aug-21	7272909	435338	0.96	0.85	0.60	0.80	23.0	1.00	0.45 µm
	BRP-35-4	16-Aug-21	7272865	435340	0.97	0.90	0.95	0.94	4.1	1.00	0.45 µm
	BRP-35-5	16-Aug-21	7272889	435288	0.99	0.90	1.00	0.96	5.8	1.00	0.45 µm
	BRP-36-1	14-Aug-21	7279131	434643	0.59	0.86	0.82	0.76	19.2	1.00	0.45 µm
	BRP-36-2	14-Aug-21	7278767	434753	1.02	1.06	0.85	0.98	11.5	1.00	0.45 µm

Location	Sample Name	Date	UTM (NAD 83, Zone 13V)		Chlorophyll a (µg/L)			Mean	CV (%)	Mean Volume Filtered (L)	Filter Size
			Northing (m)	Easting (m)	Rep 1	Rep 2	Rep 3				
Propeller Lake	BRP-36-3	14-Aug-21	7278579	434821	1.06	1.10	1.17	1.11	5.0	1.00	0.45 µm
	BRP-36-4	14-Aug-21	7278584	434140	0.98	0.98	0.89	0.95	5.8	1.00	0.45 µm
	BRP-36-5	14-Aug-21	7279207	434615	0.90	1.00	0.89	0.93	6.3	1.00	0.45 µm

CV = coefficient of variation; - = not available.

APPENDIX D

2024 Water Quality – Analytical Chemistry Results

Parameter	Unit	Guidelines for the Protection of:						Site-specific Water Quality Objective (Sabina 2017)	Stations																	
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)	BRP-29A-1		BRP-29A-2	BRP-29A-3	BRP-29A-4	BRP-29A-5	GLWB-B	GLWB-M	GLWB-T	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5	
							19-Apr-24		19-Apr-24	19-Apr-24	19-Apr-24	19-Apr-24	21-Apr-24	21-Apr-24	21-Apr-24	4-Aug-24	4-Aug-24	4-Aug-24	4-Aug-24	4-Aug-24	19-Sep-24	19-Sep-24	19-Sep-24	19-Sep-24	19-Sep-24	19-Sep-24
							YL2400309-001		YL2400309-002	YL2400309-003	YL2400309-004	YL2400309-005	YL2400317-006	YL2400317-005	YL2400317-004	YL2401131-001	YL2401131-002	YL2401131-003	YL2401131-004	YL2401131-005	YL2401543-001	YL2401543-002	YL2401543-003	YL2401543-004	YL2401543-005	
Easting	m	-	-	-	-	-	-	431311	431372	431333	431422	431508	431335	431335	431335	432124	432103	432072	432000	431958	432124	432103	432072	432000	431958	
Northing	m	-	-	-	-	-	-	7269939	7270008	7269960	7269937	7269918	7269963	7269963	7269963	7269886	7269877	7269863	7269860	7269881	7269886	7269877	7269863	7269860	7269881	
Station depth	m	-	-	-	-	-	-	2.5	4.1	4.4	7.5	3.5	3.3	2.0	0.30	3.1	3.3	3.9	3.0	3.6	3.5	3.5	3.6	3.4	3.7	
Field Measured																										
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	6.4 ^(Cc, Ha)	6.9 ^(Ha)	6.2 ^(Cc, Ha)	6.3 ^(Cc, Ha)	5.9 ^(Cc, Ha)	6.0 ^(Cc, Ha)	6.0 ^(Cc, Ha)	6.2 ^(Cc, Ha)	6.8 ^(Ha)	7.0	7.1	7.1	7.1	6.5 ^(Ha)	6.5 ^(Ha)	6.4 ^(Cc, Ha)	6.5 ^(Ha)	6.4 ^(Cc, Ha)	
Specific conductivity	µS/cm	-	-	-	-	-	-	179	170	175	173	172	175	175	174	80	80	78	77	77	248	249	249	248	247	
Temperature	°C	-	-	-	-	-	-	0.84	1.0	0.76	0.36	1.1	1.3	0.98	0.91	14	14	14	14	14	7.0	7.0	7.0	7.1	7.1	
Dissolved oxygen	mg/L	-	6.5	-	-	-	-	13	12	13	13	12	11	12	12	9.9	9.9	9.5	9.8	9.6	12	12	12	12	12	
Dissolved oxygen	%	-	-	-	-	-	-	91	85	93	89	84	80	89	90	95	95	91	94	93	96	95	94	96	95	
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.27	0.26	0.19	0.12	0.21	1.3	1.6	1.5	1.6	1.8	
Conventional Parameters																										
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	6.9 ^(Ha)	6.9 ^(Ha)	7.0	7.7	7.0	6.5 ^(Ha)	6.5 ^(Ha)	6.5 ^(Ha)	6.9 ^(Ha)	6.9 ^(Ha)	7.0	7.1	7.0	6.4 ^(Cc, Ha)	6.5 ^(Ha)	6.5 ^(Ha)	6.4 ^(Cc, Ha)	6.4 ^(Cc, Ha)	
Specific conductivity	µS/cm	-	-	-	-	-	-	183	179	187	208	185	186	185	187	85	84	83	85	82	255	255	255	254	252	
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	65	65	69	67	70	68	69	69	30	28	29	28	28	89	86	89	86	85	
Total alkalinity, as CaCO ₃	mg/L	-	-	-	-	-	-	4.4	4.6	5.6	22	6.1	5.8	5.8	5.2	5.0	4.9	4.9	6.6	5.1	3.4	3.4	3.3	3.4	2.9	
Total dissolved solids (measured)	mg/L	-	-	-	-	500	-	136	139	146	139	139	127	127	127	72	67	73	70	64	218	229	232	253	232	
Total dissolved solids (calculated) ⁽ⁿ⁾																										

Table D-1: Water Quality Summary at Goose Lake West Bay, 2024

Parameter	Unit	Guidelines for the Protection of:						Site-specific Water Quality Objective (Sabina 2017)	Stations																
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)	BRP-29A-1		BRP-29A-2	BRP-29A-3	BRP-29A-4	BRP-29A-5	GLWB-B	GLWB-M	GLWB-T	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
							19-Apr-24		19-Apr-24	19-Apr-24	19-Apr-24	19-Apr-24	21-Apr-24	21-Apr-24	21-Apr-24	4-Aug-24	4-Aug-24	4-Aug-24	4-Aug-24	4-Aug-24	19-Sep-24	19-Sep-24	19-Sep-24	19-Sep-24	19-Sep-24
							YL2400309-001		YL2400309-002	YL2400309-003	YL2400309-004	YL2400309-005	YL2400317-006	YL2400317-005	YL2400317-004	YL2401131-001	YL2401131-002	YL2401131-003	YL2401131-004	YL2401131-005	YL2401543-001	YL2401543-002	YL2401543-003	YL2401543-004	YL2401543-005
Niobium	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Rhenium	µg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0059	0.0067	0.0057	0.0055	0.0056	
Tantalum	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Yttrium	µg/L	-	-	-	-	-	-	0.31	0.29	0.31	0.31	0.29	0.46	0.31	0.32	0.052	0.048	0.050	0.048	0.046	0.58	0.60	0.59	0.60	0.60
Dissolved Metals																									
Aluminum	µg/L	-	-	-	-	-	-	38	37	39	38	38	38	38	41	8.9	8.4	7.5	7.3	7.6	68	66	68	66	64
Antimony	µg/L	-	-	-	-	-	-	0.016	0.017	0.018	0.015	0.018	0.017	0.016	0.084	0.050	0.036	0.017	0.013	0.022	0.020	0.021	0.021	0.019	
Arsenic	µg/L	-	-	-	-	-	-	0.27	0.28	0.30	0.29	0.31	0.30	0.29	0.29	0.27	0.27	0.27	0.27	0.29	0.45	0.47	0.45	0.43	0.42
Barium	µg/L	-	-	-	-	-	-	32	32	32	32	33	32	33	12	11	11	11	11	41	41	42	41	41	
Beryllium	µg/L	-	-	-	-	-	-	0.013	0.015	0.015	0.015	0.014	0.015	0.015	<0.002	0.0024	0.0022	<0.002	<0.002	0.022	0.022	0.022	0.022	0.022	
Bismuth	µg/L	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Boron	µg/L	-	-	-	-	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.3	5.2	5.2	5.3	5.1	
Cadmium	µg/L	-	-	-	-	-	-	0.063	0.064	0.064	0.064	0.063	0.062	0.064	0.067	0.0099	0.010	0.0095	0.0084	0.0097	0.10	0.096	0.099	0.099	0.098
Cesium	µg/L	-	-	-	-	-	-	0.030	0.029	0.031	0.030	0.029	0.029	0.031	0.013	0.012	0.013	0.012	0.012	0.054	0.052	0.054	0.053	0.052	
Chromium	µg/L	-	-	-	-	-	-	0.13	0.13	0.14	0.13	0.14	0.13	0.13	0.13	0.058	0.058	0.054	0.053	0.052	0.19	0.19	0.19	0.19	0.18
Cobalt	µg/L	-	-	-	-	-	-	1.8	1.8	1.9	1.8	1.5	1.7	1.8	1.8	0.23	0.22	0.22	0.20	0.21	5.0	4.9	5.1	5.0	5.1
Copper	µg/L	-	-	0.20 - 1.3 ^(f, g)	-	-	-	2.8 ^(Fe)	2.8 ^(Fe)	3.0 ^(Fe)	2.9 ^(Fe)	3.1 ^(Fe)	2.9 ^(Fe)	2.9 ^(Fe)	3.0 ^(Fe)	1.6 ^(Fe)	1.6 ^(Fe)	1.6 ^(Fe)	1.5 ^(Fe)	1.6 ^(Fe)	3.7 ^(Fe)	3.6 ^(Fe)	3.7 ^(Fe)	3.6 ^(Fe)	3.6 ^(Fe)
Iron	µg/L	-	-	-	-	-	-	14	14	15	14	16	14	14	15	21	19	19	19	19	48	48	48	46	40
Lanthanum	µg/L	-	-	-	-	-	-	0.68	0.65	0.66	0.66	0.61	0.64	0.66	0.68	0.088	0.089	0.090	0.085	0.084	1.4	1.4	1.4	1.4	1.4
Lead	µg/L	-	-	-	-	-	-	<0.005	0.0089	0.0074	<0.005	0.0078	0.0060	0.0063	0.0056	0.016	0.016	0.0097	<0.005	0.013	0.031	0.028	0.029	0.030	0.023
Lithium	µg/L	-	-	-	-	-	-	1.8	1.9	2.0	1.9	2.0	2.1	2.1	2.2	1.0	1.0	0.97	0.96	0.95	2.7	2.5	2.6	2.6	2.5
Manganese	µg/L	2,156 - 5,997 ^(h)	350 - 560 ⁽ⁱ⁾	-	-	-	-	28	28	29	28	25	27	28	29	4.8	4.6	4.6	4.3	4.3	83	81	84	83	83
Mercury	µg/L	-	-	-	-	-	-	0.00077	0.00080	0.00085	0.00083	0.00083	0.00087	0.00085	0.00099	<0.0005	<0.0005	<0.0005	<0.0005	0.00052	0.0012	0.0012	0.0011	0.0011	0.0010
Molybdenum	µg/L	-	-	-	-	-	-	0.016	0.011	0.015	0.010	0.013	0.011	0.014	0.015	0.014	0.013	0.013	0.017	0.040	0.040	0.045	0.036	0.023	
Nickel	µg/L	-	-	-	-	-	-	19	18	19	19	19	18	19	19	4.4	4.1	4.2	3.9	4.0	23	23	23	22	23
Rubidium	µg/L	-	-	-	-	-	-	3.0	3.0	3.2	3.1	3.2	3.1	3.1	3.2	1.7	1.6	1.6	1.6	1.6	4.6	4.5	4.7	4.5	4.4
Selenium	µg/L	-	-	-	-	-	-	0.084	0.070	0.076	0.077	0.097	0.072	0.054	0.077	0.029	0.025	0.028	<0.025	0.031	0.16	0.16	0.17	0.15	0.15
Silicon	µg/L	-	-	-	-	-	-	1.640	1.700	1.730	1.730	1.810	1.750	1.720	1.780	166	157	155	150	151	1,920	1,910	1,920	1,830	1,820
Silver	µg/L	-	-	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0029	0.0023	0.0028	0.0030	0.0026
Strontium	µg/L	-	-	-	-	-	-	101	100	104	102	104	100	101	106	39	38	39	37	38	116	114	118	115	111
Sulphur	µg/L	-	-	-	-	-	-	8,960	9,060	9,410	9,360	9,940	9,670	9,500	9,840	4,170	3,980	4,020	4,040	3,970	14,300	14,100	14,000	13,800	13,900
Tellurium	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	µg/L	-	-	-	-	-	-	0.0050	0.0050	0.0051	0.0051	0.0050	0.0054	0.0049	0.0052	0.0033	0.0031	0.0029	0.0030	0.0029	0.011	0.011	0.010	0.011	0.0097
Thorium	µg/L	-	-	-	-	-	-	0.023	0.015	0.019	0.015	0.018	0.015	0.017	0.022	<0.005	0.0050	<0.005	<0.005	0.0071	0.040	0.034	0.036	0.045	0.020
Tin	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	-	-	0.062	0.083	0.066	0.081	0.095	0.085	0.070	0.078	0.055	0.10	<0.05	0.14	0.054	0.25	0.35	0.35	0.28	0.28
Tungsten	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	µg/L	-	-	-	-	-	-	0.011	0.011	0.011	0.012	0.010	0.011	0.013	0.013	0.0061	0.0054	0.0057	0.0054	0.0055	0.021	0.023	0.024	0.023	0.023
Vanadium	µg/L	-	-	-	-	-	-	0.034	0.034	0.035	0.034	0.035	0.034	0.033	0.034	0.024	0.025	0.025	0.024	0.024	0.062	0.063	0.064	0.062	0.055
Zinc	µg/L	40 - 114 ^(j)	14 - 78 ^(k)	-	-	-	-	7.7	7.6	8.2	7.6	8.1	8.3	8.2	9.4	1.2	1.2	0.92	0.94	0.87	9.0	8.5	9.1	8.7	8.4
Zirconium	µg/L	-	-	-	-	-	-	0.12	0.11	0.12	0.12	0.12	0.12	0.11	0.11	0.029	0.026	0.026	0.026	0.024	0.20	0.21	0.20	0.19	0.18
Gallium	µg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			

Notes:

- ^(a) The ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (5.0 mg-N/L) is based on the combination of field pH (7.1) and water temperature (13.7°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH

Table D-2: Water Quality Summary at Goose Lake Central Basin, 2024

Parameter	Unit	Guidelines for the Protection of:						Site-specific Water Quality Objective (Sabina 2017)	Stations																		
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)	BRP-32-1		BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5	GLCB-B	GLCB-M	GLCB-T	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5		
							20-Apr-24		20-Apr-24	20-Apr-24	20-Apr-24	20-Apr-24	21-Apr-24	21-Apr-24	21-Apr-24	3-Aug-24	3-Aug-24	3-Aug-24	3-Aug-24	3-Aug-24	18-Sep-24	18-Sep-24	18-Sep-24	18-Sep-24	18-Sep-24	18-Sep-24	18-Sep-24
		Freshwater Aquatic Life (CCME 1999)							YL2400310-001	YL2400310-002	YL2400310-003	YL2400310-004	YL2400310-005	YL2400317-003	YL2400317-002	YL2400317-001	YL2401131-006	YL2401131-007	YL2401131-008	YL2401131-009	YL2401131-010	YL2401540-001	YL2401540-002	YL2401540-003	YL2401540-004	YL2401540-005	
Easting	m	-	-	-	-	-	-	-	433691	433679	433676	433653	433654	433663	433663	433663	433690	433681	433673	433652	433653	433690	433681	433673	433652	433653	
Northing	m	-	-	-	-	-	-	-	7270849	7270889	7270943	7270840	7270898	7270903	7270903	7270903	7270849	7270890	7270944	7270835	7270898	7270849	7270890	7270944	7270835	7270898	
Station depth	m	-	-	-	-	-	-	-	1.5	5.0	5.1	4.6	5.0	3.5	2.0	0.30	4.1	4.3	4.4	4.0	4.4	4.2	4.5	4.2	4.5		
Field Measured																											
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	-	7.1	6.2 ^(Cc, Ha)	6.2 ^(Cc, Ha)	6.5 ^(Ha)	6.4 ^(Cc, Ha)	6.2 ^(Cc, Ha)	6.6 ^(Ha)	6.8 ^(Ha)	6.8 ^(Ha)	6.9 ^(Ha)	7.1	7.3	7.2	6.8 ^(Ha)	6.9 ^(Ha)	6.8 ^(Ha)	6.9 ^(Ha)	6.9 ^(Ha)	
Specific conductivity	µS/cm	-	-	-	-	-	-	-	109	104	104	108	104	94	88	96	57	57	57	57	57	73	73	73	73	73	
Temperature	°C	-	-	-	-	-	-	-	1.2	1.3	1.3	1.2	1.3	2.4	1.9	1.2	15	15	15	15	15	7.7	7.7	7.7	7.7	7.7	
Dissolved oxygen	mg/L	-	6.5	-	-	-	-	-	13	12	12	13	12	8.9	9.8	13	9.2	9.5	9.5	9.5	9.4	10	10	10	10	11	
Dissolved oxygen	%	-	-	-	-	-	-	-	92	87	90	94	89	68	74	96	91	94	94	95	93	87	86	87	87	89	
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.68	0.40	0.34	0.60	1.2	0.73	0.93	0.73	0.88	0.81	
Conventional Parameters																											
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	-	7.2	7.2	7.2	7.2	7.2	6.7 ^(Ha)	6.7 ^(Ha)	6.7 ^(Ha)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Specific conductivity	µS/cm	-	-	-	-	-	-	-	100	101	100	101	98	95	96	100	60	59	60	56	59	72	70	71	71	71	
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	-	38	37	37	39	36	36	36	37	21	21	21	21	21	27	26	29	25	26	
Total alkalinity, as CaCO ₃	mg/L	-	-	-	-	-	-	-	8.6	8.5	8.4	8.3	8.0	7.5	7.6	8.0	5.3	5.3	5.3	5.3	5.2	6.6	5.8	5.8	5.7	5.5	
Total dissolved solids (measured)	mg/L	-	-	-	-	500	-	-	65	70	76	71	70	68	60	64	44	47	46	46	41	45	42	45	42	44	
Total dissolved solids (calculated) ⁽ⁿ⁾	mg/L	-	-	-	-	500	-	-	59	60	59	60	57	55	56	60	33	35	34	34	32	43	42	43	41	42	
Total dissolved solids (APHA 2005) ^(m)	mg/L	-	-	-	-	-	-	-	50	50	49	50	48	46	46	49	28	28	28	28	27	53	53	54	52	52	
Total suspended solids	mg/L	-	<3.0	-	-	-	-	-	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	
Total organic carbon	mg/L	-	-	-	-	-	-	-	6.1	6.7	6.1	6.5	5.9	5.5	5.8	8.1	4.1	4.3	4.2	3.8	3.8	5.3	5.2	5.3	5.2	5.2	
Dissolved organic carbon	mg/L	-	-	-	-	-	-	-	6.3	6.9	6.3	6.8	6.0	5.5	5.8	7.8	5.1	6.4	6.1	5.6	4.6	6.2	5.9	5.9	5.2	5.9	
Turbidity	NTU	-	-	-	-	-	-	-	0.12	0.15	0.16	0.18	0.14	0.15	0.11	0.13	0.41	0.42	0.38	0.44	0.42	0.73	0.70	0.65	0.78	0.67	
Hydrogen sulfide	mg/L	-	-	-	-	-	-	-	0.0017	0.0017	0.0020	0.0020	<0.0016	<0.0016	<0.0016	<0.0016	0.0020	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	
Alkalinity, phenolphthalein as CaCO ₃	mg/L	-	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Major Ions																											
Bicarbonate, as CaCO ₃	mg/L	-	-	-	-	-	-	-	8.6	8.5	8.4	8.3	8.0	7.5	7.6	8.0	5.3	5.3	5.3	5.3	5.2	6.6	5.8	5.8	5.7	5.5	
Bromide	mg/L	-	-	-	-	-	-	-	0.058	0.056	0.058	0.057	0.056	0.061	0.066	0.071	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Calcium	mg/L	-	-	-	-	-	-	-	8.3	8.0	8.0	8.4	7.8	7.7	7.9	8.1	4.6	4.5	4.5	4.5	4.4	5.8	5.7	6.3	5.2	5.5	
Carbonate, as CaCO ₃	mg/L	-	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Chloride	mg/L	640	120	-	-	250	-	-	9.0	9.2	9.1	9.2	8.9	8.7	8.6	9.1	4.8	4.8	4.9	4.8	4.8	6.6	6.5	6.5	6.6	6.5	
Fluoride	mg/L	-	0.12	-	1.5	-	-	-	0.026	0.026	0.026	0.026	0.025	<0.02	<0.02	0.022	0.025	0.031	0.033	0.035	0.029	0.024	0.024	0.024	0.024	0.024	
Hydroxide, as CaCO ₃	mg/L	-	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Magnesium	mg/L	-	-	-	-	-	-	-	4.2	4.1	4.0	4.3	4.0	4.0	4.0	4.2	2.3	2.4	2.4	2.3	3.0	2.3	3.0	3.3	2.8	2.9	
Potassium	mg/L	-	-	-	-	-	-	-	0.79	0.78	0.77	0.82	0.77	0.74	0.75	0.79	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.71	0.62	0.62	
Silica	mg/L	-	-	-	-	-	-	-	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	<0.5	<0.5	<0.5	<0.5	<0.5	0.65	0.66	0.67	0.67	0.65	
Sodium	mg/L	-	-	-	-	200	-	-	1.4	1.4	1.3	1.4	1.3	1.3	1.3	1.4	0.82	0.80	0.82	0.80	0.80	1.0	1.0	1.1	0.95	0.98	
Sulphate	mg/L	-	-	-	-	500	-	-	18	18	18	18	18	17	17	18	11	11	11	11	11	13	13	13	13	13	
Sulphide	mg/L	-	-	-	-	0.050	-	-	0.0016	0.0016	0.0019	0.0019	<0.0015	<0.0015	<0.0015	<0.0015	0.0019	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	0.0015	
Total cyanide	mg/L	-	0.0050	-	0.20	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005</													

Table D-3: Water Quality Summary at Goose Lake Southeast Basin, 2024

Parameter	Unit	Guidelines for the Protection of:					Site-specific Water Quality Objective (Sabina 2017)	Stations		
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)		GLSE-B	GLSE-M	GLSE-T
								17-Apr-24	17-Apr-24	17-Apr-24
								YL2400298-003	YL2400298-002	YL2400298-001
Easting	m	-	-	-	-	-	-	434306	434306	434306
Northing	m	-	-	-	-	-	-	7270038	7270038	7270038
Station depth	m	-	-	-	-	-	-	3.0	1.5	0.30
Field Measured										
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	6.9 ^(Ha)	7.2	7.5
Specific conductivity	µS/cm	-	-	-	-	-	-	48	46	51
Temperature	°C	-	-	-	-	-	-	2.1	1.5	1.2
Dissolved oxygen	mg/L	-	6.5	-	-	-	-	8.0	13	14
Dissolved oxygen	%	-	-	-	-	-	-	59	95	100
Turbidity	NTU	-	-	-	-	-	-	-	-	-
Conventional Parameters										
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	7.1	7.1	7.2
Specific conductivity	µS/cm	-	-	-	-	-	-	103	103	119
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	37	38	39
Total alkalinity, as CaCO ₃	mg/L	-	-	-	-	-	-	8.6	8.5	11
Total dissolved solids (measured)	mg/L	-	-	-	-	500	-	69	72	86
Total dissolved solids (calculated) ^(m)	mg/L	-	-	-	-	500	-	60	61	67
Total dissolved solids (APHA 2005) ^(l)	mg/L	-	-	-	-	-	-	51	51	57
Total suspended solids	mg/L	-	-	-	-	-	-	<3.0	<3.0	<3.0
Total organic carbon	mg/L	-	-	-	-	-	-	5.9	5.9	6.0
Dissolved organic carbon	mg/L	-	-	-	-	-	-	6.0	6.1	6.3
Turbidity	NTU	-	-	-	-	-	-	0.17	0.16	1.4
Hydrogen sulfide	mg/L	-	-	-	-	-	-	<0.0016	0.0061	<0.0016
Alkalinity, phenolphthalein as CaCO ₃	mg/L	-	-	-	-	-	-	<1.0	<1.0	<1.0
Major Ions										
Bicarbonate, as CaCO ₃	mg/L	-	-	-	-	-	-	8.6	8.5	11
Bromide	mg/L	-	-	-	-	-	-	0.072	0.076	0.086
Calcium	mg/L	-	-	-	-	-	-	7.9	8.3	8.5
Carbonate, as CaCO ₃	mg/L	-	-	-	-	-	-	<1.0	<1.0	<1.0
Chloride	mg/L	640	120	-	-	250	-	9.7	9.7	11
Fluoride	mg/L	-	0.12	-	1.5	-	-	0.030	0.029	0.045
Hydroxide, as CaCO ₃	mg/L	-	-	-	-	-	-	<1.0	<1.0	<1.0
Magnesium	mg/L	-	-	-	-	-	-	4.1	4.3	4.4
Potassium	mg/L	-	-	-	-	-	-	0.76	0.83	0.85
Silica	mg/L	-	-	-	-	-	-	2.0	2.0	2.1
Sodium	mg/L	-	-	-	-	200	-	1.3	1.4	1.5
Sulphate	mg/L	-	-	-	-	500	-	19	19	21
Sulphide	mg/L	-	-	-	-	0.050	-	<0.0015	0.0057	<0.0015
Total cyanide	mg/L	-	0.0050	-	0.20	-	-	<0.005	<0.005	<0.005
Cyanide (free)	mg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005
Cyanide (WAD)	mg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005
Nutrients										
Nitrate	mg-N/L	124	2.9	-	10	-	-	0.69	0.69	0.83
Nitrite	mg-N/L	-	0.060	-	1.0	-	-	0.042	0.028	0.020
Total ammonia	mg-N/L	-	5.4 - 20 ^(a)	-	-	-	-	0.10	0.15	0.16
Total phosphorus	mg-P/L	-	-	-	-	-	-	0.0057	0.0029	0.0034
Dissolved phosphorus	mg-P/L	-	-	-	-	-	-	0.0021	0.0024	0.0014
Orthophosphate	mg-P/L	-	-	-	-	-	-	<0.001	<0.001	<0.001
Total Kjeldahl nitrogen	mg-N/L	-	-	-	-	-	-	0.40	0.40	0.46
Chlorophyll a	µg/L	-	-	-	-	-	-	-	-	-
Total Metals										
Aluminum	µg/L	-	100 ^(b)	440 - 820 ^(b, c, d)	2,900	-	-	14	13	14
Antimony	µg/L	-	-	-	6.0	-	-	0.014	0.016	0.020
Arsenic	µg/L	-	5.0	-	10	-	10	0.28	0.30	0.30
Barium	µg/L	-	-	-	2,000	-	-	18	16	17
Beryllium	µg/L	-	-	-	-	-	-	0.0046	0.0038	0.0048
Bismuth	µg/L	-	-	-	-	-	-	<0.001	<0.001	<0.001
Boron	µg/L	29,000	1,500	-	5,000	-	-	<5.0	<5.0	5.8
Cadmium	µg/L	0.75 - 0.81 ^(c)	0.069 - 0.073 ^(c)	-	7.0	-	-	0.011	0.012	0.011
Cesium	µg/L	-	-	-	-	-	-	0.015	0.016	0.016
Chromium	µg/L	-	1.0 ^(e)	5.0 ^(e)	50 ^(e)	-	-	0.12	0.11	0.12
Cobalt	µg/L	-	-	0.78 ^(c)	-	-	-	0.39	0.15	0.15
Copper	µg/L	-	2.0 ^(c)	-	2,000	1,000	4.2	2.0 ^(Cc)	2.0 ^(Cc)	2.2 ^(Cc)
Iron	µg/L	-	300	520 - 560 ^(b, d)	-	300	-	31	16	18
Lanthanum	µg/L	-	-	-	-	-	-	0.24	0.22	0.21
Lead	µg/L	-	1.0 ^(c)	8.2 - 8.5 ^(c, d)	5.0	-	-	0.0065	0.021	0.042
Lithium	µg/L	-	-	-	-	-	-	1.1	1.2	1.3
Manganese	µg/L	-	-	-	120	-	-	15	3.8	3.7
Mercury	µg/L	-	0.026	-	1.0	-	-	0.0013	0.0014	0.00091
Molybdenum	µg/L	-	73	-	-	-	-	0.013	0.015	0.023
Nickel	µg/L	-	25 ^(c)	-	-	-	-	8.2	7.5	7.9
Rubidium	µg/L	-	-	-	-	-	-	2.2	2.1	2.3
Selenium	µg/L	-	1.0	-	50	-	-	0.034	0.050	0.049
Silicon	µg/L	-	-	-	-	-	-	1,070	996	996
Silver	µg/L	-	0.25	-	-	-	-	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	2,500	7,000	-	-	49	47	49
Sulphur	µg/L	-	-	-	-	-	-	6,350	6,440	6,510
Tellurium	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Thallium	µg/L	-	0.80	-	-	-	-	0.0022	0.0022	0.0025
Thorium	µg/L	-	-	-	-	-	-	0.016	0.012	0.0092
Tin	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	-	-	0.072	0.063	0.067
Tungsten	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Uranium	µg/L	33	15	-	20	-	-	0.0074	0.0084	0.0078
Vanadium	µg/L	-	-	120	-	-	-	0.036	0.037	0.040
Zinc	µg/L	-	-	-	-	5,000	-	2.2	3.5	2.6
Zirconium	µg/L	-	-	-	-	-	-	0.070	0.079	0.074
Gallium	µg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05
Niobium	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1
Rhenium	µg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005
Tantalum	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1
Yttrium	µg/L	-	-	-	-	-	-	0.11	0.10	0.11
Dissolved Metals										
Aluminum	µg/L	-	-	-	-	-	-	12	12	13

Table D-3: Water Quality Summary at Goose Lake Southeast Basin, 2024

Parameter	Unit	Guidelines for the Protection of:					Site-specific Water Quality Objective (Sabina 2017)	Stations		
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)		GLSE-B	GLSE-M	GLSE-T
								17-Apr-24	17-Apr-24	17-Apr-24
								Freshwater Aquatic Life (CCME 1999)	YL2400298-003	YL2400298-002
Antimony	µg/L	-	-	-	-	-	-	0.019	0.023	0.018
Arsenic	µg/L	-	-	-	-	-	-	0.28	0.29	0.29
Barium	µg/L	-	-	-	-	-	-	16	16	16
Beryllium	µg/L	-	-	-	-	-	-	0.0038	0.0042	0.0042
Bismuth	µg/L	-	-	-	-	-	-	<0.001	<0.001	0.0011
Boron	µg/L	-	-	-	-	-	-	<5.0	<5.0	<5.0
Cadmium	µg/L	-	-	-	-	-	-	0.014	0.012	0.013
Cesium	µg/L	-	-	-	-	-	-	0.013	0.016	0.016
Chromium	µg/L	-	-	-	-	-	-	0.11	0.12	0.11
Cobalt	µg/L	-	-	-	-	-	-	0.31	0.13	0.13
Copper	µg/L	-	-	0.37 - 2.9 ^(f, g)	-	-	-	1.8 ^(Fc)	2.0 ^(Fc)	2.1
Iron	µg/L	-	-	-	-	-	-	15	12	12
Lanthanum	µg/L	-	-	-	-	-	-	0.20	0.20	0.21
Lead	µg/L	-	-	-	-	-	-	0.0053	0.011	0.0079
Lithium	µg/L	-	-	-	-	-	-	1.2	1.3	1.4
Manganese	µg/L	2,747 - 2,919 ^(h)	350 - 380 ⁽ⁱ⁾	-	-	-	-	12	3.2	3.1
Mercury	µg/L	-	-	-	-	-	-	0.00050	0.00054	0.00061
Molybdenum	µg/L	-	-	-	-	-	-	0.014	0.021	0.030
Nickel	µg/L	-	-	-	-	-	-	7.4	7.5	7.7
Rubidium	µg/L	-	-	-	-	-	-	1.9	2.1	2.2
Selenium	µg/L	-	-	-	-	-	-	0.060	0.046	0.056
Silicon	µg/L	-	-	-	-	-	-	1,080	1,030	1,000
Silver	µg/L	-	-	-	-	-	-	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	-	-	-	-	45	47	48
Sulphur	µg/L	-	-	-	-	-	-	6,950	6,780	6,560
Tellurium	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Thallium	µg/L	-	-	-	-	-	-	0.0024	0.0027	0.0026
Thorium	µg/L	-	-	-	-	-	-	0.0083	0.010	0.012
Tin	µg/L	-	-	-	-	-	-	<0.01	0.011	<0.01
Titanium	µg/L	-	-	-	-	-	-	0.064	<0.05	0.054
Tungsten	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Uranium	µg/L	-	-	-	-	-	-	0.0080	0.0076	0.0087
Vanadium	µg/L	-	-	-	-	-	-	0.034	0.035	0.036
Zinc	µg/L	52 - 56 ^(j)	15 - 23 ^(k)	-	-	-	-	2.8	3.1	2.3
Zirconium	µg/L	-	-	-	-	-	-	0.079	0.080	0.075
Gallium	µg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05
Niobium	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1
Rhenium	µg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005
Tantalum	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1
Yttrium	µg/L	-	-	-	-	-	-	0.096	0.10	0.10
Radionuclides										
Radium-226	Bq/L	-	-	-	-	-	-	-	-	-

Notes:

^(a) The ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (5.4 mg-N/L) is based on the combination of field pH (7.5) and water temperature (1.2°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

^(b) The guideline is pH dependent. The guideline range shown is based on the pH range observed in the dataset (6.9 to 7.5). The guideline is calculated based on the individual pH for each sample.

^(c) The guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (36 to 39 mg/L). The guideline is calculated based on the individual hardness value for each sample.

^(d) The guideline is DOC dependent. The guideline range shown is based on the DOC concentration range observed in the dataset (6.0 to 6.3 mg/L). The guideline is calculated based on the individual DOC concentration in each sample.

^(e) The guideline is for chromium VI.

^(f) The guideline was generated using a look-up table provided by ECCC; a biotic ligand model is available from ECCC, which can be used to increase the precision of the guideline if required.

^(g) The long-term dissolved copper guideline is pH, temperature, hardness and DOC dependent. The guideline that results in the minimum long-term copper guideline (0.37 µg/L) is based on the combination of field pH (6.9), temperature (1.2 °C), hardness (36 mg/L), and DOC (6.0 mg/L). Guidelines calculated with pH, temperature, hardness, and DOC values falling outside the defined range (i.e., pH 5.5 to 8.8, temperature 8.5 to 27 °C, hardness 7.9 to 525 mg/L, and DOC 0.2 to 33.4 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, temperature, hardness, and DOC extremes. The guideline is calculated based on the individual pH, tempature, hardness, and DOC measurements for each sample.

^(h) The acute guideline for dissolved manganese is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (36 to 39 mg/L). Guidelines calculated with hardness values falling outside the defined range (i.e., 25 to 250 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness extremes. The guideline is calculated based on the individual hardness value for each sample.

⁽ⁱ⁾ The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (350 µg/L) is based on the combination of field pH (6.9) and hardness (36 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

^(j) The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (52 µg/L) is based on the combination of hardness (36 mg/L) and DOC (6.0 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

^(k) The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (15.1 µg/L) is based on the combination of field pH (7.5), hardness (39 mg/L), and DOC (6.3 mg/L). Guidelines calculated with pH, hardness and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L, and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

^(l) Total dissolved solids calculated by WSP using the Standard Method by APHA 2005 (Total dissolved solids mg/L = $\Sigma[\text{Na}^+, \text{K}^+, \text{Ca}^{2+}, \text{Mg}^{2+}, \text{Cl}^-, \text{F}^-, \text{SO}_4^{2-}, 4.42 * \text{NO}_3^-]$ (as nitrogen), 0.6 * total alkalinity (as CaCO₃)).

^(m) Total dissolved solids calculated by ALS laboratory using the following equation: Total dissolved solids mg/L = $\Sigma[0.6 * \text{total alkalinity (as CaCO}_3\text{)}, \text{dissolved sodium, dissolved potassium, dissolved calcium, dissolved magnesium, 2.709 * dissolved silicon, chloride, sulfate (as SO}_4\text{)}, 4.427 * \text{nitrate (as N), fluoride, 3.284 * nitrite (as N), 1.288 * total ammonia (as N), dissolved aluminum, dissolved copper, dissolved iron, dissolved manganese, dissolved zinc, dissolved organic carbon}]$

^(Cc) = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH or DO range.

^(Fc) = concentration is higher than the chronic FEQG.

^(Ha) = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

Bolded concentrations are higher than water quality guidelines.

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision *after* comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

- no guideline or no data; B = bottom, M = Middle, T = top; CaCO₃ = calcium carbonate; µS/cm = microsiemens per centimetre; °C = degree Celsius; NTU = nephelometric turbidity units; mg/L = milligrams per litre; WAD = weak acid dissociable; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligram phosphorus per litre; µg/L = microgram per litre; DO = Dissolved Oxygen; DOC = Dissolved Organic Carbon; CCME = Canadian Council of Ministers of the Environment; ECCC = Environment and Climate Change Canada; GOC = Government of Canada; HC = Health Canada; APHA = American Public Health Association; WQG = water quality guideline; FEQG = Federal Environmental Quality Guidelines; SSWQO = Site-specific Water Quality Objective.

Sources:

CCME (Canadian Council of Ministers of the Environment). 1999. Canadian Environmental Quality Guidelines. 1999 with updates to 2024. Winnipeg, MB, Canada.

HC (Health Canada). 2024. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Ottawa, ON, Canada.

APHA (American Public Health Association). 2005. Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, NY, USA.

GOC (Government of Canada). 2024. Federal Environmental Quality Guidelines. Accessed in December 2024. <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/guidelines-objectives-codes-practice/guidelines-objectives.html#fed>

Sabina (Sabina Gold & Silver Corporation). 2017. The Back River Project Main Application Document October 2017. Submitted to the Nunavut Water Board. October 2017.

Table D-4: Water Quality Summary at Goose Lake Tail, 2024

Parameter	Unit	Guidelines for the Protection of:					Site-specific Water Quality Objective (Sabina 2017)	Stations		
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)		GLTL-B	GLTL-M	GLTL-T
								17-Apr-24	17-Apr-24	17-Apr-24
								Freshwater Aquatic Life (CCME 1999)		YL2400298-006
Easting	m	-	-	-	-	-	-	434610	434610	434610
Northing	m	-	-	-	-	-	-	7271483	7271483	7271483
Station depth	m	-	-	-	-	-	-	4.0	2.0	0.30
Field Measured										
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	6.2 ^(Cc, Ha)	6.4 ^(Cc, Ha)	6.6 ^(Ha)
Specific conductivity	µS/cm	-	-	-	-	-	-	50	47	50
Temperature	°C	-	-	-	-	-	-	2.9	2.4	1.6
Dissolved oxygen	mg/L	-	6.5	-	-	-	-	2.9 ^(Cc)	6.5	12
Dissolved oxygen	%	-	-	-	-	-	-	22	48	84
Turbidity	NTU	-	-	-	-	-	-	-	-	-
Conventional Parameters										
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	7.2	7.2	7.2
Specific conductivity	µS/cm	-	-	-	-	-	-	111	103	104
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	41	37	36
Total alkalinity, as CaCO ₃	mg/L	-	-	-	-	-	-	12	11	11
Total dissolved solids (measured)	mg/L	-	-	-	-	500	-	79	65	67
Total dissolved solids (calculated) ^(m)	mg/L	-	-	-	-	500	-	64	60	60
Total dissolved solids (APHA 2005) ^(l)	mg/L	-	-	-	-	-	-	53	50	50
Total suspended solids	mg/L	-	-	-	-	-	-	<3.0	<3.0	<3.0
Total organic carbon	mg/L	-	-	-	-	-	-	6.2	6.0	6.2
Dissolved organic carbon	mg/L	-	-	-	-	-	-	6.1	6.1	6.3
Turbidity	NTU	-	-	-	-	-	-	0.22	0.27	0.17
Hydrogen sulfide	mg/L	-	-	-	-	-	-	<0.0016	<0.0016	<0.0016
Alkalinity, phenolphthalein as CaCO ₃	mg/L	-	-	-	-	-	-	<1.0	<1.0	<1.0
Major Ions										
Bicarbonate, as CaCO ₃	mg/L	-	-	-	-	-	-	12	11	11
Bromide	mg/L	-	-	-	-	-	-	0.082	0.073	0.069
Calcium	mg/L	-	-	-	-	-	-	8.8	8.0	7.8
Carbonate, as CaCO ₃	mg/L	-	-	-	-	-	-	<1.0	<1.0	<1.0
Chloride	mg/L	640	120	-	-	250	-	10	9.3	9.5
Fluoride	mg/L	-	0.12	-	1.5	-	-	0.027	0.028	0.029
Hydroxide, as CaCO ₃	mg/L	-	-	-	-	-	-	<1.0	<1.0	<1.0
Magnesium	mg/L	-	-	-	-	-	-	4.5	4.2	4.1
Potassium	mg/L	-	-	-	-	-	-	0.88	0.80	0.79
Silica	mg/L	-	-	-	-	-	-	2.3	2.0	2.0
Sodium	mg/L	-	-	-	-	200	-	1.5	1.4	1.4
Sulphate	mg/L	-	-	-	-	500	-	18	18	18
Sulphide	mg/L	-	-	-	-	0.050	-	<0.0015	<0.0015	<0.0015
Total cyanide	mg/L	-	0.0050	-	0.20	-	-	<0.005	<0.005	<0.005
Cyanide (free)	mg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005
Cyanide (WAD)	mg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005
Nutrients										
Nitrate	mg-N/L	124	2.9	-	10	-	-	0.43	0.52	0.57
Nitrite	mg-N/L	-	0.060	-	1.0	-	-	0.26 ^(Cc)	0.092 ^(Cc)	0.059
Total ammonia	mg-N/L	-	42 - 94 ^(a)	-	-	-	-	0.098	0.15	0.16
Total phosphorus	mg-P/L	-	-	-	-	-	-	0.0053	0.0049	0.0043
Dissolved phosphorus	mg-P/L	-	-	-	-	-	-	0.0022	0.0022	0.0019
Orthophosphate	mg-P/L	-	-	-	-	-	-	0.0011	<0.001	<0.001
Total Kjeldahl nitrogen	mg-N/L	-	-	-	-	-	-	0.46	0.43	0.44
Chlorophyll a	µg/L	-	-	-	-	-	-	-	-	-
Total Metals										
Aluminum	µg/L	-	5.0 - 100 ^(b)	240 - 340 ^(b, c, d)	2,900	-	-	11 ^(Cc)	13 ^(Cc)	13
Antimony	µg/L	-	-	-	6.0	-	-	0.014	0.023	0.026
Arsenic	µg/L	-	5.0	-	10	-	10	0.29	0.29	0.29
Barium	µg/L	-	-	-	2,000	-	-	17	17	16
Beryllium	µg/L	-	-	-	-	-	-	0.0034	0.0041	0.0034
Bismuth	µg/L	-	-	-	-	-	-	<0.001	<0.001	<0.001
Boron	µg/L	29,000	1,500	-	5,000	-	-	<5.0	<5.0	<5.0
Cadmium	µg/L	0.75 - 0.84 ^(c)	0.069 - 0.075 ^(c)	-	7.0	-	-	0.013	0.010	0.0095
Cesium	µg/L	-	-	-	-	-	-	0.016	0.016	0.017
Chromium	µg/L	-	1.0 ^(e)	5.0 ^(e)	50 ^(e)	-	-	0.11	0.12	0.14
Cobalt	µg/L	-	-	0.78 ^(c)	-	-	-	0.21	0.13	0.13
Copper	µg/L	-	2.0 ^(c)	-	2,000	1,000	4.2	1.9	2.2 ^(Cc)	2.1 ^(Cc)
Iron	µg/L	-	300	500 - 530 ^(b, d)	-	300	-	22	17	17
Lanthanum	µg/L	-	-	-	-	-	-	0.17	0.17	0.16
Lead	µg/L	-	1.0 ^(c)	8.3 - 8.5 ^(c, d)	5.0	-	-	0.0094	0.046	0.046
Lithium	µg/L	-	-	-	-	-	-	1.2	1.2	1.2
Manganese	µg/L	-	-	-	120	-	-	22	13	11
Mercury	µg/L	-	0.026	-	1.0	-	-	0.0020	0.0016	0.0015
Molybdenum	µg/L	-	73	-	-	-	-	0.013	0.020	0.019
Nickel	µg/L	-	25 ^(c)	-	-	-	-	6.7	6.7	6.7
Rubidium	µg/L	-	-	-	-	-	-	2.3	2.3	2.4
Selenium	µg/L	-	1.0	-	50	-	-	0.055	0.052	0.059
Silicon	µg/L	-	-	-	-	-	-	1,000	977	930
Silver	µg/L	-	0.25	-	-	-	-	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	2,500	7,000	-	-	47	48	47
Sulphur	µg/L	-	-	-	-	-	-	5,980	6,050	5,890
Tellurium	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Thallium	µg/L	-	0.80	-	-	-	-	0.0028	0.0027	0.0023
Thorium	µg/L	-	-	-	-	-	-	0.015	0.0096	0.016
Tin	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	-	-	0.059	0.20	0.11
Tungsten	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Uranium	µg/L	33	15	-	20	-	-	0.0075	0.0079	0.0081
Vanadium	µg/L	-	-	120	-	-	-	0.032	0.039	0.039
Zinc	µg/L	-	-	-	-	5,000	-	1.6	3.2	3.6
Zirconium	µg/L	-	-	-	-	-	-	0.066	0.075	0.080
Gallium	µg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05
Niobium	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1
Rhenium	µg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005
Tantalum	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1
Yttrium	µg/L	-	-	-	-	-	-	0.082	0.083	0.081
Dissolved Metals										
Aluminum	µg/L	-	-	-	-	-	-	10	9.9	10

Table D-4: Water Quality Summary at Goose Lake Tail, 2024

Parameter	Unit	Guidelines for the Protection of:					Site-specific Water Quality Objective (Sabina 2017)	Stations		
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)		GLTL-B	GLTL-M	GLTL-T
								17-Apr-24	17-Apr-24	17-Apr-24
								Freshwater Aquatic Life (CCME 1999)	YL2400298-006	YL2400298-005
Antimony	µg/L	-	-	-	-	-	-	0.016	0.020	0.018
Arsenic	µg/L	-	-	-	-	-	-	0.28	0.28	0.29
Barium	µg/L	-	-	-	-	-	-	18	16	15
Beryllium	µg/L	-	-	-	-	-	-	0.0035	0.0030	0.0026
Bismuth	µg/L	-	-	-	-	-	-	<0.001	<0.001	<0.001
Boron	µg/L	-	-	-	-	-	-	<5.0	<5.0	<5.0
Cadmium	µg/L	-	-	-	-	-	-	0.012	0.012	0.0079
Cesium	µg/L	-	-	-	-	-	-	0.016	0.015	0.015
Chromium	µg/L	-	-	-	-	-	-	0.11	0.11	0.11
Cobalt	µg/L	-	-	-	-	-	-	0.28	0.12	0.11
Copper	µg/L	-	-	0.20 - 0.37 ^(f, g)	-	-	-	1.9 ^(Fc)	1.9 ^(Fc)	1.9 ^(Fc)
Iron	µg/L	-	-	-	-	-	-	14	9.5	8.2
Lanthanum	µg/L	-	-	-	-	-	-	0.16	0.14	0.14
Lead	µg/L	-	-	-	-	-	-	0.0072	0.013	0.010
Lithium	µg/L	-	-	-	-	-	-	1.3	1.2	1.3
Manganese	µg/L	2,741 - 3,017 ^(h)	290 - 330 ⁽ⁱ⁾	-	-	-	-	30	14	9.0
Mercury	µg/L	-	-	-	-	-	-	0.00057	0.00062	0.00062
Molybdenum	µg/L	-	-	-	-	-	-	0.014	0.016	0.016
Nickel	µg/L	-	-	-	-	-	-	6.8	6.2	6.2
Rubidium	µg/L	-	-	-	-	-	-	2.4	2.1	2.1
Selenium	µg/L	-	-	-	-	-	-	0.066	0.050	0.048
Silicon	µg/L	-	-	-	-	-	-	1,050	992	957
Silver	µg/L	-	-	-	-	-	-	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	-	-	-	-	48	44	44
Sulphur	µg/L	-	-	-	-	-	-	6,200	6,540	6,550
Tellurium	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Thallium	µg/L	-	-	-	-	-	-	0.0028	0.0028	0.0028
Thorium	µg/L	-	-	-	-	-	-	0.011	0.013	0.013
Tin	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	-	-	<0.05	<0.05	0.059
Tungsten	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Uranium	µg/L	-	-	-	-	-	-	0.0072	0.0063	0.0067
Vanadium	µg/L	-	-	-	-	-	-	0.030	0.031	0.031
Zinc	µg/L	52 - 57 ^(j)	29 - 35 ^(k)	-	-	-	-	2.2	3.1	3.0
Zirconium	µg/L	-	-	-	-	-	-	0.068	0.075	0.075
Gallium	µg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05
Niobium	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1
Rhenium	µg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005
Tantalum	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1
Yttrium	µg/L	-	-	-	-	-	-	0.078	0.070	0.074
Radionuclides										
Radium-226	Bq/L	-	-	-	-	-	-	-	-	-

Notes:

^(a) The ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (42 mg-N/L) is based on the combination of field pH (6.6) and water temperature (1.6°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

^(b) The guideline is pH dependent. The guideline range shown is based on the pH range observed in the dataset (6.2 to 6.6). The guideline is calculated based on the individual pH for each sample.

^(c) The guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (36 to 41 mg/L). The guideline is calculated based on the individual hardness value for each sample.

^(d) The guideline is DOC dependent. The guideline range shown is based on the DOC concentration range observed in the dataset (6.1 to 6.3 mg/L). The guideline is calculated based on the individual DOC concentration in each sample.

^(e) The guideline is for chromium VI.

^(f) The guideline was generated using a look-up table provided by ECCC; a biotic ligand model is available from ECCC, which can be used to increase the precision of the guideline if required.

^(g) The long-term dissolved copper guideline is pH, temperature, hardness and DOC dependent. The guideline that results in the minimum long-term copper guideline (0.2 µg/L) is based on the combination of field pH (6.2), temperature (1.6 °C), hardness (41 mg/L), and DOC (6.1 mg/L). Guidelines calculated with pH, temperature, hardness, and DOC values falling outside the defined range (i.e., pH 5.5 to 8.8, temperature 8.5 to 27 °C, hardness 7.9 to 525 mg/L, and DOC 0.2 to 33.4 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, temperature, hardness, and DOC extremes. The guideline is calculated based on the individual pH, tempature, hardness, and DOC measurements for each sample.

^(h) The acute guideline for dissolved manganese is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (36 to 41 mg/L). Guidelines calculated with hardness values falling outside the defined range (i.e., 25 to 250 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness extremes. The guideline is calculated based on the individual hardness value for each sample.

⁽ⁱ⁾ The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (290 µg/L) is based on the combination of field pH (6.2) and hardness (41 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

^(j) The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (52 µg/L) is based on the combination of hardness (36 mg/L) and DOC (6.3 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

^(k) The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (29.4 µg/L) is based on the combination of field pH (6.6), hardness (36 mg/L), and DOC (6.3 mg/L). Guidelines calculated with pH, hardness and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L, and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

^(l) Total dissolved solids calculated by WSP using the Standard Method by APHA 2005 (Total dissolved solids mg/L = Σ[Na⁺, K⁺, Ca²⁺, Mg²⁺, Cl⁻, F⁻, SO₄²⁻, 4.42 * NO₃⁻ (as nitrogen), 0.6 * total alkalinity (as CaCO₃)].

^(m) Total dissolved solids calculated by ALS laboratory using the following equation: Total dissolved solids mg/L = Σ[0.6 * total alkalinity (as CaCO₃), dissolved sodium, dissolved potassium, dissolved calcium, dissolved magnesium, 2.709 * dissolved silicon, chloride, sulfate (as SO₄), 4.427 * nitrate (as N), fluoride, 3.284 * nitrite (as N), 1.288 * total ammonia (as N), dissolved aluminum, dissolved copper, dissolved iron, dissolved manganese, dissolved zinc, dissolved organic carbon]

^(Cc) = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH or DO range.

^(Fc) = concentration is higher than the chronic FEQG.

^(Ha) = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

Bolded concentrations are higher than water quality guidelines.

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision *after* comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

- no guideline or no data; B = bottom, M = Middle, T = top; CaCO₃ = calcium carbonate; µS/cm = microsiemens per centimetre; °C = degree Celsius; NTU = nephelometric turbidity units; mg/L = miligrams per litre; WAD = weak acid dissociable; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligram phosphorus per litre; µg/L = microgram per litre; DO = Dissolved Oxygen; DOC = Dissolved Organic Carbon; CCME = Canadian Council of Ministers of the Environment; ECCC = Environment and Climate Change Canada; GOC = Government of Canada; HC = Health Canada; APHA = American Public Health Association; WQG = water quality guideline; FEQG = Federal Environmental Quality Guidelines; SSWQO = Site-specific Water Quality Objective.

Sources:

CCME (Canadian Council of Ministers of the Environment). 1999. Canadian Environmental Quality Guidelines. 1999 with updates to 2024. Winnipeg, MB, Canada.

HC (Health Canada). 2024. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Ottawa, ON, Canada.

APHA (American Public Health Association). 2005. Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, NY, USA.

GOC (Government of Canada). 2024. Federal Environmental Quality Guidelines. Accessed in December 2024. <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/guidelines-objectives-codes-practice/guidelines-objectives.html#fed>

Sabina (Sabina Gold & Silver Corporation). 2017. The Back River Project Main Application Document October 2017. Submitted to the Nunavut Water Board. October 2017.

Table D-5: Water Quality Summary at Reference B Lake, 2024

Parameter	Unit	Guidelines for the Protection of:						Site-specific Water Quality Objective (Sabina 2017)	Stations														
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)	BRP-38-1		BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	
							18-Apr-24		18-Apr-24	18-Apr-24	18-Apr-24	18-Apr-24	2-Aug-24	2-Aug-24	2-Aug-24	2-Aug-24	2-Aug-24	20-Sep-24	20-Sep-24	20-Sep-24	20-Sep-24	20-Sep-24	
							YL2400308-001		YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005	YL2401131-011	YL2401131-012	YL2401131-013	YL2401131-014	YL2401131-015	YL2401580-009	YL2401580-010	YL2401580-011	YL2401580-012	YL2401580-013	
Easting	m	-	-	-	-	-	-	442058	442026	441978	441980	441972	442060	442027	441961	441983	441990	442060	442027	441961	441983	441990	
Northing	m	-	-	-	-	-	-	7258571	7258593	7258616	7258661	7258689	7258569	7258592	7258708	7258654	7258699	7258569	7258592	7258708	7258654	7258699	
Station depth	m	-	-	-	-	-	-	3.8	3.8	4.1	3.6	3.6	3.7	3.4	3.5	3.4	3.0	3.6	4.0	3.6	3.5	3.3	
Field Measured																							
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	7.4	6.8 ^(Ha)	7.0	6.7 ^(Ha)	6.5 ^(Ha)	7.3	7.3	7.3	7.3	7.3	7.1	7.1	7.0	7.0	7.0	
Specific conductivity	µS/cm	-	-	-	-	-	-	47	45	45	46	55	29	29	29	29	29	33	33	33	33	33	
Temperature	°C	-	-	-	-	-	-	2.2	2.0	2.0	1.9	1.9	14	14	14	14	14	7.3	7.3	7.3	7.3	7.3	
Dissolved oxygen	mg/L	-	6.5	-	-	-	-	13	14	14	13	13	9.2	9.4	9.6	9.3	9.6	12	12	11	11	11	
Dissolved oxygen	%	-	-	-	-	-	-	98	100	101	93	97	89	91	93	91	94	97	95	95	94	94	
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	0.17	0.23	0.19	0.14	0.33	0.37	0.34	0.46	0.37	0.33	
Conventional Parameters																							
pH	-	-	6.5 - 9.0	-	-	7.0 - 11	-	7.6	7.5	7.5	7.5	7.6	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	
Specific conductivity	µS/cm	-	-	-	-	-	-	54	53	55	54	54	31	30	30	30	30	32	32	32	33	32	
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	21	21	21	21	22	11	11	11	11	11	13	13	13	13	13	
Total alkalinity, as CaCO ₃	mg/L	-	-	-	-	-	-	17	16	17	17	18	7.9	8.1	7.9	8.0	8.0	8.7	8.8	8.7	8.6	8.7	
Total dissolved solids (measured)	mg/L	-	-	-	-	500	-	33	36	32	37	41	26	25	25	26	26	25	24	21	23	24	
Total dissolved solids (calculated) ⁽ⁿ⁾	mg/L	-	-	-	-	500	-	34	33	34	34	35	18	18	18	18	20	21	21	21	22	22	
Total dissolved solids (APHA 2005) ^(m)	mg/L	-	-	-	-	-	-	27	26	27	27	28	14	14	14	14	14	16	16	16	34	36	
Total suspended solids	mg/L	-	-	-	-	-	-	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	
Total organic carbon	mg/L	-	-	-	-	-	-	5.5	5.4	5.9	5.9	5.7	3.7	3.7	3.8	3.6	3.6	5.3	4.8	4.8	5.0	5.0	
Dissolved organic carbon	mg/L	-	-	-	-	-	-	6.1	5.0	5.2	5.2	5.5	3.4	3.5	3.6	3.9	6.2	4.6	4.5	4.5	6.0	4.9	
Turbidity	NTU	-	-	-	-	-	-	0.27	0.20	0.16	0.21	0.21	0.46	0.41	0.46	0.49	0.44	0.47	0.53	0.46	0.44	0.45	
Hydrogen sulfide	mg/L	-	-	-	-	-	-	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	
Alkalinity, phenolphthalein as CaCO ₃	mg/L	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Major Ions																							
Bicarbonate, as CaCO ₃	mg/L	-	-	-	-	-	-	17	16	17	17	18	7.9	8.1	7.9	8.0	8.0	8.7	8.8	8.7	8.6	8.7	
Bromide	mg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Calcium	mg/L	-	-	-	-	-	-	3.7	3.8	3.6	3.7	3.9	2.0	2.0	2.0	2.0	2.0	2.3	2.3	2.2	2.2	2.3	
Carbonate, as CaCO ₃	mg/L	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Chloride	mg/L	640	120	-	-	250	-	0.95	0.94	0.96	1.3	0.98	0.59	0.57	0.58	0.56	0.59	0.59	0.58	0.58	0.56	0.58	
Fluoride	mg/L	-	0.12	-	1.5	-	-	0.024	0.026	0.028	0.026	0.026	0.026	0.029	0.026	0.025	0.023	0.022	0.022	0.022	<0.02	<0.02	
Hydroxide, as CaCO ₃	mg/L	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Magnesium	mg/L	-	-	-	-	-	-	2.8	2.8	2.8	2.9	3.0	1.5	1.5	1.5	1.5	1.5	1.8	1.9	1.8	1.8	1.8	
Potassium	mg/L	-	-	-	-	-	-	0.57	0.61	0.58	0.60	0.62	0.35	0.34	0.34	0.35	0.35	0.37	0.37	0.35	0.36	0.37	
Silica	mg/L	-	-	-	-	-	-	1.1	1.1	1.2	1.2	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	0.56	0.55	0.53	0.54	0.54	
Sodium	mg/L	-	-	-	-	200	-	0.95	1.0	0.99	1.0	1.0	0.60	0.59	0.58	0.58	0.58	0.65	0.67	0.65	0.64	0.65	
Sulphate	mg/L	-	-	-	-	500	-	7.3	7.5	7.6	7.5	7.6	3.9	3.9	3.9	3.9	4.0	4.9	5.0	4.9	5.1	5.1	
Sulphide	mg/L	-	-	-	-	0.050	-	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	
Total cyanide	mg/L	-	0.0050	-	0.20	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Cyanide (free)	mg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Cyanide (WAD)	mg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Nutrients																							
Nitrate	mg-N/L	124	2.9	-	10	-	-	0.0079	0.0081	0.0087	0.0092	0.015	<0.005	<0.005	<0.005	<0.005	<0.005	0.0094	0.0082	0.0069	0.0065	0.0065	
Nitrite	mg-N/L	-	0.060	-	1.0	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Total ammonia	mg-N/L	-	3.1 - 51 ^(a)	-	-	-	-	0.076	0.075	0.076	0.095	0.10	0.0057	0.0054	<0.005	<0.005	<0.005						

Table D-5: Water Quality Summary at Reference B Lake, 2024

Parameter	Unit	Guidelines for the Protection of:					Site-specific Water Quality Objective (Sabina 2017)	Stations														
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)		BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
								18-Apr-24	18-Apr-24	18-Apr-24	18-Apr-24	18-Apr-24	2-Aug-24	2-Aug-24	2-Aug-24	2-Aug-24	2-Aug-24	20-Sep-24	20-Sep-24	20-Sep-24	20-Sep-24	20-Sep-24
								YL2400308-001	YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005	YL2401131-011	YL2401131-012	YL2401131-013	YL2401131-014	YL2401131-015	YL2401580-009	YL2401580-010	YL2401580-011	YL2401580-012	YL2401580-013
Strontium	µg/L	-	-	2,500	7,000	-	-	13	13	13	13	14	7.0	6.9	6.8	6.7	6.6	7.8	7.8	7.7	7.6	7.8
Sulphur	µg/L	-	-	-	-	-	-	2,570	2,710	2,610	2,680	2,810	1,330	1,310	1,320	1,360	1,330	1,680	1,680	1,690	1,720	1,710
Tellurium	µg/L	-	-	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	µg/L	-	0.80	-	-	-	-	0.0011	0.0010	0.0011	0.0012	<0.001	0.0012	0.0013	0.0013	0.0012	0.0012	<0.001	<0.001	<0.001	<0.001	<0.001
Thorium	µg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0054	0.0062	<0.005	<0.005	<0.005
Tin	µg/L	-	-	-	-	-	-	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	-	-	<0.05	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.070	0.079	0.073	0.073
Tungsten	µg/L	-	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	µg/L	33	15	-	20	-	-	0.0030	0.0037	0.0030	0.0029	0.0031	0.0019	0.0022	0.0022	0.0022	0.0021	0.0037	0.0045	0.0041	0.0035	0.0032
Vanadium	µg/L	-	-	120	-	-	-	0.015	0.017	0.012	0.014	0.015	0.013	0.014	0.012	0.012	0.014	0.029	0.027	0.027	0.025	0.028
Zinc	µg/L	-	-	-	-	5,000	-	0.84	1.7	0.56	0.98	0.52	0.16	0.18	<0.1	<0.1	<0.1	0.13	0.18	0.15	0.20	0.10
Zirconium	µg/L	-	-	-	-	-	-	0.021	0.030	0.023	0.024	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	0.030	0.026	0.028	0.032	0.026
Gallium	µg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Niobium	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Rhenium	µg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tantalum	µg/L	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Yttrium	µg/L	-	-	-	-	-	-	0.014	0.016	0.014	0.014	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	0.024	0.024	0.024	0.024	0.024
Dissolved Metals																						
Aluminum	µg/L	-	-	-	-	-	-	0.80	0.91	0.66	0.74	0.78	1.4	1.7	1.4	1.3	1.6	2.7	4.7	2.8	2.6	2.8
Antimony	µg/L	-	-	-	-	-	-	0.012	0.0089	0.011	0.0080	0.0063	0.0095	0.010	<0.005	<0.005	0.016	<0.005	0.0059	<0.005	<0.005	<0.005
Arsenic	µg/L	-	-	-	-	-	-	0.23	0.24	0.23	0.23	0.25	0.18	0.17	0.17	0.17	0.18	0.17	0.18	0.18	0.18	0.18
Barium	µg/L	-	-	-	-	-	-	6.9	6.5	7.3	7.5	7.4	3.2	3.2	3.1	3.1	3.0	3.5	3.5	3.5	3.5	3.6
Beryllium	µg/L	-	-	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	-	-	-	-	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	µg/L	-	-	-	-	-	-	0.0049	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cesium	µg/L	-	-	-	-	-	-	0.0053	0.0054	0.0053	0.0057	0.0056	<0.005	<0.005	<0.005	<0.005	<0.005	0.0051	0.0056	0.0051	0.0051	0.0050
Chromium	µg/L	-	-	-	-	-	-	<0.04	0.043	<0.04	0.042	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.28	0.046	<0.04	<0.04	<0.04
Cobalt	µg/L	-	-	-	-	-	-	0.064	0.046	0.12	0.12	0.065	0.017	0.017	0.016	0.015	0.017	0.045	0.049	0.046	0.044	0.044
Copper	µg/L	-	-	0.31 - 1.2 ^(f, g)	-	-	-	0.68	0.74 ^(f, g)	0.67	0.62 ^(f, g)	0.72 ^(f, g)	0.59	0.56	0.57	0.55	0.58	0.62	0.64	0.56	0.60	0.63
Iron	µg/L	-	-	-	-	-	-	4.9	5.5	5.1	6.3	6.0	16	16	14	15	14	23	25	23	24	23
Lanthanum	µg/L	-	-	-	-	-	-	0.016	0.017	0.015	0.017	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	0.032	0.035	0.032	0.033	0.034
Lead	µg/L	-	-	-	-	-	-	0.0059	0.0067	0.0060	<0.005	<0.005	<0.005	0.0050	<0.005	<0.005	0.014	<0.005	0.051	<0.005	<0.005	<0.005
Lithium	µg/L	-	-	-	-	-	-	0.66	0.71	0.66	0.66	0.69	0.40	0.40	0.41	0.41	0.42	0.49	0.50	0.49	0.49	0.50

Table D-5: Water Quality Summary at Reference B Lake, 2024

Parameter	Unit	Guidelines for the Protection of:					Site-specific Water Quality Objective (Sabina 2017)	Stations															
		Acute	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)		BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5	
								18-Apr-24	18-Apr-24	18-Apr-24	18-Apr-24	18-Apr-24	2-Aug-24	2-Aug-24	2-Aug-24	2-Aug-24	2-Aug-24	20-Sep-24	20-Sep-24	20-Sep-24	20-Sep-24	20-Sep-24	
								YL2400308-001	YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005	YL2401131-011	YL2401131-012	YL2401131-013	YL2401131-014	YL2401131-015	YL2401580-009	YL2401580-010	YL2401580-011	YL2401580-012	YL2401580-013	
Manganese	µg/L	951 - 1,754 ^(b)	210 - 260 ^(b)	-	-	-	-	13	9.4	19	19	11	0.42	0.41	0.36	0.37	0.42	1.7	1.8	1.6	1.7	1.7	
Mercury	µg/L	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
Molybdenum	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Nickel	µg/L	-	-	-	-	-	-	1.5	1.5	1.5	1.6	1.6	0.67	0.64	0.65	0.66	0.64	1.0	1.0	1.0	1.0	1.0	
Rubidium	µg/L	-	-	-	-	-	-	1.4	1.5	1.5	1.5	1.6	0.95	0.96	0.94	0.94	0.93	0.93	0.95	0.93	0.94	0.95	
Selenium	µg/L	-	-	-	-	-	-	0.033	0.029	0.030	<0.025	0.028	<0.025	<0.025	<0.025	<0.025	<0.025	0.026	0.026	<0.025	<0.025	<0.025	
Silicon	µg/L	-	-	-	-	-	-	549	554	549	558	572	150	152	156	154	159	237	245	242	236	239	
Silver	µg/L	-	-	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Strontium	µg/L	-	-	-	-	-	-	12	13	13	13	13	7.1	7.1	7.0	7.1	7.0	7.6	7.7	7.5	7.5	7.7	
Sulphur	µg/L	-	-	-	-	-	-	2,490	2,570	2,490	2,570	2,680	1,320	1,320	1,320	1,290	1,330	1,690	1,720	1,740	1,700	1,730	
Tellurium	µg/L	-	-	<0.01	<0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Thallium	µg/L	-	-	-	-	-	-	0.0010	0.0010	0.0011	0.0010	0.0010	0.0012	0.0014	0.0010	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001	
Thorium	µg/L	-	-	-	-	-	-	0.0058	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0053	0.0055	0.0056	<0.005	0.0062	
Tin	µg/L	-	-	<0.01	<0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Titanium	µg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.075	<0.05	0.080	<0.05	
Tungsten	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Uranium	µg/L	-	-	-	-	-	-	0.0024	0.0024	0.0025	0.0024	0.0024	0.0019	0.0025	0.0016	0.0022	0.0021	0.0027	0.0033	0.0036	0.0031	0.0028	
Vanadium	µg/L	-	-	-	-	-	-	0.011	0.011	0.011	0.012	0.011	0.010	<0.01	<0.01	<0.01	<0.01	0.015	0.020	0.017	0.017	0.016	
Zinc	µg/L	20 - 33 ^(b)	8.6 - 20 ^(b)	-	-	-	-	0.64	1.3	1.2	0.96	0.41	0.47	0.21	0.19	<0.1	2.8	0.26	0.64	0.19	0.14	0.24	
Zirconium	µg/L	-	-	-	-	-	-	0.021	0.025	0.024	0.023	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	0.026	0.029	0.025	0.024	0.026	
Gallium	µg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Niobium	µg/L	-	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Rhenium	µg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Tantalum	µg/L	-	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Yttrium	µg/L	-	-	-	-	-	-	0.012	0.013	0.013	0.013	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	0.019	0.018	0.018	0.019	
Radionuclides																							
Radium-226	Bq/L	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0080	<0.005	

Notes:
Water samples collected in April from Reference B Lake were originally submitted as "BRP-40"; however, to be consistent with the Aquatic Effects Management Plan, these samples were renamed "BRP-38".

^(a) The ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (3.1 mg-N/L) is based on the combination of field pH (7.3) and water temperature (14.2°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

^(b) The guideline is pH dependent. The guideline range shown is based on the pH range observed in the dataset (6.5 to 7.4). The guideline is calculated based on the individual pH for each sample.

^(c) The guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (11 to 22 mg/L). The guideline is calculated based on the individual hardness value for each sample.

^(d) The guideline is DOC dependent. The guideline range shown is based on the DOC concentration range observed in the dataset (3.4 to 6.2 mg/L). The guideline is calculated based on the individual DOC concentration in each sample.

^(e) The guideline is for chromium VI.

^(f) The guideline was generated using a look-up table provided by ECCC; a biotic ligand model is available from ECCC, which can be used to increase the precision of the guideline if required.

^(g) The long-term dissolved copper guideline is pH, temperature, hardness and DOC dependent. The guideline that results in the minimum long-term copper guideline (0.31 µg/L) is based on the combination of field pH (6.8), temperature (7.3 °C), hardness (21 mg/L), and DOC (5.0 mg/L). Guidelines calculated with pH, temperature, hardness, and DOC values falling outside the defined range (i.e., pH 5.5 to 8.8, temperature 8.5 to 27 °C, hardness 7.9 to 525 mg/L, and DOC 0.2 to 33.4 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, temperature, hardness, and DOC extremes. The guideline is calculated based on the individual pH, tempature, hardness, and DOC measurements for each sample.

^(h) The acute guideline for dissolved manganese is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (11 to 22 mg/L). Guidelines calculated with hardness values falling outside the defined range (i.e., 25 to 250 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness extremes. The guideline is calculated based on the individual hardness value for each sample.

⁽ⁱ⁾ The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (210 µg/L) is based on the combination of field pH (6.5) and hardness (22 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

^(j) The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (20 µg/L) is based on the combination of hardness (11 mg/L) and DOC (3.4 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

^(k) The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (8.6 µg/L) is based on the combination of field pH (7.3), hardness (11 mg/L), and DOC (3.4 mg/L). Guidelines calculated with pH, hardness and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L, and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

^(l) Chlorophyll a concentration results shown in average of three replicates per sample

^(m) Total dissolved solids calculated by WSP using the Standard Method by APHA 2005 (Total dissolved solids mg/L = Σ[Na⁺, K⁺, Ca²⁺, Mg²⁺, Cl⁻, F⁻, SO₄²⁻, 4.42 * NO₃⁻ (as nitrogen), 0.6 * total alkalinity (as CaCO₃)].

⁽ⁿ⁾ Total dissolved solids calculated by ALS laboratory using the following equation: Total dissolved solids mg/L = Σ[0.6 * total alkalinity (as CaCO₃), dissolved sodium, dissolved potassium, dissolved calcium, dissolved magnesium, 2.709 * dissolved silicon, chloride, sulfate (as SO₄), 4.427 * nitrate (as N), fluoride, 3.284 * nitrite (as N), 1.288 * total ammonia (as N), dissolved aluminum, dissolved copper, dissolved iron, dissolved manganese, dissolved zinc, dissolved organic carbon]

^(Pc) = concentration is higher than the chronic FEQG.

^(P4a) = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

Bolded concentrations are higher than water quality guidelines.
Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision *after* comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.
- no guideline or no data; CaCO₃ = calcium carbonate; µS/cm = microsiemens per centimetre; °C = degree Celsius; NTU = nephelometric turbidity units; mg/L = milligrams per litre; WAD = weak acid dissociable; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligram phosphorus per litre; µg/L = microgram per litre; DO = Dissolved Oxygen; DOC = Dissolved Organic Carbon; CCME = Canadian Council of Ministers of the Environment; ECCC = Environment and Climate Change Canada; GOC = Government of Canada; HC = Health Canada; APHA = American Public Health Association; WQG = water quality guideline; FEQG = Federal Environmental Quality Guidelines; SSWQO = Site-specific Water Quality Objective.

Sources:
CCME (Canadian Council of Ministers of the Environment). 1999. Canadian Environmental Quality Guidelines. 1999 with updates to 2024. Winnipeg, MB, Canada.
HC (Health Canada). 2024. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Ottawa, ON, Canada.
APHA (American Public Health Association). 2005. Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, NY, USA.
GOC (Government of Canada). 2024. Federal Environmental Quality Guidelines. Accessed in December 2024. <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/guidelines-objectives-codes-practice/guidelines-objectives.html#fed>
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[illegible]

Table D-6: Water Quality Summary at Streams, 2024

Guidelines for the Protection of:										Site-specific Water Quality Objective (Sahina 2017)	Goose Lake Inflow from Llama Lake				Goose Lake Inflow from Echo Lake				Goose Lake Inflow from Gander Pond				Stations				Goose Lake Outflow				Goose Lake Inflow from Giraffe Lake				Goose Lake Inflow from Wolf Lake			
Parameter	Unit	Acute Freshwater Aquatic Life (CCME 1999)	Chronic	Federal Environmental Quality Guidelines (GOC 2024)	Drinking Water (HC 2024)	Aesthetic (HC 2024)	BRP-18				BRP-19				BRP-23				BRP-30				BRP-34				GIROF				WOLF OF							
							25-May-24	26-Jun-24	25-Jul-24		21-Sep-24	25-May-24	26-Jun-24	25-Jul-24	22-Sep-24	27-May-24	26-Jun-24	25-Jul-24	22-Sep-24	27-May-24	27-Jun-24	24-Jul-24	21-Sep-24	27-May-24	27-Jun-24	24-Jul-24	22-Sep-24	26-May-24	29-May-24	27-Jun-24	24-Jul-24	22-Sep-24	27-May-24	26-Jun-24	24-Jul-24	21-Sep-24		
							YL2400500-002	YL2400770-002	YL2401013-001		YL2401580-002	YL2400500-001	YL2400770-005	YL2401013-002	YL2401580-007	YL2400519-004	YL2400770-006	YL2401013-004	YL2401580-006	YL2400519-003	YL2400770-003	YL2401005-002	YL2401580-003	YL2400519-002	YL2400770-001	YL2401005-001	YL2401580-001	YL2400500-004	YL2400549-002	YL2400770-009	YL2401005-003	YL2401580-004	YL2400519-001	YL2400770-004	YL2401005-004	YL2401580-005		
							YL2400500-002	YL2400770-002	YL2401013-001		YL2401580-002	YL2400500-001	YL2400770-005	YL2401013-002	YL2401580-007	YL2400519-004	YL2400770-006	YL2401013-004	YL2401580-006	YL2400519-003	YL2400770-003	YL2401005-002	YL2401580-003	YL2400519-002	YL2400770-001	YL2401005-001	YL2401580-001	YL2400500-004	YL2400549-002	YL2400770-009	YL2401005-003	YL2401580-004	YL2400519-001	YL2400770-004	YL2401005-004	YL2401580-005		
Manganese	µg/L	658 - 11,098 ⁽¹⁾	200 - 710 ⁽²⁾	-	-	-	-	0.73	11	129	98	2.0	69	253	166	0.59	5.4	11	21	0.38	5.8	4.9	1.7	0.79	3.7	9.5	4.6	-	0.70	2.1	3.0	3.1	0.57	2.9	37	4.2		
Mercury	µg/L	-	-	-	-	-	-	10	0.0014	0.00074	0.0015	50	0.0025	0.0052	0.0020	4.7	0.0013	0.0012	0.00090	2.6	0.0029	0.0036	0.0032	22	0.0012	0.00067	<0.0005	-	25	0.00069	0.00053	0.00072	2.5	0.0014	0.0016	0.0012		
Molybdenum	µg/L	-	-	-	-	-	-	0.0024	0.012	<0.01	<0.01	0.0025	0.14	0.40	1.00	0.0016	<0.01	0.019	0.18	0.0017	0.022	0.016	0.012	0.0018	0.010	0.015	0.028	0.0021	-	0.013	0.014	0.016	0.0017	0.012	0.060	0.010		
Nickel	µg/L	-	-	-	-	-	-	0.012	6.8	46	18	0.082	17	33	27	0.010	2.1	3.1	4.9	0.015	6.3	8.2	5.9	0.013	3.5	2.8	4.3	-	<0.01	6.1	5.0	11	0.016	2.6	7.8	4.4		
Rubidium	µg/L	-	-	-	-	-	-	5.6	1.9	6.3	4.3	9.1	7.7	9.2	12	3.4	0.95	1.6	2.0	2.9	0.75	0.90	0.97	8.9	1.1	1.3	1.6	-	9.9	0.71	0.85	1.00	3.8	0.98	2.3	1.1		
Selenium	µg/L	-	-	-	-	-	-	<0.1	0.040	0.19	0.15	<0.1	0.26	0.36	0.63	<0.1	<0.025	0.050	0.11	<0.1	0.049	0.064	0.039	<0.1	<0.025	0.028	0.038	-	<0.1	<0.025	0.030	0.035	<0.1	<0.025	0.060	0.032		
Silicon	µg/L	-	-	-	-	-	-	<0.005	620	1,690	1,650	<0.005	662	1,940	4,050	<0.005	<50	92	1,170	<0.005	65	253	3,450	<0.005	255	92	337	94	<0.005	315	270	976	<0.005	94	595	1,290		
Silver	µg/L	-	-	-	-	-	-	1.6	<0.002	0.0024	0.0031	4.2	0.0039	0.013	0.0642	1.2	<0.002	<0.002	0.90	0.0049	0.0065	<0.002	1.3	<0.002	<0.002	<0.002	-	0.70	0.002	1.2	<0.002	1.2	<0.002	0.0034	<0.002			
Strontium	µg/L	-	-	-	-	-	-	0.032	47	244	124	0.12	59	71	95	0.040	13	30	33	0.030	16	19	21	0.037	22	21	32	-	<0.025	11	12	18	0.031	11	25	22		
Sulphur	µg/L	-	-	-	-	-	-	550	4,740	15,500	12,500	950	14,000	19,500	27,800	450	2,690	3,340	6,950	626	2,720	2,140	7,210	668	3,500	3,570	4,500	-	539	4,200	4,440	7,130	443	2,600	3,140	4,810		
Tellurium	µg/L	-	-	-	-	-	-	<0.002	<0.01	<0.01	<0.01	<0.002	<0.01	<0.01	<0.01	<0.002	<0.01	<0.01	<0.01	<0.002	<0.01	<0.01	<0.01	<0.002	<0.01	<0.01	<0.01	-	<0.002	<0.01	<0.01	0.0024	<0.01	<0.01	<0.01			
Thallium	µg/L	-	-	-	-	-	-	22	0.0035	0.017	0.0093	27	0.014	0.025	0.022	11	0.0015	0.0033	5.6	0.0023	0.0030	0.0024	24	0.0010	0.0023	0.0018	-	9.9	0.0013	0.0018	0.0014	12	<0.001	0.0046	0.0014			
Thorium	µg/L	-	-	-	-	-	-	0.0211	0.0075	0.0097	0.029	0.0527	0.084	0.23	0.091	0.0100	0.0066	0.015	0.025	0.0324	0.073	0.100	0.079	0.0139	0.0067	0.0051	0.011	-	0.0150	0.010	0.0068	0.025	0.0068	0.0073	0.014	0.029		
Tin	µg/L	-	-	-	-	-	-	<0.1	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.1	<0.1	<0.01	<0.01	-	<0.1	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01		
Titanium	µg/L	-	-	-	-	-	-	<0.01	<0.05	<0.05	0.12	<0.01	0.79	0.074	0.24	<0.01	0.074	0.24	<0.01	0.075	<0.01	0.52	<0.01	<0.05	<0.05	0.068	-	<0.01	<0.05	<0.05	0.082	<0.01	0.15	0.28	0.21			
Tungsten	µg/L	-	-	-	-	-	-	0.0028	<0.01	<0.01	<0.01	0.014	<0.01	0.019	<0.01	0.0018	<0.01	<0.01	0.0022	<0.01	0.0026	<0.01	0.0026	<0.01	<0.01	<0.01	<0.01	-	0.0030	<0.01	<0.01	<0.01	<0.01	0.0017	<0.01	<0.01		
Uranium	µg/L	-	-	-	-	-	-	0.021	0.0072	0.0085	0.019	0.053	0.053	0.14	0.094	0.010	0.0036	0.0080	0.030	0.032	0.017	0.021	0.010	0.014	0.0064	0.0045	0.0064	-	0.015	0.0093	0.0075	0.014	0.0068	0.0068	0.018	0.011		
Vanadium	µg/L	-	-	-	-	-	-	<0.01	0.019	0.023	0.048	<0.01	0.29	0.77	0.23	<0.01	0.081	0.19	0.065	<0.01	0.35	0.64	0.19	<0.01	0.026	0.024	0.036	-	<0.01	0.029	0.033	0.044	<0.01	0.059	0.17	0.066		
Zinc	µg/L	22 - 197 ⁽³⁾	7.1 - 126 ⁽⁴⁾	-	-	-	-	0.13	2.7	20	6.5	0.32	3.5	2.1	3.0	0.067	0.34	0.34	1.0	0.22	1.6	1.4	2.8	0.10	0.48	0.31	0.87	-	0.11	0.62	0.76	2.0	0.066	0.38	2.1	0.78		
Zirconium	µg/L	-	-	-	-	-	-	<0.01	0.039	0.063	0.16	<0.01	0.50	1.4	0.59	<0.01	0.031	0.083	0.18	<0.01	0.35	0.44	0.34	<0.01	0.031	0.021	0.046	-	<0.01	0.038	0.032	0.12	<0.01	0.044	0.16	0.19		
Gallium	µg/L	-	-	-	-	-	-	0.012	<0.05	<0.05	<0.05	0.049	<0.05	<0.05	<0.05	0.0045	<0.05	<0.05	<0.05	0.0099	<0.05	<0.05	<0.05	0.011	<0.05	<0.05	<0.05	-	0.013	<0.05	<0.05	0.0045	<0.05	<0.05	<0.05	<0.05		
Niobium	µg/L	-	-	-	-	-	-	0.036	<0.1	<0.1	<0.1	0.11	<0.1	<0.1	<0.1	0.082	<0.1	<0.1	<0.1	0.088	<0.1	<0.1	0.048	<0.1	<0.1	<0.1	-	0.038	<0.1	<0.1	<0.1	0.038	<0.1	<0.1	<0.1			
Rhenium	µg/L	-	-	-	-	-	-	0.19	<0.005	0.0064	<0.005	0.29	0.010	0.014	0.033	0.051	<0.005	<0.005	<0.005	0.11	<0.005	<0.005	<0.005	0.12	<0.005	<0.005	<0.005	-	0.17	<0.005	<0.005	<0.005	0.045	<0.005	<0.005	<0.005		
Tantalum	µg/L	-	-	-	-	-	-	2.0	<0.1	<0.1	<0.1	2.6	<0.1	<0.1	0.79	<0.1	<0.1	<0.1	<0.1	<0.1	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	2.0	<0.1	<0.1	<0.1	0.63	<0.1	<0.1	<0.1		
Yttrium	µg/L	-	-	-	-	-	-	0.074	0.14	0.37	0.54	0.27	0.36	1.3	0.59	0.050	0.039	0.071	0.12	0.13	0.21	0.28	0.29	0.069	0.041	0.027	0.054	-	0.061	0.064	0.040	0.20	0.050	0.056	0.20	0.14		

Notes:

⁽¹⁾ The ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (0.87 mg-N/L) is based on the combination of field pH (7.8) and water temperature (15.8°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

⁽²⁾ The guideline is pH-dependent. The guideline range shown is based on the pH range observed in the dataset (5.1 to 7.8). The guideline is calculated based on the individual pH for each sample.

⁽³⁾ The guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (7.2 to 178 mg/L). The guideline is calculated based on the individual hardness value for each sample.

⁽⁴⁾ The guideline is DOC dependent. The guideline range shown is based on the DOC concentration range observed in the dataset (3.7 to 29 mg/L). The guideline is calculated based on the individual DOC concentration in each sample.

⁽⁵⁾ The guideline is for chromium VI.

⁽⁶⁾ The guideline was generated using a look-up table provided by ECCCC; a biotic ligand model is available from ECCCC, which can be used to increase the precision of the guideline if required.

⁽⁷⁾ The long-term dissolved copper guideline is pH, temperature, hardness and DOC dependent. The guideline that results in the minimum long-term copper guideline (0.2 µg/L) is based on the combination of field pH (5.1), temperature (4.1 °C), hardness (179 mg/L), and DOC (3.7 mg/L). Guidelines calculated with pH, temperature, hardness, and DOC values falling outside the defined range (i.e., pH 5.5 to 6.8, temperature 8.5 to 27 °C, hardness 7.0 to 525 mg/L, and DOC 0.2 to 33.4 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, temperature, hardness, and DOC extremes. The guideline is calculated based on the individual pH, tempature, hardness, and DOC measurements for each sample.

⁽⁸⁾ The acute guideline for dissolved manganese is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (7.2 to 178 mg/L). Guidelines calculated with hardness values falling outside the defined range (i.e., 25 to 250 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness extremes. The guideline is calculated based on the individual pH, tempature, hardness, and DOC measurements for each sample.

⁽⁹⁾ The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (200 µg/L) is based on the combination of field pH (6.4) and hardness (7.2 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

⁽¹⁰⁾ The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (22 µg/L) is based on the combination of hardness (14 mg/L) and DOC (5.3 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L, and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

⁽¹¹⁾ The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (7.1 µg/L) is based on the combination of field pH (7.8), hardness (19 mg/L), and DOC (5.9 mg/L). Guidelines calculated with pH, hardness and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L, and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

⁽¹²⁾ Total dissolved solids calculated by WSP using the Standard Method by APHA 2005 (Total dissolved solids mg/L = 2[Na⁺, K⁺, Ca²⁺, Mg²⁺, Cl⁻, F⁻, SO₄²⁻, 4.42 * NO₃⁻ (as nitrogen), 0.6 * total alkalinity (as CaCO₃)]).

⁽¹³⁾ Total dissolved solids calculated by ALS laboratory using the following equation: Total dissolved solids mg/L = 20.6 * total alkalinity (as CaCO₃) + dissolved sodium + dissolved potassium + dissolved calcium + dissolved magnesium + 2.709 * dissolved silicon + chloride (as SO₄²⁻) + 4.427 * nitrate (as N) + fluoride + 3.284 * nitrite (as N) + 1.288 * total ammonia (as N) + dissolved aluminum + dissolved copper + dissolved iron + dissolved manganese + dissolved zinc + dissolved organic carbon)

⁽¹⁴⁾ = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH or DO range.

⁽¹⁵⁾ = concentration is higher than the chronic FEQG.

⁽¹⁶⁾ = concentration is higher than the drinking water Health Canada guideline.

⁽¹⁷⁾ = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

⁽¹⁸⁾ = concentration is higher than the SSWQO.

Bolded concentrations are higher than water quality guidelines.

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision after comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

- no guideline or no data; CaCO₃ = calcium carbonate; µS/cm = microsiemens per centimetre; °C = degree Celsius; NTU = nephelometric turbidity units; mg/L = milligrams per litre; WAD = weak acid dissociable; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligram phosphorus per litre; µg/L = microgram per litre; DO = Dissolved Oxygen; DOC = Dissolved Organic Carbon; CCME = Canadian Council of Ministers of the Environment; ECCCC = Environment and Climate Change Canada; GOC = Government of Canada; HC = Health Canada; APHA = American Public Health Association; WQG = water quality guideline; FEQG = Federal Environmental Quality Guidelines; SSWQO = Site-specific Water Quality Objective.

Sources:
CCME (Canadian Council of Ministers of the Environment). 1

Table D-7: Chlorophyll a Results per Replicate and Averages at Goose Lake and Reference B Lake, 2024

Location	Filter Type	Station ^(a)	Sample Date	Unit	Volume Filtered (L)	Chlorophyll a per Replicate	Average Chlorophyll a Concentration
Goose Lake West Bay	0.45 µm	BRP-31-1A	4-Aug-24	µg/L	1.0	0.85	0.87
		BRP-31-1B	4-Aug-24	µg/L	0.6	0.85	
		BRP-31-1C	4-Aug-24	µg/L	0.6	0.90	
		BRP-31-2A	4-Aug-24	µg/L	0.5	0.76	0.82
		BRP-31-2B	4-Aug-24	µg/L	0.5	0.85	
		BRP-31-2C	4-Aug-24	µg/L	0.5	0.86	
		BRP-31-3A	4-Aug-24	µg/L	0.5	0.75	0.87
		BRP-31-3B	4-Aug-24	µg/L	0.5	0.91	
		BRP-31-3C	4-Aug-24	µg/L	0.5	0.94	
		BRP-31-4A	4-Aug-24	µg/L	0.5	0.86	0.93
		BRP-31-4B	4-Aug-24	µg/L	0.5	1.04	
		BRP-31-4C	4-Aug-24	µg/L	0.5	0.90	
		BRP-31-5A	4-Aug-24	µg/L	0.5	0.92	1.36
		BRP-31-5B	4-Aug-24	µg/L	0.5	0.99	
		BRP-31-5C	4-Aug-24	µg/L	0.5	2.16	
		BRP-31-1A	19-Sep-24	µg/L	0.8	1.10	1.11
		BRP-31-1B	19-Sep-24	µg/L	0.8	1.12	
		BRP-31-1C	19-Sep-24	µg/L	0.8	1.11	
		BRP-31-2A	19-Sep-24	µg/L	0.6	0.92	1.02
		BRP-31-2B	19-Sep-24	µg/L	0.8	1.07	
		BRP-31-2C	19-Sep-24	µg/L	0.8	1.05	
		BRP-31-3A	19-Sep-24	µg/L	1.0	0.92	1.00
		BRP-31-3B	19-Sep-24	µg/L	1.0	1.02	
		BRP-31-3C	19-Sep-24	µg/L	1.0	1.06	
		BRP-31-4A	19-Sep-24	µg/L	0.7	1.02	0.95
		BRP-31-4B	19-Sep-24	µg/L	0.7	0.81	
		BRP-31-4C	19-Sep-24	µg/L	0.7	1.03	
		BRP-31-5A	19-Sep-24	µg/L	0.7	0.71	0.95
		BRP-31-5B	19-Sep-24	µg/L	0.7	1.06	
		BRP-31-5C	19-Sep-24	µg/L	0.7	1.09	
	1.2 µm	BRP-31-1A-1.2	4-Aug-24	µg/L	1.0	1.09	1.30
		BRP-31-1B-1.2	4-Aug-24	µg/L	1.0	1.33	
		BRP-31-1C-1.2	4-Aug-24	µg/L	1.0	1.49	
		BRP-31-2A-1.2	4-Aug-24	µg/L	1.0	1.34	1.34
		BRP-31-2B-1.2	4-Aug-24	µg/L	1.0	1.33	
		BRP-31-2C-1.2	4-Aug-24	µg/L	1.0	1.36	
		BRP-31-3A-1.2	4-Aug-24	µg/L	1.0	1.45	1.37
		BRP-31-3B-1.2	4-Aug-24	µg/L	1.0	1.36	
		BRP-31-3C-1.2	4-Aug-24	µg/L	1.0	1.30	
Goose Lake Central Basin	0.45 µm	BRP-32-1A	3-Aug-24	µg/L	0.4	0.81	1.21
		BRP-32-1B	3-Aug-24	µg/L	0.4	1.58	
		BRP-32-1C	3-Aug-24	µg/L	0.4	1.24	
		BRP-32-2A	3-Aug-24	µg/L	0.5	1.55	1.35
		BRP-32-2B	3-Aug-24	µg/L	0.5	1.29	
		BRP-32-2C	3-Aug-24	µg/L	0.4	1.22	
		BRP-32-3A	3-Aug-24	µg/L	0.4	1.19	1.36
		BRP-32-3B	3-Aug-24	µg/L	0.4	1.54	
		BRP-32-3C	3-Aug-24	µg/L	0.4	1.35	
		BRP-32-4A	3-Aug-24	µg/L	0.4	1.16	0.98
		BRP-32-4B	3-Aug-24	µg/L	0.4	0.98	
		BRP-32-4C	3-Aug-24	µg/L	0.4	0.82	
		BRP-32-5A	3-Aug-24	µg/L	0.5	1.49	1.38
		BRP-32-5B	3-Aug-24	µg/L	0.5	1.26	
		BRP-32-5C	3-Aug-24	µg/L	0.5	1.39	
		BRP-32-1A	18-Sep-24	µg/L	0.4	2.26	2.08
		BRP-32-1B	18-Sep-24	µg/L	0.3	1.86	
		BRP-32-1C	18-Sep-24	µg/L	0.5	2.12	
		BRP-32-2A	18-Sep-24	µg/L	0.3	2.34	2.11
		BRP-32-2B	18-Sep-24	µg/L	0.3	1.79	
		BRP-32-2C	18-Sep-24	µg/L	0.5	2.18	
		BRP-32-3A	18-Sep-24	µg/L	0.3	1.95	1.89
		BRP-32-3B	18-Sep-24	µg/L	0.3	1.70	
		BRP-32-3C	18-Sep-24	µg/L	0.4	2.01	
		BRP-32-4A	18-Sep-24	µg/L	0.4	2.13	2.05
		BRP-32-4B	18-Sep-24	µg/L	0.4	1.92	
		BRP-32-4C	18-Sep-24	µg/L	0.4	2.11	
		BRP-32-5A	18-Sep-24	µg/L	0.4	2.45	2.47
		BRP-32-5B	18-Sep-24	µg/L	0.5	2.32	
		BRP-32-5C	18-Sep-24	µg/L	0.5	2.64	
	1.2 µm	BRP-32-1A-1.2	3-Aug-24	µg/L	1.0	1.95	1.93
		BRP-32-1B-1.2	3-Aug-24	µg/L	1.0	1.94	
		BRP-32-1C-1.2	3-Aug-24	µg/L	1.0	1.89	
		BRP-32-2A-1.2	3-Aug-24	µg/L	1.0	1.75	1.86
		BRP-32-2B-1.2	3-Aug-24	µg/L	1.0	1.80	
		BRP-32-2C-1.2	3-Aug-24	µg/L	1.0	2.02	
		BRP-32-3A-1.2	3-Aug-24	µg/L	1.0	1.83	1.94
		BRP-32-3B-1.2	3-Aug-24	µg/L	1.0	1.92	
		BRP-32-3C-1.2	3-Aug-24	µg/L	1.0	2.06	
		BRP-32-4A-1.2	3-Aug-24	µg/L	1.0	1.91	1.89
		BRP-32-4B-1.2	3-Aug-24	µg/L	1.0	1.88	
		BRP-32-4C-1.2	3-Aug-24	µg/L	1.0	1.87	

Table D-7: Chlorophyll a Results per Replicate and Averages at Goose Lake and Reference B Lake, 2024

Location	Filter Type	Station ^(a)	Sample Date	Unit	Volume Filtered (L)	Chlorophyll a per Replicate	Average Chlorophyll a Concentration
Reference B Lake	0.45 µm	BRP-38-1A	2-Aug-24	µg/L	0.5	0.86	0.98
		BRP-38-1B	2-Aug-24	µg/L	0.5	0.97	
		BRP-38-1C	2-Aug-24	µg/L	0.4	1.13	
		BRP-38-2A	2-Aug-24	µg/L	0.5	1.03	0.99
		BRP-38-2B	2-Aug-24	µg/L	0.5	0.91	
		BRP-38-2C	2-Aug-24	µg/L	0.5	1.05	
		BRP-38-3A	2-Aug-24	µg/L	0.4	0.93	0.98
		BRP-38-3B	2-Aug-24	µg/L	0.3	0.91	
		BRP-38-3C	2-Aug-24	µg/L	0.3	1.11	
		BRP-38-4A	2-Aug-24	µg/L	0.3	0.82	0.94
		BRP-38-4B	2-Aug-24	µg/L	0.3	0.77	
		BRP-38-4C	2-Aug-24	µg/L	0.3	1.25	
		BRP-38-5A	2-Aug-24	µg/L	0.3	0.91	0.89
		BRP-38-5B	2-Aug-24	µg/L	0.3	0.88	
		BRP-38-5C	2-Aug-24	µg/L	0.3	0.87	
		BRP-38-1A	20-Sep-24	µg/L	1.0	1.38	1.33
		BRP-38-1B	20-Sep-24	µg/L	0.6	1.26	
		BRP-38-1C	20-Sep-24	µg/L	0.5	1.35	
		BRP-38-2A	20-Sep-24	µg/L	0.4	1.17	1.13
		BRP-38-2B	20-Sep-24	µg/L	0.4	1.29	
		BRP-38-2C	20-Sep-24	µg/L	0.4	0.94	
		BRP-38-3A	20-Sep-24	µg/L	0.5	1.25	1.23
		BRP-38-3B	20-Sep-24	µg/L	0.5	1.20	
		BRP-38-3C	20-Sep-24	µg/L	0.5	1.25	
		BRP-38-4A	20-Sep-24	µg/L	0.5	1.24	1.31
		BRP-38-4B	20-Sep-24	µg/L	0.5	1.33	
		BRP-38-4C	20-Sep-24	µg/L	0.5	1.35	
		BRP-38-5A	20-Sep-24	µg/L	0.5	1.13	1.49
		BRP-38-5B	20-Sep-24	µg/L	0.7	1.53	
		BRP-38-5C	20-Sep-24	µg/L	0.7	1.81	
	1.2 µm	BRP-38-1A-1.2	2-Aug-24	µg/L	1.0	1.31	1.34
		BRP-38-1B-1.2	2-Aug-24	µg/L	1.0	1.36	
		BRP-38-1C-1.2	2-Aug-24	µg/L	1.0	1.35	
		BRP-38-2A-1.2	2-Aug-24	µg/L	1.0	1.35	1.40
		BRP-38-2B-1.2	2-Aug-24	µg/L	1.0	1.46	
		BRP-38-2C-1.2	2-Aug-24	µg/L	1.0	1.39	
		BRP-38-3A-1.2	2-Aug-24	µg/L	1.0	1.37	1.42
		BRP-38-3B-1.2	2-Aug-24	µg/L	1.0	1.42	
		BRP-38-3C-1.2	2-Aug-24	µg/L	1.0	1.47	
		BRP-38-4A-1.2	2-Aug-24	µg/L	1.0	1.35	1.39
		BRP-38-4B-1.2	2-Aug-24	µg/L	1.0	1.40	
		BRP-38-4C-1.2	2-Aug-24	µg/L	0.9	1.42	
		BRP-38-5A-1.2	2-Aug-24	µg/L	1.0	1.33	1.36
		BRP-38-5B-1.2	2-Aug-24	µg/L	1.0	1.38	
		BRP-38-5C-1.2	2-Aug-24	µg/L	0.9	1.38	

Notes:

(a) A, B, C in the station name stands for replicate per sample and 1.2 stands for the 1.2 µm filters used.

CERTIFICATE OF ANALYSIS

Work Order	: YL2400298	Page	: 1 of 12
Amendment	: 2		
Client	: Sabina Gold & Silver Corporation	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 18-Apr-2024 13:10
PO	: 10402	Date Analysis Commenced	: 21-Apr-2024
C-O-C number	: ----	Issue Date	: 13-May-2024 13:40
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Ilina Badbezanchi	Supervisor - Metals Prep & Mercury	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Inorganics, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Russell Zhang	Analyst	Metals, Burnaby, British Columbia
Sam Silveira	Analyst	Metals, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
PHA	pH adjusted before analysis.
RRV	Reported result verified by repeat analysis.
SFP	Sample was filtered and preserved at the laboratory.
SP	Sample was preserved at the laboratory.



Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	GLSE-T	GLSE-M	GLSE-B	GLTL-T	GLTL-M
Client sampling date / time					17-Apr-2024 13:00	17-Apr-2024 13:15	17-Apr-2024 13:35	17-Apr-2024 15:30	17-Apr-2024 15:50
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-001	YL2400298-002	YL2400298-003	YL2400298-004	YL2400298-005
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	11.1	8.5	8.6	10.6	11.0
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	11.1	8.5	8.6	10.6	11.0
Conductivity	----	E100/VA	2.0	µS/cm	119	103	103	104	103
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	39.1	38.2	36.5	36.4	37.2
pH	----	E108/VA	0.10	pH units	7.15	7.13	7.09	7.19	7.24
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	86	72	69	67	65
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	66.7	60.5	60.1	59.8	59.6
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity	----	E121/VA	0.10	NTU	1.42	0.16	0.17	0.17	0.27
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.158	0.150	0.102	0.158	0.153
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.086	0.076	0.072	0.069	0.073
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	10.9	9.65	9.72	9.49	9.34
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.045	0.029	0.030	0.029	0.028
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.464	0.402	0.401	0.443	0.431
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.827	0.693	0.688	0.567	0.516
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.0195	0.0279	0.0424	0.0593	0.0918
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0034	0.0029	0.0057	0.0043	0.0049
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0014	0.0024	0.0021	0.0019	0.0022
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	2.10	2.02	2.04	1.96	2.02
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	21.0	18.7	18.8	18.0	17.6
Cyanides									
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}



Analytical Results

Sub-Matrix: Water					Client sample ID	GLSE-T	GLSE-M	GLSE-B	GLTL-T	GLTL-M
(Matrix: Water)										
Client sampling date / time					17-Apr-2024 13:00	17-Apr-2024 13:15	17-Apr-2024 13:35	17-Apr-2024 15:30	17-Apr-2024 15:50	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-001	YL2400298-002	YL2400298-003	YL2400298-004	YL2400298-005	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	6.26	6.08	5.99	6.26	6.07	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	5.98	5.89	5.86	6.15	6.03	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	0.0057	<0.0015	<0.0015	<0.0015	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	0.0061	<0.0016	<0.0016	<0.0016	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.91	1.36	1.27	1.47	1.62	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0142	0.0128	0.0141	0.0130	0.0125	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000195	0.0000161	0.0000143	0.0000258	0.0000232	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000300	0.000296	0.000276	0.000294	0.000286	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0167	0.0162	0.0175	0.0164	0.0167	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000048	0.0000038	0.0000046	0.0000034	0.0000041	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	0.0058	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000114	0.0000115	0.0000114	0.0000095	0.0000100	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	8.57	8.16	8.64	8.41	8.62	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000163	0.0000155	0.0000146	0.0000168	0.0000160	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000123	0.000111	0.000116	0.000137	0.000123	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000153	0.000149	0.000390	0.000125	0.000125	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00219	0.00202	0.00201	0.00211	0.00215	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0176	0.0157	0.0313	0.0168	0.0166	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000214	0.000219	0.000239	0.000161	0.000166	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000417	0.0000207	0.0000065	0.0000462	0.0000463	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00127	0.00122	0.00114	0.00118	0.00122	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	4.41	4.12	4.38	4.43	4.43	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00368	0.00378	0.0153	0.0107	0.0126	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLSE-T	GLSE-M	GLSE-B	GLTL-T	GLTL-M
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-001	YL2400298-002	YL2400298-003	YL2400298-004	YL2400298-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000023	0.000015	0.000013	0.000019	0.000020	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00786	0.00754	0.00815	0.00674	0.00669	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.869	0.805	0.839	0.883	0.887	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00226	0.00213	0.00218	0.00235	0.00232	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000049	0.000050	0.000034	0.000059	0.000052	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.996	0.996	1.07	0.930	0.977	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.46	1.39	1.41	1.47	1.47	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0489	0.0471	0.0491	0.0473	0.0475	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	6.51	6.44	6.35	5.89	6.05	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000025	0.0000022	0.0000022	0.0000023	0.0000027	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000092	0.0000120	0.0000156	0.0000155	0.0000096	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000067	0.000063	0.000072	0.000107	0.000198	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000078	0.0000084	0.0000074	0.0000081	0.0000079	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000040	0.000037	0.000036	0.000039	0.000039	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000107	0.000104	0.000111	0.000081	0.000083	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00259	0.00350	0.00224	0.00360	0.00323	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000074	0.000079	0.000070	0.000080	0.000075	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0128	0.0124	0.0122	0.0101	0.00991	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000176	0.0000234	0.0000187	0.0000183	0.0000203	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000293	0.000288	0.000281	0.000285	0.000282	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0164	0.0160	0.0160	0.0154	0.0156	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLSE-T	GLSE-M	GLSE-B	GLTL-T	GLTL-M
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-001	YL2400298-002	YL2400298-003	YL2400298-004	YL2400298-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000042	0.0000042	0.0000038	0.0000026	0.0000030	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	0.0000011	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000133	0.0000122	0.0000143	0.0000079	0.0000118	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	8.46	8.26	7.92	7.83	8.02	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000158	0.0000158	0.0000133	0.0000150	0.0000146	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000112	0.000116	0.000109	0.000112	0.000113	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000129	0.000131	0.000308	0.000107	0.000120	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00205	0.00195	0.00181	0.00192	0.00189	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0122	0.0117	0.0153	0.00822	0.00953	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000208	0.000202	0.000200	0.000138	0.000142	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000079	0.0000107	0.0000053	0.0000104	0.0000128	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00136	0.00131	0.00122	0.00125	0.00118	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	4.37	4.27	4.06	4.10	4.16	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00311	0.00318	0.0119	0.00897	0.0136	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.61	0.54	0.50	0.62	0.62	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000030	0.000021	0.000014	0.000016	0.000016	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00769	0.00752	0.00735	0.00617	0.00622	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.854	0.828	0.761	0.786	0.802	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00222	0.00214	0.00193	0.00208	0.00206	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000056	0.000046	0.000060	0.000048	0.000050	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.00	1.03	1.08	0.957	0.992	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.45	1.42	1.34	1.38	1.37	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0483	0.0470	0.0445	0.0439	0.0436	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLSE-T	GLSE-M	GLSE-B	GLTL-T	GLTL-M
(Matrix: Water)										
					Client sampling date / time	17-Apr-2024 13:00	17-Apr-2024 13:15	17-Apr-2024 13:35	17-Apr-2024 15:30	17-Apr-2024 15:50
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-001	YL2400298-002	YL2400298-003	YL2400298-004	YL2400298-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	6.56	6.78	6.95	6.55	6.54	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000026	0.0000027	0.0000024	0.0000028	0.0000028	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000122	0.0000100	0.0000083	0.0000129	0.0000130	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	0.000011	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000054	<0.000050	0.000064	0.000059	<0.000050	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000087	0.0000076	0.0000080	0.0000067	0.0000063	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000036	0.000035	0.000034	0.000031	0.000031	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000100	0.000101	0.000096	0.000074	0.000070	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00229	0.00311	0.00277	0.00301	0.00307	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000075	0.000080	0.000079	0.000075	0.000075	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	GLTL-B	TB	----	----	----
(Matrix: Water)										
					Client sampling date / time	17-Apr-2024 16:10	17-Apr-2024 16:15	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-006	YL2400298-007	-----	-----	-----	
					Result	Result	----	----	----	
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	12.0	<1.0	----	----	----	
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	----	----	----	
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	----	----	----	
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	----	----	----	
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	12.0	<1.0	----	----	----	
Conductivity	----	E100/VA	2.0	µS/cm	111	<2.0	----	----	----	
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	40.6	<0.50	----	----	----	
pH	----	E108/VA	0.10	pH units	7.17	5.35	----	----	----	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	79	<10	----	----	----	
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	63.6	<1.0	----	----	----	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	----	----	----	
Turbidity	----	E121/VA	0.10	NTU	0.22	<0.10	----	----	----	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0980	<0.0050 ^{SP}	----	----	----	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.082	<0.050	----	----	----	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	10.1	<0.50	----	----	----	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.027	<0.020	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.455	<0.050	----	----	----	
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.432	<0.0050	----	----	----	
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.255	<0.0010	----	----	----	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	0.0011	<0.0010	----	----	----	
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0053	<0.0010	----	----	----	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0022	<0.0010 ^{SFP}	----	----	----	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	2.34	<0.50	----	----	----	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	18.4	<0.30	----	----	----	
Cyanides										
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050	----	----	----	
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLTL-B	TB	----	----	----
(Matrix: Water)										
Client sampling date / time					17-Apr-2024 16:10	17-Apr-2024 16:15	----	----	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-006	YL2400298-007	-----	-----	-----	
					Result	Result	----	----	----	
Cyanides										
Cyanide, weak acid dissociable	---	E336/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050	----	----	----	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	---	E358-L/EO	0.50	mg/L	6.12	<0.50 ^{SFP}	----	----	----	
Carbon, total organic [TOC]	---	E355-L/EO	0.50	mg/L	6.16	<0.50 ^{SP}	----	----	----	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	----	----	----	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	1.96	0.55	----	----	----	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0109	0.00040 ^{RRV}	----	----	----	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000136	<0.0000050	----	----	----	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000287	<0.000010	----	----	----	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0171	<0.000020	----	----	----	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000034	<0.0000020	----	----	----	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000125	<0.0000025	----	----	----	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	8.46	<0.010	----	----	----	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000164	<0.0000050	----	----	----	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000111	0.000049 ^{RRV}	----	----	----	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000212	<0.0000050	----	----	----	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00193	<0.000050	----	----	----	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0220	<0.00050	----	----	----	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000166	<0.000010	----	----	----	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000094	<0.0000050	----	----	----	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00116	<0.00010	----	----	----	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	4.30	<0.0010	----	----	----	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0222	0.0000067 ^{RRV}	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLTL-B	TB	----	----	----
(Matrix: Water)										
Client sampling date / time					17-Apr-2024 16:10	17-Apr-2024 16:15	----	----	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-006	YL2400298-007	-----	-----	-----	
					Result	Result	----	----	----	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000013	<0.000010	----	----	----	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00672	<0.000020	----	----	----	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.848	<0.0050	----	----	----	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00229	<0.0000050	----	----	----	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000055	<0.000025	----	----	----	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.00	<0.050	----	----	----	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.41	<0.010	----	----	----	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0467	<0.000020	----	----	----	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	5.98	<0.50	----	----	----	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000028	<0.0000010	----	----	----	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000150	<0.0000050	----	----	----	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000059	<0.000050	----	----	----	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000075	<0.0000010	----	----	----	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000032	<0.000010	----	----	----	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000082	<0.000010	----	----	----	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00159	0.00056 ^{RRV}	----	----	----	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000066	<0.000010	----	----	----	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0101	<0.00020	----	----	----	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000164	<0.0000050	----	----	----	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000283	<0.000010	----	----	----	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0178	<0.000020	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLTL-B	TB	----	----	----
(Matrix: Water)										
Client sampling date / time					17-Apr-2024 16:10	17-Apr-2024 16:15	----	----	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-006	YL2400298-007	-----	-----	-----	
					Result	Result	----	----	----	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000035	<0.0000020	----	----	----	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000120	<0.0000025	----	----	----	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	8.83	<0.010	----	----	----	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000158	<0.0000050	----	----	----	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000109	<0.000040	----	----	----	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000280	<0.0000050	----	----	----	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00192	<0.000050	----	----	----	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	----	----	----	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0144	<0.00050	----	----	----	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000155	<0.000010	----	----	----	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000072	<0.0000050	----	----	----	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00128	<0.00010	----	----	----	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	4.50	<0.0010	----	----	----	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.0297	<0.0000050	----	----	----	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.57	<0.50	----	----	----	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000014	<0.000010	----	----	----	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00684	<0.000020	----	----	----	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.882	<0.0050	----	----	----	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00235	<0.0000050	----	----	----	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000066	<0.000025	----	----	----	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.05	<0.050	----	----	----	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.48	<0.010	----	----	----	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0483	<0.000020	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLTL-B	TB	----	----	----
(Matrix: Water)										
					Client sampling date / time	17-Apr-2024 16:10	17-Apr-2024 16:15	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400298-006	YL2400298-007	-----	-----	-----	
					Result	Result	----	----	----	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	6.20	<0.50	----	----	----	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000028	<0.0000010	----	----	----	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000114	<0.0000050	----	----	----	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000072	<0.0000010	----	----	----	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000030	<0.000010	----	----	----	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000078	<0.000010	----	----	----	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00221 ^{DTC}	0.00013 ^{RRV}	----	----	----	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000068	<0.000010	----	----	----	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2400298	Page	: 1 of 34
Amendment	: 2		
Client	: Sabina Gold & Silver Corporation	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 18-Apr-2024 13:10
PO	: 10402	Issue Date	: 13-May-2024 13:41
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Cyanides	QC-MRG3-1414649 001	----	Cyanide, free	----	E339	0.0088 ^B mg/L	0.005 mg/L	Blank result exceeds permitted value
Total Metals (Undigested)	QC-1411472-001	----	Manganese, total	7439-96-5	E466	0.000007 ^B 6 mg/L	0.000005 mg/L	Blank result exceeds permitted value
Dissolved Metals	QC-1411475-001	----	Manganese, dissolved	7439-96-5	E465	0.000006 ^B 4 mg/L	0.000005 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
<i>B</i>	<i>Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.</i>



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLSE-B	E298	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLSE-M	E298	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLSE-T	E298	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLTL-B	E298	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLTL-M	E298	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLTL-T	E298	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) TB	E298	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLSE-B	E235.Br-L	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLSE-M	E235.Br-L	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLSE-T	E235.Br-L	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLTL-B	E235.Br-L	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLTL-M	E235.Br-L	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLTL-T	E235.Br-L	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE TB	E235.Br-L	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLSE-B	E235.Cl	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLSE-M	E235.Cl	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE GLSE-T	E235.Cl	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLTL-B	E235.Cl	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLTL-M	E235.Cl	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLTL-T	E235.Cl	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE TB	E235.Cl	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLSE-B	E378-U	17-Apr-2024	22-Apr-2024	3 days	4 days	✗ EHT	23-Apr-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLSE-M	E378-U	17-Apr-2024	22-Apr-2024	3 days	4 days	✗ EHT	23-Apr-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLSE-T	E378-U	17-Apr-2024	22-Apr-2024	3 days	4 days	✗ EHT	23-Apr-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLTL-B	E378-U	17-Apr-2024	22-Apr-2024	3 days	4 days	✗ EHT	23-Apr-2024	3 days	5 days	✗ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLTL-M	E378-U	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	23-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLTL-T	E378-U	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	23-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE TB	E378-U	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	23-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLSE-B	E235.F	17-Apr-2024	22-Apr-2024	28 days	5 days	✔	22-Apr-2024	28 days	5 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLSE-M	E235.F	17-Apr-2024	22-Apr-2024	28 days	5 days	✔	22-Apr-2024	28 days	5 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLSE-T	E235.F	17-Apr-2024	22-Apr-2024	28 days	5 days	✔	22-Apr-2024	28 days	5 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLTL-B	E235.F	17-Apr-2024	22-Apr-2024	28 days	5 days	✔	22-Apr-2024	28 days	5 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLTL-M	E235.F	17-Apr-2024	22-Apr-2024	28 days	5 days	✔	22-Apr-2024	28 days	5 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLTL-T	E235.F	17-Apr-2024	22-Apr-2024	28 days	5 days	✔	22-Apr-2024	28 days	5 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE TB	E235.F	17-Apr-2024	22-Apr-2024	28 days	5 days	✔	22-Apr-2024	28 days	5 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLSE-B	E235.NO3-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLSE-M	E235.NO3-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLSE-T	E235.NO3-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLTL-B	E235.NO3-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLTL-M	E235.NO3-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLTL-T	E235.NO3-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE TB	E235.NO3-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLSE-B	E235.NO2-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLSE-M	E235.NO2-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLSE-T	E235.NO2-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLTL-B	E235.NO2-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLTL-M	E235.NO2-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLTL-T	E235.NO2-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE TB	E235.NO2-L	17-Apr-2024	22-Apr-2024	3 days	4 days	✖ EHT	22-Apr-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLSE-B	E392	17-Apr-2024	----	----	----		22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLSE-M	E392	17-Apr-2024	----	----	----		22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLSE-T	E392	17-Apr-2024	----	----	----		22-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLTL-B	E392	17-Apr-2024	----	----	----		22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLTL-M	E392	17-Apr-2024	----	----	----		22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLTL-T	E392	17-Apr-2024	----	----	----		22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE TB	E392	17-Apr-2024	----	----	----		22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLSE-B	E235.SO4	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLSE-M	E235.SO4	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLSE-T	E235.SO4	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLTL-B	E235.SO4	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLTL-M	E235.SO4	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLTL-T	E235.SO4	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE TB	E235.SO4	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLSE-B	E375-U	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLSE-M	E375-U	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLSE-T	E375-U	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLTL-B	E375-U	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLTL-M	E375-U	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLTL-T	E375-U	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) TB	E375-U	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLSE-B	E318	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLSE-M	E318	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLSE-T	E318	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLTL-B	E318	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLTL-M	E318	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLTL-T	E318	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) TB	E318	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLSE-B	E372-S	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLSE-M	E372-S	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLSE-T	E372-S	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLTL-B	E372-S	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLTL-M	E372-S	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLTL-T	E372-S	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) TB	E372-S	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLSE-B	E339	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLSE-M	E339	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLSE-T	E339	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLTL-B	E339	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLTL-M	E339	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLTL-T	E339	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E339	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLSE-B	E333	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLSE-M	E333	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLSE-T	E333	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLTL-B	E333	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLTL-M	E333	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLTL-T	E333	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E333	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLSE-B	E336	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLSE-M	E336	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLSE-T	E336	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLTL-B	E336	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLTL-M	E336	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLTL-T	E336	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E336	17-Apr-2024	24-Apr-2024	14 days	7 days	✓	24-Apr-2024	14 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GLSE-B	E509-L	17-Apr-2024	25-Apr-2024	28 days	8 days	✓	25-Apr-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GLSE-M	E509-L	17-Apr-2024	25-Apr-2024	28 days	8 days	✓	25-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GLSE-T	E509-L	17-Apr-2024	25-Apr-2024	28 days	8 days	✓	25-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GLTL-B	E509-L	17-Apr-2024	25-Apr-2024	28 days	8 days	✓	25-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GLTL-M	E509-L	17-Apr-2024	25-Apr-2024	28 days	8 days	✓	25-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GLTL-T	E509-L	17-Apr-2024	25-Apr-2024	28 days	8 days	✓	25-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) TB	E509-L	17-Apr-2024	25-Apr-2024	28 days	8 days	✓	25-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GLSE-B	E465	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GLSE-M	E465	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GLSE-T	E465	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GLTL-B	E465	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GLTL-M	E465	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GLTL-T	E465	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) TB	E465	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLSE-B	E358-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLSE-M	E358-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLSE-T	E358-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLTL-B	E358-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLTL-M	E358-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLTL-T	E358-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) TB	E358-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLSE-B	E355-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLSE-M	E355-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLSE-T	E355-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLTL-B	E355-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLTL-M	E355-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLTL-T	E355-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) TB	E355-L	17-Apr-2024	21-Apr-2024	28 days	4 days	✓	21-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE GLSE-B	E290	17-Apr-2024	22-Apr-2024	14 days	5 days	✓	22-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLSE-M	E290	17-Apr-2024	22-Apr-2024	14 days	5 days	✓	22-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLSE-T	E290	17-Apr-2024	22-Apr-2024	14 days	5 days	✓	22-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLTL-B	E290	17-Apr-2024	22-Apr-2024	14 days	5 days	✓	22-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLTL-M	E290	17-Apr-2024	22-Apr-2024	14 days	5 days	✓	22-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLTL-T	E290	17-Apr-2024	22-Apr-2024	14 days	5 days	✓	22-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE TB	E290	17-Apr-2024	22-Apr-2024	14 days	5 days	✓	22-Apr-2024	14 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE GLSE-B	E100	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE GLSE-M	E100	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE GLSE-T	E100	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE GLTL-B	E100	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE GLTL-M	E100	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE GLTL-T	E100	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE TB	E100	17-Apr-2024	22-Apr-2024	28 days	5 days	✓	22-Apr-2024	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE GLTL-B	E108	17-Apr-2024	22-Apr-2024	0.25 hrs	115 hrs	✗ EHTR-FM	22-Apr-2024	0.25 hrs	116 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GLTL-M	E108	17-Apr-2024	22-Apr-2024	0.25 hrs	115 hrs	✗ EHTR-FM	22-Apr-2024	0.25 hrs	116 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE TB	E108	17-Apr-2024	22-Apr-2024	0.25 hrs	115 hrs	✗ EHTR-FM	22-Apr-2024	0.25 hrs	116 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GLTL-T	E108	17-Apr-2024	22-Apr-2024	0.25 hrs	116 hrs	✗ EHTR-FM	22-Apr-2024	0.25 hrs	117 hrs	✗ EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE GLSE-B	E108	17-Apr-2024	22-Apr-2024	0.25 hrs	118 hrs	* EHTR-FM	22-Apr-2024	0.25 hrs	119 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE GLSE-M	E108	17-Apr-2024	22-Apr-2024	0.25 hrs	118 hrs	* EHTR-FM	22-Apr-2024	0.25 hrs	119 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE GLSE-T	E108	17-Apr-2024	22-Apr-2024	0.25 hrs	118 hrs	* EHTR-FM	22-Apr-2024	0.25 hrs	119 hrs	* EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE GLSE-B	E162	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE GLSE-M	E162	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE GLSE-T	E162	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE GLTL-B	E162	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE GLTL-M	E162	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE GLTL-T	E162	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE TB	E162	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GLSE-B	E160	17-Apr-2024	----	----	----		24-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GLSE-M	E160	17-Apr-2024	----	----	----		24-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GLSE-T	E160	17-Apr-2024	----	----	----		24-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GLTL-B	E160	17-Apr-2024	----	----	----		24-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GLTL-M	E160	17-Apr-2024	----	----	----		24-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GLTL-T	E160	17-Apr-2024	----	----	----		24-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE TB	E160	17-Apr-2024	----	----	----		24-Apr-2024	7 days	6 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE GLSE-B	E121	17-Apr-2024	----	----	----		01-May-2024	3 days	14 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE GLSE-M	E121	17-Apr-2024	----	----	----		01-May-2024	3 days	14 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GLSE-T	E121	17-Apr-2024	----	----	----		01-May-2024	3 days	14 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GLTL-B	E121	17-Apr-2024	----	----	----		01-May-2024	3 days	14 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GLTL-M	E121	17-Apr-2024	----	----	----		01-May-2024	3 days	14 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GLTL-T	E121	17-Apr-2024	----	----	----		01-May-2024	3 days	14 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE TB	E121	17-Apr-2024	----	----	----		01-May-2024	3 days	14 days	✖ EHT
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GLSE-B	E466	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GLSE-M	E466	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GLSE-T	E466	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GLTL-B	E466	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GLTL-M	E466	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GLTL-T	E466	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) TB	E466	17-Apr-2024	23-Apr-2024	180 days	6 days	✓	23-Apr-2024	180 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GLSE-B	E508-L	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GLSE-M	E508-L	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GLSE-T	E508-L	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GLTL-B	E508-L	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GLTL-M	E508-L	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GLTL-T	E508-L	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) TB	E508-L	17-Apr-2024	23-Apr-2024	28 days	6 days	✓	23-Apr-2024	28 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLSE-B	E395	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLSE-M	E395	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLSE-T	E395	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLTL-B	E395	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLTL-M	E395	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLTL-T	E395	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) TB	E395	17-Apr-2024	----	----	----		23-Apr-2024	7 days	6 days	✓

[Legend & Qualifier Definitions](#)

Page : 26 of 34
Work Order : YL2400298 Amendment 2
Client : Sabina Gold & Silver Corporation
Project : 22567626



EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
Analytical Methods			QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1411410	1	8	12.5	5.0	✓
Ammonia by Fluorescence	E298	1411486	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1411414	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1411413	1	8	12.5	5.0	✓
Conductivity in Water	E100	1411411	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1411475	1	8	12.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1411052	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1411418	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1411412	1	8	12.5	5.0	✓
Free Cyanide	E339	1414651	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1411415	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1411416	1	8	12.5	5.0	✓
pH by Meter	E108	1411409	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1411596	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1411417	1	8	12.5	5.0	✓
TDS by Gravimetry	E162	1413968	1	9	11.1	5.0	✓
Total Cyanide	E333	1414650	1	16	6.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1411336	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1411883	1	18	5.5	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1413119	1	15	6.6	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1411472	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1411048	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1411340	1	14	7.1	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1413672	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1413964	1	9	11.1	5.0	✓
Turbidity by Nephelometry	E121	1424687	1	18	5.5	5.0	✓
WAD Cyanide	E336	1414649	1	16	6.2	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1411410	1	8	12.5	5.0	✓
Ammonia by Fluorescence	E298	1411486	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1411414	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1411413	1	8	12.5	5.0	✓
Conductivity in Water	E100	1411411	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1411475	1	8	12.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1411052	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1411418	1	7	14.2	5.0	✔
Fluoride in Water by IC	E235.F	1411412	1	8	12.5	5.0	✔
Free Cyanide	E339	1414651	1	7	14.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1411415	1	8	12.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1411416	1	8	12.5	5.0	✔
pH by Meter	E108	1411409	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1411596	1	17	5.8	5.0	✔
Sulfate in Water by IC	E235.SO4	1411417	1	8	12.5	5.0	✔
TDS by Gravimetry	E162	1413968	1	9	11.1	5.0	✔
Total Cyanide	E333	1414650	1	16	6.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1411336	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1411883	1	18	5.5	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1413119	1	15	6.6	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1411472	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1411048	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1411340	1	14	7.1	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1413672	1	18	5.5	5.0	✔
TSS by Gravimetry	E160	1413964	1	9	11.1	5.0	✔
Turbidity by Nephelometry	E121	1424687	1	18	5.5	5.0	✔
WAD Cyanide	E336	1414649	1	16	6.2	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1411410	1	8	12.5	5.0	✔
Ammonia by Fluorescence	E298	1411486	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1411414	1	8	12.5	5.0	✔
Chloride in Water by IC	E235.Cl	1411413	1	8	12.5	5.0	✔
Conductivity in Water	E100	1411411	1	8	12.5	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1411475	1	8	12.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1411052	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1411418	1	7	14.2	5.0	✔
Fluoride in Water by IC	E235.F	1411412	1	8	12.5	5.0	✔
Free Cyanide	E339	1414651	1	7	14.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1411415	1	8	12.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1411416	1	8	12.5	5.0	✔
Reactive Silica by Colourimetry	E392	1411596	1	17	5.8	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1411417	1	8	12.5	5.0	✔
TDS by Gravimetry	E162	1413968	1	9	11.1	5.0	✔
Total Cyanide	E333	1414650	1	16	6.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1411336	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1411883	1	18	5.5	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1413119	1	15	6.6	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1411472	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1411048	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1411340	1	14	7.1	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1413672	1	18	5.5	5.0	✔
TSS by Gravimetry	E160	1413964	1	9	11.1	5.0	✔
Turbidity by Nephelometry	E121	1424687	1	18	5.5	5.0	✔
WAD Cyanide	E336	1414649	1	16	6.2	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1411486	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1411414	1	8	12.5	5.0	✔
Chloride in Water by IC	E235.Cl	1411413	1	8	12.5	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1411475	1	8	12.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1411052	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1411418	1	7	14.2	5.0	✔
Fluoride in Water by IC	E235.F	1411412	1	8	12.5	5.0	✔
Free Cyanide	E339	1414651	1	7	14.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1411415	1	8	12.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1411416	1	8	12.5	5.0	✔
Reactive Silica by Colourimetry	E392	1411596	1	17	5.8	5.0	✔
Sulfate in Water by IC	E235.SO4	1411417	1	8	12.5	5.0	✔
Total Cyanide	E333	1414650	1	16	6.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1411336	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1411883	1	18	5.5	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1413119	1	15	6.6	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1411472	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1411048	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1411340	1	14	7.1	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1413672	1	18	5.5	5.0	✔
WAD Cyanide	E336	1414649	1	16	6.2	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Vancouver	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Vancouver	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Vancouver	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 34 of 34
 Work Order : YL2400298 Amendment 2
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2400298	Page	: 1 of 21
Amendment	: 2		
Client	: Sabina Gold & Silver Corporation	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 18-Apr-2024 13:10
PO	: 10402	Date Analysis Commenced	: 21-Apr-2024
C-O-C number	: ----	Issue Date	: 13-May-2024 13:40
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1411409)											
YL2400298-003	GLSE-B	pH	----	E108	0.10	pH units	7.09	7.15	0.843%	4%	----
Physical Tests (QC Lot: 1411410)											
YL2400298-003	GLSE-B	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	8.6	8.6	0.00%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	8.6	8.6	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1411411)											
YL2400298-003	GLSE-B	Conductivity	----	E100	2.0	µS/cm	103	103	0.485%	10%	----
Physical Tests (QC Lot: 1413964)											
VA24A8383-002	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1413968)											
VA24A8383-002	Anonymous	Solids, total dissolved [TDS]	----	E162	400	mg/L	59100	62200	4.98%	20%	----
Physical Tests (QC Lot: 1424687)											
YL2400298-001	GLSE-T	Turbidity	----	E121	0.10	NTU	1.42	1.32	7.58%	15%	----
Anions and Nutrients (QC Lot: 1411336)											
YL2400293-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.100	mg/L	10.6	10.6	0.425%	20%	----
Anions and Nutrients (QC Lot: 1411340)											
YL2400297-020	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0066	0.0063	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1411412)											
YL2400298-001	GLSE-T	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.045	0.044	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1411413)											
YL2400298-001	GLSE-T	Chloride	16887-00-6	E235.Cl	0.50	mg/L	10.9	10.8	0.614%	20%	----
Anions and Nutrients (QC Lot: 1411414)											
YL2400298-001	GLSE-T	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.086	0.084	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1411415)											
YL2400298-001	GLSE-T	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.827	0.829	0.203%	20%	----
Anions and Nutrients (QC Lot: 1411416)											
YL2400298-001	GLSE-T	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0195	0.0194	0.113%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1411417)											
YL2400298-001	GLSE-T	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	21.0	20.8	0.773%	20%	----
Anions and Nutrients (QC Lot: 1411418)											
YL2400298-001	GLSE-T	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1411486)											
YL2400298-001	GLSE-T	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.158	0.161	1.82%	20%	----
Anions and Nutrients (QC Lot: 1411596)											
VA24A8324-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	14.9	14.9	0.128%	20%	----
Anions and Nutrients (QC Lot: 1411883)											
EO2402832-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.180	0.132	0.049	Diff <2x LOR	----
Cyanides (QC Lot: 1414649)											
YL2400298-001	GLSE-T	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1414650)											
YL2400298-001	GLSE-T	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1414651)											
YL2400298-001	GLSE-T	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1411048)											
EO2402792-009	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.35	2.35	0.005	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1411052)											
YL2400293-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	25.7	27.5	6.96%	20%	----
Total Sulfides (QC Lot: 1413672)											
CG2404799-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
Total Metals (QC Lot: 1413119)											
CG2404807-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1411472)											
YL2400283-003	Anonymous	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00376	0.00404	7.02%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000129	0.0000124	0.0000005	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000187	0.000178	5.02%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.0208	0.0211	1.25%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	0.0865	0.0892	3.03%	20%	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000033	0.0000030	0.0000002	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	13.7	13.5	1.76%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1411472) - continued											
YL2400283-003	Anonymous	Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000176	0.0000179	0.0000003	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000128	0.000130	1.58%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.000551	0.000534	3.02%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0172	0.0172	0.313%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000010	0.000010	0.0000004	Diff <2x LOR	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000860	0.0000872	1.42%	20%	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00303	0.00304	0.340%	20%	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	4.26	4.26	0.0805%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.0832	0.0830	0.293%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000104	0.000106	1.59%	20%	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.000558	0.000566	1.40%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	2.87	2.88	0.403%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00406	0.00399	1.65%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000038	0.000027	0.000011	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.156	0.155	0.001	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	10.5	10.6	0.515%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.179	0.178	0.522%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	2.45	2.50	0.05	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000028	0.0000028	0.00000002	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	0.0000055	<0.0000050	0.0000005	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000061	0.000059	0.000002	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000116	0.0000114	2.21%	20%	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000016	0.000017	0.0000009	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1411472) - continued											
YL2400283-003	Anonymous	Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00123	0.00122	0.406%	20%	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1411475)											
YL2400283-017	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0427	0.0437	2.38%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000143	0.0000140	0.0000004	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000630	0.000612	2.95%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.0131	0.0131	0.468%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000087	0.0000096	0.0000010	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	0.0000014	0.0000013	0.0000001	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	0.0057	0.0057	0.00001	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000082	0.0000096	0.0000014	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	4.07	4.02	1.23%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000223	0.0000219	0.0000004	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000262	0.000261	0.000001	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.00217	0.00217	0.0867%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00229	0.00228	0.384%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.869	0.856	1.49%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000102	0.000102	0.291%	20%	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000178	0.0000174	0.0000004	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00376	0.00374	0.634%	20%	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	2.26	2.24	0.789%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.233	0.234	0.494%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000056	0.000056	0.0000006	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00304	0.00306	0.754%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	2.19	2.14	2.30%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00538	0.00536	0.483%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000092	0.000072	0.000021	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.697	0.698	0.178%	20%	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.99	1.95	1.96%	20%	----

Page : 7 of 21
 Work Order : YL2400298 Amendment 2
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1411475) - continued											
YL2400283-017	Anonymous	Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0244	0.0245	0.193%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	0.96	0.94	0.02	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000079	0.0000075	0.0000004	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000616	0.0000516	17.6%	20%	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	0.000020	0.000021	0.000002	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	0.000242	0.000264	0.000021	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000628	0.0000626	0.366%	20%	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000129	0.000130	0.605%	20%	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000077	0.000075	0.000003	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00310	0.00312	0.376%	20%	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000188	0.000188	0.375%	20%	----
Dissolved Metals (QC Lot: 1416546)											
YL2400298-001	GLSE-T	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.61	0.60	0.02	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1411410)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1411411)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1413964)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1413968)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1424687)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1411336)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1411340)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1411412)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1411413)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1411414)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1411415)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1411416)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1411417)						
Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1411418)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1411486)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1411486) - continued						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1411596)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1411883)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Cyanides (QCLot: 1414649)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1414650)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1414651)						
Cyanide, free	----	E339	0.002	mg/L	# 0.0088	B
Organic / Inorganic Carbon (QCLot: 1411048)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1411052)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1413672)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1413119)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1411472)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----

Page : 10 of 21
 Work Order : YL2400298 Amendment 2
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1411472) - continued						
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	# 0.0000076	B
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1411475)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1411475) - continued						
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	# 0.0000064	B
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1411475) - continued						
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1416546)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----

Qualifiers

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1411409)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1411410)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	101	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	108	85.0	115	----
Physical Tests (QCLot: 1411411)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 1413964)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1413968)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	100	85.0	115	----
Physical Tests (QCLot: 1424687)									
Turbidity	----	E121	0.1	NTU	200 NTU	100	85.0	115	----
Anions and Nutrients (QCLot: 1411336)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	94.9	80.0	120	----
Anions and Nutrients (QCLot: 1411340)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	93.4	80.0	120	----
Anions and Nutrients (QCLot: 1411412)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 1411413)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1411414)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1411415)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.5	90.0	110	----
Anions and Nutrients (QCLot: 1411416)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.8	90.0	110	----
Anions and Nutrients (QCLot: 1411417)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1411418)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	107	80.0	120	----
Anions and Nutrients (QCLot: 1411486)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1411486) - continued									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1411596)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1411883)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Cyanides (QCLot: 1414649)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Cyanides (QCLot: 1414650)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	94.1	80.0	120	----
Cyanides (QCLot: 1414651)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	91.4	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1411048)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1411052)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	106	80.0	120	----
Total Sulfides (QCLot: 1413672)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	97.7	80.0	120	----
Total Metals (QCLot: 1413119)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	90.9	80.0	120	----
Total Metals (Undigested) (QCLot: 1411472)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	98.5	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	104	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	104	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	101	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	88.7	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	101	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	88.8	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	99.4	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	98.3	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	99.6	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	103	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	98.9	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1411472) - continued									
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	96.3	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	96.5	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	103	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	99.9	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	101	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	82.0	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	98.1	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	101	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	103	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	99.2	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	101	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	97.2	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	100	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	99.5	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	106	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	105	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	92.7	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	99.3	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	101	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	104	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	96.7	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	99.1	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	99.9	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	96.8	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	103	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	101	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	99.0	80.0	120	----
Dissolved Metals (QCLot: 1411475)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	101	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1411475) - continued									
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	103	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	104	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	99.4	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	93.5	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	100	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	88.4	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	101	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	100.0	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	97.9	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	99.6	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	94.5	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	98.1	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	100	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	99.2	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	99.4	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	87.8	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	101	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	100	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	98.4	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	99.6	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	101	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	99.7	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	98.0	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	102	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	107	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	93.3	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	99.1	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	105	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	98.9	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	101	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1411475) - continued									
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	101	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	99.3	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	99.8	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	99.7	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	98.3	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	91.0	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1411336)										
YL2400298-001	GLSE-T	Phosphorus, total dissolved	7723-14-0	E375-U	0.0688 mg/L	0.067 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 1411340)										
YL2400297-021	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0716 mg/L	0.067 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 1411412)										
YL2400298-002	GLSE-M	Fluoride	16984-48-8	E235.F	1.05 mg/L	1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1411413)										
YL2400298-002	GLSE-M	Chloride	16887-00-6	E235.Cl	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1411414)										
YL2400298-002	GLSE-M	Bromide	24959-67-9	E235.Br-L	0.523 mg/L	0.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1411415)										
YL2400298-002	GLSE-M	Nitrate (as N)	14797-55-8	E235.NO3-L	2.57 mg/L	2.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1411416)										
YL2400298-002	GLSE-M	Nitrite (as N)	14797-65-0	E235.NO2-L	0.507 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1411417)										
YL2400298-002	GLSE-M	Sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1411418)										
YL2400298-002	GLSE-M	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0313 mg/L	0.03 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 1411486)										
YL2400298-001	GLSE-T	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1411596)										
VA24A8394-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.2 mg/L	10 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1411883)										
EO2402848-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.61 mg/L	2.5 mg/L	104	70.0	130	----
Cyanides (QCLot: 1414649)										
YL2400298-002	GLSE-M	Cyanide, weak acid dissociable	----	E336	0.760 mg/L	0.625 mg/L	122	75.0	125	----
Cyanides (QCLot: 1414650)										
YL2400298-002	GLSE-M	Cyanide, strong acid dissociable (Total)	----	E333	1.42 mg/L	1.25 mg/L	113	75.0	125	----
Cyanides (QCLot: 1414651)										
YL2400298-002	GLSE-M	Cyanide, free	----	E339	0.688 mg/L	0.625 mg/L	110	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1411048)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1411048) - continued										
EO2402792-009	Anonymous	Carbon, total organic [TOC]	----	E355-L	4.85 mg/L	5 mg/L	97.1	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1411052)										
YL2400293-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1413672)										
CG2404799-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.179 mg/L	0.2 mg/L	89.6	75.0	125	----
Total Metals (QCLot: 1413119)										
CG2404807-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.82 ng/L	5 ng/L	96.5	70.0	130	----
Total Metals (Undigested) (QCLot: 1411472)										
YL2400283-005	Anonymous	Aluminum, total	7429-90-5	E466	0.190 mg/L	0.2 mg/L	94.9	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Barium, total	7440-39-3	E466	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0375 mg/L	0.04 mg/L	93.8	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00927 mg/L	0.01 mg/L	92.7	70.0	130	----
		Boron, total	7440-42-8	E466	0.0965 mg/L	0.1 mg/L	96.5	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00959 mg/L	0.01 mg/L	95.9	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Copper, total	7440-50-8	E466	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00252 mg/L	0.002 mg/L	101	70.0	130	----
		Iron, total	7439-89-6	E466	1.98 mg/L	2 mg/L	98.9	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00257 mg/L	0.002 mg/L	103	70.0	130	----
		Lead, total	7439-92-1	E466	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0849 mg/L	0.1 mg/L	84.9	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0392 mg/L	0.04 mg/L	98.1	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00258 mg/L	0.002 mg/L	103	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.44 mg/L	10 mg/L	94.4	70.0	130	----
		Potassium, total	7440-09-7	E466	3.69 mg/L	4 mg/L	92.3	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00251 mg/L	0.002 mg/L	100	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0422 mg/L	0.04 mg/L	106	70.0	130	----
		Silicon, total	7440-21-3	E466	9.00 mg/L	10 mg/L	90.0	70.0	130	----
		Silver, total	7440-22-4	E466	0.00375 mg/L	0.004 mg/L	93.7	70.0	130	----
		Sodium, total	7440-23-5	E466	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E466	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E466	19.3 mg/L	20 mg/L	96.7	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00253 mg/L	0.002 mg/L	101	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1411472) - continued										
YL2400283-005	Anonymous	Tellurium, total	13494-80-9	E466	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00365 mg/L	0.004 mg/L	91.2	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Tin, total	7440-31-5	E466	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0379 mg/L	0.04 mg/L	94.9	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00264 mg/L	0.002 mg/L	106	70.0	130	----
		Zinc, total	7440-66-6	E466	0.423 mg/L	0.4 mg/L	106	70.0	130	----
Zirconium, total	7440-67-7	E466	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----		
Dissolved Metals (QCLot: 1411475)										
YL2400298-001	GLSE-T	Aluminum, dissolved	7429-90-5	E465	0.192 mg/L	0.2 mg/L	95.9	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0196 mg/L	0.02 mg/L	97.9	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0399 mg/L	0.04 mg/L	99.7	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00952 mg/L	0.01 mg/L	95.2	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.0975 mg/L	0.1 mg/L	97.5	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00409 mg/L	0.004 mg/L	102	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00974 mg/L	0.01 mg/L	97.4	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00247 mg/L	0.002 mg/L	98.7	70.0	130	----
		Iron, dissolved	7439-89-6	E465	1.96 mg/L	2 mg/L	97.8	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00256 mg/L	0.002 mg/L	102	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.0927 mg/L	0.1 mg/L	92.7	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00254 mg/L	0.002 mg/L	102	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.83 mg/L	10 mg/L	98.3	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	3.83 mg/L	4 mg/L	95.7	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00252 mg/L	0.002 mg/L	101	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0418 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.50 mg/L	10 mg/L	95.0	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00389 mg/L	0.004 mg/L	97.4	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.94 mg/L	2 mg/L	97.0	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1411475) - continued										
YL2400298-001	GLSE-T	Sulfur, dissolved	7704-34-9	E465	19.5 mg/L	20 mg/L	97.5	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00245 mg/L	0.002 mg/L	97.8	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0428 mg/L	0.04 mg/L	107	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00378 mg/L	0.004 mg/L	94.5	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0196 mg/L	0.02 mg/L	97.8	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0378 mg/L	0.04 mg/L	94.6	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00383 mg/L	0.004 mg/L	95.8	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00258 mg/L	0.002 mg/L	103	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.417 mg/L	0.4 mg/L	104	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 1416546)										
YL2400298-002	GLSE-M	Mercury, dissolved	7439-97-6	E509-L	4.40 ng/L	5 ng/L	88.1	70.0	130	----



CHAIN OF CUSTODY

ALS Laboratory

RELINQUISHED BY: *Dave Culkin*

RECEIVED BY: *MT*

RELINQUISHED BY:

RECEIVED BY:

CLIENT: B204d

TUNNARICHARD REQUIREMENTS 1

DATE/TIME: 18 Apr 2024 13:10

DATE/TIME: 18 Apr 2024 13:10

DATE/TIME:

DATE/TIME:

PROJECT: ZSSEKES - Black River Project

Standard TAT may be longer for some tests e.g. Ultra Trace Organics

Standard TAT (Est due date)

Non Standard or urgent TAT (Est due date)

FOR LABORATORY USE ONLY (Check)

Yes No N/A

SITE: B204d - Oodua Lagoon

PURCHASE ORDER NO.: Oodua number: YL23-SAR100-001 Date: 23-Jun-2023

PROJECT MANAGER: Maria Kneale

CONTACT PH: 087 429 8081

SAMPLES: Amy Cardwell

Yes No N/A

EMAIL REPORTS TO: zsmo@zsmo.com.au, kneale@zsmo.com.au, gtl@zsmo.com.au

SAMPLES MOBILE: 087 429 8081

EMAIL INVOICE TO: m@zsmo.com.au

Other comments

Yes No N/A

SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY

SAMPLE DETAILS

Sample Identification (This description will appear on the report)

DATE / TIME (dd-mm-yyyy)

MATRIX

CONTAINER INFORMATION

ANALYSIS REQUIRED

Additional Information

SAMPLE

GLSE-T

17 Apr 2024 13:00

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GLSE-M

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Telephone : +1 867 873 5503



Environmental Division
Work Order Reference
YL2400298

Comments or Notes should be made. Additions or deletions requiring specific QI approval are

CERTIFICATE OF ANALYSIS

Work Order	: YL2400308		
Amendment	: 3		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Edmonton
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver British Columbia Canada V7X 1M7	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 22-Apr-2024 09:00
PO	: ----	Date Analysis Commenced	: 23-Apr-2024
C-O-C number	: ----	Issue Date	: 05-Dec-2024 11:46
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SAB100-001		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Christopher Li	Analyst	Metals, Burnaby, British Columbia
Ilnaz Badbezanchi	Supervisor - Metals Prep & Mercury	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Sam Silveira	Analyst	Metals, Burnaby, British Columbia
Shruti Mudliar	Lab Analyst	Inorganics, Edmonton, Alberta
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	Description
mg/L	milligrams per litre
NTU	nephelometric turbidity units
µS/cm	microsiemens per centimetre
pH units	pH units
ng/L	nanograms per litre
-	no units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Qualifiers

Qualifier	Description
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
PHA	pH adjusted before analysis.



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Sub-Matrix: Water (Matrix: Water)		Client sample ID			BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
Client sampling date / time					18-Apr-2024 11:00	18-Apr-2024 12:00	18-Apr-2024 13:15	18-Apr-2024 14:10	18-Apr-2024 15:10
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400308-001	YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	17.2	16.0	16.9	17.0	17.8
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	17.2	16.0	16.9	17.0	17.8
Conductivity	----	E100/VA	2.0	µS/cm	53.8	53.3	54.7	53.9	54.3
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	20.7	21.0	20.6	21.2	21.9
pH	----	E108/VA	0.10	pH units	7.55	7.51	7.48	7.53	7.56
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	33	36	32	37	41
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	34.3	32.9	33.5	34.0	35.1
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity	----	E121/VA	0.10	NTU	0.27	0.20	0.16	0.21	0.21
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0762	0.0754	0.0760	0.0946	0.103
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	0.95	0.94	0.96	1.27	0.98
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.024	0.026	0.028	0.026	0.026
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.377	0.740	0.382	0.297	0.356
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0079	0.0081	0.0087	0.0092	0.0150
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
Client sampling date / time					18-Apr-2024 11:00	18-Apr-2024 12:00	18-Apr-2024 13:15	18-Apr-2024 14:10	18-Apr-2024 15:10	
Analyte		CAS Number	Method/Lab	LOR	Unit	YL2400308-001	YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005
						Result	Result	Result	Result	Result
Anions and Nutrients										
Phosphorus, total		7723-14-0	E372-S/EO	0.0010	mg/L	0.0057	0.0040	0.0036	0.0042	0.0049
Phosphorus, total dissolved		7723-14-0	E375-U/EO	0.0010	mg/L	0.0018	0.0023	0.0023	0.0021	0.0022
Silicate (as SiO2)		7631-86-9	E392/VA	0.50	mg/L	1.14	1.12	1.16	1.22	1.25
Sulfate (as SO4)		14808-79-8	E235.SO4/VA	0.30	mg/L	7.28	7.48	7.59	7.47	7.61
Cyanides										
Cyanide, free		----	E339/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}
Cyanide, strong acid dissociable (Total)		----	E333/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}
Cyanide, weak acid dissociable		----	E336/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]		----	E358-L/EO	0.50	mg/L	6.10	4.98	5.20	5.17	5.52
Carbon, total organic [TOC]		----	E355-L/EO	0.50	mg/L	5.52	5.37	5.88	5.94	5.65
Total Sulfides										
Sulfide, total (as S)		18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Sulfide, total (as H2S)		7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Total Metals										
Mercury, total		7439-97-6	E508-L/VA	0.50	ng/L	<0.50	<0.50	<0.50	<0.50	<0.50
Total Metals (Undigested)										
Aluminum, total		7429-90-5	E466/VA	0.00020	mg/L	0.00245	0.00379	0.00136	0.00151	0.00190
Antimony, total		7440-36-0	E466/VA	0.0000050	mg/L	0.0000132	0.0000205	0.0000098	0.0000082	0.0000079
Arsenic, total		7440-38-2	E466/VA	0.000010	mg/L	0.000241	0.000250	0.000236	0.000248	0.000256
Barium, total		7440-39-3	E466/VA	0.000020	mg/L	0.00719	0.00708	0.00733	0.00724	0.00769



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
Client sampling date / time					18-Apr-2024 11:00	18-Apr-2024 12:00	18-Apr-2024 13:15	18-Apr-2024 14:10	18-Apr-2024 15:10	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400308-001	YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000027	0.0000031	0.0000030	<0.0000025	0.0000030	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	3.77	3.86	3.84	3.86	4.02	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000050	0.0000050	<0.0000050	<0.0000050	0.0000053	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000048	0.000056	0.000040	0.000046	0.000047	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.0000739	0.0000497	0.000118	0.0000649	0.0000624	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.000761	0.000982	0.000716	0.000795	0.000787	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0200	0.0174	0.0454	0.0226	0.0188	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000021	0.000022	0.000020	0.000021	0.000022	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000461	0.0000808	0.0000279	0.0000186	0.0000102	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00073	0.00075	0.00076	0.00075	0.00076	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	2.88	2.93	2.92	2.98	3.12	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0116	0.00722	0.0159	0.00914	0.00931	
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000027	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00155	0.00152	0.00155	0.00154	0.00162	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.577	0.599	0.587	0.594	0.624	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
Client sampling date / time					18-Apr-2024 11:00	18-Apr-2024 12:00	18-Apr-2024 13:15	18-Apr-2024 14:10	18-Apr-2024 15:10	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400308-001	YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00148	0.00149	0.00150	0.00152	0.00156	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000039	0.000028	0.000025	0.000034	0.000035	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.547	0.563	0.558	0.563	0.588	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.03	1.08	1.03	1.04	1.10	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0128	0.0128	0.0131	0.0132	0.0136	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	2.57	2.71	2.61	2.68	2.81	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000011	0.0000010	0.0000011	0.0000012	<0.0000010	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	0.000011	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	<0.000050	0.000266	<0.000050	<0.000050	<0.000050	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000030	0.0000037	0.0000030	0.0000029	0.0000031	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000015	0.000017	0.000012	0.000014	0.000015	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000014	0.000016	0.000014	0.000014	0.000015	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00084	0.00174	0.00056	0.00098	0.00052	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000021	0.000030	0.000023	0.000024	0.000023	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
Client sampling date / time					18-Apr-2024 11:00	18-Apr-2024 12:00	18-Apr-2024 13:15	18-Apr-2024 14:10	18-Apr-2024 15:10	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400308-001	YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00080	0.00091	0.00066	0.00074	0.00078	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000118	0.0000089	0.0000110	0.0000080	0.0000063	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000228	0.000237	0.000234	0.000232	0.000245	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00687	0.00654	0.00729	0.00752	0.00743	
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000049	<0.0000025	<0.0000025	<0.0000025	<0.0000025	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	3.65	3.79	3.60	3.73	3.88	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000053	0.0000054	0.0000053	0.0000057	0.0000056	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	<0.000040	0.000043	<0.000040	0.000042	<0.000040	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.0000638	0.0000462	0.000117	0.000118 ^{DTC}	0.0000648	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.000680	0.000744	0.000674	0.000622	0.000720	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.00492	0.00547	0.00514	0.00629	0.00600	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000016	0.000017	0.000015	0.000017	0.000017	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000059	0.0000067	0.0000060	<0.0000050	<0.0000050	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00066	0.00071	0.00066	0.00066	0.00069	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	2.82	2.81	2.81	2.89	2.96	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.0133	0.00944	0.0194	0.0190 ^{DTC}	0.0108	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
Client sampling date / time						18-Apr-2024 11:00	18-Apr-2024 12:00	18-Apr-2024 13:15	18-Apr-2024 14:10	18-Apr-2024 15:10
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400308-001	YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00146	0.00150	0.00151	0.00156	0.00160	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.570	0.611	0.577	0.597	0.619	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00141	0.00146	0.00146	0.00149	0.00155	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000033	0.000029	0.000030	<0.000025	0.000028	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.549	0.554	0.549	0.558	0.572	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	0.952	1.04	0.987	1.00	1.03	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0124	0.0127	0.0128	0.0131	0.0133	
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	2.49	2.57	2.49	2.57	2.68	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000010	0.0000010	0.0000011	0.0000010	0.0000010	0.0000010
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000058	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
					Client sampling date / time	18-Apr-2024 11:00	18-Apr-2024 12:00	18-Apr-2024 13:15	18-Apr-2024 14:10	18-Apr-2024 15:10
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2400308-001	YL2400308-002	YL2400308-003	YL2400308-004	YL2400308-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L		0.0000024	0.0000024	0.0000025	0.0000024	0.0000024
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L		0.000011	0.000011	0.000011	0.000012	0.000011
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L		0.000012	0.000013	0.000013	0.000013	0.000014
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L		0.00064	0.00125	0.00119 ^{DTC}	0.00096	0.00041
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L		0.000021	0.000025	0.000024	0.000023	0.000023
Dissolved mercury filtration location	----	EP509-L/VA	-	-		Field	Field	Field	Field	Field

Please refer to the General Comments section for an explanation of any result qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2400308	Page	: 1 of 26
Amendment	: 3		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 22-Apr-2024 09:00
PO	: ----	Issue Date	: 05-Dec-2024 11:46
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-1	E298	18-Apr-2024	23-Apr-2024	28 days	5 days	✓	23-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-2	E298	18-Apr-2024	23-Apr-2024	28 days	5 days	✓	23-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-3	E298	18-Apr-2024	23-Apr-2024	28 days	5 days	✓	23-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-4	E298	18-Apr-2024	23-Apr-2024	28 days	5 days	✓	23-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-5	E298	18-Apr-2024	23-Apr-2024	28 days	5 days	✓	23-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-2	E235.Br-L	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-3	E235.Br-L	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-4	E235.Br-L	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-5	E235.Br-L	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-1	E235.Br-L	18-Apr-2024	24-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-2	E235.Cl	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-3	E235.Cl	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-4	E235.Cl	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-5	E235.Cl	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-1	E235.Cl	18-Apr-2024	24-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-2	E378-U	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	25-Apr-2024	3 days	7 days	✖ EHTR



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-3	E378-U	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	25-Apr-2024	3 days	7 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-4	E378-U	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	25-Apr-2024	3 days	7 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-5	E378-U	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	25-Apr-2024	3 days	7 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-1	E378-U	18-Apr-2024	24-Apr-2024	3 days	7 days	✖ EHTR	25-Apr-2024	3 days	7 days	✖ EHTR
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-2	E235.F	18-Apr-2024	24-Apr-2024	28 days	6 days	✔	24-Apr-2024	28 days	6 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-3	E235.F	18-Apr-2024	24-Apr-2024	28 days	6 days	✔	24-Apr-2024	28 days	6 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-4	E235.F	18-Apr-2024	24-Apr-2024	28 days	6 days	✔	24-Apr-2024	28 days	6 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-5	E235.F	18-Apr-2024	24-Apr-2024	28 days	6 days	✔	24-Apr-2024	28 days	6 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-1	E235.F	18-Apr-2024	24-Apr-2024	28 days	7 days	✔	25-Apr-2024	28 days	7 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-2	E235.NO3-L	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	24-Apr-2024	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-3	E235.NO3-L	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	24-Apr-2024	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-4	E235.NO3-L	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	24-Apr-2024	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-5	E235.NO3-L	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	24-Apr-2024	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-1	E235.NO3-L	18-Apr-2024	24-Apr-2024	3 days	7 days	✖ EHTR	25-Apr-2024	3 days	7 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-2	E235.NO2-L	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	24-Apr-2024	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-3	E235.NO2-L	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	24-Apr-2024	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-4	E235.NO2-L	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	24-Apr-2024	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-5	E235.NO2-L	18-Apr-2024	24-Apr-2024	3 days	6 days	✖ EHTR	24-Apr-2024	3 days	6 days	✖ EHTR



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Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-1	E235.NO2-L	18-Apr-2024	24-Apr-2024	3 days	7 days	✖ EHTR	25-Apr-2024	3 days	7 days	✖ EHTR
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-1	E392	18-Apr-2024	----	----	----		28-Apr-2024	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-2	E392	18-Apr-2024	----	----	----		28-Apr-2024	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-3	E392	18-Apr-2024	----	----	----		28-Apr-2024	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-4	E392	18-Apr-2024	----	----	----		28-Apr-2024	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-5	E392	18-Apr-2024	----	----	----		28-Apr-2024	28 days	10 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-2	E235.SO4	18-Apr-2024	24-Apr-2024	28 days	6 days	✔	24-Apr-2024	28 days	6 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-3	E235.SO4	18-Apr-2024	24-Apr-2024	28 days	6 days	✔	24-Apr-2024	28 days	6 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-4	E235.SO4	18-Apr-2024	24-Apr-2024	28 days	6 days	✔	24-Apr-2024	28 days	6 days	✔



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-5	E235.SO4	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-1	E235.SO4	18-Apr-2024	24-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-1	E375-U	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-2	E375-U	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-3	E375-U	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-4	E375-U	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-5	E375-U	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-1	E318	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-2	E318	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-3	E318	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-4	E318	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-5	E318	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-1	E372-S	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-2	E372-S	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-3	E372-S	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-4	E372-S	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-5	E372-S	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-1	E339	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-2	E339	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-3	E339	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-4	E339	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-5	E339	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-1	E333	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-2	E333	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-3	E333	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-4	E333	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-5	E333	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-1	E336	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-2	E336	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-3	E336	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-4	E336	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-38-5	E336	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	24-Apr-2024	14 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-1	E509-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-2	E509-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-3	E509-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-4	E509-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-5	E509-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-1	E465	18-Apr-2024	25-Apr-2024	180 days	7 days	✓	26-Apr-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-2	E465	18-Apr-2024	25-Apr-2024	180 days	7 days	✓	26-Apr-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-3	E465	18-Apr-2024	25-Apr-2024	180 days	7 days	✓	26-Apr-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-5	E465	18-Apr-2024	25-Apr-2024	180 days	7 days	✓	26-Apr-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-4	E465	18-Apr-2024	25-Apr-2024	180 days	9 days	✓	26-Apr-2024	180 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-1	E358-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-2	E358-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-3	E358-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-4	E358-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-5	E358-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-1	E355-L	18-Apr-2024	27-Apr-2024	28 days	9 days	✓	27-Apr-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-2	E355-L	18-Apr-2024	27-Apr-2024	28 days	9 days	✓	27-Apr-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-3	E355-L	18-Apr-2024	27-Apr-2024	28 days	9 days	✓	27-Apr-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-4	E355-L	18-Apr-2024	27-Apr-2024	28 days	9 days	✓	27-Apr-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-5	E355-L	18-Apr-2024	27-Apr-2024	28 days	9 days	✓	27-Apr-2024	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-2	E290	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	25-Apr-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-3	E290	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	25-Apr-2024	14 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-4	E290	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	25-Apr-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-5	E290	18-Apr-2024	24-Apr-2024	14 days	6 days	✓	25-Apr-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-1	E290	18-Apr-2024	24-Apr-2024	14 days	7 days	✓	25-Apr-2024	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-2	E100	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-3	E100	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-4	E100	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-5	E100	18-Apr-2024	24-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-1	E100	18-Apr-2024	24-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE BRP-38-5	E108	18-Apr-2024	24-Apr-2024	0.25 hrs	149 hrs	✖ EHTR-FM	25-Apr-2024	0.25 hrs	160 hrs	✖ EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-38-4	E108	18-Apr-2024	24-Apr-2024	0.25 hrs	150 hrs	✖ EHTR-FM	25-Apr-2024	0.25 hrs	161 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-3	E108	18-Apr-2024	24-Apr-2024	0.25 hrs	151 hrs	✖ EHTR-FM	25-Apr-2024	0.25 hrs	162 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-2	E108	18-Apr-2024	24-Apr-2024	0.25 hrs	152 hrs	✖ EHTR-FM	25-Apr-2024	0.25 hrs	163 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-1	E108	18-Apr-2024	24-Apr-2024	0.25 hrs	156 hrs	✖ EHTR-FM	25-Apr-2024	0.25 hrs	164 hrs	✖ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-3	E162	18-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-4	E162	18-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-5	E162	18-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-1	E162	18-Apr-2024	----	----	----		25-Apr-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-2	E162	18-Apr-2024	----	----	----		25-Apr-2024	7 days	7 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-3	E160	18-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-4	E160	18-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-5	E160	18-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-1	E160	18-Apr-2024	----	----	----		25-Apr-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-2	E160	18-Apr-2024	----	----	----		25-Apr-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-1	E121	18-Apr-2024	----	----	----		01-May-2024	3 days	13 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-2	E121	18-Apr-2024	----	----	----		01-May-2024	3 days	13 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-3	E121	18-Apr-2024	----	----	----		01-May-2024	3 days	13 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-4	E121	18-Apr-2024	----	----	----		01-May-2024	3 days	13 days	✖ EHTR



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-5	E121	18-Apr-2024	----	----	----		01-May-2024	3 days	13 days	✖ EHTR
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-1	E466	18-Apr-2024	26-Apr-2024	180 days	8 days	✔	29-Apr-2024	180 days	11 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-2	E466	18-Apr-2024	26-Apr-2024	180 days	8 days	✔	29-Apr-2024	180 days	11 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-3	E466	18-Apr-2024	26-Apr-2024	180 days	8 days	✔	29-Apr-2024	180 days	11 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-4	E466	18-Apr-2024	26-Apr-2024	180 days	8 days	✔	29-Apr-2024	180 days	11 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-5	E466	18-Apr-2024	26-Apr-2024	180 days	8 days	✔	29-Apr-2024	180 days	11 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-1	E508-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✔	25-Apr-2024	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-2	E508-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✔	25-Apr-2024	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-3	E508-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✔	25-Apr-2024	28 days	7 days	✔

Page : 18 of 26
 Work Order : YL2400308 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-4	E508-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-5	E508-L	18-Apr-2024	25-Apr-2024	28 days	7 days	✓	25-Apr-2024	28 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-1	E395	18-Apr-2024	----	----	----		25-Apr-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-2	E395	18-Apr-2024	----	----	----		25-Apr-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-3	E395	18-Apr-2024	----	----	----		25-Apr-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-4	E395	18-Apr-2024	----	----	----		25-Apr-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-5	E395	18-Apr-2024	----	----	----		25-Apr-2024	7 days	7 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 EHTR: Exceeded ALS recommended hold time prior to sample receipt.
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1415547	2	36	5.5	5.0	✓
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	2	22	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1415540	2	22	9.0	5.0	✓
Conductivity in Water	E100	1415549	2	36	5.5	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416248	1	11	9.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1416550	1	18	5.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	2	32	6.2	5.0	✓
Fluoride in Water by IC	E235.F	1415539	2	22	9.0	5.0	✓
Free Cyanide	E339	1414899	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	2	22	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	2	36	5.5	5.0	✓
pH by Meter	E108	1415548	2	36	5.5	5.0	✓
Reactive Silica by Colourimetry	E392	1420098	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1415536	2	22	9.0	5.0	✓
TDS by Gravimetry	E162	1415740	1	20	5.0	5.0	✓
Total Cyanide	E333	1414900	1	17	5.8	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413261	2	33	6.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416281	1	20	5.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414583	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1416081	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1415752	1	16	6.2	5.0	✓
Turbidity by Nephelometry	E121	1424687	1	18	5.5	5.0	✓
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1415547	2	36	5.5	5.0	✓
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	2	22	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1415540	2	22	9.0	5.0	✓
Conductivity in Water	E100	1415549	2	36	5.5	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416248	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1416550	1	18	5.5	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	2	32	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	2	22	9.0	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	2	22	9.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	2	36	5.5	5.0	✔
pH by Meter	E108	1415548	2	36	5.5	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1415536	2	22	9.0	5.0	✔
TDS by Gravimetry	E162	1415740	1	20	5.0	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413261	2	33	6.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416281	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414583	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1416081	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1415752	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	1424687	1	18	5.5	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1415547	2	36	5.5	5.0	✔
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	2	22	9.0	5.0	✔
Chloride in Water by IC	E235.Cl	1415540	2	22	9.0	5.0	✔
Conductivity in Water	E100	1415549	2	36	5.5	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416248	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1416550	1	18	5.5	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	2	32	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	2	22	9.0	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	2	22	9.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	2	36	5.5	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	1	20	5.0	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1415536	2	22	9.0	5.0	✔
TDS by Gravimetry	E162	1415740	1	20	5.0	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413261	2	33	6.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416281	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414583	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1416081	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1415752	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	1424687	1	18	5.5	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	2	22	9.0	5.0	✔
Chloride in Water by IC	E235.Cl	1415540	2	22	9.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416248	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1416550	1	18	5.5	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	2	32	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	2	22	9.0	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	2	22	9.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	2	36	5.5	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1415536	2	22	9.0	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413261	2	33	6.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416281	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414583	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1416081	1	20	5.0	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Vancouver	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Vancouver	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Vancouver	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 26 of 26
 Work Order : YL2400308 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2400308	Page	: 1 of 22
Amendment	: 3		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 22-Apr-2024 09:00
PO	: ----	Date Analysis Commenced	: 23-Apr-2024
C-O-C number	: ----	Issue Date	: 05-Dec-2024 11:46
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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Brooke Miller	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Christopher Li	Analyst	Vancouver Metals, Burnaby, British Columbia
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Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Page : 3 of 22
 Work Order : YL2400308 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1415547)											
YL2400308-003	BRP-38-3	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	16.9	16.9	0.00%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	16.9	16.9	0.00%	20%	----
Physical Tests (QC Lot: 1415548)											
YL2400308-003	BRP-38-3	pH	----	E108	0.10	pH units	7.48	7.52	0.533%	4%	----
Physical Tests (QC Lot: 1415549)											
YL2400308-003	BRP-38-3	Conductivity	----	E100	2.0	µS/cm	54.7	54.3	0.734%	10%	----
Physical Tests (QC Lot: 1415636)											
YL2400311-002	Anonymous	pH	----	E108	0.10	pH units	7.18	7.17	0.139%	4%	----
Physical Tests (QC Lot: 1415637)											
YL2400311-002	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	8.0	8.0	0.00%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	8.0	8.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1415638)											
YL2400311-002	Anonymous	Conductivity	----	E100	2.0	µS/cm	22.1	22.1	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1415740)											
VA24A8632-004	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	48	48	0.3	Diff <2x LOR	----
Physical Tests (QC Lot: 1415752)											
VA24A8680-006	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	4.8	7.0	2.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1424687)											
YL2400298-001	Anonymous	Turbidity	----	E121	0.10	NTU	1.42	1.32	7.58%	15%	----
Anions and Nutrients (QC Lot: 1413261)											
YL2400291-007	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1413262)											
YL2400308-005	BRP-38-5	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.356	0.328	0.027	Diff <2x LOR	----

Page : 4 of 22
 Work Order : YL2400308 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1413343)											
YL2400310-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.102	0.103	1.56%	20%	----
Anions and Nutrients (QC Lot: 1414583)											
FC2400937-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0610	0.0615	0.800%	20%	----
Anions and Nutrients (QC Lot: 1414585)											
EO2402927-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415535)											
VA24A8752-014	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415536)											
VA24A8752-014	Anonymous	Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.30	mg/L	45.9	45.8	0.195%	20%	----
Anions and Nutrients (QC Lot: 1415537)											
VA24A8752-014	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415538)											
VA24A8752-014	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415539)											
VA24A8752-014	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.126	0.120	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415540)											
VA24A8752-014	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	4.81	4.80	0.008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415541)											
VA24A8752-014	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415639)											
YL2400308-001	BRP-38-1	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.024	0.022	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415640)											
YL2400308-001	BRP-38-1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.95	0.94	0.009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415641)											
YL2400308-001	BRP-38-1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415642)											
YL2400308-001	BRP-38-1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0079	0.0077	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415643)											
YL2400308-001	BRP-38-1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415644)											
YL2400308-001	BRP-38-1	Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.30	mg/L	7.28	7.23	0.639%	20%	----
Anions and Nutrients (QC Lot: 1415649)											
YL2400308-001	BRP-38-1	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

Page : 5 of 22
 Work Order : YL2400308 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1420098)											
VA24A8695-002	Anonymous	Silicate (as SiO ₂)	7631-86-9	E392	0.50	mg/L	3.03	3.07	0.04	Diff <2x LOR	----
Cyanides (QC Lot: 1414898)											
YL2400308-001	BRP-38-1	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1414899)											
YL2400308-001	BRP-38-1	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1414900)											
YL2400308-001	BRP-38-1	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1416550)											
YL2400308-001	BRP-38-1	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	6.10	5.27	14.6%	20%	----
Organic / Inorganic Carbon (QC Lot: 1419861)											
EO2402881-003	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	25.4	24.9	2.21%	20%	----
Total Sulfides (QC Lot: 1416081)											
CG2404887-021	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0290	0.0266	8.69%	20%	----
Total Metals (QC Lot: 1416281)											
CG2404870-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.66	0.64	0.02	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1416246)											
YL2400308-001	BRP-38-1	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00245	0.00233	5.23%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000132	0.0000133	0.0000008	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000241	0.000236	2.06%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00719	0.00714	0.682%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000027	<0.0000025	0.0000002	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	3.77	3.74	0.624%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000050	<0.0000050	0.00000001	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000048	0.000047	0.000001	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000739	0.0000758	2.55%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.000761	0.000757	0.530%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0200	0.0202	1.08%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000021	0.000022	0.0000004	Diff <2x LOR	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000461	0.0000442	0.0000018	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1416246) - continued											
YL2400308-001	BRP-38-1	Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00073	0.00072	0.000006	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.88	2.84	1.50%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.0116	0.0115	0.768%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00155	0.00151	2.24%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.577	0.582	0.903%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00148	0.00148	0.0373%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000039	0.000037	0.000002	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.547	0.541	1.06%	20%	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	1.03	1.02	0.651%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0128	0.0126	0.794%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	2.57	2.59	0.02	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000011	<0.0000010	0.00000008	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000030	0.0000032	0.0000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000015	0.000013	0.000002	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000014	0.000014	0.0000002	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00084	0.00082	0.00003	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000021	0.000021	0.0000003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1416248)											
YL2400308-001	BRP-38-1	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00080	0.00081	0.000007	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000118	0.0000117	0.0000001	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000228	0.000233	2.10%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00687	0.00677	1.39%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----



Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1416248) - continued											
YL2400308-001	BRP-38-1	Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000049	0.0000037	0.0000012	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	3.65	3.58	2.02%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000053	<0.0000050	0.0000003	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000638	0.0000646	1.24%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000680	0.000678	0.320%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00492	0.00488	0.00003	Diff <2x LOR	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000016	0.000016	0.00000007	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000059	0.0000055	0.0000003	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00066	0.00063	0.00003	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	2.82	2.78	1.45%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.0133	0.0132	0.824%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00146	0.00147	0.904%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.570	0.569	0.0492%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00141	0.00141	0.0587%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000033	0.000033	0.000000009	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.549	0.547	0.386%	20%	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.952	0.943	0.939%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0124	0.0122	1.29%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.49	2.48	0.007	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000010	<0.0000010	0.00000004	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000058	<0.0000050	0.0000008	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1416248) - continued											
YL2400308-001	BRP-38-1	Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000024	0.0000026	0.0000002	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000011	0.000011	0.0000002	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000012	0.000012	0.0000002	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00064	0.00062	0.00003	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000021	0.000020	0.0000004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1416546)											
YL2400298-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.61	0.60	0.02	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1415547)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1415549)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1415637)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1415638)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1415740)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1415752)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1424687)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1413261)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1413262)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1413343)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1414583)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1414585)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415535)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1415535) - continued						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415536)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1415537)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1415538)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415539)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1415540)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1415541)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1415639)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1415640)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1415641)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1415642)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1415643)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415644)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1415649)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1420098)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1414898)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1414899)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1414900)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----

Page : 11 of 22
 Work Order : YL2400308 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 1416550)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1419861)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1416081)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1416281)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1416246)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued						
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1416248)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1416248) - continued						
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1416546)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1415547)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	103	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	114	85.0	115	----
Physical Tests (QCLot: 1415548)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1415549)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	98.0	90.0	110	----
Physical Tests (QCLot: 1415636)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1415637)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	96.2	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	113	85.0	115	----
Physical Tests (QCLot: 1415638)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	97.1	90.0	110	----
Physical Tests (QCLot: 1415740)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	110	85.0	115	----
Physical Tests (QCLot: 1415752)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1424687)									
Turbidity	----	E121	0.1	NTU	200 NTU	100	85.0	115	----
Anions and Nutrients (QCLot: 1413261)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1413262)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1413343)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1414583)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	105	80.0	120	----
Anions and Nutrients (QCLot: 1414585)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 1415535)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	102	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1415536)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1415537)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1415538)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 1415539)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	93.2	90.0	110	----
Anions and Nutrients (QCLot: 1415540)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 1415541)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.3	85.0	115	----
Anions and Nutrients (QCLot: 1415639)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 1415640)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1415641)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.7	85.0	115	----
Anions and Nutrients (QCLot: 1415642)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1415643)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.4	90.0	110	----
Anions and Nutrients (QCLot: 1415644)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1415649)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	109	80.0	120	----
Anions and Nutrients (QCLot: 1420098)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Cyanides (QCLot: 1414898)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	99.6	80.0	120	----
Cyanides (QCLot: 1414899)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	92.4	80.0	120	----
Cyanides (QCLot: 1414900)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	94.2	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1416550)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1419861)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	107	80.0	120	----
Total Sulfides (QCLot: 1416081)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	106	80.0	120	----
Total Metals (QCLot: 1416281)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	95.2	80.0	120	----
Total Metals (Undigested) (QCLot: 1416246)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	102	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	102	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	95.1	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	98.3	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	95.0	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	98.6	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	100	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	99.0	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	95.5	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	93.6	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	93.3	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	99.7	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	97.9	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	99.8	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	95.9	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	98.4	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	96.2	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	97.9	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	96.1	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	97.7	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	104	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	97.0	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	105	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued									
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	96.7	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	100	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	109	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	92.4	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	98.2	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	104	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	98.2	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	101	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	98.2	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	97.9	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	96.7	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	100	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	96.4	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	97.9	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	98.2	80.0	120	----
Dissolved Metals (QCLot: 1416248)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	99.0	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	103	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	98.9	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	97.1	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	97.2	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	92.9	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	98.2	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	99.4	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	94.8	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	96.0	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	95.4	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	97.4	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	101	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1416248) - continued									
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	97.1	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	97.7	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	93.0	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	96.7	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	99.8	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	99.6	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	97.6	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	102	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	101	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	100	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	97.7	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	98.4	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	99.3	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	112	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	90.7	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	98.8	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	105	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	98.4	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	97.1	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	94.3	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	98.4	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	96.7	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	93.2	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	102	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	98.2	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	91.0	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1413261)										
YL2400291-008	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.80 mg/L	2.5 mg/L	112	70.0	130	----
Anions and Nutrients (QCLot: 1413262)										
YL2400309-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.79 mg/L	2.5 mg/L	112	70.0	130	----
Anions and Nutrients (QCLot: 1413343)										
YL2400310-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1414583)										
FC2400937-002	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1414585)										
YL2400308-001	BRP-38-1	Phosphorus, total dissolved	7723-14-0	E375-U	0.0727 mg/L	0.067 mg/L	108	70.0	130	----
Anions and Nutrients (QCLot: 1415535)										
YL2400308-002	BRP-38-2	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0310 mg/L	0.03 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 1415536)										
YL2400308-002	BRP-38-2	Sulfate (as SO4)	14808-79-8	E235.SO4	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1415537)										
YL2400308-002	BRP-38-2	Nitrate (as N)	14797-55-8	E235.NO3-L	2.56 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1415538)										
YL2400308-002	BRP-38-2	Nitrite (as N)	14797-65-0	E235.NO2-L	0.501 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1415539)										
YL2400308-002	BRP-38-2	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1415540)										
YL2400308-002	BRP-38-2	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1415541)										
YL2400308-002	BRP-38-2	Bromide	24959-67-9	E235.Br-L	0.500 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1415639)										
YL2400316-001	Anonymous	Fluoride	16984-48-8	E235.F	1.08 mg/L	1 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 1415640)										
YL2400316-001	Anonymous	Chloride	16887-00-6	E235.Cl	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1415641)										
YL2400316-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.532 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1415642)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1415642) - continued										
YL2400316-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.60 mg/L	2.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1415643)										
YL2400311-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1415644)										
YL2400316-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	107 mg/L	100 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1415649)										
YL2400311-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0302 mg/L	0.03 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 1420098)										
VA24A8751-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.0 mg/L	10 mg/L	100	75.0	125	----
Cyanides (QCLot: 1414898)										
YL2400308-002	BRP-38-2	Cyanide, weak acid dissociable	----	E336	0.667 mg/L	0.625 mg/L	107	75.0	125	----
Cyanides (QCLot: 1414899)										
YL2400308-002	BRP-38-2	Cyanide, free	----	E339	0.610 mg/L	0.625 mg/L	97.6	75.0	125	----
Cyanides (QCLot: 1414900)										
YL2400308-002	BRP-38-2	Cyanide, strong acid dissociable (Total)	----	E333	1.28 mg/L	1.25 mg/L	102	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1416550)										
YL2400308-001	BRP-38-1	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1419861)										
EO2402881-003	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1416081)										
CG2404888-010	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.202 mg/L	0.2 mg/L	101	75.0	125	----
Total Metals (QCLot: 1416281)										
CG2404870-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.68 ng/L	5 ng/L	93.6	70.0	130	----
Total Metals (Undigested) (QCLot: 1416246)										
YL2400308-002	BRP-38-2	Aluminum, total	7429-90-5	E466	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Barium, total	7440-39-3	E466	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00950 mg/L	0.01 mg/L	95.0	70.0	130	----
		Boron, total	7440-42-8	E466	0.0946 mg/L	0.1 mg/L	94.6	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		Calcium, total	7440-70-2	E466	3.75 mg/L	4 mg/L	93.8	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00976 mg/L	0.01 mg/L	97.6	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0373 mg/L	0.04 mg/L	93.4	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0186 mg/L	0.02 mg/L	93.3	70.0	130	----
		Copper, total	7440-50-8	E466	0.0184 mg/L	0.02 mg/L	92.3	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued										
YL2400308-002	BRP-38-2	Gallium, total	7440-55-3	E466	0.00251 mg/L	0.002 mg/L	100	70.0	130	----
		Iron, total	7439-89-6	E466	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00248 mg/L	0.002 mg/L	99.0	70.0	130	----
		Lead, total	7439-92-1	E466	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0929 mg/L	0.1 mg/L	92.9	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00254 mg/L	0.002 mg/L	101	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.74 mg/L	10 mg/L	97.4	70.0	130	----
		Potassium, total	7440-09-7	E466	3.74 mg/L	4 mg/L	93.6	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00265 mg/L	0.002 mg/L	106	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E466	9.33 mg/L	10 mg/L	93.3	70.0	130	----
		Silver, total	7440-22-4	E466	0.00364 mg/L	0.004 mg/L	91.0	70.0	130	----
		Sodium, total	7440-23-5	E466	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Strontium, total	7440-24-6	E466	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----
		Sulfur, total	7704-34-9	E466	19.0 mg/L	20 mg/L	95.2	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00254 mg/L	0.002 mg/L	102	70.0	130	----
		Tellurium, total	13494-80-9	E466	0.0389 mg/L	0.04 mg/L	97.4	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00387 mg/L	0.004 mg/L	96.7	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Tin, total	7440-31-5	E466	0.0181 mg/L	0.02 mg/L	90.7	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0180 mg/L	0.02 mg/L	89.9	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00374 mg/L	0.004 mg/L	93.4	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.0944 mg/L	0.1 mg/L	94.4	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00258 mg/L	0.002 mg/L	103	70.0	130	----
		Zinc, total	7440-66-6	E466	0.401 mg/L	0.4 mg/L	100	70.0	130	----
		Zirconium, total	7440-67-7	E466	0.0375 mg/L	0.04 mg/L	93.8	70.0	130	----
Dissolved Metals (QCLot: 1416248)										
YL2400308-002	BRP-38-2	Aluminum, dissolved	7429-90-5	E465	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0380 mg/L	0.04 mg/L	95.0	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00938 mg/L	0.01 mg/L	93.8	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.0921 mg/L	0.1 mg/L	92.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00393 mg/L	0.004 mg/L	98.2	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	3.87 mg/L	4 mg/L	96.8	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00949 mg/L	0.01 mg/L	94.9	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0393 mg/L	0.04 mg/L	98.4	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1416248) - continued										
YL2400308-002	BRP-38-2	Cobalt, dissolved	7440-48-4	E465	0.0196 mg/L	0.02 mg/L	97.8	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00252 mg/L	0.002 mg/L	101	70.0	130	----
		Iron, dissolved	7439-89-6	E465	1.94 mg/L	2 mg/L	97.2	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00255 mg/L	0.002 mg/L	102	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.0918 mg/L	0.1 mg/L	91.8	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0387 mg/L	0.04 mg/L	96.9	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.88 mg/L	10 mg/L	98.8	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	3.84 mg/L	4 mg/L	96.1	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00248 mg/L	0.002 mg/L	99.0	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.73 mg/L	10 mg/L	97.3	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00373 mg/L	0.004 mg/L	93.3	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.92 mg/L	2 mg/L	96.0	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	19.4 mg/L	20 mg/L	97.0	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00242 mg/L	0.002 mg/L	96.9	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0419 mg/L	0.04 mg/L	105	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00368 mg/L	0.004 mg/L	92.1	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00352 mg/L	0.004 mg/L	88.0	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00265 mg/L	0.002 mg/L	106	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
Dissolved Metals (QCLot: 1416546)										
YL2400298-002	Anonymous	Mercury, dissolved	7439-97-6	E509-L	4.40 ng/L	5 ng/L	88.1	70.0	130	----



CHAIN OF CUSTODY

ALS Laboratory

Don't call

CLIENT: BROOK

PROJECT: 2256725 - Black River Project

DATE: 2024-04-24

PROJECT MANAGER: Maria Kuch

SAMPLER: Amy Carls

DATE REPORT TO: 2024-04-24

SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:

(Standard TAT may be longer for some tests e.g. this Time Critical)

Non Standard report TAT (Date due date)

Equin Code: TREC2023

CONTACT PM: SAMPLER MOBILE: 877 431 6281

EMAIL: amy.carls@als.com

EMAIL: maria.kuch@als.com

EMAIL: gail.calk@als.com

EMAIL: info@als.com

RECEIVED BY: Amy Carls

DATE/TIME: 19 Apr 24 7:30

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CERTIFICATE OF ANALYSIS

Work Order	: YL2400309		
Amendment	: 3		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Edmonton
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver British Columbia Canada V7X 1M7	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 22-Apr-2024 09:00
PO	: ----	Date Analysis Commenced	: 23-Apr-2024
C-O-C number	: ----	Issue Date	: 05-Dec-2024 11:49
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SAB100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Christopher Li	Analyst	Metals, Burnaby, British Columbia
Ilnaz Badbezanchi	Supervisor - Metals Prep & Mercury	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Sam Silveira	Analyst	Metals, Burnaby, British Columbia
Shruti Mudliar	Lab Analyst	Inorganics, Edmonton, Alberta
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	Description
mg/L	milligrams per litre
NTU	nephelometric turbidity units
µS/cm	microsiemens per centimetre
pH units	pH units
ng/L	nanograms per litre
-	no units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Qualifiers

Qualifier	Description
DTMF	Dissolved concentration exceeds total for field-filtered metals sample. Metallic contaminants may have been introduced to dissolved sample during field filtration.
PHA	pH adjusted before analysis.



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29A-1	BRP-29A-2	BRP-29A-3	BRP-29A-4	BRP-29A-5
Client sampling date / time					19-Apr-2024 09:30	19-Apr-2024 13:00	19-Apr-2024 11:20	19-Apr-2024 14:00	19-Apr-2024 15:25	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-001	YL2400309-002	YL2400309-003	YL2400309-004	YL2400309-005	
					Result	Result	Result	Result	Result	
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	4.4	4.6	5.6	22.2	6.1	
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	4.4	4.6	5.6	22.2	6.1	
Conductivity	----	E100/VA	2.0	µS/cm	183	179	187	208	185	
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	65.4	64.9	68.5	67.0	69.6	
pH	----	E108/VA	0.10	pH units	6.90	6.93	7.01	7.73	6.98	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	136	139	146	139	139	
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	102	102	106	114	106	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
Turbidity	----	E121/VA	0.10	NTU	0.27	0.16	0.14	0.12	0.15	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.298	0.282	0.331	0.310	0.280	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.176	0.165	0.170	0.167	0.164	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	25.4	24.8	25.9	25.3	24.5	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.024	0.023	0.026	0.025	0.025	
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.728	0.750	0.768	0.776	0.761	
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	2.28	2.21	2.26	2.25	2.13	
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0854	0.0937	0.0693	0.0595	0.104	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29A-1	BRP-29A-2	BRP-29A-3	BRP-29A-4	BRP-29A-5
Client sampling date / time					19-Apr-2024 09:30	19-Apr-2024 13:00	19-Apr-2024 11:20	19-Apr-2024 14:00	19-Apr-2024 15:25	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-001	YL2400309-002	YL2400309-003	YL2400309-004	YL2400309-005	
					Result	Result	Result	Result	Result	
Anions and Nutrients										
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0051	0.0027	0.0032	0.0032	0.0029	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0017	0.0019	0.0018	0.0020	0.0025	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	3.36	3.38	3.43	3.41	3.51	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	27.6	27.3	28.8	27.9	28.6	
Cyanides										
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	6.04	6.48	6.54	6.30	6.79	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	7.01	6.81	6.77	6.46	6.89	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	1.06	2.06	1.20	1.06	1.07	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0414	0.0408	0.0476	0.0408	0.0423	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000148	0.0000193	0.0000258	0.0000146	0.0000205	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000290	0.000287	0.000300	0.000289	0.000307	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0325	0.0321	0.0335	0.0326	0.0351	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29A-1	BRP-29A-2	BRP-29A-3	BRP-29A-4	BRP-29A-5
Client sampling date / time					19-Apr-2024 09:30	19-Apr-2024 13:00	19-Apr-2024 11:20	19-Apr-2024 14:00	19-Apr-2024 15:25	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-001	YL2400309-002	YL2400309-003	YL2400309-004	YL2400309-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000150	0.0000134	0.0000143	0.0000149	0.0000148	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000627	0.0000604	0.0000657	0.0000647	0.0000599	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	15.9	16.2	16.8	16.4	16.6	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000298	0.0000289	0.0000310	0.0000303	0.0000299	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000127	0.000134	0.000150	0.000128	0.000149	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.00176	0.00175	0.00190	0.00177	0.00151	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00290	0.00288	0.00336	0.00289	0.00328	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0235	0.0195	0.0271	0.0189	0.0259	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000720	0.000663	0.000712	0.000682	0.000646	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000111	0.0000201	0.0000540	0.0000084	0.0000309	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00202	0.00198	0.00208	0.00206	0.00202	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	6.48	6.55	6.84	6.63	6.93	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0273	0.0272	0.0294	0.0272	0.0247	
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000011	0.000011	0.000016	<0.000010	0.000016	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.0184	0.0182	0.0191	0.0185	0.0190	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	1.09	1.12	1.17	1.13	1.19	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29A-1	BRP-29A-2	BRP-29A-3	BRP-29A-4	BRP-29A-5
Client sampling date / time					19-Apr-2024 09:30	19-Apr-2024 13:00	19-Apr-2024 11:20	19-Apr-2024 14:00	19-Apr-2024 15:25	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-001	YL2400309-002	YL2400309-003	YL2400309-004	YL2400309-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00302	0.00302	0.00315	0.00307	0.00318	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000084	0.000046	0.000073	0.000075	0.000097	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.68	1.67	1.73	1.70	1.78	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	0.0000021	<0.0000020	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.91	1.89	2.01	1.94	2.02	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.101	0.101	0.105	0.102	0.104	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	9.20	8.96	9.50	9.24	9.73	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000051	0.0000049	0.0000053	0.0000048	0.0000051	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000129	0.0000182	0.0000174	0.0000154	0.0000270	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000088	0.000103	0.000218	0.000138	0.000193	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000120	0.0000116	0.0000134	0.0000123	0.0000118	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000035	0.000036	0.000054	0.000036	0.000046	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000308	0.000291	0.000311	0.000305	0.000291	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00782	0.00755	0.00857	0.00745	0.00855	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000107	0.000110	0.000116	0.000130	0.000118	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29A-1	BRP-29A-2	BRP-29A-3	BRP-29A-4	BRP-29A-5
Client sampling date / time					19-Apr-2024 09:30	19-Apr-2024 13:00	19-Apr-2024 11:20	19-Apr-2024 14:00	19-Apr-2024 15:25	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-001	YL2400309-002	YL2400309-003	YL2400309-004	YL2400309-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0382	0.0368	0.0389	0.0383	0.0375	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000159	0.0000174	0.0000180	0.0000153	0.0000180	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000272	0.000282	0.000300	0.000288	0.000309	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0320	0.0315	0.0322	0.0315	0.0330	
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000131	0.0000153	0.0000153	0.0000152	0.0000126	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000633	0.0000644	0.0000641	0.0000641	0.0000634	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	15.6	15.6	16.5	16.4	16.8	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000301	0.0000291	0.0000305	0.0000296	0.0000294	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000128	0.000127	0.000139	0.000134	0.000138	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.00176	0.00177	0.00187	0.00176	0.00149	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00282	0.00281	0.00301	0.00286	0.00306	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0140	0.0137	0.0149	0.0139	0.0157	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000675	0.000650	0.000664	0.000662	0.000607	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	0.0000089	0.0000074	<0.0000050	0.0000078	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00181	0.00186	0.00199	0.00194	0.00197	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	6.42	6.30	6.64	6.32	6.71	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.0275	0.0275	0.0289	0.0278	0.0248	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29A-1	BRP-29A-2	BRP-29A-3	BRP-29A-4	BRP-29A-5
Client sampling date / time					19-Apr-2024 09:30	19-Apr-2024 13:00	19-Apr-2024 11:20	19-Apr-2024 14:00	19-Apr-2024 15:25	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-001	YL2400309-002	YL2400309-003	YL2400309-004	YL2400309-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.77	0.80	0.85	0.83	0.83	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000016	0.000011	0.000015	0.000010	0.000013	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.0187	0.0182	0.0188	0.0187	0.0190	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	1.14	1.12	1.20	1.19	1.26	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00304	0.00298	0.00315	0.00310	0.00321	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000084	0.000070	0.000076	0.000077	0.000097	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.64	1.70	1.73	1.73	1.81	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.84	1.88	1.98	1.96	2.05	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.101	0.0999	0.104	0.102	0.104	
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	8.96	9.06	9.41	9.36	9.94	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000050	0.0000050	0.0000051	0.0000051	0.0000050	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000233 ^{DTMF}	0.0000149	0.0000191	0.0000150	0.0000176	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000062	0.000083	0.000066	0.000081	0.000095	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29A-1	BRP-29A-2	BRP-29A-3	BRP-29A-4	BRP-29A-5
Client sampling date / time						19-Apr-2024 09:30	19-Apr-2024 13:00	19-Apr-2024 11:20	19-Apr-2024 14:00	19-Apr-2024 15:25
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-001	YL2400309-002	YL2400309-003	YL2400309-004	YL2400309-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000112	0.0000109	0.0000106	0.0000119	0.0000100	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000034	0.000034	0.000035	0.000034	0.000035	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000302	0.000300	0.000310	0.000303	0.000284	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00768	0.00756	0.00817	0.00761	0.00814	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000115	0.000113	0.000118	0.000115	0.000118	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	DUP-1	----	----	----	----
Client sampling date / time					19-Apr-2024 09:45	----	----	----	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-006	----	----	----	----	
					Result	----	----	----	----	
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	4.6	----	----	----	----	
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	4.6	----	----	----	----	
Conductivity	----	E100/VA	2.0	µS/cm	183	----	----	----	----	
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	67.6	----	----	----	----	
pH	----	E108/VA	0.10	pH units	6.85	----	----	----	----	



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

					Client sample ID	DUP-1	----	----	----	----
					Client sampling date / time	19-Apr-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-006	----	----	----	----	----
					Result	----	----	----	----	----
Physical Tests										
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	144	----	----	----	----	----
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	103	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.22	----	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.298	----	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.168	----	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	25.2	----	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.024	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.761	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	2.27	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0794	----	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0033	----	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0020	----	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	3.36	----	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	27.4	----	----	----	----	----
Cyanides										
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050 ^{PHA}	----	----	----	----	----
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050 ^{PHA}	----	----	----	----	----
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050 ^{PHA}	----	----	----	----	----



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Client sample ID					DUP-1	----	----	----	----
Client sampling date / time					19-Apr-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-006	----	----	----	----
					Result	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	6.40	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	5.66	----	----	----	----
Total Sulfides									
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----
Total Metals									
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	1.17	----	----	----	----
Total Metals (Undigested)									
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0440	----	----	----	----
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000144	----	----	----	----
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000299	----	----	----	----
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0324	----	----	----	----
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000161	----	----	----	----
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	----	----	----	----
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000670	----	----	----	----
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	16.5	----	----	----	----
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000302	----	----	----	----
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000138	----	----	----	----
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.00186	----	----	----	----
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00296	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					DUP-1	----	----	----	----
Client sampling date / time					19-Apr-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-006	----	----	----	----
					Result	----	----	----	----
Total Metals (Undigested)									
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0345	----	----	----	----
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000723	----	----	----	----
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000133	----	----	----	----
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00198	----	----	----	----
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	6.71	----	----	----	----
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0291	----	----	----	----
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000010	----	----	----	----
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.0190	----	----	----	----
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	----	----	----	----
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	1.15	----	----	----	----
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00310	----	----	----	----
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000061	----	----	----	----
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.68	----	----	----	----
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.98	----	----	----	----
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.104	----	----	----	----
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	9.32	----	----	----	----
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

					Client sample ID	DUP-1	----	----	----	----
					Client sampling date / time	19-Apr-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-006	----	----	----	----	----
					Result	----	----	----	----	----
Total Metals (Undigested)										
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000052	----	----	----	----	----
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000272	----	----	----	----	----
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000342	----	----	----	----	----
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000148	----	----	----	----	----
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000040	----	----	----	----	----
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000321	----	----	----	----	----
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00769	----	----	----	----	----
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000114	----	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0398	----	----	----	----	----
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000159	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000268	----	----	----	----	----
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0317	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000151	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000676	----	----	----	----	----
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	16.4	----	----	----	----	----



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

					Client sample ID	DUP-1	----	----	----	----
					Client sampling date / time	19-Apr-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-006	----	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000295	----	----	----	----	----
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000136	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.00181	----	----	----	----	----
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00288	----	----	----	----	----
Dissolved metals filtration location	----	EP465/VA	-	-	Field	----	----	----	----	----
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0146	----	----	----	----	----
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000660	----	----	----	----	----
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000059	----	----	----	----	----
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00201	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	6.47	----	----	----	----	----
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.0282	----	----	----	----	----
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.84	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000020	----	----	----	----	----
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.0187	----	----	----	----	----
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	1.18	----	----	----	----	----
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00308	----	----	----	----	----
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000078	----	----	----	----	----



Analytical Results

					Client sample ID	DUP-1	----	----	----	----
Sub-Matrix: Water (Matrix: Water)					Client sampling date / time	19-Apr-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400309-006	Result	----	----	----	----
Dissolved Metals										
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.71	----	----	----	----	----
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.90	----	----	----	----	----
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.103	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	9.21	----	----	----	----	----
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000052	----	----	----	----	----
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000259	----	----	----	----	----
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000075	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000114	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000032	----	----	----	----	----
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000299	----	----	----	----	----
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00787	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000114	----	----	----	----	----
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	----	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2400309	Page	: 1 of 29
Amendment	: 3		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 22-Apr-2024 09:00
PO	: ----	Issue Date	: 05-Dec-2024 11:49
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29A-1	E298	19-Apr-2024	23-Apr-2024	28 days	4 days	✓	23-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29A-2	E298	19-Apr-2024	23-Apr-2024	28 days	4 days	✓	23-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29A-3	E298	19-Apr-2024	23-Apr-2024	28 days	4 days	✓	23-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29A-4	E298	19-Apr-2024	23-Apr-2024	28 days	4 days	✓	23-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29A-5	E298	19-Apr-2024	23-Apr-2024	28 days	4 days	✓	23-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP-1	E298	19-Apr-2024	23-Apr-2024	28 days	4 days	✓	23-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-29A-2	E235.Br-L	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-29A-3	E235.Br-L	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-29A-4	E235.Br-L	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-29A-5	E235.Br-L	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-29A-1	E235.Br-L	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE DUP-1	E235.Br-L	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29A-2	E235.Cl	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29A-3	E235.Cl	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29A-4	E235.Cl	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29A-5	E235.Cl	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29A-1	E235.Cl	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE DUP-1	E235.Cl	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-29A-1	E378-U	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	25-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-29A-2	E378-U	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	25-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-29A-3	E378-U	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	25-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-29A-4	E378-U	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	25-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-29A-5	E378-U	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	25-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE DUP-1	E378-U	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	25-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29A-2	E235.F	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29A-3	E235.F	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29A-4	E235.F	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29A-5	E235.F	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29A-1	E235.F	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE DUP-1	E235.F	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29A-2	E235.NO3-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✗ EHTL	24-Apr-2024	3 days	5 days	✗ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29A-3	E235.NO3-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✗ EHTL	24-Apr-2024	3 days	5 days	✗ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29A-4	E235.NO3-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✗ EHTL	24-Apr-2024	3 days	5 days	✗ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29A-5	E235.NO3-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✗ EHTL	24-Apr-2024	3 days	5 days	✗ EHTL



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29A-1	E235.NO3-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	24-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE DUP-1	E235.NO3-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	24-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29A-2	E235.NO2-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	24-Apr-2024	3 days	5 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29A-3	E235.NO2-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	24-Apr-2024	3 days	5 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29A-4	E235.NO2-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	24-Apr-2024	3 days	5 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29A-5	E235.NO2-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	24-Apr-2024	3 days	5 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29A-1	E235.NO2-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	24-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE DUP-1	E235.NO2-L	19-Apr-2024	24-Apr-2024	3 days	5 days	✖ EHTL	24-Apr-2024	3 days	6 days	✖ EHTL
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29A-1	E392	19-Apr-2024	----	----	----		28-Apr-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29A-2	E392	19-Apr-2024	----	----	----		28-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29A-3	E392	19-Apr-2024	----	----	----		28-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29A-4	E392	19-Apr-2024	----	----	----		28-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29A-5	E392	19-Apr-2024	----	----	----		28-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE DUP-1	E392	19-Apr-2024	----	----	----		28-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-29A-2	E235.SO4	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-29A-3	E235.SO4	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-29A-4	E235.SO4	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-29A-5	E235.SO4	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-29A-1	E235.SO4	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE DUP-1	E235.SO4	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29A-1	E375-U	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29A-2	E375-U	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29A-3	E375-U	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29A-4	E375-U	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29A-5	E375-U	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) DUP-1	E375-U	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-1	E318	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-2	E318	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-3	E318	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-4	E318	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-5	E318	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) DUP-1	E318	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29A-1	E372-S	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29A-2	E372-S	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29A-3	E372-S	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29A-4	E372-S	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29A-5	E372-S	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) DUP-1	E372-S	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-1	E339	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-2	E339	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-3	E339	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-4	E339	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-5	E339	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Free Cyanide										
Opaque HDPE - total (sodium hydroxide) DUP-1	E339	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-1	E333	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-2	E333	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-3	E333	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-4	E333	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-5	E333	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) DUP-1	E333	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-1	E336	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-2	E336	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-3	E336	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-4	E336	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) BRP-29A-5	E336	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Cyanides : WAD Cyanide										
Opaque HDPE - total (sodium hydroxide) DUP-1	E336	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	24-Apr-2024	14 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-29A-1	E509-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-29A-2	E509-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-29A-3	E509-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-29A-4	E509-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-29A-5	E509-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) DUP-1	E509-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29A-2	E465	19-Apr-2024	25-Apr-2024	180 days	6 days	✓	26-Apr-2024	180 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29A-3	E465	19-Apr-2024	25-Apr-2024	180 days	6 days	✓	26-Apr-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29A-4	E465	19-Apr-2024	25-Apr-2024	180 days	6 days	✓	26-Apr-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29A-5	E465	19-Apr-2024	25-Apr-2024	180 days	6 days	✓	26-Apr-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) DUP-1	E465	19-Apr-2024	25-Apr-2024	180 days	6 days	✓	26-Apr-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29A-1	E465	19-Apr-2024	25-Apr-2024	180 days	6 days	✓	26-Apr-2024	180 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29A-1	E358-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29A-2	E358-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29A-3	E358-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29A-4	E358-L	19-Apr-2024	26-Apr-2024	28 days	7 days	✓	26-Apr-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29A-5	E358-L	19-Apr-2024	26-Apr-2024	28 days	7 days	✓	26-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) DUP-1	E358-L	19-Apr-2024	26-Apr-2024	28 days	7 days	✓	26-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-1	E355-L	19-Apr-2024	27-Apr-2024	28 days	8 days	✓	27-Apr-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-2	E355-L	19-Apr-2024	27-Apr-2024	28 days	8 days	✓	27-Apr-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-3	E355-L	19-Apr-2024	27-Apr-2024	28 days	8 days	✓	27-Apr-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-4	E355-L	19-Apr-2024	27-Apr-2024	28 days	8 days	✓	27-Apr-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29A-5	E355-L	19-Apr-2024	27-Apr-2024	28 days	8 days	✓	27-Apr-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) DUP-1	E355-L	19-Apr-2024	28-Apr-2024	28 days	9 days	✓	28-Apr-2024	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29A-1	E290	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	25-Apr-2024	14 days	6 days	✓



Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29A-2	E290	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	25-Apr-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29A-3	E290	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	25-Apr-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29A-4	E290	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	25-Apr-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29A-5	E290	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	25-Apr-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE DUP-1	E290	19-Apr-2024	24-Apr-2024	14 days	5 days	✓	25-Apr-2024	14 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29A-1	E100	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29A-2	E100	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29A-3	E100	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29A-4	E100	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-29A-5	E100	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE DUP-1	E100	19-Apr-2024	24-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	6 days	✓
Physical Tests : pH by Meter										
HDPE BRP-29A-5	E108	19-Apr-2024	24-Apr-2024	0.25 hrs	125 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	136 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-29A-4	E108	19-Apr-2024	24-Apr-2024	0.25 hrs	126 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	137 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-29A-2	E108	19-Apr-2024	24-Apr-2024	0.25 hrs	127 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	138 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-29A-3	E108	19-Apr-2024	24-Apr-2024	0.25 hrs	129 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	140 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-29A-1	E108	19-Apr-2024	24-Apr-2024	0.25 hrs	131 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	141 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE DUP-1	E108	19-Apr-2024	24-Apr-2024	0.25 hrs	131 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	141 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-29A-4	E162	19-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-29A-5	E162	19-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29A-1	E162	19-Apr-2024	----	----	----		26-Apr-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29A-2	E162	19-Apr-2024	----	----	----		26-Apr-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29A-3	E162	19-Apr-2024	----	----	----		26-Apr-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE DUP-1	E162	19-Apr-2024	----	----	----		26-Apr-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29A-2	E160	19-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29A-4	E160	19-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29A-5	E160	19-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29A-1	E160	19-Apr-2024	----	----	----		26-Apr-2024	7 days	7 days	✓

Page : 19 of 29
 Work Order : YL2400309 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-29A-3	E160	19-Apr-2024	----	----	----		26-Apr-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE DUP-1	E160	19-Apr-2024	----	----	----		26-Apr-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29A-1	E121	19-Apr-2024	----	----	----		01-May-2024	3 days	12 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29A-2	E121	19-Apr-2024	----	----	----		01-May-2024	3 days	12 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29A-3	E121	19-Apr-2024	----	----	----		01-May-2024	3 days	12 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29A-4	E121	19-Apr-2024	----	----	----		01-May-2024	3 days	12 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29A-5	E121	19-Apr-2024	----	----	----		01-May-2024	3 days	12 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE DUP-1	E121	19-Apr-2024	----	----	----		01-May-2024	3 days	12 days	✖ EHTL
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-29A-1	E466	19-Apr-2024	26-Apr-2024	180 days	7 days	✓	29-Apr-2024	180 days	10 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-29A-2	E466	19-Apr-2024	26-Apr-2024	180 days	7 days	✓	29-Apr-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-29A-3	E466	19-Apr-2024	26-Apr-2024	180 days	7 days	✓	29-Apr-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-29A-4	E466	19-Apr-2024	26-Apr-2024	180 days	7 days	✓	29-Apr-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-29A-5	E466	19-Apr-2024	26-Apr-2024	180 days	7 days	✓	29-Apr-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) DUP-1	E466	19-Apr-2024	26-Apr-2024	180 days	7 days	✓	29-Apr-2024	180 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-29A-1	E508-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-29A-2	E508-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-29A-3	E508-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-29A-4	E508-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-29A-5	E508-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) DUP-1	E508-L	19-Apr-2024	25-Apr-2024	28 days	6 days	✓	25-Apr-2024	28 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29A-1	E395	19-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29A-2	E395	19-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29A-3	E395	19-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29A-4	E395	19-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29A-5	E395	19-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) DUP-1	E395	19-Apr-2024	----	----	----		25-Apr-2024	7 days	6 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1415547	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1415540	1	17	5.8	5.0	✔
Conductivity in Water	E100	1415549	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416248	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1416550	2	37	5.4	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	1	17	5.8	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	1	19	5.2	5.0	✔
pH by Meter	E108	1415548	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1415536	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1417730	2	28	7.1	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413262	1	13	7.6	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416281	2	29	6.9	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	2	40	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414583	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1416784	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1417737	2	28	7.1	5.0	✔
Turbidity by Nephelometry	E121	1424687	1	18	5.5	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1415547	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1415540	1	17	5.8	5.0	✔
Conductivity in Water	E100	1415549	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416248	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1416550	2	37	5.4	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	1	17	5.8	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	1	19	5.2	5.0	✔
pH by Meter	E108	1415548	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1415536	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1417730	2	28	7.1	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413262	1	13	7.6	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416281	2	29	6.9	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	2	40	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414583	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1416784	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1417737	2	28	7.1	5.0	✔
Turbidity by Nephelometry	E121	1424687	1	18	5.5	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1415547	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1415540	1	17	5.8	5.0	✔
Conductivity in Water	E100	1415549	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416248	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1416550	2	37	5.4	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	1	17	5.8	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	1	20	5.0	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1415536	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1417730	2	28	7.1	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413262	1	13	7.6	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416281	2	29	6.9	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	2	40	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414583	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1416784	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1417737	2	28	7.1	5.0	✔
Turbidity by Nephelometry	E121	1424687	1	18	5.5	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1415540	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416248	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1416550	2	37	5.4	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	1	17	5.8	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1415536	1	17	5.8	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413262	1	13	7.6	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416281	2	29	6.9	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	2	40	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414583	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1416784	1	20	5.0	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Vancouver	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Vancouver	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Vancouver	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 29 of 29
 Work Order : YL2400309 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2400309	Page	: 1 of 21
Amendment	: 3		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 22-Apr-2024 09:00
PO	: ----	Date Analysis Commenced	: 23-Apr-2024
C-O-C number	: ----	Issue Date	: 05-Dec-2024 11:49
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

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Page : 2 of 21
Work Order : YL2400309 Amendment 3
Client : B2Gold Back River Corp.
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1415547)											
YL2400308-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	16.9	16.9	0.00%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	16.9	16.9	0.00%	20%	----
Physical Tests (QC Lot: 1415548)											
YL2400308-003	Anonymous	pH	----	E108	0.10	pH units	7.48	7.52	0.533%	4%	----
Physical Tests (QC Lot: 1415549)											
YL2400308-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	54.7	54.3	0.734%	10%	----
Physical Tests (QC Lot: 1417730)											
VA24A8752-007	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	850	870	2.27%	20%	----
Physical Tests (QC Lot: 1417731)											
YL2400309-005	BRP-29A-5	Solids, total dissolved [TDS]	----	E162	13	mg/L	139	151	8.50%	20%	----
Physical Tests (QC Lot: 1417737)											
VA24A8752-007	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1417738)											
YL2400309-005	BRP-29A-5	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1424687)											
YL2400298-001	Anonymous	Turbidity	----	E121	0.10	NTU	1.42	1.32	7.58%	15%	----
Anions and Nutrients (QC Lot: 1413262)											
YL2400308-005	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.356	0.328	0.027	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1413343)											
YL2400310-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.102	0.103	1.56%	20%	----
Anions and Nutrients (QC Lot: 1414583)											
FC2400937-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0610	0.0615	0.800%	20%	----
Anions and Nutrients (QC Lot: 1414585)											
EO2402927-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415535)											
VA24A8752-014	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2400309 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1415536)											
VA24A8752-014	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	45.9	45.8	0.195%	20%	----
Anions and Nutrients (QC Lot: 1415537)											
VA24A8752-014	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415538)											
VA24A8752-014	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415539)											
VA24A8752-014	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.126	0.120	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415540)											
VA24A8752-014	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	4.81	4.80	0.008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415541)											
VA24A8752-014	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1420098)											
VA24A8695-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	3.03	3.07	0.04	Diff <2x LOR	----
Cyanides (QC Lot: 1414898)											
YL2400308-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1414899)											
YL2400308-001	Anonymous	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1414900)											
YL2400308-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1416550)											
YL2400308-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	6.10	5.27	14.6%	20%	----
Organic / Inorganic Carbon (QC Lot: 1418511)											
FC2400937-005	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	14.7	14.5	1.33%	20%	----
Organic / Inorganic Carbon (QC Lot: 1419861)											
EO2402881-003	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	25.4	24.9	2.21%	20%	----
Organic / Inorganic Carbon (QC Lot: 1420067)											
EO2402938-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	23.4	24.2	3.41%	20%	----
Total Sulfides (QC Lot: 1416784)											
CG2404889-012	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.182	0.180	1.25%	20%	----
Total Metals (QC Lot: 1416281)											
CG2404870-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.66	0.64	0.02	Diff <2x LOR	----
Total Metals (QC Lot: 1416861)											
YL2400309-004	BRP-29A-4	Mercury, total	7439-97-6	E508-L	0.50	ng/L	1.06	1.03	0.03	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1416246)											
YL2400308-001	Anonymous	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00245	0.00233	5.23%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000132	0.0000133	0.00000008	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000241	0.000236	2.06%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00719	0.00714	0.682%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000027	<0.0000025	0.0000002	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	3.77	3.74	0.624%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000050	<0.0000050	0.00000001	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000048	0.000047	0.000001	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000739	0.0000758	2.55%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.000761	0.000757	0.530%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0200	0.0202	1.08%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000021	0.000022	0.0000004	Diff <2x LOR	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000461	0.0000442	0.0000018	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00073	0.00072	0.000006	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.88	2.84	1.50%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.0116	0.0115	0.768%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00155	0.00151	2.24%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.577	0.582	0.903%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00148	0.00148	0.0373%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000039	0.000037	0.000002	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.547	0.541	1.06%	20%	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	1.03	1.02	0.651%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0128	0.0126	0.794%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	2.57	2.59	0.02	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1416246) - continued											
YL2400308-001	Anonymous	Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000011	<0.0000010	0.00000008	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000030	0.0000032	0.0000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000015	0.000013	0.000002	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000014	0.000014	0.0000002	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.000010	mg/L	0.00084	0.00082	0.00003	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000021	0.000021	0.0000003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1416248)											
YL2400308-001	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00080	0.00081	0.000007	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000118	0.0000117	0.0000001	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000228	0.000233	2.10%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00687	0.00677	1.39%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000049	0.0000037	0.0000012	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	3.65	3.58	2.02%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000053	<0.0000050	0.0000003	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000638	0.0000646	1.24%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000680	0.000678	0.320%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.000050	mg/L	0.00492	0.00488	0.00003	Diff <2x LOR	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000016	0.000016	0.00000007	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000059	0.0000055	0.0000003	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00066	0.00063	0.00003	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	2.82	2.78	1.45%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.0133	0.0132	0.824%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00146	0.00147	0.904%	20%	----

Page : 7 of 21
 Work Order : YL2400309 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1416248) - continued											
YL2400308-001	Anonymous	Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.570	0.569	0.0492%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00141	0.00141	0.0587%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000033	0.000033	0.00000009	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.549	0.547	0.386%	20%	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.952	0.943	0.939%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0124	0.0122	1.29%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.49	2.48	0.007	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000010	<0.0000010	0.00000004	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000058	<0.0000050	0.0000008	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000024	0.0000026	0.0000002	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000011	0.000011	0.0000002	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000012	0.000012	0.0000002	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00064	0.00062	0.00003	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000021	0.000020	0.0000004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1416546)											
YL2400298-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.61	0.60	0.02	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1415547)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1415549)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1417730)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1417731)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1417737)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1417738)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1424687)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1413262)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1413343)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1414583)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1414585)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415535)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415536)						
Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1415537)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1415538)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1415538) - continued						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415539)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1415540)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1415541)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1420098)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1414898)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1414899)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1414900)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1416550)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1418511)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1419861)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1420067)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1416784)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1416281)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (QCLot: 1416861)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1416246)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued						
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued						
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1416248)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----

Page : 12 of 21
 Work Order : YL2400309 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1416248) - continued						
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1416546)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1415547)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	103	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	114	85.0	115	----
Physical Tests (QCLot: 1415548)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1415549)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	98.0	90.0	110	----
Physical Tests (QCLot: 1417730)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	112	85.0	115	----
Physical Tests (QCLot: 1417731)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1417737)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1417738)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	96.4	85.0	115	----
Physical Tests (QCLot: 1424687)									
Turbidity	----	E121	0.1	NTU	200 NTU	100	85.0	115	----
Anions and Nutrients (QCLot: 1413262)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1413343)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1414583)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	105	80.0	120	----
Anions and Nutrients (QCLot: 1414585)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 1415535)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 1415536)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1415537)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1415538)									

Page : 14 of 21
 Work Order : YL2400309 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1415538) - continued									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 1415539)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	93.2	90.0	110	----
Anions and Nutrients (QCLot: 1415540)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 1415541)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.3	85.0	115	----
Anions and Nutrients (QCLot: 1420098)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Cyanides (QCLot: 1414898)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	99.6	80.0	120	----
Cyanides (QCLot: 1414899)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	92.4	80.0	120	----
Cyanides (QCLot: 1414900)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	94.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1416550)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1418511)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1419861)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	107	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1420067)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
Total Sulfides (QCLot: 1416784)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	98.8	80.0	120	----
Total Metals (QCLot: 1416281)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	95.2	80.0	120	----
Total Metals (QCLot: 1416861)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	94.7	80.0	120	----
Total Metals (Undigested) (QCLot: 1416246)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	102	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued									
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	102	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	95.1	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	98.3	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	95.0	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	98.6	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	100	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	99.0	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	95.5	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	93.6	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	93.3	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	99.7	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	97.9	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	99.8	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	95.9	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	98.4	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	96.2	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	97.9	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	96.1	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	97.7	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	104	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	97.0	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	96.7	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	100	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	109	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	92.4	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	98.2	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	104	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	98.2	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	101	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	98.2	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	97.9	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Target Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued									
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	96.7	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	100	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	96.4	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	97.9	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	98.2	80.0	120	----
Dissolved Metals (QCLot: 1416248)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	99.0	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	103	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	98.9	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	97.1	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	97.2	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	92.9	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	98.2	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	99.4	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	94.8	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	96.0	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	95.4	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	97.4	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	101	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	97.1	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	97.7	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	93.0	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	96.7	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	99.8	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	99.6	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	97.6	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	102	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	101	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	100	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	97.7	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	98.4	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1416248) - continued									
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	99.3	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	112	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	90.7	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	98.8	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	105	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	98.4	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	97.1	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	94.3	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	98.4	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	96.7	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	93.2	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	102	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	98.2	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	91.0	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Laboratory sample ID					Matrix Spike (MS) Report				
					Spike		Recovery (%)	Recovery Limits (%)	
					Concentration	Target	MS	Low	High
Client sample ID	Analyte	CAS Number	Method						Qualifier
Anions and Nutrients (QCLot: 1413262)									
YL2400309-001	BRP-29A-1	Kjeldahl nitrogen, total [TKN]	----	E318	2.79 mg/L	2.5 mg/L	112	70.0	130
Anions and Nutrients (QCLot: 1413343)									
YL2400310-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125
Anions and Nutrients (QCLot: 1414583)									
FC2400937-002	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130
Anions and Nutrients (QCLot: 1414585)									
YL2400308-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0727 mg/L	0.067 mg/L	108	70.0	130
Anions and Nutrients (QCLot: 1415535)									
YL2400308-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0310 mg/L	0.03 mg/L	103	70.0	130
Anions and Nutrients (QCLot: 1415536)									
YL2400308-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	103 mg/L	100 mg/L	103	75.0	125
Anions and Nutrients (QCLot: 1415537)									
YL2400308-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.56 mg/L	2.5 mg/L	102	75.0	125
Anions and Nutrients (QCLot: 1415538)									
YL2400308-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.501 mg/L	0.5 mg/L	100	75.0	125
Anions and Nutrients (QCLot: 1415539)									
YL2400308-002	Anonymous	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125
Anions and Nutrients (QCLot: 1415540)									
YL2400308-002	Anonymous	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125
Anions and Nutrients (QCLot: 1415541)									
YL2400308-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.500 mg/L	0.5 mg/L	100	75.0	125
Anions and Nutrients (QCLot: 1420098)									
VA24A8751-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.0 mg/L	10 mg/L	100	75.0	125
Cyanides (QCLot: 1414898)									
YL2400308-002	Anonymous	Cyanide, weak acid dissociable	----	E336	0.667 mg/L	0.625 mg/L	107	75.0	125
Cyanides (QCLot: 1414899)									
YL2400308-002	Anonymous	Cyanide, free	----	E339	0.610 mg/L	0.625 mg/L	97.6	75.0	125
Cyanides (QCLot: 1414900)									
YL2400308-002	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	1.28 mg/L	1.25 mg/L	102	75.0	125
Organic / Inorganic Carbon (QCLot: 1416550)									



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1416550) - continued										
YL2400308-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1418511)										
FC2400937-005	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1419861)										
EO2402881-003	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1420067)										
EO2402938-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1416784)										
CG2404889-013	Anonymous	Sulfide, total (as S)	18496-25-8	E395	ND mg/L	----	ND	75.0	125	----
Total Metals (QCLot: 1416281)										
CG2404870-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.68 ng/L	5 ng/L	93.6	70.0	130	----
Total Metals (QCLot: 1416861)										
YL2400309-005	BRP-29A-5	Mercury, total	7439-97-6	E508-L	4.75 ng/L	5 ng/L	95.0	70.0	130	----
Total Metals (Undigested) (QCLot: 1416246)										
YL2400308-002	Anonymous	Aluminum, total	7429-90-5	E466	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Barium, total	7440-39-3	E466	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00950 mg/L	0.01 mg/L	95.0	70.0	130	----
		Boron, total	7440-42-8	E466	0.0946 mg/L	0.1 mg/L	94.6	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		Calcium, total	7440-70-2	E466	3.75 mg/L	4 mg/L	93.8	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00976 mg/L	0.01 mg/L	97.6	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0373 mg/L	0.04 mg/L	93.4	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0186 mg/L	0.02 mg/L	93.3	70.0	130	----
		Copper, total	7440-50-8	E466	0.0184 mg/L	0.02 mg/L	92.3	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00251 mg/L	0.002 mg/L	100	70.0	130	----
		Iron, total	7439-89-6	E466	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00248 mg/L	0.002 mg/L	99.0	70.0	130	----
		Lead, total	7439-92-1	E466	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0929 mg/L	0.1 mg/L	92.9	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00254 mg/L	0.002 mg/L	101	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.74 mg/L	10 mg/L	97.4	70.0	130	----
		Potassium, total	7440-09-7	E466	3.74 mg/L	4 mg/L	93.6	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00265 mg/L	0.002 mg/L	106	70.0	130	----

Page : 20 of 21
 Work Order : YL2400309 Amendment 3
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued										
YL2400308-002	Anonymous	Rubidium, total	7440-17-7	E466	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E466	9.33 mg/L	10 mg/L	93.3	70.0	130	----
		Silver, total	7440-22-4	E466	0.00364 mg/L	0.004 mg/L	91.0	70.0	130	----
		Sodium, total	7440-23-5	E466	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Strontium, total	7440-24-6	E466	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----
		Sulfur, total	7704-34-9	E466	19.0 mg/L	20 mg/L	95.2	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00254 mg/L	0.002 mg/L	102	70.0	130	----
		Tellurium, total	13494-80-9	E466	0.0389 mg/L	0.04 mg/L	97.4	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00387 mg/L	0.004 mg/L	96.7	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Tin, total	7440-31-5	E466	0.0181 mg/L	0.02 mg/L	90.7	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0180 mg/L	0.02 mg/L	89.9	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00374 mg/L	0.004 mg/L	93.4	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.0944 mg/L	0.1 mg/L	94.4	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00258 mg/L	0.002 mg/L	103	70.0	130	----
		Zinc, total	7440-66-6	E466	0.401 mg/L	0.4 mg/L	100	70.0	130	----
		Zirconium, total	7440-67-7	E466	0.0375 mg/L	0.04 mg/L	93.8	70.0	130	----
Dissolved Metals (QCLot: 1416248)										
YL2400308-002	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0380 mg/L	0.04 mg/L	95.0	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00938 mg/L	0.01 mg/L	93.8	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.0921 mg/L	0.1 mg/L	92.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00393 mg/L	0.004 mg/L	98.2	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	3.87 mg/L	4 mg/L	96.8	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00949 mg/L	0.01 mg/L	94.9	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0393 mg/L	0.04 mg/L	98.4	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0196 mg/L	0.02 mg/L	97.8	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00252 mg/L	0.002 mg/L	101	70.0	130	----
		Iron, dissolved	7439-89-6	E465	1.94 mg/L	2 mg/L	97.2	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00255 mg/L	0.002 mg/L	102	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.0918 mg/L	0.1 mg/L	91.8	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0387 mg/L	0.04 mg/L	96.9	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.88 mg/L	10 mg/L	98.8	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1416248) - continued										
YL2400308-002	Anonymous	Potassium, dissolved	7440-09-7	E465	3.84 mg/L	4 mg/L	96.1	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00248 mg/L	0.002 mg/L	99.0	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.73 mg/L	10 mg/L	97.3	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00373 mg/L	0.004 mg/L	93.3	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.92 mg/L	2 mg/L	96.0	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	19.4 mg/L	20 mg/L	97.0	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00242 mg/L	0.002 mg/L	96.9	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0419 mg/L	0.04 mg/L	105	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00368 mg/L	0.004 mg/L	92.1	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00352 mg/L	0.004 mg/L	88.0	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00265 mg/L	0.002 mg/L	106	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
Dissolved Metals (QCLot: 1416546)										
YL2400298-002	Anonymous	Mercury, dissolved	7439-97-6	E509-L	4.40 ng/L	5 ng/L	88.1	70.0	130	----



CHAIN OF CUSTODY
ALS Laboratory

CLIENT: Bould

PROJECT: 228728 - Back River Project

SITE: Bould - Goose Lake

PURCHASE ORDER NO.: Quote number: 1121-SAM1190-001 Date: 23-Jun-2023

PROJECT MANAGER: Mike Keate

SAMPLES: Amy Carfield

EMAIL REPORTS TO: amy@carfieldlab.com, amy@carfieldlab.com, 414 CAL, 504.505.0000

SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:

Standard 1-2 (Sat day ship)
9-2 (One Time Original)
☐ Non Standard or longer 1-2 (Sat day ship)

RECEIVED BY: Amy Carfield
DATE/TIME: 20 Apr 24 7:30

RECEIVED BY: [Signature]
DATE/TIME: Apr 22/24 9:00

FOR LABORATORY USE ONLY (Cont'd)

Checklist Item (Y/N)?
Sample / Reagent bottles present upon receipt?
Checklist Sample Temperature on Receipt
Other comments:

25
Y N
N/A

ALS USE ONLY

SAMPLE DETAILS

Bottle(s) Used (V)

MATRIX

CONTAINER INFORMATION

ANALYSIS REQUIRED

Additional Information

SAMPLE

Sample Identification
(This description will appear on the report)

DATE / TIME
(dd-mm-yyyy)

MATRIX

TOTAL CONTAINERS

Total Metals + Hg
LOW LEVEL

Dissolved Metals + Hg
LOW LEVEL

Total Nutrients

Dissolved Nutrients

General Parameters / Routine

Total Sulfides

Cyanides (Total, WAD, free)

BRP-29-1

BRP-29-2

BRP-29-3

BRP-29-4

BRP-29-5

DUP-1

18-Apr-24 9:30

13:00

11:20

14:00

15:25

9:45

water

water

water

water

water

water

water

water

water

water

water

water

water

water

water

TOTAL

Telephone : +1 867 873 5563



Environmental Division
Yellowknife
Work Order Reference
YL2400309

Consents to test, transport, store, dispose, or
sample require specific CC written on.

CERTIFICATE OF ANALYSIS

Work Order	: YL2400310	Page	: 1 of 13
Amendment	: 2		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 22-Apr-2024 09:00
PO	: PO-17852	Date Analysis Commenced	: 23-Apr-2024
C-O-C number	: ----	Issue Date	: 09-Jul-2024 12:05
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Brieanna Allen	Production/Validation Manager	Inorganics, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Christopher Li	Analyst	Metals, Burnaby, British Columbia
Ilnaz Badbezanchi	Supervisor - Metals Prep & Mercury	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Robin Weeks	Team Leader - Metals	Inorganics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sam Silveira	Analyst	Metals, Burnaby, British Columbia
Shruti Mudliar	Lab Analyst	Inorganics, Edmonton, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
PHA	pH adjusted before analysis.
RRV	Reported result verified by repeat analysis.
SFP	Sample was filtered and preserved at the laboratory.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time					20-Apr-2024 09:00	20-Apr-2024 14:00	20-Apr-2024 15:30	20-Apr-2024 10:30	20-Apr-2024 12:40	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400310-001	YL2400310-002	YL2400310-003	YL2400310-004	YL2400310-005	
					Result	Result	Result	Result	Result	
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	8.6	8.5	8.4	8.3	8.0	
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	8.6	8.5	8.4	8.3	8.0	
Conductivity	----	E100/VA	2.0	µS/cm	100	101	100	101	98.0	
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	38.0	36.6	36.5	38.5	35.8	
pH	----	E108/VA	0.10	pH units	7.20	7.22	7.17	7.20	7.18	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	65	70	76	71	70	
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	59.2	59.8	58.8	60.2	57.4	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
Turbidity	----	E121/VA	0.10	NTU	0.12	0.15	0.16	0.18	0.14	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.102	0.0917	0.0991	0.108	0.0854	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.058	0.056	0.058	0.057	0.056	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	9.00	9.18	9.09	9.16	8.88	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.026	0.026	0.026	0.026	0.025	
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.473	0.495	0.472	0.521	0.442	
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.651	0.665	0.656	0.663	0.643	
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.0677	0.0884	0.0938	0.0720	0.106	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0015	0.0022	0.0036	0.0021	0.0026	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0015	0.0016	0.0018	0.0029	0.0016	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	2.05	2.11	2.08	2.09	2.05	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	18.0	18.2	18.1	18.2	17.7	
Cyanides										
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400310-001	YL2400310-002	YL2400310-003	YL2400310-004	YL2400310-005	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}	<0.0050 ^{PHA}
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	6.28	6.94	6.27	6.76	6.04	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	6.10	6.70	6.05	6.54	5.93	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0016	0.0016	0.0019	0.0019	<0.0015	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0017	0.0017	0.0020	0.0020	<0.0016	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.91	0.63	0.89	0.74	0.66	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0135	0.0142	0.0135	0.0133	0.0134	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000162	0.0000188	0.0000150	0.0000177	0.0000153	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000278	0.000282	0.000270	0.000279	0.000269	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0160	0.0157	0.0152	0.0160	0.0149	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000030	0.0000035	0.0000036	0.0000044	0.0000039	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000115	0.0000105	0.0000111	0.0000098	0.0000074	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	8.30	8.43	8.20	8.35	8.08	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000156	0.0000157	0.0000151	0.0000156	0.0000149	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000101	0.000105	0.000108	0.000095	0.000102	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000132	0.000127	0.000118	0.000126	0.000117	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00203	0.00203	0.00191	0.00197	0.00193	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0142	0.0141	0.0129	0.0136	0.0128	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000207	0.000200	0.000198	0.000204	0.000196	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000128	0.0000154	0.0000062	0.0000058	0.0000087	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00131	0.00133	0.00131	0.00137	0.00132	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	4.25	4.24	4.16	4.26	4.07	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00506	0.00461	0.00439	0.00475	0.00422	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400310-001	YL2400310-002	YL2400310-003	YL2400310-004	YL2400310-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000017	0.000016	0.000015	0.000017	0.000015	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00724	0.00736	0.00718	0.00739	0.00705	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.816	0.827	0.793	0.808	0.779	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00209	0.00212	0.00205	0.00211	0.00199	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000050	0.000042	0.000033	0.000039	0.000051	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.03	1.05	1.03	1.06	1.02	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.40	1.41	1.37	1.42	1.34	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0456	0.0455	0.0444	0.0454	0.0432	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	6.17	6.23	6.20	6.40	6.18	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000024	0.0000022	0.0000023	0.0000021	0.0000022	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000150	0.0000163	0.0000148	0.0000109	0.0000179	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000078	0.000276	0.000095	0.000070	0.000110	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000083	0.0000084	0.0000087	0.0000092	0.0000083	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000034	0.000035	0.000032	0.000034	0.000030	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000100	0.000101	0.000100	0.000100	0.000099	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00199	0.00210	0.00196	0.00199	0.00183	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000067	0.000077	0.000066	0.000068	0.000068	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0129	0.0123	0.0125	0.0130	0.0124	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000168	0.0000154	0.0000155	0.0000167	0.0000140	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000270	0.000271	0.000264	0.000279	0.000266	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0156	0.0151	0.0150	0.0159	0.0148	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400310-001	YL2400310-002	YL2400310-003	YL2400310-004	YL2400310-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000034	0.0000035	0.0000039	0.0000038	0.0000031	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000118	0.0000087	0.0000097	0.0000089	0.0000104	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	8.28	7.96	7.97	8.35	7.79	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000144	0.0000143	0.0000145	0.0000150	0.0000142	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000099	0.000096	0.000098	0.000101	0.000095	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000116	0.000109	0.000106	0.000113	0.000105	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00190	0.00185	0.00180	0.00195	0.00183	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0100	0.0103	0.00966	0.0102	0.00969	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000193	0.000191	0.000192	0.000197	0.000194	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	0.0000068	<0.0000050	<0.0000050	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00132	0.00132	0.00134	0.00135	0.00132	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	4.22	4.05	4.04	4.28	3.97	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00470	0.00459	0.00412	0.00453	0.00407	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.58	0.56	0.56	0.52	0.56	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000020	0.000014	0.000014	0.000015	0.000038 ^{OTC}	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00723	0.00709	0.00706	0.00741	0.00688	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.785	0.781	0.765	0.820	0.768	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00209	0.00202	0.00203	0.00212	0.00201	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000040	0.000046	0.000047	0.000043	0.000040	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.02	1.02	1.01	1.02	0.998	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.39	1.35	1.34	1.40	1.32	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0445	0.0429	0.0435	0.0458	0.0434	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
					Client sampling date / time	20-Apr-2024 09:00	20-Apr-2024 14:00	20-Apr-2024 15:30	20-Apr-2024 10:30	20-Apr-2024 12:40
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400310-001	YL2400310-002	YL2400310-003	YL2400310-004	YL2400310-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	6.30	6.19	6.23	6.26	6.07	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000022	0.0000021	0.0000023	0.0000021	0.0000022	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000140	0.0000105	0.0000098	0.0000155	0.0000091	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000077	0.0000084	0.0000071	0.0000084	0.0000073	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000030	0.000030	0.000031	0.000031	0.000030	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000096	0.000096	0.000095	0.000095	0.000095	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00193	0.00225	0.00218	0.00220	0.00205	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000069	0.000071	0.000066	0.000073	0.000064	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	20-Apr-2024 15:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400310-006	-----	-----	-----	-----	
					Result	---	---	---	---	
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	
Conductivity	----	E100/VA	2.0	µS/cm	<2.0	----	----	----	----	
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	<0.50	----	----	----	----	
pH	----	E108/VA	0.10	pH units	5.39	----	----	----	----	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	<10	----	----	----	----	
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	<1.0	----	----	----	----	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----	
Turbidity	----	E121/VA	0.10	NTU	<0.10	----	----	----	----	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	<0.0050	----	----	----	----	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	----	----	----	----	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	<0.50	----	----	----	----	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	----	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	<0.050 ^{RRV}	----	----	----	----	
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	<0.0050	----	----	----	----	
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	----	----	----	----	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----	
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	<0.0010	----	----	----	----	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	<0.0010	----	----	----	----	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	<0.50	----	----	----	----	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	<0.30	----	----	----	----	
Cyanides										
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050 ^{PHA}	----	----	----	----	
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050 ^{PHA}	----	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)					Client sampling date / time	20-Apr-2024 15:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400310-006	Result	-----	-----	-----	-----
Cyanides										
Cyanide, weak acid dissociable	---	E336/VA	0.0050	mg/L	<0.0050 ^{PHA}	----	----	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	---	E358-L/EO	0.50	mg/L	<0.50 ^{SFP}	----	----	----	----	----
Carbon, total organic [TOC]	---	E355-L/EO	0.50	mg/L	<0.50	----	----	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----	----
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	<0.50	----	----	----	----	----
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	<0.0000025	----	----	----	----	----
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	<0.010	----	----	----	----	----
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	<0.000040	----	----	----	----	----
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)					Client sampling date / time	20-Apr-2024 15:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400310-006	Result	----	----	----	----
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	----	----	----	----	----
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025	----	----	----	----	----
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	<0.050	----	----	----	----	----
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	<0.010	----	----	----	----	----
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	<0.50	----	----	----	----	----
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00012 RRV	----	----	----	----	----
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)					Client sampling date / time	20-Apr-2024 15:45	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400310-006	Result	----	----	----	----
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	<0.0000025	----	----	----	----	----
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	<0.000040	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Dissolved metals filtration location	----	EP465/VA	-	-	Field	----	----	----	----	----
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	----	----	----	----	----
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	<0.050	----	----	----	----	----
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	---	---	---	---
(Matrix: Water)										
					Client sampling date / time	20-Apr-2024 15:45	---	---	---	---
Analyte					CAS Number	Method/Lab	LOR	Unit	YL2400310-006	-----
									Result	---
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	<0.50	---	---	---	---	---
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	---	---	---	---	---
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	---	---	---	---	---
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	<0.0000010	---	---	---	---	---
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	<0.0000050	---	---	---	---	---
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	---	---	---	---	---
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	---	---	---	---	---
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	---	---	---	---	---
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	<0.0000010	---	---	---	---	---
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	<0.000010	---	---	---	---	---
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	<0.000010	---	---	---	---	---
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00029 ^{RRV}	---	---	---	---	---
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	<0.000010	---	---	---	---	---
Dissolved mercury filtration location	---	EP509-L/VA	-	-	Field	---	---	---	---	---

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2400310	Page	: 1 of 29
Amendment	: 2		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 22-Apr-2024 09:00
PO	: PO-17852	Issue Date	: 09-Jul-2024 12:06
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-1	E298	20-Apr-2024	23-Apr-2024	28 days	3 days	✓	23-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-2	E298	20-Apr-2024	23-Apr-2024	28 days	3 days	✓	23-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-3	E298	20-Apr-2024	23-Apr-2024	28 days	3 days	✓	23-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-4	E298	20-Apr-2024	23-Apr-2024	28 days	3 days	✓	23-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-5	E298	20-Apr-2024	23-Apr-2024	28 days	3 days	✓	23-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FB	E298	20-Apr-2024	23-Apr-2024	28 days	3 days	✓	23-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-2	E235.Br-L	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-3	E235.Br-L	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-5	E235.Br-L	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FB	E235.Br-L	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-1	E235.Br-L	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-4	E235.Br-L	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-2	E235.Cl	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-3	E235.Cl	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-5	E235.Cl	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB	E235.Cl	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-1	E235.Cl	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-4	E235.Cl	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-1	E378-U	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	25-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-2	E378-U	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	25-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-3	E378-U	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	25-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-4	E378-U	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	25-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-5	E378-U	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	25-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FB	E378-U	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	25-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-2	E235.F	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-3	E235.F	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-5	E235.F	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB	E235.F	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-1	E235.F	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-4	E235.F	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO3-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✗ EHT	24-Apr-2024	3 days	4 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO3-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✗ EHT	24-Apr-2024	3 days	4 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO3-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✗ EHT	24-Apr-2024	3 days	4 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO3-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✗ EHT	24-Apr-2024	3 days	4 days	✗ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO3-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	24-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB	E235.NO3-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	24-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO2-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	24-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO2-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	24-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO2-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	24-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO2-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	24-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO2-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	24-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB	E235.NO2-L	20-Apr-2024	24-Apr-2024	3 days	4 days	✖ EHT	24-Apr-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-1	E392	20-Apr-2024	----	----	----		28-Apr-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-2	E392	20-Apr-2024	----	----	----		28-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-3	E392	20-Apr-2024	----	----	----		28-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-4	E392	20-Apr-2024	----	----	----		28-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-5	E392	20-Apr-2024	----	----	----		28-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FB	E392	20-Apr-2024	----	----	----		28-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-2	E235.SO4	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-3	E235.SO4	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-5	E235.SO4	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FB	E235.SO4	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-1	E235.SO4	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-4	E235.SO4	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E375-U	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E375-U	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-3	E375-U	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-4	E375-U	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-5	E375-U	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FB	E375-U	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E318	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E318	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E318	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E318	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E318	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FB	E318	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	24-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-1	E372-S	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-2	E372-S	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-3	E372-S	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-4	E372-S	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-5	E372-S	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FB	E372-S	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E339	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E339	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E339	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E339	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E339	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E339	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E333	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E333	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E333	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E333	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E333	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E333	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E336	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E336	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E336	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E336	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E336	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E336	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	24-Apr-2024	14 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-1	E509-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-2	E509-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-3	E509-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-4	E509-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-5	E509-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FB	E509-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-1	E465	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-2	E465	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-3	E465	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-4	E465	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-5	E465	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FB	E465	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E358-L	20-Apr-2024	26-Apr-2024	28 days	6 days	✓	26-Apr-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E358-L	20-Apr-2024	26-Apr-2024	28 days	6 days	✓	26-Apr-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-3	E358-L	20-Apr-2024	26-Apr-2024	28 days	6 days	✓	26-Apr-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-4	E358-L	20-Apr-2024	26-Apr-2024	28 days	6 days	✓	26-Apr-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-5	E358-L	20-Apr-2024	26-Apr-2024	28 days	6 days	✓	26-Apr-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FB	E358-L	20-Apr-2024	26-Apr-2024	28 days	6 days	✓	26-Apr-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E355-L	20-Apr-2024	27-Apr-2024	28 days	7 days	✓	27-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E355-L	20-Apr-2024	27-Apr-2024	28 days	7 days	✓	27-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E355-L	20-Apr-2024	27-Apr-2024	28 days	7 days	✓	27-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E355-L	20-Apr-2024	27-Apr-2024	28 days	7 days	✓	27-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E355-L	20-Apr-2024	27-Apr-2024	28 days	7 days	✓	27-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB	E355-L	20-Apr-2024	27-Apr-2024	28 days	7 days	✓	27-Apr-2024	28 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-1	E290	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-2	E290	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-3	E290	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-4	E290	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-5	E290	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FB	E290	20-Apr-2024	24-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-1	E100	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-2	E100	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-3	E100	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-4	E100	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-32-5	E100	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE FB	E100	20-Apr-2024	24-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE BRP-32-3	E108	20-Apr-2024	24-Apr-2024	0.25 hrs	101 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	111 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE FB	E108	20-Apr-2024	24-Apr-2024	0.25 hrs	101 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	111 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-2	E108	20-Apr-2024	24-Apr-2024	0.25 hrs	102 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	113 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-5	E108	20-Apr-2024	24-Apr-2024	0.25 hrs	104 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	114 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-4	E108	20-Apr-2024	24-Apr-2024	0.25 hrs	106 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	116 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-1	E108	20-Apr-2024	24-Apr-2024	0.25 hrs	107 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	118 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-2	E162	20-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-3	E162	20-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FB	E162	20-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-1	E162	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-4	E162	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-5	E162	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-2	E160	20-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-3	E160	20-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-5	E160	20-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FB	E160	20-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓

Page : 19 of 29
 Work Order : YL2400310 Amendment 2
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-1	E160	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-4	E160	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-1	E121	20-Apr-2024	----	----	----		01-May-2024	3 days	11 days	✗ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-2	E121	20-Apr-2024	----	----	----		01-May-2024	3 days	11 days	✗ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-3	E121	20-Apr-2024	----	----	----		01-May-2024	3 days	11 days	✗ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-4	E121	20-Apr-2024	----	----	----		01-May-2024	3 days	11 days	✗ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-5	E121	20-Apr-2024	----	----	----		01-May-2024	3 days	11 days	✗ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FB	E121	20-Apr-2024	----	----	----		01-May-2024	3 days	11 days	✗ EHT
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-1	E466	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-2	E466	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-3	E466	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-4	E466	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-5	E466	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FB	E466	20-Apr-2024	26-Apr-2024	180 days	6 days	✓	29-Apr-2024	180 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-1	E508-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-2	E508-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-3	E508-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-4	E508-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-5	E508-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FB	E508-L	20-Apr-2024	25-Apr-2024	28 days	5 days	✓	25-Apr-2024	28 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-1	E395	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-2	E395	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-3	E395	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-4	E395	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-5	E395	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FB	E395	20-Apr-2024	----	----	----		26-Apr-2024	7 days	6 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1415547	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1415540	1	17	5.8	5.0	✓
Conductivity in Water	E100	1415549	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	2	24	8.3	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416249	1	13	7.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1418511	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1415539	1	17	5.8	5.0	✓
Free Cyanide	E339	1414899	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	1	19	5.2	5.0	✓
pH by Meter	E108	1415548	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1420098	2	27	7.4	5.0	✓
Sulfate in Water by IC	E235.SO4	1415536	1	17	5.8	5.0	✓
TDS by Gravimetry	E162	1417731	1	8	12.5	5.0	✓
Total Cyanide	E333	1414900	1	17	5.8	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413262	1	13	7.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416861	1	9	11.1	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414584	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1417990	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1417738	1	8	12.5	5.0	✓
Turbidity by Nephelometry	E121	1424870	2	31	6.4	5.0	✓
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1415547	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1415540	1	17	5.8	5.0	✓
Conductivity in Water	E100	1415549	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	2	24	8.3	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416249	1	13	7.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1418511	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	1	17	5.8	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	1	19	5.2	5.0	✔
pH by Meter	E108	1415548	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	2	27	7.4	5.0	✔
Sulfate in Water by IC	E235.SO4	1415536	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1417731	1	8	12.5	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413262	1	13	7.6	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416861	1	9	11.1	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414584	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1417990	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1417738	1	8	12.5	5.0	✔
Turbidity by Nephelometry	E121	1424870	2	31	6.4	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1415547	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1415540	1	17	5.8	5.0	✔
Conductivity in Water	E100	1415549	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	2	24	8.3	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416249	1	13	7.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1418511	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	1	17	5.8	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	2	27	7.4	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1415536	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1417731	1	8	12.5	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413262	1	13	7.6	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416861	1	9	11.1	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414584	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1417990	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1417738	1	8	12.5	5.0	✔
Turbidity by Nephelometry	E121	1424870	2	31	6.4	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1413343	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415541	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1415540	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1416546	2	24	8.3	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416249	1	13	7.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1418511	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415535	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1415539	1	17	5.8	5.0	✔
Free Cyanide	E339	1414899	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415537	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415538	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1420098	2	27	7.4	5.0	✔
Sulfate in Water by IC	E235.SO4	1415536	1	17	5.8	5.0	✔
Total Cyanide	E333	1414900	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1414585	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1413262	1	13	7.6	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1416861	1	9	11.1	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416246	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1419861	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1414584	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1417990	1	20	5.0	5.0	✔
WAD Cyanide	E336	1414898	1	17	5.8	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Vancouver	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Vancouver	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Vancouver	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 29 of 29
 Work Order : YL2400310 Amendment 2
 Client : B2Gold Back River Corp.
 Project : 22567626



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2400310	Page	: 1 of 21
Amendment	: 2		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 22-Apr-2024 09:00
PO	: PO-17852	Date Analysis Commenced	: 23-Apr-2024
C-O-C number	: ----	Issue Date	: 09-Jul-2024 12:05
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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Page : 2 of 21
Work Order : YL2400310 Amendment 2
Client : B2Gold Back River Corp.
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1415547)											
YL2400308-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	16.9	16.9	0.00%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	16.9	16.9	0.00%	20%	----
Physical Tests (QC Lot: 1415548)											
YL2400308-003	Anonymous	pH	----	E108	0.10	pH units	7.48	7.52	0.533%	4%	----
Physical Tests (QC Lot: 1415549)											
YL2400308-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	54.7	54.3	0.734%	10%	----
Physical Tests (QC Lot: 1417731)											
YL2400309-005	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	139	151	8.50%	20%	----
Physical Tests (QC Lot: 1417738)											
YL2400309-005	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1424870)											
VA24A8754-001	Anonymous	Turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1424871)											
YL2400310-002	BRP-32-2	Turbidity	----	E121	0.10	NTU	0.15	0.16	0.01	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1413262)											
YL2400308-005	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.356	0.328	0.027	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1413343)											
YL2400310-001	BRP-32-1	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.102	0.103	1.56%	20%	----
Anions and Nutrients (QC Lot: 1414584)											
YL2400310-001	BRP-32-1	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0015	0.0017	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1414585)											
EO2402927-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415535)											
VA24A8752-014	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415536)											
VA24A8752-014	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	45.9	45.8	0.195%	20%	----

Page : 4 of 21
 Work Order : YL2400310 Amendment 2
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1415537)											
VA24A8752-014	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415538)											
VA24A8752-014	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415539)											
VA24A8752-014	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.126	0.120	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415540)											
VA24A8752-014	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	4.81	4.80	0.008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415541)											
VA24A8752-014	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1420098)											
VA24A8695-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	3.03	3.07	0.04	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1420099)											
YL2400310-002	BRP-32-2	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	2.11	2.08	0.02	Diff <2x LOR	----
Cyanides (QC Lot: 1414898)											
YL2400308-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1414899)											
YL2400308-001	Anonymous	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1414900)											
YL2400308-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1418511)											
FC2400937-005	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	14.7	14.5	1.33%	20%	----
Organic / Inorganic Carbon (QC Lot: 1419861)											
EO2402881-003	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	25.4	24.9	2.21%	20%	----
Total Sulfides (QC Lot: 1417990)											
CG2404912-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0085	0.0087	0.0002	Diff <2x LOR	----
Total Metals (QC Lot: 1416861)											
YL2400309-004	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	1.06	1.03	0.03	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1416246)											
YL2400308-001	Anonymous	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00245	0.00233	5.23%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000132	0.0000133	0.00000008	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000241	0.000236	2.06%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00719	0.00714	0.682%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1416246) - continued											
YL2400308-001	Anonymous	Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000027	<0.0000025	0.0000002	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	3.77	3.74	0.624%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000050	<0.0000050	0.00000001	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000048	0.000047	0.000001	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000739	0.0000758	2.55%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.000761	0.000757	0.530%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0200	0.0202	1.08%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000021	0.000022	0.0000004	Diff <2x LOR	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000461	0.0000442	0.0000018	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00073	0.00072	0.000006	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.88	2.84	1.50%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.0116	0.0115	0.768%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00155	0.00151	2.24%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.577	0.582	0.903%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00148	0.00148	0.0373%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000039	0.000037	0.000002	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.547	0.541	1.06%	20%	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	1.03	1.02	0.651%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0128	0.0126	0.794%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	2.57	2.59	0.02	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000011	<0.0000010	0.00000008	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1416246) - continued											
YL2400308-001	Anonymous	Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000030	0.0000032	0.0000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000015	0.000013	0.000002	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000014	0.000014	0.0000002	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00084	0.00082	0.00003	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000021	0.000021	0.0000003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1416249)											
YL2400310-001	BRP-32-1	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0129	0.0129	0.292%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000168	0.0000157	0.0000011	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000270	0.000269	0.164%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.0156	0.0154	0.755%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000034	0.0000039	0.0000005	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000118	0.0000115	0.0000002	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	8.28	8.24	0.435%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000144	0.0000145	0.00000010	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000099	0.000098	0.0000009	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000116	0.000113	3.04%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00190	0.00194	2.03%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0100	0.00989	1.06%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000193	0.000197	1.94%	20%	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00132	0.00132	0.193%	20%	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	4.22	4.12	2.24%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00470	0.00476	1.23%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000020	0.000021	0.0000003	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00723	0.00719	0.592%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.785	0.790	0.565%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00209	0.00205	1.82%	20%	----

Page : 7 of 21
 Work Order : YL2400310 Amendment 2
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1416249) - continued											
YL2400310-001	BRP-32-1	Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000040	0.000034	0.000006	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	1.02	0.998	2.12%	20%	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.39	1.37	1.29%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0445	0.0447	0.519%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	6.30	6.21	1.47%	20%	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000022	0.0000021	0.0000002	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000140	0.0000100	0.0000040	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000077	0.0000078	0.00000003	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000030	0.000030	0.000000006	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000096	0.000093	0.000003	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00193	0.00188	2.82%	20%	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000069	0.000069	0.00000008	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1416546)											
YL2400298-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.61	0.60	0.02	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1416897)											
YL2400310-003	BRP-32-3	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.56	0.53	0.04	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1415547)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1415549)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1417731)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1417738)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1424870)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1424871)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1413262)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1413343)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1414584)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1414585)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415535)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415536)						
Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1415537)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1415538)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1415539)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1415539) - continued						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1415540)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1415541)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1420098)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1420099)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1414898)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1414899)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1414900)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1418511)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1419861)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1417990)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1416861)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1416246)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued						
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1416249)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1416249) - continued						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1416249) - continued						
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1416546)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 1416897)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1415547)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	103	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	114	85.0	115	----
Physical Tests (QCLot: 1415548)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1415549)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	98.0	90.0	110	----
Physical Tests (QCLot: 1417731)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1417738)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	96.4	85.0	115	----
Physical Tests (QCLot: 1424870)									
Turbidity	----	E121	0.1	NTU	200 NTU	100	85.0	115	----
Physical Tests (QCLot: 1424871)									
Turbidity	----	E121	0.1	NTU	200 NTU	100	85.0	115	----
Anions and Nutrients (QCLot: 1413262)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1413343)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1414584)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	105	80.0	120	----
Anions and Nutrients (QCLot: 1414585)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 1415535)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 1415536)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1415537)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1415538)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 1415539)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1415539) - continued									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	93.2	90.0	110	----
Anions and Nutrients (QCLot: 1415540)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 1415541)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.3	85.0	115	----
Anions and Nutrients (QCLot: 1420098)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1420099)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Cyanides (QCLot: 1414898)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	99.6	80.0	120	----
Cyanides (QCLot: 1414899)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	92.4	80.0	120	----
Cyanides (QCLot: 1414900)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	94.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1418511)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1419861)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	107	80.0	120	----
Total Sulfides (QCLot: 1417990)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	90.8	80.0	120	----
Total Metals (QCLot: 1416861)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	94.7	80.0	120	----
Total Metals (Undigested) (QCLot: 1416246)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	102	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	102	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	95.1	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	98.3	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	95.0	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	98.6	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued									
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	100	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	99.0	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	95.5	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	93.6	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	93.3	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	99.7	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	97.9	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	99.8	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	95.9	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	98.4	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	96.2	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	97.9	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	96.1	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	97.7	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	104	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	97.0	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	96.7	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	100	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	109	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	92.4	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	98.2	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	104	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	98.2	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	101	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	98.2	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	97.9	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	96.7	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	100	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	96.4	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	97.9	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1416246) - continued									
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	98.2	80.0	120	----
Dissolved Metals (QCLot: 1416249)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	99.5	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	99.8	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	99.0	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	100	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	97.6	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	93.8	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	98.1	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	97.2	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	97.6	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	93.8	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	91.1	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	92.0	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	97.7	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	97.1	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	95.8	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	96.7	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	99.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	100	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	96.1	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	94.9	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	94.8	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	93.4	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	104	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	93.7	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	96.3	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	100	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	110	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	94.0	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	95.9	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	106	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1416249) - continued									
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	98.4	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	98.1	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	93.7	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	99.4	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	99.0	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	97.1	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	95.0	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	95.0	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	99.3	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	95.9	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	96.1	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	91.0	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	93.6	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Laboratory sample ID					Matrix Spike (MS) Report				
					Spike		Recovery (%)	Recovery Limits (%)	
					Concentration	Target	MS	Low	High
Client sample ID	Analyte	CAS Number	Method						Qualifier
Anions and Nutrients (QCLot: 1413262)									
YL2400309-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.79 mg/L	2.5 mg/L	112	70.0	130
Anions and Nutrients (QCLot: 1413343)									
YL2400310-001	BRP-32-1	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125
Anions and Nutrients (QCLot: 1414584)									
YL2400310-002	BRP-32-2	Phosphorus, total	7723-14-0	E372-S	0.0659 mg/L	0.067 mg/L	98.4	70.0	130
Anions and Nutrients (QCLot: 1414585)									
YL2400308-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0727 mg/L	0.067 mg/L	108	70.0	130
Anions and Nutrients (QCLot: 1415535)									
YL2400308-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0310 mg/L	0.03 mg/L	103	70.0	130
Anions and Nutrients (QCLot: 1415536)									
YL2400308-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	103 mg/L	100 mg/L	103	75.0	125
Anions and Nutrients (QCLot: 1415537)									
YL2400308-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.56 mg/L	2.5 mg/L	102	75.0	125
Anions and Nutrients (QCLot: 1415538)									
YL2400308-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.501 mg/L	0.5 mg/L	100	75.0	125
Anions and Nutrients (QCLot: 1415539)									
YL2400308-002	Anonymous	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125
Anions and Nutrients (QCLot: 1415540)									
YL2400308-002	Anonymous	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125
Anions and Nutrients (QCLot: 1415541)									
YL2400308-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.500 mg/L	0.5 mg/L	100	75.0	125
Anions and Nutrients (QCLot: 1420098)									
VA24A8751-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.0 mg/L	10 mg/L	100	75.0	125
Anions and Nutrients (QCLot: 1420099)									
YL2400310-003	BRP-32-3	Silicate (as SiO2)	7631-86-9	E392	10.4 mg/L	10 mg/L	104	75.0	125
Cyanides (QCLot: 1414898)									
YL2400308-002	Anonymous	Cyanide, weak acid dissociable	----	E336	0.667 mg/L	0.625 mg/L	107	75.0	125
Cyanides (QCLot: 1414899)									
YL2400308-002	Anonymous	Cyanide, free	----	E339	0.610 mg/L	0.625 mg/L	97.6	75.0	125
Cyanides (QCLot: 1414900)									



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 1414900) - continued										
YL2400308-002	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	1.28 mg/L	1.25 mg/L	102	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1418511)										
FC2400937-005	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1419861)										
EO2402881-003	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1417990)										
CG2404912-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.217 mg/L	0.2 mg/L	108	75.0	125	----
Total Metals (QCLot: 1416861)										
YL2400309-005	Anonymous	Mercury, total	7439-97-6	E508-L	4.75 ng/L	5 ng/L	95.0	70.0	130	----
Total Metals (Undigested) (QCLot: 1416246)										
YL2400308-002	Anonymous	Aluminum, total	7429-90-5	E466	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Barium, total	7440-39-3	E466	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00950 mg/L	0.01 mg/L	95.0	70.0	130	----
		Boron, total	7440-42-8	E466	0.0946 mg/L	0.1 mg/L	94.6	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		Calcium, total	7440-70-2	E466	3.75 mg/L	4 mg/L	93.8	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00976 mg/L	0.01 mg/L	97.6	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0373 mg/L	0.04 mg/L	93.4	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0186 mg/L	0.02 mg/L	93.3	70.0	130	----
		Copper, total	7440-50-8	E466	0.0184 mg/L	0.02 mg/L	92.3	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00251 mg/L	0.002 mg/L	100	70.0	130	----
		Iron, total	7439-89-6	E466	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00248 mg/L	0.002 mg/L	99.0	70.0	130	----
		Lead, total	7439-92-1	E466	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0929 mg/L	0.1 mg/L	92.9	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00254 mg/L	0.002 mg/L	101	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.74 mg/L	10 mg/L	97.4	70.0	130	----
		Potassium, total	7440-09-7	E466	3.74 mg/L	4 mg/L	93.6	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00265 mg/L	0.002 mg/L	106	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E466	9.33 mg/L	10 mg/L	93.3	70.0	130	----
		Silver, total	7440-22-4	E466	0.00364 mg/L	0.004 mg/L	91.0	70.0	130	----
		Sodium, total	7440-23-5	E466	1.87 mg/L	2 mg/L	93.4	70.0	130	----

Page : 20 of 21
 Work Order : YL2400310 Amendment 2
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water

Sub-Matrix: Water					Matrix Spike (MS) Report						
					Spike		Recovery (%)	Recovery Limits (%)			
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier	
Total Metals (Undigested) (QCLot: 1416246) - continued											
YL2400308-002	Anonymous	Strontium, total	7440-24-6	E466	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----	
		Sulfur, total	7704-34-9	E466	19.0 mg/L	20 mg/L	95.2	70.0	130	----	
		Tantalum, total	7440-25-7	E466	0.00254 mg/L	0.002 mg/L	102	70.0	130	----	
		Tellurium, total	13494-80-9	E466	0.0389 mg/L	0.04 mg/L	97.4	70.0	130	----	
		Thallium, total	7440-28-0	E466	0.00387 mg/L	0.004 mg/L	96.7	70.0	130	----	
		Thorium, total	7440-29-1	E466	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----	
		Tin, total	7440-31-5	E466	0.0181 mg/L	0.02 mg/L	90.7	70.0	130	----	
		Titanium, total	7440-32-6	E466	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----	
		Tungsten, total	7440-33-7	E466	0.0180 mg/L	0.02 mg/L	89.9	70.0	130	----	
		Uranium, total	7440-61-1	E466	0.00374 mg/L	0.004 mg/L	93.4	70.0	130	----	
		Vanadium, total	7440-62-2	E466	0.0944 mg/L	0.1 mg/L	94.4	70.0	130	----	
		Yttrium, total	7440-65-5	E466	0.00258 mg/L	0.002 mg/L	103	70.0	130	----	
		Zinc, total	7440-66-6	E466	0.401 mg/L	0.4 mg/L	100	70.0	130	----	
	Zirconium, total	7440-67-7	E466	0.0375 mg/L	0.04 mg/L	93.8	70.0	130	----		
Dissolved Metals (QCLot: 1416249)											
YL2400310-002	BRP-32-2	Aluminum, dissolved	7429-90-5	E465	0.193 mg/L	0.2 mg/L	96.3	70.0	130	----	
		Antimony, dissolved	7440-36-0	E465	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----	
		Arsenic, dissolved	7440-38-2	E465	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----	
		Barium, dissolved	7440-39-3	E465	0.0182 mg/L	0.02 mg/L	91.1	70.0	130	----	
		Beryllium, dissolved	7440-41-7	E465	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----	
		Bismuth, dissolved	7440-69-9	E465	0.00913 mg/L	0.01 mg/L	91.3	70.0	130	----	
		Boron, dissolved	7440-42-8	E465	0.0930 mg/L	0.1 mg/L	93.0	70.0	130	----	
		Cadmium, dissolved	7440-43-9	E465	0.00378 mg/L	0.004 mg/L	94.6	70.0	130	----	
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----	
		Cesium, dissolved	7440-46-2	E465	0.00932 mg/L	0.01 mg/L	93.2	70.0	130	----	
		Chromium, dissolved	7440-47-3	E465	0.0366 mg/L	0.04 mg/L	91.6	70.0	130	----	
		Cobalt, dissolved	7440-48-4	E465	0.0181 mg/L	0.02 mg/L	90.4	70.0	130	----	
		Copper, dissolved	7440-50-8	E465	0.0181 mg/L	0.02 mg/L	90.4	70.0	130	----	
		Gallium, dissolved	7440-55-3	E465	0.00256 mg/L	0.002 mg/L	102	70.0	130	----	
		Iron, dissolved	7439-89-6	E465	1.87 mg/L	2 mg/L	93.5	70.0	130	----	
		Lanthanum, dissolved	7439-91-0	E465	0.00247 mg/L	0.002 mg/L	98.9	70.0	130	----	
		Lead, dissolved	7439-92-1	E465	0.0182 mg/L	0.02 mg/L	90.8	70.0	130	----	
		Lithium, dissolved	7439-93-2	E465	0.0958 mg/L	0.1 mg/L	95.8	70.0	130	----	
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----	
		Manganese, dissolved	7439-96-5	E465	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----	
		Molybdenum, dissolved	7439-98-7	E465	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----	
		Nickel, dissolved	7440-02-0	E465	0.0373 mg/L	0.04 mg/L	93.2	70.0	130	----	
		Niobium, dissolved	7440-03-1	E465	0.00243 mg/L	0.002 mg/L	97.3	70.0	130	----	
		Phosphorus, dissolved	7723-14-0	E465	9.88 mg/L	10 mg/L	98.8	70.0	130	----	
		Potassium, dissolved	7440-09-7	E465	3.61 mg/L	4 mg/L	90.2	70.0	130	----	
		Rhenium, dissolved	7440-15-5	E465	0.00265 mg/L	0.002 mg/L	106	70.0	130	----	
		Rubidium, dissolved	7440-17-7	E465	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----	
		Selenium, dissolved	7782-49-2	E465	0.0420 mg/L	0.04 mg/L	105	70.0	130	----	
			Silicon, dissolved	7440-21-3	E465	9.17 mg/L	10 mg/L	91.7	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1416249) - continued										
YL2400310-002	BRP-32-2	Silver, dissolved	7440-22-4	E465	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.86 mg/L	2 mg/L	92.9	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	18.8 mg/L	20 mg/L	93.8	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00264 mg/L	0.002 mg/L	106	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0398 mg/L	0.04 mg/L	99.4	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00365 mg/L	0.004 mg/L	91.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0380 mg/L	0.04 mg/L	94.9	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0184 mg/L	0.02 mg/L	91.9	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00366 mg/L	0.004 mg/L	91.6	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0926 mg/L	0.1 mg/L	92.6	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00258 mg/L	0.002 mg/L	103	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.392 mg/L	0.4 mg/L	98.0	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0375 mg/L	0.04 mg/L	93.8	70.0	130	----
Dissolved Metals (QCLot: 1416546)										
YL2400298-002	Anonymous	Mercury, dissolved	7439-97-6	E509-L	4.40 ng/L	5 ng/L	88.1	70.0	130	----
Dissolved Metals (QCLot: 1416897)										
YL2400310-004	BRP-32-4	Mercury, dissolved	7439-97-6	E509-L	4.44 ng/L	5 ng/L	88.7	70.0	130	----



CHAIN OF CUSTODY
ALS Laboratory

Only custody

RECEIVED BY: A. Cordina

DATE/TIME: 21 Apr 24 7:30

RECEIVED BY: JF

DATE/TIME: APR 22/24 9:30

RECEIVED BY:

CLIENT: BCCM
PROJECT: 2287205 - Black River Project
SITE: BCCM - Grange Lake
PURCHASE ORDER NO.: Order number: TL33-SAB100-001 Date: 23-Jun-2023
PROJECT MANAGER: Brian Keels
SAMPLE: Any Cardinal
SPECIAL REPORTS TO: amanda.standish@bep.com, brian.keels@bep.com, JH.GAL.EQUUS@bep.com
SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:
(Standard TAT may be longer for some tests - e.g. Virus (Time Critical))

DATE/TIME: APR 22/24 9:30
FOR LABORATORY USE ONLY (Contd.)

DATE/TIME: APR 22/24 9:30
FOR LABORATORY USE ONLY (Contd.)

CONTACT PH: 087 433 6081
SAMPLE MOBILE: 087 433 6081
EMAIL: brian.keels@bep.com, JH.GAL.EQUUS@bep.com
EMAIL INVOICE TO: mbeane@bep.com

DATE/TIME: APR 22/24 9:30
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CERTIFICATE OF ANALYSIS

Work Order : **YL2400317**
Client : **Sabina Gold & Silver Corporation**
Contact : Merle Keefe
Address : 375 - 555 Burrard St. Box 220, Bentall 2
Vancouver BC Canada V7X 1M7
Telephone : 604 240 6619
Project : 22567626
PO : ----
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : YL23-SABI100-001
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 12
Laboratory : ALS Environmental - Yellowknife
Account Manager : Oliver Gregg
Address : 314 Old Airport Road, Unit 116
Yellowknife NT Canada X1A 3T3
Telephone : 1 867 445 7143
Date Samples Received : 23-Apr-2024 09:21
Date Analysis Commenced : 24-Apr-2024
Issue Date : 06-May-2024 09:44

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Christopher Li	Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Ilmaz Badbezanchi	Supervisor - Metals Prep & Mercury	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kim Jensen	Department Manager - Metals	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Shruti Mudliar	Lab Analyst	Inorganics, Edmonton, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.



Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	GLCB-T	GLCB-M	GLCB-B	GLWB-T	GLWB-M
Client sampling date / time					21-Apr-2024 09:00	21-Apr-2024 09:30	21-Apr-2024 10:00	21-Apr-2024 11:00	21-Apr-2024 11:30
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-001	YL2400317-002	YL2400317-003	YL2400317-004	YL2400317-005
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	8.0	7.6	7.5	5.2	5.8
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	8.0	7.6	7.5	5.2	5.8
Conductivity	----	E100/VA	2.0	µS/cm	100	96.0	95.4	187	185
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	37.4	36.1	35.7	69.3	69.1
pH	----	E108/VA	0.10	pH units	6.71	6.66	6.67	6.46	6.47
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	64	60	68	127	127
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	60.0	55.7	55.2	104	103
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity	----	E121/VA	0.10	NTU	0.13	0.11	0.15	0.17	0.17
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0859	0.0499	0.0505	0.312	0.296
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.071	0.066	0.061	0.186	0.187
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	9.08	8.64	8.65	25.6	24.8
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.022	<0.020	<0.020	<0.020	0.021
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.381	0.243	0.276	0.633	0.534
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.648	0.604	0.602	2.26	2.14
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.0923	0.114	0.120	0.0603	0.0714
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0035	0.0020	0.0023	0.0043	0.0030
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0027	0.0014	0.0016	0.0020	0.0015
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	2.01	2.03	2.02	3.37	3.36
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	17.6	16.7	16.6	27.0	27.1
Cyanides									
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050



Analytical Results

Sub-Matrix: Water					Client sample ID	GLCB-T	GLCB-M	GLCB-B	GLWB-T	GLWB-M
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-001	YL2400317-002	YL2400317-003	YL2400317-004	YL2400317-005	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	7.82	5.83	5.53	6.18	6.62	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	8.07	5.78	5.54	6.39	6.42	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	1.31	0.76	0.78	1.13	1.03	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0151	0.0146	0.0446	0.0430	0.0403	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000238	0.0000188	0.0000155	0.0000193	0.0000169	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000284	0.000268	0.000287	0.000289	0.000302	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0155	0.0153	0.0155	0.0332	0.0324	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000038	0.0000035	0.0000056	0.0000144	0.0000142	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000116	0.0000092	0.0000111	0.0000639	0.0000527	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	7.70	7.57	7.47	16.1	15.8	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000160	0.0000152	0.0000166	0.0000326	0.0000314	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000108	0.000098	0.000138	0.000140	0.000136	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000126	0.000133	0.000229	0.00189	0.00175	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00221	0.00200	0.00217	0.00310	0.00293	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0185	0.0160	0.0726	0.0229	0.0200	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000212	0.000204	0.000556	0.000712	0.000679	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000242	0.0000175	0.0000423	0.0000209	0.0000140	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00127	0.00122	0.00118	0.00198	0.00194	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	5.18	5.03	5.00	8.40	8.46	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00441	0.00584	0.00900	0.0296	0.0282	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLCB-T	GLCB-M	GLCB-B	GLWB-T	GLWB-M
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-001	YL2400317-002	YL2400317-003	YL2400317-004	YL2400317-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000018	0.000018	0.000017	0.000012	0.000013	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00711	0.00701	0.00724	0.0188	0.0183	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.793	0.765	0.759	1.15	1.16	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00208	0.00200	0.00196	0.00313	0.00311	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000039	0.000049	0.000041	0.000069	0.000051	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.02	1.02	1.04	1.72	1.72	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.40	1.39	1.29	1.98	1.99	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0436	0.0422	0.0420	0.103	0.101	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	6.02	5.89	5.59	9.13	9.25	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000021	0.0000024	0.0000024	0.0000054	0.0000050	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000099	0.0000187	0.0000130	0.0000140	0.0000202	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000132	0.000102	0.000612	0.000152	0.000122	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000085	0.0000081	0.0000142	0.0000122	0.0000123	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000041	0.000034	0.000073	0.000039	0.000038	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000106	0.000101	0.000226	0.000316	0.000305	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00225	0.00207	0.00246	0.00870	0.00803	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000078	0.000072	0.000075	0.000117	0.000121	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0128	0.0124	0.0118	0.0405	0.0382	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000168	0.0000142	0.0000161	0.0000163	0.0000165	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000272	0.000262	0.000261	0.000289	0.000292	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0151	0.0149	0.0152	0.0327	0.0321	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLCB-T	GLCB-M	GLCB-B	GLWB-T	GLWB-M
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-001	YL2400317-002	YL2400317-003	YL2400317-004	YL2400317-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000033	0.0000030	0.0000030	0.0000147	0.0000146	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000114	0.0000098	0.0000105	0.0000667	0.0000640	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	8.10	7.89	7.71	16.6	16.6	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000152	0.0000144	0.0000138	0.0000305	0.0000307	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000096	0.000094	0.000092	0.000133	0.000130	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000108	0.000114	0.000147	0.00183	0.00176	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00212	0.00180	0.00179	0.00300	0.00290	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0105	0.0102	0.0215	0.0147	0.0142	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000197	0.000191	0.000200	0.000677	0.000661	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000056	0.0000063	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00138	0.00128	0.00132	0.00220	0.00212	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	4.16	3.98	3.99	6.76	6.71	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00397	0.00496	0.00746	0.0290	0.0277	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	0.57	0.55	0.99	0.85	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000029	0.000017	0.000013	0.000011	0.000014	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00725	0.00705	0.00697	0.0192	0.0186	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.794	0.750	0.740	1.15	1.14	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00208	0.00198	0.00193	0.00315	0.00309	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000036	0.000040	0.000030	0.000077	0.000054	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.04	1.02	1.05	1.78	1.72	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.37	1.32	1.28	1.98	2.00	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0448	0.0424	0.0418	0.106	0.101	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLCB-T	GLCB-M	GLCB-B	GLWB-T	GLWB-M
(Matrix: Water)										
Client sampling date / time					21-Apr-2024 09:00	21-Apr-2024 09:30	21-Apr-2024 10:00	21-Apr-2024 11:00	21-Apr-2024 11:30	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-001	YL2400317-002	YL2400317-003	YL2400317-004	YL2400317-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	6.37	6.10	6.00	9.84	9.50	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000024	0.0000021	0.0000018	0.0000052	0.0000049	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000098	0.0000118	0.0000141	0.0000218	0.0000166	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	0.000078	0.000070	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000093	0.0000082	0.0000072	0.0000129	0.0000131	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000029	0.000029	0.000031	0.000034	0.000033	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000099	0.000095	0.000096	0.000307	0.000297	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00223	0.00224	0.00346 ^{DTC}	0.00941	0.00823	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000069	0.000068	0.000069	0.000114	0.000114	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	GLWB-B	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	21-Apr-2024 12:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-006	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	5.8	----	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	5.8	----	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	186	----	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	68.0	----	----	----	----	----
pH	----	E108/VA	0.10	pH units	6.52	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	127	----	----	----	----	----
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	103	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.16	----	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.287	----	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.191	----	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	24.8	----	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.021	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.599	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	2.12	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.0712	----	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0039	----	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0018	----	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	3.35	----	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	27.0	----	----	----	----	----
Cyanides										
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	GLWB-B	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	21-Apr-2024 12:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-006	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Cyanides										
Cyanide, weak acid dissociable	---	E336/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	---	E358-L/EO	0.50	mg/L	6.56	----	----	----	----	----
Carbon, total organic [TOC]	---	E355-L/EO	0.50	mg/L	6.49	----	----	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----	----
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	10.6	----	----	----	----	----
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0682	----	----	----	----	----
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000180	----	----	----	----	----
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000387	----	----	----	----	----
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0326	----	----	----	----	----
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000194	----	----	----	----	----
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000688	----	----	----	----	----
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	15.9	----	----	----	----	----
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000323	----	----	----	----	----
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000170	----	----	----	----	----
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.00195	----	----	----	----	----
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00346	----	----	----	----	----
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0709	----	----	----	----	----
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.00112	----	----	----	----	----
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000613	----	----	----	----	----
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00209	----	----	----	----	----
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	8.56	----	----	----	----	----
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0311	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	GLWB-B	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	21-Apr-2024 12:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000014	----	----	----	----	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.0188	----	----	----	----	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	----	----	----	----	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	1.18	----	----	----	----	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00314	----	----	----	----	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000085	----	----	----	----	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.73	----	----	----	----	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	0.0000024	----	----	----	----	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	2.01	----	----	----	----	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.101	----	----	----	----	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	9.28	----	----	----	----	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000058	----	----	----	----	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000164	----	----	----	----	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000457	----	----	----	----	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000218	----	----	----	----	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000075	----	----	----	----	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000459	----	----	----	----	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00845	----	----	----	----	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000130	----	----	----	----	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0379	----	----	----	----	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000168	----	----	----	----	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000300	----	----	----	----	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0323	----	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	GLWB-B	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	21-Apr-2024 12:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-006	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000144	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000617	----	----	----	----	----
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	16.4	----	----	----	----	----
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000291	----	----	----	----	----
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000133	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.00168	----	----	----	----	----
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00287	----	----	----	----	----
Dissolved metals filtration location	----	EP465/VA	-	-	Field	----	----	----	----	----
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0142	----	----	----	----	----
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000640	----	----	----	----	----
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000060	----	----	----	----	----
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00207	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	6.57	----	----	----	----	----
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.0270	----	----	----	----	----
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.87	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000011	----	----	----	----	----
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.0182	----	----	----	----	----
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	1.13	----	----	----	----	----
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00310	----	----	----	----	----
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000072	----	----	----	----	----
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.75	----	----	----	----	----
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.97	----	----	----	----	----
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.100	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	GLWB-B	---	---	---	---
(Matrix: Water)										
					Client sampling date / time	21-Apr-2024 12:00	---	---	---	---
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400317-006	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	9.67	---	---	---	---	---
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	---	---	---	---	---
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	---	---	---	---	---
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000054	---	---	---	---	---
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000150	---	---	---	---	---
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	---	---	---	---	---
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000085	---	---	---	---	---
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	---	---	---	---	---
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000112	---	---	---	---	---
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000034	---	---	---	---	---
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000295	---	---	---	---	---
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00827	---	---	---	---	---
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000115	---	---	---	---	---
Dissolved mercury filtration location	---	EP509-L/VA	-	-	Field	---	---	---	---	---

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2400317	Page	: 1 of 30
Client	: Sabina Gold & Silver Corporation	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 23-Apr-2024 09:21
PO	: ----	Issue Date	: 06-May-2024 09:45
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Matrix Spike outliers occur.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Page : 3 of 30
Work Order : YL2400317
Client : Sabina Gold & Silver Corporation
Project : 22567626



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Total Metals (Undigested)	QC-1416247-002	----	Magnesium, total	7439-95-4	E466	125 % ^{MES}	80.0-120%	Recovery greater than upper control limit

Result Qualifiers

Qualifier	Description

MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLCB-B	E298	21-Apr-2024	24-Apr-2024	28 days	3 days	✓	24-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLCB-M	E298	21-Apr-2024	24-Apr-2024	28 days	3 days	✓	24-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLCB-T	E298	21-Apr-2024	24-Apr-2024	28 days	3 days	✓	24-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLWB-B	E298	21-Apr-2024	24-Apr-2024	28 days	3 days	✓	24-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLWB-M	E298	21-Apr-2024	24-Apr-2024	28 days	3 days	✓	24-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GLWB-T	E298	21-Apr-2024	24-Apr-2024	28 days	3 days	✓	24-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLCB-B	E235.Br-L	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLCB-M	E235.Br-L	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLCB-T	E235.Br-L	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLWB-B	E235.Br-L	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLWB-M	E235.Br-L	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GLWB-T	E235.Br-L	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLCB-B	E235.Cl	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLCB-M	E235.Cl	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLCB-T	E235.Cl	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLWB-B	E235.Cl	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE GLWB-M	E235.Cl	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLWB-T	E235.Cl	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLCB-B	E378-U	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLCB-M	E378-U	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLCB-T	E378-U	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLWB-B	E378-U	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLWB-M	E378-U	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GLWB-T	E378-U	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLCB-B	E235.F	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLCB-M	E235.F	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLCB-T	E235.F	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLWB-B	E235.F	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLWB-M	E235.F	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE GLWB-T	E235.F	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLCB-B	E235.NO3-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLCB-M	E235.NO3-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLCB-T	E235.NO3-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLWB-B	E235.NO3-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLWB-M	E235.NO3-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLWB-T	E235.NO3-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLCB-B	E235.NO2-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLCB-M	E235.NO2-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLCB-T	E235.NO2-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLWB-B	E235.NO2-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLWB-M	E235.NO2-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GLWB-T	E235.NO2-L	21-Apr-2024	25-Apr-2024	3 days	3 days	✓	25-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLCB-B	E392	21-Apr-2024	----	----	----		01-May-2024	28 days	10 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLCB-M	E392	21-Apr-2024	----	----	----		01-May-2024	28 days	10 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLCB-T	E392	21-Apr-2024	----	----	----		01-May-2024	28 days	10 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLWB-B	E392	21-Apr-2024	----	----	----		01-May-2024	28 days	10 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLWB-M	E392	21-Apr-2024	----	----	----		01-May-2024	28 days	10 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GLWB-T	E392	21-Apr-2024	----	----	----		01-May-2024	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLCB-B	E235.SO4	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLCB-M	E235.SO4	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLCB-T	E235.SO4	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLWB-B	E235.SO4	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLWB-M	E235.SO4	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLWB-T	E235.SO4	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLCB-B	E375-U	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLCB-M	E375-U	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLCB-T	E375-U	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLWB-B	E375-U	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLWB-M	E375-U	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GLWB-T	E375-U	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLCB-B	E318	21-Apr-2024	30-Apr-2024	28 days	9 days	✓	30-Apr-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLCB-M	E318	21-Apr-2024	30-Apr-2024	28 days	9 days	✓	30-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLCB-T	E318	21-Apr-2024	30-Apr-2024	28 days	9 days	✓	30-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLWB-B	E318	21-Apr-2024	30-Apr-2024	28 days	9 days	✓	30-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLWB-M	E318	21-Apr-2024	30-Apr-2024	28 days	9 days	✓	30-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GLWB-T	E318	21-Apr-2024	30-Apr-2024	28 days	9 days	✓	30-Apr-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLCB-B	E372-S	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLCB-M	E372-S	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLCB-T	E372-S	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLWB-B	E372-S	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓

Page : 12 of 30
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLWB-M	E372-S	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GLWB-T	E372-S	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	29-Apr-2024	28 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLCB-B	E339	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLCB-M	E339	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLCB-T	E339	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLWB-B	E339	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLWB-M	E339	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLWB-T	E339	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLCB-B	E333	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLCB-M	E333	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLCB-T	E333	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLWB-B	E333	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLWB-M	E333	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLWB-T	E333	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLCB-B	E336	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLCB-M	E336	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLCB-T	E336	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLWB-B	E336	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLWB-M	E336	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GLWB-T	E336	21-Apr-2024	30-Apr-2024	14 days	9 days	✓	30-Apr-2024	14 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) GLCB-B	E509-L	21-Apr-2024	29-Apr-2024	28 days	8 days	✓	29-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) GLCB-M	E509-L	21-Apr-2024	29-Apr-2024	28 days	8 days	✓	29-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) GLCB-T	E509-L	21-Apr-2024	29-Apr-2024	28 days	8 days	✓	29-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) GLWB-B	E509-L	21-Apr-2024	29-Apr-2024	28 days	8 days	✓	29-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) GLWB-M	E509-L	21-Apr-2024	29-Apr-2024	28 days	8 days	✓	29-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) GLWB-T	E509-L	21-Apr-2024	29-Apr-2024	28 days	8 days	✓	29-Apr-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - dissolved (lab preserved) GLCB-B	E465	21-Apr-2024	26-Apr-2024	180 days	5 days	✓	29-Apr-2024	180 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - dissolved (lab preserved) GLCB-M	E465	21-Apr-2024	26-Apr-2024	180 days	5 days	✓	29-Apr-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - dissolved (lab preserved) GLCB-T	E465	21-Apr-2024	26-Apr-2024	180 days	5 days	✓	29-Apr-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - dissolved (lab preserved) GLWB-B	E465	21-Apr-2024	26-Apr-2024	180 days	5 days	✓	29-Apr-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - dissolved (lab preserved) GLWB-M	E465	21-Apr-2024	26-Apr-2024	180 days	5 days	✓	29-Apr-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - dissolved (lab preserved) GLWB-T	E465	21-Apr-2024	26-Apr-2024	180 days	5 days	✓	29-Apr-2024	180 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLCB-T	E358-L	21-Apr-2024	26-Apr-2024	28 days	5 days	✓	26-Apr-2024	28 days	5 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLCB-B	E358-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLCB-M	E358-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLWB-B	E358-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLWB-M	E358-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GLWB-T	E358-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLCB-B	E355-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLCB-M	E355-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLCB-T	E355-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLWB-B	E355-L	21-Apr-2024	30-Apr-2024	28 days	9 days	✓	30-Apr-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLWB-M	E355-L	21-Apr-2024	30-Apr-2024	28 days	9 days	✓	30-Apr-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GLWB-T	E355-L	21-Apr-2024	30-Apr-2024	28 days	9 days	✓	30-Apr-2024	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLCB-B	E290	21-Apr-2024	25-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE GLCB-M	E290	21-Apr-2024	25-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLCB-T	E290	21-Apr-2024	25-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLWB-B	E290	21-Apr-2024	25-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLWB-M	E290	21-Apr-2024	25-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLWB-T	E290	21-Apr-2024	25-Apr-2024	14 days	4 days	✓	25-Apr-2024	14 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE GLCB-B	E100	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE GLCB-M	E100	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE GLCB-T	E100	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE GLWB-B	E100	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE GLWB-M	E100	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE GLWB-T	E100	21-Apr-2024	25-Apr-2024	28 days	4 days	✓	25-Apr-2024	28 days	4 days	✓
Physical Tests : pH by Meter										
HDPE GLWB-B	E108	21-Apr-2024	25-Apr-2024	0.25 hrs	85 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	91 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GLWB-M	E108	21-Apr-2024	25-Apr-2024	0.25 hrs	86 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	91 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GLWB-T	E108	21-Apr-2024	25-Apr-2024	0.25 hrs	86 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	92 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GLCB-B	E108	21-Apr-2024	25-Apr-2024	0.25 hrs	87 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	93 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GLCB-M	E108	21-Apr-2024	25-Apr-2024	0.25 hrs	88 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	93 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GLCB-T	E108	21-Apr-2024	25-Apr-2024	0.25 hrs	88 hrs	✗ EHTR-FM	25-Apr-2024	0.25 hrs	94 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE GLCB-B	E162	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE GLCB-M	E162	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE GLCB-T	E162	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE GLWB-B	E162	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE GLWB-M	E162	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE GLWB-T	E162	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✔
Physical Tests : TSS by Gravimetry										
HDPE GLCB-B	E160	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✔
Physical Tests : TSS by Gravimetry										
HDPE GLCB-M	E160	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✔
Physical Tests : TSS by Gravimetry										
HDPE GLCB-T	E160	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✔
Physical Tests : TSS by Gravimetry										
HDPE GLWB-B	E160	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE GLWB-M	E160	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GLWB-T	E160	21-Apr-2024	----	----	----		28-Apr-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE GLCB-B	E121	21-Apr-2024	----	----	----		01-May-2024	3 days	10 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GLCB-M	E121	21-Apr-2024	----	----	----		01-May-2024	3 days	10 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GLCB-T	E121	21-Apr-2024	----	----	----		01-May-2024	3 days	10 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GLWB-B	E121	21-Apr-2024	----	----	----		01-May-2024	3 days	10 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GLWB-M	E121	21-Apr-2024	----	----	----		01-May-2024	3 days	10 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GLWB-T	E121	21-Apr-2024	----	----	----		01-May-2024	3 days	10 days	✖ EHT
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - total (lab preserved) GLCB-B	E466	21-Apr-2024	25-Apr-2024	180 days	4 days	✓	26-Apr-2024	180 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - total (lab preserved) GLWB-B	E466	21-Apr-2024	25-Apr-2024	180 days	4 days	✓	26-Apr-2024	180 days	5 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - total (lab preserved) GLWB-M	E466	21-Apr-2024	25-Apr-2024	180 days	4 days	✓	26-Apr-2024	180 days	5 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - total (lab preserved) GLWB-T	E466	21-Apr-2024	25-Apr-2024	180 days	4 days	✓	26-Apr-2024	180 days	5 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - total (lab preserved) GLCB-M	E466	21-Apr-2024	25-Apr-2024	180 days	4 days	✓	26-Apr-2024	180 days	6 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - total (lab preserved) GLCB-T	E466	21-Apr-2024	25-Apr-2024	180 days	5 days	✓	26-Apr-2024	180 days	6 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) GLCB-B	E508-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) GLCB-M	E508-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) GLCB-T	E508-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) GLWB-B	E508-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) GLWB-M	E508-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) GLWB-T	E508-L	21-Apr-2024	28-Apr-2024	28 days	7 days	✓	28-Apr-2024	28 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLCB-B	E395	21-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLCB-M	E395	21-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLCB-T	E395	21-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLWB-B	E395	21-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLWB-M	E395	21-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GLWB-T	E395	21-Apr-2024	----	----	----		26-Apr-2024	7 days	5 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1415697	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1415199	1	13	7.6	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415704	1	12	8.3	5.0	✔
Chloride in Water by IC	E235.Cl	1415699	1	13	7.6	5.0	✔
Conductivity in Water	E100	1415696	1	13	7.6	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1420841	1	11	9.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416249	1	13	7.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1419008	2	22	9.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415705	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1415702	1	13	7.6	5.0	✔
Free Cyanide	E339	1422182	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415700	1	14	7.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415701	1	19	5.2	5.0	✔
pH by Meter	E108	1415695	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1424702	2	37	5.4	5.0	✔
Sulfate in Water by IC	E235.SO4	1415698	1	13	7.6	5.0	✔
TDS by Gravimetry	E162	1419959	1	7	14.2	5.0	✔
Total Cyanide	E333	1422181	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1418809	1	15	6.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1420414	1	11	9.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1420086	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416247	1	18	5.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1420067	2	37	5.4	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1418537	1	19	5.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1417994	1	18	5.5	5.0	✔
TSS by Gravimetry	E160	1419951	1	7	14.2	5.0	✔
Turbidity by Nephelometry	E121	1424871	1	11	9.0	5.0	✔
WAD Cyanide	E336	1422180	1	11	9.0	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1415697	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1415199	1	13	7.6	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415704	1	12	8.3	5.0	✔
Chloride in Water by IC	E235.Cl	1415699	1	13	7.6	5.0	✔
Conductivity in Water	E100	1415696	1	13	7.6	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1420841	1	11	9.0	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416249	1	13	7.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1419008	2	22	9.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415705	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1415702	1	13	7.6	5.0	✔
Free Cyanide	E339	1422182	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415700	1	14	7.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415701	1	19	5.2	5.0	✔
pH by Meter	E108	1415695	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1424702	2	37	5.4	5.0	✔
Sulfate in Water by IC	E235.SO4	1415698	1	13	7.6	5.0	✔
TDS by Gravimetry	E162	1419959	1	7	14.2	5.0	✔
Total Cyanide	E333	1422181	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1418809	1	15	6.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1420414	1	11	9.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1420086	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416247	1	18	5.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1420067	2	37	5.4	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1418537	1	19	5.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1417994	1	18	5.5	5.0	✔
TSS by Gravimetry	E160	1419951	1	7	14.2	5.0	✔
Turbidity by Nephelometry	E121	1424871	1	11	9.0	5.0	✔
WAD Cyanide	E336	1422180	1	11	9.0	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1415697	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1415199	1	13	7.6	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415704	1	12	8.3	5.0	✔
Chloride in Water by IC	E235.Cl	1415699	1	13	7.6	5.0	✔
Conductivity in Water	E100	1415696	1	13	7.6	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1420841	1	11	9.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416249	1	13	7.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1419008	2	22	9.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415705	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1415702	1	13	7.6	5.0	✔
Free Cyanide	E339	1422182	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415700	1	14	7.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415701	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1424702	2	37	5.4	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1415698	1	13	7.6	5.0	✔
TDS by Gravimetry	E162	1419959	1	7	14.2	5.0	✔
Total Cyanide	E333	1422181	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1418809	1	15	6.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1420414	1	11	9.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1420086	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416247	1	18	5.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1420067	2	37	5.4	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1418537	1	19	5.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1417994	1	18	5.5	5.0	✔
TSS by Gravimetry	E160	1419951	1	7	14.2	5.0	✔
Turbidity by Nephelometry	E121	1424871	1	11	9.0	5.0	✔
WAD Cyanide	E336	1422180	1	11	9.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1415199	1	13	7.6	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1415704	1	12	8.3	5.0	✔
Chloride in Water by IC	E235.Cl	1415699	1	13	7.6	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1420841	1	11	9.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1416249	1	13	7.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1419008	2	22	9.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1415705	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1415702	1	13	7.6	5.0	✔
Free Cyanide	E339	1422182	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1415700	1	14	7.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1415701	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1424702	2	37	5.4	5.0	✔
Sulfate in Water by IC	E235.SO4	1415698	1	13	7.6	5.0	✔
Total Cyanide	E333	1422181	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1418809	1	15	6.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1420414	1	11	9.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1420086	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1416247	1	18	5.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1420067	2	37	5.4	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1418537	1	19	5.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1417994	1	18	5.5	5.0	✔
WAD Cyanide	E336	1422180	1	11	9.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Vancouver	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Vancouver	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Vancouver	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 30 of 30
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2400317	Page	: 1 of 21
Client	: Sabina Gold & Silver Corporation	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 23-Apr-2024 09:21
PO	: ----	Date Analysis Commenced	: 24-Apr-2024
C-O-C number	: ----	Issue Date	: 06-May-2024 09:45
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Edmonton Inorganics, Edmonton, Alberta
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Page : 2 of 21
Work Order : YL2400317
Client : Sabina Gold & Silver Corporation
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Page : 3 of 21
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1415695)											
KS2401416-001	Anonymous	pH	----	E108	0.10	pH units	8.23	8.26	0.364%	4%	----
Physical Tests (QC Lot: 1415696)											
KS2401416-001	Anonymous	Conductivity	----	E100	2.0	µS/cm	925	927	0.216%	10%	----
Physical Tests (QC Lot: 1415697)											
KS2401416-001	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	464	452	2.47%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	464	452	2.47%	20%	----
Physical Tests (QC Lot: 1419951)											
YL2400316-004	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	7.2	7.2	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1419959)											
YL2400316-004	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	49	46	2	Diff <2x LOR	----
Physical Tests (QC Lot: 1424871)											
YL2400310-002	Anonymous	Turbidity	----	E121	0.10	NTU	0.15	0.16	0.01	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415199)											
YL2400317-006	GLWB-B	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.287	0.290	1.25%	20%	----
Anions and Nutrients (QC Lot: 1415698)											
VA24A8900-004	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	43.7	43.7	0.0652%	20%	----
Anions and Nutrients (QC Lot: 1415699)											
VA24A8900-004	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	67.8	67.6	0.306%	20%	----
Anions and Nutrients (QC Lot: 1415700)											
VA24A8900-004	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	2.02	2.01	0.340%	20%	----
Anions and Nutrients (QC Lot: 1415701)											
VA24A8900-004	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415702)											
VA24A8900-004	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.124	0.127	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1415704)											
VA24A8900-004	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1415705)											
VA24A8695-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1418537)											
FC2400945-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.269	0.265	1.75%	20%	----
Anions and Nutrients (QC Lot: 1418809)											
EO2402950-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.141	0.141	0.588%	20%	----
Anions and Nutrients (QC Lot: 1420414)											
YL2400317-001	GLCB-T	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.381	0.311	0.070	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1424702)											
VA24A8991-001	Anonymous	Silicate (as SiO ₂)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1424703)											
YL2400317-006	GLWB-B	Silicate (as SiO ₂)	7631-86-9	E392	0.50	mg/L	3.35	3.37	0.02	Diff <2x LOR	----
Cyanides (QC Lot: 1422180)											
YL2400317-001	GLCB-T	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1422181)											
YL2400317-001	GLCB-T	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1422182)											
YL2400317-001	GLCB-T	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1419008)											
FC2400951-003	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	21.1	18.1	15.5%	20%	----
Organic / Inorganic Carbon (QC Lot: 1419995)											
YL2400317-002	GLCB-M	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.83	5.74	1.50%	20%	----
Organic / Inorganic Carbon (QC Lot: 1420067)											
EO2402938-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	23.4	24.2	3.41%	20%	----
Organic / Inorganic Carbon (QC Lot: 1422067)											
FC2400967-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.82	3.68	0.14	Diff <2x LOR	----
Total Sulfides (QC Lot: 1417994)											
CG2404912-014	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
Total Metals (QC Lot: 1420086)											
CG2405206-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.54	0.50	0.03	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1416247)											
YL2400311-001	Anonymous	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00463	0.00471	1.82%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000322	0.0000327	0.0000005	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000216	0.000219	1.62%	20%	----

Page : 5 of 21
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1416247) - continued											
YL2400311-001	Anonymous	Barium, total	7440-39-3	E466	0.000020	mg/L	0.00461	0.00473	2.74%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	<0.0000025	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	1.98	2.05	3.31%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000106	0.0000107	0.0000002	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000070	0.000068	0.000002	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000162	0.0000147	0.0000015	Diff <2x LOR	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.000548	0.000566	3.19%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.000050	mg/L	0.00700	0.00701	0.0726%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000019	0.000018	0.0000001	Diff <2x LOR	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00118	0.00115	1.86%	20%	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	1.02	1.04	2.39%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00177	0.00178	0.540%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000017	0.000017	0.0000002	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.000251	0.000265	5.55%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.601	0.610	1.61%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00158	0.00162	2.25%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000029	0.000032	0.000004	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.072	0.070	0.002	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	0.958	0.968	1.08%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0124	0.0127	2.15%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	0.62	0.61	0.01	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	<0.0000050	0.0000074	0.0000024	Diff <2x LOR	----

Page : 6 of 21
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1416247) - continued											
YL2400311-001	Anonymous	Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000100	0.000078	0.000022	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000107	0.0000112	4.16%	20%	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000018	0.000018	0.0000002	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00056	0.00058	0.00002	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000010	0.000014	0.000004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1416249)											
YL2400310-001	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0129	0.0129	0.292%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000168	0.0000157	0.0000011	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000270	0.000269	0.164%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.0156	0.0154	0.755%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000034	0.0000039	0.0000005	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000118	0.0000115	0.0000002	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	8.28	8.24	0.435%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000144	0.0000145	0.00000010	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000099	0.000098	0.0000009	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000116	0.000113	3.04%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00190	0.00194	2.03%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0100	0.00989	1.06%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000193	0.000197	1.94%	20%	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00132	0.00132	0.193%	20%	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	4.22	4.12	2.24%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00470	0.00476	1.23%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000020	0.000021	0.0000003	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00723	0.00719	0.592%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.785	0.790	0.565%	20%	----

Page : 7 of 21
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1416249) - continued											
YL2400310-001	Anonymous	Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00209	0.00205	1.82%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000040	0.000034	0.000006	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	1.02	0.998	2.12%	20%	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.39	1.37	1.29%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0445	0.0447	0.519%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	6.30	6.21	1.47%	20%	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000022	0.0000021	0.0000002	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000140	0.0000100	0.0000040	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000077	0.0000078	0.00000003	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000030	0.000030	0.000000006	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000096	0.000093	0.000003	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00193	0.00188	2.82%	20%	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000069	0.000069	0.00000008	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1420841)											
VA24A8814-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	12.9	12.7	1.25%	20%	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1415696)						
Conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 1415697)						
Alkalinity, bicarbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, carbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, hydroxide (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, phenolphthalein (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 1419951)						
Solids, total suspended [TSS]	---	E160	3	mg/L	<3.0	---
Physical Tests (QCLot: 1419959)						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 1424871)						
Turbidity	---	E121	0.1	NTU	<0.10	---
Anions and Nutrients (QCLot: 1415199)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1415698)						
Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 1415699)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	---
Anions and Nutrients (QCLot: 1415700)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1415701)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1415702)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 1415704)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 1415705)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1418537)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1418809)						

Page : 9 of 21
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1418809) - continued						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1420414)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1424702)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1424703)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1422180)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1422181)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1422182)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1419008)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1419995)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1420067)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1422067)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1417994)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1420086)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1416247)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1416247) - continued						
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	MBRR
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----

Page : 11 of 21
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1416247) - continued						
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1416249)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1416249) - continued						
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1420841)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----

Qualifiers

Qualifier	Description
MBRR	Initial MB for this submission had positive results for flagged analyte (data not shown). Low level samples were repeated with new QC (2nd MB results shown). High level results (>5x initial MB level) and non-detect results were reported and are defensible



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1415695)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1415696)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	99.1	90.0	110	----
Physical Tests (QCLot: 1415697)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	116	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	108	85.0	115	----
Physical Tests (QCLot: 1419951)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	88.8	85.0	115	----
Physical Tests (QCLot: 1419959)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.1	85.0	115	----
Physical Tests (QCLot: 1424871)									
Turbidity	----	E121	0.1	NTU	200 NTU	100	85.0	115	----
Anions and Nutrients (QCLot: 1415199)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1415698)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1415699)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1415700)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100.0	90.0	110	----
Anions and Nutrients (QCLot: 1415701)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.1	90.0	110	----
Anions and Nutrients (QCLot: 1415702)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.2	90.0	110	----
Anions and Nutrients (QCLot: 1415704)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1415705)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	105	80.0	120	----
Anions and Nutrients (QCLot: 1418537)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1418809)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1418809) - continued									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1420414)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 1424702)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1424703)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	100	85.0	115	----
Cyanides (QCLot: 1422180)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	99.9	80.0	120	----
Cyanides (QCLot: 1422181)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	92.3	80.0	120	----
Cyanides (QCLot: 1422182)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	98.5	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1419008)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	110	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1419995)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1420067)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1422067)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	110	80.0	120	----
Total Sulfides (QCLot: 1417994)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	93.6	80.0	120	----
Total Metals (QCLot: 1420086)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	85.9	80.0	120	----
Total Metals (Undigested) (QCLot: 1416247)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	97.1	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	102	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	102	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	101	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	91.2	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	101	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1416247) - continued									
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	88.9	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	101	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	95.0	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	98.5	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	97.2	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	94.9	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	92.4	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	98.9	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	99.4	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	98.5	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	98.7	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	# 125	80.0	120	MES
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	97.2	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	96.8	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	96.4	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	103	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	100	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	96.2	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	97.0	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	99.4	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	108	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	92.1	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	97.8	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	96.0	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	102	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	99.2	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	101	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	95.4	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	97.9	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	98.3	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	94.0	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	98.1	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Target Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1416247) - continued									
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	97.5	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	98.9	80.0	120	----
Dissolved Metals (QCLot: 1416249)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	99.5	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	99.8	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	99.0	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	100	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	97.6	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	93.8	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	98.1	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	97.2	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	97.6	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	93.8	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	91.1	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	92.0	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	97.7	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	97.1	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	95.8	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	96.7	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	99.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	100	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	96.1	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	94.9	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	94.8	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	93.4	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	104	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	93.7	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	96.3	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	100	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	110	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	94.0	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	102	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Target Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1416249) - continued									
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	95.9	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	106	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	98.4	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	98.1	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	93.7	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	99.4	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	99.0	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	97.1	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	95.0	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	95.0	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	99.3	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	95.9	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	96.1	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	89.2	80.0	120	----

Qualifiers

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1415199)										
YL2400317-006	GLWB-B	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1415698)										
VA24A8900-005	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	99.9 mg/L	100 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 1415699)										
VA24A8900-005	Anonymous	Chloride	16887-00-6	E235.Cl	99.9 mg/L	100 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 1415700)										
VA24A8900-005	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.50 mg/L	2.5 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 1415701)										
VA24A8695-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.499 mg/L	0.5 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 1415702)										
VA24A8900-005	Anonymous	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1415704)										
VA24A8900-005	Anonymous	Bromide	24959-67-9	E235.Br-L	0.523 mg/L	0.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1415705)										
VA24A8695-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0307 mg/L	0.03 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 1418537)										
FC2400946-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1418809)										
EO2402984-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1420414)										
YL2400317-002	GLCB-M	Kjeldahl nitrogen, total [TKN]	----	E318	2.61 mg/L	2.5 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 1424702)										
VA24A8991-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1424703)										
YL2400336-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.3 mg/L	10 mg/L	103	75.0	125	----
Cyanides (QCLot: 1422180)										
YL2400317-002	GLCB-M	Cyanide, weak acid dissociable	----	E336	0.128 mg/L	0.125 mg/L	103	75.0	125	----
Cyanides (QCLot: 1422181)										
YL2400317-002	GLCB-M	Cyanide, strong acid dissociable (Total)	----	E333	0.244 mg/L	0.25 mg/L	97.4	75.0	125	----
Cyanides (QCLot: 1422182)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 1422182) - continued										
YL2400317-002	GLCB-M	Cyanide, free	----	E339	0.128 mg/L	0.125 mg/L	102	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1419008)										
FC2400951-003	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1419995)										
YL2400317-002	GLCB-M	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1420067)										
EO2402938-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1422067)										
FC2400967-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.19 mg/L	5 mg/L	104	70.0	130	----
Total Sulfides (QCLot: 1417994)										
CG2404912-015	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.192 mg/L	0.2 mg/L	96.1	75.0	125	----
Total Metals (QCLot: 1420086)										
CG2405206-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.55 ng/L	5 ng/L	91.0	70.0	130	----
Total Metals (Undigested) (QCLot: 1416247)										
YL2400311-002	Anonymous	Aluminum, total	7429-90-5	E466	0.190 mg/L	0.2 mg/L	95.1	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		Barium, total	7440-39-3	E466	0.0211 mg/L	0.02 mg/L	105	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		Boron, total	7440-42-8	E466	0.0939 mg/L	0.1 mg/L	93.9	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00410 mg/L	0.004 mg/L	103	70.0	130	----
		Calcium, total	7440-70-2	E466	3.88 mg/L	4 mg/L	97.0	70.0	130	----
		Cesium, total	7440-46-2	E466	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0398 mg/L	0.04 mg/L	99.4	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0196 mg/L	0.02 mg/L	97.9	70.0	130	----
		Copper, total	7440-50-8	E466	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00262 mg/L	0.002 mg/L	105	70.0	130	----
		Iron, total	7439-89-6	E466	1.97 mg/L	2 mg/L	98.7	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00265 mg/L	0.002 mg/L	106	70.0	130	----
		Lead, total	7439-92-1	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Lithium, total	7439-93-2	E466	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		Magnesium, total	7439-95-4	E466	1.22 mg/L	1 mg/L	122	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00268 mg/L	0.002 mg/L	107	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.99 mg/L	10 mg/L	99.9	70.0	130	----
		Potassium, total	7440-09-7	E466	3.91 mg/L	4 mg/L	97.7	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00265 mg/L	0.002 mg/L	106	70.0	130	----

Page : 20 of 21
 Work Order : YL2400317
 Client : Sabina Gold & Silver Corporation
 Project : 22567626



Sub-Matrix: Water

Sub-Matrix: Water					Matrix Spike (MS) Report							
					Spike		Recovery (%)	Recovery Limits (%)				
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier		
Total Metals (Undigested) (QCLot: 1416247) - continued												
YL2400311-002	Anonymous	Rubidium, total	7440-17-7	E466	0.0199 mg/L	0.02 mg/L	99.3	70.0	130	----		
		Selenium, total	7782-49-2	E466	0.0409 mg/L	0.04 mg/L	102	70.0	130	----		
		Silicon, total	7440-21-3	E466	9.76 mg/L	10 mg/L	97.6	70.0	130	----		
		Silver, total	7440-22-4	E466	0.00386 mg/L	0.004 mg/L	96.4	70.0	130	----		
		Sodium, total	7440-23-5	E466	1.87 mg/L	2 mg/L	93.7	70.0	130	----		
		Strontium, total	7440-24-6	E466	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----		
		Sulfur, total	7704-34-9	E466	20.1 mg/L	20 mg/L	100	70.0	130	----		
		Tantalum, total	7440-25-7	E466	0.00267 mg/L	0.002 mg/L	107	70.0	130	----		
		Tellurium, total	13494-80-9	E466	0.0435 mg/L	0.04 mg/L	109	70.0	130	----		
		Thallium, total	7440-28-0	E466	0.00400 mg/L	0.004 mg/L	100.0	70.0	130	----		
		Thorium, total	7440-29-1	E466	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----		
		Tin, total	7440-31-5	E466	0.0199 mg/L	0.02 mg/L	99.3	70.0	130	----		
		Titanium, total	7440-32-6	E466	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----		
		Tungsten, total	7440-33-7	E466	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----		
		Uranium, total	7440-61-1	E466	0.00382 mg/L	0.004 mg/L	95.5	70.0	130	----		
		Vanadium, total	7440-62-2	E466	0.0993 mg/L	0.1 mg/L	99.3	70.0	130	----		
		Yttrium, total	7440-65-5	E466	0.00272 mg/L	0.002 mg/L	109	70.0	130	----		
		Zinc, total	7440-66-6	E466	0.410 mg/L	0.4 mg/L	102	70.0	130	----		
				Zirconium, total	7440-67-7	E466	0.0398 mg/L	0.04 mg/L	99.6	70.0	130	----
Dissolved Metals (QCLot: 1416249)												
YL2400310-002	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.193 mg/L	0.2 mg/L	96.3	70.0	130	----		
		Antimony, dissolved	7440-36-0	E465	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----		
		Arsenic, dissolved	7440-38-2	E465	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----		
		Barium, dissolved	7440-39-3	E465	0.0182 mg/L	0.02 mg/L	91.1	70.0	130	----		
		Beryllium, dissolved	7440-41-7	E465	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----		
		Bismuth, dissolved	7440-69-9	E465	0.00913 mg/L	0.01 mg/L	91.3	70.0	130	----		
		Boron, dissolved	7440-42-8	E465	0.0930 mg/L	0.1 mg/L	93.0	70.0	130	----		
		Cadmium, dissolved	7440-43-9	E465	0.00378 mg/L	0.004 mg/L	94.6	70.0	130	----		
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----		
		Cesium, dissolved	7440-46-2	E465	0.00932 mg/L	0.01 mg/L	93.2	70.0	130	----		
		Chromium, dissolved	7440-47-3	E465	0.0366 mg/L	0.04 mg/L	91.6	70.0	130	----		
		Cobalt, dissolved	7440-48-4	E465	0.0181 mg/L	0.02 mg/L	90.4	70.0	130	----		
		Copper, dissolved	7440-50-8	E465	0.0181 mg/L	0.02 mg/L	90.4	70.0	130	----		
		Gallium, dissolved	7440-55-3	E465	0.00256 mg/L	0.002 mg/L	102	70.0	130	----		
		Iron, dissolved	7439-89-6	E465	1.87 mg/L	2 mg/L	93.5	70.0	130	----		
		Lanthanum, dissolved	7439-91-0	E465	0.00247 mg/L	0.002 mg/L	98.9	70.0	130	----		
		Lead, dissolved	7439-92-1	E465	0.0182 mg/L	0.02 mg/L	90.8	70.0	130	----		
		Lithium, dissolved	7439-93-2	E465	0.0958 mg/L	0.1 mg/L	95.8	70.0	130	----		
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----		
		Manganese, dissolved	7439-96-5	E465	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----		
		Molybdenum, dissolved	7439-98-7	E465	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----		
		Nickel, dissolved	7440-02-0	E465	0.0373 mg/L	0.04 mg/L	93.2	70.0	130	----		
		Niobium, dissolved	7440-03-1	E465	0.00243 mg/L	0.002 mg/L	97.3	70.0	130	----		
				Phosphorus, dissolved	7723-14-0	E465	9.88 mg/L	10 mg/L	98.8	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1416249) - continued										
YL2400310-002	Anonymous	Potassium, dissolved	7440-09-7	E465	3.61 mg/L	4 mg/L	90.2	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00265 mg/L	0.002 mg/L	106	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0420 mg/L	0.04 mg/L	105	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.17 mg/L	10 mg/L	91.7	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.86 mg/L	2 mg/L	92.9	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	18.8 mg/L	20 mg/L	93.8	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00264 mg/L	0.002 mg/L	106	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0398 mg/L	0.04 mg/L	99.4	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00365 mg/L	0.004 mg/L	91.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0380 mg/L	0.04 mg/L	94.9	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0184 mg/L	0.02 mg/L	91.9	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00366 mg/L	0.004 mg/L	91.6	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0926 mg/L	0.1 mg/L	92.6	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00258 mg/L	0.002 mg/L	103	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.392 mg/L	0.4 mg/L	98.0	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0375 mg/L	0.04 mg/L	93.8	70.0	130	----
Dissolved Metals (QCLot: 1420841)										
VA24A8814-003	Anonymous	Mercury, dissolved	7439-97-6	E509-L	ND ng/L	----	ND	70.0	130	----



CHAIN OF CUSTODY

ACS Laboratory

Handwritten signature

RECEIVED BY:

DATE/TIME:

RECEIVED BY:

DATE/TIME:

DATE/TIME: 22-06-2024 7:30

DATE/TIME: 22/24 9:21

DATE/TIME:

TURNAROUND REQUIREMENTS:

Standard TAT may be longer for some tests

Non Standard or urgent TAT (Lead time only)

FOR LABORATORY USE ONLY (Initials)

Yes No Not

Capacity limit reached?

Have you + others the project been tested?

Recheck Sample Temperature on Receipt?

Other comments:

2.1

CLIENT: B2004

PROJECT: 2207025 - Bush River Project

SITE: B2004 - Bousse Lake

PURCHASE ORDER NO.: Quote number: YL23-SAB100-001 Date: 23-Jun-2023

PROJECT MANAGER: Maria Kocak

SAMPLER: Amy Caribud

CONTACT PH: 587 439 8091

SAMPLER MOBILE: 587 439 8091

EMAIL REPORTS TO: zsm@acs-lab.com, bcaribud@acs-lab.com, g@ACS_EQUIS@acs-lab.com

EMAIL INVOICE TO: m@acs-lab.com

SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY

SAMPLE DETAILS

MATRIX

CONTAINER INFORMATION

ANALYSIS REQUIRED

Additional Information

SAMPLE

Sample Identification
(This description will appear on the report)

DATE / TIME
(dd-mm-yyyy)

MATRIX

TOTAL CONTAINERS

Total Metals + Hg
LOW LEVEL

Dissolved Metals + Hg
LOW LEVEL

Total Nutrients

Dissolved Nutrients

General Parameters / Routine

Total Sulfides

Cyanides (total, WAD, free)

Environmental Division
Yellowknife
Work Order Reference
YL2400317



Telephone : +1 867 873 5553

TOTAL

CERTIFICATE OF ANALYSIS

Work Order	: YL2400500	Page	: 1 of 7
Amendment	: 1		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 27-May-2024 15:00
PO	: PO-17852	Date Analysis Commenced	: 29-May-2024
C-O-C number	: ----	Issue Date	: 09-Jul-2024 12:05
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Christopher Li	Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Greg Pokocky	Manager - Inorganics	Inorganics, Waterloo, Ontario
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Leon Yang	Analyst	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Shruti Mudliar	Lab Analyst	Inorganics, Edmonton, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
RRV	Reported result verified by repeat analysis.



Analytical Results

Sub-Matrix: Water				Client sample ID	BRP-19	BRP-18	FB	GIROF	----
(Matrix: Water)									
Client sampling date / time					25-May-2024 15:50	25-May-2024 12:40	25-May-2024 16:15	26-May-2024 12:10	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400500-001	YL2400500-002	YL2400500-003	YL2400500-004	-----
					Result	Result	Result	Result	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	4.2	4.3	<1.0	4.2	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	4.2	4.3	<1.0	4.2	----
Conductivity	----	E100/VA	2.0	µS/cm	146	57.2	<2.0	33.7	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	33.3	19.4	<0.50	----	----
pH	----	E108/VA	0.10	pH units	6.77	6.82	5.32	6.82	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	80	29	<10	30	----
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	91.8	34.0	<1.0	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	4.5	<3.0	<3.0	<3.0	----
Turbidity	----	E121/VA	0.10	NTU	10.4	0.61	<0.10	0.89	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	4.45	0.0607	<0.0050	0.0076	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	1.69	6.50	<0.50	0.68	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.039	<0.020	<0.020	0.021	----
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	4.77	0.367	<0.050	0.267	----
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	8.94	0.244	<0.0050	0.0427	----
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.0092	0.0012	<0.0010	<0.0010	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0220	0.0090	<0.0010	0.0111	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0066	0.0059	0.0020	0.0054	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	1.90	1.16	<0.50	1.16	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	17.8	8.08	<0.30	8.25	----
Cyanides									
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	----
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	----



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-19	BRP-18	FB	GIROF	----
(Matrix: Water)										
Client sampling date / time					25-May-2024 15:50	25-May-2024 12:40	25-May-2024 16:15	26-May-2024 12:10	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400500-001	YL2400500-002	YL2400500-003	YL2400500-004	-----	
					Result	Result	Result	Result	----	
Cyanides										
Cyanide, weak acid dissociable	----	E336/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	----	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	8.04	6.08	<0.50	6.65	----	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	8.95	6.61	<0.50	6.58	----	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0021	<0.0015	<0.0015	<0.0015	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0022	<0.0016	<0.0016	<0.0016	----	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	3.48	2.73	<0.50	3.01	----	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.519	0.0568	0.00071 ^{RRV}	----	----	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000516	0.0000116	<0.0000050	----	----	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.00257	0.000320	<0.000010	----	----	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0255	0.0102	<0.000020	----	----	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000221	0.0000058	<0.0000020	----	----	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	0.0000098	<0.0000010	<0.0000010	----	----	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000313	0.0000200	<0.0000025	----	----	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	6.46	4.76	<0.010	----	----	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000607	0.0000113	<0.0000050	----	----	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.00119	0.000186	<0.000040	----	----	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.00400	0.000681	<0.0000050	----	----	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00483	0.00223	<0.000050	----	----	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	0.000135	<0.000050	<0.000050	----	----	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.525	0.0505	<0.00050	----	----	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.00133	0.000577	<0.000010	----	----	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.000454	0.0000299	<0.0000050	----	----	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00247	0.00071	<0.00010	----	----	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	5.22	2.07	<0.0010	----	----	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0613	0.0105	0.0000112 ^{RRV}	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-19	BRP-18	FB	GIROF	----
(Matrix: Water)										
Client sampling date / time						25-May-2024 15:50	25-May-2024 12:40	25-May-2024 16:15	26-May-2024 12:10	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400500-001	YL2400500-002	YL2400500-003	YL2400500-004	-----	
					Result	Result	Result	Result	----	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000117	0.000016	<0.000010	----	----	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.0120	0.00585	<0.000020	----	----	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	0.014	<0.010	<0.010	----	----	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	2.46	0.650	<0.0050	----	----	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00527	0.00169	<0.0000050	----	----	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000117	0.000027	<0.000025	----	----	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.72	0.575	<0.050	----	----	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	0.0000062	0.0000022	<0.0000020	----	----	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.32	0.955	<0.010	----	----	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0323	0.0233	<0.000020	----	----	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	5.76	2.71	<0.50	----	----	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000185	0.0000031	<0.0000010	----	----	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.000128	0.0000201	<0.0000050	----	----	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.0148	0.000455	<0.000050	----	----	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	0.000022	<0.000010	<0.000010	----	----	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000812	0.0000140	<0.0000010	----	----	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000973	0.000071	<0.000010	----	----	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000567	0.000198	<0.000010	----	----	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00428	0.00218	0.00036 ^{RRV}	----	----	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000903	0.000082	<0.000010	----	----	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0701	0.0374	<0.00020	----	----	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000454	0.0000105	<0.0000050	----	----	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.00122	0.000292	<0.000010	----	----	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0207	0.00989	<0.000020	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-19	BRP-18	FB	GIROF	----
(Matrix: Water)										
Client sampling date / time						25-May-2024 15:50	25-May-2024 12:40	25-May-2024 16:15	26-May-2024 12:10	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400500-001	YL2400500-002	YL2400500-003	YL2400500-004	-----	
					Result	Result	Result	Result	----	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000080	0.0000052	<0.0000020	----	----	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	0.0000010	<0.0000010	<0.0000010	----	----	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000277	0.0000184	<0.0000025	----	----	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	5.72	4.54	<0.010	----	----	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000309	0.0000098	<0.0000050	----	----	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000234	0.000132	<0.000040	----	----	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.00303	0.000659	<0.0000050	----	----	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00295	0.00204	0.000072 RRV	----	----	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	----	----	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0636	0.0262	<0.00050	----	----	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000474	0.000559	<0.000010	----	----	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000503	0.0000134	<0.0000050	----	----	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00203	0.00073	<0.00010	----	----	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	4.61	1.96	<0.0010	----	----	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.0499	0.0102	0.0000080 RRV	----	----	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	2.54	2.36	<0.50	2.06	----	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000082	0.000012	<0.000010	----	----	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00910	0.00556	<0.000020	----	----	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	2.09	0.631	<0.0050	----	----	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00417	0.00156	<0.0000050	----	----	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000116	0.000032	<0.000025	----	----	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.950	0.550	<0.050	----	----	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.16	0.896	<0.010	----	----	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0274	0.0218	<0.000020	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-19	BRP-18	FB	GIROF	----
(Matrix: Water)										
					Client sampling date / time	25-May-2024 15:50	25-May-2024 12:40	25-May-2024 16:15	26-May-2024 12:10	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400500-001	YL2400500-002	YL2400500-003	YL2400500-004	-----	
					Result	Result	Result	Result	----	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	5.89	2.74	<0.50	----	----	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000143	0.0000028	<0.0000010	----	----	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000527	0.0000211	<0.0000050	----	----	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000321	0.000134	<0.000050	----	----	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000486	0.0000122	<0.0000010	----	----	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000110	0.000036	<0.000010	----	----	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000293	0.000192	<0.000010	----	----	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00260	0.00196	0.00019 ^{RRV}	----	----	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000274	0.000074	<0.000010	----	----	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2400500	Page	: 1 of 24
Amendment	: 1		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 27-May-2024 15:00
PO	: PO-17852	Issue Date	: 09-Jul-2024 12:06
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Total Metals (Undigested)	YL2400500-002	BRP-18	Beryllium, total	7440-41-7	E466	66.2 % ^{MES}	70.0-130%	Recovery less than lower data quality objective
Total Metals (Undigested)	YL2400500-002	BRP-18	Boron, total	7440-42-8	E466	65.7 % ^{MES}	70.0-130%	Recovery less than lower data quality objective
Total Metals (Undigested)	YL2400500-002	BRP-18	Lithium, total	7439-93-2	E466	65.2 % ^{MES}	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GIROF	E298	26-May-2024	29-May-2024	28 days	3 days	✓	29-May-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-18	E298	25-May-2024	29-May-2024	28 days	4 days	✓	29-May-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-19	E298	25-May-2024	29-May-2024	28 days	4 days	✓	29-May-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FB	E298	25-May-2024	29-May-2024	28 days	4 days	✓	29-May-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GIROF	E235.Br-L	26-May-2024	29-May-2024	28 days	3 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-19	E235.Br-L	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FB	E235.Br-L	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-18	E235.Br-L	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GIROF	E235.Cl	26-May-2024	29-May-2024	28 days	3 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-19	E235.Cl	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB	E235.Cl	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-18	E235.Cl	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	5 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GIROF	E378-U	26-May-2024	29-May-2024	3 days	3 days	✓	30-May-2024	3 days	4 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FB	E378-U	25-May-2024	29-May-2024	3 days	4 days	✗ EHT	30-May-2024	3 days	4 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-18	E378-U	25-May-2024	29-May-2024	3 days	4 days	✗ EHT	30-May-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-19	E378-U	25-May-2024	29-May-2024	3 days	4 days	✗ EHT	30-May-2024	3 days	5 days	✗ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE GIROF	E235.F	26-May-2024	29-May-2024	28 days	3 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-19	E235.F	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB	E235.F	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-18	E235.F	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GIROF	E235.NO3-L	26-May-2024	29-May-2024	3 days	3 days	✓	30-May-2024	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-18	E235.NO3-L	25-May-2024	29-May-2024	3 days	4 days	✖ EHT	30-May-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-19	E235.NO3-L	25-May-2024	29-May-2024	3 days	4 days	✖ EHT	30-May-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB	E235.NO3-L	25-May-2024	29-May-2024	3 days	4 days	✖ EHT	30-May-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GIROF	E235.NO2-L	26-May-2024	29-May-2024	3 days	3 days	✓	30-May-2024	3 days	3 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-18	E235.NO2-L	25-May-2024	29-May-2024	3 days	4 days	✖ EHT	30-May-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-19	E235.NO2-L	25-May-2024	29-May-2024	3 days	4 days	✖ EHT	30-May-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB	E235.NO2-L	25-May-2024	29-May-2024	3 days	4 days	✖ EHT	30-May-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GIROF	E392	26-May-2024	----	----	----		05-Jun-2024	28 days	10 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-18	E392	25-May-2024	----	----	----		05-Jun-2024	28 days	11 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-19	E392	25-May-2024	----	----	----		05-Jun-2024	28 days	11 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FB	E392	25-May-2024	----	----	----		05-Jun-2024	28 days	11 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GIROF	E235.SO4	26-May-2024	29-May-2024	28 days	3 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-19	E235.SO4	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE FB	E235.SO4	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-18	E235.SO4	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GIROF	E375-U	26-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-18	E375-U	25-May-2024	31-May-2024	28 days	6 days	✓	02-Jun-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-19	E375-U	25-May-2024	31-May-2024	28 days	6 days	✓	02-Jun-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FB	E375-U	25-May-2024	31-May-2024	28 days	6 days	✓	02-Jun-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GIROF	E318	26-May-2024	30-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-18	E318	25-May-2024	30-May-2024	28 days	5 days	✓	30-May-2024	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-19	E318	25-May-2024	30-May-2024	28 days	5 days	✓	30-May-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FB	E318	25-May-2024	30-May-2024	28 days	5 days	✓	30-May-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GIROF	E372-S	26-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-18	E372-S	25-May-2024	31-May-2024	28 days	6 days	✓	02-Jun-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-19	E372-S	25-May-2024	31-May-2024	28 days	6 days	✓	02-Jun-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FB	E372-S	25-May-2024	31-May-2024	28 days	6 days	✓	02-Jun-2024	28 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E339	26-May-2024	30-May-2024	14 days	4 days	✓	30-May-2024	14 days	4 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E339	25-May-2024	30-May-2024	14 days	5 days	✓	30-May-2024	14 days	5 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E339	25-May-2024	30-May-2024	14 days	5 days	✓	30-May-2024	14 days	5 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E339	25-May-2024	30-May-2024	14 days	5 days	✓	30-May-2024	14 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E333	26-May-2024	30-May-2024	14 days	4 days	✓	30-May-2024	14 days	4 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E333	25-May-2024	30-May-2024	14 days	5 days	✓	30-May-2024	14 days	5 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E333	25-May-2024	30-May-2024	14 days	5 days	✓	30-May-2024	14 days	5 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E333	25-May-2024	----	----	----		03-Jun-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E336	26-May-2024	30-May-2024	14 days	4 days	✓	30-May-2024	14 days	4 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E336	25-May-2024	30-May-2024	14 days	5 days	✓	30-May-2024	14 days	5 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E336	25-May-2024	30-May-2024	14 days	5 days	✓	30-May-2024	14 days	5 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E336	25-May-2024	30-May-2024	14 days	5 days	✓	30-May-2024	14 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GIROF	E509-L	26-May-2024	03-Jun-2024	28 days	8 days	✓	03-Jun-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-18	E509-L	25-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-19	E509-L	25-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FB	E509-L	25-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - dissolved (lab preserved) BRP-18	E465	25-May-2024	31-May-2024	180 days	6 days	✓	01-Jun-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - dissolved (lab preserved) BRP-19	E465	25-May-2024	31-May-2024	180 days	6 days	✓	01-Jun-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - dissolved (lab preserved) FB	E465	25-May-2024	31-May-2024	180 days	6 days	✓	01-Jun-2024	180 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GIROF	E358-L	26-May-2024	29-May-2024	28 days	3 days	✓	29-May-2024	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-18	E358-L	25-May-2024	29-May-2024	28 days	4 days	✓	29-May-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-19	E358-L	25-May-2024	29-May-2024	28 days	4 days	✓	29-May-2024	28 days	4 days	✓

Page : 12 of 24
 Work Order : YL2400500 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FB	E358-L	25-May-2024	29-May-2024	28 days	4 days	✓	29-May-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GIROF	E355-L	26-May-2024	30-May-2024	28 days	4 days	✓	30-May-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-18	E355-L	25-May-2024	30-May-2024	28 days	5 days	✓	30-May-2024	28 days	5 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-19	E355-L	25-May-2024	30-May-2024	28 days	5 days	✓	30-May-2024	28 days	5 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB	E355-L	25-May-2024	30-May-2024	28 days	5 days	✓	30-May-2024	28 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GIROF	E290	26-May-2024	29-May-2024	14 days	3 days	✓	30-May-2024	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-18	E290	25-May-2024	29-May-2024	14 days	4 days	✓	30-May-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-19	E290	25-May-2024	29-May-2024	14 days	4 days	✓	30-May-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FB	E290	25-May-2024	29-May-2024	14 days	4 days	✓	30-May-2024	14 days	5 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE GIROF	E100	26-May-2024	29-May-2024	28 days	3 days	✓	30-May-2024	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-18	E100	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-19	E100	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE FB	E100	25-May-2024	29-May-2024	28 days	4 days	✓	30-May-2024	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE FB	E108	25-May-2024	29-May-2024	0.25 hrs	103 hrs	✗ EHTR-FM	30-May-2024	0.25 hrs	114 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-19	E108	25-May-2024	29-May-2024	0.25 hrs	103 hrs	✗ EHTR-FM	30-May-2024	0.25 hrs	115 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-18	E108	25-May-2024	29-May-2024	0.25 hrs	106 hrs	✗ EHTR-FM	30-May-2024	0.25 hrs	118 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GIROF	E108	26-May-2024	29-May-2024	0.25 hrs	83 hrs	✗ EHTR-FM	30-May-2024	0.25 hrs	94 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE GIROF	E162	26-May-2024	----	----	----		01-Jun-2024	7 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-18	E162	25-May-2024	----	----	----		01-Jun-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-19	E162	25-May-2024	----	----	----		01-Jun-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FB	E162	25-May-2024	----	----	----		01-Jun-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GIROF	E160	26-May-2024	----	----	----		01-Jun-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-18	E160	25-May-2024	----	----	----		01-Jun-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-19	E160	25-May-2024	----	----	----		01-Jun-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FB	E160	25-May-2024	----	----	----		01-Jun-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE GIROF	E121	26-May-2024	----	----	----		29-May-2024	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-18	E121	25-May-2024	----	----	----		29-May-2024	3 days	4 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-19	E121	25-May-2024	----	----	----		29-May-2024	3 days	4 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FB	E121	25-May-2024	----	----	----		29-May-2024	3 days	4 days	✖ EHT
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - total (lab preserved) BRP-18	E466	25-May-2024	31-May-2024	180 days	6 days	✓	01-Jun-2024	180 days	7 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - total (lab preserved) BRP-19	E466	25-May-2024	31-May-2024	180 days	6 days	✓	01-Jun-2024	180 days	7 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
HDPE - total (lab preserved) FB	E466	25-May-2024	31-May-2024	180 days	6 days	✓	01-Jun-2024	180 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GIROF	E508-L	26-May-2024	03-Jun-2024	28 days	8 days	✓	03-Jun-2024	28 days	8 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-18	E508-L	25-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-19	E508-L	25-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FB	E508-L	25-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓

Page : 16 of 24
 Work Order : YL2400500 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GIROF	E395	26-May-2024	----	----	----		30-May-2024	7 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-18	E395	25-May-2024	----	----	----		30-May-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-19	E395	25-May-2024	----	----	----		30-May-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FB	E395	25-May-2024	----	----	----		30-May-2024	7 days	5 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1466080	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1465028	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1466084	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	1466083	1	19	5.2	5.0	✓
Conductivity in Water	E100	1466081	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1472651	1	15	6.6	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1469892	1	3	33.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1465245	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1466093	1	5	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1466082	1	19	5.2	5.0	✓
Free Cyanide	E339	1466947	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1466085	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1466086	1	20	5.0	5.0	✓
pH by Meter	E108	1466079	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1476721	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1466087	1	19	5.2	5.0	✓
TDS by Gravimetry	E162	1471265	1	18	5.5	5.0	✓
Total Cyanide	E333	1466948	2	19	10.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1469975	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1464981	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1472601	1	4	25.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1469891	1	3	33.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1467004	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1468674	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1467728	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1471264	1	18	5.5	5.0	✓
Turbidity by Nephelometry	E121	1465608	1	9	11.1	5.0	✓
WAD Cyanide	E336	1466946	1	15	6.6	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1466080	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1465028	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1466084	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	1466083	1	19	5.2	5.0	✓
Conductivity in Water	E100	1466081	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1472651	1	15	6.6	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1469892	1	3	33.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1465245	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1466093	1	5	20.0	5.0	✔
Fluoride in Water by IC	E235.F	1466082	1	19	5.2	5.0	✔
Free Cyanide	E339	1466947	1	7	14.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1466085	1	19	5.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1466086	1	20	5.0	5.0	✔
pH by Meter	E108	1466079	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1476721	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1466087	1	19	5.2	5.0	✔
TDS by Gravimetry	E162	1471265	1	18	5.5	5.0	✔
Total Cyanide	E333	1466948	2	19	10.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1469975	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1464981	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1472601	1	4	25.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1469891	1	3	33.3	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1467004	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1468674	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1467728	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1471264	1	18	5.5	5.0	✔
Turbidity by Nephelometry	E121	1465608	1	9	11.1	5.0	✔
WAD Cyanide	E336	1466946	1	15	6.6	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1466080	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	1465028	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1466084	1	19	5.2	5.0	✔
Chloride in Water by IC	E235.Cl	1466083	1	19	5.2	5.0	✔
Conductivity in Water	E100	1466081	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1472651	1	15	6.6	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1469892	1	3	33.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1465245	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1466093	1	5	20.0	5.0	✔
Fluoride in Water by IC	E235.F	1466082	1	19	5.2	5.0	✔
Free Cyanide	E339	1466947	1	7	14.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1466085	1	19	5.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1466086	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1476721	1	20	5.0	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1466087	1	19	5.2	5.0	✔
TDS by Gravimetry	E162	1471265	1	18	5.5	5.0	✔
Total Cyanide	E333	1466948	2	19	10.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1469975	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1464981	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1472601	1	4	25.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1469891	1	3	33.3	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1467004	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1468674	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1467728	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1471264	1	18	5.5	5.0	✔
Turbidity by Nephelometry	E121	1465608	1	9	11.1	5.0	✔
WAD Cyanide	E336	1466946	1	15	6.6	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1465028	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1466084	1	19	5.2	5.0	✔
Chloride in Water by IC	E235.Cl	1466083	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1472651	1	15	6.6	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1469892	1	3	33.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1465245	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1466093	1	5	20.0	5.0	✔
Fluoride in Water by IC	E235.F	1466082	1	19	5.2	5.0	✔
Free Cyanide	E339	1466947	1	7	14.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1466085	1	19	5.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1466086	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1476721	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1466087	1	19	5.2	5.0	✔
Total Cyanide	E333	1466948	2	19	10.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1469975	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1464981	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1472601	1	4	25.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1469891	1	3	33.3	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1467004	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1468674	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1467728	1	20	5.0	5.0	✔
WAD Cyanide	E336	1466946	1	15	6.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Waterloo	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Waterloo	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Waterloo	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 24 of 24
Work Order : YL2400500 Amendment 1
Client : B2Gold Back River Corp.
Project : 22567626



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order	: YL2400500	Page	: 1 of 21
Amendment	: 1		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 27-May-2024 15:00
PO	: PO-17852	Date Analysis Commenced	: 29-May-2024
C-O-C number	: ----	Issue Date	: 09-Jul-2024 12:05
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Vancouver Metals, Burnaby, British Columbia
Christopher Li	Analyst	Vancouver Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
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Page : 2 of 21
Work Order : YL2400500 Amendment 1
Client : B2Gold Back River Corp.
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1465608)											
YL2400478-001	Anonymous	Turbidity	----	E121	0.10	NTU	1.86	1.91	2.66%	15%	----
Physical Tests (QC Lot: 1466079)											
KS2401941-003	Anonymous	pH	----	E108	0.10	pH units	7.02	7.03	0.142%	4%	----
Physical Tests (QC Lot: 1466080)											
KS2401941-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	5.6	5.7	1.77%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	5.6	5.7	0.1	Diff <2x LOR	----
Physical Tests (QC Lot: 1466081)											
KS2401941-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	20.1	19.9	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1471264)											
VA24B2174-004	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1471265)											
VA24B2174-004	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	275	276	0.181%	20%	----
Anions and Nutrients (QC Lot: 1464981)											
RG2400749-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.440	0.460	0.020	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1465028)											
FC2401257-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1466082)											
KS2401941-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.074	0.074	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1466083)											
KS2401941-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1466084)											
KS2401941-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1466085)											
KS2401941-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1466086)											
KS2401941-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2400500 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1466087)											
KS2401941-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235-SO4	0.30	mg/L	2.24	2.25	0.007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1466093)											
YL2400500-001	BRP-19	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1468674)											
FC2401275-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.249	0.245	1.58%	20%	----
Anions and Nutrients (QC Lot: 1469975)											
YL2400518-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.100	mg/L	2.86	2.88	0.856%	20%	----
Anions and Nutrients (QC Lot: 1476721)											
EO2404025-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	6.54	6.61	0.956%	20%	----
Cyanides (QC Lot: 1466946)											
TY2405308-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1466947)											
TY2405308-001	Anonymous	Cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1466948)											
TY2405308-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1472463)											
YL2400500-001	BRP-19	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1465245)											
EO2403976-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.41	5.15	5.00%	20%	----
Organic / Inorganic Carbon (QC Lot: 1467004)											
EO2404041-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	26.1	26.8	2.56%	20%	----
Total Sulfides (QC Lot: 1467728)											
CG2406894-015	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0146	0.0159	8.57%	20%	----
Total Metals (QC Lot: 1472601)											
YL2400500-001	BRP-19	Mercury, total	7439-97-6	E508-L	0.50	ng/L	3.48	3.43	0.06	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1469891)											
YL2400500-001	BRP-19	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.519	0.533	2.67%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000516	0.0000516	0.0632%	20%	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.00257	0.00256	0.367%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.0255	0.0257	0.866%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000221	0.0000224	1.72%	20%	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	0.0000098	0.0000098	0.00000004	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----

Page : 5 of 21
 Work Order : YL2400500 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1469891) - continued											
YL2400500-001	BRP-19	Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000313	0.0000312	0.0400%	20%	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	6.46	6.38	1.20%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000607	0.0000601	0.968%	20%	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.00119	0.00117	2.14%	20%	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.00400	0.00397	0.657%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00483	0.00477	1.32%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	0.000135	0.000138	0.000002	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.525	0.539	2.68%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.00133	0.00146	9.56%	20%	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.000454	0.000466	2.47%	20%	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00247	0.00246	0.650%	20%	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	5.22	5.21	0.209%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.0613	0.0606	1.15%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000117	0.000113	3.43%	20%	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.0120	0.0118	1.84%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	0.014	0.014	0.0002	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	2.46	2.42	1.52%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00527	0.00530	0.565%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000117	0.000130	0.000013	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	1.72	1.76	1.97%	20%	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	0.0000062	0.0000067	0.0000005	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	1.32	1.34	1.37%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0323	0.0318	1.67%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	5.76	5.75	0.146%	20%	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000185	0.0000185	0.306%	20%	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	0.000128	0.000138	7.63%	20%	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	0.000010	0.0000005	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.0148	0.0135	9.01%	20%	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	0.000022	0.000022	0.0000001	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000812	0.0000831	2.33%	20%	----

Page : 6 of 21
 Work Order : YL2400500 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1469891) - continued											
YL2400500-001	BRP-19	Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000973	0.000964	0.907%	20%	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000567	0.000549	3.18%	20%	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00428	0.00426	0.615%	20%	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000903	0.000892	1.17%	20%	----
Dissolved Metals (QC Lot: 1469892)											
YL2400500-001	BRP-19	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0701	0.0716	2.01%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000454	0.0000447	0.0000008	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.00122	0.00120	1.65%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.0207	0.0202	2.34%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000080	0.0000088	0.0000008	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	0.0000010	0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000277	0.0000278	0.364%	20%	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	5.72	5.79	1.29%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000309	0.0000296	0.0000013	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000234	0.000237	0.000003	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.00303	0.00305	0.517%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00295	0.00302	2.47%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0636	0.0646	1.52%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000474	0.000471	0.542%	20%	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000503	0.0000496	0.0000008	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00203	0.00199	1.92%	20%	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	4.61	4.66	1.15%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.0499	0.0509	1.90%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000082	0.000082	0.0000008	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00910	0.00924	1.54%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	2.09	2.14	2.61%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00417	0.00426	2.02%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000116	0.000143	0.000027	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.950	0.932	1.92%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1469892) - continued											
YL2400500-001	BRP-19	Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.16	1.19	2.06%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0274	0.0282	2.73%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	5.89	5.93	0.622%	20%	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000143	0.0000143	0.176%	20%	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000527	0.0000486	8.20%	20%	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	0.000321	0.000302	0.000018	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000486	0.0000487	0.313%	20%	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000110	0.000105	4.41%	20%	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000293	0.000292	0.478%	20%	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00260	0.00259	0.484%	20%	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000274	0.000272	0.830%	20%	----
Dissolved Metals (QC Lot: 1472651)											
WP2413154-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.69	0.68	0.02	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1465608)						
Turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 1466080)						
Alkalinity, bicarbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, carbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, hydroxide (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, phenolphthalein (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 1466081)						
Conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 1471264)						
Solids, total suspended [TSS]	---	E160	3	mg/L	<3.0	---
Physical Tests (QCLot: 1471265)						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Anions and Nutrients (QCLot: 1464981)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 1465028)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1466082)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 1466083)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	---
Anions and Nutrients (QCLot: 1466084)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 1466085)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1466086)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1466087)						
Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 1466093)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1468674)						

Page : 9 of 21
 Work Order : YL2400500 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1468674) - continued						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1469975)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1476721)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1466946)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1466947)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1466948)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1472463)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1465245)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1467004)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1467728)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1472601)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1469891)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1469891) - continued						
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1469892)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1469892) - continued						
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1469892) - continued						
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1472651)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1465608)									
Turbidity	----	E121	0.1	NTU	200 NTU	101	85.0	115	----
Physical Tests (QCLot: 1466079)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1466080)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	95.9	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1466081)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 1471264)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	88.5	85.0	115	----
Physical Tests (QCLot: 1471265)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	91.7	85.0	115	----
Anions and Nutrients (QCLot: 1464981)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1465028)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1466082)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1466083)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1466084)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	107	85.0	115	----
Anions and Nutrients (QCLot: 1466085)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1466086)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1466087)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 1466093)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	98.3	80.0	120	----
Anions and Nutrients (QCLot: 1468674)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1468674) - continued									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1469975)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1476721)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	101	85.0	115	----
Cyanides (QCLot: 1466946)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	94.5	80.0	120	----
Cyanides (QCLot: 1466947)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	94.1	80.0	120	----
Cyanides (QCLot: 1466948)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	88.4	80.0	120	----
Cyanides (QCLot: 1472463)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	89.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1465245)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	107	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1467004)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	113	80.0	120	----
Total Sulfides (QCLot: 1467728)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	97.2	80.0	120	----
Total Metals (QCLot: 1472601)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	96.4	80.0	120	----
Total Metals (Undigested) (QCLot: 1469891)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	105	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	108	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	106	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	106	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	94.3	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	104	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	89.5	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	105	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	100	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	102	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1469891) - continued									
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	98.6	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	98.0	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	102	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	99.8	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	106	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	95.6	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	98.7	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	99.9	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	100	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	102	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	110	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	108	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	96.8	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	99.2	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	114	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	93.6	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	102	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	106	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	105	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	105	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	109	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	104	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	101	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	102	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	104	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1469892)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	103	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	107	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	101	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	93.7	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	101	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	90.5	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	106	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	96.5	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	98.8	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	96.1	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	94.1	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	93.3	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	98.7	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	96.3	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	96.9	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	97.4	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	98.3	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	100	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	109	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	96.8	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	97.5	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	101	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	114	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	98.2	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	99.4	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	98.5	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	111	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	99.5	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1469892) - continued									
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	106	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	96.4	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	97.8	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	98.9	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	97.1	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1464981)										
GP2400931-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.74 mg/L	2.5 mg/L	110	70.0	130	----
Anions and Nutrients (QCLot: 1465028)										
FC2401257-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0997 mg/L	0.1 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 1466082)										
KS2401941-002	Anonymous	Fluoride	16984-48-8	E235.F	1.03 mg/L	1 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1466083)										
KS2401941-002	Anonymous	Chloride	16887-00-6	E235.Cl	105 mg/L	100 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1466084)										
KS2401941-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.530 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1466085)										
KS2401941-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.62 mg/L	2.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1466086)										
KS2401941-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.519 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1466087)										
KS2401941-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1466093)										
YL2400500-002	BRP-18	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0287 mg/L	0.03 mg/L	95.7	70.0	130	----
Anions and Nutrients (QCLot: 1468674)										
GP2400931-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1469975)										
YL2400518-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1476721)										
EO2404025-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	9.87 mg/L	10 mg/L	98.7	75.0	125	----
Cyanides (QCLot: 1466946)										
TY2405308-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.117 mg/L	0.125 mg/L	93.8	75.0	125	----
Cyanides (QCLot: 1466947)										
TY2405308-001	Anonymous	Cyanide, free	----	E339	0.116 mg/L	0.125 mg/L	92.6	75.0	125	----
Cyanides (QCLot: 1466948)										
TY2405308-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.213 mg/L	0.25 mg/L	85.1	75.0	125	----
Cyanides (QCLot: 1472463)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 1472463) - continued										
YL2400500-001	BRP-19	Cyanide, strong acid dissociable (Total)	----	E333	0.208 mg/L	0.25 mg/L	83.4	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1465245)										
EO2403976-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1467004)										
EO2404041-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1467728)										
CG2406894-016	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.199 mg/L	0.2 mg/L	99.7	75.0	125	----
Total Metals (QCLot: 1472601)										
YL2400500-002	BRP-18	Mercury, total	7439-97-6	E508-L	4.46 ng/L	5 ng/L	89.3	70.0	130	----
Total Metals (Undigested) (QCLot: 1469891)										
YL2400500-002	BRP-18	Aluminum, total	7429-90-5	E466	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0213 mg/L	0.02 mg/L	107	70.0	130	----
		Barium, total	7440-39-3	E466	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0265 mg/L	0.04 mg/L	66.2	70.0	130	MES
		Bismuth, total	7440-69-9	E466	0.00992 mg/L	0.01 mg/L	99.2	70.0	130	----
		Boron, total	7440-42-8	E466	0.0657 mg/L	0.1 mg/L	65.7	70.0	130	MES
		Cadmium, total	7440-43-9	E466	0.00423 mg/L	0.004 mg/L	106	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Copper, total	7440-50-8	E466	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00257 mg/L	0.002 mg/L	103	70.0	130	----
		Iron, total	7439-89-6	E466	2.04 mg/L	2 mg/L	102	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00257 mg/L	0.002 mg/L	103	70.0	130	----
		Lead, total	7439-92-1	E466	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0652 mg/L	0.1 mg/L	65.2	70.0	130	MES
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0198 mg/L	0.02 mg/L	99.1	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0418 mg/L	0.04 mg/L	104	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00251 mg/L	0.002 mg/L	100	70.0	130	----
		Phosphorus, total	7723-14-0	E466	10.5 mg/L	10 mg/L	105	70.0	130	----
		Potassium, total	7440-09-7	E466	3.95 mg/L	4 mg/L	98.8	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00259 mg/L	0.002 mg/L	104	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, total	7440-21-3	E466	10.0 mg/L	10 mg/L	100	70.0	130	----
		Silver, total	7440-22-4	E466	0.00403 mg/L	0.004 mg/L	101	70.0	130	----
		Sodium, total	7440-23-5	E466	1.98 mg/L	2 mg/L	98.9	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report							
					Spike		Recovery (%)	Recovery Limits (%)				
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier		
Total Metals (Undigested) (QCLot: 1469891) - continued												
YL2400500-002	BRP-18	Strontium, total	7440-24-6	E466	ND mg/L	----	ND	70.0	130	----		
		Sulfur, total	7704-34-9	E466	19.8 mg/L	20 mg/L	98.9	70.0	130	----		
		Tantalum, total	7440-25-7	E466	0.00253 mg/L	0.002 mg/L	101	70.0	130	----		
		Tellurium, total	13494-80-9	E466	0.0427 mg/L	0.04 mg/L	107	70.0	130	----		
		Thallium, total	7440-28-0	E466	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----		
		Thorium, total	7440-29-1	E466	0.0175 mg/L	0.02 mg/L	87.6	70.0	130	----		
		Tin, total	7440-31-5	E466	0.0201 mg/L	0.02 mg/L	101	70.0	130	----		
		Titanium, total	7440-32-6	E466	0.0406 mg/L	0.04 mg/L	101	70.0	130	----		
		Tungsten, total	7440-33-7	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----		
		Uranium, total	7440-61-1	E466	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----		
		Vanadium, total	7440-62-2	E466	0.104 mg/L	0.1 mg/L	104	70.0	130	----		
		Yttrium, total	7440-65-5	E466	0.00266 mg/L	0.002 mg/L	106	70.0	130	----		
		Zinc, total	7440-66-6	E466	0.437 mg/L	0.4 mg/L	109	70.0	130	----		
		Zirconium, total	7440-67-7	E466	0.0402 mg/L	0.04 mg/L	101	70.0	130	----		
Dissolved Metals (QCLot: 1469892)												
YL2400500-002	BRP-18	Aluminum, dissolved	7429-90-5	E465	0.194 mg/L	0.2 mg/L	96.9	70.0	130	----		
		Antimony, dissolved	7440-36-0	E465	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----		
		Arsenic, dissolved	7440-38-2	E465	0.0210 mg/L	0.02 mg/L	105	70.0	130	----		
		Barium, dissolved	7440-39-3	E465	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	----		
		Beryllium, dissolved	7440-41-7	E465	0.0373 mg/L	0.04 mg/L	93.2	70.0	130	----		
		Bismuth, dissolved	7440-69-9	E465	0.00983 mg/L	0.01 mg/L	98.3	70.0	130	----		
		Boron, dissolved	7440-42-8	E465	0.0938 mg/L	0.1 mg/L	93.8	70.0	130	----		
		Cadmium, dissolved	7440-43-9	E465	0.00413 mg/L	0.004 mg/L	103	70.0	130	----		
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----		
		Cesium, dissolved	7440-46-2	E465	0.0100 mg/L	0.01 mg/L	100	70.0	130	----		
		Chromium, dissolved	7440-47-3	E465	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----		
		Cobalt, dissolved	7440-48-4	E465	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----		
		Copper, dissolved	7440-50-8	E465	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----		
		Gallium, dissolved	7440-55-3	E465	0.00256 mg/L	0.002 mg/L	102	70.0	130	----		
		Iron, dissolved	7439-89-6	E465	1.93 mg/L	2 mg/L	96.4	70.0	130	----		
		Lanthanum, dissolved	7439-91-0	E465	0.00256 mg/L	0.002 mg/L	103	70.0	130	----		
		Lead, dissolved	7439-92-1	E465	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----		
		Lithium, dissolved	7439-93-2	E465	0.0925 mg/L	0.1 mg/L	92.5	70.0	130	----		
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----		
		Manganese, dissolved	7439-96-5	E465	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----		
		Molybdenum, dissolved	7439-98-7	E465	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----		
		Nickel, dissolved	7440-02-0	E465	0.0400 mg/L	0.04 mg/L	99.9	70.0	130	----		
		Niobium, dissolved	7440-03-1	E465	0.00246 mg/L	0.002 mg/L	98.3	70.0	130	----		
		Phosphorus, dissolved	7723-14-0	E465	10.1 mg/L	10 mg/L	101	70.0	130	----		
		Potassium, dissolved	7440-09-7	E465	3.78 mg/L	4 mg/L	94.4	70.0	130	----		
		Rhenium, dissolved	7440-15-5	E465	0.00264 mg/L	0.002 mg/L	105	70.0	130	----		
		Rubidium, dissolved	7440-17-7	E465	0.0192 mg/L	0.02 mg/L	96.3	70.0	130	----		
		Selenium, dissolved	7782-49-2	E465	0.0411 mg/L	0.04 mg/L	103	70.0	130	----		
				Silicon, dissolved	7440-21-3	E465	9.86 mg/L	10 mg/L	98.6	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1469892) - continued										
YL2400500-002	BRP-18	Silver, dissolved	7440-22-4	E465	0.00403 mg/L	0.004 mg/L	101	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.93 mg/L	2 mg/L	96.5	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	20.0 mg/L	20 mg/L	100	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00264 mg/L	0.002 mg/L	105	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0424 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00380 mg/L	0.004 mg/L	94.9	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0178 mg/L	0.02 mg/L	89.2	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0398 mg/L	0.04 mg/L	99.4	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00380 mg/L	0.004 mg/L	95.0	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00268 mg/L	0.002 mg/L	107	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.414 mg/L	0.4 mg/L	104	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 1472651)										
WP2413154-002	Anonymous	Mercury, dissolved	7439-97-6	E509-L	4.18 ng/L	5 ng/L	83.6	70.0	130	----

Qualifiers

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).



CHAIN OF CUSTODY

ALS Laboratory

CLIENT: Sabina Gold & Silver Corporation

PROJECT: 2267328

SITE: 020048

PURCHASE ORDER NO.: Quote number: YL23-SAB100-001 Date: 08 May 2024

PROJECT MANAGER: Marie Koels

SAMPLES: Melissa Thompson

EMAIL REPORTS TO: zts@als.com, bts@als.com, jts@als.com

SPECIAL HANDLING/STORAGE OR DISPOSAL:

RECEIVED BY: Melissa Thompson

RECEIVED BY: jts

RECEIVED BY:

RECEIVED BY:

TURNAROUND REQUIREMENTS: Standard TAT may be longer for some tests e.g. like Trace Organic

DATE/TIME: 27 May 2024 15:00

DATE/TIME: 27 May 2024 15:00

DATE/TIME:

ALB QUOTE NO: YL23-SAB100-001

EMAIL INVOICE TO:

FOR LABORATORY USE ONLY (CHECK)

Yes No N/A
Cleanly sealed sample? Yes No N/A
Free of / frozen on / broken pieces? Yes No N/A
Properly sealed / temperature controlled? Yes No N/A
Other comments: 3.7 C

ALS USE ONLY SAMPLE DETAILS Sample ID: (This description will appear on the report)

DATE / TIME (dd-mm-yyyy)

MATRIX

TOTAL CONTAINERS

Conventional parameters and Major ions

Metals

Nutrients

Total cyanide, WAD cyanide, Free cyanide

Sulfide

Residual TSS

Chlorophyll

Additional Information

Comments on field collection, sample storage, or any other relevant details (CC and/or other)

BRD-19

BRP-18

FB

G1R0F

25-May-2024 15:50

25-May-2024 12:40

25-May-2024 16:15

26-May-2024 12:10

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TOTAL

Telephone : +1 807 673 6593



Environmental Division
Yellowknife
Work Order Reference
YL24005500

CERTIFICATE OF ANALYSIS

Work Order	: YL2400519	Page	: 1 of 11
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 28-May-2024 15:15
PO	: ----	Date Analysis Commenced	: 31-May-2024
C-O-C number	: ----	Issue Date	: 07-Jun-2024 09:03
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Michael Webb	Analyst	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sam Silveira	Analyst	Metals, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
RRV	Reported result verified by repeat analysis.



Analytical Results

Sub-Matrix: Water				Client sample ID	WOLFOF	BRP-34	BRP-30	BRP-23	FD-BRP-23
(Matrix: Water)									
Client sampling date / time				27-May-2024 00:00	27-May-2024 00:00	27-May-2024 00:00	27-May-2024 00:00	27-May-2024 00:00	27-May-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400519-001	YL2400519-002	YL2400519-003	YL2400519-004	YL2400519-005
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	7.3	5.1	3.3	7.5	7.5
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	7.3	5.1	3.3	7.5	7.5
Conductivity	----	E100/VA	2.0	µS/cm	36.4	56.1	18.3	37.6	37.3
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	14.9	21.9	7.17	15.8	15.5
pH	----	E108/VA	0.10	pH units	7.13	6.95	6.62	7.13	7.14
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	38	52	17	23	30
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	26.5	37.3	20.2	29.3	27.9
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	3.0	3.0
Turbidity	----	E121/VA	0.10	NTU	0.64	0.93	0.49	1.04	1.05
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0152	0.0714	0.0071	0.0678	0.0755
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	0.73	4.80	<0.50	1.04	1.02
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.253	0.363	0.485	0.364	0.457
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.0269	0.384	<0.0050	0.111	0.110
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	0.0174	<0.0010	<0.0010	<0.0010
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0108	0.0092	0.0149	0.0139	0.0204
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0057	0.0047	0.0067	0.0034	0.0036
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	0.99	1.45	1.34	0.99	0.99
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	7.60	10.8	3.09	7.25	7.32
Cyanides									
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050



Analytical Results

Sub-Matrix: Water					Client sample ID	WOLFOF	BRP-34	BRP-30	BRP-23	FD-BRP-23
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400519-001	YL2400519-002	YL2400519-003	YL2400519-004	YL2400519-005	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	---	E336/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	---	E358-L/EO	0.50	mg/L	6.47	6.30	10.2	8.42	7.05	
Carbon, total organic [TOC]	---	E355-L/EO	0.50	mg/L	7.52	6.64	10.0	7.76	9.05	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	0.0021	0.0017	0.0022	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	0.0022	0.0018	0.0023	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	2.30	2.19	3.92	2.42	2.34	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0326	0.0734	0.0632	0.0320	0.0323	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000090	0.0000142	0.0000072	0.0000145	0.0000144	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000292	0.000318	0.000228	0.000258	0.000269	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00559	0.0107	0.00551	0.00609	0.00608	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000022	0.0000065	0.0000042	0.0000024	0.0000029	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000033	0.0000128	0.0000061	0.0000038	0.0000045	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	3.00	4.90	1.53	3.40	3.37	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	<0.0000050	0.0000114	<0.0000050	<0.0000050	<0.0000050	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000401	0.000255	0.000262	0.000146	0.000145	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000161	0.000849	0.000334	0.000270	0.000270	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00116	0.00185	0.00160	0.00117	0.00116	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.109	0.100	0.144	0.127	0.129	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000161	0.000362	0.000146	0.000175	0.000184	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000183	0.0000339	0.0000098	0.0000178	0.0000192	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00058	0.00088	0.00036	0.00062	0.00059	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	2.04	2.72	1.03	2.41	2.41	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00339	0.0238	0.00259	0.00574	0.00568	



Analytical Results

Sub-Matrix: Water					Client sample ID	WOLFOF	BRP-34	BRP-30	BRP-23	FD-BRP-23
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400519-001	YL2400519-002	YL2400519-003	YL2400519-004	YL2400519-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000016	0.000017	0.000019	0.000013	0.000011	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00383	0.00737	0.00324	0.00406	0.00404	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.490	0.620	0.364	0.542	0.542	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00127	0.00146	0.00100	0.00140	0.00140	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000034	0.000027	<0.000025	0.000034	<0.000025	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.466	0.753	0.612	0.465	0.474	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	0.0000036	0.0000025	0.0000024	<0.0000020	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	0.792	0.985	0.590	0.902	0.900	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0122	0.0253	0.00623	0.0133	0.0133	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	2.54	3.63	1.10	2.86	2.87	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000020	0.0000031	0.0000023	0.0000022	0.0000021	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000124	0.0000216	0.0000265	0.0000103	0.0000124	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000432	0.000895	0.000315	0.000755	0.000669	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000066	0.0000244	0.0000115	0.0000061	0.0000056	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000083	0.000142	0.000101	0.000134	0.000129	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000059	0.000138	0.000111	0.000064	0.000067	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00073	0.00227	0.00166	0.00077	0.00078	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000054	0.000085	0.000118	0.000053	0.000050	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0153	0.0272	0.0524	0.0140	0.0141	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000087	0.0000140	0.0000063	0.0000141	0.0000145	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000263	0.000251	0.000230	0.000240	0.000248	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00537	0.0105	0.00546	0.00609	0.00604	



Analytical Results

Sub-Matrix: Water					Client sample ID	WOLFOF	BRP-34	BRP-30	BRP-23	FD-BRP-23
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400519-001	YL2400519-002	YL2400519-003	YL2400519-004	YL2400519-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	0.0000044	0.0000043	<0.0000020	<0.0000020	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	<0.0000025	0.0000142	0.0000076	0.0000048	0.0000028	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	2.88	4.72	1.39	2.95	2.91	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	<0.0000050	0.0000085	<0.0000050	<0.0000050	<0.0000050	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000171	0.000092	0.000220	0.000152	0.000086	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000120	0.000750	0.000313	0.000214	0.000215	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00105	0.00164	0.00141	0.000960	0.000945	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0533	0.0391	0.116	0.0589	0.0602	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000103	0.000297	0.000136	0.000121	0.000127	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000053	0.0000088	<0.0000050	0.0000058	0.0000059	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00057	0.00079	0.00038	0.00059	0.00060	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	1.87	2.45	0.899	2.05	2.01	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00253	0.0220	0.00256	0.00471	0.00470	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	1.74	1.75	1.66	1.55	1.62	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000016	0.000013	0.000015	0.000010	<0.000010	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00347	0.00690	0.00290	0.00343	0.00345	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.465	0.575	0.321	0.463	0.462	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00119	0.00133	0.000900	0.00119	0.00118	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000031	0.000037	0.000030	0.000040	0.000030	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.443	0.668	0.626	0.450	0.451	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	0.0000024	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	0.739	0.870	0.500	0.749	0.745	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0124	0.0236	0.00556	0.0113	0.0115	



Analytical Results

Sub-Matrix: Water					Client sample ID	WOLFOF	BRP-34	BRP-30	BRP-23	FD-BRP-23
(Matrix: Water)										
Client sampling date / time					27-May-2024 00:00	27-May-2024 00:00	27-May-2024 00:00	27-May-2024 00:00	27-May-2024 00:00	27-May-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400519-001	YL2400519-002	YL2400519-003	YL2400519-004	YL2400519-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	2.59	3.70	1.16	2.92	2.94	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000017	0.0000026	0.0000022	0.0000018	0.0000019	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000068	0.0000139	0.0000324	0.0000100	0.0000064	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000066	0.000101	0.000223	0.000067	0.000074	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000045	0.0000107	0.0000099	0.0000045	0.0000042	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000038	0.000048	0.000088	0.000062	0.000060	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000045	0.000120	0.000114	0.000051	0.000050	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00063	0.00235	0.00145	0.00079	0.00077	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000050	0.000069	0.000130	0.000050	0.000048	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	28-May-2024 00:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400519-006	Result	-----	-----	-----	-----
Physical Tests										
Hardness (as CaCO3), dissolved	---	EC100/VA	0.50	mg/L	<0.50		---	---	---	---
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	<0.00020		---	---	---	---
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	<0.0000050		---	---	---	---
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	<0.000010		---	---	---	---
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	<0.000020		---	---	---	---
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020		---	---	---	---
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010		---	---	---	---
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050		---	---	---	---
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	<0.0000025		---	---	---	---
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	<0.010		---	---	---	---
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	<0.0000050		---	---	---	---
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	<0.000040		---	---	---	---
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	<0.0000050		---	---	---	---
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	<0.000050		---	---	---	---
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050		---	---	---	---
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	<0.00050		---	---	---	---
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	<0.000010		---	---	---	---
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	<0.0000050		---	---	---	---
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	<0.00010		---	---	---	---
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	<0.0010		---	---	---	---
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0000084		---	---	---	---
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010		---	---	---	---
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	<0.000020		---	---	---	---
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010		---	---	---	---
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010		---	---	---	---
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	<0.0050		---	---	---	---
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050		---	---	---	---
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	<0.0000050		---	---	---	---
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025		---	---	---	---



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
Client sampling date / time					28-May-2024 00:00	----	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400519-006	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Total Metals (Undigested)										
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	<0.050	----	----	----	----	----
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	<0.010	----	----	----	----	----
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	<0.50	----	----	----	----	----
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	<0.0000025	----	----	----	----	----
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	<0.000040	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	28-May-2024 00:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400519-006	-----	-----	-----	-----	
					Result	---	---	---	---	
Dissolved Metals										
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	----	----	----	----	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	
Iron, dissolved	7439-89-6	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	<0.0010	----	----	----	----	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.0000054 ^{RRV}	----	----	----	----	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	----	----	----	----	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	----	----	----	----	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	<0.050	----	----	----	----	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	<0.010	----	----	----	----	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	<0.50	----	----	----	----	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	28-May-2024 00:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400519-006	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Dissolved Metals										
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2400519	Page	: 1 of 27
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 28-May-2024 15:15
PO	: ----	Issue Date	: 07-Jun-2024 09:03
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-23	E298	27-May-2024	31-May-2024	28 days	4 days	✓	31-May-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-30	E298	27-May-2024	31-May-2024	28 days	4 days	✓	31-May-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-34	E298	27-May-2024	31-May-2024	28 days	4 days	✓	31-May-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FD-BRP-23	E298	27-May-2024	31-May-2024	28 days	4 days	✓	31-May-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WOLFOF	E298	27-May-2024	31-May-2024	28 days	4 days	✓	31-May-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-23	E235.Br-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-30	E235.Br-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-34	E235.Br-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FD-BRP-23	E235.Br-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WOLFOF	E235.Br-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-23	E235.Cl	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-30	E235.Cl	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-34	E235.Cl	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FD-BRP-23	E235.Cl	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WOLFOF	E235.Cl	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-23	E378-U	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-30	E378-U	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-34	E378-U	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FD-BRP-23	E378-U	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE WOLFOF	E378-U	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-23	E235.F	27-May-2024	01-Jun-2024	28 days	6 days	✔	01-Jun-2024	28 days	6 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-30	E235.F	27-May-2024	01-Jun-2024	28 days	6 days	✔	01-Jun-2024	28 days	6 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-34	E235.F	27-May-2024	01-Jun-2024	28 days	6 days	✔	01-Jun-2024	28 days	6 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE FD-BRP-23	E235.F	27-May-2024	01-Jun-2024	28 days	6 days	✔	01-Jun-2024	28 days	6 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE WOLFOF	E235.F	27-May-2024	01-Jun-2024	28 days	6 days	✔	01-Jun-2024	28 days	6 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-23	E235.NO3-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-30	E235.NO3-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-34	E235.NO3-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FD-BRP-23	E235.NO3-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WOLFOF	E235.NO3-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-23	E235.NO2-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-30	E235.NO2-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-34	E235.NO2-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FD-BRP-23	E235.NO2-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WOLFOF	E235.NO2-L	27-May-2024	01-Jun-2024	3 days	5 days	✖ EHT	01-Jun-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-23	E392	27-May-2024	----	----	----		06-Jun-2024	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-30	E392	27-May-2024	----	----	----		06-Jun-2024	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-34	E392	27-May-2024	----	----	----		06-Jun-2024	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FD-BRP-23	E392	27-May-2024	----	----	----		06-Jun-2024	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE WOLFOF	E392	27-May-2024	----	----	----		06-Jun-2024	28 days	10 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-23	E235.SO4	27-May-2024	01-Jun-2024	28 days	6 days	✔	01-Jun-2024	28 days	6 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-30	E235.SO4	27-May-2024	01-Jun-2024	28 days	6 days	✔	01-Jun-2024	28 days	6 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-34	E235.SO4	27-May-2024	01-Jun-2024	28 days	6 days	✔	01-Jun-2024	28 days	6 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE FD-BRP-23	E235.SO4	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WOLFOF	E235.SO4	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-23	E375-U	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-30	E375-U	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-34	E375-U	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FD-BRP-23	E375-U	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) WOLFOF	E375-U	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-23	E318	27-May-2024	04-Jun-2024	28 days	8 days	✓	04-Jun-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-30	E318	27-May-2024	04-Jun-2024	28 days	8 days	✓	04-Jun-2024	28 days	8 days	✓

Page : 9 of 27
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E318	27-May-2024	04-Jun-2024	28 days	8 days	✓	04-Jun-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FD-BRP-23	E318	27-May-2024	04-Jun-2024	28 days	8 days	✓	04-Jun-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) WOLFOF	E318	27-May-2024	04-Jun-2024	28 days	8 days	✓	04-Jun-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-23	E372-S	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-30	E372-S	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-34	E372-S	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FD-BRP-23	E372-S	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) WOLFOF	E372-S	27-May-2024	31-May-2024	28 days	5 days	✓	02-Jun-2024	28 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E339	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E339	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E339	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-BRP-23	E339	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E339	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E333	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E333	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E333	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-BRP-23	E333	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E333	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓

Page : 11 of 27
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E336	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E336	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E336	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-BRP-23	E336	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E336	27-May-2024	04-Jun-2024	14 days	9 days	✓	04-Jun-2024	14 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-23	E509-L	27-May-2024	04-Jun-2024	28 days	9 days	✓	04-Jun-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-30	E509-L	27-May-2024	04-Jun-2024	28 days	9 days	✓	04-Jun-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-34	E509-L	27-May-2024	04-Jun-2024	28 days	9 days	✓	04-Jun-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FD-BRP-23	E509-L	27-May-2024	04-Jun-2024	28 days	9 days	✓	04-Jun-2024	28 days	9 days	✓

Page : 12 of 27
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) WOLFOF	E509-L	27-May-2024	04-Jun-2024	28 days	9 days	✓	04-Jun-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FB	E465	28-May-2024	04-Jun-2024	180 days	8 days	✓	05-Jun-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-23	E465	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-30	E465	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-34	E465	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FD-BRP-23	E465	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) WOLFOF	E465	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-34	E358-L	27-May-2024	02-Jun-2024	28 days	7 days	✓	03-Jun-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WOLFOF	E358-L	27-May-2024	02-Jun-2024	28 days	7 days	✓	03-Jun-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-23	E358-L	27-May-2024	03-Jun-2024	28 days	8 days	✓	04-Jun-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-30	E358-L	27-May-2024	03-Jun-2024	28 days	8 days	✓	04-Jun-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FD-BRP-23	E358-L	27-May-2024	03-Jun-2024	28 days	8 days	✓	04-Jun-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-23	E355-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-30	E355-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E355-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FD-BRP-23	E355-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) WOLFOF	E355-L	27-May-2024	01-Jun-2024	28 days	6 days	✓	01-Jun-2024	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-23	E290	27-May-2024	01-Jun-2024	14 days	6 days	✓	03-Jun-2024	14 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-30	E290	27-May-2024	01-Jun-2024	14 days	6 days	✓	03-Jun-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-34	E290	27-May-2024	01-Jun-2024	14 days	6 days	✓	03-Jun-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FD-BRP-23	E290	27-May-2024	01-Jun-2024	14 days	6 days	✓	03-Jun-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WOLFOF	E290	27-May-2024	01-Jun-2024	14 days	6 days	✓	03-Jun-2024	14 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-23	E100	27-May-2024	01-Jun-2024	28 days	6 days	✓	03-Jun-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-30	E100	27-May-2024	01-Jun-2024	28 days	6 days	✓	03-Jun-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-34	E100	27-May-2024	01-Jun-2024	28 days	6 days	✓	03-Jun-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE FD-BRP-23	E100	27-May-2024	01-Jun-2024	28 days	6 days	✓	03-Jun-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE WOLFOF	E100	27-May-2024	01-Jun-2024	28 days	6 days	✓	03-Jun-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-23	E108	27-May-2024	01-Jun-2024	0.25 hrs	135 hrs	* EHTR-FM	03-Jun-2024	0.25 hrs	190 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-30	E108	27-May-2024	01-Jun-2024	0.25 hrs	135 hrs	* EHTR-FM	03-Jun-2024	0.25 hrs	190 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-34	E108	27-May-2024	01-Jun-2024	0.25 hrs	135 hrs	* EHTR-FM	03-Jun-2024	0.25 hrs	190 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE FD-BRP-23	E108	27-May-2024	01-Jun-2024	0.25 hrs	135 hrs	* EHTR-FM	03-Jun-2024	0.25 hrs	190 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE WOLFOF	E108	27-May-2024	01-Jun-2024	0.25 hrs	135 hrs	* EHTR-FM	03-Jun-2024	0.25 hrs	190 hrs	* EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-23	E162	27-May-2024	----	----	----		02-Jun-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-30	E162	27-May-2024	----	----	----		02-Jun-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-34	E162	27-May-2024	----	----	----		02-Jun-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FD-BRP-23	E162	27-May-2024	----	----	----		02-Jun-2024	7 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE WOLFOF	E162	27-May-2024	----	----	----		02-Jun-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-23	E160	27-May-2024	----	----	----		02-Jun-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-30	E160	27-May-2024	----	----	----		02-Jun-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-34	E160	27-May-2024	----	----	----		02-Jun-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FD-BRP-23	E160	27-May-2024	----	----	----		02-Jun-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WOLFOF	E160	27-May-2024	----	----	----		02-Jun-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-23	E121	27-May-2024	----	----	----		06-Jun-2024	3 days	10 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-30	E121	27-May-2024	----	----	----		06-Jun-2024	3 days	10 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-34	E121	27-May-2024	----	----	----		06-Jun-2024	3 days	10 days	✖ EHT

Page : 17 of 27
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE FD-BRP-23	E121	27-May-2024	----	----	----		06-Jun-2024	3 days	10 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE WOLFOF	E121	27-May-2024	----	----	----		06-Jun-2024	3 days	10 days	✖ EHT
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FB	E466	28-May-2024	04-Jun-2024	180 days	8 days	✓	05-Jun-2024	180 days	8 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-23	E466	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-30	E466	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-34	E466	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FD-BRP-23	E466	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) WOLFOF	E466	27-May-2024	04-Jun-2024	180 days	9 days	✓	05-Jun-2024	180 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-23	E508-L	27-May-2024	05-Jun-2024	28 days	9 days	✓	05-Jun-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-30	E508-L	27-May-2024	05-Jun-2024	28 days	9 days	✓	05-Jun-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-34	E508-L	27-May-2024	05-Jun-2024	28 days	9 days	✓	05-Jun-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FD-BRP-23	E508-L	27-May-2024	05-Jun-2024	28 days	9 days	✓	05-Jun-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) WOLFOF	E508-L	27-May-2024	05-Jun-2024	28 days	9 days	✓	05-Jun-2024	28 days	9 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-23	E395	27-May-2024	----	----	----		01-Jun-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-30	E395	27-May-2024	----	----	----		01-Jun-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-34	E395	27-May-2024	----	----	----		01-Jun-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FD-BRP-23	E395	27-May-2024	----	----	----		01-Jun-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WOLFOF	E395	27-May-2024	----	----	----		01-Jun-2024	7 days	5 days	✓

[Legend & Qualifier Definitions](#)

Page : 19 of 27
Work Order : YL2400519
Client : B2Gold Back River Corp.
Project : 22567626



EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1471350	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1467844	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1471354	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	1471353	1	20	5.0	5.0	✓
Conductivity in Water	E100	1471351	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1475856	1	17	5.8	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1474693	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1472103	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1471360	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1471352	1	20	5.0	5.0	✓
Free Cyanide	E339	1472997	2	17	11.7	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1471355	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1471356	1	20	5.0	5.0	✓
pH by Meter	E108	1471349	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1479259	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1471357	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1471712	1	20	5.0	5.0	✓
Total Cyanide	E333	1472995	2	37	5.4	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1469975	2	26	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1472425	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1476719	1	20	5.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1474697	1	9	11.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1471477	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1468674	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1470894	1	16	6.2	5.0	✓
TSS by Gravimetry	E160	1471710	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1478993	1	20	5.0	5.0	✓
WAD Cyanide	E336	1472996	2	39	5.1	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1471350	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1467844	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1471354	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	1471353	1	20	5.0	5.0	✓
Conductivity in Water	E100	1471351	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1475856	1	17	5.8	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1474693	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1472103	2	40	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1471360	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1471352	1	20	5.0	5.0	✔
Free Cyanide	E339	1472997	2	17	11.7	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1471355	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1471356	1	20	5.0	5.0	✔
pH by Meter	E108	1471349	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1479259	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1471357	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1471712	1	20	5.0	5.0	✔
Total Cyanide	E333	1472995	2	37	5.4	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1469975	2	26	7.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1472425	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1476719	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1474697	1	9	11.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1471477	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1468674	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1470894	1	16	6.2	5.0	✔
TSS by Gravimetry	E160	1471710	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1478993	1	20	5.0	5.0	✔
WAD Cyanide	E336	1472996	2	39	5.1	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1471350	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	1467844	1	18	5.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1471354	1	19	5.2	5.0	✔
Chloride in Water by IC	E235.Cl	1471353	1	20	5.0	5.0	✔
Conductivity in Water	E100	1471351	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1475856	1	17	5.8	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1474693	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1472103	2	40	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1471360	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1471352	1	20	5.0	5.0	✔
Free Cyanide	E339	1472997	2	17	11.7	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1471355	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1471356	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1479259	1	20	5.0	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1471357	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1471712	1	20	5.0	5.0	✔
Total Cyanide	E333	1472995	2	37	5.4	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1469975	2	26	7.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1472425	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1476719	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1474697	1	9	11.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1471477	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1468674	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1470894	1	16	6.2	5.0	✔
TSS by Gravimetry	E160	1471710	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1478993	1	20	5.0	5.0	✔
WAD Cyanide	E336	1472996	2	39	5.1	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1467844	1	18	5.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1471354	1	19	5.2	5.0	✔
Chloride in Water by IC	E235.Cl	1471353	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1475856	1	17	5.8	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1474693	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1472103	2	40	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1471360	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1471352	1	20	5.0	5.0	✔
Free Cyanide	E339	1472997	2	17	11.7	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1471355	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1471356	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1479259	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1471357	1	20	5.0	5.0	✔
Total Cyanide	E333	1472995	2	37	5.4	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1469975	2	26	7.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1472425	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1476719	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1474697	1	9	11.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1471477	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1468674	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1470894	1	16	6.2	5.0	✔
WAD Cyanide	E336	1472996	2	39	5.1	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Waterloo	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Waterloo	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Waterloo	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 27 of 27
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2400519	Page	: 1 of 21
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 28-May-2024 15:15
PO	: ----	Date Analysis Commenced	: 31-May-2024
C-O-C number	: ----	Issue Date	: 07-Jun-2024 09:03
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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Page : 2 of 21
Work Order : YL2400519
Client : B2Gold Back River Corp.
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1471349)											
VA24B2434-002	Anonymous	pH	----	E108	0.10	pH units	8.28	8.29	0.121%	4%	----
Physical Tests (QC Lot: 1471350)											
VA24B2434-002	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	112	114	1.60%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	112	114	1.60%	20%	----
Physical Tests (QC Lot: 1471351)											
VA24B2434-002	Anonymous	Conductivity	----	E100	1.0	µS/cm	222	224	0.897%	10%	----
Physical Tests (QC Lot: 1471710)											
VA24B1890-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1471712)											
VA24B1890-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	284	278	2.14%	20%	----
Physical Tests (QC Lot: 1478993)											
VA24B2541-001	Anonymous	Turbidity	----	E121	0.10	NTU	0.52	0.57	0.05	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1467844)											
YL2400519-005	FD-BRP-23	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0755	0.0748	0.931%	20%	----
Anions and Nutrients (QC Lot: 1468674)											
FC2401275-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.249	0.245	1.58%	20%	----
Anions and Nutrients (QC Lot: 1469975)											
YL2400518-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.100	mg/L	2.86	2.88	0.856%	20%	----
Anions and Nutrients (QC Lot: 1469976)											
YL2400519-003	BRP-30	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0067	0.0068	0.00003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1471352)											
VA24B2208-033	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.030	0.029	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1471353)											
VA24B2208-033	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.99	0.99	0.007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1471354)											
VA24B2208-033	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1471355)											
VA24B2208-033	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0289	0.0287	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1471356)											
VA24B2208-033	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1471357)											
VA24B2208-033	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	21.0	21.0	0.338%	20%	----
Anions and Nutrients (QC Lot: 1471360)											
VA24B2208-033	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1472425)											
EO2404163-009	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.422	0.432	0.011	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1479259)											
VA24B2645-005	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	4.06	4.04	0.02	Diff <2x LOR	----
Cyanides (QC Lot: 1472995)											
VA24B2328-007	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1472996)											
VA24B2328-007	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1472997)											
WP2413722-001	Anonymous	Cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1474842)											
VA24B2084-003	Anonymous	Cyanide, free	----	E339	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
Cyanides (QC Lot: 1474843)											
VA24B2273-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1474844)											
VA24B2273-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1471477)											
EO2404125-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	29.2	29.8	2.05%	20%	----
Organic / Inorganic Carbon (QC Lot: 1472103)											
EO2404159-006	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	11.8	11.5	2.30%	20%	----
Organic / Inorganic Carbon (QC Lot: 1473294)											
EO2404114-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	8.97	8.75	2.43%	20%	----
Total Sulfides (QC Lot: 1470894)											
CG2407159-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
Total Metals (QC Lot: 1476719)											

Page : 5 of 21
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1476719) - continued											
VA24B2383-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.0000118 mg/L	11.8	0.186%	20%	----
Total Metals (Undigested) (QC Lot: 1474697)											
YL2400519-001	WOLFOF	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0326	0.0331	1.66%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000090	0.0000092	0.0000002	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000292	0.000294	0.581%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00559	0.00554	0.841%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000022	<0.0000020	0.0000002	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000033	0.0000031	0.0000002	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	3.00	3.03	1.11%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	<0.0000050	0.0000052	0.0000002	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000401	0.000409	2.00%	20%	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000161	0.000165	2.15%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00116	0.00116	0.126%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.109	0.109	0.0362%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000161	0.000156	3.04%	20%	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000183	0.0000184	0.0000001	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00058	0.00058	0.0000007	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.04	2.03	0.270%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00339	0.00339	0.129%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000016	0.000015	0.0000009	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00383	0.00389	1.52%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.490	0.486	0.986%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00127	0.00127	0.342%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000034	0.000032	0.000002	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.466	0.456	0.010	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	0.0000036	0.0000034	0.0000002	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	0.792	0.789	0.360%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0122	0.0124	1.19%	20%	----



Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1474697) - continued											
YL2400519-001	WOLFOF	Sulfur, total	7704-34-9	E466	0.50	mg/L	2.54	2.46	0.08	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000020	0.0000020	0.000000006	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	0.0000124	0.0000098	0.0000026	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000432	0.000500	0.000068	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000066	0.0000068	0.0000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000083	0.000077	0.000006	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000059	0.000057	0.000002	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00073	0.00078	0.00005	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000054	0.000054	0.0000007	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1474693)											
YL2400519-001	WOLFOF	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0153	0.0150	2.14%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000087	0.0000088	0.0000001	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000263	0.000267	1.52%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00537	0.00528	1.71%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	<0.0000025	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.88	2.79	3.20%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000171	0.000163	0.000008	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000120	0.000116	3.40%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00105	0.000998	5.28%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0533	0.0516	3.24%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000103	0.000104	1.08%	20%	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000053	<0.0000050	0.0000003	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00057	0.00057	0.000002	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.87	1.80	3.63%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00253	0.00244	3.65%	20%	----

Page : 7 of 21
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1474693) - continued											
YL2400519-001	WOLFOF	Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000016	0.000016	0.0000002	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00347	0.00333	4.08%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.465	0.449	3.48%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00119	0.00115	3.08%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000031	0.000034	0.000003	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.443	0.439	0.003	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	0.0000024	<0.0000020	0.0000004	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.739	0.702	5.17%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0124	0.0120	3.69%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.59	2.65	0.07	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000017	0.0000017	0.00000001	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000068	0.0000117	0.0000049	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	0.000066	0.000071	0.000005	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000045	0.0000059	0.0000014	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000038	0.000038	0.00000007	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000045	0.000045	0.0000004	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00063	0.00058	0.00005	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000050	0.000051	0.0000006	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1475856)											
VA24B2215-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	2.50	ng/L	11.4	11.8	0.46	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1471350)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1471351)						
Conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 1471710)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1471712)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1478993)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1467844)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1468674)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1469975)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1469976)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1471352)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1471353)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1471354)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1471355)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1471356)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1471357)						

Page : 9 of 21
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1471357) - continued						
Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1471360)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1472425)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1479259)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1472995)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1472996)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1472997)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1474842)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1474843)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1474844)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1471477)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1472103)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1473294)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1470894)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1476719)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1474697)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1474697) - continued						
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----

Page : 11 of 21
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1474697) - continued						
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1474693)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----

Page : 12 of 21
 Work Order : YL2400519
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1474693) - continued						
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1475856)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1471349)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1471350)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	102	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1471351)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	91.3	90.0	110	----
Physical Tests (QCLot: 1471710)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.0	85.0	115	----
Physical Tests (QCLot: 1471712)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1478993)									
Turbidity	----	E121	0.1	NTU	200 NTU	102	85.0	115	----
Anions and Nutrients (QCLot: 1467844)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.2	85.0	115	----
Anions and Nutrients (QCLot: 1468674)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1469975)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1469976)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	105	80.0	120	----
Anions and Nutrients (QCLot: 1471352)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1471353)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1471354)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1471355)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1471356)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1471357)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1471357) - continued									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1471360)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	86.9	80.0	120	----
Anions and Nutrients (QCLot: 1472425)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1479259)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	101	85.0	115	----
Cyanides (QCLot: 1472995)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	93.9	80.0	120	----
Cyanides (QCLot: 1472996)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	95.8	80.0	120	----
Cyanides (QCLot: 1472997)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	93.3	80.0	120	----
Cyanides (QCLot: 1474842)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	92.8	80.0	120	----
Cyanides (QCLot: 1474843)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	96.1	80.0	120	----
Cyanides (QCLot: 1474844)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	92.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1471477)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	111	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1472103)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1473294)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	111	80.0	120	----
Total Sulfides (QCLot: 1470894)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	96.4	80.0	120	----
Total Metals (QCLot: 1476719)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	92.8	80.0	120	----
Total Metals (Undigested) (QCLot: 1474697)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	104	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	100	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1474697) - continued									
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	96.9	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	99.9	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	86.7	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	98.4	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	88.6	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	97.9	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	97.3	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	98.8	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	97.8	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	94.6	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	95.0	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	98.5	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	103	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	97.2	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	99.3	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	92.0	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	105	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	97.0	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	97.3	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	100	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	109	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	98.2	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	98.0	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	98.8	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	96.0	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	98.4	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	106	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	87.2	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	99.4	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	101	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	94.1	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	97.9	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	95.6	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1474697) - continued									
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	93.3	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	99.7	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	94.8	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	99.0	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	98.4	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	97.6	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	95.8	80.0	120	----
Dissolved Metals (QCLot: 1474693)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	105	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	101	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	98.8	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	102	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	84.1	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	99.0	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	85.0	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	99.1	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	99.7	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	101	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	99.5	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	95.7	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	98.7	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	105	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	98.7	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	88.6	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	102	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	98.9	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	101	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	98.6	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	99.4	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	102	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	97.7	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1474693) - continued									
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	100	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	104	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	89.0	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	99.8	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	100	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	98.6	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	97.4	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	98.0	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	98.7	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	97.2	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	91.8	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	97.9	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	98.0	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	92.4	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	92.9	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Laboratory sample ID					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Client sample ID	Analyte	CAS Number	Method							
Anions and Nutrients (QCLot: 1467844)										
YL2400519-005	FD-BRP-23	Ammonia, total (as N)	7664-41-7	E298	0.0890 mg/L	0.1 mg/L	89.0	75.0	125	----
Anions and Nutrients (QCLot: 1468674)										
GP2400931-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1469975)										
YL2400518-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1469976)										
YL2400519-004	BRP-23	Phosphorus, total dissolved	7723-14-0	E375-U	0.0740 mg/L	0.067 mg/L	110	70.0	130	----
Anions and Nutrients (QCLot: 1471352)										
VA24B2208-034	Anonymous	Fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1471353)										
VA24B2208-034	Anonymous	Chloride	16887-00-6	E235.Cl	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1471354)										
VA24B2208-034	Anonymous	Bromide	24959-67-9	E235.Br-L	0.538 mg/L	0.5 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 1471355)										
VA24B2208-034	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.59 mg/L	2.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1471356)										
VA24B2208-034	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.518 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1471357)										
VA24B2208-034	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1471360)										
VA24B2208-034	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0292 mg/L	0.03 mg/L	97.2	70.0	130	----
Anions and Nutrients (QCLot: 1472425)										
EO2404163-008	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.68 mg/L	2.5 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 1479259)										
VA24B2645-004	Anonymous	Silicate (as SiO2)	7631-86-9	E392	ND mg/L	----	ND	75.0	125	----
Cyanides (QCLot: 1472995)										
VA24B2328-007	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.232 mg/L	0.25 mg/L	93.0	75.0	125	----
Cyanides (QCLot: 1472996)										
VA24B2328-007	Anonymous	Cyanide, weak acid dissociable	----	E336	0.121 mg/L	0.125 mg/L	96.9	75.0	125	----
Cyanides (QCLot: 1472997)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 1472997) - continued										
WP2413722-001	Anonymous	Cyanide, free	----	E339	0.115 mg/L	0.125 mg/L	92.2	75.0	125	----
Cyanides (QCLot: 1474842)										
VA24B2084-003	Anonymous	Cyanide, free	----	E339	5.13 mg/L	6.25 mg/L	82.1	75.0	125	----
Cyanides (QCLot: 1474843)										
VA24B2273-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.117 mg/L	0.125 mg/L	93.8	75.0	125	----
Cyanides (QCLot: 1474844)										
VA24B2273-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.230 mg/L	0.25 mg/L	92.1	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1471477)										
EO2404125-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1472103)										
EO2404159-006	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1473294)										
EO2404114-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1470894)										
CG2407159-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.223 mg/L	0.2 mg/L	112	75.0	125	----
Total Metals (QCLot: 1476719)										
VA24B2383-002	Anonymous	Mercury, total	7439-97-6	E508-L	ND ng/L	----	ND	70.0	130	----
Total Metals (Undigested) (QCLot: 1474697)										
YL2400519-002	BRP-34	Aluminum, total	7429-90-5	E466	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Barium, total	7440-39-3	E466	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0358 mg/L	0.04 mg/L	89.5	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00966 mg/L	0.01 mg/L	96.6	70.0	130	----
		Boron, total	7440-42-8	E466	0.0916 mg/L	0.1 mg/L	91.6	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00393 mg/L	0.004 mg/L	98.3	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00984 mg/L	0.01 mg/L	98.4	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Copper, total	7440-50-8	E466	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00250 mg/L	0.002 mg/L	100	70.0	130	----
		Iron, total	7439-89-6	E466	2.05 mg/L	2 mg/L	102	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00249 mg/L	0.002 mg/L	99.7	70.0	130	----
		Lead, total	7439-92-1	E466	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0908 mg/L	0.1 mg/L	90.8	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1474697) - continued										
YL2400519-002	BRP-34	Nickel, total	7440-02-0	E466	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00268 mg/L	0.002 mg/L	107	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.59 mg/L	10 mg/L	95.9	70.0	130	----
		Potassium, total	7440-09-7	E466	3.93 mg/L	4 mg/L	98.2	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00248 mg/L	0.002 mg/L	99.4	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		Silicon, total	7440-21-3	E466	9.28 mg/L	10 mg/L	92.8	70.0	130	----
		Silver, total	7440-22-4	E466	0.00366 mg/L	0.004 mg/L	91.5	70.0	130	----
		Sodium, total	7440-23-5	E466	2.02 mg/L	2 mg/L	101	70.0	130	----
		Strontium, total	7440-24-6	E466	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E466	18.6 mg/L	20 mg/L	93.2	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00251 mg/L	0.002 mg/L	100	70.0	130	----
		Tellurium, total	13494-80-9	E466	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0169 mg/L	0.02 mg/L	84.4	70.0	130	----
		Tin, total	7440-31-5	E466	0.0189 mg/L	0.02 mg/L	94.3	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0385 mg/L	0.04 mg/L	96.4	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Zinc, total	7440-66-6	E466	0.414 mg/L	0.4 mg/L	104	70.0	130	----
		Zirconium, total	7440-67-7	E466	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
Dissolved Metals (QCLot: 1474693)										
YL2400519-002	BRP-34	Aluminum, dissolved	7429-90-5	E465	0.194 mg/L	0.2 mg/L	97.2	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0359 mg/L	0.04 mg/L	89.8	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00946 mg/L	0.01 mg/L	94.6	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.0899 mg/L	0.1 mg/L	89.9	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00396 mg/L	0.004 mg/L	99.1	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00998 mg/L	0.01 mg/L	99.8	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0391 mg/L	0.04 mg/L	97.8	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00259 mg/L	0.002 mg/L	104	70.0	130	----
		Iron, dissolved	7439-89-6	E465	2.03 mg/L	2 mg/L	101	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00260 mg/L	0.002 mg/L	104	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.0885 mg/L	0.1 mg/L	88.5	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1474693) - continued										
YL2400519-002	BRP-34	Manganese, dissolved	7439-96-5	E465	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0398 mg/L	0.04 mg/L	99.4	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00260 mg/L	0.002 mg/L	104	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.35 mg/L	10 mg/L	93.5	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	3.89 mg/L	4 mg/L	97.4	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00254 mg/L	0.002 mg/L	102	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.00 mg/L	10 mg/L	90.0	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00376 mg/L	0.004 mg/L	94.0	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.96 mg/L	2 mg/L	97.8	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	18.3 mg/L	20 mg/L	91.4	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00373 mg/L	0.004 mg/L	93.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0158 mg/L	0.02 mg/L	78.9	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0364 mg/L	0.04 mg/L	91.0	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00381 mg/L	0.004 mg/L	95.2	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0979 mg/L	0.1 mg/L	97.9	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00258 mg/L	0.002 mg/L	103	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0364 mg/L	0.04 mg/L	91.0	70.0	130	----
Dissolved Metals (QCLot: 1475856)										
VA24B2215-002	Anonymous	Mercury, dissolved	7439-97-6	E509-L	ND ng/L	----	ND	70.0	130	----



CHAIN OF CUSTODY

ALS Laboratory

RECEIVED BY:
Meissa Thompson
DATE/TIME: 2/8/2024 15:05

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Meissa Thompson
DATE/TIME: 2/8/2024 15:05

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Meissa Thompson
DATE/TIME: 2/8/2024 15:05

RECEIVED BY:
Meissa Thompson
DATE/TIME: 2/8/2024 15:05

CLIENT: **Sedra Gold & Silver Corporation**

PROJECT: **2255728**

TURNAROUND REQUIREMENTS:
☐ Standard TAT (See this date)
☐ Expedited TAT (See this date)
☐ Non Standard or urgent TAT (See this date)

FOR LABORATORY USE ONLY (C/SER)

DATE/TIME: 2/8/2024 15:05

SITE: **B204d**

PURCHASE ORDER NO.: **Quota number: YL23-SAL1156-001** Date: **06-May-2024**

ALB QUOTE NO: **YL23-SAL1100-001**

DATE/TIME: 2/8/2024 15:05

DATE/TIME: 2/8/2024 15:05

PROJECT MANAGER: **Meissa Thompson**

CONTACT PH:

SAMPLE MOBILE: **403-921-8890**

DATE/TIME: 2/8/2024 15:05

DATE/TIME: 2/8/2024 15:05

DATE/TIME: 2/8/2024 15:05

EMAIL REPORTS TO: **zoe@als.com, meissa@als.com, lisa@als.com, gtl@als.com, EOU@als.com**

EMAIL INVOICE TO:

DATE/TIME: 2/8/2024 15:05

DATE/TIME: 2/8/2024 15:05

SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY

SAMPLE DETAILS

Sample ID (Vial/V)

MATRIX

CONTAINER INFORMATION

ANALYSIS REQUIRED

Additional Information

SAMPLE IDENTIFICATION
(This description will appear on the report)

DATE / TIME
(dd-mth-yyyy)

MATRIX

TOTAL CONTAINERS

Conventional parameters and Major ions

Metals

Nutrients

Total cyanide, WAD cyanide, Free cyanide

Sulfide

Residue 228

Chlorophyll a

DATE/TIME: 2/8/2024 15:05

DATE/TIME: 2/8/2024 15:05

DATE/TIME: 2/8/2024 15:05

WOLF OF

BRP-34

BRP-30

BRP-a3

FD-BRP-a3

FB

water

water

water

water

water

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Telephone: +1 867 873 5553



Environmental Division
Yellowknife
Work Order Reference
YL2400519

Consent to use this information for research, training, or other purposes must be obtained from ALS.

CERTIFICATE OF ANALYSIS

Work Order	: YL2400549	Page	: 1 of 7
Amendment	: 2		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 31-May-2024 09:55
PO	: PO-17852	Date Analysis Commenced	: 02-Jun-2024
C-O-C number	: ----	Issue Date	: 15-Jul-2024 12:09
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Ilnaz Badbezanchi	Supervisor - Metals Prep & Mercury	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Leon Yang	Analyst	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Michael Webb	Analyst	Metals, Burnaby, British Columbia
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Sam Silveira	Analyst	Metals, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
RRV	Reported result verified by repeat analysis.
SFP	Sample was filtered and preserved at the laboratory.



Analytical Results

Sub-Matrix: Water					Client sample ID		TB	GIROF	OLD TB METALS	----	----
(Matrix: Water)											
					Client sampling date / time		26-May-2024 00:00	29-May-2024 15:16	26-May-2024 00:00	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400549-001	YL2400549-002	YL2400549-003	-----	-----		
					Result	Result	Result	----	----		
Physical Tests											
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----		
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----		
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----		
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----		
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----		
Conductivity	----	E100/VA	2.0	µS/cm	<2.0	----	----	----	----		
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	<0.50	14.1	<0.50	----	----		
pH	----	E108/VA	0.10	pH units	5.46	----	----	----	----		
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	<10	----	----	----	----		
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	<1.0	----	----	----	----		
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----		
Turbidity	----	E121/VA	0.10	NTU	<0.10	----	----	----	----		
Anions and Nutrients											
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	<0.0050	----	----	----	----		
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	----	----	----	----		
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	<0.50	----	----	----	----		
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	----	----	----	----		
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	<0.050	----	----	----	----		
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	<0.0050	----	----	----	----		
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	----	----	----	----		
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----		
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	<0.0010	----	----	----	----		
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	<0.0010 ^{SFP}	----	----	----	----		
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	<0.50	----	----	----	----		
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	<0.30	----	----	----	----		
Cyanides											
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	----	----	----	----		
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	<0.0050	----	----	----	----		



Analytical Results

Sub-Matrix: Water					Client sample ID	TB	GIROF	OLD TB METALS	----	----
(Matrix: Water)										
Client sampling date / time					26-May-2024 00:00	29-May-2024 15:16	26-May-2024 00:00	----	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400549-001	YL2400549-002	YL2400549-003	-----	-----	
					Result	Result	Result	----	----	
Cyanides										
Cyanide, weak acid dissociable	---	E336/WT	0.0050	mg/L	<0.0050	----	----	----	----	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	---	E358-L/EO	0.50	mg/L	<0.50	----	----	----	----	
Carbon, total organic [TOC]	---	E355-L/EO	0.50	mg/L	<0.50	----	----	----	----	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	<0.50	----	----	----	----	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	<0.00020	0.0620	<0.00020	----	----	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	<0.0000050	0.0000067	<0.0000050	----	----	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	<0.000010	0.000214	<0.000010	----	----	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	<0.000020	0.00487	<0.000020	----	----	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	0.0000074	<0.0000020	----	----	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	----	----	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	<0.0000025	0.0000123	<0.0000025	----	----	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	<0.010	2.73	<0.010	----	----	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	<0.0000050	0.0000073	<0.0000050	----	----	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	<0.000040	0.000122	<0.000040	----	----	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	<0.0000050	0.00192	<0.0000050	----	----	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	<0.000050	0.00220	<0.000050	----	----	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	<0.00050	0.112	<0.00050	----	----	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	<0.000010	0.000596	<0.000010	----	----	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	<0.0000050	0.0000180	<0.0000050	----	----	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	<0.00010	0.00077	<0.00010	----	----	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	<0.0010	2.22	<0.0010	----	----	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	<0.0000050	0.0281	<0.0000050	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	TB	GIROF	OLD TB METALS	----	----
(Matrix: Water)					Client sampling date / time	26-May-2024 00:00	29-May-2024 15:16	26-May-2024 00:00	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400549-001	YL2400549-002	YL2400549-003	-----	-----	
					Result	Result	Result	----	----	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010	0.000011	<0.000010	----	----	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	<0.000020	0.0109	<0.000020	----	----	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	<0.0050	0.410	<0.0050	----	----	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	<0.0000050	0.000812	<0.0000050	----	----	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025	0.000030	<0.000025	----	----	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	<0.050	0.583	<0.050	----	----	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	0.0000021	<0.0000020	----	----	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	<0.010	0.736	<0.010	----	----	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	<0.000020	0.0109	<0.000020	----	----	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	<0.50	3.31	<0.50	----	----	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	<0.0000010	0.0000023	<0.0000010	----	----	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	0.0000124	<0.0000050	----	----	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	<0.000050	0.00161	<0.000050	----	----	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	<0.0000010	0.0000147	<0.0000010	----	----	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	<0.000010	0.000123	<0.000010	----	----	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	<0.000010	0.000200	<0.000010	----	----	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	<0.00010	0.00236	0.00018 ^{RRV}	----	----	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	<0.000010	0.000063	<0.000010	----	----	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	<0.00020	0.0324	<0.00020	----	----	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	<0.0000050	0.0000055	<0.0000050	----	----	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	<0.000010	0.000190	<0.000010	----	----	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	<0.000020	0.00472	<0.000020	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID		TB	GIROF	OLD TB METALS	----	----
(Matrix: Water)					Client sampling date / time		26-May-2024 00:00	29-May-2024 15:16	26-May-2024 00:00	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400549-001	YL2400549-002	YL2400549-003	-----	-----		
					Result	Result	Result	----	----		
Dissolved Metals											
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	0.0000062	<0.0000020	----	----		
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	----	----		
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----		
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	<0.0000025	0.0000136	<0.0000025	----	----		
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	<0.010	2.50	<0.010	----	----		
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----		
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	<0.000040	0.000078	<0.000040	----	----		
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	<0.0000050	0.00166	<0.0000050	----	----		
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	<0.000050	0.00185	<0.000050	----	----		
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	----	----		
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----		
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	<0.00050	0.0408	<0.00050	----	----		
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	<0.000010	0.000481	<0.000010	----	----		
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	0.0000056	<0.0000050	----	----		
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	<0.00010	0.00070	<0.00010	----	----		
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	<0.0010	1.90	<0.0010	----	----		
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	<0.0000050	0.0246	<0.0000050	----	----		
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	----	----	----	----		
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----		
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	<0.000020	0.00992	<0.000020	----	----		
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----		
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	----	----		
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	<0.0050	0.362	<0.0050	----	----		
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----		
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	<0.0000050	0.000696	<0.0000050	----	----		
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	<0.000025	<0.000025	----	----		
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	<0.050	0.539	<0.050	----	----		
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----		
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	<0.010	0.644	<0.010	----	----		
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	<0.000020	0.00992	<0.000020	----	----		



Analytical Results

Sub-Matrix: Water					Client sample ID	TB	GIROF	OLD TB METALS	----	----
(Matrix: Water)										
					Client sampling date / time	26-May-2024 00:00	29-May-2024 15:16	26-May-2024 00:00	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400549-001	YL2400549-002	YL2400549-003	-----	-----	
					Result	Result	Result	----	----	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	<0.50	3.32	<0.50	----	----	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	<0.0000010	0.0000020	<0.0000010	----	----	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	<0.0000050	0.0000150	<0.0000050	----	----	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	0.000105	<0.000050	----	----	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	<0.0000010	0.0000130	<0.0000010	----	----	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	<0.000010	0.000038	<0.000010	----	----	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	<0.000010	0.000170	<0.000010	----	----	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	<0.00010	0.00204	0.00020 ^{RRV}	----	----	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	<0.000010	0.000061	<0.000010	----	----	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2400549	Page	: 1 of 14
Amendment	: 2		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 31-May-2024 09:55
PO	: PO-17852	Issue Date	: 15-Jul-2024 12:10
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) TB	E298	26-May-2024	05-Jun-2024	28 days	11 days	✓	05-Jun-2024	28 days	11 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE TB	E235.Br-L	26-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE TB	E235.Cl	26-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE TB	E378-U	26-May-2024	03-Jun-2024	3 days	8 days	✖ EHTR	04-Jun-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Fluoride in Water by IC										
HDPE TB	E235.F	26-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE TB	E235.NO3-L	26-May-2024	03-Jun-2024	3 days	8 days	✖ EHTR	03-Jun-2024	3 days	8 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE TB	E235.NO2-L	26-May-2024	03-Jun-2024	3 days	8 days	✖ EHTR	03-Jun-2024	3 days	8 days	✖ EHTR



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE TB	E392	26-May-2024	----	----	----		05-Jun-2024	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE TB	E235.SO4	26-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) TB	E375-U	26-May-2024	04-Jun-2024	28 days	9 days	✓	04-Jun-2024	28 days	10 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) TB	E318	26-May-2024	07-Jun-2024	28 days	12 days	✓	07-Jun-2024	28 days	12 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) TB	E372-S	26-May-2024	06-Jun-2024	28 days	12 days	✓	06-Jun-2024	28 days	12 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E339	26-May-2024	05-Jun-2024	14 days	10 days	✓	05-Jun-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E333	26-May-2024	05-Jun-2024	14 days	10 days	✓	05-Jun-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E336	26-May-2024	05-Jun-2024	14 days	10 days	✓	05-Jun-2024	14 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) TB	E509-L	26-May-2024	06-Jun-2024	28 days	12 days	✓	06-Jun-2024	28 days	12 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) OLD TB METALS	E465	26-May-2024	04-Jun-2024	180 days	10 days	✓	05-Jun-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) TB	E465	26-May-2024	04-Jun-2024	180 days	10 days	✓	05-Jun-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GIROF	E465	29-May-2024	04-Jun-2024	180 days	6 days	✓	05-Jun-2024	180 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) TB	E358-L	26-May-2024	02-Jun-2024	28 days	8 days	✓	03-Jun-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) TB	E355-L	26-May-2024	03-Jun-2024	28 days	9 days	✓	04-Jun-2024	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE TB	E290	26-May-2024	03-Jun-2024	14 days	9 days	✓	03-Jun-2024	14 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE TB	E100	26-May-2024	03-Jun-2024	28 days	9 days	✓	03-Jun-2024	28 days	9 days	✓
Physical Tests : pH by Meter										
HDPE TB	E108	26-May-2024	03-Jun-2024	0.25 hrs	214 hrs	✖ EHTR-FM	03-Jun-2024	0.25 hrs	214 hrs	✖ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE TB	E162	26-May-2024	----	----	----		02-Jun-2024	7 days	7 days	✓

Page : 6 of 14
 Work Order : YL2400549 Amendment 2
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE TB	E160	26-May-2024	----	----	----		02-Jun-2024	7 days	8 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE TB	E121	26-May-2024	----	----	----		05-Jun-2024	3 days	10 days	✖ EHTR
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) OLD TB METALS	E466	26-May-2024	04-Jun-2024	180 days	10 days	✓	05-Jun-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) TB	E466	26-May-2024	04-Jun-2024	180 days	10 days	✓	05-Jun-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GIROF	E466	29-May-2024	04-Jun-2024	180 days	6 days	✓	05-Jun-2024	180 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) TB	E508-L	26-May-2024	10-Jun-2024	28 days	15 days	✓	10-Jun-2024	28 days	15 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) TB	E395	26-May-2024	----	----	----		02-Jun-2024	7 days	7 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 EHTR: Exceeded ALS recommended hold time prior to sample receipt.
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1473752	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1477217	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1473756	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1473755	1	20	5.0	5.0	✓
Conductivity in Water	E100	1473753	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1479475	1	17	5.8	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1474693	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1472103	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1473760	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1473754	1	20	5.0	5.0	✓
Free Cyanide	E339	1476417	1	1	100.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1473757	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1473758	1	20	5.0	5.0	✓
pH by Meter	E108	1473751	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1476723	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1473759	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1471713	1	7	14.2	5.0	✓
Total Cyanide	E333	1476416	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1474601	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1478950	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1484891	1	20	5.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1474697	1	9	11.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1472845	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1478740	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1471684	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1471711	1	7	14.2	5.0	✓
Turbidity by Nephelometry	E121	1477845	1	20	5.0	5.0	✓
WAD Cyanide	E336	1476415	1	7	14.2	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1473752	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1477217	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1473756	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1473755	1	20	5.0	5.0	✓
Conductivity in Water	E100	1473753	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1479475	1	17	5.8	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1474693	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1472103	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1473760	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1473754	1	20	5.0	5.0	✔
Free Cyanide	E339	1476417	1	1	100.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1473757	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1473758	1	20	5.0	5.0	✔
pH by Meter	E108	1473751	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1476723	1	8	12.5	5.0	✔
Sulfate in Water by IC	E235.SO4	1473759	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1471713	1	7	14.2	5.0	✔
Total Cyanide	E333	1476416	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1474601	1	14	7.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1478950	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1484891	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1474697	1	9	11.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1472845	1	16	6.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1478740	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1471684	1	17	5.8	5.0	✔
TSS by Gravimetry	E160	1471711	1	7	14.2	5.0	✔
Turbidity by Nephelometry	E121	1477845	1	20	5.0	5.0	✔
WAD Cyanide	E336	1476415	1	7	14.2	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1473752	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	1477217	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1473756	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1473755	1	20	5.0	5.0	✔
Conductivity in Water	E100	1473753	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1479475	1	17	5.8	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1474693	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1472103	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1473760	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1473754	1	20	5.0	5.0	✔
Free Cyanide	E339	1476417	1	1	100.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1473757	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1473758	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1476723	1	8	12.5	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1473759	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1471713	1	7	14.2	5.0	✔
Total Cyanide	E333	1476416	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1474601	1	14	7.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1478950	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1484891	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1474697	1	9	11.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1472845	1	16	6.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1478740	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1471684	1	17	5.8	5.0	✔
TSS by Gravimetry	E160	1471711	1	7	14.2	5.0	✔
Turbidity by Nephelometry	E121	1477845	1	20	5.0	5.0	✔
WAD Cyanide	E336	1476415	1	7	14.2	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1477217	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1473756	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1473755	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1479475	1	17	5.8	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1474693	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1472103	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1473760	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1473754	1	20	5.0	5.0	✔
Free Cyanide	E339	1476417	1	1	100.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1473757	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1473758	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1476723	1	8	12.5	5.0	✔
Sulfate in Water by IC	E235.SO4	1473759	1	20	5.0	5.0	✔
Total Cyanide	E333	1476416	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1474601	1	14	7.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1478950	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1484891	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1474697	1	9	11.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1472845	1	16	6.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1478740	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1471684	1	17	5.8	5.0	✔
WAD Cyanide	E336	1476415	1	7	14.2	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Waterloo	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Waterloo	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Waterloo	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 14 of 14
 Work Order : YL2400549 Amendment 2
 Client : B2Gold Back River Corp.
 Project : 22567626



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2400549	Page	: 1 of 21
Amendment	: 2		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 31-May-2024 09:55
PO	: PO-17852	Date Analysis Commenced	: 02-Jun-2024
C-O-C number	: ----	Issue Date	: 15-Jul-2024 12:10
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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Page : 2 of 21
Work Order : YL2400549 Amendment 2
Client : B2Gold Back River Corp.
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1471711)											
YL2400520-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	174	172	1.45%	20%	----
Physical Tests (QC Lot: 1471713)											
YL2400520-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	525	506	3.59%	20%	----
Physical Tests (QC Lot: 1473751)											
VA24B2552-001	Anonymous	pH	----	E108	0.10	pH units	6.58	6.60	0.303%	4%	----
Physical Tests (QC Lot: 1473752)											
VA24B2552-001	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	4.3	4.2	2.35%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	4.3	4.2	0.1	Diff <2x LOR	----
Physical Tests (QC Lot: 1473753)											
VA24B2552-001	Anonymous	Conductivity	----	E100	2.0	µS/cm	91.6	90.9	0.767%	10%	----
Physical Tests (QC Lot: 1477845)											
VA24B2556-001	Anonymous	Turbidity	----	E121	0.10	NTU	109	110	0.914%	15%	----
Anions and Nutrients (QC Lot: 1473754)											
VA24B2552-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.125	0.121	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1473755)											
VA24B2552-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1473756)											
VA24B2552-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1473757)											
VA24B2552-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1473758)											
VA24B2552-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1473759)											
VA24B2552-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	35.4	35.4	0.154%	20%	----
Anions and Nutrients (QC Lot: 1473760)											
VA24B2552-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2400549 Amendment 2
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1474601)											
YL2400544-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0041	0.0036	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1476723)											
YL2400520-003	Anonymous	Silicate (as SiO ₂)	7631-86-9	E392	0.50	mg/L	3.61	3.60	0.007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1477217)											
FC2401309-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0279	0.0281	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1478740)											
EO2404285-002	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.307	0.319	4.04%	20%	----
Anions and Nutrients (QC Lot: 1478950)											
FC2401346-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.448	0.432	0.016	Diff <2x LOR	----
Cyanides (QC Lot: 1476415)											
VA24B2534-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1476416)											
VA24B2534-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1476417)											
YL2400549-001	TB	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1472103)											
EO2404159-006	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	11.8	11.5	2.30%	20%	----
Organic / Inorganic Carbon (QC Lot: 1472845)											
EO2404190-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	27.0	29.2	7.51%	20%	----
Total Sulfides (QC Lot: 1471684)											
CG2407083-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.407	0.394	3.23%	20%	----
Total Metals (QC Lot: 1484891)											
CG2407391-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.00173 µg/L	1.62	0.10	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1474697)											
YL2400519-001	Anonymous	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0326	0.0331	1.66%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000090	0.0000092	0.0000002	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000292	0.000294	0.581%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00559	0.00554	0.841%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000022	<0.0000020	0.0000002	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000033	0.0000031	0.0000002	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	3.00	3.03	1.11%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1474697) - continued											
YL2400519-001	Anonymous	Cesium, total	7440-46-2	E466	0.0000050	mg/L	<0.0000050	0.0000052	0.0000002	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000401	0.000409	2.00%	20%	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000161	0.000165	2.15%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00116	0.00116	0.126%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.109	0.109	0.0362%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000161	0.000156	3.04%	20%	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000183	0.0000184	0.0000001	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00058	0.00058	0.0000007	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.04	2.03	0.270%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00339	0.00339	0.129%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000016	0.000015	0.0000009	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00383	0.00389	1.52%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.490	0.486	0.986%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00127	0.00127	0.342%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000034	0.000032	0.000002	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.466	0.456	0.010	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	0.0000036	0.0000034	0.0000002	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	0.792	0.789	0.360%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0122	0.0124	1.19%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	2.54	2.46	0.08	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000020	0.0000020	0.0000000006	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	0.0000124	0.0000098	0.0000026	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000432	0.000500	0.000068	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000066	0.0000068	0.0000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000083	0.000077	0.000006	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000059	0.000057	0.000002	Diff <2x LOR	----

Page : 6 of 21
 Work Order : YL2400549 Amendment 2
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1474697) - continued											
YL2400519-001	Anonymous	Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00073	0.00078	0.00005	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000054	0.000054	0.0000007	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1474693)											
YL2400519-001	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0153	0.0150	2.14%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000087	0.0000088	0.0000001	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000263	0.000267	1.52%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00537	0.00528	1.71%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	<0.0000025	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.88	2.79	3.20%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000171	0.000163	0.000008	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000120	0.000116	3.40%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00105	0.000998	5.28%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0533	0.0516	3.24%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000103	0.000104	1.08%	20%	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000053	<0.0000050	0.0000003	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00057	0.00057	0.000002	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.87	1.80	3.63%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00253	0.00244	3.65%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000016	0.000016	0.0000002	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00347	0.00333	4.08%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.465	0.449	3.48%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00119	0.00115	3.08%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000031	0.000034	0.000003	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.443	0.439	0.003	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	0.0000024	<0.0000020	0.0000004	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.739	0.702	5.17%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1474693) - continued											
YL2400519-001	Anonymous	Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0124	0.0120	3.69%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.59	2.65	0.07	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000017	0.0000017	0.00000001	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000068	0.0000117	0.0000049	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	0.000066	0.000071	0.000005	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000045	0.0000059	0.0000014	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000038	0.000038	0.00000007	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000045	0.000045	0.00000004	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00063	0.00058	0.00005	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000050	0.000051	0.0000006	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1479475)											
VA24B2384-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	<0.00000050 mg/L	<0.50	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1471711)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1471713)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1473752)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1473753)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1477845)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1473754)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1473755)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1473756)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1473757)						
Nitrate (as N)	14797-55-8	E235.NO ₃ -L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1473758)						
Nitrite (as N)	14797-65-0	E235.NO ₂ -L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1473759)						
Sulfate (as SO ₄)	14808-79-8	E235.SO ₄	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1473760)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1474601)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1476723)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1477217)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1477217) - continued						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1478740)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1478950)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Cyanides (QCLot: 1476415)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1476416)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1476417)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1472103)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1472845)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1471684)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1484891)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1474697)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1474697) - continued						
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1474693)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1474693) - continued						
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1474693) - continued						
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1479475)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1471711)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	93.3	85.0	115	----
Physical Tests (QCLot: 1471713)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.4	85.0	115	----
Physical Tests (QCLot: 1473751)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1473752)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	106	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1473753)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	90.2	90.0	110	----
Physical Tests (QCLot: 1477845)									
Turbidity	----	E121	0.1	NTU	200 NTU	102	85.0	115	----
Anions and Nutrients (QCLot: 1473754)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.3	90.0	110	----
Anions and Nutrients (QCLot: 1473755)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 1473756)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	94.8	85.0	115	----
Anions and Nutrients (QCLot: 1473757)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	98.4	90.0	110	----
Anions and Nutrients (QCLot: 1473758)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	95.1	90.0	110	----
Anions and Nutrients (QCLot: 1473759)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 1473760)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	94.5	80.0	120	----
Anions and Nutrients (QCLot: 1474601)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 1476723)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1477217)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1477217) - continued									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.2	85.0	115	----
Anions and Nutrients (QCLot: 1478740)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	112	80.0	120	----
Anions and Nutrients (QCLot: 1478950)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Cyanides (QCLot: 1476415)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	93.0	80.0	120	----
Cyanides (QCLot: 1476416)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	91.4	80.0	120	----
Cyanides (QCLot: 1476417)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	94.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1472103)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1472845)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	106	80.0	120	----
Total Sulfides (QCLot: 1471684)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	97.2	80.0	120	----
Total Metals (QCLot: 1484891)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	95.5	80.0	120	----
Total Metals (Undigested) (QCLot: 1474697)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	104	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	100	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	96.9	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	99.9	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	86.7	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	98.4	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	88.6	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	97.9	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	97.3	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	98.8	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	97.8	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	94.6	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1474697) - continued									
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	95.0	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	98.5	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	103	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	97.2	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	99.3	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	92.0	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	105	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	97.0	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	97.3	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	100	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	109	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	98.2	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	98.0	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	98.8	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	96.0	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	98.4	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	106	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	87.2	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	99.4	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	101	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	94.1	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	97.9	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	95.6	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	93.3	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	99.7	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	94.8	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	99.0	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	98.4	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	97.6	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	95.8	80.0	120	----
Dissolved Metals (QCLot: 1474693)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	105	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1474693) - continued									
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	101	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	98.8	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	102	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	84.1	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	99.0	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	85.0	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	99.1	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	99.7	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	101	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	99.5	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	95.7	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	98.7	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	105	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	98.7	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	88.6	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	102	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	98.9	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	101	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	98.6	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	99.4	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	102	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	97.7	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	100	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	104	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	89.0	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	99.8	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	100	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	98.6	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	97.4	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	98.0	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	98.7	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1474693) - continued									
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	97.2	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	91.8	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	97.9	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	98.0	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	92.4	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	90.9	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1473754)										
VA24B2552-002	Anonymous	Fluoride	16984-48-8	E235.F	0.941 mg/L	1 mg/L	94.1	75.0	125	----
Anions and Nutrients (QCLot: 1473755)										
VA24B2552-002	Anonymous	Chloride	16887-00-6	E235.Cl	98.8 mg/L	100 mg/L	98.8	75.0	125	----
Anions and Nutrients (QCLot: 1473756)										
VA24B2552-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.471 mg/L	0.5 mg/L	94.2	75.0	125	----
Anions and Nutrients (QCLot: 1473757)										
VA24B2552-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.44 mg/L	2.5 mg/L	97.4	75.0	125	----
Anions and Nutrients (QCLot: 1473758)										
VA24B2552-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.472 mg/L	0.5 mg/L	94.3	75.0	125	----
Anions and Nutrients (QCLot: 1473759)										
VA24B2552-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	98.5 mg/L	100 mg/L	98.5	75.0	125	----
Anions and Nutrients (QCLot: 1473760)										
VA24B2552-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0306 mg/L	0.03 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 1474601)										
YL2400547-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0750 mg/L	0.067 mg/L	112	70.0	130	----
Anions and Nutrients (QCLot: 1476723)										
YL2400520-004	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.0 mg/L	10 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1477217)										
FC2401309-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0980 mg/L	0.1 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 1478740)										
FC2401317-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0871 mg/L	0.067 mg/L	130	70.0	130	----
Anions and Nutrients (QCLot: 1478950)										
FC2401346-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.49 mg/L	2.5 mg/L	99.6	70.0	130	----
Cyanides (QCLot: 1476415)										
VA24B2534-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.112 mg/L	0.125 mg/L	89.9	75.0	125	----
Cyanides (QCLot: 1476416)										
VA24B2534-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.219 mg/L	0.25 mg/L	87.6	75.0	125	----
Cyanides (QCLot: 1476417)										
YL2400549-001	TB	Cyanide, free	----	E339	0.117 mg/L	0.125 mg/L	94.0	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1472103)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1472103) - continued										
EO2404159-006	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1472845)										
EO2404190-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1471684)										
CG2407083-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	ND mg/L	----	ND	75.0	125	----
Total Metals (QCLot: 1484891)										
CG2407391-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.27 ng/L	5 ng/L	85.4	70.0	130	----
Total Metals (Undigested) (QCLot: 1474697)										
YL2400519-002	Anonymous	Aluminum, total	7429-90-5	E466	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Barium, total	7440-39-3	E466	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0358 mg/L	0.04 mg/L	89.5	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00966 mg/L	0.01 mg/L	96.6	70.0	130	----
		Boron, total	7440-42-8	E466	0.0916 mg/L	0.1 mg/L	91.6	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00393 mg/L	0.004 mg/L	98.3	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00984 mg/L	0.01 mg/L	98.4	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Copper, total	7440-50-8	E466	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00250 mg/L	0.002 mg/L	100	70.0	130	----
		Iron, total	7439-89-6	E466	2.05 mg/L	2 mg/L	102	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00249 mg/L	0.002 mg/L	99.7	70.0	130	----
		Lead, total	7439-92-1	E466	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0908 mg/L	0.1 mg/L	90.8	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00268 mg/L	0.002 mg/L	107	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.59 mg/L	10 mg/L	95.9	70.0	130	----
		Potassium, total	7440-09-7	E466	3.93 mg/L	4 mg/L	98.2	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00248 mg/L	0.002 mg/L	99.4	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		Silicon, total	7440-21-3	E466	9.28 mg/L	10 mg/L	92.8	70.0	130	----
		Silver, total	7440-22-4	E466	0.00366 mg/L	0.004 mg/L	91.5	70.0	130	----
		Sodium, total	7440-23-5	E466	2.02 mg/L	2 mg/L	101	70.0	130	----
		Strontium, total	7440-24-6	E466	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E466	18.6 mg/L	20 mg/L	93.2	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00251 mg/L	0.002 mg/L	100	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1474697) - continued										
YL2400519-002	Anonymous	Tellurium, total	13494-80-9	E466	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0169 mg/L	0.02 mg/L	84.4	70.0	130	----
		Tin, total	7440-31-5	E466	0.0189 mg/L	0.02 mg/L	94.3	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0385 mg/L	0.04 mg/L	96.4	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Zinc, total	7440-66-6	E466	0.414 mg/L	0.4 mg/L	104	70.0	130	----
Zirconium, total	7440-67-7	E466	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----		
Dissolved Metals (QCLot: 1474693)										
YL2400519-002	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.194 mg/L	0.2 mg/L	97.2	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0359 mg/L	0.04 mg/L	89.8	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00946 mg/L	0.01 mg/L	94.6	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.0899 mg/L	0.1 mg/L	89.9	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00396 mg/L	0.004 mg/L	99.1	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00998 mg/L	0.01 mg/L	99.8	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0391 mg/L	0.04 mg/L	97.8	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00259 mg/L	0.002 mg/L	104	70.0	130	----
		Iron, dissolved	7439-89-6	E465	2.03 mg/L	2 mg/L	101	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00260 mg/L	0.002 mg/L	104	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.0885 mg/L	0.1 mg/L	88.5	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0398 mg/L	0.04 mg/L	99.4	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00260 mg/L	0.002 mg/L	104	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.35 mg/L	10 mg/L	93.5	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	3.89 mg/L	4 mg/L	97.4	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00254 mg/L	0.002 mg/L	102	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.00 mg/L	10 mg/L	90.0	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00376 mg/L	0.004 mg/L	94.0	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.96 mg/L	2 mg/L	97.8	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1474693) - continued										
YL2400519-002	Anonymous	Sulfur, dissolved	7704-34-9	E465	18.3 mg/L	20 mg/L	91.4	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00373 mg/L	0.004 mg/L	93.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0158 mg/L	0.02 mg/L	78.9	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0364 mg/L	0.04 mg/L	91.0	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00381 mg/L	0.004 mg/L	95.2	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0979 mg/L	0.1 mg/L	97.9	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00258 mg/L	0.002 mg/L	103	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0364 mg/L	0.04 mg/L	91.0	70.0	130	----
Dissolved Metals (QCLot: 1479475)										
VA24B2384-002	Anonymous	Mercury, dissolved	7439-97-6	E509-L	4.43 ng/L	5 ng/L	88.7	70.0	130	----



CHAIN OF CUSTODY

SPECIAL HANDLING/STORAGE OR DISPOSAL: extra bottle set sent back + extra empty metals containers

Environmental Division
Yellowknife
Work Order Reference
YL2400549



Telephone : +1 867 872 5560

CERTIFICATE OF ANALYSIS

Work Order	: YL2400770	Page	: 1 of 12
Amendment	: 1		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 28-Jun-2024 15:00
PO	: 17852	Date Analysis Commenced	: 03-Jul-2024
C-O-C number	: ----	Issue Date	: 19-Aug-2024 10:48
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 10		
No. of samples analysed	: 10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Michael Webb	Analyst	Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Sam Silveira	Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
CNP	Cyanide test sample appears to have been preserved, but pH was <10 at time of testing. Results may be biased low, particularly for Free CN species.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
HTDC	Hold time exceeded for dilution or re-analysis. Reported results are consistent with initial results (tested within hold time), and are valid and defensible.
RRV	Reported result verified by repeat analysis.
SFP	Sample was filtered and preserved at the laboratory.
SP	Sample was preserved at the laboratory.



Analytical Results

Sub-Matrix: Water				Client sample ID	BRP-34	BRP-18	BRP-30	WOLFOF	BRP-19
(Matrix: Water)									
				Client sampling date / time	27-Jun-2024 00:00	26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00	26-Jun-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-001	YL2400770-002	YL2400770-003	YL2400770-004	YL2400770-005
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	5.0	4.5	12.0	6.7	8.3
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	5.0	4.5	12.0	6.7	8.3
Conductivity	----	E100/VA	2.0	µS/cm	53.8	97.8	48.3	37.2	220
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	19.4	36.4	20.1	13.7	72.8
pH	----	E108/VA	0.10	pH units	6.94	6.87	7.29	7.10	7.12
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	34	71	58	21	148
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	31.9	54.5	40.6	24.0	138
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity	----	E121/VA	0.10	NTU	0.29	0.12	1.52	1.14	16.4
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0141	0.0083	0.0067	0.0122	2.87
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	0.080
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	4.55	13.7	0.63	1.06	7.44
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.022	0.023	0.033	0.022	0.055
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.201	0.258	0.754	0.251	3.81
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.184	0.847	<0.0050	0.0395	8.53
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.0011	<0.0010	<0.0010	<0.0010	0.0330
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	0.0011	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0030	<0.0010	0.0142	0.0026	0.0165
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0012	<0.0010	0.0063	0.0013	0.0035
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	0.54	1.26	<0.50	<0.50	1.08
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	10.2	13.5	7.40	7.64	41.9
Cyanides									
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34	BRP-18	BRP-30	WOLFOF	BRP-19
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-001	YL2400770-002	YL2400770-003	YL2400770-004	YL2400770-005	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	4.95	4.72 ^{RRV}	16.7	5.32 ^{RRV}	10.2	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	4.48	2.91	15.0	4.13	9.25	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015 ^{HTDC}	<0.0015	0.0056	0.0015	0.0059	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	0.0060	<0.0016	0.0063	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.95	1.36	3.04	0.87	2.28	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0144	0.0184	0.0540	0.0410	0.741	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000090	0.0000114	0.0000092	0.0000080	0.0000789	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000214	0.000187	0.000598	0.000438	0.00435	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00762	0.0155	0.0118	0.00478	0.0366	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000022	0.0000049	0.0000079	0.0000030	0.0000326	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	0.0000014	0.0000012	0.0000156	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0057	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000038	0.0000218	0.0000104	0.0000026	0.0000327	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	4.22	9.10	3.70	2.60	12.4	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000067	0.0000100	<0.0000050	0.0000085	0.0000850	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000136	0.000137	0.000728	0.000258	0.00175	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000190	0.000437	0.000688	0.000174	0.00470	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00131	0.00190	0.00261	0.00137	0.00579	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	0.000204	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0491	0.00599	0.686	0.208	0.868	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000122	0.000360	0.000362	0.000215	0.00162	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000080	0.0000167	0.0000365	0.0000486	0.000522	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00083	0.00117	0.00080	0.00068	0.00462	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	2.24	3.56	2.62	1.79	10.0	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00512	0.00774	0.00628	0.00346	0.0742	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34	BRP-18	BRP-30	WOLFOF	BRP-19
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-001	YL2400770-002	YL2400770-003	YL2400770-004	YL2400770-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000012	0.000011	0.000019	0.000013	0.000145	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00359	0.00661	0.00627	0.00280	0.0177	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	0.011	<0.010	0.012	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.488	0.839	0.226	0.378	4.48	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000096	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00116	0.00179	0.000761	0.000999	0.00822	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025	0.000037	0.000048	<0.000025	0.000278	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.258	0.604	0.065	0.135	1.77	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	0.0000052	<0.0000020	0.0000085	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	0.781	1.26	1.37	0.608	2.43	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0215	0.0457	0.0151	0.0108	0.0586	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	3.60	4.50	2.77	2.65	14.8	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000015	0.0000026	0.0000028	0.0000014	0.0000201	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000086	0.0000056	0.0000876	0.0000149	0.000242	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000115	0.000089	0.00128	0.000797	0.0186	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000030	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000067	0.0000078	0.0000200	0.0000091	0.0000942	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000036	0.000025	0.000492	0.000128	0.00152	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000052	0.000127	0.000255	0.000080	0.000684	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00063	0.00331	0.00170	0.00045	0.00412	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000029	0.000035	0.000358	0.000076	0.00145	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00874	0.0179	0.0405	0.0110	0.131	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000084	0.0000101	0.0000105	0.0000072	0.0000758	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000204	0.000180	0.000567	0.000351	0.00177	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00739	0.0162	0.0112	0.00429	0.0311	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34	BRP-18	BRP-30	WOLFOF	BRP-19
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-001	YL2400770-002	YL2400770-003	YL2400770-004	YL2400770-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	0.0000046	0.0000070	<0.0000020	0.0000117	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	0.0000011	<0.0000010	0.0000034	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0057	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000037	0.0000247	0.0000116	0.0000026	0.0000312	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	4.09	8.82	3.73	2.61	12.5	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000061	0.0000106	<0.0000050	0.0000052	0.0000404	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000095	0.000154	0.000729	0.000248	0.000579	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000133	0.000578	0.000655	0.000129	0.00395	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00132	0.00182	0.00254	0.00128	0.00427	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0225	0.00495	0.475	0.118	0.246	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000086	0.000390	0.000287	0.000123	0.000632	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	0.0000064	0.0000280	0.0000224	0.000110	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00079	0.00119	0.00078	0.00064	0.00394	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	2.24	3.50	2.61	1.75	10.1	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00366	0.0113 ^{DTC}	0.00583	0.00291	0.0690	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	1.17	1.36	2.94	1.40	2.47	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000010	0.000012	0.000022	0.000012	0.000140	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00349	0.00684	0.00631	0.00261	0.0165	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.480	0.847	0.224	0.372	4.32	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000100	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00114	0.00191	0.000749	0.000975	0.00766	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	0.000040	0.000049	<0.000025	0.000264	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.255	0.620	0.065	0.094	0.662	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	0.0000049	<0.0000020	0.0000039	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	0.774	1.25	1.35	0.607	2.52	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0216	0.0466	0.0155	0.0108	0.0592	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34	BRP-18	BRP-30	WOLFOF	BRP-19
(Matrix: Water)										
					Client sampling date / time	27-Jun-2024 00:00	26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00	26-Jun-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-001	YL2400770-002	YL2400770-003	YL2400770-004	YL2400770-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	3.50	4.74	2.72	2.60	14.0	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000010	0.0000033	0.0000023	<0.0000010	0.0000139	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000067	0.0000075	0.0000734	0.0000073	0.0000835	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	0.000012	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	<0.000050	0.000745	0.000154	0.00218	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000064	0.0000072	0.0000171	0.0000068	0.0000532	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000026	0.000019	0.000351	0.000059	0.000285	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000041	0.000136	0.000212	0.000056	0.000362	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00048	0.00266	0.00155	0.00038	0.00346	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000031	0.000039	0.000348	0.000044	0.000495	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-23	FD-2	TB2	GIROF	FB-02
(Matrix: Water)										
Client sampling date / time					26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00	27-Jun-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-006	YL2400770-007	YL2400770-008	YL2400770-009	YL2400770-010	
					Result	Result	Result	Result	Result	
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	---	E290/VA	1.0	mg/L	6.9	4.8	<1.0	4.8	<1.0	
Alkalinity, carbonate (as CaCO3)	---	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, hydroxide (as CaCO3)	---	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, phenolphthalein (as CaCO3)	---	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, total (as CaCO3)	---	E290/VA	1.0	mg/L	6.9	4.8	<1.0	4.8	<1.0	
Conductivity	---	E100/VA	2.0	µS/cm	39.9	53.7	<2.0	42.5	<2.0	
Hardness (as CaCO3), dissolved	---	EC100/VA	0.50	mg/L	15.3	20.3	<0.50	16.2	<0.50	
pH	---	E108/VA	0.10	pH units	7.11	6.94	5.46	6.92	5.39	
Solids, total dissolved [TDS]	---	E162/VA	10	mg/L	26	42	<10	28	<10	
Solids, total dissolved [TDS], calculated	---	EC103/VA	1.0	mg/L	24.5	32.7	<1.0	28.4	2.0	
Solids, total suspended [TSS]	---	E160/VA	3.0	mg/L	3.8	<3.0	<3.0	<3.0	<3.0	
Turbidity	---	E121/VA	0.10	NTU	0.84	0.35	<0.10	0.40	<0.10	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0230	0.0101	<0.0050 ^{SP}	<0.0050	<0.0050	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	1.44	4.56	<0.50	0.80	<0.50	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.025	0.022	<0.020	0.028	<0.020	
Kjeldahl nitrogen, total [TKN]	---	E318/EO	0.050	mg/L	0.270	0.238	<0.050 ^{SP}	0.184	<0.050	
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.0673	0.182	<0.0050	<0.0050	<0.0050	
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0043	0.0030	<0.0010	0.0064	<0.0010	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0011	0.0015	<0.0010	0.0013	<0.0010	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	<0.50	0.55	<0.50	0.68	<0.50	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	7.89	10.2	<0.30	12.4	<0.30	
Cyanides										
Cyanide, free	---	E339/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050 ^{CNP}	<0.0050	<0.0050	
Cyanide, strong acid dissociable (Total)	---	E333/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050 ^{CNP}	<0.0050	<0.0050	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-23	FD-2	TB2	GIROF	FB-02
(Matrix: Water)										
Client sampling date / time						26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-006	YL2400770-007	YL2400770-008	YL2400770-009	YL2400770-010	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050 ^{CNP}	<0.0050	<0.0050	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	4.65	5.64 ^{RRV}	<0.50 ^{SFP}	5.34 ^{RRV}	1.98 ^{RRV}	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	4.21	4.66	<0.50	3.94	<0.50	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0022	0.0016 ^{HTDC}	<0.0015	0.0031	<0.0015	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0023	0.0017	<0.0016	0.0033	<0.0016	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	1.00	0.92	<0.50	3.28	<0.50	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0256	0.0155	<0.00020	0.0392	0.00021 ^{RRV}	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000134	0.0000084	<0.0000050	0.0000131	<0.0000050	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000291	0.000216	<0.000010	0.000247	<0.000010	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00532	0.00758	<0.000020	0.00498	<0.000020	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000022	0.0000024	<0.0000020	0.0000065	<0.0000020	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000040	0.0000043	<0.0000025	0.0000089	<0.0000025	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	3.05	4.38	<0.010	2.90	<0.010	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000053	0.0000066	<0.0000050	0.0000067	<0.0000050	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000167	0.000231	<0.000040	0.000133	0.000132 ^{RRV}	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000253	0.000190	<0.0000050	0.000621	<0.0000050	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00119	0.00138	<0.000050	0.00229	<0.000050	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.129	0.0504	<0.00050	0.179	<0.00050	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000169	0.000115	<0.000010	0.000550	<0.000010	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000207	0.0000077	<0.0000050	0.0000320	<0.0000050	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00067	0.00076	<0.00010	0.00087	<0.00010	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	1.93	2.36	<0.0010	2.28	<0.0010	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00614	0.00514	<0.0000050	0.00744	<0.0000050	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-23	FD-2	TB2	GIROF	FB-02
(Matrix: Water)										
Client sampling date / time						26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-006	YL2400770-007	YL2400770-008	YL2400770-009	YL2400770-010	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010	0.000011	<0.000010	0.000019	<0.000010	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00210	0.00363	<0.000020	0.00696	<0.000020	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.374	0.514	<0.0050	0.387	<0.0050	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.000970	0.00121	<0.0000050	0.000748	<0.0000050	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.056	0.257	<0.050	0.333	<0.050	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	0.0000025	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	0.685	0.814	<0.010	0.736	<0.010	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0132	0.0224	<0.000020	0.0118	<0.000020	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	2.76	3.55	<0.50	4.10	<0.50	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000018	0.0000013	<0.0000010	0.0000017	<0.0000010	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000127	0.0000088	<0.0000050	0.0000072	<0.0000050	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.00136	0.000136	<0.000050	0.000645	<0.000050	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000058	0.0000064	<0.0000010	0.0000183	<0.0000010	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000187	0.000036	<0.000010	0.000093	<0.000010	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000074	0.000051	<0.000010	0.000195	<0.000010	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00047	0.00063	<0.00010	0.00114	<0.00010	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000040	0.000031	<0.000010	0.000040	<0.000010	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00667	0.00910	<0.00020	0.0112	0.00169	DTC, RRV
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000142	0.0000078	<0.0000050	0.0000075	<0.0000050	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000254	0.000193	<0.000010	0.000200	<0.000010	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00508	0.00746	<0.000020	0.00455	0.000031	RRV



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-23	FD-2	TB2	GIROF	FB-02
(Matrix: Water)										
Client sampling date / time						26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-006	YL2400770-007	YL2400770-008	YL2400770-009	YL2400770-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	0.0000024	<0.0000020	0.0000030	<0.0000020	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000029	0.0000040	<0.0000025	0.0000035	<0.0000025	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	3.02	4.23	<0.010	2.78	<0.010	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	<0.0000050	0.0000063	<0.0000050	<0.0000050	<0.0000050	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000093	0.000055	<0.000040	0.000086	0.000072	RRV
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000216	0.000130	<0.0000050	0.000167	<0.0000050	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00104	0.00131	<0.000050	0.00173	<0.000050	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0694	0.0230	<0.00050	0.0348	0.00317	DTC, RRV
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000077	0.000086	<0.000010	0.000158	<0.000010	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000076	0.0000058	<0.0000050	<0.0000050	0.0000106	DTC, RRV
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00064	0.00082	<0.00010	0.00088	<0.00010	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	1.89	2.36	<0.0010	2.24	0.0013	RRV
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00538	0.00381	<0.0000050	0.00211	0.0000604	DTC, RRV
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	1.26	1.08	<0.50	0.69	0.53	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	0.000013	<0.000010	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00205	0.00354	<0.000020	0.00614	<0.000020	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.360	0.489	<0.0050	0.371	0.0072	RRV
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.000950	0.00116	<0.0000050	0.000714	0.0000101	DTC, RRV
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	<0.050	0.237	<0.050	0.315	<0.050	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	0.698	0.797	<0.010	0.715	0.011	RRV
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0132	0.0218	<0.000020	0.0111	0.000025	RRV



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-23	FD-2	TB2	GIROF	FB-02
(Matrix: Water)										
Client sampling date / time					26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00	27-Jun-2024 00:00	26-Jun-2024 00:00	26-Jun-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2400770-006	YL2400770-007	YL2400770-008	YL2400770-009	YL2400770-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	2.69	3.47	<0.50	4.20	<0.50	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000015	0.0000013	<0.0000010	0.0000013	<0.0000010	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000066	0.0000078	<0.0000050	0.0000101	<0.0000050	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000074	<0.000050	<0.000050	<0.000050	0.000055 RRV	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000036	0.0000064	<0.0000010	0.0000093	<0.0000010	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000081	0.000027	<0.000010	0.000029	<0.000010	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000039	0.000038	<0.000010	0.000064	<0.000010	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00034	0.00050	<0.00010	0.00062	0.00023 DTC, RRV	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000031	0.000028	<0.000010	0.000038	<0.000010	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2400770	Page	: 1 of 42
Amendment	: 1		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 28-Jun-2024 15:00
PO	: 17852	Issue Date	: 19-Aug-2024 10:49
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 10		
No. of samples analysed	: 10		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-30	E298	27-Jun-2024	09-Jul-2024	28 days	12 days	✓	09-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-34	E298	27-Jun-2024	09-Jul-2024	28 days	12 days	✓	09-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FD-2	E298	27-Jun-2024	09-Jul-2024	28 days	12 days	✓	09-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GIROF	E298	27-Jun-2024	09-Jul-2024	28 days	12 days	✓	09-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-18	E298	26-Jun-2024	09-Jul-2024	28 days	13 days	✓	09-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-19	E298	26-Jun-2024	09-Jul-2024	28 days	13 days	✓	09-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-23	E298	26-Jun-2024	09-Jul-2024	28 days	13 days	✓	09-Jul-2024	28 days	14 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FB-02	E298	26-Jun-2024	09-Jul-2024	28 days	13 days	✓	09-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) TB2	E298	26-Jun-2024	09-Jul-2024	28 days	13 days	✓	09-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WOLFOF	E298	26-Jun-2024	09-Jul-2024	28 days	13 days	✓	09-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-30	E235.Br-L	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-34	E235.Br-L	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FD-2	E235.Br-L	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GIROF	E235.Br-L	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-18	E235.Br-L	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-19	E235.Br-L	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓



Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-23	E235.Br-L	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FB-02	E235.Br-L	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE TB2	E235.Br-L	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WOLFOF	E235.Br-L	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-30	E235.Cl	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-34	E235.Cl	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FD-2	E235.Cl	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GIROF	E235.Cl	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-18	E235.Cl	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-19	E235.Cl	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-23	E235.Cl	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB-02	E235.Cl	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE TB2	E235.Cl	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WOLFOF	E235.Cl	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-30	E378-U	27-Jun-2024	04-Jul-2024	3 days	7 days	✗ EHT	04-Jul-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-34	E378-U	27-Jun-2024	04-Jul-2024	3 days	7 days	✗ EHT	04-Jul-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FD-2	E378-U	27-Jun-2024	04-Jul-2024	3 days	7 days	✗ EHT	04-Jul-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GIROF	E378-U	27-Jun-2024	04-Jul-2024	3 days	7 days	✗ EHT	04-Jul-2024	3 days	7 days	✗ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-18	E378-U	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-19	E378-U	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-23	E378-U	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FB-02	E378-U	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE TB2	E378-U	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE WOLFOF	E378-U	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-30	E235.F	27-Jun-2024	04-Jul-2024	28 days	7 days	✔	04-Jul-2024	28 days	7 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-34	E235.F	27-Jun-2024	04-Jul-2024	28 days	7 days	✔	04-Jul-2024	28 days	7 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE FD-2	E235.F	27-Jun-2024	04-Jul-2024	28 days	7 days	✔	04-Jul-2024	28 days	7 days	✔



Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE GIROF	E235.F	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-18	E235.F	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-19	E235.F	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-23	E235.F	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB-02	E235.F	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE TB2	E235.F	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WOLFOF	E235.F	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-30	E235.NO3-L	27-Jun-2024	04-Jul-2024	3 days	7 days	✖ EHT	04-Jul-2024	3 days	7 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-34	E235.NO3-L	27-Jun-2024	04-Jul-2024	3 days	7 days	✖ EHT	04-Jul-2024	3 days	7 days	✖ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FD-2	E235.NO3-L	27-Jun-2024	04-Jul-2024	3 days	7 days	✖ EHT	04-Jul-2024	3 days	7 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GIROF	E235.NO3-L	27-Jun-2024	04-Jul-2024	3 days	7 days	✖ EHT	04-Jul-2024	3 days	7 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-18	E235.NO3-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-19	E235.NO3-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-23	E235.NO3-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB-02	E235.NO3-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE TB2	E235.NO3-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WOLFOF	E235.NO3-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-30	E235.NO2-L	27-Jun-2024	04-Jul-2024	3 days	7 days	✖ EHT	04-Jul-2024	3 days	7 days	✖ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-34	E235.NO2-L	27-Jun-2024	04-Jul-2024	3 days	7 days	✖ EHT	04-Jul-2024	3 days	7 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FD-2	E235.NO2-L	27-Jun-2024	04-Jul-2024	3 days	7 days	✖ EHT	04-Jul-2024	3 days	7 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GIROF	E235.NO2-L	27-Jun-2024	04-Jul-2024	3 days	7 days	✖ EHT	04-Jul-2024	3 days	7 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-18	E235.NO2-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-19	E235.NO2-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-23	E235.NO2-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB-02	E235.NO2-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE TB2	E235.NO2-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WOLFOF	E235.NO2-L	26-Jun-2024	04-Jul-2024	3 days	8 days	✖ EHT	04-Jul-2024	3 days	8 days	✖ EHT

Page : 11 of 42
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-30	E392	27-Jun-2024	----	----	----		10-Jul-2024	28 days	14 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-34	E392	27-Jun-2024	----	----	----		10-Jul-2024	28 days	14 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FD-2	E392	27-Jun-2024	----	----	----		10-Jul-2024	28 days	14 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GIROF	E392	27-Jun-2024	----	----	----		10-Jul-2024	28 days	14 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-18	E392	26-Jun-2024	----	----	----		10-Jul-2024	28 days	15 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-19	E392	26-Jun-2024	----	----	----		10-Jul-2024	28 days	15 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-23	E392	26-Jun-2024	----	----	----		10-Jul-2024	28 days	15 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FB-02	E392	26-Jun-2024	----	----	----		10-Jul-2024	28 days	15 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE TB2	E392	26-Jun-2024	----	----	----		10-Jul-2024	28 days	15 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE WOLFOF	E392	26-Jun-2024	----	----	----		10-Jul-2024	28 days	15 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-30	E235.SO4	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-34	E235.SO4	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FD-2	E235.SO4	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GIROF	E235.SO4	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-18	E235.SO4	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-19	E235.SO4	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-23	E235.SO4	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FB-02	E235.SO4	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE TB2	E235.SO4	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WOLFOF	E235.SO4	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-30	E375-U	27-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-34	E375-U	27-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FD-2	E375-U	27-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GIROF	E375-U	27-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-18	E375-U	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-19	E375-U	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-23	E375-U	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓



Matrix: **Water** Evaluation: **x** = Holding time exceedance ; **✓** = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FB-02	E375-U	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) TB2	E375-U	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) WOLFOF	E375-U	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-30	E318	27-Jun-2024	10-Jul-2024	28 days	13 days	✓	10-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E318	27-Jun-2024	10-Jul-2024	28 days	13 days	✓	10-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FD-2	E318	27-Jun-2024	10-Jul-2024	28 days	13 days	✓	10-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GIROF	E318	27-Jun-2024	10-Jul-2024	28 days	13 days	✓	10-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-18	E318	26-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-19	E318	26-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-23	E318	26-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FB-02	E318	26-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) TB2	E318	26-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) WOLFOF	E318	26-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-30	E372-S	27-Jun-2024	09-Jul-2024	28 days	13 days	✓	09-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-34	E372-S	27-Jun-2024	09-Jul-2024	28 days	13 days	✓	09-Jul-2024	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-18	E372-S	26-Jun-2024	09-Jul-2024	28 days	14 days	✓	09-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FD-2	E372-S	27-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GIROF	E372-S	27-Jun-2024	10-Jul-2024	28 days	14 days	✓	10-Jul-2024	28 days	14 days	✓

Page : 16 of 42
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) WOLFOF	E372-S	26-Jun-2024	09-Jul-2024	28 days	14 days	✓	09-Jul-2024	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-19	E372-S	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-23	E372-S	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FB-02	E372-S	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) TB2	E372-S	26-Jun-2024	10-Jul-2024	28 days	15 days	✓	10-Jul-2024	28 days	15 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E339	27-Jun-2024	16-Jul-2024	14 days	19 days	✗ EHT	16-Jul-2024	14 days	19 days	✗ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E339	27-Jun-2024	16-Jul-2024	14 days	19 days	✗ EHT	16-Jul-2024	14 days	19 days	✗ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-2	E339	27-Jun-2024	16-Jul-2024	14 days	19 days	✗ EHT	16-Jul-2024	14 days	19 days	✗ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E339	27-Jun-2024	16-Jul-2024	14 days	19 days	✗ EHT	16-Jul-2024	14 days	19 days	✗ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E339	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E339	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E339	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-02	E339	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB2	E339	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E339	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E333	27-Jun-2024	16-Jul-2024	14 days	19 days	✖ EHT	16-Jul-2024	14 days	19 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E333	27-Jun-2024	16-Jul-2024	14 days	19 days	✖ EHT	16-Jul-2024	14 days	19 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-2	E333	27-Jun-2024	16-Jul-2024	14 days	19 days	✖ EHT	16-Jul-2024	14 days	19 days	✖ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E333	27-Jun-2024	16-Jul-2024	14 days	19 days	✖ EHT	16-Jul-2024	14 days	19 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E333	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E333	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E333	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-02	E333	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB2	E333	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E333	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E336	27-Jun-2024	16-Jul-2024	14 days	19 days	✖ EHT	16-Jul-2024	14 days	19 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E336	27-Jun-2024	16-Jul-2024	14 days	19 days	✖ EHT	16-Jul-2024	14 days	19 days	✖ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-2	E336	27-Jun-2024	16-Jul-2024	14 days	19 days	✖ EHT	16-Jul-2024	14 days	19 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E336	27-Jun-2024	16-Jul-2024	14 days	19 days	✖ EHT	16-Jul-2024	14 days	19 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E336	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E336	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E336	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-02	E336	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB2	E336	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E336	26-Jun-2024	16-Jul-2024	14 days	20 days	✖ EHT	16-Jul-2024	14 days	20 days	✖ EHT
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-30	E509-L	27-Jun-2024	08-Jul-2024	28 days	11 days	✔	08-Jul-2024	28 days	11 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-34	E509-L	27-Jun-2024	08-Jul-2024	28 days	11 days	✓	08-Jul-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FD-2	E509-L	27-Jun-2024	08-Jul-2024	28 days	11 days	✓	08-Jul-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GIROF	E509-L	27-Jun-2024	08-Jul-2024	28 days	11 days	✓	08-Jul-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-18	E509-L	26-Jun-2024	08-Jul-2024	28 days	12 days	✓	08-Jul-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-19	E509-L	26-Jun-2024	08-Jul-2024	28 days	12 days	✓	08-Jul-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-23	E509-L	26-Jun-2024	08-Jul-2024	28 days	12 days	✓	08-Jul-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FB-02	E509-L	26-Jun-2024	08-Jul-2024	28 days	12 days	✓	08-Jul-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) TB2	E509-L	26-Jun-2024	08-Jul-2024	28 days	12 days	✓	08-Jul-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) WOLFOF	E509-L	26-Jun-2024	08-Jul-2024	28 days	12 days	✓	08-Jul-2024	28 days	12 days	✓

Page : 21 of 42
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-30	E465	27-Jun-2024	04-Jul-2024	180 days	8 days	✓	08-Jul-2024	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-34	E465	27-Jun-2024	04-Jul-2024	180 days	8 days	✓	08-Jul-2024	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FD-2	E465	27-Jun-2024	04-Jul-2024	180 days	8 days	✓	08-Jul-2024	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GIROF	E465	27-Jun-2024	04-Jul-2024	180 days	8 days	✓	08-Jul-2024	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-18	E465	26-Jun-2024	04-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-19	E465	26-Jun-2024	04-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-23	E465	26-Jun-2024	04-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FB-02	E465	26-Jun-2024	04-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) TB2	E465	26-Jun-2024	04-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) WOLFOF	E465	26-Jun-2024	04-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-30	E358-L	27-Jun-2024	06-Jul-2024	28 days	10 days	✓	06-Jul-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-34	E358-L	27-Jun-2024	06-Jul-2024	28 days	10 days	✓	06-Jul-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FD-2	E358-L	27-Jun-2024	06-Jul-2024	28 days	10 days	✓	06-Jul-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GIROF	E358-L	27-Jun-2024	06-Jul-2024	28 days	10 days	✓	06-Jul-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-18	E358-L	26-Jun-2024	06-Jul-2024	28 days	11 days	✓	06-Jul-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-19	E358-L	26-Jun-2024	06-Jul-2024	28 days	11 days	✓	06-Jul-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-23	E358-L	26-Jun-2024	06-Jul-2024	28 days	11 days	✓	06-Jul-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FB-02	E358-L	26-Jun-2024	06-Jul-2024	28 days	11 days	✓	06-Jul-2024	28 days	11 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) TB2	E358-L	26-Jun-2024	06-Jul-2024	28 days	11 days	✓	06-Jul-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WOLFOF	E358-L	26-Jun-2024	06-Jul-2024	28 days	11 days	✓	06-Jul-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-30	E355-L	27-Jun-2024	07-Jul-2024	28 days	10 days	✓	07-Jul-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E355-L	27-Jun-2024	07-Jul-2024	28 days	10 days	✓	07-Jul-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FD-2	E355-L	27-Jun-2024	07-Jul-2024	28 days	10 days	✓	07-Jul-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GIROF	E355-L	27-Jun-2024	07-Jul-2024	28 days	10 days	✓	07-Jul-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-19	E355-L	26-Jun-2024	07-Jul-2024	28 days	11 days	✓	07-Jul-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-23	E355-L	26-Jun-2024	07-Jul-2024	28 days	11 days	✓	07-Jul-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB-02	E355-L	26-Jun-2024	07-Jul-2024	28 days	11 days	✓	07-Jul-2024	28 days	12 days	✓

Page : 24 of 42
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) TB2	E355-L	26-Jun-2024	07-Jul-2024	28 days	11 days	✓	07-Jul-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) WOLFOF	E355-L	26-Jun-2024	07-Jul-2024	28 days	11 days	✓	07-Jul-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-18	E355-L	26-Jun-2024	07-Jul-2024	28 days	13 days	✓	07-Jul-2024	28 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-30	E290	27-Jun-2024	04-Jul-2024	14 days	7 days	✓	04-Jul-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-34	E290	27-Jun-2024	04-Jul-2024	14 days	7 days	✓	04-Jul-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FD-2	E290	27-Jun-2024	04-Jul-2024	14 days	7 days	✓	04-Jul-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GIROF	E290	27-Jun-2024	04-Jul-2024	14 days	7 days	✓	04-Jul-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-18	E290	26-Jun-2024	04-Jul-2024	14 days	8 days	✓	04-Jul-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-19	E290	26-Jun-2024	04-Jul-2024	14 days	8 days	✓	04-Jul-2024	14 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-23	E290	26-Jun-2024	04-Jul-2024	14 days	8 days	✓	04-Jul-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FB-02	E290	26-Jun-2024	04-Jul-2024	14 days	8 days	✓	04-Jul-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE TB2	E290	26-Jun-2024	04-Jul-2024	14 days	8 days	✓	04-Jul-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WOLFOF	E290	26-Jun-2024	04-Jul-2024	14 days	8 days	✓	04-Jul-2024	14 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-30	E100	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-34	E100	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE FD-2	E100	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE GIROF	E100	27-Jun-2024	04-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-18	E100	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-19	E100	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-23	E100	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE FB-02	E100	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE TB2	E100	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE WOLFOF	E100	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	04-Jul-2024	28 days	8 days	✓
Physical Tests : pH by Meter										
HDPE BRP-30	E108	27-Jun-2024	04-Jul-2024	0.25 hrs	173 hrs	✗ EHTR-FM	04-Jul-2024	0.25 hrs	177 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-34	E108	27-Jun-2024	04-Jul-2024	0.25 hrs	173 hrs	✗ EHTR-FM	04-Jul-2024	0.25 hrs	177 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE FD-2	E108	27-Jun-2024	04-Jul-2024	0.25 hrs	173 hrs	✗ EHTR-FM	04-Jul-2024	0.25 hrs	177 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GIROF	E108	27-Jun-2024	04-Jul-2024	0.25 hrs	173 hrs	✗ EHTR-FM	04-Jul-2024	0.25 hrs	177 hrs	✗ EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-18	E108	26-Jun-2024	04-Jul-2024	0.25 hrs	197 hrs	✖ EHTR-FM	04-Jul-2024	0.25 hrs	201 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-19	E108	26-Jun-2024	04-Jul-2024	0.25 hrs	197 hrs	✖ EHTR-FM	04-Jul-2024	0.25 hrs	201 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-23	E108	26-Jun-2024	04-Jul-2024	0.25 hrs	197 hrs	✖ EHTR-FM	04-Jul-2024	0.25 hrs	201 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE FB-02	E108	26-Jun-2024	04-Jul-2024	0.25 hrs	197 hrs	✖ EHTR-FM	04-Jul-2024	0.25 hrs	201 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE TB2	E108	26-Jun-2024	04-Jul-2024	0.25 hrs	197 hrs	✖ EHTR-FM	04-Jul-2024	0.25 hrs	201 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE WOLFOF	E108	26-Jun-2024	04-Jul-2024	0.25 hrs	197 hrs	✖ EHTR-FM	04-Jul-2024	0.25 hrs	201 hrs	✖ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-18	E162	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-19	E162	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-23	E162	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-30	E162	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-34	E162	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FB-02	E162	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FD-2	E162	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE GIROF	E162	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE TB2	E162	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WOLFOF	E162	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-18	E160	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-19	E160	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-23	E160	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-30	E160	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-34	E160	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FB-02	E160	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FD-2	E160	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GIROF	E160	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE TB2	E160	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WOLFOF	E160	26-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-30	E121	27-Jun-2024	----	----	----		03-Jul-2024	3 days	6 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-34	E121	27-Jun-2024	----	----	----		03-Jul-2024	3 days	6 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FD-2	E121	27-Jun-2024	----	----	----		03-Jul-2024	3 days	6 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GIROF	E121	27-Jun-2024	----	----	----		03-Jul-2024	3 days	6 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-18	E121	26-Jun-2024	----	----	----		03-Jul-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-19	E121	26-Jun-2024	----	----	----		03-Jul-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-23	E121	26-Jun-2024	----	----	----		03-Jul-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FB-02	E121	26-Jun-2024	----	----	----		03-Jul-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE TB2	E121	26-Jun-2024	----	----	----		03-Jul-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE WOLFOF	E121	26-Jun-2024	----	----	----		03-Jul-2024	3 days	7 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-30	E466	27-Jun-2024	05-Jul-2024	180 days	8 days	✓	08-Jul-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-34	E466	27-Jun-2024	05-Jul-2024	180 days	8 days	✓	08-Jul-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FD-2	E466	27-Jun-2024	05-Jul-2024	180 days	8 days	✓	08-Jul-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GIROF	E466	27-Jun-2024	05-Jul-2024	180 days	8 days	✓	08-Jul-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-18	E466	26-Jun-2024	05-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-19	E466	26-Jun-2024	05-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-23	E466	26-Jun-2024	05-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FB-02	E466	26-Jun-2024	05-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) TB2	E466	26-Jun-2024	05-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) WOLFOF	E466	26-Jun-2024	05-Jul-2024	180 days	9 days	✓	08-Jul-2024	180 days	13 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-30	E508-L	27-Jun-2024	07-Jul-2024	28 days	10 days	✓	07-Jul-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-34	E508-L	27-Jun-2024	07-Jul-2024	28 days	10 days	✓	07-Jul-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-18	E508-L	26-Jun-2024	07-Jul-2024	28 days	11 days	✓	07-Jul-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FD-2	E508-L	27-Jun-2024	08-Jul-2024	28 days	12 days	✓	08-Jul-2024	28 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GIROF	E508-L	27-Jun-2024	08-Jul-2024	28 days	12 days	✓	08-Jul-2024	28 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-19	E508-L	26-Jun-2024	08-Jul-2024	28 days	13 days	✓	08-Jul-2024	28 days	13 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-23	E508-L	26-Jun-2024	08-Jul-2024	28 days	13 days	✓	08-Jul-2024	28 days	13 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) TB2	E508-L	26-Jun-2024	08-Jul-2024	28 days	13 days	✓	08-Jul-2024	28 days	13 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) WOLFOF	E508-L	26-Jun-2024	08-Jul-2024	28 days	13 days	✓	08-Jul-2024	28 days	13 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FB-02	E508-L	26-Jun-2024	09-Jul-2024	28 days	14 days	✓	09-Jul-2024	28 days	14 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-34	E395	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FD-2	E395	27-Jun-2024	----	----	----		03-Jul-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-19	E395	26-Jun-2024	----	----	----		04-Jul-2024	7 days	8 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-18	E395	26-Jun-2024	----	----	----		03-Jul-2024	7 days	8 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-23	E395	26-Jun-2024	----	----	----		03-Jul-2024	7 days	8 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-30	E395	27-Jun-2024	----	----	----		04-Jul-2024	7 days	8 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FB-02	E395	26-Jun-2024	----	----	----		03-Jul-2024	7 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GIROF	E395	27-Jun-2024	----	----	----		04-Jul-2024	7 days	8 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) TB2	E395	26-Jun-2024	----	----	----		03-Jul-2024	7 days	8 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WOLFOF	E395	26-Jun-2024	----	----	----		03-Jul-2024	7 days	8 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1526902	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1535125	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1526907	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	1526906	1	19	5.2	5.0	✔
Conductivity in Water	E100	1526901	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1533457	1	18	5.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1527627	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1532005	3	54	5.5	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1526913	1	16	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1526905	1	19	5.2	5.0	✔
Free Cyanide	E339	1547403	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1526909	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1526910	1	18	5.5	5.0	✔
pH by Meter	E108	1526903	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1538033	1	13	7.6	5.0	✔
Sulfate in Water by IC	E235.SO4	1526908	1	19	5.2	5.0	✔
TDS by Gravimetry	E162	1526732	2	28	7.1	5.0	✔
Total Cyanide	E333	1547402	1	15	6.6	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1536974	1	16	6.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1535697	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1532327	3	54	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1527628	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1532326	2	36	5.5	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1534987	2	32	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1526603	1	12	8.3	5.0	✔
TSS by Gravimetry	E160	1526731	1	13	7.6	5.0	✔
Turbidity by Nephelometry	E121	1526670	2	36	5.5	5.0	✔
WAD Cyanide	E336	1547401	1	15	6.6	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1526902	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1535125	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1526907	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	1526906	1	19	5.2	5.0	✔
Conductivity in Water	E100	1526901	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1533457	1	18	5.5	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1527627	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1532005	3	54	5.5	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1526913	1	16	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1526905	1	19	5.2	5.0	✔
Free Cyanide	E339	1547403	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1526909	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1526910	1	18	5.5	5.0	✔
pH by Meter	E108	1526903	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	1538033	1	13	7.6	5.0	✔
Sulfate in Water by IC	E235.SO4	1526908	1	19	5.2	5.0	✔
TDS by Gravimetry	E162	1526732	2	28	7.1	5.0	✔
Total Cyanide	E333	1547402	1	15	6.6	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1536974	1	16	6.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1535697	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1532327	3	54	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1527628	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1532326	2	36	5.5	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1534987	2	32	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1526603	1	12	8.3	5.0	✔
TSS by Gravimetry	E160	1526731	1	13	7.6	5.0	✔
Turbidity by Nephelometry	E121	1526670	2	36	5.5	5.0	✔
WAD Cyanide	E336	1547401	1	15	6.6	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1526902	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	1535125	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1526907	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	1526906	1	19	5.2	5.0	✔
Conductivity in Water	E100	1526901	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1533457	1	18	5.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1527627	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1532005	3	54	5.5	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1526913	1	16	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1526905	1	19	5.2	5.0	✔
Free Cyanide	E339	1547403	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1526909	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1526910	1	18	5.5	5.0	✔
Reactive Silica by Colourimetry	E392	1538033	1	13	7.6	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1526908	1	19	5.2	5.0	✔
TDS by Gravimetry	E162	1526732	2	28	7.1	5.0	✔
Total Cyanide	E333	1547402	1	15	6.6	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1536974	1	16	6.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1535697	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1532327	3	54	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1527628	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1532326	2	36	5.5	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1534987	2	32	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1526603	1	12	8.3	5.0	✔
TSS by Gravimetry	E160	1526731	1	13	7.6	5.0	✔
Turbidity by Nephelometry	E121	1526670	2	36	5.5	5.0	✔
WAD Cyanide	E336	1547401	1	15	6.6	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1535125	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1526907	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	1526906	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1533457	1	18	5.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1527627	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1532005	3	54	5.5	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1526913	1	16	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1526905	1	19	5.2	5.0	✔
Free Cyanide	E339	1547403	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1526909	1	17	5.8	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1526910	1	18	5.5	5.0	✔
Reactive Silica by Colourimetry	E392	1538033	1	13	7.6	5.0	✔
Sulfate in Water by IC	E235.SO4	1526908	1	19	5.2	5.0	✔
Total Cyanide	E333	1547402	1	15	6.6	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1536974	1	16	6.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1535697	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1532327	3	54	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1527628	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1532326	2	36	5.5	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1534987	2	32	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1526603	1	12	8.3	5.0	✔
WAD Cyanide	E336	1547401	1	15	6.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Vancouver	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Vancouver	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Vancouver	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 42 of 42
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2400770	Page	: 1 of 21
Amendment	: 1		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 28-Jun-2024 15:00
PO	: 17852	Date Analysis Commenced	: 03-Jul-2024
C-O-C number	: ----	Issue Date	: 19-Aug-2024 10:49
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 10		
No. of samples analysed	: 10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
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Page : 2 of 21
Work Order : YL2400770 Amendment 1
Client : B2Gold Back River Corp.
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1526670)											
VA24B5686-001	Anonymous	Turbidity	----	E121	0.10	NTU	9.76	9.36	4.08%	15%	----
Physical Tests (QC Lot: 1526671)											
YL2400770-006	BRP-23	Turbidity	----	E121	0.10	NTU	0.84	0.93	0.09	Diff <2x LOR	----
Physical Tests (QC Lot: 1526731)											
VA24B5813-003	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1526732)											
VA24B5330-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	292	283	3.13%	20%	----
Physical Tests (QC Lot: 1526733)											
YL2400770-003	BRP-30	Solids, total dissolved [TDS]	----	E162	10	mg/L	58	49	8	Diff <2x LOR	----
Physical Tests (QC Lot: 1526901)											
VA24B5720-001	Anonymous	Conductivity	----	E100	1.0	µS/cm	<1.0	<1.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1526902)											
VA24B5720-001	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1526903)											
VA24B5720-001	Anonymous	pH	----	E108	0.10	pH units	5.65	5.52	2.33%	4%	----
Anions and Nutrients (QC Lot: 1526905)											
VA24B5720-002	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1526906)											
VA24B5720-002	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1526907)											
VA24B5720-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1526908)											
VA24B5720-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1526909)											
VA24B5720-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1526910)											
VA24B5720-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1526913)											
VA24B5720-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1534987)											
EO2405322-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.428	0.424	0.892%	20%	----
Anions and Nutrients (QC Lot: 1535125)											
EO2405367-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0451	0.0460	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1535697)											
FC2401709-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.515	0.516	0.310%	20%	----
Anions and Nutrients (QC Lot: 1536971)											
YL2400770-005	BRP-19	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0165	0.0146	12.0%	20%	----
Anions and Nutrients (QC Lot: 1536974)											
YL2400770-001	BRP-34	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0012	<0.0010	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1538033)											
YL2400770-001	BRP-34	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	0.54	0.54	0.002	Diff <2x LOR	----
Cyanides (QC Lot: 1547401)											
VA24B7011-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1547402)											
VA24B7011-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1547403)											
VA24B7011-001	Anonymous	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1532005)											
FC2401696-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	9.10	8.76	3.71%	20%	----
Organic / Inorganic Carbon (QC Lot: 1532053)											
EO2405413-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	7.62	7.45	2.28%	20%	----
Organic / Inorganic Carbon (QC Lot: 1532326)											
YL2400770-001	BRP-34	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	4.48	4.52	0.04	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1533490)											
EO2405510-003	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	44.8	45.0	0.510%	20%	----
Organic / Inorganic Carbon (QC Lot: 1533787)											
FC2401735-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	13.7	13.7	0.318%	20%	----
Total Sulfides (QC Lot: 1526603)											
CG2409047-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0597	0.0610	2.25%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1532327)											
CG2409217-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.70	0.80	0.10	Diff <2x LOR	----
Total Metals (QC Lot: 1533863)											
WP2416300-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.77	0.73	0.04	Diff <2x LOR	----
Total Metals (QC Lot: 1535711)											
CG2409334-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.99	0.95	0.04	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1527628)											
YL2400770-001	BRP-34	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0144	0.0135	6.52%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000090	0.0000089	0.00000009	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000214	0.000211	1.49%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00762	0.00754	1.08%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000022	0.0000027	0.0000005	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000038	0.0000048	0.0000010	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	4.22	4.11	2.51%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000067	0.0000069	0.0000002	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000136	0.000136	0.0000002	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000190	0.000188	0.558%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00131	0.00131	0.253%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0491	0.0483	1.78%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000122	0.000118	4.23%	20%	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000080	0.0000073	0.0000007	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00083	0.00082	0.000003	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.24	2.25	0.494%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00512	0.00503	1.75%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000012	0.000010	0.000002	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00359	0.00348	3.13%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.488	0.487	0.109%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00116	0.00115	0.913%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1527628) - continued											
YL2400770-001	BRP-34	Silicon, total	7440-21-3	E466	0.050	mg/L	0.258	0.257	0.0001	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	0.781	0.770	1.41%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0215	0.0215	0.328%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	3.60	3.52	0.08	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000015	0.0000014	0.0000002	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	0.0000086	0.0000081	0.0000005	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000115	0.000121	0.000006	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000067	0.0000063	0.0000004	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000036	0.000037	0.0000009	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000052	0.000052	0.0000003	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00063	0.00058	0.00005	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000029	0.000030	0.000002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1527627)											
YL2400770-001	BRP-34	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00874	0.00879	0.502%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000084	0.0000085	0.0000001	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000204	0.000206	1.20%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00739	0.00733	0.780%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000037	0.0000043	0.0000006	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	4.09	4.25	3.96%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000061	0.0000062	0.0000001	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000095	0.000098	0.000003	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000133	0.000132	0.664%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00132	0.00133	1.24%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0225	0.0225	0.174%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000086	0.000084	0.000001	Diff <2x LOR	----

Page : 7 of 21
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1527627) - continued											
YL2400770-001	BRP-34	Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00079	0.00080	0.000009	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	2.24	2.26	0.886%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00366	0.00372	1.49%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000010	0.000010	0.0000002	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00349	0.00350	0.302%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.480	0.492	2.32%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00114	0.00115	1.18%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	0.000027	0.000002	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.255	0.255	0.00001	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.774	0.787	1.72%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0216	0.0217	0.270%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	3.50	3.54	0.04	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000010	0.0000013	0.0000002	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000067	0.0000064	0.0000003	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000064	0.0000059	0.0000005	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000026	0.000025	0.0000006	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000041	0.000041	0.0000005	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00048	0.00049	0.00001	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000031	0.000034	0.000003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1533457)											
CG2409334-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.76	0.76	0.003	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1526670)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1526671)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1526731)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1526732)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1526733)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1526901)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1526902)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 1526905)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1526906)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1526907)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1526908)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1526909)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1526910)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1526913)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----

Page : 9 of 21
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1534987)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1535125)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1535697)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1536971)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1536974)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1538033)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1547401)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1547402)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1547403)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1532005)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1532053)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1532326)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1533490)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1533787)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1526603)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1532327)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (QCLot: 1533863)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (QCLot: 1535711)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1527628)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1527628) - continued						
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1527627)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----

Page : 12 of 21
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1527627) - continued						
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1533457)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1526670)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.5	85.0	115	----
Physical Tests (QCLot: 1526671)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.5	85.0	115	----
Physical Tests (QCLot: 1526731)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1526732)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.9	85.0	115	----
Physical Tests (QCLot: 1526733)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	108	85.0	115	----
Physical Tests (QCLot: 1526901)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	103	90.0	110	----
Physical Tests (QCLot: 1526902)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	92.9	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1526903)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Anions and Nutrients (QCLot: 1526905)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 1526906)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 1526907)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1526908)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1526909)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 1526910)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 1526913)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	91.0	80.0	120	----
Anions and Nutrients (QCLot: 1534987)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1534987) - continued									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	99.6	80.0	120	----
Anions and Nutrients (QCLot: 1535125)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1535697)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 1536971)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1536974)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1538033)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	94.8	85.0	115	----
Cyanides (QCLot: 1547401)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	95.8	80.0	120	----
Cyanides (QCLot: 1547402)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	94.3	80.0	120	----
Cyanides (QCLot: 1547403)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	94.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1532005)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1532053)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1532326)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1533490)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.3	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1533787)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	107	80.0	120	----
Total Sulfides (QCLot: 1526603)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	114	80.0	120	----
Total Metals (QCLot: 1532327)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	91.0	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Target Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1533863)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	87.8	80.0	120	----
Total Metals (QCLot: 1535711)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	83.8	80.0	120	----
Total Metals (Undigested) (QCLot: 1527628)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	108	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	105	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	103	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	102	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	103	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	103	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	103	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	97.9	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	104	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	101	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	105	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	102	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	110	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	97.3	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	104	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	108	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	106	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	103	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	103	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	100	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	104	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	110	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	99.8	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	108	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	92.2	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	105	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	106	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1527628) - continued									
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	104	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	93.0	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	103	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	96.2	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	101	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	104	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	99.1	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	98.5	80.0	120	----
Dissolved Metals (QCLot: 1527627)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	107	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	103	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	101	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	104	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	102	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	104	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	97.5	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	106	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	100	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	104	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	101	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	99.6	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	109	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	98.0	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	102	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	104	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	107	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	103	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1527627) - continued									
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	103	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	93.8	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	99.1	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	108	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	99.3	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	107	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	102	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	103	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	93.7	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	106	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	103	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	91.3	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	99.4	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	102	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	91.3	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	99.9	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	96.5	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	102	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	104	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	96.2	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	107	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	93.4	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	92.0	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1526905)										
VA24B5720-002	Anonymous	Fluoride	16984-48-8	E235.F	1.04 mg/L	1 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1526906)										
VA24B5720-002	Anonymous	Chloride	16887-00-6	E235.Cl	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1526907)										
VA24B5720-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.518 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1526908)										
VA24B5720-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1526909)										
VA24B5720-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.58 mg/L	2.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1526910)										
VA24B5720-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.515 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1526913)										
VA24B5720-003	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0279 mg/L	0.03 mg/L	93.0	70.0	130	----
Anions and Nutrients (QCLot: 1534987)										
EO2405333-002	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1535125)										
EO2405367-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0936 mg/L	0.1 mg/L	93.6	75.0	125	----
Anions and Nutrients (QCLot: 1535697)										
FC2401709-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.69 mg/L	2.5 mg/L	108	70.0	130	----
Anions and Nutrients (QCLot: 1536971)										
YL2400770-006	BRP-23	Phosphorus, total	7723-14-0	E372-S	0.0767 mg/L	0.067 mg/L	114	70.0	130	----
Anions and Nutrients (QCLot: 1536974)										
YL2400770-002	BRP-18	Phosphorus, total dissolved	7723-14-0	E375-U	0.0700 mg/L	0.067 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 1538033)										
YL2400770-002	BRP-18	Silicate (as SiO2)	7631-86-9	E392	9.89 mg/L	10 mg/L	98.9	75.0	125	----
Cyanides (QCLot: 1547401)										
YL2400770-001	BRP-34	Cyanide, weak acid dissociable	----	E336	0.130 mg/L	0.125 mg/L	104	75.0	125	----
Cyanides (QCLot: 1547402)										
YL2400770-001	BRP-34	Cyanide, strong acid dissociable (Total)	----	E333	0.250 mg/L	0.25 mg/L	100.0	75.0	125	----
Cyanides (QCLot: 1547403)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 1547403) - continued										
YL2400770-001	BRP-34	Cyanide, free	----	E339	0.125 mg/L	0.125 mg/L	100	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1532005)										
FC2401696-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1532053)										
EO2405413-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1532326)										
YL2400770-001	BRP-34	Carbon, total organic [TOC]	----	E355-L	5.37 mg/L	5 mg/L	107	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1533490)										
EO2405510-003	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1533787)										
FC2401735-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1526603)										
FC2401653-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.212 mg/L	0.2 mg/L	106	75.0	125	----
Total Metals (QCLot: 1532327)										
CG2409217-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.07 ng/L	5 ng/L	81.4	70.0	130	----
Total Metals (QCLot: 1533863)										
WP2416300-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.41 ng/L	5 ng/L	88.2	70.0	130	----
Total Metals (QCLot: 1535711)										
CG2409334-002	Anonymous	Mercury, total	7439-97-6	E508-L	3.75 ng/L	5 ng/L	75.0	70.0	130	----
Total Metals (Undigested) (QCLot: 1527628)										
YL2400770-002	BRP-18	Aluminum, total	7429-90-5	E466	0.209 mg/L	0.2 mg/L	104	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0193 mg/L	0.02 mg/L	96.3	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, total	7440-39-3	E466	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00961 mg/L	0.01 mg/L	96.1	70.0	130	----
		Boron, total	7440-42-8	E466	0.0971 mg/L	0.1 mg/L	97.1	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00394 mg/L	0.004 mg/L	98.5	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00979 mg/L	0.01 mg/L	97.9	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Copper, total	7440-50-8	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00256 mg/L	0.002 mg/L	102	70.0	130	----
		Iron, total	7439-89-6	E466	2.06 mg/L	2 mg/L	103	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00250 mg/L	0.002 mg/L	100	70.0	130	----
		Lead, total	7439-92-1	E466	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0984 mg/L	0.1 mg/L	98.4	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Total Metals (Undigested) (QCLot: 1527628) - continued										
YL2400770-002	BRP-18	Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0207 mg/L	0.02 mg/L	104	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0198 mg/L	0.02 mg/L	99.1	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00256 mg/L	0.002 mg/L	102	70.0	130	----
		Phosphorus, total	7723-14-0	E466	10.2 mg/L	10 mg/L	102	70.0	130	----
		Potassium, total	7440-09-7	E466	4.20 mg/L	4 mg/L	105	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00250 mg/L	0.002 mg/L	99.8	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, total	7440-21-3	E466	9.38 mg/L	10 mg/L	93.8	70.0	130	----
		Silver, total	7440-22-4	E466	0.00391 mg/L	0.004 mg/L	97.7	70.0	130	----
		Sodium, total	7440-23-5	E466	2.02 mg/L	2 mg/L	101	70.0	130	----
		Strontium, total	7440-24-6	E466	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E466	19.4 mg/L	20 mg/L	97.2	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00231 mg/L	0.002 mg/L	92.3	70.0	130	----
		Tellurium, total	13494-80-9	E466	0.0424 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0186 mg/L	0.02 mg/L	92.8	70.0	130	----
		Tin, total	7440-31-5	E466	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00380 mg/L	0.004 mg/L	95.0	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00250 mg/L	0.002 mg/L	100	70.0	130	----
		Zinc, total	7440-66-6	E466	0.435 mg/L	0.4 mg/L	109	70.0	130	----
		Zirconium, total	7440-67-7	E466	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
Dissolved Metals (QCLot: 1527627)										
YL2400770-002	BRP-18	Aluminum, dissolved	7429-90-5	E465	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0182 mg/L	0.02 mg/L	91.0	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00909 mg/L	0.01 mg/L	90.9	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.0933 mg/L	0.1 mg/L	93.3	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00395 mg/L	0.004 mg/L	98.8	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00964 mg/L	0.01 mg/L	96.4	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00254 mg/L	0.002 mg/L	102	70.0	130	----
		Iron, dissolved	7439-89-6	E465	2.08 mg/L	2 mg/L	104	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00252 mg/L	0.002 mg/L	101	70.0	130	----

Page : 21 of 21
 Work Order : YL2400770 Amendment 1
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1527627) - continued										
YL2400770-002	BRP-18	Lead, dissolved	7439-92-1	E465	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.0977 mg/L	0.1 mg/L	97.7	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0406 mg/L	0.04 mg/L	102	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00240 mg/L	0.002 mg/L	95.9	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.76 mg/L	10 mg/L	97.6	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	4.17 mg/L	4 mg/L	104	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00243 mg/L	0.002 mg/L	97.3	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0211 mg/L	0.02 mg/L	106	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0414 mg/L	0.04 mg/L	103	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	8.91 mg/L	10 mg/L	89.1	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00390 mg/L	0.004 mg/L	97.6	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.99 mg/L	2 mg/L	99.6	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	19.2 mg/L	20 mg/L	96.1	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00230 mg/L	0.002 mg/L	91.9	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0423 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00382 mg/L	0.004 mg/L	95.4	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0179 mg/L	0.02 mg/L	89.5	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0366 mg/L	0.04 mg/L	91.4	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00383 mg/L	0.004 mg/L	95.7	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00243 mg/L	0.002 mg/L	97.4	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.436 mg/L	0.4 mg/L	109	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0356 mg/L	0.04 mg/L	89.0	70.0	130	----
Dissolved Metals (QCLot: 1533457)										
CG2409334-002	Anonymous	Mercury, dissolved	7439-97-6	E509-L	4.78 ng/L	5 ng/L	95.5	70.0	130	----



CHAIN OF CUSTODY
ALS Laboratory

CLIENT: R25044 Nurex
PROJECT: CAG033154.8381
SITE: B2044

TURNAROUND REQUIREMENTS:
(Indicate TAT may be longer for some tests)
☒ Standard TAT (4-6 business days)
☐ Fast Turnaround or urgent TAT (4-6 business days)

RELINQUISHED BY: Danielle Teth
DATE/TIME: 28-06-2024 8:00

RELINQUISHED BY: [Signature]
DATE/TIME: 4/10/2024 15:00

RECEIVED BY: [Signature]
DATE/TIME: 28-06-2024 15:00

PURCHASE ORDER NO.: CAG033154-001 Date: 04-May-2024
PROJECT MANAGER: Martin Kaebe
CONTACT FRI: [Redacted]
SAMPLE: Danielle Teth
SAMPLE NO: 250-317-3944

ALS QUOTE NO: YL2400770

EMAIL REPORTS TO: jessica.counsell@als.com, laura.rye@als.com, or any/online@als.com

EMAIL INVOICE TO: laura.rye@als.com

SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS (Solids/Liquids)	MATRIX	CONTAINER INFORMATION	ANALYSIS REQUIRED										Additional Information
				MATRIX	TOTAL CONTAINERS	Conventional parameters and major ions (specific conductivity, pH, TSS, turbidity, TDS measured, total hardness, total alkalinity, bicarbonate, carbonate, chloride, fluoride, hydroxide, potassium, sulphate, soluble reactive silica)	Total and Dissolved Metals (ultra low level)	Total and Dissolved Mercury (ultra low level)	Total and dissolved nutrients (TOC/DOC, nitrate, nitrite, total ammonia, TKN, orthophosphate, TDP, TP)	Total cyanide, WAD cyanide, Free cyanide	Bathes	Field Filtered (F) / Preserved (P)		
	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE / TIME (dd-mm-yyyy)												
	RMP-34	27-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	RMP-18	26-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	RMP-38	27-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	GRD-06	27-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	WOL-06	26-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	RMP-18	26-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	RMP-33	26-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	TD-02	27-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	TD-02	26-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	TD-02	26-06-2024	water	10	X	X	X	X	X	X	X	X	F/P	
	TOTAL													



Telephone: +1 857 873 6553

Environmental Division
Yellowknife
Work Order Reference
YL2400770

container 1/2



CHAIN OF CUSTODY
ALS Laboratory

RELINQUISHED BY:
Danielle Toth

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY:

CLIENT: BDOHL Howard

PROJECT: CAA005104.001

DATE: BDOHL

PURCHASE ORDER NO.: Quote number: Y123-SAB100-001 Date: 06 May 2024

PROJECT MANAGER: Maria Korda

SAMPLE: Danielle Toth

EMAIL REPORTS TO: maria.korda@bdohl.com; danielle.toth@bdohl.com

SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:
(Standard TAT may be longer for some tests)
e.g. Urban Time Critical

DATE/TIME: 28-06-2024 8:00

DATE/TIME:

DATE/TIME:
FOR LABORATORY USE ONLY (Chew)
Closely Seal Bag?
Freeze and Freeze for 24 hours prior to analysis?
Refrigerate Sample Temperature of Sample?
(Other comments)

DATE/TIME:

ALS QUOTE IN: Y123-SAB100-001

EMAIL INVOICE TO: maria.korda@bdohl.com

ALS USE ONLY		SAMPLE DETAILS	MATRIX	CONTAINER INFORMATION		ANALYSIS REQUIRED						Additional Information	
		Sample Identification (This description will appear on the report)	DATE / TIME (dd-mm-yyyy)	MATRIX	TOTAL CONTAINERS	Conventional parameters and major ions (specific conductivity, pH, TSS, turbidity, TDS measured, total hardness, total alkalinity, bicarbonate, carbonate, chloride, fluoride, hydroxide, potassium, sulphate, soluble reactive silica)	Total and Dissolved Metals (ultra low level)	Total and Dissolved Mercury (ultra low level)	Total and dissolved nutrients (TDG/DOC, nitrate, nitrite, total ammonia, TRN, orthophosphate, TDP, TP)	Total cyanide, WAD cyanide, Free cyanide	Sulfide	Field Filtered (F) / Preserved (P)	
		SRP-01	27-06-2024	water	10	X	X	X	X	X	X	FIP as marked on bottles	
		SRP-02	28-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-03	27-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-04	27-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-05	28-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-06	27-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-07	28-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-08	29-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-09	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-10	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-11	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-12	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-13	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-14	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-15	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-16	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-17	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-18	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-19	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-20	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-21	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-22	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-23	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-24	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-25	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-26	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-27	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-28	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-29	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-30	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-31	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-32	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-33	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-34	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-35	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-36	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-37	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-38	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-39	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-40	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-41	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-42	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-43	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-44	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-45	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-46	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-47	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-48	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-49	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-50	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-51	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-52	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-53	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-54	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-55	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-56	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-57	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-58	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-59	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-60	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-61	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-62	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-63	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-64	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-65	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-66	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-67	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-68	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-69	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-70	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-71	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-72	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-73	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-74	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-75	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-76	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-77	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-78	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-79	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-80	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-81	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-82	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-83	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-84	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-85	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-86	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-87	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-88	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-89	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-90	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-91	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-92	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-93	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-94	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-95	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-96	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-97	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-98	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-99	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-100	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-101	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-102	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-103	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-104	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-105	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-106	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-107	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-108	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-109	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-110	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-111	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-112	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-113	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-114	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-115	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-116	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-117	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-118	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-119	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-120	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-121	26-06-2024	water	10	X	X	X	X	X	X	FIP "	
		SRP-122	26-06-2024	water	10								

CERTIFICATE OF ANALYSIS

Work Order	: YL2401005	Page	: 1 of 12
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 26-Jul-2024 16:37
PO	: ----	Date Analysis Commenced	: 31-Jul-2024
C-O-C number	: ----	Issue Date	: 07-Aug-2024 17:19
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Christopher Li	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
RRV	Reported result verified by repeat analysis.
SFP	Sample was filtered and preserved at the laboratory.
SFT	Sample was filtered due to turbidity interference. Result reflects soluble analyte concentration.
SP	Sample was preserved at the laboratory.



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					BRP-34	BRP-30	GIROF	WOLFOF	TB
Client sampling date / time					24-Jul-2024 11:45	24-Jul-2024 13:00	24-Jul-2024 09:15	24-Jul-2024 14:15	24-Jul-2024 15:17
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401005-001	YL2401005-002	YL2401005-003	YL2401005-004	YL2401005-005
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	---	E290/VA	1.0	mg/L	5.2	18.0	5.7	18.8	<1.0
Alkalinity, carbonate (as CaCO3)	---	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	---	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	---	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	---	E290/VA	1.0	mg/L	5.2	18.0	5.7	18.8	<1.0
Conductivity	---	E100/VA	2.0	µS/cm	52.8	55.2	46.4	69.0	<2.0
Hardness (as CaCO3), dissolved	---	EC100/VA	0.50	mg/L	18.7	24.1	16.2	29.3	<0.50
pH	---	E108/VA	0.10	pH units	6.69	7.04	6.77	7.21	5.22
Solids, total dissolved [TDS]	---	E162/VA	10	mg/L	30	62	30	51	<10
Solids, total dissolved [TDS], calculated	---	EC103/VA	1.0	mg/L	32.5	49.6	30.4	44.9	<1.0
Solids, total suspended [TSS]	---	E160/VA	3.0	mg/L	<3.0	9.3	<3.0	<3.0	<3.0
Turbidity	---	E121/VA	0.10	NTU	0.48	2.70	0.41	1.57	<0.10
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0158	0.0177	0.0950	0.0807	<0.0050 ^{SP}
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	4.74	0.76	0.84	2.65	<0.50
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.021	0.042	0.026	0.032	<0.020
Kjeldahl nitrogen, total [TKN]	---	E318/EO	0.050	mg/L	0.247	1.02	0.204	0.408	<0.050
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.0846	0.0265	0.0861	0.190	<0.0050
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	<0.0010	<0.0010	0.0055	<0.0010
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0198	0.0242	0.0061	0.0088	<0.0010
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0021	0.0114	0.0013	0.0033	<0.0010 ^{SFP}
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	<0.50	0.52 ^{SFT}	0.63	1.23	<0.50
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	10.6	4.65	13.2	8.66	<0.30
Cyanides									
Cyanide, free	---	E339/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, strong acid dissociable (Total)	---	E333/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34	BRP-30	GIROF	WOLFOF	TB
(Matrix: Water)										
Client sampling date / time					24-Jul-2024 11:45	24-Jul-2024 13:00	24-Jul-2024 09:15	24-Jul-2024 14:15	24-Jul-2024 15:17	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401005-001	YL2401005-002	YL2401005-003	YL2401005-004	YL2401005-005	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	5.94	21.7	5.50	7.50	<0.50 ^{SFP}	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	5.39	22.7	4.74	7.11	<0.50 ^{SP}	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0016	0.0105	<0.0015	0.0056	<0.0015	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0017	0.0112	<0.0016	0.0060	<0.0016	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.96	5.09	0.82	2.23	<0.50	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.00765	0.0924	0.0185	0.0227	<0.00020	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000108	0.0000146	0.0000083	0.0000139	<0.0000050	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000261	0.00105	0.000271	0.00156	<0.000010	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00709	0.0137	0.00489	0.00820	<0.000020	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	0.0000092	0.0000024	0.0000026	<0.0000020	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	0.0000023	<0.0000010	0.0000023	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000042	0.0000204	0.0000054	0.0000115	<0.0000025	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	3.89	4.51	2.81	5.51	<0.010	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000088	0.0000065	0.0000075	0.0000133	<0.0000050	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000052	0.000967	0.000068	0.000170	<0.000040	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000342	0.000679	0.000218	0.000677	<0.0000050	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00135	0.00306	0.00190	0.00253	<0.000050	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0954	1.94	0.0967	1.16	<0.00050	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000088	0.000625	0.000201	0.000462	<0.000010	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000054	0.0000757	0.0000107	0.0000918	<0.0000050	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00084	0.00100	0.00100	0.00082	<0.00010	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	2.18	3.30	2.37	3.55	<0.0010	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0116	0.00753	0.00374	0.0356	<0.0000050	
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000013	0.000019	0.000015	0.000060	<0.000010	



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					BRP-34	BRP-30	GIROF	WOLFOF	TB
Client sampling date / time					24-Jul-2024 11:45	24-Jul-2024 13:00	24-Jul-2024 09:15	24-Jul-2024 14:15	24-Jul-2024 15:17
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401005-001	YL2401005-002	YL2401005-003	YL2401005-004	YL2401005-005
					Result	Result	Result	Result	Result
Total Metals (Undigested)									
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00285	0.00887	0.00534	0.00759	<0.000020
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	0.019	<0.010	<0.010	<0.010
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.507	0.244	0.409	0.757	<0.0050
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00133	0.000945	0.000891	0.00222	<0.0000050
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000035	0.000076	0.000035	0.000058	<0.000025
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.095	0.254	0.273	0.585	<0.050
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	0.0000063	0.0000022	0.0000038	<0.0000020
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	0.798	1.68	0.827	1.03	<0.010
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0215	0.0196	0.0121	0.0237	<0.000020
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	3.42	2.04	4.33	3.05	<0.50
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000022	0.0000043	0.0000020	0.0000041	<0.0000010
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	0.0000948	<0.0000050	0.0000232	<0.0000050
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000066	0.00305	0.000325	0.000515	<0.000050
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	0.000011	<0.000010	<0.000010	<0.000010
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000051	0.0000269	0.0000104	0.0000197	<0.0000010
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000035	0.000988	0.000063	0.000208	<0.000010
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000036	0.000383	0.000073	0.000230	<0.000010
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00042	0.00214	0.00121	0.00070	<0.00010
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000021	0.000453	0.000031	0.000174	<0.000010
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00420	0.0541	0.00848	0.0153	<0.00020
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000091	0.0000139	0.0000070	0.0000139	<0.0000050
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000241	0.00102	0.000265	0.00143	<0.000010
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00686	0.0122	0.00481	0.00867	<0.000020
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	0.0000068	0.0000020	0.0000028	<0.0000020
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	0.0000017	<0.0000010	0.0000014	<0.0000010



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)									
					Client sampling date / time				
Analyte					CAS Number				
					Method/Lab				
					LOR				
					Unit				
					YL2401005-001				
					YL2401005-002				
					YL2401005-003				
					YL2401005-004				
					YL2401005-005				
					Result				
Dissolved Metals									
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000032	0.0000108	0.0000049	0.0000086	<0.0000025
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	3.83	4.27	2.70	5.60	<0.010
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000088	0.0000052	0.0000068	0.0000130	<0.0000050
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000042	0.000830	0.000049	0.000161	<0.000040
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000276	0.000520	0.000173	0.000671	<0.0000050
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00135	0.00271	0.00168	0.00239	<0.000050
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0542	1.31	0.0390	0.960	<0.00050
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000054	0.000397	0.000098	0.000373	<0.000010
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	0.0000412	<0.0000050	0.0000731	<0.0000050
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00082	0.00099	0.00095	0.00082	<0.00010
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	2.21	3.26	2.31	3.73	<0.0010
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00958	0.00493	0.00296	0.0365	<0.0000050
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.67	3.59	0.53	1.62	<0.50
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000015	0.000016	0.000014	0.000060	<0.000010
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00282	0.00824	0.00499	0.00759	<0.000020
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	0.011	<0.010	0.070	<0.010
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.499	0.233	0.391	0.796	<0.0050
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00129	0.000899	0.000847	0.00228	<0.0000050
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000028	0.000064	0.000030	0.000060	<0.000025
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.092	0.253	0.270	0.595	<0.050
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	0.0000055	0.0000020	0.0000034	<0.0000020
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	0.802	1.64	0.782	1.05	<0.010
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0211	0.0190	0.0117	0.0248	<0.000020
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	3.57	2.14	4.44	3.14	<0.50
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34	BRP-30	GIROF	WOLFOF	TB
(Matrix: Water)										
Client sampling date / time					24-Jul-2024 11:45	24-Jul-2024 13:00	24-Jul-2024 09:15	24-Jul-2024 14:15	24-Jul-2024 15:17	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401005-001	YL2401005-002	YL2401005-003	YL2401005-004	YL2401005-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000023	0.0000030	0.0000018	0.0000046	<0.0000010	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000051	0.0000995	0.0000068	0.0000142	<0.0000050	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	0.00132	<0.000050	0.000284	<0.000050	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000045	0.0000205	0.0000075	0.0000182	<0.0000010	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000024	0.000641	0.000033	0.000174	<0.000010	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000027	0.000281	0.000040	0.000195	<0.000010	
Zinc, dissolved	7440-66-6	E465/VA	0.000010	mg/L	0.00031	0.00144	0.00076	0.00206	<0.000010	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000021	0.000437	0.000032	0.000162	<0.000010	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	24-Jul-2024 15:20	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401005-006	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	<2.0	----	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	<0.50	----	----	----	----	----
pH	----	E108/VA	0.10	pH units	5.25	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	<10	----	----	----	----	----
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	<1.0	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	<0.10	----	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0195 ^{RRV}	----	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	----	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	<0.50	----	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	<0.050	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	<0.0050	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	----	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	<0.0010	----	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	<0.0010	----	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	<0.50	----	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	<0.30	----	----	----	----	----
Cyanides										
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
Client sampling date / time					24-Jul-2024 15:20	----	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401005-006	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	<0.50	----	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	<0.50	----	----	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----	----
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	<0.50	----	----	----	----	----
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	<0.0000025	----	----	----	----	----
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	<0.010	----	----	----	----	----
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	<0.000040	----	----	----	----	----
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	24-Jul-2024 15:20	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401005-006	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Total Metals (Undigested)										
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	----	----	----	----	----
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025	----	----	----	----	----
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	<0.050	----	----	----	----	----
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	<0.010	----	----	----	----	----
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	<0.50	----	----	----	----	----
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	<0.0000025	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	24-Jul-2024 15:20	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401005-006	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Dissolved Metals										
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	<0.000040	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Dissolved metals filtration location	----	EP465/VA	-	-	Field	----	----	----	----	----
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	----	----	----	----	----
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	<0.050	----	----	----	----	----
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	<0.50	----	----	----	----	----
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	FB	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	24-Jul-2024 15:20	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401005-006	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Dissolved Metals										
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	----	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2401005	Page	: 1 of 29
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 26-Jul-2024 16:37
PO	: ----	Issue Date	: 07-Aug-2024 17:20
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-30	E298	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-34	E298	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FB	E298	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GIROF	E298	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) TB	E298	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WOLFOF	E298	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-30	E235.Br-L	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-34	E235.Br-L	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FB	E235.Br-L	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GIROF	E235.Br-L	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE TB	E235.Br-L	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WOLFOF	E235.Br-L	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-30	E235.Cl	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-34	E235.Cl	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB	E235.Cl	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GIROF	E235.Cl	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE TB	E235.Cl	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WOLFOF	E235.Cl	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FB	E378-U	24-Jul-2024	01-Aug-2024	3 days	7 days	✖ EHT	02-Aug-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE TB	E378-U	24-Jul-2024	01-Aug-2024	3 days	7 days	✖ EHT	02-Aug-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE WOLFOF	E378-U	24-Jul-2024	01-Aug-2024	3 days	7 days	✖ EHT	02-Aug-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-30	E378-U	24-Jul-2024	01-Aug-2024	3 days	8 days	✖ EHT	02-Aug-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-34	E378-U	24-Jul-2024	01-Aug-2024	3 days	8 days	✖ EHT	02-Aug-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GIROF	E378-U	24-Jul-2024	01-Aug-2024	3 days	8 days	✖ EHT	02-Aug-2024	3 days	8 days	✖ EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-30	E235.F	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-34	E235.F	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB	E235.F	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE GIROF	E235.F	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE TB	E235.F	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WOLFOF	E235.F	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB	E235.NO3-L	24-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	01-Aug-2024	3 days	8 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE TB	E235.NO3-L	24-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	01-Aug-2024	3 days	8 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WOLFOF	E235.NO3-L	24-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	01-Aug-2024	3 days	8 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-30	E235.NO3-L	24-Jul-2024	01-Aug-2024	3 days	8 days	✗ EHT	01-Aug-2024	3 days	8 days	✗ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-34	E235.NO3-L	24-Jul-2024	01-Aug-2024	3 days	8 days	* EHT	01-Aug-2024	3 days	8 days	* EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GIROF	E235.NO3-L	24-Jul-2024	01-Aug-2024	3 days	8 days	* EHT	01-Aug-2024	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB	E235.NO2-L	24-Jul-2024	01-Aug-2024	3 days	7 days	* EHT	01-Aug-2024	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE TB	E235.NO2-L	24-Jul-2024	01-Aug-2024	3 days	7 days	* EHT	01-Aug-2024	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WOLFOF	E235.NO2-L	24-Jul-2024	01-Aug-2024	3 days	7 days	* EHT	01-Aug-2024	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-30	E235.NO2-L	24-Jul-2024	01-Aug-2024	3 days	8 days	* EHT	01-Aug-2024	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-34	E235.NO2-L	24-Jul-2024	01-Aug-2024	3 days	8 days	* EHT	01-Aug-2024	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GIROF	E235.NO2-L	24-Jul-2024	01-Aug-2024	3 days	8 days	* EHT	01-Aug-2024	3 days	8 days	* EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-30	E392	24-Jul-2024	----	----	----		01-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-34	E392	24-Jul-2024	----	----	----		01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FB	E392	24-Jul-2024	----	----	----		01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GIROF	E392	24-Jul-2024	----	----	----		01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE TB	E392	24-Jul-2024	----	----	----		01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE WOLFOF	E392	24-Jul-2024	----	----	----		01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-30	E235.SO4	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-34	E235.SO4	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FB	E235.SO4	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GIROF	E235.SO4	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: **✖** = Holding time exceedance ; **✓** = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE TB	E235.SO4	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WOLFOF	E235.SO4	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-30	E375-U	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-34	E375-U	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FB	E375-U	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GIROF	E375-U	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) TB	E375-U	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) WOLFOF	E375-U	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-30	E318	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓

Page : 10 of 29
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: **x** = Holding time exceedance ; **✓** = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E318	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FB	E318	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GIROF	E318	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) TB	E318	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) WOLFOF	E318	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-30	E372-S	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-34	E372-S	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FB	E372-S	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GIROF	E372-S	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) TB	E372-S	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) WOLFOF	E372-S	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E339	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E339	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E339	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E339	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E339	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E339	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E333	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E333	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E333	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E333	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E333	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E333	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E336	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E336	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E336	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E336	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E336	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E336	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-30	E509-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-34	E509-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FB	E509-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GIROF	E509-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) TB	E509-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) WOLFOF	E509-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-30	E465	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-34	E465	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FB	E465	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GIROF	E465	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) TB	E465	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) WOLFOF	E465	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-30	E358-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-34	E358-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FB	E358-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GIROF	E358-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) TB	E358-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WOLFOF	E358-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-30	E355-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E355-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB	E355-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GIROF	E355-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) TB	E355-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) WOLFOF	E355-L	24-Jul-2024	31-Jul-2024	28 days	7 days	✓	31-Jul-2024	28 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-30	E290	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-34	E290	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FB	E290	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GIROF	E290	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE TB	E290	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WOLFOF	E290	24-Jul-2024	01-Aug-2024	14 days	8 days	✓	01-Aug-2024	14 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-30	E100	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-34	E100	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE FB	E100	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE GIROF	E100	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE TB	E100	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE WOLFOF	E100	24-Jul-2024	01-Aug-2024	28 days	8 days	✓	01-Aug-2024	28 days	8 days	✓
Physical Tests : pH by Meter										
HDPE FB	E108	24-Jul-2024	01-Aug-2024	0.25 hrs	190 hrs	✗ EHTR-FM	01-Aug-2024	0.25 hrs	193 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE TB	E108	24-Jul-2024	01-Aug-2024	0.25 hrs	190 hrs	✗ EHTR-FM	01-Aug-2024	0.25 hrs	193 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE WOLFOF	E108	24-Jul-2024	01-Aug-2024	0.25 hrs	191 hrs	✗ EHTR-FM	01-Aug-2024	0.25 hrs	194 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-30	E108	24-Jul-2024	01-Aug-2024	0.25 hrs	192 hrs	✗ EHTR-FM	01-Aug-2024	0.25 hrs	195 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-34	E108	24-Jul-2024	01-Aug-2024	0.25 hrs	194 hrs	✗ EHTR-FM	01-Aug-2024	0.25 hrs	196 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE GIROF	E108	24-Jul-2024	01-Aug-2024	0.25 hrs	196 hrs	✗ EHTR-FM	01-Aug-2024	0.25 hrs	199 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE FB	E162	24-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE TB	E162	24-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-30	E162	24-Jul-2024	----	----	----		01-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-34	E162	24-Jul-2024	----	----	----		01-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE GIROF	E162	24-Jul-2024	----	----	----		01-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE WOLFOF	E162	24-Jul-2024	----	----	----		01-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE FB	E160	24-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE TB	E160	24-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WOLFOF	E160	24-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-30	E160	24-Jul-2024	----	----	----		01-Aug-2024	7 days	8 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-34	E160	24-Jul-2024	----	----	----		01-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE GIROF	E160	24-Jul-2024	----	----	----		01-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FB	E121	24-Jul-2024	----	----	----		01-Aug-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE TB	E121	24-Jul-2024	----	----	----		01-Aug-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE WOLFOF	E121	24-Jul-2024	----	----	----		01-Aug-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-30	E121	24-Jul-2024	----	----	----		01-Aug-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-34	E121	24-Jul-2024	----	----	----		01-Aug-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GIROF	E121	24-Jul-2024	----	----	----		01-Aug-2024	3 days	8 days	✖ EHT
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-30	E466	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓

Page : 20 of 29
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-34	E466	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FB	E466	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GIROF	E466	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) TB	E466	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) WOLFOF	E466	24-Jul-2024	03-Aug-2024	180 days	10 days	✓	06-Aug-2024	180 days	13 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-30	E508-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-34	E508-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FB	E508-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GIROF	E508-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓

Page : 21 of 29
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) TB	E508-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) WOLFOF	E508-L	24-Jul-2024	04-Aug-2024	28 days	11 days	✓	04-Aug-2024	28 days	11 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-30	E395	24-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FB	E395	24-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) TB	E395	24-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WOLFOF	E395	24-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-34	E395	24-Jul-2024	----	----	----		01-Aug-2024	7 days	8 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GIROF	E395	24-Jul-2024	----	----	----		01-Aug-2024	7 days	8 days	✖ EHT

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1575621	1	6	16.6	5.0	✓
Ammonia by Fluorescence	E298	1571718	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1575627	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1575623	1	16	6.2	5.0	✓
Conductivity in Water	E100	1575620	1	10	10.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1579815	1	10	10.0	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1579346	1	10	10.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1573474	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1575628	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	1575626	1	14	7.1	5.0	✓
Free Cyanide	E339	1576060	1	19	5.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1575622	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1575624	1	16	6.2	5.0	✓
pH by Meter	E108	1575619	1	12	8.3	5.0	✓
Reactive Silica by Colourimetry	E392	1575973	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1575625	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1575993	1	20	5.0	5.0	✓
Total Cyanide	E333	1576058	1	19	5.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1571821	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1573350	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1579814	1	10	10.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1579347	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1573276	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1571820	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1575730	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1575985	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1575786	1	19	5.2	5.0	✓
WAD Cyanide	E336	1576059	1	19	5.2	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1575621	1	6	16.6	5.0	✓
Ammonia by Fluorescence	E298	1571718	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1575627	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1575623	1	16	6.2	5.0	✓
Conductivity in Water	E100	1575620	1	10	10.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1579815	1	10	10.0	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1579346	1	10	10.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1573474	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1575628	1	10	10.0	5.0	✔
Fluoride in Water by IC	E235.F	1575626	1	14	7.1	5.0	✔
Free Cyanide	E339	1576060	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1575622	1	19	5.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1575624	1	16	6.2	5.0	✔
pH by Meter	E108	1575619	1	12	8.3	5.0	✔
Reactive Silica by Colourimetry	E392	1575973	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	1575625	1	15	6.6	5.0	✔
TDS by Gravimetry	E162	1575993	1	20	5.0	5.0	✔
Total Cyanide	E333	1576058	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1571821	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1573350	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1579814	1	10	10.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1579347	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1573276	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1571820	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1575730	1	6	16.6	5.0	✔
TSS by Gravimetry	E160	1575985	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1575786	1	19	5.2	5.0	✔
WAD Cyanide	E336	1576059	1	19	5.2	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1575621	1	6	16.6	5.0	✔
Ammonia by Fluorescence	E298	1571718	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1575627	1	14	7.1	5.0	✔
Chloride in Water by IC	E235.Cl	1575623	1	16	6.2	5.0	✔
Conductivity in Water	E100	1575620	1	10	10.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1579815	1	10	10.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1579346	1	10	10.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1573474	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1575628	1	10	10.0	5.0	✔
Fluoride in Water by IC	E235.F	1575626	1	14	7.1	5.0	✔
Free Cyanide	E339	1576060	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1575622	1	19	5.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1575624	1	16	6.2	5.0	✔
Reactive Silica by Colourimetry	E392	1575973	1	19	5.2	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1575625	1	15	6.6	5.0	✔
TDS by Gravimetry	E162	1575993	1	20	5.0	5.0	✔
Total Cyanide	E333	1576058	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1571821	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1573350	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1579814	1	10	10.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1579347	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1573276	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1571820	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1575730	1	6	16.6	5.0	✔
TSS by Gravimetry	E160	1575985	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1575786	1	19	5.2	5.0	✔
WAD Cyanide	E336	1576059	1	19	5.2	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1571718	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1575627	1	14	7.1	5.0	✔
Chloride in Water by IC	E235.Cl	1575623	1	16	6.2	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1579815	1	10	10.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1579346	1	10	10.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1573474	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1575628	1	10	10.0	5.0	✔
Fluoride in Water by IC	E235.F	1575626	1	14	7.1	5.0	✔
Free Cyanide	E339	1576060	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1575622	1	19	5.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1575624	1	16	6.2	5.0	✔
Reactive Silica by Colourimetry	E392	1575973	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	1575625	1	15	6.6	5.0	✔
Total Cyanide	E333	1576058	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1571821	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1573350	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1579814	1	10	10.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1579347	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1573276	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1571820	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1575730	1	6	16.6	5.0	✔
WAD Cyanide	E336	1576059	1	19	5.2	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Vancouver	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Vancouver	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Vancouver	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 29 of 29
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2401005	Page	: 1 of 21
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 26-Jul-2024 16:37
PO	: ----	Date Analysis Commenced	: 31-Jul-2024
C-O-C number	: ----	Issue Date	: 07-Aug-2024 17:20
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Vancouver Metals, Burnaby, British Columbia
Christopher Li	Analyst	Vancouver Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia

Page : 2 of 21
Work Order : YL2401005
Client : B2Gold Back River Corp.
Project : CA0035158.8381



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Page : 3 of 21
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1575619)											
YL2401005-003	GIROF	pH	----	E108	0.10	pH units	6.77	6.77	0.00%	4%	----
Physical Tests (QC Lot: 1575620)											
YL2401005-003	GIROF	Conductivity	----	E100	2.0	µS/cm	46.4	46.3	0.216%	10%	----
Physical Tests (QC Lot: 1575621)											
YL2401005-003	GIROF	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	5.7	5.5	3.57%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	5.7	5.5	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1575786)											
VA24B8958-001	Anonymous	Turbidity	----	E121	0.10	NTU	7.46	7.17	3.96%	15%	----
Physical Tests (QC Lot: 1575985)											
FJ2402167-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	7.1	6.9	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1575993)											
FJ2402167-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	1400	1330	5.46%	20%	----
Anions and Nutrients (QC Lot: 1571718)											
FC2401965-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0487	0.0509	0.0022	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1571820)											
FC2401961-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.335	0.323	3.82%	20%	----
Anions and Nutrients (QC Lot: 1571821)											
YL2401005-001	BRP-34	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0021	0.0010	0.0011	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1573350)											
FC2401981-005	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	2.12	2.11	0.737%	20%	----
Anions and Nutrients (QC Lot: 1575622)											
VA24B8979-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1575623)											
VA24B8979-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	14.5	14.5	0.460%	20%	----
Anions and Nutrients (QC Lot: 1575624)											
VA24B8979-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1575625)											
VA24B8979-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1575626)											
VA24B8979-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1575627)											
VA24B8979-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1575628)											
VA24B8981-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1575973)											
EO2406351-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	6.43	6.45	0.258%	20%	----
Cyanides (QC Lot: 1576058)											
VA24B8562-009	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.100	mg/L	0.886	0.842	0.0434	Diff <2x LOR	----
Cyanides (QC Lot: 1576059)											
VA24B8562-009	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0100	mg/L	<0.0050	<0.0100	0.0050	Diff <2x LOR	----
Cyanides (QC Lot: 1576060)											
VA24B8562-009	Anonymous	Cyanide, free	----	E339	0.0100	mg/L	<0.0050	<0.0100	0.0050	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1573276)											
FC2401981-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	27.8	26.9	3.44%	20%	----
Organic / Inorganic Carbon (QC Lot: 1573474)											
YL2401005-001	BRP-34	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.94	5.47	8.27%	20%	----
Total Sulfides (QC Lot: 1575730)											
YL2401005-001	BRP-34	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0016	0.0015	0.0001	Diff <2x LOR	----
Total Metals (QC Lot: 1579814)											
YL2401005-001	BRP-34	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.96	0.90	0.05	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1579347)											
YL2401005-001	BRP-34	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00765	0.00752	1.82%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000108	0.0000104	0.0000004	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000261	0.000264	1.27%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00709	0.00729	2.73%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000042	0.0000059	0.0000017	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	3.89	3.92	0.935%	20%	----

Page : 5 of 21
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1579347) - continued											
YL2401005-001	BRP-34	Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000088	0.0000093	0.0000004	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000052	0.000052	0.0000003	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000342	0.000360	5.00%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00135	0.00136	0.675%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0954	0.0977	2.37%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000088	0.000090	0.000002	Diff <2x LOR	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000054	0.0000056	0.0000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00084	0.00094	0.00009	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.18	2.22	1.48%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.0116	0.0118	1.97%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000013	0.000014	0.0000010	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00285	0.00287	0.593%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.507	0.504	0.577%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00133	0.00132	0.119%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000035	0.000035	0.0000003	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.095	0.092	0.003	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	0.798	0.810	1.44%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0215	0.0215	0.232%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	3.42	3.48	0.05	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000022	0.0000023	0.00000002	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000066	0.000060	0.000006	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000051	0.0000060	0.0000008	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000035	0.000037	0.000002	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000036	0.000036	0.0000006	Diff <2x LOR	----

Page : 6 of 21
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1579347) - continued											
YL2401005-001	BRP-34	Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00042	0.00039	0.00003	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000021	0.000020	0.0000009	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1579346)											
YL2401005-001	BRP-34	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00420	0.00424	1.13%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000091	0.0000097	0.0000006	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000241	0.000253	4.97%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00686	0.00698	1.68%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000032	0.0000030	0.0000002	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	3.83	3.83	0.0353%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000088	0.0000086	0.0000002	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000042	0.000044	0.000001	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000276	0.000277	0.156%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00135	0.00133	1.53%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0542	0.0537	0.858%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000054	0.000055	0.000001	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00082	0.00082	0.000003	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	2.21	2.21	0.0527%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00958	0.00956	0.178%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000015	0.000013	0.000002	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00282	0.00277	1.82%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.499	0.504	1.01%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00129	0.00130	0.878%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000028	0.000037	0.000009	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.092	0.092	0.0004	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.802	0.814	1.36%	20%	----

Page : 7 of 21
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1579346) - continued											
YL2401005-001	BRP-34	Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0211	0.0212	0.613%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	3.57	3.55	0.02	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000023	0.0000022	0.00000004	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000051	0.0000052	0.0000001	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000045	0.0000042	0.0000003	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000024	0.000027	0.000003	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000027	0.000026	0.0000004	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00031	0.00031	0.000002	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000021	0.000021	0.0000001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1579815)											
YL2401005-001	BRP-34	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.67	0.60	0.07	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1575620)						
Conductivity	----	E100	1	µS/cm	1.3	----
Physical Tests (QCLot: 1575621)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1575786)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1575985)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1575993)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1571718)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1571820)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1571821)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1573350)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1575622)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1575623)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1575624)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1575625)						
Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1575626)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1575627)						

Page : 9 of 21
 Work Order : YL2401005
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1575627) - continued						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1575628)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1575973)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1576058)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1576059)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1576060)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1573276)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1573474)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1575730)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1579814)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1579347)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1579347) - continued						
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1579346)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1579346) - continued						
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1579346) - continued						
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1579815)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1575619)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1575620)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	103	90.0	110	----
Physical Tests (QCLot: 1575621)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	95.4	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	99.7	85.0	115	----
Physical Tests (QCLot: 1575786)									
Turbidity	----	E121	0.1	NTU	200 NTU	99.0	85.0	115	----
Physical Tests (QCLot: 1575985)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	100	85.0	115	----
Physical Tests (QCLot: 1575993)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	93.1	85.0	115	----
Anions and Nutrients (QCLot: 1571718)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	92.8	85.0	115	----
Anions and Nutrients (QCLot: 1571820)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	96.9	80.0	120	----
Anions and Nutrients (QCLot: 1571821)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	96.9	80.0	120	----
Anions and Nutrients (QCLot: 1573350)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	88.5	75.0	125	----
Anions and Nutrients (QCLot: 1575622)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1575623)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1575624)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	107	90.0	110	----
Anions and Nutrients (QCLot: 1575625)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 1575626)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1575627)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1575627) - continued									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1575628)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	99.6	80.0	120	----
Anions and Nutrients (QCLot: 1575973)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	99.1	85.0	115	----
Cyanides (QCLot: 1576058)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	100	80.0	120	----
Cyanides (QCLot: 1576059)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	99.3	80.0	120	----
Cyanides (QCLot: 1576060)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	97.5	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1573276)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1573474)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.1	80.0	120	----
Total Sulfides (QCLot: 1575730)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	103	80.0	120	----
Total Metals (QCLot: 1579814)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	95.7	80.0	120	----
Total Metals (Undigested) (QCLot: 1579347)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	100	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	104	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	105	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	103	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	101	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	98.6	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	105	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	94.6	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	100	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	98.8	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	98.1	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1579347) - continued									
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	98.0	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	100	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	103	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	100	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	99.1	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	96.9	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	99.4	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	101	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	102	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	98.9	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	97.3	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	108	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	105	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	96.3	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	102	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	98.4	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	105	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	106	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	104	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	98.5	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	103	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	101	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	97.9	80.0	120	----
Dissolved Metals (QCLot: 1579346)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	101	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1579346) - continued									
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	103	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	104	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	101	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	101	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	97.2	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	94.4	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	99.0	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	97.4	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	96.9	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	97.8	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	99.2	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	100.0	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	97.1	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	95.8	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	97.8	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	103	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	97.2	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	96.8	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	101	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	108	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	94.7	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	97.8	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	108	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	103	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	105	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1579346) - continued									
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	103	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	96.7	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	99.7	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	98.5	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	95.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1571718)										
FC2401965-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0885 mg/L	0.1 mg/L	88.5	75.0	125	----
Anions and Nutrients (QCLot: 1571820)										
FC2401962-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1571821)										
YL2401005-002	BRP-30	Phosphorus, total dissolved	7723-14-0	E375-U	0.0603 mg/L	0.067 mg/L	89.9	70.0	130	----
Anions and Nutrients (QCLot: 1573350)										
FC2401981-006	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.41 mg/L	2.5 mg/L	96.4	70.0	130	----
Anions and Nutrients (QCLot: 1575622)										
VA24B8979-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.64 mg/L	2.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1575623)										
VA24B8979-002	Anonymous	Chloride	16887-00-6	E235.Cl	105 mg/L	100 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1575624)										
VA24B8979-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.554 mg/L	0.5 mg/L	111	75.0	125	----
Anions and Nutrients (QCLot: 1575625)										
VA24B8979-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	108 mg/L	100 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 1575626)										
VA24B8979-002	Anonymous	Fluoride	16984-48-8	E235.F	1.06 mg/L	1 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1575627)										
VA24B8979-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.533 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1575628)										
VA24B8981-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0268 mg/L	0.03 mg/L	89.5	70.0	130	----
Anions and Nutrients (QCLot: 1575973)										
-----		Silicate (as SiO2)	7631-86-9	E392	9.56 mg/L	10 mg/L	95.6	75.0	125	----
Cyanides (QCLot: 1576058)										
VA24B8562-010	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	1.22 mg/L	1.25 mg/L	98.0	75.0	125	----
Cyanides (QCLot: 1576059)										
VA24B8562-010	Anonymous	Cyanide, weak acid dissociable	----	E336	0.621 mg/L	0.625 mg/L	99.4	75.0	125	----
Cyanides (QCLot: 1576060)										
VA24B8562-010	Anonymous	Cyanide, free	----	E339	0.606 mg/L	0.625 mg/L	96.9	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1573276)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1573276) - continued										
FC2401981-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1573474)										
YL2401005-001	BRP-34	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1575730)										
YL2401005-002	BRP-30	Sulfide, total (as S)	18496-25-8	E395	0.479 mg/L	0.5 mg/L	95.8	75.0	125	----
Total Metals (QCLot: 1579814)										
YL2401005-002	BRP-30	Mercury, total	7439-97-6	E508-L	ND ng/L	----	ND	70.0	130	----
Total Metals (Undigested) (QCLot: 1579347)										
YL2401005-002	BRP-30	Aluminum, total	7429-90-5	E466	0.181 mg/L	0.2 mg/L	90.4	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, total	7440-39-3	E466	0.0183 mg/L	0.02 mg/L	91.3	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00886 mg/L	0.01 mg/L	88.6	70.0	130	----
		Boron, total	7440-42-8	E466	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00392 mg/L	0.004 mg/L	98.1	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00941 mg/L	0.01 mg/L	94.1	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		Copper, total	7440-50-8	E466	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00244 mg/L	0.002 mg/L	97.8	70.0	130	----
		Iron, total	7439-89-6	E466	1.81 mg/L	2 mg/L	90.7	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00244 mg/L	0.002 mg/L	97.6	70.0	130	----
		Lead, total	7439-92-1	E466	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0979 mg/L	0.1 mg/L	97.9	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0183 mg/L	0.02 mg/L	91.3	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0181 mg/L	0.02 mg/L	90.6	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0370 mg/L	0.04 mg/L	92.4	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00235 mg/L	0.002 mg/L	94.1	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.81 mg/L	10 mg/L	98.1	70.0	130	----
		Potassium, total	7440-09-7	E466	3.66 mg/L	4 mg/L	91.5	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00246 mg/L	0.002 mg/L	98.6	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0413 mg/L	0.04 mg/L	103	70.0	130	----
		Silicon, total	7440-21-3	E466	9.34 mg/L	10 mg/L	93.4	70.0	130	----
		Silver, total	7440-22-4	E466	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		Sodium, total	7440-23-5	E466	1.83 mg/L	2 mg/L	91.6	70.0	130	----
		Strontium, total	7440-24-6	E466	0.0174 mg/L	0.02 mg/L	87.2	70.0	130	----
		Sulfur, total	7704-34-9	E466	19.8 mg/L	20 mg/L	99.1	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00236 mg/L	0.002 mg/L	94.3	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1579347) - continued										
YL2401005-002	BRP-30	Tellurium, total	13494-80-9	E466	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00371 mg/L	0.004 mg/L	92.7	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Tin, total	7440-31-5	E466	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0377 mg/L	0.04 mg/L	94.4	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00364 mg/L	0.004 mg/L	91.1	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.0952 mg/L	0.1 mg/L	95.2	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00251 mg/L	0.002 mg/L	100	70.0	130	----
		Zinc, total	7440-66-6	E466	0.396 mg/L	0.4 mg/L	99.0	70.0	130	----
Zirconium, total	7440-67-7	E466	0.0377 mg/L	0.04 mg/L	94.3	70.0	130	----		
Dissolved Metals (QCLot: 1579346)										
YL2401005-002	BRP-30	Aluminum, dissolved	7429-90-5	E465	0.184 mg/L	0.2 mg/L	92.3	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00914 mg/L	0.01 mg/L	91.4	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00399 mg/L	0.004 mg/L	99.8	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00953 mg/L	0.01 mg/L	95.3	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0371 mg/L	0.04 mg/L	92.7	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Iron, dissolved	7439-89-6	E465	1.83 mg/L	2 mg/L	91.6	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00250 mg/L	0.002 mg/L	99.8	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	0.0185 mg/L	0.02 mg/L	92.3	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0180 mg/L	0.02 mg/L	89.8	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00247 mg/L	0.002 mg/L	98.7	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.89 mg/L	10 mg/L	98.9	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	3.68 mg/L	4 mg/L	92.0	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00250 mg/L	0.002 mg/L	100	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.49 mg/L	10 mg/L	94.9	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.88 mg/L	2 mg/L	93.9	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	0.0179 mg/L	0.02 mg/L	89.6	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1579346) - continued										
YL2401005-002	BRP-30	Sulfur, dissolved	7704-34-9	E465	20.0 mg/L	20 mg/L	99.8	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00242 mg/L	0.002 mg/L	96.7	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00380 mg/L	0.004 mg/L	95.0	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00372 mg/L	0.004 mg/L	93.1	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0956 mg/L	0.1 mg/L	95.6	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.397 mg/L	0.4 mg/L	99.4	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0376 mg/L	0.04 mg/L	94.1	70.0	130	----
Dissolved Metals (QCLot: 1579815)										
YL2401005-002	BRP-30	Mercury, dissolved	7439-97-6	E509-L	4.26 ng/L	5 ng/L	85.2	70.0	130	----

CERTIFICATE OF ANALYSIS

Work Order	: YL2401013	Page	: 1 of 7
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 26-Jul-2024 16:37
PO	: ----	Date Analysis Commenced	: 31-Jul-2024
C-O-C number	: ----	Issue Date	: 09-Aug-2024 16:19
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Christopher Li	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Shruti Mudliar	Lab Analyst	Inorganics, Edmonton, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
HTDC	Hold time exceeded for dilution or re-analysis. Reported results are consistent with initial results (tested within hold time), and are valid and defensible.
RRV	Reported result verified by repeat analysis.
SFT	Sample was filtered due to turbidity interference. Result reflects soluble analyte concentration.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water				Client sample ID	BRP-18	FD	BRP-19	BRP-23	----
(Matrix: Water)									
				Client sampling date / time	25-Jul-2024 11:45	25-Jul-2024 08:35	25-Jul-2024 11:30	25-Jul-2024 11:20	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401013-001	YL2401013-002	YL2401013-003	YL2401013-004	-----
					Result	Result	Result	Result	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	1.5	12.5	26.5	12.4	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	1.5	12.5	26.5	12.4	----
Conductivity	----	E100/VA	2.0	µS/cm	510	73.2	253	72.3	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	179	26.2	90.2	26.3	----
pH	----	E108/VA	0.10	pH units	5.84	7.24	7.31	7.25	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	485	49	229	52	----
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	254	41.5	172	42.9	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	----
Turbidity	----	E121/VA	0.10	NTU	<0.10	1.28	20.6	1.39	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0264	0.0394	2.36	0.0428	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.339	<0.050	0.149	<0.050	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	100	5.57	12.7	5.64	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	0.025	0.052	0.027	----
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.230 ^{TKN}	0.402	3.46	0.532	----
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	7.48	0.280	2.71	0.284	----
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.0022	0.0020	0.135	0.0018	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0020	0.0076	0.0240	0.0103	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	<0.0010	0.0014	0.0051	0.0040	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	3.39	<0.50	3.29 ^{SFT}	<0.50	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	44.0	9.20	54.2	9.36	----
Cyanides									
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	----
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	----



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-18	FD	BRP-19	BRP-23	----
(Matrix: Water)										
Client sampling date / time					25-Jul-2024 11:45	25-Jul-2024 08:35	25-Jul-2024 11:30	25-Jul-2024 11:20	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401013-001	YL2401013-002	YL2401013-003	YL2401013-004	-----	
					Result	Result	Result	Result	----	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	----	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	3.74	7.04	29.2	8.25	----	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	3.07	6.02	24.3 ^{RRV}	6.94	----	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	0.0147 ^{HTDC}	0.0015	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	0.0156	<0.0016	----	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.88	1.72	6.39	1.71	----	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0664	0.0325	0.926	0.0325	----	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000109	0.0000257	0.0000882	0.0000255	----	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000187	0.000669	0.00873	0.000656	----	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0959	0.00826	0.0398	0.00821	----	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000366	0.0000024	0.0000436	0.0000025	----	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	0.0000211	<0.0000010	----	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	0.0063	<0.0050	0.0063	<0.0050	----	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.000290	0.0000071	0.0000465	0.0000086	----	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	47.1	5.78	15.0	5.82	----	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000440	0.0000090	0.0000911	0.0000083	----	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000160	0.000195	0.00226	0.000192	----	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.00595	0.000460	0.0101	0.000455	----	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00243	0.00182	0.0122	0.00182	----	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	0.000256	<0.000050	----	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.00508	0.556	2.79	0.549	----	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.00134	0.000259	0.00316	0.000264	----	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000262	0.0000362	0.000834	0.0000380	----	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00320	0.00108	0.00528	0.00111	----	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	15.6	3.03	12.8	3.07	----	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.123	0.0126	0.257	0.0125	----	
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010	0.000022	0.000414	0.000020	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-18	FD	BRP-19	BRP-23	----
(Matrix: Water)										
Client sampling date / time					25-Jul-2024 11:45	25-Jul-2024 08:35	25-Jul-2024 11:30	25-Jul-2024 11:20	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401013-001	YL2401013-002	YL2401013-003	YL2401013-004	-----	
					Result	Result	Result	Result	----	
Total Metals (Undigested)										
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.0465	0.00339	0.0347	0.00340	----	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	0.022	<0.010	----	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	2.28	0.597	5.72	0.602	----	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	0.0000061	<0.0000050	0.0000126	<0.0000050	----	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00628	0.00168	0.00992	0.00165	----	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000189	0.000057	0.000385	0.000058	----	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.68	0.088	3.29	0.085	----	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	0.0000032	0.0000024	0.0000206	0.0000024	----	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	3.80	1.10	3.11	1.18	----	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.246	0.0318	0.0709	0.0318	----	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	15.0	3.27	19.3	3.25	----	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000166	0.0000043	0.0000293	0.0000040	----	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000057	0.0000213	0.000445	0.0000191	----	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	0.000015	<0.000010	----	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000056	0.000438	0.0233	0.000642	----	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	0.000048	<0.000010	----	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000083	0.0000110	0.000185	0.0000102	----	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000025	0.000301	0.00214	0.000307	----	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000361	0.000101	0.00166	0.000103	----	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.0203	0.00076	0.00377	0.00090	----	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000054	0.000083	0.00280	0.000082	----	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0712	0.0200	0.242	0.0195	----	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000100	0.0000244	0.0000821	0.0000237	----	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000188	0.000605	0.00576	0.000604	----	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0971	0.00789	0.0340	0.00792	----	
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000385	<0.0000020	0.0000213	<0.0000020	----	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	0.0000088	<0.0000010	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-18	FD	BRP-19	BRP-23	----
(Matrix: Water)										
Client sampling date / time					25-Jul-2024 11:45	25-Jul-2024 08:35	25-Jul-2024 11:30	25-Jul-2024 11:20	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401013-001	YL2401013-002	YL2401013-003	YL2401013-004	-----	
					Result	Result	Result	Result	----	
Dissolved Metals										
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	0.0066	<0.0050	0.0058	<0.0050	----	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.000271	0.0000058	0.0000385	0.0000067	----	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	46.0	5.56	15.0	5.56	----	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000457	0.0000078	0.0000503	0.0000077	----	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000165	0.000163	0.000913	0.000155	----	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.00603	0.000401	0.00952	0.000391	----	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00245	0.00167	0.00966	0.00164	----	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	----	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.00421	0.369	1.86	0.349	----	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.00142	0.000166	0.00198	0.000165	----	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000286	0.0000232	0.000385	0.0000226	----	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00325	0.00109	0.00441	0.00110	----	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	15.6	3.00	12.8	3.02	----	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.129	0.0112	0.253	0.0109	----	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.74	1.18	5.22	1.23	----	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	0.000020	0.000403	0.000019	----	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.0454	0.00316	0.0330	0.00311	----	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	0.011	<0.010	----	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	2.35	0.561	5.59	0.573	----	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	0.0000064	<0.0000050	0.0000140	<0.0000050	----	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00634	0.00154	0.00918	0.00156	----	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000194	0.000056	0.000358	0.000050	----	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.69	0.087	1.94	0.092	----	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	0.0000024	0.0000021	0.0000133	<0.0000020	----	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	3.78	1.08	3.09	1.06	----	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.244	0.0303	0.0714	0.0302	----	
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	15.5	3.47	19.5	3.34	----	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-18	FD	BRP-19	BRP-23	----
(Matrix: Water)										
					Client sampling date / time	25-Jul-2024 11:45	25-Jul-2024 08:35	25-Jul-2024 11:30	25-Jul-2024 11:20	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401013-001	YL2401013-002	YL2401013-003	YL2401013-004	-----	
					Result	Result	Result	Result	----	
Dissolved Metals										
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000169	0.0000033	0.0000248	0.0000037	----	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000097	0.0000178	0.000231	0.0000149	----	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	0.000188	0.00421	0.000241	----	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	0.000019	<0.000010	----	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000085	0.0000089	0.000136	0.0000080	----	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000023	0.000203	0.000768	0.000193	----	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000374	0.000073	0.00126	0.000071	----	
Zinc, dissolved	7440-66-6	E465/VA	0.000010	mg/L	0.0199	0.00037	0.00210	0.00034	----	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000063	0.000082	0.00142	0.000083	----	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2401013	Page	: 1 of 23
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 26-Jul-2024 16:37
PO	: ----	Issue Date	: 09-Aug-2024 16:20
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-18	E298	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-19	E298	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-23	E298	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FD	E298	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-18	E235.Br-L	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-19	E235.Br-L	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-23	E235.Br-L	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FD	E235.Br-L	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-18	E235.Cl	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-19	E235.Cl	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-23	E235.Cl	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FD	E235.Cl	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-18	E378-U	25-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	02-Aug-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-19	E378-U	25-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	02-Aug-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-23	E378-U	25-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	02-Aug-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FD	E378-U	25-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	02-Aug-2024	3 days	7 days	✗ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-18	E235.F	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-19	E235.F	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-23	E235.F	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FD	E235.F	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-18	E235.NO3-L	25-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	01-Aug-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-19	E235.NO3-L	25-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	01-Aug-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-23	E235.NO3-L	25-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	01-Aug-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FD	E235.NO3-L	25-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	01-Aug-2024	3 days	7 days	✗ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-18	E235.NO2-L	25-Jul-2024	01-Aug-2024	3 days	7 days	✗ EHT	01-Aug-2024	3 days	7 days	✗ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-19	E235.NO2-L	25-Jul-2024	01-Aug-2024	3 days	7 days	✖ EHT	01-Aug-2024	3 days	7 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-23	E235.NO2-L	25-Jul-2024	01-Aug-2024	3 days	7 days	✖ EHT	01-Aug-2024	3 days	7 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FD	E235.NO2-L	25-Jul-2024	01-Aug-2024	3 days	7 days	✖ EHT	01-Aug-2024	3 days	7 days	✖ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-18	E392	25-Jul-2024	----	----	----		01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-19	E392	25-Jul-2024	----	----	----		01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-23	E392	25-Jul-2024	----	----	----		01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FD	E392	25-Jul-2024	----	----	----		01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-18	E235.SO4	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-19	E235.SO4	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-23	E235.SO4	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FD	E235.SO4	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-18	E375-U	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-19	E375-U	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-23	E375-U	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FD	E375-U	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-18	E318	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-19	E318	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-23	E318	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓

Page : 8 of 23
 Work Order : YL2401013
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FD	E318	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	01-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-18	E372-S	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-19	E372-S	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-23	E372-S	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FD	E372-S	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E339	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E339	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E339	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD	E339	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓

Page : 9 of 23
 Work Order : YL2401013
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E333	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E333	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E333	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD	E333	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E336	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E336	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E336	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD	E336	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	01-Aug-2024	14 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-18	E509-L	25-Jul-2024	04-Aug-2024	28 days	10 days	✓	04-Aug-2024	28 days	10 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-19	E509-L	25-Jul-2024	04-Aug-2024	28 days	10 days	✓	04-Aug-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-23	E509-L	25-Jul-2024	04-Aug-2024	28 days	10 days	✓	04-Aug-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FD	E509-L	25-Jul-2024	04-Aug-2024	28 days	10 days	✓	04-Aug-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-18	E465	25-Jul-2024	03-Aug-2024	180 days	9 days	✓	06-Aug-2024	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-19	E465	25-Jul-2024	03-Aug-2024	180 days	9 days	✓	06-Aug-2024	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-23	E465	25-Jul-2024	03-Aug-2024	180 days	9 days	✓	06-Aug-2024	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FD	E465	25-Jul-2024	03-Aug-2024	180 days	9 days	✓	06-Aug-2024	180 days	12 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-18	E358-L	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-19	E358-L	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓

Page : 11 of 23
 Work Order : YL2401013
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-23	E358-L	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FD	E358-L	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-18	E355-L	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-19	E355-L	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-23	E355-L	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FD	E355-L	25-Jul-2024	31-Jul-2024	28 days	6 days	✓	31-Jul-2024	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-18	E290	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	02-Aug-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-19	E290	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	02-Aug-2024	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-23	E290	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	02-Aug-2024	14 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE FD	E290	25-Jul-2024	01-Aug-2024	14 days	7 days	✓	02-Aug-2024	14 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-18	E100	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	02-Aug-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-19	E100	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	02-Aug-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-23	E100	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	02-Aug-2024	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE FD	E100	25-Jul-2024	01-Aug-2024	28 days	7 days	✓	02-Aug-2024	28 days	8 days	✓
Physical Tests : pH by Meter										
HDPE BRP-18	E108	25-Jul-2024	01-Aug-2024	0.25 hrs	175 hrs	✗ EHTR-FM	02-Aug-2024	0.25 hrs	187 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-19	E108	25-Jul-2024	01-Aug-2024	0.25 hrs	175 hrs	✗ EHTR-FM	02-Aug-2024	0.25 hrs	187 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-23	E108	25-Jul-2024	01-Aug-2024	0.25 hrs	175 hrs	✗ EHTR-FM	02-Aug-2024	0.25 hrs	188 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE FD	E108	25-Jul-2024	01-Aug-2024	0.25 hrs	178 hrs	✗ EHTR-FM	02-Aug-2024	0.25 hrs	190 hrs	✗ EHTR-FM



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-18	E162	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-19	E162	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-23	E162	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FD	E162	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-18	E160	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-19	E160	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-23	E160	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FD	E160	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-18	E121	25-Jul-2024	----	----	----		01-Aug-2024	3 days	7 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-19	E121	25-Jul-2024	----	----	----		01-Aug-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-23	E121	25-Jul-2024	----	----	----		01-Aug-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FD	E121	25-Jul-2024	----	----	----		01-Aug-2024	3 days	7 days	✖ EHT
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-18	E466	25-Jul-2024	03-Aug-2024	180 days	9 days	✔	06-Aug-2024	180 days	12 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-19	E466	25-Jul-2024	03-Aug-2024	180 days	9 days	✔	06-Aug-2024	180 days	12 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-23	E466	25-Jul-2024	03-Aug-2024	180 days	9 days	✔	06-Aug-2024	180 days	12 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FD	E466	25-Jul-2024	03-Aug-2024	180 days	9 days	✔	06-Aug-2024	180 days	12 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-18	E508-L	25-Jul-2024	04-Aug-2024	28 days	10 days	✔	04-Aug-2024	28 days	10 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-19	E508-L	25-Jul-2024	04-Aug-2024	28 days	10 days	✔	04-Aug-2024	28 days	10 days	✔

Page : 15 of 23
 Work Order : YL2401013
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-23	E508-L	25-Jul-2024	04-Aug-2024	28 days	10 days	✓	04-Aug-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FD	E508-L	25-Jul-2024	04-Aug-2024	28 days	10 days	✓	04-Aug-2024	28 days	10 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-18	E395	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-19	E395	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-23	E395	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FD	E395	25-Jul-2024	----	----	----		01-Aug-2024	7 days	7 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1576401	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1571718	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1576406	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1576405	1	14	7.1	5.0	✓
Conductivity in Water	E100	1576402	1	14	7.1	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1579815	1	10	10.0	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1579346	1	10	10.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1573474	2	38	5.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1576411	1	15	6.6	5.0	✓
Fluoride in Water by IC	E235.F	1576404	1	14	7.1	5.0	✓
Free Cyanide	E339	1576060	1	19	5.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1576407	1	14	7.1	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1576408	1	14	7.1	5.0	✓
pH by Meter	E108	1576400	1	14	7.1	5.0	✓
Reactive Silica by Colourimetry	E392	1575973	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1576409	1	14	7.1	5.0	✓
TDS by Gravimetry	E162	1575993	1	20	5.0	5.0	✓
Total Cyanide	E333	1576058	1	19	5.2	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1571821	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1573350	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1579814	1	10	10.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1579347	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1573276	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1571820	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1576135	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1575985	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1575786	1	19	5.2	5.0	✓
WAD Cyanide	E336	1576059	1	19	5.2	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1576401	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1571718	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1576406	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1576405	1	14	7.1	5.0	✓
Conductivity in Water	E100	1576402	1	14	7.1	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1579815	1	10	10.0	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1579346	1	10	10.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1573474	2	38	5.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1576411	1	15	6.6	5.0	✔
Fluoride in Water by IC	E235.F	1576404	1	14	7.1	5.0	✔
Free Cyanide	E339	1576060	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1576407	1	14	7.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1576408	1	14	7.1	5.0	✔
pH by Meter	E108	1576400	1	14	7.1	5.0	✔
Reactive Silica by Colourimetry	E392	1575973	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	1576409	1	14	7.1	5.0	✔
TDS by Gravimetry	E162	1575993	1	20	5.0	5.0	✔
Total Cyanide	E333	1576058	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1571821	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1573350	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1579814	1	10	10.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1579347	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1573276	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1571820	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1576135	1	18	5.5	5.0	✔
TSS by Gravimetry	E160	1575985	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1575786	1	19	5.2	5.0	✔
WAD Cyanide	E336	1576059	1	19	5.2	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1576401	1	14	7.1	5.0	✔
Ammonia by Fluorescence	E298	1571718	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1576406	1	14	7.1	5.0	✔
Chloride in Water by IC	E235.Cl	1576405	1	14	7.1	5.0	✔
Conductivity in Water	E100	1576402	1	14	7.1	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1579815	1	10	10.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1579346	1	10	10.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1573474	2	38	5.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1576411	1	15	6.6	5.0	✔
Fluoride in Water by IC	E235.F	1576404	1	14	7.1	5.0	✔
Free Cyanide	E339	1576060	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1576407	1	14	7.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1576408	1	14	7.1	5.0	✔
Reactive Silica by Colourimetry	E392	1575973	1	19	5.2	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1576409	1	14	7.1	5.0	✔
TDS by Gravimetry	E162	1575993	1	20	5.0	5.0	✔
Total Cyanide	E333	1576058	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1571821	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1573350	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1579814	1	10	10.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1579347	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1573276	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1571820	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1576135	1	18	5.5	5.0	✔
TSS by Gravimetry	E160	1575985	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1575786	1	19	5.2	5.0	✔
WAD Cyanide	E336	1576059	1	19	5.2	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1571718	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1576406	1	14	7.1	5.0	✔
Chloride in Water by IC	E235.Cl	1576405	1	14	7.1	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1579815	1	10	10.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1579346	1	10	10.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1573474	2	38	5.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1576411	1	15	6.6	5.0	✔
Fluoride in Water by IC	E235.F	1576404	1	14	7.1	5.0	✔
Free Cyanide	E339	1576060	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1576407	1	14	7.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1576408	1	14	7.1	5.0	✔
Reactive Silica by Colourimetry	E392	1575973	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	1576409	1	14	7.1	5.0	✔
Total Cyanide	E333	1576058	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1571821	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1573350	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1579814	1	10	10.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1579347	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1573276	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1571820	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1576135	1	18	5.5	5.0	✔
WAD Cyanide	E336	1576059	1	19	5.2	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Vancouver	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Vancouver	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Vancouver	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Page : 23 of 23
 Work Order : YL2401013
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2401013	Page	: 1 of 21
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 26-Jul-2024 16:37
PO	: ----	Date Analysis Commenced	: 31-Jul-2024
C-O-C number	: ----	Issue Date	: 09-Aug-2024 16:20
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Vancouver Metals, Burnaby, British Columbia
Christopher Li	Analyst	Vancouver Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Kate Dimitrova	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Shruti Mudliar	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta

Page : 2 of 21
Work Order : YL2401013
Client : B2Gold Back River Corp.
Project : CA0035158.8381



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1575786)											
VA24B8958-001	Anonymous	Turbidity	----	E121	0.10	NTU	7.46	7.17	3.96%	15%	----
Physical Tests (QC Lot: 1575985)											
FJ2402167-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	7.1	6.9	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1575993)											
FJ2402167-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	1400	1330	5.46%	20%	----
Physical Tests (QC Lot: 1576400)											
FJ2402196-003	Anonymous	pH	----	E108	0.10	pH units	5.27	5.21	1.14%	4%	----
Physical Tests (QC Lot: 1576401)											
FJ2402196-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1576402)											
FJ2402196-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	<2.0	<2.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1571718)											
FC2401965-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0487	0.0509	0.0022	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1571820)											
FC2401961-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.335	0.323	3.82%	20%	----
Anions and Nutrients (QC Lot: 1571821)											
YL2401005-001	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0021	0.0010	0.0011	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1573350)											
FC2401981-005	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	2.12	2.11	0.737%	20%	----
Anions and Nutrients (QC Lot: 1575973)											
EO2406351-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	6.43	6.45	0.258%	20%	----
Anions and Nutrients (QC Lot: 1576404)											
FJ2402196-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.051	0.049	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1576405)											
FJ2402196-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2401013
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1576406)											
FJ2402196-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1576407)											
FJ2402196-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0244	0.0219	0.0025	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1576408)											
FJ2402196-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1576409)											
FJ2402196-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	11.4	11.3	1.57%	20%	----
Anions and Nutrients (QC Lot: 1576411)											
FJ2402196-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0025	0.0018	0.0007	Diff <2x LOR	----
Cyanides (QC Lot: 1576058)											
VA24B8562-009	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.100	mg/L	0.886	0.842	0.0434	Diff <2x LOR	----
Cyanides (QC Lot: 1576059)											
VA24B8562-009	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0100	mg/L	<0.0050	<0.0100	0.0050	Diff <2x LOR	----
Cyanides (QC Lot: 1576060)											
VA24B8562-009	Anonymous	Cyanide, free	----	E339	0.0100	mg/L	<0.0050	<0.0100	0.0050	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1573276)											
FC2401981-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	27.8	26.9	3.44%	20%	----
Organic / Inorganic Carbon (QC Lot: 1573474)											
YL2401005-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.94	5.47	8.27%	20%	----
Organic / Inorganic Carbon (QC Lot: 1575577)											
EO2405109-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.98	2.85	0.12	Diff <2x LOR	----
Total Sulfides (QC Lot: 1576135)											
CG2410407-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.293	0.295	0.847%	20%	----
Total Metals (QC Lot: 1579814)											
YL2401005-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.96	0.90	0.05	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1579347)											
YL2401005-001	Anonymous	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00765	0.00752	1.82%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000108	0.0000104	0.0000004	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000261	0.000264	1.27%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00709	0.00729	2.73%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----



Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1579347) - continued											
YL2401005-001	Anonymous	Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000042	0.0000059	0.0000017	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	3.89	3.92	0.935%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000088	0.0000093	0.0000004	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000052	0.000052	0.0000003	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000342	0.000360	5.00%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00135	0.00136	0.675%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0954	0.0977	2.37%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000088	0.000090	0.000002	Diff <2x LOR	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000054	0.0000056	0.0000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00084	0.00094	0.00009	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.18	2.22	1.48%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.0116	0.0118	1.97%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000013	0.000014	0.0000010	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00285	0.00287	0.593%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.507	0.504	0.577%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00133	0.00132	0.119%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000035	0.000035	0.0000003	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.095	0.092	0.003	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	0.798	0.810	1.44%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0215	0.0215	0.232%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	3.42	3.48	0.05	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000022	0.0000023	0.0000002	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000066	0.000060	0.000006	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000051	0.0000060	0.0000008	Diff <2x LOR	----

Page : 6 of 21
 Work Order : YL2401013
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1579347) - continued											
YL2401005-001	Anonymous	Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000035	0.000037	0.000002	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000036	0.000036	0.0000006	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00042	0.00039	0.00003	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000021	0.000020	0.0000009	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1579346)											
YL2401005-001	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00420	0.00424	1.13%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000091	0.0000097	0.0000006	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000241	0.000253	4.97%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00686	0.00698	1.68%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000032	0.0000030	0.0000002	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	3.83	3.83	0.0353%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000088	0.0000086	0.0000002	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000042	0.000044	0.000001	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000276	0.000277	0.156%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00135	0.00133	1.53%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0542	0.0537	0.858%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000054	0.000055	0.000001	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00082	0.00082	0.000003	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	2.21	2.21	0.0527%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00958	0.00956	0.178%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000015	0.000013	0.000002	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00282	0.00277	1.82%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.499	0.504	1.01%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00129	0.00130	0.878%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000028	0.000037	0.000009	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.092	0.092	0.0004	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1579346) - continued											
YL2401005-001	Anonymous	Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.802	0.814	1.36%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0211	0.0212	0.613%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	3.57	3.55	0.02	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000023	0.0000022	0.00000004	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000051	0.0000052	0.0000001	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000045	0.0000042	0.0000003	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000024	0.000027	0.000003	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000027	0.000026	0.0000004	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00031	0.00031	0.000002	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000021	0.000021	0.0000001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1579815)											
YL2401005-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.67	0.60	0.07	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1575786)						
Turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 1575985)						
Solids, total suspended [TSS]	---	E160	3	mg/L	<3.0	---
Physical Tests (QCLot: 1575993)						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 1576401)						
Alkalinity, bicarbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, carbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, hydroxide (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, phenolphthalein (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 1576402)						
Conductivity	---	E100	1	µS/cm	<1.0	---
Anions and Nutrients (QCLot: 1571718)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1571820)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1571821)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1573350)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 1575973)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	---
Anions and Nutrients (QCLot: 1576404)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 1576405)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	---
Anions and Nutrients (QCLot: 1576406)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 1576407)						
Nitrate (as N)	14797-55-8	E235.NO ₃ -L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1576408)						

Page : 9 of 21
 Work Order : YL2401013
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1576408) - continued						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1576409)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1576411)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Cyanides (QCLot: 1576058)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1576059)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1576060)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1573276)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1573474)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1575577)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1576135)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1579814)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1579347)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1579347) - continued						
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1579346)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1579346) - continued						
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1579346) - continued						
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1579815)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1575786)									
Turbidity	----	E121	0.1	NTU	200 NTU	99.0	85.0	115	----
Physical Tests (QCLot: 1575985)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	100	85.0	115	----
Physical Tests (QCLot: 1575993)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	93.1	85.0	115	----
Physical Tests (QCLot: 1576400)									
pH	----	E108	----	pH units	7 pH units	99.8	98.0	102	----
Physical Tests (QCLot: 1576401)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	112	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	101	85.0	115	----
Physical Tests (QCLot: 1576402)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	103	90.0	110	----
Anions and Nutrients (QCLot: 1571718)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	92.8	85.0	115	----
Anions and Nutrients (QCLot: 1571820)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	96.9	80.0	120	----
Anions and Nutrients (QCLot: 1571821)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	96.9	80.0	120	----
Anions and Nutrients (QCLot: 1573350)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	88.5	75.0	125	----
Anions and Nutrients (QCLot: 1575973)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	99.1	85.0	115	----
Anions and Nutrients (QCLot: 1576404)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 1576405)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1576406)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1576407)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1576408)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1576408) - continued									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1576409)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1576411)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	95.9	80.0	120	----
Cyanides (QCLot: 1576058)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	100	80.0	120	----
Cyanides (QCLot: 1576059)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	99.3	80.0	120	----
Cyanides (QCLot: 1576060)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	97.5	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1573276)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1573474)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.1	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1575577)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	96.8	80.0	120	----
Total Sulfides (QCLot: 1576135)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	95.5	80.0	120	----
Total Metals (QCLot: 1579814)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	95.7	80.0	120	----
Total Metals (Undigested) (QCLot: 1579347)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	100	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	104	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	105	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	103	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	101	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	98.6	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	105	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	94.6	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	100	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1579347) - continued									
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	98.8	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	98.1	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	98.0	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	100	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	103	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	100	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	99.1	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	96.9	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	99.4	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	101	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	102	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	98.9	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	97.3	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	108	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	105	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	96.3	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	102	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	98.4	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	105	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	106	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	104	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	98.5	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	103	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	101	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	97.9	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1579346)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	101	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	103	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	104	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	101	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	101	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	97.2	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	94.4	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	99.0	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	97.4	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	96.9	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	97.8	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	99.2	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	100.0	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	97.1	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	95.8	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	97.8	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	103	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	97.2	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	96.8	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	101	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	108	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	94.7	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	97.8	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	108	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	103	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1579346) - continued									
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	103	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	96.7	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	99.7	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	98.5	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	95.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Laboratory sample ID					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Client sample ID	Analyte	CAS Number	Method							
Anions and Nutrients (QCLot: 1571718)										
FC2401965-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0885 mg/L	0.1 mg/L	88.5	75.0	125	----
Anions and Nutrients (QCLot: 1571820)										
FC2401962-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1571821)										
YL2401005-002	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0603 mg/L	0.067 mg/L	89.9	70.0	130	----
Anions and Nutrients (QCLot: 1573350)										
FC2401981-006	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.41 mg/L	2.5 mg/L	96.4	70.0	130	----
Anions and Nutrients (QCLot: 1575973)										
-----		Silicate (as SiO2)	7631-86-9	E392	9.56 mg/L	10 mg/L	95.6	75.0	125	----
Anions and Nutrients (QCLot: 1576404)										
FJ2402196-002	Anonymous	Fluoride	16984-48-8	E235.F	1.06 mg/L	1 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1576405)										
FJ2402196-002	Anonymous	Chloride	16887-00-6	E235.Cl	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1576406)										
FJ2402196-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.526 mg/L	0.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1576407)										
FJ2402196-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.63 mg/L	2.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1576408)										
FJ2402196-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.537 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1576409)										
FJ2402196-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	105 mg/L	100 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1576411)										
FJ2402196-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0284 mg/L	0.03 mg/L	94.8	70.0	130	----
Cyanides (QCLot: 1576058)										
VA24B8562-010	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	1.22 mg/L	1.25 mg/L	98.0	75.0	125	----
Cyanides (QCLot: 1576059)										
VA24B8562-010	Anonymous	Cyanide, weak acid dissociable	----	E336	0.621 mg/L	0.625 mg/L	99.4	75.0	125	----
Cyanides (QCLot: 1576060)										
VA24B8562-010	Anonymous	Cyanide, free	----	E339	0.606 mg/L	0.625 mg/L	96.9	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1573276)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1573276) - continued										
FC2401981-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1573474)										
YL2401005-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1575577)										
EO2405109-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.77 mg/L	5 mg/L	95.3	70.0	130	----
Total Sulfides (QCLot: 1576135)										
CG2410441-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.194 mg/L	0.2 mg/L	97.2	75.0	125	----
Total Metals (QCLot: 1579814)										
YL2401005-002	Anonymous	Mercury, total	7439-97-6	E508-L	ND ng/L	----	ND	70.0	130	----
Total Metals (Undigested) (QCLot: 1579347)										
YL2401005-002	Anonymous	Aluminum, total	7429-90-5	E466	0.181 mg/L	0.2 mg/L	90.4	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, total	7440-39-3	E466	0.0183 mg/L	0.02 mg/L	91.3	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00886 mg/L	0.01 mg/L	88.6	70.0	130	----
		Boron, total	7440-42-8	E466	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00392 mg/L	0.004 mg/L	98.1	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00941 mg/L	0.01 mg/L	94.1	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		Copper, total	7440-50-8	E466	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00244 mg/L	0.002 mg/L	97.8	70.0	130	----
		Iron, total	7439-89-6	E466	1.81 mg/L	2 mg/L	90.7	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00244 mg/L	0.002 mg/L	97.6	70.0	130	----
		Lead, total	7439-92-1	E466	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0979 mg/L	0.1 mg/L	97.9	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0183 mg/L	0.02 mg/L	91.3	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0181 mg/L	0.02 mg/L	90.6	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0370 mg/L	0.04 mg/L	92.4	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00235 mg/L	0.002 mg/L	94.1	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.81 mg/L	10 mg/L	98.1	70.0	130	----
		Potassium, total	7440-09-7	E466	3.66 mg/L	4 mg/L	91.5	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00246 mg/L	0.002 mg/L	98.6	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0413 mg/L	0.04 mg/L	103	70.0	130	----
		Silicon, total	7440-21-3	E466	9.34 mg/L	10 mg/L	93.4	70.0	130	----
		Silver, total	7440-22-4	E466	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		Sodium, total	7440-23-5	E466	1.83 mg/L	2 mg/L	91.6	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1579347) - continued										
YL2401005-002	Anonymous	Strontium, total	7440-24-6	E466	0.0174 mg/L	0.02 mg/L	87.2	70.0	130	----
		Sulfur, total	7704-34-9	E466	19.8 mg/L	20 mg/L	99.1	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00236 mg/L	0.002 mg/L	94.3	70.0	130	----
		Tellurium, total	13494-80-9	E466	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00371 mg/L	0.004 mg/L	92.7	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Tin, total	7440-31-5	E466	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0377 mg/L	0.04 mg/L	94.4	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00364 mg/L	0.004 mg/L	91.1	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.0952 mg/L	0.1 mg/L	95.2	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00251 mg/L	0.002 mg/L	100	70.0	130	----
		Zinc, total	7440-66-6	E466	0.396 mg/L	0.4 mg/L	99.0	70.0	130	----
		Zirconium, total	7440-67-7	E466	0.0377 mg/L	0.04 mg/L	94.3	70.0	130	----
Dissolved Metals (QCLot: 1579346)										
YL2401005-002	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.184 mg/L	0.2 mg/L	92.3	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00914 mg/L	0.01 mg/L	91.4	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00399 mg/L	0.004 mg/L	99.8	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00953 mg/L	0.01 mg/L	95.3	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0371 mg/L	0.04 mg/L	92.7	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Iron, dissolved	7439-89-6	E465	1.83 mg/L	2 mg/L	91.6	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00250 mg/L	0.002 mg/L	99.8	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	0.0185 mg/L	0.02 mg/L	92.3	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0180 mg/L	0.02 mg/L	89.8	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00247 mg/L	0.002 mg/L	98.7	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.89 mg/L	10 mg/L	98.9	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	3.68 mg/L	4 mg/L	92.0	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00250 mg/L	0.002 mg/L	100	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.49 mg/L	10 mg/L	94.9	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1579346) - continued										
YL2401005-002	Anonymous	Silver, dissolved	7440-22-4	E465	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.88 mg/L	2 mg/L	93.9	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	0.0179 mg/L	0.02 mg/L	89.6	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	20.0 mg/L	20 mg/L	99.8	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00242 mg/L	0.002 mg/L	96.7	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00380 mg/L	0.004 mg/L	95.0	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00372 mg/L	0.004 mg/L	93.1	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0956 mg/L	0.1 mg/L	95.6	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.397 mg/L	0.4 mg/L	99.4	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0376 mg/L	0.04 mg/L	94.1	70.0	130	----
Dissolved Metals (QCLot: 1579815)										
YL2401005-002	Anonymous	Mercury, dissolved	7439-97-6	E509-L	4.26 ng/L	5 ng/L	85.2	70.0	130	----

CERTIFICATE OF ANALYSIS

Work Order	: YL2401131	Page	: 1 of 22
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 07-Aug-2024 16:00
PO	: 17852	Date Analysis Commenced	: 09-Aug-2024
C-O-C number	: ----	Issue Date	: 30-Aug-2024 15:04
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 18		
No. of samples analysed	: 18		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan
Sam Silveira	Analyst	Metals, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
µS/cm	microsiemens per centimetre
Bq/L	becquerels per litre
mg/L	milligrams per litre
ng/L	nanograms per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
DTMF	Dissolved concentration exceeds total for field-filtered metals sample. Metallic contaminants may have been introduced to dissolved sample during field filtration.
RRV	Reported result verified by repeat analysis.
SFP	Sample was filtered and preserved at the laboratory.
SP	Sample was preserved at the laboratory.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
(Matrix: Water)										
					Client sampling date / time	04-Aug-2024 10:50	04-Aug-2024 11:20	04-Aug-2024 12:00	04-Aug-2024 12:20	04-Aug-2024 12:50
Analyte		CAS Number	Method/Lab	LOR	Unit	YL2401131-001	YL2401131-002	YL2401131-003	YL2401131-004	YL2401131-005
						Result	Result	Result	Result	Result
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)		----	E290/VA	1.0	mg/L	5.0	4.9	4.9	6.6	5.1
Alkalinity, carbonate (as CaCO3)		----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)		----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)		----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)		----	E290/VA	1.0	mg/L	5.0	4.9	4.9	6.6	5.1
Conductivity		----	E100/VA	2.0	µS/cm	84.6	83.5	83.3	84.7	81.7
Hardness (as CaCO3), dissolved		----	EC100/VA	0.50	mg/L	29.6	28.4	28.7	27.7	28.0
pH		----	E108/VA	0.10	pH units	6.92	6.94	6.95	7.08	6.96
Solids, total dissolved [TDS]		----	E162/VA	10	mg/L	72	67	73	70	64
Solids, total dissolved [TDS], calculated		----	EC103/VA	1.0	mg/L	44.7	44.1	43.7	44.9	43.9
Solids, total suspended [TSS]		----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity		----	E121/VA	0.10	NTU	0.37	0.37	0.42	0.36	0.35
Anions and Nutrients										
Ammonia, total (as N)		7664-41-7	E298/EO	0.0050	mg/L	0.0344	0.0364	0.0367	0.0308	0.0308
Bromide		24959-67-9	E235.Br-L/VA	0.050	mg/L	0.052	0.051	0.052	<0.050	<0.050
Chloride		16887-00-6	E235.Cl/VA	0.50	mg/L	10.0	9.78	9.65	9.30	9.34
Fluoride		16984-48-8	E235.F/VA	0.020	mg/L	0.029	0.032	0.032	0.030	0.032
Kjeldahl nitrogen, total [TKN]		----	E318/EO	0.050	mg/L	0.315	0.280	0.309	0.285	0.306
Nitrate (as N)		14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.556	0.534	0.523	0.490	0.495
Nitrite (as N)		14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.0025	0.0024	0.0022	0.0023	0.0023
Phosphate, ortho-, dissolved (as P)		14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total		7723-14-0	E372-S/EO	0.0010	mg/L	0.0043	0.0028	0.0036	0.0033	0.0041
Phosphorus, total dissolved		7723-14-0	E375-U/EO	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silicate (as SiO2)		7631-86-9	E392/VA	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Sulfate (as SO4)		14808-79-8	E235.SO4/VA	0.30	mg/L	12.6	12.7	12.5	12.4	12.5
Cyanides										
Cyanide, free		----	E339/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, strong acid dissociable (Total)		----	E333/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-001	YL2401131-002	YL2401131-003	YL2401131-004	YL2401131-005	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	4.54	4.67 ^{RRV}	4.50	5.74 ^{RRV}	5.37 ^{RRV}	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	4.40	3.88 ^{RRV}	3.74	4.10 ^{RRV}	4.03 ^{RRV}	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	0.0016	0.0020	0.0024	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	0.0017	0.0021	0.0026	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.70	0.59	0.61	0.60	0.59	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0115	0.00979	0.0105	0.00996	0.0102	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000117	0.0000082	0.0000083	0.0000090	0.0000088	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000296	0.000287	0.000285	0.000278	0.000281	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0117	0.0112	0.0113	0.0110	0.0110	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	0.0000024	0.0000024	0.0000020	0.0000022	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000109	0.0000100	0.0000096	0.0000106	0.0000083	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	6.89	6.31	6.53	6.42	6.43	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000130	0.0000126	0.0000125	0.0000125	0.0000124	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000058	0.000055	0.000056	0.000055	0.000058	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000304	0.000237	0.000258	0.000221	0.000225	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00157	0.00148	0.00156	0.00152	0.00154	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0402	0.0335	0.0369	0.0355	0.0362	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000131	0.000120	0.000124	0.000118	0.000117	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000068	<0.0000050	<0.0000050	<0.0000050	0.0000052	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00098	0.00098	0.00098	0.00096	0.00096	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	2.98	2.86	2.93	2.87	2.91	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00603	0.00482	0.00520	0.00465	0.00469	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-001	YL2401131-002	YL2401131-003	YL2401131-004	YL2401131-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000012	0.000013	0.000013	0.000014	0.000015	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00423	0.00411	0.00406	0.00397	0.00394	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.670	0.628	0.636	0.640	0.645	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00169	0.00155	0.00162	0.00160	0.00161	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000033	<0.000025	0.000025	0.000026	<0.000025	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.162	0.159	0.150	0.149	0.146	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	0.0000025	<0.0000020	0.0000022	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	0.979	0.952	0.961	0.952	0.965	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0392	0.0364	0.0375	0.0370	0.0371	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	4.09	4.06	4.00	3.97	3.99	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000035	0.0000030	0.0000028	0.0000029	0.0000029	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	0.0000079	0.0000064	0.0000065	<0.0000050	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000103	<0.000050	<0.000050	<0.000050	<0.000050	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000064	0.0000069	0.0000057	0.0000064	0.0000048	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000028	0.000026	0.000026	0.000027	0.000028	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000052	0.000048	0.000050	0.000048	0.000046	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00105	0.00086	0.00090	0.00081	0.00079	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000025	0.000025	0.000024	0.000024	0.000026	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00885	0.00840	0.00754	0.00733	0.00764	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000843 ^{DTMF}	0.0000499 ^{DTMF}	0.0000362 ^{DTMF}	0.0000173	0.0000134	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000291	0.000273	0.000271	0.000269	0.000286	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0117	0.0113	0.0114	0.0110	0.0110	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-001	YL2401131-002	YL2401131-003	YL2401131-004	YL2401131-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	0.0000024	0.0000022	<0.0000020	<0.0000020	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000099	0.0000100	0.0000095	0.0000084	0.0000097	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	6.86	6.61	6.66	6.38	6.51	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000133	0.0000123	0.0000128	0.0000120	0.0000124	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000058	0.000058	0.000054	0.000053	0.000052	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000234	0.000222	0.000222	0.000202	0.000206	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00158	0.00156	0.00156	0.00154	0.00157	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0205	0.0192	0.0186	0.0185	0.0188	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000088	0.000089	0.000090	0.000085	0.000084	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000155	0.0000160DTMF	0.0000097	<0.0000050	0.0000125	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00103	0.00100	0.00097	0.00096	0.00095	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	3.03	2.89	2.94	2.86	2.84	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00481	0.00456	0.00455	0.00426	0.00432	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	<0.50	<0.50	<0.50	0.52	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000015	0.000014	0.000013	0.000013	0.000017	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00439	0.00413	0.00416	0.00394	0.00402	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.673	0.649	0.656	0.650	0.645	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00171	0.00163	0.00164	0.00163	0.00164	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000029	0.000025	0.000028	<0.000025	0.000031	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.166	0.157	0.155	0.150	0.151	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.01	0.977	0.976	0.970	0.957	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0394	0.0379	0.0385	0.0369	0.0377	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
(Matrix: Water)										
					Client sampling date / time	04-Aug-2024 10:50	04-Aug-2024 11:20	04-Aug-2024 12:00	04-Aug-2024 12:20	04-Aug-2024 12:50
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-001	YL2401131-002	YL2401131-003	YL2401131-004	YL2401131-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	4.17	3.98	4.02	4.04	3.97	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000033	0.0000031	0.0000029	0.0000030	0.0000029	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	<0.0000050	0.0000050	<0.0000050	<0.0000050	0.0000071	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000055	0.000104 ^{DTMF}	<0.000050	0.000142 ^{DTMF}	0.000054	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000061	0.0000054	0.0000057	0.0000054	0.0000055	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000024	0.000025	0.000025	0.000021	0.000024	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000040	0.000038	0.000038	0.000036	0.000037	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00116	0.00118 ^{DTC}	0.00092	0.00094	0.00087	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000029	0.000026	0.000026	0.000026	0.000024	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	
Radiological Parameters										
Radium-226	13982-63-3	Ra-226/2l	0.005	Bq/L	<0.005	<0.005	<0.005	<0.005	0.006	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time					03-Aug-2024 10:00	03-Aug-2024 10:40	03-Aug-2024 11:15	03-Aug-2024 11:45	03-Aug-2024 12:20	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-006	YL2401131-007	YL2401131-008	YL2401131-009	YL2401131-010	
					Result	Result	Result	Result	Result	
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	5.3	5.3	5.3	5.3	5.2	
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	5.3	5.3	5.3	5.3	5.2	
Conductivity	----	E100/VA	2.0	µS/cm	59.5	59.3	59.6	56.1	59.4	
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	20.9	21.0	20.9	20.8	20.6	
pH	----	E108/VA	0.10	pH units	6.98	6.99	6.99	6.99	6.97	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	44	47	46	46	41	
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	33.3	34.6	34.3	33.6	32.4	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
Turbidity	----	E121/VA	0.10	NTU	0.41	0.42	0.38	0.44	0.42	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	<0.0050	0.0798	0.0124	0.0061	<0.0050	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	4.84	4.84	4.85	4.82	4.80	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.025	0.031	0.033	0.035	0.029	
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.183	0.185	0.180	0.154	0.192	
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.100	0.100	0.102	0.100	0.102	
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0046	0.0036	0.0032	0.0028	0.0033	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	<0.0010	<0.0010	0.0026	<0.0010	<0.0010	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	11.1	11.1	11.1	11.0	11.0	
Cyanides										
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time					03-Aug-2024 10:00	03-Aug-2024 10:40	03-Aug-2024 11:15	03-Aug-2024 11:45	03-Aug-2024 12:20	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-006	YL2401131-007	YL2401131-008	YL2401131-009	YL2401131-010	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	5.13	6.42 ^{RRV}	6.09 ^{RRV}	5.62 ^{RRV}	4.58	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	4.13	4.30 ^{RRV}	4.18 ^{RRV}	3.75 ^{RRV}	3.77	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0019	<0.0015	<0.0015	<0.0015	<0.0015	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0020	<0.0016	<0.0016	<0.0016	<0.0016	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.58	0.61	0.55	0.60	0.57	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.00941	0.00930	0.00890	0.00929	0.00872	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000103	0.0000085	0.0000091	0.0000084	0.0000080	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000241	0.000244	0.000247	0.000254	0.000252	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00761	0.00763	0.00756	0.00762	0.00748	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000033	0.0000043	0.0000049	0.0000041	0.0000034	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	4.31	4.29	4.29	4.36	4.29	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000080	0.0000081	0.0000080	0.0000081	0.0000078	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000052	0.000052	0.000051	0.000052	0.000050	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000119	0.000123	0.000111	0.000118	0.000101	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00141	0.00139	0.00138	0.00141	0.00136	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0212	0.0221	0.0212	0.0215	0.0194	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000070	0.000071	0.000070	0.000070	0.000067	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00080	0.00079	0.00079	0.00078	0.00080	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	2.30	2.30	2.26	2.32	2.31	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00332	0.00351	0.00316	0.00330	0.00281	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-006	YL2401131-007	YL2401131-008	YL2401131-009	YL2401131-010	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000013	0.000012	0.000013	0.000012	0.000013	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00307	0.00307	0.00301	0.00306	0.00303	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.502	0.498	0.496	0.516	0.498	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00123	0.00122	0.00122	0.00126	0.00122	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.118	0.121	0.117	0.120	0.121	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	0.792	0.780	0.790	0.802	0.784	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0229	0.0225	0.0224	0.0230	0.0222	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	3.61	3.54	3.60	3.57	3.66	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000027	0.0000026	0.0000027	0.0000028	0.0000027	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000071	0.0000053	<0.0000050	<0.0000050	<0.0000050	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000060	0.0000062	0.0000066	0.0000063	0.0000062	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000028	0.000026	0.000026	0.000026	0.000024	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000031	0.000031	0.000031	0.000031	0.000031	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00032	0.00030	0.00028	0.00038	0.00026	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000024	0.000023	0.000023	0.000026	0.000024	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00685	0.00684	0.00703	0.00684	0.00675	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000610 ^{DTMF}	0.0000112	0.0000180	0.0000138	0.0000084	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000248	0.000241	0.000236	0.000242	0.000237	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00748	0.00761	0.00763	0.00759	0.00769	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time					03-Aug-2024 10:00	03-Aug-2024 10:40	03-Aug-2024 11:15	03-Aug-2024 11:45	03-Aug-2024 12:20	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-006	YL2401131-007	YL2401131-008	YL2401131-009	YL2401131-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000027	<0.0000025	<0.0000025	0.0000030	0.0000033	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	4.56	4.50	4.51	4.52	4.40	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000078	0.0000080	0.0000083	0.0000077	0.0000075	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000047	0.000050	0.000049	0.000050	0.000049	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.0000567	0.0000536	0.0000672	0.0000556	0.0000545	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00142	0.00142	0.00144	0.00140	0.00143	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.00803	0.00813	0.00911	0.00801	0.00793	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000044	0.000046	0.000046	0.000044	0.000044	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	0.0000071	<0.0000050	<0.0000050	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00080	0.00080	0.00081	0.00079	0.00079	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	2.32	2.36	2.35	2.31	2.33	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00127	0.00125	0.00205	0.00125	0.00125	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000016	0.000014	0.000014	0.000013	0.000012	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00309	0.00312	0.00315	0.00343	0.00304	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.513	0.507	0.513	0.508	0.506	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00129	0.00128	0.00129	0.00127	0.00126	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.117	0.118	0.121	0.123	0.121	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	0.816	0.802	0.823	0.803	0.800	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0234	0.0236	0.0235	0.0236	0.0230	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
					Client sampling date / time	03-Aug-2024 10:00	03-Aug-2024 10:40	03-Aug-2024 11:15	03-Aug-2024 11:45	03-Aug-2024 12:20
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-006	YL2401131-007	YL2401131-008	YL2401131-009	YL2401131-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	3.49	3.58	3.52	3.54	3.58	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000025	0.0000025	0.0000029	0.0000028	0.0000024	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000060	0.0000083	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	0.000123 ^{DTMF}	<0.000050	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000050	0.0000059	0.0000046	0.0000057	0.0000047	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000024	0.000023	0.000023	0.000023	0.000023	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000022	0.000021	0.000023	0.000022	0.000022	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00041	0.00029	0.00047	0.00035	0.00032	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000025	0.000025	0.000025	0.000025	0.000026	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	
Radiological Parameters										
Radium-226	13982-63-3	Ra-226/2l	0.005	Bq/L	<0.005	<0.005	<0.005	<0.005	<0.005	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-011	YL2401131-012	YL2401131-013	YL2401131-014	YL2401131-015	
					Result	Result	Result	Result	Result	
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	---	E290/VA	1.0	mg/L	7.9	8.1	7.9	8.0	8.0	
Alkalinity, carbonate (as CaCO3)	---	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, hydroxide (as CaCO3)	---	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, phenolphthalein (as CaCO3)	---	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, total (as CaCO3)	---	E290/VA	1.0	mg/L	7.9	8.1	7.9	8.0	8.0	
Conductivity	---	E100/VA	2.0	µS/cm	30.8	30.4	30.4	30.4	30.4	
Hardness (as CaCO3), dissolved	---	EC100/VA	0.50	mg/L	11.2	11.2	11.1	11.2	10.9	
pH	---	E108/VA	0.10	pH units	7.18	7.17	7.17	7.17	7.18	
Solids, total dissolved [TDS]	---	E162/VA	10	mg/L	26	25	25	26	26	
Solids, total dissolved [TDS], calculated	---	EC103/VA	1.0	mg/L	17.6	17.7	17.8	18.1	20.4	
Solids, total suspended [TSS]	---	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
Turbidity	---	E121/VA	0.10	NTU	0.46	0.41	0.46	0.49	0.44	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0057	0.0054	<0.0050	<0.0050	<0.0050	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	0.59	0.57	0.58	0.56	0.59	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.026	0.029	0.026	0.025	0.023	
Kjeldahl nitrogen, total [TKN]	---	E318/EO	0.050	mg/L	0.219	0.214	0.206	0.233	0.216	
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0035	0.0110	0.0035	0.0036	0.0034	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0012	<0.0010	<0.0010	0.0024	<0.0010	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	3.92	3.90	3.93	3.90	3.95	
Cyanides										
Cyanide, free	---	E339/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cyanide, strong acid dissociable (Total)	---	E333/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-011	YL2401131-012	YL2401131-013	YL2401131-014	YL2401131-015	
					Result	Result	Result	Result	Result	
Cyanides										
Cyanide, weak acid dissociable	----	E336/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	3.44	3.46	3.64	3.94	6.21	RRV
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	3.68	3.73	3.77	3.61	3.56	RRV
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.00235	0.00282	0.00251	0.00244	0.00254	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	<0.0000050	0.0000086	<0.0000050	<0.0000050	<0.0000050	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000176	0.000178	0.000179	0.000175	0.000180	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00323	0.00327	0.00320	0.00317	0.00322	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	<0.0000025	<0.0000025	<0.0000025	<0.0000025	<0.0000025	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	1.96	1.95	1.92	1.87	1.87	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	<0.000040	<0.000040	<0.000040	<0.000040	<0.000040	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.0000378	0.0000550	0.0000423	0.0000442	0.0000490	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.000577	0.000577	0.000563	0.000544	0.000549	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0382	0.0506	0.0408	0.0418	0.0438	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000018	0.000021	0.000019	0.000019	0.000020	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	<0.0000050	0.0000227	<0.0000050	<0.0000050	<0.0000050	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00041	0.00042	0.00042	0.00041	0.00042	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	1.55	1.51	1.51	1.49	1.48	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00234	0.00351	0.00269	0.00292	0.00330	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-011	YL2401131-012	YL2401131-013	YL2401131-014	YL2401131-015	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.000670	0.000688	0.000649	0.000668	0.000654	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.358	0.349	0.344	0.338	0.335	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.000957	0.000932	0.000925	0.000898	0.000898	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.155	0.156	0.154	0.156	0.156	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	0.599	0.588	0.578	0.570	0.569	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.00704	0.00691	0.00677	0.00671	0.00662	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	1.33	1.31	1.32	1.36	1.33	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000012	0.0000013	0.0000013	0.0000012	0.0000012	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000023	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000019	0.0000022	0.0000022	0.0000022	0.0000021	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000013	0.000014	0.000012	0.000012	0.000014	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00016	0.00018	<0.00010	<0.00010	<0.00010	<0.00010
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00141	0.00172	0.00136	0.00125	0.00159	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000095	0.0000102	<0.0000050	<0.0000050	0.0000157	DTMF
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000175	0.000171	0.000174	0.000169	0.000178	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00319	0.00315	0.00309	0.00305	0.00304	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-011	YL2401131-012	YL2401131-013	YL2401131-014	YL2401131-015	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	<0.0000025	<0.0000025	<0.0000025	<0.0000025	<0.0000025	<0.0000025
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	1.99	1.98	1.97	1.99		1.95
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	<0.000040	<0.000040	<0.000040	<0.000040	<0.000040	<0.000040
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.0000170	0.0000167	0.0000157	0.0000152		0.0000165
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.000594	0.000563	0.000568	0.000548		0.000579
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field		Field
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0162	0.0162	0.0142	0.0145		0.0144
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	0.0000050	<0.0000050	<0.0000050		0.0000136 ^{DTMF}
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00040	0.00040	0.00041	0.00041		0.00042
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	1.51	1.51	1.51	1.51		1.46
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.000422	0.000412	0.000363	0.000374		0.000423
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	<0.50	<0.50	<0.50		<0.50
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.000666	0.000643	0.000649	0.000661		0.000641
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.350	0.344	0.344	0.353		0.348
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.000953	0.000956	0.000939	0.000942		0.000933
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.150	0.152	0.156	0.154		0.159
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	0.598	0.587	0.582	0.583		0.579
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.00714	0.00710	0.00704	0.00711		0.00695



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-1	BRP-38-2	BRP-38-3	BRP-38-4	BRP-38-5
(Matrix: Water)										
					Client sampling date / time	02-Aug-2024 11:45	02-Aug-2024 12:45	02-Aug-2024 13:40	02-Aug-2024 14:20	02-Aug-2024 15:00
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-011	YL2401131-012	YL2401131-013	YL2401131-014	YL2401131-015	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	1.32	1.32	1.32	1.29	1.33	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000012	0.0000014	0.0000010	<0.0000010	0.0000011	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000019	0.0000025	0.0000016	0.0000022	0.0000021	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00047 ^{DTC}	0.00021	0.00019	<0.00010	0.00278 ^{DTC}	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	
Radiological Parameters										
Radium-226	13982-63-3	Ra-226/2l	0.005	Bq/L	<0.005	<0.005	<0.005	<0.005	<0.005	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	FD	FB	TB	----	----
(Matrix: Water)										
					Client sampling date / time	04-Aug-2024 10:50	03-Aug-2024 09:50	02-Aug-2024 11:20	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-016	YL2401131-017	YL2401131-018	-----	-----	
					Result	Result	Result	----	----	
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	5.1	<1.0	<1.0	----	----	
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	5.1	<1.0	<1.0	----	----	
Conductivity	----	E100/VA	2.0	µS/cm	85.2	<2.0	<2.0	----	----	
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	29.9	<0.50	<0.50	----	----	
pH	----	E108/VA	0.10	pH units	6.95	5.50	5.45	----	----	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	57	<10	<10	----	----	
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	47.1	<1.0	<1.0	----	----	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	----	----	
Turbidity	----	E121/VA	0.10	NTU	0.36	<0.10	<0.10	----	----	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0351	<0.0050	<0.0050 ^{SP}	----	----	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.054	<0.050	<0.050	----	----	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	9.93	<0.50	<0.50	----	----	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.027	<0.020	<0.020	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.235	<0.050	<0.050 ^{SP}	----	----	
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.545	<0.0050	<0.0050	----	----	
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	0.0022	<0.0010	<0.0010	----	----	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	----	----	
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0024	<0.0010	<0.0010 ^{SP}	----	----	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	<0.0010	<0.0010	<0.0010 ^{SFP}	----	----	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	<0.50	<0.50	<0.50	----	----	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	12.5	<0.30	<0.30	----	----	
Cyanides										
Cyanide, free	----	E339/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
Cyanide, strong acid dissociable (Total)	----	E333/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	FD	FB	TB	----	----
(Matrix: Water)										
Client sampling date / time						04-Aug-2024 10:50	03-Aug-2024 09:50	02-Aug-2024 11:20	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-016	YL2401131-017	YL2401131-018	-----	-----	
					Result	Result	Result	----	----	
Cyanides										
Cyanide, weak acid dissociable	---	E336/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	---	E358-L/EO	0.50	mg/L	6.97 ^{RRV}	0.55 ^{RRV}	<0.50 ^{SFP}	----	----	
Carbon, total organic [TOC]	---	E355-L/EO	0.50	mg/L	3.69 ^{RRV}	<0.50	<0.50 ^{SP}	----	----	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0016	<0.0015	<0.0015	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0017	<0.0016	<0.0016	----	----	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.58	<0.50	<0.50	----	----	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0109	<0.00020	<0.00020	----	----	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000117	<0.0000050	<0.0000050	----	----	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000286	<0.000010	<0.000010	----	----	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0117	<0.000020	<0.000020	----	----	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000020	<0.0000020	<0.0000020	----	----	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	----	----	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000106	<0.0000025	<0.0000025	----	----	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	6.52	<0.010	<0.010	----	----	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000131	<0.0000050	<0.0000050	----	----	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000055	<0.000040	<0.000040	----	----	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000287	<0.0000050	<0.0000050	----	----	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00155	<0.000050	<0.000050	----	----	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0372	<0.00050	<0.00050	----	----	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000130	<0.000010	<0.000010	----	----	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000072	<0.0000050	<0.0000050	----	----	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00100	<0.00010	<0.00010	----	----	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	2.89	<0.0010	<0.0010	----	----	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00568	<0.0000050	<0.0000050	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	FD	FB	TB	----	----
(Matrix: Water)										
Client sampling date / time					04-Aug-2024 10:50	03-Aug-2024 09:50	02-Aug-2024 11:20	----	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-016	YL2401131-017	YL2401131-018	-----	-----	
					Result	Result	Result	----	----	
Total Metals (Undigested)										
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000013	<0.000010	<0.000010	----	----	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00422	<0.000020	<0.000020	----	----	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.648	<0.0050	<0.0050	----	----	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00159	<0.0000050	<0.0000050	----	----	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000027	<0.000025	<0.000025	----	----	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.162	<0.050	<0.050	----	----	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	0.948	<0.010	<0.010	----	----	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0374	<0.000020	<0.000020	----	----	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	4.10	<0.50	<0.50	----	----	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000030	<0.0000010	<0.0000010	----	----	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000063	<0.0000010	<0.0000010	----	----	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000029	<0.000010	<0.000010	----	----	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000051	<0.000010	<0.000010	----	----	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00104	<0.00010	<0.00010	----	----	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000025	<0.000010	<0.000010	----	----	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00777	<0.00020	<0.00020	----	----	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000376 ^{DTMF}	<0.0000050	<0.0000050	----	----	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000268	<0.000010	<0.000010	----	----	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0115	<0.000020	<0.000020	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	FD	FB	TB	----	----
(Matrix: Water)										
Client sampling date / time					04-Aug-2024 10:50	03-Aug-2024 09:50	02-Aug-2024 11:20	----	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-016	YL2401131-017	YL2401131-018	-----	-----	
					Result	Result	Result	----	----	
Dissolved Metals										
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000023	<0.0000020	<0.0000020	----	----	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	----	----	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000102	<0.0000025	<0.0000025	----	----	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	6.98	<0.010	<0.010	----	----	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000127	<0.0000050	<0.0000050	----	----	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000055	<0.000040	<0.000040	----	----	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000232	<0.0000050	<0.0000050	----	----	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00154	<0.000050	<0.000050	----	----	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	----	----	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0183	<0.00050	<0.00050	----	----	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000093	<0.000010	<0.000010	----	----	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00101	<0.00010	<0.00010	----	----	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	3.04	<0.0010	<0.0010	----	----	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00476	<0.0000050	<0.0000050	----	----	
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	<0.50	<0.50	----	----	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000015	<0.000010	<0.000010	----	----	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00416	<0.000020	<0.000020	----	----	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.671	<0.0050	<0.0050	----	----	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00169	<0.0000050	<0.0000050	----	----	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	<0.000025	<0.000025	----	----	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.156	<0.050	<0.050	----	----	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.00	<0.010	<0.010	----	----	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0396	<0.000020	<0.000020	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	FD	FB	TB	----	----
(Matrix: Water)										
					Client sampling date / time	04-Aug-2024 10:50	03-Aug-2024 09:50	02-Aug-2024 11:20	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401131-016	YL2401131-017	YL2401131-018	-----	-----	
					Result	Result	Result	----	----	
Dissolved Metals										
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	3.94	<0.50	<0.50	----	----	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000034	<0.0000010	<0.0000010	----	----	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000053	<0.0000010	<0.0000010	----	----	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000024	<0.000010	<0.000010	----	----	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000038	<0.000010	<0.000010	----	----	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00105	<0.00010	<0.00010	----	----	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000022	<0.000010	<0.000010	----	----	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	----	----	
Radiological Parameters										
Radium-226	13982-63-3	Ra-226/2l	0.005	Bq/L	<0.005	<0.005	<0.005	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2401131	Page	: 1 of 69
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 07-Aug-2024 16:00
PO	: 17852	Issue Date	: 30-Aug-2024 15:06
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 18		
No. of samples analysed	: 18		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-1	E298	04-Aug-2024	09-Aug-2024	28 days	5 days	✓	09-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-2	E298	04-Aug-2024	09-Aug-2024	28 days	5 days	✓	09-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-3	E298	04-Aug-2024	09-Aug-2024	28 days	5 days	✓	09-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-4	E298	04-Aug-2024	09-Aug-2024	28 days	5 days	✓	09-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-5	E298	04-Aug-2024	09-Aug-2024	28 days	5 days	✓	09-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FD	E298	04-Aug-2024	09-Aug-2024	28 days	5 days	✓	09-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-1	E298	03-Aug-2024	09-Aug-2024	28 days	6 days	✓	09-Aug-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-2	E298	03-Aug-2024	09-Aug-2024	28 days	6 days	✓	09-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-3	E298	03-Aug-2024	09-Aug-2024	28 days	6 days	✓	09-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-4	E298	03-Aug-2024	09-Aug-2024	28 days	6 days	✓	09-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-5	E298	03-Aug-2024	09-Aug-2024	28 days	6 days	✓	09-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FB	E298	03-Aug-2024	09-Aug-2024	28 days	6 days	✓	09-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-1	E298	02-Aug-2024	09-Aug-2024	28 days	7 days	✓	09-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-2	E298	02-Aug-2024	09-Aug-2024	28 days	7 days	✓	09-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-3	E298	02-Aug-2024	09-Aug-2024	28 days	7 days	✓	09-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-4	E298	02-Aug-2024	09-Aug-2024	28 days	7 days	✓	09-Aug-2024	28 days	7 days	✓



Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-5	E298	02-Aug-2024	09-Aug-2024	28 days	7 days	✓	09-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) TB	E298	02-Aug-2024	09-Aug-2024	28 days	7 days	✓	09-Aug-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-1	E235.Br-L	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-2	E235.Br-L	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-3	E235.Br-L	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-4	E235.Br-L	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-5	E235.Br-L	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE TB	E235.Br-L	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-1	E235.Br-L	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-2	E235.Br-L	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-3	E235.Br-L	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-4	E235.Br-L	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-5	E235.Br-L	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FD	E235.Br-L	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-1	E235.Br-L	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-2	E235.Br-L	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-3	E235.Br-L	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-4	E235.Br-L	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-5	E235.Br-L	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FB	E235.Br-L	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-1	E235.Cl	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-2	E235.Cl	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-3	E235.Cl	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-4	E235.Cl	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-5	E235.Cl	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE TB	E235.Cl	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-1	E235.Cl	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-2	E235.Cl	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-3	E235.Cl	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-4	E235.Cl	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-5	E235.Cl	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FD	E235.Cl	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-1	E235.Cl	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-2	E235.Cl	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-3	E235.Cl	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-4	E235.Cl	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-5	E235.Cl	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB	E235.Cl	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE TB	E378-U	02-Aug-2024	12-Aug-2024	3 days	10 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-3	E378-U	04-Aug-2024	12-Aug-2024	3 days	7 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-4	E378-U	04-Aug-2024	12-Aug-2024	3 days	7 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-5	E378-U	04-Aug-2024	12-Aug-2024	3 days	7 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-1	E378-U	04-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-2	E378-U	04-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FD	E378-U	04-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-4	E378-U	03-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-5	E378-U	03-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-1	E378-U	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-2	E378-U	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-3	E378-U	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-4	E378-U	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-1	E378-U	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-2	E378-U	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-3	E378-U	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-5	E378-U	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FB	E378-U	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-1	E235.F	02-Aug-2024	12-Aug-2024	28 days	10 days	✔	12-Aug-2024	28 days	10 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-2	E235.F	02-Aug-2024	12-Aug-2024	28 days	10 days	✔	12-Aug-2024	28 days	10 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-3	E235.F	02-Aug-2024	12-Aug-2024	28 days	10 days	✔	12-Aug-2024	28 days	10 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-4	E235.F	02-Aug-2024	12-Aug-2024	28 days	10 days	✔	12-Aug-2024	28 days	10 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-5	E235.F	02-Aug-2024	12-Aug-2024	28 days	10 days	✔	12-Aug-2024	28 days	10 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE TB	E235.F	02-Aug-2024	12-Aug-2024	28 days	10 days	✔	12-Aug-2024	28 days	10 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-1	E235.F	04-Aug-2024	12-Aug-2024	28 days	8 days	✔	12-Aug-2024	28 days	8 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-2	E235.F	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-3	E235.F	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-4	E235.F	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-5	E235.F	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FD	E235.F	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-1	E235.F	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-2	E235.F	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-3	E235.F	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-4	E235.F	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-5	E235.F	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB	E235.F	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE TB	E235.NO3-L	02-Aug-2024	12-Aug-2024	3 days	10 days	✗ EHTR	12-Aug-2024	3 days	10 days	✗ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-3	E235.NO3-L	04-Aug-2024	12-Aug-2024	3 days	7 days	✗ EHTL	12-Aug-2024	3 days	8 days	✗ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-4	E235.NO3-L	04-Aug-2024	12-Aug-2024	3 days	7 days	✗ EHTL	12-Aug-2024	3 days	8 days	✗ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-5	E235.NO3-L	04-Aug-2024	12-Aug-2024	3 days	7 days	✗ EHTL	12-Aug-2024	3 days	8 days	✗ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-1	E235.NO3-L	04-Aug-2024	12-Aug-2024	3 days	8 days	✗ EHTL	12-Aug-2024	3 days	8 days	✗ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-2	E235.NO3-L	04-Aug-2024	12-Aug-2024	3 days	8 days	✗ EHTL	12-Aug-2024	3 days	8 days	✗ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FD	E235.NO3-L	04-Aug-2024	12-Aug-2024	3 days	8 days	✗ EHTL	12-Aug-2024	3 days	8 days	✗ EHTL



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO3-L	03-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO3-L	03-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-1	E235.NO3-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-2	E235.NO3-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO3-L	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO3-L	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO3-L	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-3	E235.NO3-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-4	E235.NO3-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-5	E235.NO3-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB	E235.NO3-L	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE TB	E235.NO2-L	02-Aug-2024	12-Aug-2024	3 days	10 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-3	E235.NO2-L	04-Aug-2024	12-Aug-2024	3 days	7 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-4	E235.NO2-L	04-Aug-2024	12-Aug-2024	3 days	7 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-5	E235.NO2-L	04-Aug-2024	12-Aug-2024	3 days	7 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-1	E235.NO2-L	04-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-2	E235.NO2-L	04-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FD	E235.NO2-L	04-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTL	12-Aug-2024	3 days	8 days	✖ EHTL



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO2-L	03-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO2-L	03-Aug-2024	12-Aug-2024	3 days	8 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-1	E235.NO2-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-2	E235.NO2-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	10 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO2-L	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO2-L	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO2-L	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-3	E235.NO2-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-4	E235.NO2-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR

Page : 17 of 69
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-5	E235.NO2-L	02-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB	E235.NO2-L	03-Aug-2024	12-Aug-2024	3 days	9 days	✖ EHTR	12-Aug-2024	3 days	9 days	✖ EHTR
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-1	E392	04-Aug-2024	----	----	----		20-Aug-2024	28 days	16 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-2	E392	04-Aug-2024	----	----	----		20-Aug-2024	28 days	16 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-3	E392	04-Aug-2024	----	----	----		20-Aug-2024	28 days	16 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-4	E392	04-Aug-2024	----	----	----		20-Aug-2024	28 days	16 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-5	E392	04-Aug-2024	----	----	----		20-Aug-2024	28 days	16 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FD	E392	04-Aug-2024	----	----	----		20-Aug-2024	28 days	16 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-1	E392	03-Aug-2024	----	----	----		20-Aug-2024	28 days	17 days	✔



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-2	E392	03-Aug-2024	----	----	----		20-Aug-2024	28 days	17 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-3	E392	03-Aug-2024	----	----	----		20-Aug-2024	28 days	17 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-4	E392	03-Aug-2024	----	----	----		20-Aug-2024	28 days	17 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-5	E392	03-Aug-2024	----	----	----		20-Aug-2024	28 days	17 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FB	E392	03-Aug-2024	----	----	----		20-Aug-2024	28 days	17 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-1	E392	02-Aug-2024	----	----	----		20-Aug-2024	28 days	18 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-2	E392	02-Aug-2024	----	----	----		20-Aug-2024	28 days	18 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-3	E392	02-Aug-2024	----	----	----		20-Aug-2024	28 days	18 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-4	E392	02-Aug-2024	----	----	----		20-Aug-2024	28 days	18 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-5	E392	02-Aug-2024	----	----	----		20-Aug-2024	28 days	18 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE TB	E392	02-Aug-2024	----	----	----		20-Aug-2024	28 days	18 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-1	E235.SO4	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-2	E235.SO4	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-3	E235.SO4	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-4	E235.SO4	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-5	E235.SO4	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE TB	E235.SO4	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-1	E235.SO4	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-2	E235.SO4	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-3	E235.SO4	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-4	E235.SO4	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-5	E235.SO4	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FD	E235.SO4	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-1	E235.SO4	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-2	E235.SO4	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-3	E235.SO4	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-4	E235.SO4	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-5	E235.SO4	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FB	E235.SO4	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-1	E375-U	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-2	E375-U	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-3	E375-U	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-4	E375-U	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-5	E375-U	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) TB	E375-U	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-1	E375-U	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-2	E375-U	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-3	E375-U	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-4	E375-U	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-5	E375-U	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FD	E375-U	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E375-U	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E375-U	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-3	E375-U	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-4	E375-U	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-5	E375-U	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FB	E375-U	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E318	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E318	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E318	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E318	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E318	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FB	E318	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-1	E318	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-2	E318	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-3	E318	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-4	E318	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-5	E318	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) TB	E318	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-1	E318	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-2	E318	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-3	E318	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-4	E318	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-5	E318	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FD	E318	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-1	E372-S	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-2	E372-S	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-3	E372-S	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-4	E372-S	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-5	E372-S	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) TB	E372-S	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	12-Aug-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-1	E372-S	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-2	E372-S	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-3	E372-S	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-4	E372-S	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-5	E372-S	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FD	E372-S	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	12-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-1	E372-S	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-2	E372-S	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-3	E372-S	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-4	E372-S	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓

Page : 27 of 69
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-5	E372-S	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FB	E372-S	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	12-Aug-2024	28 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E339	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E339	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E339	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E339	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E339	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E339	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-1	E339	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-2	E339	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-3	E339	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-4	E339	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-5	E339	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E339	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-1	E339	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-2	E339	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-3	E339	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-4	E339	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-5	E339	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD	E339	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E333	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E333	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E333	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E333	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E333	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E333	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-1	E333	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-2	E333	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-3	E333	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-4	E333	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-5	E333	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E333	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-1	E333	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
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Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-3	E333	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-4	E333	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-5	E333	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD	E333	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E336	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E336	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E336	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E336	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E336	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E336	03-Aug-2024	13-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-1	E336	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-2	E336	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-3	E336	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-4	E336	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : WAD Cyanide										
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Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB	E336	02-Aug-2024	13-Aug-2024	14 days	11 days	✓	13-Aug-2024	14 days	11 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-1	E336	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
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Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-4	E336	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-5	E336	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD	E336	04-Aug-2024	13-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-1	E509-L	04-Aug-2024	14-Aug-2024	28 days	10 days	✓	14-Aug-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-2	E509-L	04-Aug-2024	14-Aug-2024	28 days	10 days	✓	14-Aug-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-3	E509-L	04-Aug-2024	14-Aug-2024	28 days	10 days	✓	14-Aug-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-4	E509-L	04-Aug-2024	14-Aug-2024	28 days	10 days	✓	14-Aug-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-5	E509-L	04-Aug-2024	14-Aug-2024	28 days	10 days	✓	14-Aug-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FD	E509-L	04-Aug-2024	14-Aug-2024	28 days	10 days	✓	14-Aug-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-1	E509-L	03-Aug-2024	14-Aug-2024	28 days	11 days	✓	14-Aug-2024	28 days	11 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-2	E509-L	03-Aug-2024	14-Aug-2024	28 days	11 days	✓	14-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-3	E509-L	03-Aug-2024	14-Aug-2024	28 days	11 days	✓	14-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-4	E509-L	03-Aug-2024	14-Aug-2024	28 days	11 days	✓	14-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-5	E509-L	03-Aug-2024	14-Aug-2024	28 days	11 days	✓	14-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FB	E509-L	03-Aug-2024	14-Aug-2024	28 days	11 days	✓	14-Aug-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-1	E509-L	02-Aug-2024	14-Aug-2024	28 days	12 days	✓	14-Aug-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-2	E509-L	02-Aug-2024	14-Aug-2024	28 days	12 days	✓	14-Aug-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-3	E509-L	02-Aug-2024	14-Aug-2024	28 days	12 days	✓	14-Aug-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-4	E509-L	02-Aug-2024	14-Aug-2024	28 days	12 days	✓	14-Aug-2024	28 days	12 days	✓

Page : 35 of 69
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-5	E509-L	02-Aug-2024	14-Aug-2024	28 days	12 days	✓	14-Aug-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) TB	E509-L	02-Aug-2024	14-Aug-2024	28 days	12 days	✓	14-Aug-2024	28 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-2	E465	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-3	E465	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-4	E465	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-5	E465	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-1	E465	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FB	E465	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-1	E465	02-Aug-2024	13-Aug-2024	180 days	11 days	✓	14-Aug-2024	180 days	12 days	✓



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
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Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-31-1	E465	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓
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Pre-cleaned HDPE - dissolved (lab preserved) BRP-31-2	E465	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓
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Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-31-4	E465	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-31-5	E465	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FD	E465	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E358-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E358-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
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Amber glass dissolved (sulfuric acid) BRP-32-5	E358-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FB	E358-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-1	E358-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-2	E358-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-3	E358-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-4	E358-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-5	E358-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) TB	E358-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-1	E358-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-2	E358-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-3	E358-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-4	E358-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-5	E358-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FD	E358-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E355-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E355-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB	E355-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-1	E355-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-2	E355-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-3	E355-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-4	E355-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-5	E355-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) TB	E355-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-1	E355-L	04-Aug-2024	11-Aug-2024	28 days	7 days	✓	11-Aug-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-2	E355-L	04-Aug-2024	11-Aug-2024	28 days	7 days	✓	11-Aug-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-3	E355-L	04-Aug-2024	11-Aug-2024	28 days	7 days	✓	11-Aug-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-4	E355-L	04-Aug-2024	11-Aug-2024	28 days	7 days	✓	11-Aug-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-5	E355-L	04-Aug-2024	11-Aug-2024	28 days	7 days	✓	11-Aug-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E355-L	03-Aug-2024	11-Aug-2024	28 days	8 days	✓	11-Aug-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E355-L	03-Aug-2024	11-Aug-2024	28 days	8 days	✓	11-Aug-2024	28 days	8 days	✓



Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E355-L	03-Aug-2024	11-Aug-2024	28 days	8 days	✓	11-Aug-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FD	E355-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-1	E290	02-Aug-2024	12-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-2	E290	02-Aug-2024	12-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-3	E290	02-Aug-2024	12-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-4	E290	02-Aug-2024	12-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-5	E290	02-Aug-2024	12-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE TB	E290	02-Aug-2024	12-Aug-2024	14 days	10 days	✓	13-Aug-2024	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-1	E290	04-Aug-2024	12-Aug-2024	14 days	8 days	✓	13-Aug-2024	14 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-2	E290	04-Aug-2024	12-Aug-2024	14 days	8 days	✓	13-Aug-2024	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-3	E290	04-Aug-2024	12-Aug-2024	14 days	8 days	✓	13-Aug-2024	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-4	E290	04-Aug-2024	12-Aug-2024	14 days	8 days	✓	13-Aug-2024	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-5	E290	04-Aug-2024	12-Aug-2024	14 days	8 days	✓	13-Aug-2024	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FD	E290	04-Aug-2024	12-Aug-2024	14 days	8 days	✓	13-Aug-2024	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-1	E290	03-Aug-2024	12-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-2	E290	03-Aug-2024	12-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-3	E290	03-Aug-2024	12-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-4	E290	03-Aug-2024	12-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	10 days	✓

Page : 43 of 69
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-5	E290	03-Aug-2024	12-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FB	E290	03-Aug-2024	12-Aug-2024	14 days	9 days	✓	13-Aug-2024	14 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-1	E100	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-2	E100	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-3	E100	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-4	E100	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-5	E100	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE TB	E100	02-Aug-2024	12-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-31-1	E100	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	13-Aug-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-31-2	E100	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	13-Aug-2024	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-31-3	E100	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	13-Aug-2024	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-31-4	E100	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	13-Aug-2024	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-31-5	E100	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	13-Aug-2024	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE FD	E100	04-Aug-2024	12-Aug-2024	28 days	8 days	✓	13-Aug-2024	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-1	E100	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-2	E100	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-3	E100	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-4	E100	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	10 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-32-5	E100	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE FB	E100	03-Aug-2024	12-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	10 days	✓
Physical Tests : pH by Meter										
HDPE BRP-31-5	E108	04-Aug-2024	12-Aug-2024	0.25 hrs	191 hrs	✗ EHTR-FM	13-Aug-2024	0.25 hrs	210 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-31-4	E108	04-Aug-2024	12-Aug-2024	0.25 hrs	191 hrs	✗ EHTR-FM	13-Aug-2024	0.25 hrs	211 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-31-3	E108	04-Aug-2024	12-Aug-2024	0.25 hrs	192 hrs	✗ EHTR-FM	13-Aug-2024	0.25 hrs	211 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-31-2	E108	04-Aug-2024	12-Aug-2024	0.25 hrs	192 hrs	✗ EHTR-FM	13-Aug-2024	0.25 hrs	212 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-31-1	E108	04-Aug-2024	12-Aug-2024	0.25 hrs	193 hrs	✗ EHTR-FM	13-Aug-2024	0.25 hrs	212 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE FD	E108	04-Aug-2024	12-Aug-2024	0.25 hrs	193 hrs	✗ EHTR-FM	13-Aug-2024	0.25 hrs	212 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-5	E108	03-Aug-2024	12-Aug-2024	0.25 hrs	215 hrs	✗ EHTR-FM	13-Aug-2024	0.25 hrs	235 hrs	✗ EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-32-4	E108	03-Aug-2024	12-Aug-2024	0.25 hrs	216 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	235 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-2	E108	03-Aug-2024	12-Aug-2024	0.25 hrs	217 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	236 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-3	E108	03-Aug-2024	12-Aug-2024	0.25 hrs	217 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	236 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-1	E108	03-Aug-2024	12-Aug-2024	0.25 hrs	218 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	237 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE FB	E108	03-Aug-2024	12-Aug-2024	0.25 hrs	218 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	237 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-5	E108	02-Aug-2024	12-Aug-2024	0.25 hrs	237 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	256 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-4	E108	02-Aug-2024	12-Aug-2024	0.25 hrs	237 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	257 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-3	E108	02-Aug-2024	12-Aug-2024	0.25 hrs	238 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	257 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-2	E108	02-Aug-2024	12-Aug-2024	0.25 hrs	239 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	258 hrs	✖ EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-38-1	E108	02-Aug-2024	12-Aug-2024	0.25 hrs	240 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	259 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE TB	E108	02-Aug-2024	12-Aug-2024	0.25 hrs	240 hrs	✖ EHTR-FM	13-Aug-2024	0.25 hrs	260 hrs	✖ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-1	E162	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-2	E162	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-3	E162	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-4	E162	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE TB	E162	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-1	E162	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-2	E162	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-3	E162	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-4	E162	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-5	E162	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE FD	E162	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-1	E162	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-2	E162	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-3	E162	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-4	E162	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-5	E162	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-5	E162	02-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE FB	E162	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-1	E160	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-2	E160	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-3	E160	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-4	E160	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-5	E160	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE TB	E160	02-Aug-2024	----	----	----		12-Aug-2024	7 days	10 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-1	E160	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-2	E160	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-3	E160	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-4	E160	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-5	E160	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE FD	E160	04-Aug-2024	----	----	----		12-Aug-2024	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-1	E160	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-2	E160	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-3	E160	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-4	E160	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-5	E160	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE FB	E160	03-Aug-2024	----	----	----		12-Aug-2024	7 days	9 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-1	E121	02-Aug-2024	----	----	----		13-Aug-2024	3 days	10 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-2	E121	02-Aug-2024	----	----	----		13-Aug-2024	3 days	10 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-3	E121	02-Aug-2024	----	----	----		13-Aug-2024	3 days	10 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-4	E121	02-Aug-2024	----	----	----		13-Aug-2024	3 days	10 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-5	E121	02-Aug-2024	----	----	----		13-Aug-2024	3 days	10 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE FB	E121	03-Aug-2024	----	----	----		13-Aug-2024	3 days	10 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE TB	E121	02-Aug-2024	----	----	----		13-Aug-2024	3 days	10 days	✖ EHTR



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-1	E121	04-Aug-2024	----	----	----		12-Aug-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-2	E121	04-Aug-2024	----	----	----		12-Aug-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-3	E121	04-Aug-2024	----	----	----		12-Aug-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-4	E121	04-Aug-2024	----	----	----		12-Aug-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-5	E121	04-Aug-2024	----	----	----		12-Aug-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE FD	E121	04-Aug-2024	----	----	----		13-Aug-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-1	E121	03-Aug-2024	----	----	----		12-Aug-2024	3 days	9 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-2	E121	03-Aug-2024	----	----	----		12-Aug-2024	3 days	9 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-3	E121	03-Aug-2024	----	----	----		12-Aug-2024	3 days	9 days	✖ EHTR



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-4	E121	03-Aug-2024	----	----	----		13-Aug-2024	3 days	9 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-5	E121	03-Aug-2024	----	----	----		13-Aug-2024	3 days	9 days	✖ EHTR
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-1	Ra-226	04-Aug-2024	----	----	----		26-Aug-2024	----	22 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-3	Ra-226	04-Aug-2024	----	----	----		26-Aug-2024	----	22 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-5	Ra-226	04-Aug-2024	----	----	----		26-Aug-2024	----	22 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) FD	Ra-226	04-Aug-2024	----	----	----		26-Aug-2024	----	22 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-1	Ra-226	03-Aug-2024	----	----	----		26-Aug-2024	----	23 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-2	Ra-226	03-Aug-2024	----	----	----		26-Aug-2024	----	23 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-3	Ra-226	03-Aug-2024	----	----	----		26-Aug-2024	----	23 days	



Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-4	Ra-226	03-Aug-2024	----	----	----		26-Aug-2024	----	23 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-5	Ra-226	03-Aug-2024	----	----	----		26-Aug-2024	----	23 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) FB	Ra-226	03-Aug-2024	----	----	----		26-Aug-2024	----	23 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-2	Ra-226	04-Aug-2024	----	----	----		28-Aug-2024	----	24 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-4	Ra-226	04-Aug-2024	----	----	----		28-Aug-2024	----	24 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-1	Ra-226	02-Aug-2024	----	----	----		26-Aug-2024	----	24 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-3	Ra-226	02-Aug-2024	----	----	----		26-Aug-2024	----	24 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-5	Ra-226	02-Aug-2024	----	----	----		26-Aug-2024	----	24 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) TB	Ra-226	02-Aug-2024	----	----	----		26-Aug-2024	----	24 days	

Page : 55 of 69
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-2	Ra-226	02-Aug-2024	----	----	----		28-Aug-2024	----	26 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-4	Ra-226	02-Aug-2024	----	----	----		28-Aug-2024	----	26 days	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-2	E466	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-3	E466	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-4	E466	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-5	E466	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-1	E466	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FB	E466	03-Aug-2024	13-Aug-2024	180 days	10 days	✓	14-Aug-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-1	E466	02-Aug-2024	13-Aug-2024	180 days	11 days	✓	14-Aug-2024	180 days	12 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-2	E466	02-Aug-2024	13-Aug-2024	180 days	11 days	✓	14-Aug-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-3	E466	02-Aug-2024	13-Aug-2024	180 days	11 days	✓	14-Aug-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-4	E466	02-Aug-2024	13-Aug-2024	180 days	11 days	✓	14-Aug-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-5	E466	02-Aug-2024	13-Aug-2024	180 days	11 days	✓	14-Aug-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) TB	E466	02-Aug-2024	13-Aug-2024	180 days	11 days	✓	14-Aug-2024	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-1	E466	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-2	E466	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-3	E466	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-4	E466	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-5	E466	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FD	E466	04-Aug-2024	13-Aug-2024	180 days	9 days	✓	14-Aug-2024	180 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-1	E508-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-2	E508-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-3	E508-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-4	E508-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-5	E508-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FB	E508-L	03-Aug-2024	13-Aug-2024	28 days	10 days	✓	13-Aug-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-1	E508-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-2	E508-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-3	E508-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-4	E508-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-5	E508-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) TB	E508-L	02-Aug-2024	13-Aug-2024	28 days	11 days	✓	13-Aug-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-1	E508-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-2	E508-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-3	E508-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-4	E508-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓

Page : 59 of 69
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-5	E508-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FD	E508-L	04-Aug-2024	13-Aug-2024	28 days	9 days	✓	13-Aug-2024	28 days	9 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-1	E395	03-Aug-2024	----	----	----		13-Aug-2024	7 days	10 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FD	E395	04-Aug-2024	----	----	----		14-Aug-2024	7 days	10 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-2	E395	03-Aug-2024	----	----	----		14-Aug-2024	7 days	11 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-3	E395	03-Aug-2024	----	----	----		14-Aug-2024	7 days	11 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-4	E395	03-Aug-2024	----	----	----		14-Aug-2024	7 days	11 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-5	E395	03-Aug-2024	----	----	----		14-Aug-2024	7 days	11 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FB	E395	03-Aug-2024	----	----	----		14-Aug-2024	7 days	11 days	✖ EHT

Page : 60 of 69
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-1	E395	02-Aug-2024	----	----	----		14-Aug-2024	7 days	12 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-2	E395	02-Aug-2024	----	----	----		14-Aug-2024	7 days	12 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-3	E395	02-Aug-2024	----	----	----		14-Aug-2024	7 days	12 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-4	E395	02-Aug-2024	----	----	----		14-Aug-2024	7 days	12 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-5	E395	02-Aug-2024	----	----	----		14-Aug-2024	7 days	12 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) TB	E395	02-Aug-2024	----	----	----		14-Aug-2024	7 days	12 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-1	E395	04-Aug-2024	----	----	----		13-Aug-2024	7 days	9 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-2	E395	04-Aug-2024	----	----	----		13-Aug-2024	7 days	9 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-3	E395	04-Aug-2024	----	----	----		13-Aug-2024	7 days	9 days	✖ EHT

Page : 61 of 69
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-4	E395	04-Aug-2024	----	----	----		13-Aug-2024	7 days	9 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-5	E395	04-Aug-2024	----	----	----		13-Aug-2024	7 days	9 days	✖ EHT

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1590956	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1587312	2	40	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1590961	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1590960	1	20	5.0	5.0	✓
Conductivity in Water	E100	1590957	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1594965	1	18	5.5	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1592758	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1592888	2	24	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1590965	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1590959	1	20	5.0	5.0	✓
Free Cyanide	E339	1593460	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1590962	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1590963	1	20	5.0	5.0	✓
pH by Meter	E108	1590955	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1605732	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1590964	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1591496	1	18	5.5	5.0	✓
Total Cyanide	E333	1593461	1	18	5.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1589306	1	18	5.5	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1590272	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1593637	1	18	5.5	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1592761	1	18	5.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1589670	2	40	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1588820	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1593704	2	30	6.6	5.0	✓
TSS by Gravimetry	E160	1591495	1	18	5.5	5.0	✓
Turbidity by Nephelometry	E121	1591782	3	38	7.8	5.0	✓
WAD Cyanide	E336	1593459	1	18	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1590956	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1587312	2	40	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1590961	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1590960	1	20	5.0	5.0	✓
Conductivity in Water	E100	1590957	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1594965	1	18	5.5	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1592758	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1592888	2	24	8.3	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1590965	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1590959	1	20	5.0	5.0	✔
Free Cyanide	E339	1593460	1	18	5.5	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1590962	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1590963	1	20	5.0	5.0	✔
pH by Meter	E108	1590955	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1605732	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1590964	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1591496	1	18	5.5	5.0	✔
Total Cyanide	E333	1593461	1	18	5.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1589306	1	18	5.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1590272	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1593637	1	18	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1592761	1	18	5.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1589670	2	40	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1588820	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1593704	2	30	6.6	5.0	✔
TSS by Gravimetry	E160	1591495	1	18	5.5	5.0	✔
Turbidity by Nephelometry	E121	1591782	3	38	7.8	5.0	✔
WAD Cyanide	E336	1593459	1	18	5.5	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1590956	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	1587312	2	40	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1590961	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1590960	1	20	5.0	5.0	✔
Conductivity in Water	E100	1590957	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1594965	1	18	5.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1592758	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1592888	2	24	8.3	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1590965	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1590959	1	20	5.0	5.0	✔
Free Cyanide	E339	1593460	1	18	5.5	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1590962	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1590963	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1605732	1	20	5.0	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1590964	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1591496	1	18	5.5	5.0	✔
Total Cyanide	E333	1593461	1	18	5.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1589306	1	18	5.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1590272	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1593637	1	18	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1592761	1	18	5.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1589670	2	40	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1588820	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1593704	2	30	6.6	5.0	✔
TSS by Gravimetry	E160	1591495	1	18	5.5	5.0	✔
Turbidity by Nephelometry	E121	1591782	3	38	7.8	5.0	✔
WAD Cyanide	E336	1593459	1	18	5.5	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1587312	2	40	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1590961	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1590960	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1594965	1	18	5.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1592758	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1592888	2	24	8.3	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1590965	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1590959	1	20	5.0	5.0	✔
Free Cyanide	E339	1593460	1	18	5.5	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1590962	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1590963	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	1605732	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1590964	1	20	5.0	5.0	✔
Total Cyanide	E333	1593461	1	18	5.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1589306	1	18	5.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1590272	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1593637	1	18	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1592761	1	18	5.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1589670	2	40	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1588820	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1593704	2	30	6.6	5.0	✔
WAD Cyanide	E336	1593459	1	18	5.5	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Vancouver	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Vancouver	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Vancouver	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)	Ra-226 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon

Page : 69 of 69
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2401131	Page	: 1 of 21
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 07-Aug-2024 16:00
PO	: 17852	Date Analysis Commenced	: 09-Aug-2024
C-O-C number	: ----	Issue Date	: 30-Aug-2024 15:05
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 18		
No. of samples analysed	: 18		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Vancouver Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	Saskatchewan Research Council External Subcontracting, Saskatoon, Saskatchewan
Sam Silveira	Analyst	Vancouver Metals, Burnaby, British Columbia

Page : 2 of 21
Work Order : YL2401131
Client : B2Gold Back River Corp.
Project : CA0035158.8381



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Page : 3 of 21
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1590955)											
YL2401131-001	BRP-31-1	pH	----	E108	0.10	pH units	6.92	6.93	0.144%	4%	----
Physical Tests (QC Lot: 1590956)											
YL2401131-001	BRP-31-1	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	5.0	5.2	3.92%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	5.0	5.2	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1590957)											
YL2401131-001	BRP-31-1	Conductivity	----	E100	2.0	µS/cm	84.6	85.1	0.589%	10%	----
Physical Tests (QC Lot: 1591495)											
YL2401131-001	BRP-31-1	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1591496)											
YL2401131-001	BRP-31-1	Solids, total dissolved [TDS]	----	E162	13	mg/L	72	68	4	Diff <2x LOR	----
Physical Tests (QC Lot: 1591782)											
YL2401107-007	Anonymous	Turbidity	----	E121	0.10	NTU	2.25	2.22	1.07%	15%	----
Physical Tests (QC Lot: 1591783)											
YL2401131-006	BRP-32-1	Turbidity	----	E121	0.10	NTU	0.41	0.41	0.007	Diff <2x LOR	----
Physical Tests (QC Lot: 1592851)											
VA24C0138-003	Anonymous	Turbidity	----	E121	0.10	NTU	5.24	5.49	4.66%	15%	----
Anions and Nutrients (QC Lot: 1587312)											
EO2406687-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.165	0.163	1.28%	20%	----
Anions and Nutrients (QC Lot: 1587315)											
EO2406679-016	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0113	0.0115	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1588820)											
FC2402074-007	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0728	0.0713	2.18%	20%	----
Anions and Nutrients (QC Lot: 1589306)											
YL2401131-001	BRP-31-1	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1590272)											
EO2406645-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1590959)											
VA24B9912-001	Anonymous	Fluoride	16984-48-8	E235.F	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1590960)											
VA24B9912-001	Anonymous	Chloride	16887-00-6	E235.Cl	25.0	mg/L	<25.0	<25.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1590961)											
VA24B9912-001	Anonymous	Bromide	24959-67-9	E235.Br-L	2.50	mg/L	<2.50	<2.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1590962)											
VA24B9912-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1590963)											
VA24B9912-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0500	mg/L	<0.0500	<0.0500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1590964)											
VA24B9912-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	15.0	mg/L	4450	4550	2.30%	20%	----
Anions and Nutrients (QC Lot: 1590965)											
YL2401131-001	BRP-31-1	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1605732)											
YL2401128-006	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	2.39	2.39	0.0009	Diff <2x LOR	----
Cyanides (QC Lot: 1593459)											
YL2401131-001	BRP-31-1	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1593460)											
YL2401131-001	BRP-31-1	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1593461)											
YL2401131-001	BRP-31-1	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1589670)											
YL2401131-001	BRP-31-1	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	4.40	3.96	0.44	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1592888)											
YL2401131-001	BRP-31-1	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	4.54	3.88	0.66	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1593014)											
YL2401131-009	BRP-32-4	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.75	3.72	0.03	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1595742)											
EO2406852-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	7.43	7.63	2.65%	20%	----
Total Sulfides (QC Lot: 1593704)											
RG2401228-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
Total Sulfides (QC Lot: 1596194)											
VA24C0235-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0102	0.0116	0.0014	Diff <2x LOR	----

Page : 5 of 21
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1593637)											
YL2401131-001	BRP-31-1	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.70	0.63	0.07	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1592761)											
YL2401131-001	BRP-31-1	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0115	0.0109	5.48%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000117	0.0000115	0.0000002	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000296	0.000288	2.82%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.0117	0.0118	1.35%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000109	0.0000081	0.0000028	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	6.89	6.92	0.506%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000130	0.0000134	0.0000004	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000058	0.000058	0.0000004	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000304	0.000302	0.562%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00157	0.00161	2.42%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0402	0.0420	4.22%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000131	0.000133	1.32%	20%	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000068	0.0000065	0.0000003	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00098	0.00100	0.00002	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.98	2.94	1.21%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00603	0.00606	0.532%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000012	0.000015	0.000003	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00423	0.00430	1.64%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.670	0.680	1.44%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00169	0.00167	0.857%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000033	0.000031	0.000002	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.162	0.157	0.005	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	0.979	0.966	1.34%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0392	0.0398	1.44%	20%	----

Page : 6 of 21
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1592761) - continued											
YL2401131-001	BRP-31-1	Sulfur, total	7704-34-9	E466	0.50	mg/L	4.09	4.03	0.06	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000035	0.0000025	0.0000010	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000103	<0.000050	0.000053	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000064	0.0000053	0.0000011	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000028	0.000029	0.0000006	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000052	0.000050	0.000001	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00105	0.00105	0.177%	20%	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000025	0.000024	0.0000007	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1592758)											
YL2401131-001	BRP-31-1	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00885	0.00841	5.12%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000843	0.0000811	3.91%	20%	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000291	0.000285	2.16%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.0117	0.0118	0.594%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000099	0.0000100	0.0000002	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	6.86	6.78	1.11%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000133	0.0000132	0.00000004	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000058	0.000061	0.000003	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000234	0.000238	2.06%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00158	0.00159	0.314%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0205	0.0200	2.15%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000088	0.000089	0.0000008	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000155	0.0000141	0.0000013	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00103	0.00098	4.89%	20%	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	3.03	2.97	2.01%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00481	0.00471	2.07%	20%	----

Page : 7 of 21
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1592758) - continued											
YL2401131-001	BRP-31-1	Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000015	0.000016	0.0000008	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00439	0.00430	2.18%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.673	0.670	0.370%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00171	0.00166	2.64%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000029	0.000026	0.000003	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.166	0.164	0.002	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.01	0.996	1.66%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0394	0.0397	0.855%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	4.17	4.05	0.12	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000033	0.0000030	0.0000003	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	0.000055	0.000095	0.000040	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000061	0.0000056	0.0000005	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000024	0.000025	0.000002	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000040	0.000039	0.000001	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00116	0.00113	2.44%	20%	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000029	0.000027	0.000002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1594965)											
YL2401131-001	BRP-31-1	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1590956)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	1.1	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	1.1	----
Physical Tests (QCLot: 1590957)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1591495)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1591496)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1591782)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1591783)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1592851)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1587312)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1587315)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1588820)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1589306)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1590272)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1590959)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1590960)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1590961)						

Page : 9 of 21
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1590961) - continued						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1590962)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1590963)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1590964)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1590965)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1605732)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1593459)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1593460)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1593461)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1589670)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1592888)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1593014)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1595742)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1593704)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Sulfides (QCLot: 1596194)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1593637)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1592761)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1592761) - continued						
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----

Page : 11 of 21
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1592761) - continued						
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1592758)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----

Page : 12 of 21
 Work Order : YL2401131
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1592758) - continued						
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1594965)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1590955)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1590956)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	105	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1590957)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	106	90.0	110	----
Physical Tests (QCLot: 1591495)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	87.7	85.0	115	----
Physical Tests (QCLot: 1591496)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1591782)									
Turbidity	----	E121	0.1	NTU	200 NTU	96.4	85.0	115	----
Physical Tests (QCLot: 1591783)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Physical Tests (QCLot: 1592851)									
Turbidity	----	E121	0.1	NTU	200 NTU	96.5	85.0	115	----
Anions and Nutrients (QCLot: 1587312)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1587315)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1588820)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 1589306)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1590272)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	92.5	75.0	125	----
Anions and Nutrients (QCLot: 1590959)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1590960)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1590961)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1590961) - continued									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1590962)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1590963)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1590964)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1590965)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.2	80.0	120	----
Anions and Nutrients (QCLot: 1605732)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	98.6	85.0	115	----
Cyanides (QCLot: 1593459)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	100	80.0	120	----
Cyanides (QCLot: 1593460)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	92.3	80.0	120	----
Cyanides (QCLot: 1593461)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	99.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1589670)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1592888)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	111	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1593014)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	104	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1595742)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	103	80.0	120	----
Total Sulfides (QCLot: 1593704)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	94.0	80.0	120	----
Total Sulfides (QCLot: 1596194)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	83.1	80.0	120	----
Total Metals (QCLot: 1593637)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	86.9	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1592761)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	100	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	102	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	101	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	102	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	96.6	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	101	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	92.0	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	96.6	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	98.4	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	95.6	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	98.3	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	96.8	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	91.0	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	97.7	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	97.0	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	99.3	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	95.8	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	108	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	99.8	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	99.6	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	98.2	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	98.9	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	100	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	92.7	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	97.5	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	98.0	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	101	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	115	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	98.0	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	99.0	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1592761) - continued									
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	114	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	102	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	97.2	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	95.6	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 1592758)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	100	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	99.1	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	100	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	99.5	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	98.6	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	98.0	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	93.8	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	101	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	100	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	101	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	97.2	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	99.4	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	99.0	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	98.3	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	99.2	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	94.2	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	96.0	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	101	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	101	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	96.1	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	103	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	98.0	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	101	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1592758) - continued									
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	99.2	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	100	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	93.3	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	99.0	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	101	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	102	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	105	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	98.6	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	97.2	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	99.5	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	95.3	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	100.0	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	98.2	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	99.9	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	98.0	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	96.4	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	85.9	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1587312)										
EO2406687-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1587315)										
EO2406679-016	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0950 mg/L	0.1 mg/L	95.0	75.0	125	----
Anions and Nutrients (QCLot: 1588820)										
FC2402081-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1589306)										
YL2401131-002	BRP-31-2	Phosphorus, total dissolved	7723-14-0	E375-U	0.0643 mg/L	0.067 mg/L	95.9	70.0	130	----
Anions and Nutrients (QCLot: 1590272)										
EO2406645-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.26 mg/L	2.5 mg/L	90.3	70.0	130	----
Anions and Nutrients (QCLot: 1590959)										
VA24B9912-002	Anonymous	Fluoride	16984-48-8	E235.F	19.6 mg/L	20 mg/L	97.8	75.0	125	----
Anions and Nutrients (QCLot: 1590960)										
VA24B9912-002	Anonymous	Chloride	16887-00-6	E235.Cl	2040 mg/L	2000 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1590961)										
VA24B9912-002	Anonymous	Bromide	24959-67-9	E235.Br-L	10.3 mg/L	10 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1590962)										
VA24B9912-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	51.2 mg/L	50 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1590963)										
VA24B9912-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	10.1 mg/L	10 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1590964)										
VA24B9912-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1590965)										
YL2401131-002	BRP-31-2	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0288 mg/L	0.03 mg/L	95.8	70.0	130	----
Anions and Nutrients (QCLot: 1605732)										
YL2401131-001	BRP-31-1	Silicate (as SiO2)	7631-86-9	E392	9.85 mg/L	10 mg/L	98.5	75.0	125	----
Cyanides (QCLot: 1593459)										
YL2401131-002	BRP-31-2	Cyanide, weak acid dissociable	----	E336	0.127 mg/L	0.125 mg/L	102	75.0	125	----
Cyanides (QCLot: 1593460)										
YL2401131-002	BRP-31-2	Cyanide, free	----	E339	0.114 mg/L	0.125 mg/L	91.4	75.0	125	----
Cyanides (QCLot: 1593461)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 1593461) - continued										
YL2401131-002	BRP-31-2	Cyanide, strong acid dissociable (Total)	----	E333	0.255 mg/L	0.25 mg/L	102	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1589670)										
YL2401131-001	BRP-31-1	Carbon, total organic [TOC]	----	E355-L	5.00 mg/L	5 mg/L	100	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1592888)										
YL2401131-001	BRP-31-1	Carbon, dissolved organic [DOC]	----	E358-L	4.92 mg/L	5 mg/L	98.3	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1593014)										
YL2401131-009	BRP-32-4	Carbon, total organic [TOC]	----	E355-L	5.33 mg/L	5 mg/L	106	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1595742)										
EO2406852-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1593704)										
RG2401228-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.208 mg/L	0.2 mg/L	104	75.0	125	----
Total Sulfides (QCLot: 1596194)										
VA24C0235-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.202 mg/L	0.2 mg/L	101	75.0	125	----
Total Metals (QCLot: 1593637)										
YL2401131-002	BRP-31-2	Mercury, total	7439-97-6	E508-L	4.16 ng/L	5 ng/L	83.1	70.0	130	----
Total Metals (Undigested) (QCLot: 1592761)										
YL2401131-002	BRP-31-2	Aluminum, total	7429-90-5	E466	0.188 mg/L	0.2 mg/L	94.1	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0196 mg/L	0.02 mg/L	98.2	70.0	130	----
		Barium, total	7440-39-3	E466	0.0188 mg/L	0.02 mg/L	94.1	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00946 mg/L	0.01 mg/L	94.6	70.0	130	----
		Boron, total	7440-42-8	E466	0.0867 mg/L	0.1 mg/L	86.7	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00401 mg/L	0.004 mg/L	100	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00962 mg/L	0.01 mg/L	96.2	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0375 mg/L	0.04 mg/L	93.8	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		Copper, total	7440-50-8	E466	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00276 mg/L	0.002 mg/L	110	70.0	130	----
		Iron, total	7439-89-6	E466	1.83 mg/L	2 mg/L	91.6	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00275 mg/L	0.002 mg/L	110	70.0	130	----
		Lead, total	7439-92-1	E466	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0902 mg/L	0.1 mg/L	90.2	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0184 mg/L	0.02 mg/L	92.1	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0366 mg/L	0.04 mg/L	91.6	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00295 mg/L	0.002 mg/L	118	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Total Metals (Undigested) (QCLot: 1592761) - continued										
YL2401131-002	BRP-31-2	Phosphorus, total	7723-14-0	E466	9.67 mg/L	10 mg/L	96.7	70.0	130	----
		Potassium, total	7440-09-7	E466	3.75 mg/L	4 mg/L	93.7	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00274 mg/L	0.002 mg/L	110	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0182 mg/L	0.02 mg/L	91.2	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		Silicon, total	7440-21-3	E466	8.94 mg/L	10 mg/L	89.4	70.0	130	----
		Silver, total	7440-22-4	E466	0.00380 mg/L	0.004 mg/L	94.9	70.0	130	----
		Sodium, total	7440-23-5	E466	1.78 mg/L	2 mg/L	89.3	70.0	130	----
		Strontium, total	7440-24-6	E466	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E466	19.6 mg/L	20 mg/L	98.0	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00285 mg/L	0.002 mg/L	114	70.0	130	----
		Tellurium, total	13494-80-9	E466	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00372 mg/L	0.004 mg/L	92.9	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Tin, total	7440-31-5	E466	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0384 mg/L	0.04 mg/L	96.0	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00377 mg/L	0.004 mg/L	94.2	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.0910 mg/L	0.1 mg/L	91.0	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00279 mg/L	0.002 mg/L	112	70.0	130	----
		Zinc, total	7440-66-6	E466	0.387 mg/L	0.4 mg/L	96.7	70.0	130	----
		Zirconium, total	7440-67-7	E466	0.0389 mg/L	0.04 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 1592758)										
YL2401131-002	BRP-31-2	Aluminum, dissolved	7429-90-5	E465	0.198 mg/L	0.2 mg/L	98.9	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00958 mg/L	0.01 mg/L	95.8	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.0913 mg/L	0.1 mg/L	91.3	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00424 mg/L	0.004 mg/L	106	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00969 mg/L	0.01 mg/L	96.9	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00284 mg/L	0.002 mg/L	114	70.0	130	----
		Iron, dissolved	7439-89-6	E465	1.95 mg/L	2 mg/L	97.5	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00286 mg/L	0.002 mg/L	114	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.0932 mg/L	0.1 mg/L	93.2	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1592758) - continued										
YL2401131-002	BRP-31-2	Nickel, dissolved	7440-02-0	E465	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00282 mg/L	0.002 mg/L	113	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.83 mg/L	10 mg/L	98.3	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	3.88 mg/L	4 mg/L	97.1	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00277 mg/L	0.002 mg/L	111	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.19 mg/L	10 mg/L	91.9	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.93 mg/L	2 mg/L	96.4	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	19.8 mg/L	20 mg/L	99.3	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00282 mg/L	0.002 mg/L	113	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0442 mg/L	0.04 mg/L	110	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0196 mg/L	0.02 mg/L	98.3	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00378 mg/L	0.004 mg/L	94.4	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0964 mg/L	0.1 mg/L	96.4	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00282 mg/L	0.002 mg/L	113	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.408 mg/L	0.4 mg/L	102	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0390 mg/L	0.04 mg/L	97.5	70.0	130	----
Dissolved Metals (QCLot: 1594965)										
YL2401131-002	BRP-31-2	Mercury, dissolved	7439-97-6	E509-L	4.09 ng/L	5 ng/L	81.8	70.0	130	----

CERTIFICATE OF ANALYSIS

Work Order	: YL2401135	Page	: 1 of 9
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 07-Aug-2024 16:00
PO	: 10402	Date Analysis Commenced	: 30-Aug-2024
C-O-C number	:	Issue Date	: 03-Sep-2024 14:25
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 81		
No. of samples analysed	: 81		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
µg/sample	micrograms per sample

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-1A	BRP-31-1B	BRP-31-1C	BRP-31-2A	BRP-31-2B
(Matrix: Water)										
					Client sampling date / time	04-Aug-2024 11:10	04-Aug-2024 11:10	04-Aug-2024 11:10	04-Aug-2024 11:25	04-Aug-2024 11:25
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401135-001	YL2401135-002	YL2401135-003	YL2401135-004	YL2401135-005	
					Result	Result	Result	Result	Result	
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample	0.852	0.507	0.542	0.381	0.426	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-2C	BRP-31-3A	BRP-31-3B	BRP-31-3C	BRP-31-4A
(Matrix: Water)										
					Client sampling date / time	04-Aug-2024 11:25	04-Aug-2024 12:10	04-Aug-2024 12:10	04-Aug-2024 12:10	04-Aug-2024 12:30
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2401135-006	YL2401135-007	YL2401135-008	YL2401135-009	YL2401135-010	
					Result	Result	Result	Result	Result	
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample	0.430	0.373	0.456	0.472	0.432	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-4B	BRP-31-4C	BRP-31-5A	BRP-31-5B	BRP-31-5C
(Matrix: Water)										
					Client sampling date / time	04-Aug-2024 12:30	04-Aug-2024 12:30	04-Aug-2024 13:00	04-Aug-2024 13:00	04-Aug-2024 13:00
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-011	YL2401135-012	YL2401135-013	YL2401135-014	YL2401135-015
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.519	0.451	0.462	0.494	1.08

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1A	BRP-32-1B	BRP-32-1C	BRP-32-2A	BRP-32-2B
(Matrix: Water)										
					Client sampling date / time	03-Aug-2024 10:10	03-Aug-2024 10:10	03-Aug-2024 10:10	03-Aug-2024 10:50	03-Aug-2024 10:50
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-016	YL2401135-017	YL2401135-018	YL2401135-019	YL2401135-020
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.325	0.633	0.495	0.775	0.645

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-2C	BRP-32-3A	BRP-32-3B	BRP-32-3C	BRP-32-4A
(Matrix: Water)										
					Client sampling date / time	03-Aug-2024 10:50	03-Aug-2024 11:20	03-Aug-2024 11:20	03-Aug-2024 11:20	03-Aug-2024 11:55
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-021	YL2401135-022	YL2401135-023	YL2401135-024	YL2401135-025
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.487	0.474	0.616	0.539	0.463

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-4B	BRP-32-4C	BRP-32-5A	BRP-32-5B	BRP-32-5C
(Matrix: Water)										
					Client sampling date / time	03-Aug-2024 11:55	03-Aug-2024 11:55	03-Aug-2024 12:30	03-Aug-2024 12:30	03-Aug-2024 12:30
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-026	YL2401135-027	YL2401135-028	YL2401135-029	YL2401135-030
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.390	0.326	0.743	0.632	0.694

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-1A	BRP-38-1B	BRP-38-1C	BRP-38-2A	BRP-38-2B
(Matrix: Water)										
					Client sampling date / time	02-Aug-2024 13:20	02-Aug-2024 13:20	02-Aug-2024 13:20	02-Aug-2024 13:00	02-Aug-2024 13:00
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-031	YL2401135-032	YL2401135-033	YL2401135-034	YL2401135-035
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.428	0.436	0.394	0.513	0.455

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-2C	BRP-38-3A	BRP-38-3B	BRP-38-3C	BRP-38-4A
(Matrix: Water)										
					Client sampling date / time	02-Aug-2024 13:00	02-Aug-2024 13:45	02-Aug-2024 13:45	02-Aug-2024 13:45	02-Aug-2024 14:30
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-036	YL2401135-037	YL2401135-038	YL2401135-039	YL2401135-040
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.523	0.326	0.272	0.334	0.245

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-4B	BRP-38-4C	BRP-38-5A	BRP-38-5B	BRP-38-5C
(Matrix: Water)										
					Client sampling date / time	02-Aug-2024 14:30	02-Aug-2024 14:30	02-Aug-2024 15:20	02-Aug-2024 15:20	02-Aug-2024 15:20
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-041	YL2401135-042	YL2401135-043	YL2401135-044	YL2401135-045
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.230	0.374	0.274	0.263	0.260

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-1A-1.2	BRP-31-1B-1.2	BRP-31-1C-1.2	BRP-31-2A-1.2	BRP-31-2B-1.2
(Matrix: Water)										
					Client sampling date / time	04-Aug-2024 11:10	04-Aug-2024 11:10	04-Aug-2024 11:10	04-Aug-2024 11:25	04-Aug-2024 11:25
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-046	YL2401135-047	YL2401135-048	YL2401135-049	YL2401135-050
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.09	1.33	1.49	1.34	1.33

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-31-2C-1.2	BRP-31-3A-1.2	BRP-31-3B-1.2	BRP-31-3C-1.2	BRP-32-1A-1.2
(Matrix: Water)										
					Client sampling date / time	04-Aug-2024 11:25	04-Aug-2024 12:10	04-Aug-2024 12:10	04-Aug-2024 12:10	03-Aug-2024 10:10
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-051	YL2401135-052	YL2401135-053	YL2401135-054	YL2401135-055
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.36	1.45	1.36	1.30	1.95

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1B-1.2	BRP-32-1C-1.2	BRP-32-2A-1.2	BRP-32-2B-1.2	BRP-32-2C-1.2
(Matrix: Water)										
Client sampling date / time						03-Aug-2024 10:10	03-Aug-2024 10:10	03-Aug-2024 10:50	03-Aug-2024 10:50	03-Aug-2024 10:50
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-056	YL2401135-057	YL2401135-058	YL2401135-059	YL2401135-060
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.94	1.89	1.75	1.80	2.02

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-3A-1.2	BRP-32-3B-1.2	BRP-32-3C-1.2	BRP-32-4A-1.2	BRP-32-4B-1.2
(Matrix: Water)										
Client sampling date / time						03-Aug-2024 11:20	03-Aug-2024 11:20	03-Aug-2024 11:20	03-Aug-2024 11:55	03-Aug-2024 11:55
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-061	YL2401135-062	YL2401135-063	YL2401135-064	YL2401135-065
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.83	1.92	2.06	1.91	1.88

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-4C-1.2	BRP-38-1A-1.2	BRP-38-1B-1.2	BRP-38-1C-1.2	BRP-38-2A-1.2
(Matrix: Water)										
Client sampling date / time						03-Aug-2024 11:55	02-Aug-2024 13:20	02-Aug-2024 13:20	02-Aug-2024 13:20	02-Aug-2024 13:00
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-066	YL2401135-067	YL2401135-068	YL2401135-069	YL2401135-070
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.87	1.31	1.36	1.35	1.35

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-2B-1.2	BRP-38-2C-1.2	BRP-38-3A-1.2	BRP-38-3B-1.2	BRP-38-3C-1.2
(Matrix: Water)										
					Client sampling date / time	02-Aug-2024 13:00	02-Aug-2024 13:00	02-Aug-2024 13:45	02-Aug-2024 13:45	02-Aug-2024 13:45
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-071	YL2401135-072	YL2401135-073	YL2401135-074	YL2401135-075
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.46	1.39	1.37	1.42	1.47

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-4A-1.2	BRP-38-4B-1.2	BRP-38-4C-1.2	BRP-38-5A-1.2	BRP-38-5B-1.2
(Matrix: Water)										
					Client sampling date / time	02-Aug-2024 14:30	02-Aug-2024 14:30	02-Aug-2024 14:30	02-Aug-2024 15:20	02-Aug-2024 15:20
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-076	YL2401135-077	YL2401135-078	YL2401135-079	YL2401135-080
						Result	Result	Result	Result	Result
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.35	1.40	1.28	1.33	1.38

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-38-5C-1.2	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	02-Aug-2024 15:20	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2401135-081	-----	-----	-----	-----
						Result	----	----	----	----
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.24	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

Page : 9 of 9
Work Order : YL2401135
Client : B2Gold Back River Corp.
Project : CA0035158.8381



QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2401135	Page	: 1 of 14
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 07-Aug-2024 16:00
PO	: 10402	Issue Date	: 03-Sep-2024 14:25
C-O-C number	:		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 81		
No. of samples analysed	: 81		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-1A	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-1A-1.2	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-1B	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-1B-1.2	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-1C	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-1C-1.2	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-2A	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-2A-1.2	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-2B	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-2B-1.2	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-2C	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-2C-1.2	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-3A	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-3A-1.2	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-3B	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-3B-1.2	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-3C	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-3C-1.2	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-4A	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-4B	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-4C	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-5A	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-5B	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-5C	E870A	04-Aug-2024	30-Aug-2024	28 days	26 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-1A	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-1A-1.2	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-1B	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
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Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-2A-1.2	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
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Opaque HDPE tube BRP-32-2B-1.2	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-2C	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-2C-1.2	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-3A	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-3A-1.2	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
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Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-4A	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓

Page : 8 of 14
 Work Order : YL2401135
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-4A-1.2	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-4B	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
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Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-4C-1.2	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
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Opaque HDPE tube BRP-32-5A	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
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Opaque HDPE tube BRP-32-5C	E870A	03-Aug-2024	30-Aug-2024	28 days	27 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-1A	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-1A-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-1B	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-1B-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
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Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-2B	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-2B-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-2C	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-2C-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-3A	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
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Opaque HDPE tube BRP-38-3B	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-3B-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-3C	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-3C-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-4A	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓

Page : 11 of 14
 Work Order : YL2401135
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-4A-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-4B	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-4B-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-4C	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-4C-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-5A	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-5A-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-5B	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-5B-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓

Page : 12 of 14
 Work Order : YL2401135
 Client : B2Gold Back River Corp.
 Project : CA0035158.8381



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-5C	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-5C-1.2	E870A	02-Aug-2024	30-Aug-2024	28 days	28 days	✓	30-Aug-2024	28 days	0 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS)							
Chlorophyll-a by Fluorometry (Field Filtered µg)	E870A	1625979	5	81	6.1	5.0	✔
Method Blanks (MB)							
Chlorophyll-a by Fluorometry (Field Filtered µg)	E870A	1625979	5	81	6.1	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chlorophyll-a by Fluorometry (Field Filtered µg)	E870A ALS Environmental - Vancouver	Water	EPA 445.0 (mod)	Chlorophyll-a is determined by solvent extraction followed with analysis by fluorometry using the non-acidification procedure. Sampling volume not provided by client.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chlorophyll-a Extraction (Field Filtered)	EP870A ALS Environmental - Vancouver	Water	EPA 445.0 (mod)	Chlorophyll-a solvent extraction.

QUALITY CONTROL REPORT

Work Order	: YL2401135	Page	: 1 of 3
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: CA0035158.8381	Date Samples Received	: 07-Aug-2024 16:00
PO	: 10402	Date Analysis Commenced	: 30-Aug-2024
C-O-C number	:	Issue Date	: 03-Sep-2024 14:25
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 81		
No. of samples analysed	: 81		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

- Key :
- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
 - CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
 - DQO = Data Quality Objective.
 - LOR = Limit of Reporting (detection limit).
 - RPD = Relative Percent Difference
 - # = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Plant Pigments (QCLot: 1625979)						
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	<0.0020	----
Plant Pigments (QCLot: 1625980)						
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	<0.0020	----
Plant Pigments (QCLot: 1626450)						
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	<0.0020	----
Plant Pigments (QCLot: 1626451)						
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	<0.0020	----
Plant Pigments (QCLot: 1626452)						
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	<0.0020	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Plant Pigments (QCLot: 1625979)									
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	1 µg/sample	95.4	80.0	120	----
Plant Pigments (QCLot: 1625980)									
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	1 µg/sample	95.4	80.0	120	----
Plant Pigments (QCLot: 1626450)									
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	1 µg/sample	92.9	80.0	120	----
Plant Pigments (QCLot: 1626451)									
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	1 µg/sample	93.2	80.0	120	----
Plant Pigments (QCLot: 1626452)									
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	1 µg/sample	93.6	80.0	120	----

p. 1/4

CHAIN OF CUSTODY
ALS Laboratory

RELINQUISHED BY:
Tamara Denauski
DATE/TIME: **Aug 2024 6:30**

RECEIVED BY:
Aug 2024 16:00

CLIENT: **ES&S National**
PROJECT: **CA003182.B3B1**
SITE: **B25048**
PURCHASE ORDER NO.: **Quote number: 1123-540100-001 Date: 04 Aug 2024**
PROJECT MANAGER: **Shirley Keady**

TURNAROUND REQUIREMENTS:
Standard (1st) may be longer for more than a 2. USR
☐ Non Standard at request FAX (last day only)

DATE/TIME: **Aug 2024 16:00**

DATE/TIME: **-2.5**

ANALYST: **SAMPLES MOBILE**
CONTACT PH: **760.400.0000**

EMAIL INVOICE TO: **ALS@ALS.COM**

EMAIL INVOICE TO: **ALS@ALS.COM**

SPECIAL HANDLING/TOWARD ON DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS	MATRIX (OPTION)	CONTAINER INFORMATION	ANALYSIS REQUIRED	Additional Information
	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE/TIME (dd-mm-yyyy)	MATRIX	TOTAL CONTAINERS	
	BMP-31-1A	4 August 2024 / 11:10	water	Conventional parameters and major ions (specifically conductivity, pH, TSS, salinity, TDS measured, total hardness, total alkalinity, bicarbonate, carbonate, chloride, fluoride, hydroxide, potassium, sulfate, volatile reactive silica)	
	BMP-31-1B	4 August 2024 / 11:10	water	Total and Dissolved Metals (ultra low level)	
	BMP-31-1C	4 August 2024 / 11:10	water	Total and Dissolved Mercury (ultra low level)	
	BMP-31-2A	4 August 2024 / 11:20	water	Total and Dissolved nutrients (TOC/DOC, nitrate, nitrite, total ammonia, TNH, orthophosphate, TDP, TP)	
	BMP-31-2B	4 August 2024 / 11:20	water	Total cyanide, total cyanide, free cyanide	
	BMP-31-2C	4 August 2024 / 11:20	water	Sulfide	
	BMP-31-3A	4 August 2024 / 12:10	water	Chlorophyll a	
	BMP-31-3B	4 August 2024 / 12:10	water	Protein	
	BMP-31-3C	4 August 2024 / 12:10	water	Field Filtered (F) / Preserved (P)	
	BMP-31-4A	4 August 2024 / 12:30	water		
	BMP-31-4B	4 August 2024 / 12:30	water		
	BMP-31-4C	4 August 2024 / 12:30	water		
	BMP-31-5A	4 August 2024 / 13:00	water		
	BMP-31-5B	4 August 2024 / 13:00	water		
	BMP-31-5C	4 August 2024 / 13:00	water		
	BMP-32-1A	3 August 2024 / 10:10	water		
	BMP-32-1B	3 August 2024 / 10:10	water		
	BMP-32-1C	3 August 2024 / 10:10	water		
	BMP-32-2A	3 August 2024 / 10:30	water		
	BMP-32-2B	3 August 2024 / 10:30	water		
	BMP-32-2C	3 August 2024 / 10:30	water		
	TOTAL				



Environmental Division
Yellowknife
Work Order Reference
YL2401135

Telephone : +1 867 873 5533

P.3/4

CHAIN OF CUSTODY
ALSLABATORY

CLIENT: ECOLOGICAL	TURNAROUND REQUIREMENTS: ☒ Standard (7-10 days) ☐ Expedited (3-5 days) ☐ Non Standard (request TAT) (Email for quote)	RECEIVED BY: DATE/TIME:	RECEIVED BY: DATE/TIME:
PROJECT: CANADIAN BIRCH	SITE: ECOLOGICAL	DATE/TIME: FOR LABORATORY USE ONLY (CHECK)	DATE/TIME:
PURCHASE ORDER NO.: 00000000000000000000	DATE: 06 Aug 2024	Pre-test (check for leaks) (insert upon receipt)	Yes No NA
PROJECT MANAGER: Mark Kade	CONTACT: PH: 503.255.1234	Post-test (check for leaks) (insert upon receipt)	Yes No NA
SAMPLE: 00000000000000000000	SAMPLES WORK E: 00000000000000000000	Other (specify):	
EMAIL REPORT TO: getdata.ecolab@ecolab.com	EMAIL INVOICE TO: getdata.ecolab@ecolab.com		

ALSO USE ONLY	SAMPLE DETAILS	MATRIX (cell(s))	DATE / TIME (dd-mm-yyyy)	MATRIX	CONTAINER INFORMATION	ANALYSIS REQUIRED							Additional Information		
	SAMPLE IDENTIFICATION (This description will appear on the report)				TOTAL CONTAINERS	Conventional parameters and major ions (specific conductivity, pH, TSS, turbidity, TDS measured, total hardness, total alkalinity, bicarbonate, carbonate, chloride, fluoride, hydrosulfide, potassium, sulphate, volatile reactive silica)	Total and Dissolved Metals (ultra low level)	Total and Dissolved Mercury (ultra low level)	Total and dissolved nutrients (DOC, DOC, nitrate, nitrite, total ammonia, TRN, orthophosphate, TSP, TP)	Total cyanide, WAD cyanide, Free cyanide	Sulfide	Chlorophyll a	Radium	Field Filtered (F) / Preserved (P)	
Bottle 1	BRP-38-5A	2 August 2024 / 18:30	water									X			0.3
	BRP-38-5B	2 August 2024 / 18:30	water									X			0.3
	BRP-38-5C	2 August 2024 / 18:30	water									X			0.3
	BRP-31-1A-1-2	4 August 2024 / 11:10	water									X			1
	BRP-31-1B-1-2	4 August 2024 / 11:10	water									X			1
	BRP-31-1C-1-2	4 August 2024 / 11:10	water									X			1
	BRP-31-2B-1-2	4 August 2024 / 11:25	water									X			1
	BRP-31-2B-1-2	4 August 2024 / 11:25	water									X			1
	BRP-31-2C-1-2	4 August 2024 / 11:25	water									X			1
	BRP-31-2C-1-2	4 August 2024 / 12:10	water									X			1
	BRP-31-2C-1-2	4 August 2024 / 12:10	water									X			1
	BRP-32-1A-1-2	3 August 2024 / 10:10	water									X			1
	BRP-32-1B-1-2	3 August 2024 / 10:10	water									X			1
	BRP-32-1C-1-2	3 August 2024 / 10:50	water									X			1
	BRP-32-2B-1-2	3 August 2024 / 11:00	water									X			1
	BRP-32-2C-1-2	3 August 2024 / 11:00	water									X			1
BRP-32-3A-1-2	3 August 2024 / 11:20	water									X			1	
BRP-32-3B-1-2	3 August 2024 / 11:20	water									X			1	
BRP-32-3C-1-2	3 August 2024 / 11:20	water									X			1	
TOTAL															



CHAIN OF CUSTODY
ALS Laboratory

RELINQUISHED BY:

RECEIVED BY:

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DATE/TIME:

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TUNING/ROUND REQUIREMENTS:

(Standard TAT may be longer for some tests
e.g. Ultra Trace Elements)

☒ Elements that pass due date
☐ Not Element or Element TAT (later due date)

ALS QUOTE IN VIALS/BAIRING/MT

SAMPLES:

SAMPLES MOBILE:

EMAIL REPORTS TO: results@alslab.com Sample Report Email: sample@alslab.com For a more detailed report: info@alslab.com

EMAIL INVOICE TO: invoices@alslab.com

SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS	Matrix	CONTAINER INFORMATION	ANALYSIS REQUIRED						Additional Information

SAMPLE IDENTIFICATION
(This description will appear on the report)

MATRIX

Connectional parameters and
major ions (specifically conductivity,
pH, TDS, turbidity, TDS measured,
total hardness, total alkalinity,
bicarbonate, carbonate, chloride,
fluoride, nitrate, potassium,
sulfate, soluble reactive silicon)

Total and Dissolved Metals (see low level)

Total and Dissolved Mercury (see low level)

Total and dissolved nutrients
(DOC/DIC, nitrate, nitrite, total
ammonia, TAN, orthophosphate,
TDP, TP)

Total cyanide, WAD cyanide, Free
cyanide

Sulfide

Chlorophyll a

Radiation

Field Filtered (F) /
Preserved (P)

Volume (mL)

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(dd-mm-yyyy)

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CERTIFICATE OF ANALYSIS

Work Order	: YL2401540		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Edmonton
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver British Columbia Canada V7X 1M7	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 19-Sep-2024 15:55
PO	: 17852	Date Analysis Commenced	: 23-Sep-2024
C-O-C number	: ----	Issue Date	: 10-Oct-2024 15:46
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Jon Fisher	Production Manager, Environmental	Inorganics, Waterloo, Ontario
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Michael Webb	Analyst	Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan
Shruti Mudliar	Lab Analyst	Inorganics, Edmonton, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	Description
mg/L	milligrams per litre
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
ng/L	nanograms per litre
-	no units
Bq/L	becquerels per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Sample BRP-32-4: we received 2 container fo total ultra mercury but on COC listead total and dissolved ultra mercury one of them might be dissolved mercury due to pattern of labbled on bottle we randomly labbled one is total and second is dissolved.



Qualifiers

Qualifier	Description
RRV	Reported result verified by repeat analysis.



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID		BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time					18-Sep-2024 09:45		18-Sep-2024 10:45	18-Sep-2024 11:15	18-Sep-2024 11:50	18-Sep-2024 11:55	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-001	YL2401540-002	YL2401540-003	YL2401540-004	YL2401540-005		
					Result	Result	Result	Result	Result		
Physical Tests											
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	6.6	5.8	5.8	5.7	5.5		
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0		
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0		
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0		
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	6.6	5.8	5.8	5.7	5.5		
Conductivity	----	E100/VA	2.0	µS/cm	72.0	70.0	70.5	70.7	70.5		
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	26.6	26.4	29.2	24.6	25.5		
pH	----	E108/VA	0.10	pH units	7.04	6.97	6.97	6.97	6.95		
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	45	42	45	42	44		
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	43.4	42.2	43.2	40.8	41.6		
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0		
Turbidity	----	E121/VA	0.10	NTU	0.73	0.70	0.65	0.78	0.67		
Anions and Nutrients											
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.280	0.0883	0.0799	0.0902	0.0912		
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050		
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	6.59	6.54	6.50	6.59	6.52		
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.024	0.024	0.024	0.024	0.024		
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.318	0.189	0.297	0.354	0.354		
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.428	0.421	0.417	0.433	0.420		
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0038	0.0036	0.0036	0.0037	0.0036		
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID		BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time					18-Sep-2024 09:45		18-Sep-2024 10:45	18-Sep-2024 11:15	18-Sep-2024 11:50	18-Sep-2024 11:55	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-001	YL2401540-002	YL2401540-003	YL2401540-004	YL2401540-005		
					Result	Result	Result	Result	Result		
Anions and Nutrients											
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0040	0.0029	0.0038	0.0047	0.0057		
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0039	<0.0010	<0.0010	0.0014	0.0015		
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	0.65	0.66	0.67	0.67	0.65		
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	13.2	13.2	13.2	13.2	13.2		
Cyanides											
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
Cyanide, weak acid dissociable	----	E336/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
Organic / Inorganic Carbon											
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	6.22	5.91 ^{RRV}	5.85	5.18	5.87		
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	5.32	5.22 ^{RRV}	5.26	5.17	5.23		
Total Sulfides											
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	0.0015		
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016		
Total Metals											
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.66	0.61	0.65	0.64	0.78		
Total Metals (Undigested)											
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0163	0.0154	0.0156	0.0142	0.0148		
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000210	0.0000144	0.0000140	0.0000145	0.0000138		
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000280	0.000282	0.000263	0.000272	0.000282		
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00940	0.00898	0.00922	0.00917	0.00922		



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time					18-Sep-2024 09:45	18-Sep-2024 10:45	18-Sep-2024 11:15	18-Sep-2024 11:50	18-Sep-2024 11:55	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-001	YL2401540-002	YL2401540-003	YL2401540-004	YL2401540-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000029	0.0000025	0.0000027	0.0000024	0.0000021	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000062	0.0000068	0.0000068	0.0000076	0.0000045	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	5.84	5.83	5.58	5.74	5.67	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000117	0.0000112	0.0000112	0.0000110	0.0000112	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000084	0.000087	0.000079	0.000085	0.000081	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000354	0.000354	0.000342	0.000334	0.000353	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00154	0.00158	0.00154	0.00152	0.00150	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0459	0.0450	0.0449	0.0395	0.0453	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000133	0.000137	0.000137	0.000122	0.000133	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000229	0.0000112	0.0000114	0.0000090	0.0000090	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00106	0.00100	0.00102	0.00102	0.00102	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	2.99	2.96	2.93	2.91	2.93	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00606	0.00594	0.00585	0.00572	0.00601	
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000020	0.000023	0.000022	0.000022	0.000023	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00443	0.00441	0.00429	0.00433	0.00439	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.668	0.668	0.648	0.630	0.656	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time					18-Sep-2024 09:45	18-Sep-2024 10:45	18-Sep-2024 11:15	18-Sep-2024 11:50	18-Sep-2024 11:55	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-001	YL2401540-002	YL2401540-003	YL2401540-004	YL2401540-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00161	0.00160	0.00157	0.00155	0.00157	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000038	0.000039	0.000036	0.000044	0.000036	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.284	0.274	0.269	0.284	0.276	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.02	1.01	0.968	0.975	0.986	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0322	0.0326	0.0313	0.0311	0.0316	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	4.38	4.36	4.38	4.47	4.36	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000025	0.0000020	0.0000023	0.0000018	0.0000024	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000096	0.0000089	0.0000125	0.0000101	0.0000122	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000209	0.000232	0.000200	0.000167	0.000221	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000084	0.0000063	0.0000079	0.0000061	0.0000070	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000060	0.000060	0.000053	0.000052	0.000070	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000057	0.000057	0.000056	0.000055	0.000058	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00087	0.00090	0.00139	0.00091	0.00084	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000038	0.000036	0.000043	0.000037	0.000035	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time					18-Sep-2024 09:45	18-Sep-2024 10:45	18-Sep-2024 11:15	18-Sep-2024 11:50	18-Sep-2024 11:55	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-001	YL2401540-002	YL2401540-003	YL2401540-004	YL2401540-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00896	0.00882	0.00967	0.00810	0.00822	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000158	0.0000163	0.0000140	0.0000133	0.0000134	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000263	0.000264	0.000264	0.000255	0.000253	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00968	0.00917	0.00852	0.00907	0.00905	
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000021	<0.0000020	<0.0000020	0.0000022	0.0000024	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000070	0.0000088	0.0000045	0.0000056	0.0000066	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	5.76	5.70	6.32	5.22	5.49	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000110	0.0000104	0.0000100	0.0000101	0.0000104	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000070	0.000070	0.000072	0.000064	0.000068	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000306	0.000295	0.000304	0.000284	0.000292	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00145	0.00149	0.00169	0.00138	0.00140	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0162	0.0159	0.0173	0.0142	0.0151	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000097	0.000098	0.000098	0.000096	0.000098	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000090	0.0000098	0.0000088	<0.0000050	<0.0000050	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00106	0.00104	0.00102	0.00103	0.00105	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	2.98	2.95	3.25	2.80	2.86	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00488	0.00483	0.00540	0.00450	0.00465	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time					18-Sep-2024 09:45	18-Sep-2024 10:45	18-Sep-2024 11:15	18-Sep-2024 11:50	18-Sep-2024 11:55	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-001	YL2401540-002	YL2401540-003	YL2401540-004	YL2401540-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.83	0.74	1.34	0.95	<0.50	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000027	0.000026	0.000024	0.000020	0.000021	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00427	0.00427	0.00450	0.00413	0.00425	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.645	0.653	0.712	0.620	0.618	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00154	0.00154	0.00172	0.00146	0.00148	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000036	0.000035	0.000035	0.000035	0.000030	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.270	0.270	0.273	0.271	0.266	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.03	1.02	1.09	0.948	0.983	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0329	0.0313	0.0347	0.0287	0.0306	
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	4.44	4.43	4.46	4.34	4.35	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000020	0.0000021	0.0000017	0.0000020	0.0000018	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000121	0.0000116	0.0000095	0.0000090	0.0000097	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	0.000051	<0.000050	0.000056	<0.000050	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time					18-Sep-2024 09:45	18-Sep-2024 10:45	18-Sep-2024 11:15	18-Sep-2024 11:50	18-Sep-2024 11:55	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-001	YL2401540-002	YL2401540-003	YL2401540-004	YL2401540-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000067	0.0000066	0.0000055	0.0000062	0.0000064	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000036	0.000035	0.000036	0.000032	0.000034	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000045	0.000046	0.000046	0.000046	0.000044	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00097	0.00117	0.00110	0.00084	0.00089	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000034	0.000035	0.000034	0.000034	0.000035	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	
Radiological Parameters										
Radium-226	13982-63-3	Ra-226/2l	0.005	Bq/L	<0.005	<0.005	<0.005	0.007	<0.005	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	FD-1	----	----	----	----
Client sampling date / time						18-Sep-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-006	----	----	----	----	----
					Result	----	----	----	----	----
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	5.6	----	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	5.6	----	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	70.6	----	----	----	----	----



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

					Client sample ID	FD-1	----	----	----	----
					Client sampling date / time	18-Sep-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-006	----	----	----	----	----
						Result	----	----	----	----
Physical Tests										
Hardness (as CaCO ₃), dissolved	----	EC100/VA	0.50	mg/L	26.9	----	----	----	----	----
pH	----	E108/VA	0.10	pH units	6.97	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	41	----	----	----	----	----
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	41.4	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.69	----	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0877	----	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	----	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	6.59	----	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.024	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.342	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.427	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0037	----	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0039	----	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0010	----	----	----	----	----
Silicate (as SiO ₂)	7631-86-9	E392/VA	0.50	mg/L	0.66	----	----	----	----	----
Sulfate (as SO ₄)	14808-79-8	E235.SO4/VA	0.30	mg/L	13.2	----	----	----	----	----
Cyanides										
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	----	----	----	----	----



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Client sample ID					FD-1	----	----	----	----
Client sampling date / time					18-Sep-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-006	----	----	----	----
					Result	----	----	----	----
Cyanides									
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	<0.0050	----	----	----	----
Cyanide, weak acid dissociable	----	E336/WT	0.0050	mg/L	<0.0050	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	4.90	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	5.42	----	----	----	----
Total Sulfides									
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----
Total Metals									
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.67	----	----	----	----
Total Metals (Undigested)									
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0157	----	----	----	----
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000169	----	----	----	----
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000278	----	----	----	----
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00920	----	----	----	----
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	----	----	----	----
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000074	----	----	----	----
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	5.88	----	----	----	----
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000106	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					FD-1	----	----	----	----
Client sampling date / time					18-Sep-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-006	----	----	----	----
					Result	----	----	----	----
Total Metals (Undigested)									
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000089	----	----	----	----
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000356	----	----	----	----
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00158	----	----	----	----
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0481	----	----	----	----
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000130	----	----	----	----
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000154	----	----	----	----
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00101	----	----	----	----
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	2.99	----	----	----	----
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00619	----	----	----	----
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000025	----	----	----	----
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00451	----	----	----	----
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	----	----	----	----
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.680	----	----	----	----
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00165	----	----	----	----
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000040	----	----	----	----
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.270	----	----	----	----
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.00	----	----	----	----



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

					Client sample ID	FD-1	----	----	----	----
					Client sampling date / time	18-Sep-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-006	----	----	----	----	----
						Result	----	----	----	----
Total Metals (Undigested)										
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0330	----	----	----	----	----
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	4.38	----	----	----	----	----
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000020	----	----	----	----	----
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000102	----	----	----	----	----
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000242	----	----	----	----	----
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000077	----	----	----	----	----
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000062	----	----	----	----	----
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000058	----	----	----	----	----
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00104	----	----	----	----	----
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000079	----	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00890	----	----	----	----	----
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000153	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000254	----	----	----	----	----
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00875	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					FD-1	----	----	----	----
Client sampling date / time					18-Sep-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-006	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000070	----	----	----	----
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	5.81	----	----	----	----
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000103	----	----	----	----
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000071	----	----	----	----
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000291	----	----	----	----
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00154	----	----	----	----
Dissolved metals filtration location	----	EP465/VA	-	-	Field	----	----	----	----
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0160	----	----	----	----
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000091	----	----	----	----
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000065	----	----	----	----
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00102	----	----	----	----
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	3.01	----	----	----	----
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00497	----	----	----	----
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	----	----	----	----
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000022	----	----	----	----
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00423	----	----	----	----
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	----	----	----	----
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.666	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					FD-1	----	----	----	----
Client sampling date / time					18-Sep-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-006	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00160	----	----	----	----
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000038	----	----	----	----
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.271	----	----	----	----
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.04	----	----	----	----
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0324	----	----	----	----
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	4.25	----	----	----	----
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000020	----	----	----	----
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000124	----	----	----	----
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000060	----	----	----	----
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000038	----	----	----	----
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000046	----	----	----	----
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00099	----	----	----	----
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000039	----	----	----	----
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	----	----	----	----



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	FD-1	----	----	----	----
					Client sampling date / time	18-Sep-2024 09:45	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401540-006	----	----	----	----	
					Result	----	----	----	----	
Radiological Parameters										
Radium-226	13982-63-3	Ra-226/21	0.005	Bq/L	0.006	----	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2401540	Page	: 1 of 30
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 19-Sep-2024 15:55
PO	: 17852	Issue Date	: 10-Oct-2024 15:46
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-1	E298	18-Sep-2024	24-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-2	E298	18-Sep-2024	24-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-3	E298	18-Sep-2024	24-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-4	E298	18-Sep-2024	24-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-5	E298	18-Sep-2024	24-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FD-1	E298	18-Sep-2024	24-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-1	E235.Br-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-2	E235.Br-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-3	E235.Br-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-4	E235.Br-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-32-5	E235.Br-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FD-1	E235.Br-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-1	E235.Cl	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-2	E235.Cl	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-3	E235.Cl	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-4	E235.Cl	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-5	E235.Cl	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FD-1	E235.Cl	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-1	E378-U	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-2	E378-U	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-3	E378-U	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-4	E378-U	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-32-5	E378-U	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FD-1	E378-U	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-1	E235.F	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-2	E235.F	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-3	E235.F	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-4	E235.F	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-5	E235.F	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FD-1	E235.F	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO3-L	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO3-L	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO3-L	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO3-L	18-Sep-2024	23-Sep-2024	3 days	5 days	✗ EHT	23-Sep-2024	3 days	5 days	✗ EHT

Page : 7 of 30
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO3-L	18-Sep-2024	23-Sep-2024	3 days	5 days	* EHT	23-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FD-1	E235.NO3-L	18-Sep-2024	23-Sep-2024	3 days	5 days	* EHT	23-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO2-L	18-Sep-2024	23-Sep-2024	3 days	5 days	* EHT	23-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO2-L	18-Sep-2024	23-Sep-2024	3 days	5 days	* EHT	23-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO2-L	18-Sep-2024	23-Sep-2024	3 days	5 days	* EHT	23-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO2-L	18-Sep-2024	23-Sep-2024	3 days	5 days	* EHT	23-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO2-L	18-Sep-2024	23-Sep-2024	3 days	5 days	* EHT	23-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FD-1	E235.NO2-L	18-Sep-2024	23-Sep-2024	3 days	5 days	* EHT	23-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-1	E392	18-Sep-2024	----	----	----		25-Sep-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-2	E392	18-Sep-2024	----	----	----		25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-3	E392	18-Sep-2024	----	----	----		25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-4	E392	18-Sep-2024	----	----	----		25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-5	E392	18-Sep-2024	----	----	----		25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FD-1	E392	18-Sep-2024	----	----	----		25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-1	E235.SO4	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-2	E235.SO4	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-3	E235.SO4	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-4	E235.SO4	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-5	E235.SO4	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FD-1	E235.SO4	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E375-U	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E375-U	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-3	E375-U	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-4	E375-U	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-5	E375-U	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FD-1	E375-U	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E318	18-Sep-2024	26-Sep-2024	28 days	8 days	✓	26-Sep-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E318	18-Sep-2024	26-Sep-2024	28 days	8 days	✓	26-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E318	18-Sep-2024	26-Sep-2024	28 days	8 days	✓	26-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E318	18-Sep-2024	26-Sep-2024	28 days	8 days	✓	26-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E318	18-Sep-2024	26-Sep-2024	28 days	8 days	✓	26-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FD-1	E318	18-Sep-2024	26-Sep-2024	28 days	8 days	✓	26-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-1	E372-S	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-2	E372-S	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-3	E372-S	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-4	E372-S	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-5	E372-S	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FD-1	E372-S	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E339	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E339	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E339	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E339	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E339	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-1	E339	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E333	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E333	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E333	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E333	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E333	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-1	E333	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E336	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E336	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E336	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E336	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E336	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-1	E336	18-Sep-2024	24-Sep-2024	14 days	6 days	✓	24-Sep-2024	14 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-1	E509-L	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-2	E509-L	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-3	E509-L	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-4	E509-L	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-32-5	E509-L	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FD-1	E509-L	18-Sep-2024	25-Sep-2024	28 days	7 days	✓	25-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-2	E465	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	25-Sep-2024	180 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-3	E465	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	25-Sep-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-4	E465	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	25-Sep-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-5	E465	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	25-Sep-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-1	E465	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	25-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FD-1	E465	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	25-Sep-2024	180 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E358-L	18-Sep-2024	27-Sep-2024	28 days	9 days	✓	27-Sep-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E358-L	18-Sep-2024	27-Sep-2024	28 days	9 days	✓	27-Sep-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-3	E358-L	18-Sep-2024	27-Sep-2024	28 days	9 days	✓	27-Sep-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-4	E358-L	18-Sep-2024	27-Sep-2024	28 days	9 days	✓	27-Sep-2024	28 days	9 days	✓

Page : 15 of 30
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-5	E358-L	18-Sep-2024	27-Sep-2024	28 days	9 days	✓	27-Sep-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FD-1	E358-L	18-Sep-2024	27-Sep-2024	28 days	9 days	✓	27-Sep-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E355-L	18-Sep-2024	28-Sep-2024	28 days	10 days	✓	28-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E355-L	18-Sep-2024	28-Sep-2024	28 days	10 days	✓	28-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E355-L	18-Sep-2024	28-Sep-2024	28 days	10 days	✓	28-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E355-L	18-Sep-2024	28-Sep-2024	28 days	10 days	✓	28-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E355-L	18-Sep-2024	28-Sep-2024	28 days	10 days	✓	28-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FD-1	E355-L	18-Sep-2024	28-Sep-2024	28 days	10 days	✓	28-Sep-2024	28 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-1	E290	18-Sep-2024	23-Sep-2024	14 days	5 days	✓	23-Sep-2024	14 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-2	E290	18-Sep-2024	23-Sep-2024	14 days	5 days	✓	23-Sep-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-3	E290	18-Sep-2024	23-Sep-2024	14 days	5 days	✓	23-Sep-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-4	E290	18-Sep-2024	23-Sep-2024	14 days	5 days	✓	23-Sep-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-5	E290	18-Sep-2024	23-Sep-2024	14 days	5 days	✓	23-Sep-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FD-1	E290	18-Sep-2024	23-Sep-2024	14 days	5 days	✓	23-Sep-2024	14 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-1	E100	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-2	E100	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-3	E100	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-4	E100	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-32-5	E100	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE FD-1	E100	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE BRP-32-5	E108	18-Sep-2024	23-Sep-2024	0.25 hrs	123 hrs	✗ EHTR-FM	23-Sep-2024	0.25 hrs	123 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-3	E108	18-Sep-2024	23-Sep-2024	0.25 hrs	123 hrs	✗ EHTR-FM	23-Sep-2024	0.25 hrs	124 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-4	E108	18-Sep-2024	23-Sep-2024	0.25 hrs	123 hrs	✗ EHTR-FM	23-Sep-2024	0.25 hrs	124 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-2	E108	18-Sep-2024	23-Sep-2024	0.25 hrs	124 hrs	✗ EHTR-FM	23-Sep-2024	0.25 hrs	125 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-1	E108	18-Sep-2024	23-Sep-2024	0.25 hrs	125 hrs	✗ EHTR-FM	23-Sep-2024	0.25 hrs	126 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE FD-1	E108	18-Sep-2024	23-Sep-2024	0.25 hrs	125 hrs	✗ EHTR-FM	23-Sep-2024	0.25 hrs	126 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-1	E162	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-2	E162	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-3	E162	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-4	E162	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-5	E162	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FD-1	E162	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-1	E160	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-2	E160	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-3	E160	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-4	E160	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-5	E160	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FD-1	E160	18-Sep-2024	----	----	----		25-Sep-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-1	E121	18-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-2	E121	18-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-3	E121	18-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-4	E121	18-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-5	E121	18-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FD-1	E121	18-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-1	Ra-226	18-Sep-2024	----	----	----		09-Oct-2024	----	21 days	

Page : 20 of 30
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-2	Ra-226	18-Sep-2024	----	----	----		09-Oct-2024	----	21 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-3	Ra-226	18-Sep-2024	----	----	----		09-Oct-2024	----	21 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-4	Ra-226	18-Sep-2024	----	----	----		09-Oct-2024	----	21 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-32-5	Ra-226	18-Sep-2024	----	----	----		09-Oct-2024	----	21 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) FD-1	Ra-226	18-Sep-2024	----	----	----		09-Oct-2024	----	21 days	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-1	E466	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-2	E466	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-3	E466	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-4	E466	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓

Page : 21 of 30
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-5	E466	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FD-1	E466	18-Sep-2024	25-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-1	E508-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-2	E508-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-3	E508-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-4	E508-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-32-5	E508-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FD-1	E508-L	18-Sep-2024	23-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-1	E395	18-Sep-2024	----	----	----		23-Sep-2024	7 days	5 days	✓

Page : 22 of 30
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-2	E395	18-Sep-2024	----	----	----		23-Sep-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-3	E395	18-Sep-2024	----	----	----		23-Sep-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-4	E395	18-Sep-2024	----	----	----		23-Sep-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-5	E395	18-Sep-2024	----	----	----		23-Sep-2024	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FD-1	E395	18-Sep-2024	----	----	----		23-Sep-2024	7 days	5 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1667712	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1669715	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1667718	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1667717	1	10	10.0	5.0	✓
Conductivity in Water	E100	1667711	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1672533	1	12	8.3	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1670464	1	7	14.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1678134	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1667713	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	1667716	1	10	10.0	5.0	✓
Free Cyanide	E339	1669065	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1667719	1	10	10.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1667714	1	17	5.8	5.0	✓
pH by Meter	E108	1667710	1	17	5.8	5.0	✓
Reactive Silica by Colourimetry	E392	1673012	2	34	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1667720	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	1672671	1	16	6.2	5.0	✓
Total Cyanide	E333	1669063	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1669624	1	13	7.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1671744	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1667846	2	34	5.8	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1670465	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1679679	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1669616	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1668194	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1672651	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1674067	1	17	5.8	5.0	✓
WAD Cyanide	E336	1669064	1	9	11.1	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1667712	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1669715	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1667718	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1667717	1	10	10.0	5.0	✓
Conductivity in Water	E100	1667711	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1672533	1	12	8.3	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1670464	1	7	14.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1678134	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1667713	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1667716	1	10	10.0	5.0	✔
Free Cyanide	E339	1669065	1	8	12.5	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1667719	1	10	10.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1667714	1	17	5.8	5.0	✔
pH by Meter	E108	1667710	1	17	5.8	5.0	✔
Reactive Silica by Colourimetry	E392	1673012	2	34	5.8	5.0	✔
Sulfate in Water by IC	E235.SO4	1667720	1	10	10.0	5.0	✔
TDS by Gravimetry	E162	1672671	1	16	6.2	5.0	✔
Total Cyanide	E333	1669063	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1669624	1	13	7.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1671744	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1667846	2	34	5.8	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1670465	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1679679	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1669616	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1668194	1	17	5.8	5.0	✔
TSS by Gravimetry	E160	1672651	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1674067	1	17	5.8	5.0	✔
WAD Cyanide	E336	1669064	1	9	11.1	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1667712	1	10	10.0	5.0	✔
Ammonia by Fluorescence	E298	1669715	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1667718	1	10	10.0	5.0	✔
Chloride in Water by IC	E235.Cl	1667717	1	10	10.0	5.0	✔
Conductivity in Water	E100	1667711	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1672533	1	12	8.3	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1670464	1	7	14.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1678134	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1667713	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1667716	1	10	10.0	5.0	✔
Free Cyanide	E339	1669065	1	8	12.5	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1667719	1	10	10.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1667714	1	17	5.8	5.0	✔
Reactive Silica by Colourimetry	E392	1673012	2	34	5.8	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1667720	1	10	10.0	5.0	✔
TDS by Gravimetry	E162	1672671	1	16	6.2	5.0	✔
Total Cyanide	E333	1669063	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1669624	1	13	7.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1671744	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1667846	2	34	5.8	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1670465	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1679679	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1669616	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1668194	1	17	5.8	5.0	✔
TSS by Gravimetry	E160	1672651	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1674067	1	17	5.8	5.0	✔
WAD Cyanide	E336	1669064	1	9	11.1	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1669715	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1667718	1	10	10.0	5.0	✔
Chloride in Water by IC	E235.Cl	1667717	1	10	10.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1672533	1	12	8.3	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1670464	1	7	14.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1678134	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1667713	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1667716	1	10	10.0	5.0	✔
Free Cyanide	E339	1669065	1	8	12.5	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1667719	1	10	10.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1667714	1	17	5.8	5.0	✔
Reactive Silica by Colourimetry	E392	1673012	2	34	5.8	5.0	✔
Sulfate in Water by IC	E235.SO4	1667720	1	10	10.0	5.0	✔
Total Cyanide	E333	1669063	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1669624	1	13	7.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1671744	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1667846	2	34	5.8	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1670465	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1679679	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1669616	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1668194	1	17	5.8	5.0	✔
WAD Cyanide	E336	1669064	1	9	11.1	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Waterloo	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Waterloo	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Waterloo	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)	Ra-226 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon

Page : 30 of 30
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2401540	Page	: 1 of 21
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 19-Sep-2024 15:55
PO	: 17852	Date Analysis Commenced	: 23-Sep-2024
C-O-C number	: ----	Issue Date	: 10-Oct-2024 15:46
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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Page : 2 of 21
Work Order : YL2401540
Client : B2Gold Back River Corp.
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1667710)											
VA24C4950-003	Anonymous	pH	----	E108	0.10	pH units	8.24	8.24	0.00%	4%	----
Physical Tests (QC Lot: 1667711)											
VA24C4950-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	6060	6070	0.165%	10%	----
Physical Tests (QC Lot: 1667712)											
VA24C4950-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	607	599	1.38%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	607	599	1.38%	20%	----
Physical Tests (QC Lot: 1672651)											
VA24C5186-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1672671)											
VA24C5186-002	Anonymous	Solids, total dissolved [TDS]	----	E162	10	mg/L	372	374	0.671%	20%	----
Physical Tests (QC Lot: 1674067)											
VA24C5352-001	Anonymous	Turbidity	----	E121	0.10	NTU	0.41	0.55	0.14	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1667713)											
KS2403873-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0160	0.0189	16.7%	20%	----
Anions and Nutrients (QC Lot: 1667714)											
KS2403873-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1667716)											
VA24C4950-001	Anonymous	Fluoride	16984-48-8	E235.F	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1667717)											
VA24C4950-001	Anonymous	Chloride	16887-00-6	E235.Cl	25.0	mg/L	35.2	35.1	0.13	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1667718)											
VA24C4950-001	Anonymous	Bromide	24959-67-9	E235.Br-L	2.50	mg/L	<2.50	<2.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1667719)											
VA24C4950-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.250	mg/L	17.0	16.9	0.770%	20%	----
Anions and Nutrients (QC Lot: 1667720)											
VA24C4950-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	15.0	mg/L	3350	3330	0.619%	20%	----

Page : 4 of 21
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1669616)											
FC2402605-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.110	0.111	1.21%	20%	----
Anions and Nutrients (QC Lot: 1669624)											
YL2401540-001	BRP-32-1	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0039	0.0046	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1669715)											
FC2402598-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0413	0.0436	0.0023	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1671744)											
EO2408364-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1673012)											
VA24C4329-001	Anonymous	Silicate (as SiO ₂)	7631-86-9	E392	5.00	mg/L	7.23	7.10	0.13	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1673126)											
VA24C4765-001	Anonymous	Silicate (as SiO ₂)	7631-86-9	E392	0.50	mg/L	3.39	3.38	0.005	Diff <2x LOR	----
Cyanides (QC Lot: 1669063)											
VA24C3089-004	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
Cyanides (QC Lot: 1669064)											
VA24C3089-004	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1669065)											
VA24C4772-001	Anonymous	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1678134)											
YL2401540-006	FD-1	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	4.90	4.86	0.04	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1679679)											
YL2401540-006	FD-1	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	5.42	5.17	4.70%	20%	----
Total Sulfides (QC Lot: 1668194)											
SK2405165-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0750	mg/L	0.700	0.569	0.132	Diff <2x LOR	----
Total Metals (QC Lot: 1667846)											
VA24C3578-007	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.70	0.77	0.07	Diff <2x LOR	----
Total Metals (QC Lot: 1671916)											
VA24C4557-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1670465)											
YL2401540-001	BRP-32-1	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0163	0.0191	15.8%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000210	0.0000182	0.0000028	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000280	0.000274	1.79%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00940	0.00923	1.85%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000029	0.0000025	0.0000004	Diff <2x LOR	----

Page : 5 of 21
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1670465) - continued											
YL2401540-001	BRP-32-1	Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000062	0.0000076	0.0000014	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	5.84	5.72	2.07%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000117	0.0000107	0.0000010	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000084	0.000088	0.000004	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000354	0.000344	2.75%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00154	0.00155	0.694%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0459	0.0458	0.328%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000133	0.000135	1.62%	20%	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000229	0.0000180	0.0000049	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00106	0.00107	0.428%	20%	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	2.99	2.97	0.678%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00606	0.00601	0.788%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000020	0.000024	0.000003	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00443	0.00434	2.10%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.668	0.663	0.758%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00161	0.00159	1.16%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000038	0.000038	0.0000006	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.284	0.274	0.009	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	1.02	1.00	1.93%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0322	0.0323	0.305%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	4.38	4.30	0.08	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000025	0.0000020	0.0000006	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	0.0000096	0.0000119	0.0000023	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000209	0.000198	0.000011	Diff <2x LOR	----

Page : 6 of 21
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1670465) - continued											
YL2401540-001	BRP-32-1	Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000084	0.0000077	0.0000007	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000060	0.000054	0.000006	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000057	0.000056	0.0000001	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00087	0.00094	0.00006	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000038	0.000037	0.000001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1670464)											
YL2401400-012	Anonymous	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	<0.0000025	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000084	0.000077	0.000007	Diff <2x LOR	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.0000057	<0.0000050	0.0000007	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Page : 7 of 21
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1670464) - continued											
YL2401400-012	Anonymous	Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1672533)											
VA24C4549-001	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1667711)						
Conductivity	---	E100	1	µS/cm	1.1	---
Physical Tests (QCLot: 1667712)						
Alkalinity, bicarbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, carbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, hydroxide (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, phenolphthalein (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 1672651)						
Solids, total suspended [TSS]	---	E160	3	mg/L	<3.0	---
Physical Tests (QCLot: 1672671)						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 1674067)						
Turbidity	---	E121	0.1	NTU	<0.10	---
Anions and Nutrients (QCLot: 1667713)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1667714)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1667716)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 1667717)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	---
Anions and Nutrients (QCLot: 1667718)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 1667719)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1667720)						
Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 1669616)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1669624)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1669715)						

Page : 9 of 21
 Work Order : YL2401540
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1669715) - continued						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1671744)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1673012)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1673126)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 1669063)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1669064)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1669065)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1678134)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1679679)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1668194)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1667846)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (QCLot: 1671916)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1670465)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1670465) - continued						
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1670464)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1670464) - continued						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1670464) - continued						
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1672533)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1667710)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1667711)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 1667712)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	93.3	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1672651)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	94.4	85.0	115	----
Physical Tests (QCLot: 1672671)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	99.3	85.0	115	----
Physical Tests (QCLot: 1674067)									
Turbidity	----	E121	0.1	NTU	200 NTU	95.5	85.0	115	----
Anions and Nutrients (QCLot: 1667713)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 1667714)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1667716)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.2	90.0	110	----
Anions and Nutrients (QCLot: 1667717)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1667718)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1667719)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1667720)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1669616)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	99.1	80.0	120	----
Anions and Nutrients (QCLot: 1669624)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	95.8	80.0	120	----
Anions and Nutrients (QCLot: 1669715)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1669715) - continued									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1671744)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 1673012)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1673126)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	103	85.0	115	----
Cyanides (QCLot: 1669063)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	87.2	80.0	120	----
Cyanides (QCLot: 1669064)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	99.1	80.0	120	----
Cyanides (QCLot: 1669065)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1678134)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	113	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1679679)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Total Sulfides (QCLot: 1668194)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	112	80.0	120	----
Total Metals (QCLot: 1667846)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	88.1	80.0	120	----
Total Metals (QCLot: 1671916)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	92.6	80.0	120	----
Total Metals (Undigested) (QCLot: 1670465)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	97.8	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	100	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	107	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	96.6	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	98.5	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	96.5	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	103	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1670465) - continued									
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	102	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	98.9	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	107	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	101	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	106	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	96.3	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	107	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	98.0	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	100.0	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	99.4	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	107	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	107	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	104	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	95.4	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	102	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	106	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	102	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	101	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	90.5	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	99.6	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	110	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	102	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	99.0	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	98.6	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	99.4	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	93.6	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	101	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	99.7	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	102	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	103	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	108	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1670465) - continued									
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	98.8	80.0	120	----
Dissolved Metals (QCLot: 1670464)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	102	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	105	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	101	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	99.3	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	99.5	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	97.7	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	105	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	100	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	100	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	104	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	103	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	110	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	97.8	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	106	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	99.5	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	106	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	106	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	103	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	94.6	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	99.1	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	106	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	104	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	102	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	90.9	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	108	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1670464) - continued									
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	99.5	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	100	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	96.3	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	103	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	101	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	103	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	110	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	97.1	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	97.6	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Laboratory sample ID					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Client sample ID	Analyte	CAS Number	Method							
Anions and Nutrients (QCLot: 1667713)										
KS2403881-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0320 mg/L	0.03 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 1667714)										
KS2403881-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	2.56 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1667716)										
VA24C4950-002	Anonymous	Fluoride	16984-48-8	E235.F	49.5 mg/L	50 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 1667717)										
VA24C4950-002	Anonymous	Chloride	16887-00-6	E235.Cl	5040 mg/L	5000 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1667718)										
VA24C4950-002	Anonymous	Bromide	24959-67-9	E235.Br-L	25.6 mg/L	25 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1667719)										
VA24C4950-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	125 mg/L	125 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1667720)										
VA24C4950-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	4930 mg/L	5000 mg/L	98.7	75.0	125	----
Anions and Nutrients (QCLot: 1669616)										
FC2402606-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1669624)										
YL2401540-002	BRP-32-2	Phosphorus, total dissolved	7723-14-0	E375-U	0.0678 mg/L	0.067 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 1669715)										
FC2402598-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1671744)										
GP2401855-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.39 mg/L	2.5 mg/L	95.7	70.0	130	----
Anions and Nutrients (QCLot: 1673012)										
VA24C4329-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	97.4 mg/L	100 mg/L	97.4	75.0	125	----
Anions and Nutrients (QCLot: 1673126)										
VA24C4765-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.6 mg/L	10 mg/L	106	75.0	125	----
Cyanides (QCLot: 1669063)										
VA24C3089-004	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	10.3 mg/L	12.5 mg/L	82.5	75.0	125	----
Cyanides (QCLot: 1669064)										
VA24C3089-004	Anonymous	Cyanide, weak acid dissociable	----	E336	0.122 mg/L	0.125 mg/L	97.9	75.0	125	----
Cyanides (QCLot: 1669065)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 1669065) - continued										
VA24C4772-001	Anonymous	Cyanide, free	----	E339	0.124 mg/L	0.125 mg/L	99.6	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1678134)										
YL2401540-006	FD-1	Carbon, dissolved organic [DOC]	----	E358-L	4.93 mg/L	5 mg/L	98.7	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1679679)										
YL2401540-006	FD-1	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1668194)										
SK2405166-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.971 mg/L	1 mg/L	97.1	75.0	125	----
Total Metals (QCLot: 1667846)										
VA24C4549-001	Anonymous	Mercury, total	7439-97-6	E508-L	4.77 ng/L	5 ng/L	95.4	70.0	130	----
Total Metals (QCLot: 1671916)										
VA24C4557-002	Anonymous	Mercury, total	7439-97-6	E508-L	5.04 ng/L	5 ng/L	101	70.0	130	----
Total Metals (Undigested) (QCLot: 1670465)										
YL2401540-002	BRP-32-2	Aluminum, total	7429-90-5	E466	0.191 mg/L	0.2 mg/L	95.6	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Barium, total	7440-39-3	E466	0.0193 mg/L	0.02 mg/L	96.3	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00912 mg/L	0.01 mg/L	91.2	70.0	130	----
		Boron, total	7440-42-8	E466	0.0984 mg/L	0.1 mg/L	98.4	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00967 mg/L	0.01 mg/L	96.7	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Copper, total	7440-50-8	E466	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00253 mg/L	0.002 mg/L	101	70.0	130	----
		Iron, total	7439-89-6	E466	2.09 mg/L	2 mg/L	104	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00256 mg/L	0.002 mg/L	102	70.0	130	----
		Lead, total	7439-92-1	E466	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0410 mg/L	0.04 mg/L	103	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00242 mg/L	0.002 mg/L	96.9	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.47 mg/L	10 mg/L	94.7	70.0	130	----
		Potassium, total	7440-09-7	E466	4.12 mg/L	4 mg/L	103	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00247 mg/L	0.002 mg/L	98.9	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0421 mg/L	0.04 mg/L	105	70.0	130	----
		Silicon, total	7440-21-3	E466	8.83 mg/L	10 mg/L	88.3	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1670465) - continued										
YL2401540-002	BRP-32-2	Silver, total	7440-22-4	E466	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		Sodium, total	7440-23-5	E466	1.95 mg/L	2 mg/L	97.6	70.0	130	----
		Strontium, total	7440-24-6	E466	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E466	19.1 mg/L	20 mg/L	95.4	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00244 mg/L	0.002 mg/L	97.8	70.0	130	----
		Tellurium, total	13494-80-9	E466	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0178 mg/L	0.02 mg/L	89.1	70.0	130	----
		Tin, total	7440-31-5	E466	0.0190 mg/L	0.02 mg/L	95.3	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00390 mg/L	0.004 mg/L	97.6	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00264 mg/L	0.002 mg/L	106	70.0	130	----
		Zinc, total	7440-66-6	E466	0.460 mg/L	0.4 mg/L	115	70.0	130	----
		Zirconium, total	7440-67-7	E466	0.0377 mg/L	0.04 mg/L	94.3	70.0	130	----
Dissolved Metals (QCLot: 1670464)										
YL2401540-001	BRP-32-1	Aluminum, dissolved	7429-90-5	E465	0.198 mg/L	0.2 mg/L	99.2	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0190 mg/L	0.02 mg/L	95.3	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0207 mg/L	0.02 mg/L	103	70.0	130	----
		Barium, dissolved	7440-39-3	E465	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00924 mg/L	0.01 mg/L	92.4	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.0976 mg/L	0.1 mg/L	97.6	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00418 mg/L	0.004 mg/L	104	70.0	130	----
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00960 mg/L	0.01 mg/L	96.0	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0207 mg/L	0.02 mg/L	104	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00259 mg/L	0.002 mg/L	104	70.0	130	----
		Iron, dissolved	7439-89-6	E465	2.10 mg/L	2 mg/L	105	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00264 mg/L	0.002 mg/L	106	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00238 mg/L	0.002 mg/L	95.0	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.91 mg/L	10 mg/L	99.1	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	4.17 mg/L	4 mg/L	104	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00251 mg/L	0.002 mg/L	100	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0203 mg/L	0.02 mg/L	102	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1670464) - continued										
YL2401540-001	BRP-32-1	Selenium, dissolved	7782-49-2	E465	0.0427 mg/L	0.04 mg/L	107	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.17 mg/L	10 mg/L	91.7	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00378 mg/L	0.004 mg/L	94.5	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	1.96 mg/L	2 mg/L	98.0	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	19.9 mg/L	20 mg/L	99.7	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00249 mg/L	0.002 mg/L	99.7	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0414 mg/L	0.04 mg/L	104	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00380 mg/L	0.004 mg/L	95.1	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00272 mg/L	0.002 mg/L	109	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.409 mg/L	0.4 mg/L	102	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0394 mg/L	0.04 mg/L	98.6	70.0	130	----
Dissolved Metals (QCLot: 1672533)										
VA24C4549-002	Anonymous	Mercury, dissolved	7439-97-6	E509-L	4.52 ng/L	5 ng/L	90.5	70.0	130	----

CERTIFICATE OF ANALYSIS

Work Order	: YL2401543		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Edmonton
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver British Columbia Canada V7X 1M7	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 20-Sep-2024 15:50
PO	: 17852	Date Analysis Commenced	: 25-Sep-2024
C-O-C number	: ----	Issue Date	: 11-Oct-2024 16:34
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Ghazaleh Khanmirzaei	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kim Jensen	Department Manager - Metals	Inorganics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	Description
mg/L	milligrams per litre
NTU	nephelometric turbidity units
µS/cm	microsiemens per centimetre
pH units	pH units
ng/L	nanograms per litre
-	no units
Bq/L	becquerels per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Work Order : YL2401543
Client : B2Gold Back River Corp.
Project : 22567626





Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID		BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
Client sampling date / time					19-Sep-2024 10:05		19-Sep-2024 10:25	19-Sep-2024 10:25	19-Sep-2024 11:10	19-Sep-2024 11:35	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-001	YL2401543-002	YL2401543-003	YL2401543-004	YL2401543-005		
					Result	Result	Result	Result	Result		
Physical Tests											
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	3.4	3.4	3.3	3.4	2.9		
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0		
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0		
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0		
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	3.4	3.4	3.3	3.4	2.9		
Conductivity	----	E100/VA	2.0	µS/cm	255	255	255	254	252		
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	88.8	85.6	88.7	86.4	85.2		
pH	----	E108/VA	0.10	pH units	6.43	6.45	6.46	6.44	6.43		
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	218	229	232	253	232		
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	140	142	142	141	139		
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0		
Turbidity	----	E121/VA	0.10	NTU	1.02	1.31	1.11	1.16	0.99		
Anions and Nutrients											
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.726	0.837	0.798	0.780	0.709		
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	0.186	0.181	0.185	0.182	0.186		
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	33.9	33.2	33.4	33.7	34.2		
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.026	0.027	0.027	0.028	0.025		
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	1.32	1.32	1.33	1.31	1.18		
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	4.24	4.47	4.44	4.36	4.16		
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0176	0.0185	0.0180	0.0178	0.0175		
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
Client sampling date / time					19-Sep-2024 10:05	19-Sep-2024 10:25	19-Sep-2024 10:25	19-Sep-2024 11:10	19-Sep-2024 11:35	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-001	YL2401543-002	YL2401543-003	YL2401543-004	YL2401543-005	
					Result	Result	Result	Result	Result	
Anions and Nutrients										
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0046	0.0045	0.0046	0.0045	0.0062	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0016	0.0027	0.0016	0.0013	0.0013	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	3.82	3.98	3.94	3.87	3.74	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	38.2	39.1	39.3	39.1	38.5	
Cyanides										
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cyanide, weak acid dissociable	----	E336/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	6.45	7.75	7.12	7.19	7.07	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	6.96	7.52	7.52	7.38	7.18	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0023	0.0016	0.0019	0.0017	0.0019	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0024	0.0017	0.0020	0.0018	0.0020	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	1.70	1.42	2.06	1.79	1.74	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.104	0.101	0.0972	0.103	0.0918	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000238	0.0000196	0.0000201	0.0000200	0.0000190	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000529	0.000512	0.000565	0.000492	0.000479	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.0407	0.0419	0.0409	0.0402	0.0406	



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
Client sampling date / time					19-Sep-2024 10:05	19-Sep-2024 10:25	19-Sep-2024 10:25	19-Sep-2024 11:10	19-Sep-2024 11:35	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-001	YL2401543-002	YL2401543-003	YL2401543-004	YL2401543-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000244	0.0000239	0.0000237	0.0000240	0.0000259	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	0.0000014	0.0000010	<0.0000010	0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	0.0055	0.0053	0.0053	0.0053	0.0052	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000990	0.000111	0.000107	0.000107	0.000101	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	22.6	22.1	22.1	22.4	22.3	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000544	0.0000550	0.0000547	0.0000525	0.0000533	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000252	0.000254	0.000242	0.000243	0.000222	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.00525	0.00521	0.00518	0.00518	0.00523	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00395	0.00385	0.00384	0.00395	0.00388	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0834	0.0870	0.0845	0.0820	0.0736	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.00147	0.00157	0.00155	0.00153	0.00159	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000494	0.0000486	0.0000448	0.0000461	0.0000428	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00271	0.00270	0.00268	0.00270	0.00264	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	8.94	8.97	8.92	9.04	8.88	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0887	0.0861	0.0842	0.0853	0.0858	
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000040	0.000042	0.000039	0.000038	0.000031	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.0237	0.0234	0.0236	0.0236	0.0240	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	1.98	1.99	1.92	1.93	1.82	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
Client sampling date / time					19-Sep-2024 10:05	19-Sep-2024 10:25	19-Sep-2024 10:25	19-Sep-2024 11:10	19-Sep-2024 11:35	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-001	YL2401543-002	YL2401543-003	YL2401543-004	YL2401543-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	0.0000059	0.0000067	0.0000057	0.0000055	0.0000056	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00494	0.00488	0.00478	0.00474	0.00459	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000162	0.000173	0.000172	0.000172	0.000155	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.93	2.00	1.94	1.94	1.88	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	0.0000043	0.0000039	0.0000042	0.0000040	0.0000047	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	2.70	2.66	2.64	2.68	2.65	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.122	0.119	0.119	0.120	0.120	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	13.9	14.3	13.8	14.3	14.1	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000110	0.0000111	0.0000113	0.0000114	0.0000109	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000334	0.0000311	0.0000331	0.0000387	0.0000298	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000754	0.00109	0.000826	0.000996	0.000799	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000236	0.0000250	0.0000273	0.0000243	0.0000235	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000109	0.000112	0.000110	0.000111	0.000107	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000584	0.000595	0.000587	0.000595	0.000596	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00921	0.00934	0.00911	0.00927	0.00917	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000206	0.000236	0.000219	0.000219	0.000208	



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
Client sampling date / time					19-Sep-2024 10:05	19-Sep-2024 10:25	19-Sep-2024 10:25	19-Sep-2024 11:10	19-Sep-2024 11:35	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-001	YL2401543-002	YL2401543-003	YL2401543-004	YL2401543-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0678	0.0656	0.0677	0.0660	0.0640	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000219	0.0000200	0.0000211	0.0000213	0.0000189	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000445	0.000470	0.000451	0.000431	0.000415	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.0412	0.0405	0.0415	0.0405	0.0409	
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000216	0.0000217	0.0000219	0.0000216	0.0000215	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	0.0053	0.0052	0.0052	0.0053	0.0051	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.000101	0.0000956	0.0000994	0.0000988	0.0000976	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	21.4	20.8	21.5	21.0	20.9	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000537	0.0000520	0.0000540	0.0000529	0.0000518	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000194	0.000191	0.000194	0.000186	0.000175	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.00502	0.00489	0.00507	0.00495	0.00506	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00368	0.00360	0.00369	0.00364	0.00363	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0480	0.0483	0.0484	0.0460	0.0403	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.00139	0.00140	0.00142	0.00138	0.00141	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000306	0.0000280	0.0000294	0.0000302	0.0000228	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00271	0.00253	0.00260	0.00258	0.00248	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	8.58	8.17	8.50	8.24	8.02	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.0828	0.0812	0.0837	0.0825	0.0829	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
Client sampling date / time					19-Sep-2024 10:05	19-Sep-2024 10:25	19-Sep-2024 10:25	19-Sep-2024 11:10	19-Sep-2024 11:35	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-001	YL2401543-002	YL2401543-003	YL2401543-004	YL2401543-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	1.23	1.20	1.09	1.12	1.03	
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000040	0.000040	0.000045	0.000036	0.000023	
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.0227	0.0226	0.0229	0.0224	0.0234	
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	1.90	1.80	1.87	1.81	1.73	
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	0.0000059	0.0000066	0.0000070	0.0000062	0.0000056	
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00463	0.00448	0.00465	0.00454	0.00442	
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000164	0.000158	0.000165	0.000152	0.000152	
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.92	1.91	1.92	1.83	1.82	
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	0.0000029	0.0000023	0.0000028	0.0000030	0.0000026	
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	2.62	2.49	2.55	2.52	2.44	
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.116	0.114	0.118	0.115	0.111	
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	14.3	14.1	14.0	13.8	13.9	
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000109	0.0000105	0.0000104	0.0000106	0.0000097	
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000398	0.0000337	0.0000356	0.0000452	0.0000196	
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000250	0.000351	0.000351	0.000276	0.000283	
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-31-1	BRP-31-2	BRP-31-3	BRP-31-4	BRP-31-5
Client sampling date / time						19-Sep-2024 10:05	19-Sep-2024 10:25	19-Sep-2024 10:25	19-Sep-2024 11:10	19-Sep-2024 11:35
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-001	YL2401543-002	YL2401543-003	YL2401543-004	YL2401543-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000210	0.0000228	0.0000240	0.0000231	0.0000230	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000062	0.000063	0.000064	0.000062	0.000055	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000547	0.000555	0.000552	0.000543	0.000550	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00900	0.00849	0.00912	0.00874	0.00839	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000201	0.000206	0.000198	0.000194	0.000180	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	
Radiological Parameters										
Radium-226	13982-63-3	Ra-226/2I	0.005	Bq/L	0.01	<0.005	0.007	0.007	0.02	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	FB-2	----	----	----	----
Client sampling date / time						19-Sep-2024 10:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-006	----	----	----	----	----
					Result	----	----	----	----	----
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	<2.0	----	----	----	----	----



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Client sample ID					FB-2	----	----	----	----
Client sampling date / time					19-Sep-2024 10:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-006	----	----	----	----
					Result	----	----	----	----
Physical Tests									
Hardness (as CaCO ₃), dissolved	----	EC100/VA	0.50	mg/L	<0.50	----	----	----	----
pH	----	E108/VA	0.10	pH units	5.25	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	<10	----	----	----	----
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	<1.0	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	<0.10	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	<0.0050	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	<0.50	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	<0.050	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	<0.0050	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	<0.0010	----	----	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	<0.0010	----	----	----	----
Silicate (as SiO ₂)	7631-86-9	E392/VA	0.50	mg/L	<0.50	----	----	----	----
Sulfate (as SO ₄)	14808-79-8	E235.SO4/VA	0.30	mg/L	<0.30	----	----	----	----
Cyanides									
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	----	----	----	----



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Client sample ID					FB-2	----	----	----	----
Client sampling date / time					19-Sep-2024 10:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-006	----	----	----	----
					Result	----	----	----	----
Cyanides									
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	<0.0050	----	----	----	----
Cyanide, weak acid dissociable	----	E336/WT	0.0050	mg/L	<0.0050	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	<0.50	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	<0.50	----	----	----	----
Total Sulfides									
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----
Total Metals									
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	<0.50	----	----	----	----
Total Metals (Undigested)									
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	<0.00020	----	----	----	----
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	----	----	----	----
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	<0.0000025	----	----	----	----
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	<0.010	----	----	----	----
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					FB-2	----	----	----	----
Client sampling date / time					19-Sep-2024 10:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-006	----	----	----	----
					Result	----	----	----	----
Total Metals (Undigested)									
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	<0.000040	----	----	----	----
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	<0.00050	----	----	----	----
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	<0.0010	----	----	----	----
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	----	----	----	----
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	<0.0050	----	----	----	----
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025	----	----	----	----
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	<0.050	----	----	----	----
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	----	----	----	----
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	<0.010	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					FB-2	----	----	----	----
Client sampling date / time					19-Sep-2024 10:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-006	----	----	----	----
					Result	----	----	----	----
Total Metals (Undigested)									
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	<0.000020	----	----	----	----
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	<0.50	----	----	----	----
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	<0.000050	----	----	----	----
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	<0.0000010	----	----	----	----
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	<0.00010	----	----	----	----
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	<0.000010	----	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	<0.00020	----	----	----	----
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

					Client sample ID	FB-2	----	----	----	----
					Client sampling date / time	19-Sep-2024 10:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-006	----	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	<0.0000025	----	----	----	----	----
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	<0.000040	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Dissolved metals filtration location	----	EP465/VA	-	-	Field	----	----	----	----	----
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	----	----	----	----	----
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	<0.0050	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Client sample ID					FB-2	----	----	----	----
Client sampling date / time					19-Sep-2024 10:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-006	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	----	----	----	----
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	<0.050	----	----	----	----
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	----	----	----	----
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	<0.010	----	----	----	----
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	<0.000020	----	----	----	----
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	<0.50	----	----	----	----
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	----	----	----	----
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	<0.0000010	----	----	----	----
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	<0.00010	----	----	----	----
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	<0.000010	----	----	----	----
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	----	----	----	----



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID	FB-2	----	----	----	----
					Client sampling date / time	19-Sep-2024 10:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401543-006	----	----	----	----	
					Result	----	----	----	----	
Radiological Parameters										
Radium-226	13982-63-3	Ra-226/21	0.005	Bq/L	<0.005	----	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.
Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2401543	Page	: 1 of 30
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 20-Sep-2024 15:50
PO	: 17852	Issue Date	: 11-Oct-2024 16:34
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-1	E298	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-2	E298	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-3	E298	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-4	E298	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-31-5	E298	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FB-2	E298	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-1	E235.Br-L	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-2	E235.Br-L	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-3	E235.Br-L	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-4	E235.Br-L	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-31-5	E235.Br-L	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FB-2	E235.Br-L	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-1	E235.Cl	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-2	E235.Cl	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-3	E235.Cl	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-4	E235.Cl	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-31-5	E235.Cl	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB-2	E235.Cl	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-1	E378-U	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-2	E378-U	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-3	E378-U	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-4	E378-U	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-31-5	E378-U	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FB-2	E378-U	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-1	E235.F	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-2	E235.F	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-3	E235.F	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-4	E235.F	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-31-5	E235.F	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB-2	E235.F	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-1	E235.NO3-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✗ EHT	25-Sep-2024	3 days	6 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-2	E235.NO3-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✗ EHT	25-Sep-2024	3 days	6 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-3	E235.NO3-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✗ EHT	25-Sep-2024	3 days	6 days	✗ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-4	E235.NO3-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✗ EHT	25-Sep-2024	3 days	6 days	✗ EHT

Page : 7 of 30
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-31-5	E235.NO3-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB-2	E235.NO3-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-1	E235.NO2-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-2	E235.NO2-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-3	E235.NO2-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-4	E235.NO2-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-31-5	E235.NO2-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB-2	E235.NO2-L	19-Sep-2024	25-Sep-2024	3 days	6 days	✖ EHT	25-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-1	E392	19-Sep-2024	----	----	----		25-Sep-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-2	E392	19-Sep-2024	----	----	----		25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-3	E392	19-Sep-2024	----	----	----		25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-4	E392	19-Sep-2024	----	----	----		25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-31-5	E392	19-Sep-2024	----	----	----		25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FB-2	E392	19-Sep-2024	----	----	----		25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-1	E235.SO4	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-2	E235.SO4	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-3	E235.SO4	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-4	E235.SO4	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-31-5	E235.SO4	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FB-2	E235.SO4	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-1	E375-U	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-2	E375-U	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-3	E375-U	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-4	E375-U	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-31-5	E375-U	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FB-2	E375-U	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-1	E318	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-2	E318	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-3	E318	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-4	E318	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-31-5	E318	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FB-2	E318	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-1	E372-S	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-2	E372-S	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-3	E372-S	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-4	E372-S	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-31-5	E372-S	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FB-2	E372-S	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-1	E339	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-2	E339	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-3	E339	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-4	E339	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-5	E339	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-2	E339	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-1	E333	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-2	E333	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-3	E333	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-4	E333	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-5	E333	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-2	E333	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-1	E336	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-2	E336	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-3	E336	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-4	E336	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-31-5	E336	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-2	E336	19-Sep-2024	26-Sep-2024	14 days	7 days	✓	26-Sep-2024	14 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-1	E509-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-2	E509-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-3	E509-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-4	E509-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-31-5	E509-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FB-2	E509-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-31-4	E465	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-31-5	E465	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-31-1	E465	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-31-2	E465	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-31-3	E465	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FB-2	E465	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-1	E358-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-2	E358-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-3	E358-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-4	E358-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓

Page : 15 of 30
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-31-5	E358-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FB-2	E358-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-1	E355-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-2	E355-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-3	E355-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-4	E355-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-31-5	E355-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB-2	E355-L	19-Sep-2024	29-Sep-2024	28 days	10 days	✓	29-Sep-2024	28 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-1	E290	19-Sep-2024	25-Sep-2024	14 days	6 days	✓	25-Sep-2024	14 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-2	E290	19-Sep-2024	25-Sep-2024	14 days	6 days	✓	25-Sep-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-3	E290	19-Sep-2024	25-Sep-2024	14 days	6 days	✓	25-Sep-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-4	E290	19-Sep-2024	25-Sep-2024	14 days	6 days	✓	25-Sep-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-31-5	E290	19-Sep-2024	25-Sep-2024	14 days	6 days	✓	25-Sep-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FB-2	E290	19-Sep-2024	25-Sep-2024	14 days	6 days	✓	25-Sep-2024	14 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-31-1	E100	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-31-2	E100	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-31-3	E100	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-31-4	E100	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-31-5	E100	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE FB-2	E100	19-Sep-2024	25-Sep-2024	28 days	6 days	✓	25-Sep-2024	28 days	6 days	✓
Physical Tests : pH by Meter										
HDPE BRP-31-5	E108	19-Sep-2024	25-Sep-2024	0.25 hrs	150 hrs	✗ EHTR-FM	25-Sep-2024	0.25 hrs	152 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-31-4	E108	19-Sep-2024	25-Sep-2024	0.25 hrs	151 hrs	✗ EHTR-FM	25-Sep-2024	0.25 hrs	152 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-31-1	E108	19-Sep-2024	25-Sep-2024	0.25 hrs	152 hrs	✗ EHTR-FM	25-Sep-2024	0.25 hrs	153 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-31-2	E108	19-Sep-2024	25-Sep-2024	0.25 hrs	152 hrs	✗ EHTR-FM	25-Sep-2024	0.25 hrs	153 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-31-3	E108	19-Sep-2024	25-Sep-2024	0.25 hrs	152 hrs	✗ EHTR-FM	25-Sep-2024	0.25 hrs	153 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE FB-2	E108	19-Sep-2024	25-Sep-2024	0.25 hrs	152 hrs	✗ EHTR-FM	25-Sep-2024	0.25 hrs	153 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-1	E162	19-Sep-2024	----	----	----		25-Sep-2024	7 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-2	E162	19-Sep-2024	----	----	----		25-Sep-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-3	E162	19-Sep-2024	----	----	----		25-Sep-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-4	E162	19-Sep-2024	----	----	----		26-Sep-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-31-5	E162	19-Sep-2024	----	----	----		26-Sep-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FB-2	E162	19-Sep-2024	----	----	----		26-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-1	E160	19-Sep-2024	----	----	----		26-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-2	E160	19-Sep-2024	----	----	----		26-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-3	E160	19-Sep-2024	----	----	----		26-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-4	E160	19-Sep-2024	----	----	----		26-Sep-2024	7 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-31-5	E160	19-Sep-2024	----	----	----		26-Sep-2024	7 days	7 days	✔
Physical Tests : TSS by Gravimetry										
HDPE FB-2	E160	19-Sep-2024	----	----	----		26-Sep-2024	7 days	7 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-1	E121	19-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-2	E121	19-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-3	E121	19-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-4	E121	19-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-31-5	E121	19-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FB-2	E121	19-Sep-2024	----	----	----		26-Sep-2024	3 days	8 days	✖ EHT
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-1	Ra-226	19-Sep-2024	----	----	----		11-Oct-2024	----	22 days	

Page : 20 of 30
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: **✖** = Holding time exceedance ; **✔** = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-2	Ra-226	19-Sep-2024	----	----	----		11-Oct-2024	----	22 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-3	Ra-226	19-Sep-2024	----	----	----		11-Oct-2024	----	22 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-4	Ra-226	19-Sep-2024	----	----	----		11-Oct-2024	----	22 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-31-5	Ra-226	19-Sep-2024	----	----	----		11-Oct-2024	----	22 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) FB-2	Ra-226	19-Sep-2024	----	----	----		11-Oct-2024	----	22 days	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-2	E466	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	7 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-3	E466	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	7 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-4	E466	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	7 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-5	E466	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	7 days	✓

Page : 21 of 30
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FB-2	E466	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	7 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-31-1	E466	19-Sep-2024	26-Sep-2024	180 days	7 days	✓	26-Sep-2024	180 days	8 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-1	E508-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-2	E508-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-3	E508-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-4	E508-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-31-5	E508-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FB-2	E508-L	19-Sep-2024	26-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-1	E395	19-Sep-2024	----	----	----		25-Sep-2024	7 days	6 days	✓

Page : 22 of 30
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-2	E395	19-Sep-2024	----	----	----		25-Sep-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-3	E395	19-Sep-2024	----	----	----		25-Sep-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-4	E395	19-Sep-2024	----	----	----		25-Sep-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-31-5	E395	19-Sep-2024	----	----	----		25-Sep-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FB-2	E395	19-Sep-2024	----	----	----		25-Sep-2024	7 days	6 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
Analytical Methods			QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1673215	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1672194	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1673220	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1673219	1	18	5.5	5.0	✓
Conductivity in Water	E100	1673214	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1675068	1	10	10.0	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1674763	1	6	16.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1680233	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1673225	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	1673218	1	18	5.5	5.0	✓
Free Cyanide	E339	1675650	1	6	16.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1673221	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1673222	1	18	5.5	5.0	✓
pH by Meter	E108	1673216	1	18	5.5	5.0	✓
Reactive Silica by Colourimetry	E392	1673369	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1673223	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1673598	2	21	9.5	5.0	✓
Total Cyanide	E333	1675646	1	8	12.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1673915	1	18	5.5	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1671744	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1675043	2	38	5.2	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1674744	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1680379	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1674152	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1673072	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1674749	2	32	6.2	5.0	✓
Turbidity by Nephelometry	E121	1676455	1	20	5.0	5.0	✓
WAD Cyanide	E336	1675645	1	8	12.5	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1673215	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1672194	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1673220	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1673219	1	18	5.5	5.0	✓
Conductivity in Water	E100	1673214	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1675068	1	10	10.0	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1674763	1	6	16.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1680233	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1673225	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1673218	1	18	5.5	5.0	✔
Free Cyanide	E339	1675650	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1673221	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1673222	1	18	5.5	5.0	✔
pH by Meter	E108	1673216	1	18	5.5	5.0	✔
Reactive Silica by Colourimetry	E392	1673369	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1673223	1	18	5.5	5.0	✔
TDS by Gravimetry	E162	1673598	2	21	9.5	5.0	✔
Total Cyanide	E333	1675646	1	8	12.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1673915	1	18	5.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1671744	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1675043	2	38	5.2	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1674744	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1680379	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1674152	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1673072	1	6	16.6	5.0	✔
TSS by Gravimetry	E160	1674749	2	32	6.2	5.0	✔
Turbidity by Nephelometry	E121	1676455	1	20	5.0	5.0	✔
WAD Cyanide	E336	1675645	1	8	12.5	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1673215	1	18	5.5	5.0	✔
Ammonia by Fluorescence	E298	1672194	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1673220	1	14	7.1	5.0	✔
Chloride in Water by IC	E235.Cl	1673219	1	18	5.5	5.0	✔
Conductivity in Water	E100	1673214	1	18	5.5	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1675068	1	10	10.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1674763	1	6	16.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1680233	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1673225	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1673218	1	18	5.5	5.0	✔
Free Cyanide	E339	1675650	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1673221	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1673222	1	18	5.5	5.0	✔
Reactive Silica by Colourimetry	E392	1673369	1	20	5.0	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1673223	1	18	5.5	5.0	✔
TDS by Gravimetry	E162	1673598	2	21	9.5	5.0	✔
Total Cyanide	E333	1675646	1	8	12.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1673915	1	18	5.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1671744	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1675043	2	38	5.2	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1674744	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1680379	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1674152	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1673072	1	6	16.6	5.0	✔
TSS by Gravimetry	E160	1674749	2	32	6.2	5.0	✔
Turbidity by Nephelometry	E121	1676455	1	20	5.0	5.0	✔
WAD Cyanide	E336	1675645	1	8	12.5	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1672194	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1673220	1	14	7.1	5.0	✔
Chloride in Water by IC	E235.Cl	1673219	1	18	5.5	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1675068	1	10	10.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1674763	1	6	16.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1680233	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1673225	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1673218	1	18	5.5	5.0	✔
Free Cyanide	E339	1675650	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1673221	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1673222	1	18	5.5	5.0	✔
Reactive Silica by Colourimetry	E392	1673369	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1673223	1	18	5.5	5.0	✔
Total Cyanide	E333	1675646	1	8	12.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1673915	1	18	5.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1671744	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1675043	2	38	5.2	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1674744	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1680379	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1674152	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1673072	1	6	16.6	5.0	✔
WAD Cyanide	E336	1675645	1	8	12.5	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Waterloo	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Waterloo	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Waterloo	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)	Ra-226 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon

Page : 30 of 30
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2401543	Page	: 1 of 21
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 20-Sep-2024 15:50
PO	: 17852	Date Analysis Commenced	: 25-Sep-2024
C-O-C number	: ----	Issue Date	: 11-Oct-2024 16:34
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Alex Thornton	Analyst	Vancouver Metals, Burnaby, British Columbia
Ghazaleh Khanmirzaei	Analyst	Vancouver Metals, Burnaby, British Columbia
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Kim Jensen	Department Manager - Metals	Vancouver Inorganics, Burnaby, British Columbia
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Oliver Gregg	Client Services Supervisor	Saskatchewan Research Council External Subcontracting, Saskatoon, Saskatchewan

Page : 2 of 21
Work Order : YL2401543
Client : B2Gold Back River Corp.
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Page : 3 of 21
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1673214)											
VA24C5354-001	Anonymous	Conductivity	----	E100	1.0	µS/cm	431	432	0.232%	10%	----
Physical Tests (QC Lot: 1673215)											
VA24C5354-001	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	150	151	0.470%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	150	151	0.470%	20%	----
Physical Tests (QC Lot: 1673216)											
VA24C5354-001	Anonymous	pH	----	E108	0.10	pH units	8.20	8.20	0.00%	4%	----
Physical Tests (QC Lot: 1673598)											
VA24C5151-001	Anonymous	Solids, total dissolved [TDS]	----	E162	10	mg/L	431	406	5.98%	20%	----
Physical Tests (QC Lot: 1674749)											
VA24C5206-002	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1674783)											
VA24C5206-002	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	66	61	5	Diff <2x LOR	----
Physical Tests (QC Lot: 1674873)											
VA24C5054-003	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	13.7	16.1	2.4	Diff <2x LOR	----
Physical Tests (QC Lot: 1676455)											
VA24C5151-001	Anonymous	Turbidity	----	E121	0.10	NTU	34.6	35.4	2.00%	15%	----
Anions and Nutrients (QC Lot: 1671744)											
EO2408364-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1672194)											
FC2402611-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0461	0.0474	0.0013	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1673218)											
VA24C5354-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.077	0.074	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1673219)											
VA24C5354-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	3.46	3.43	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1673220)											
VA24C5354-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----

Page : 4 of 21
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1673221)											
VA24C5354-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.153	0.152	0.721%	20%	----
Anions and Nutrients (QC Lot: 1673222)											
VA24C5354-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0011	<0.0010	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1673223)											
VA24C5354-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	72.1	71.7	0.473%	20%	----
Anions and Nutrients (QC Lot: 1673225)											
VA24C5354-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1673369)											
EO2408336-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	6.84	6.91	0.945%	20%	----
Anions and Nutrients (QC Lot: 1673915)											
YL2401543-001	BRP-31-1	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0016	0.0017	0.00003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1674152)											
FC2402631-002	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.100	mg/L	4.28	4.26	0.398%	20%	----
Cyanides (QC Lot: 1675645)											
YL2401543-001	BRP-31-1	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1675646)											
YL2401543-001	BRP-31-1	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1675650)											
YL2401543-001	BRP-31-1	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1680233)											
GP2401833-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.16	2.98	0.18	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1680379)											
GP2401833-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	6.62	6.02	9.46%	20%	----
Total Sulfides (QC Lot: 1673072)											
YL2401543-001	BRP-31-1	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0023	0.0020	0.0003	Diff <2x LOR	----
Total Metals (QC Lot: 1675043)											
CG2413739-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 1675046)											
VA24C4866-031	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.00000316 mg/L	3.13	0.03	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1674744)											
YL2401543-001	BRP-31-1	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.104	0.100	3.56%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000238	0.0000230	0.0000008	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000529	0.000498	6.11%	20%	----

Page : 5 of 21
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1674744) - continued											
YL2401543-001	BRP-31-1	Barium, total	7440-39-3	E466	0.000020	mg/L	0.0407	0.0412	1.31%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000244	0.0000238	2.34%	20%	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	0.0000014	0.0000010	0.0000004	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	0.0055	0.0055	0.00002	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000990	0.000101	2.09%	20%	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	22.6	22.0	2.88%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000544	0.0000529	2.78%	20%	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000252	0.000289	0.000037	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.00525	0.00513	2.39%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00395	0.00384	2.85%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.000050	mg/L	0.0834	0.0858	2.80%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.00147	0.00153	4.38%	20%	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000494	0.0000506	0.0000012	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00271	0.00270	0.494%	20%	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	8.94	8.66	3.21%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.0887	0.0861	2.93%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000040	0.000040	0.0000005	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.0237	0.0236	0.708%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	1.98	1.94	1.80%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	0.0000059	0.0000057	0.0000002	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00494	0.00491	0.686%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000162	0.000171	0.000009	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	1.93	1.95	1.07%	20%	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	0.0000043	0.0000042	0.00000008	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	2.70	2.64	2.20%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.122	0.120	1.77%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	13.9	14.0	0.876%	20%	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000110	0.0000117	5.56%	20%	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	0.0000334	0.0000407	0.0000073	Diff <2x LOR	----

Page : 6 of 21
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1674744) - continued											
YL2401543-001	BRP-31-1	Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000754	0.000872	14.6%	20%	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000236	0.0000248	4.94%	20%	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000109	0.000123	12.1%	20%	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000584	0.000578	0.933%	20%	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00921	0.00894	3.05%	20%	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000206	0.000210	1.79%	20%	----
Dissolved Metals (QC Lot: 1674763)											
YL2401543-001	BRP-31-1	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0678	0.0678	0.0484%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000219	0.0000212	0.0000007	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000445	0.000436	2.15%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.0412	0.0399	3.38%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000216	0.0000201	7.45%	20%	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	0.0053	0.0054	0.00004	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.000101	0.000102	0.964%	20%	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	21.4	21.5	0.223%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000537	0.0000516	3.92%	20%	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000194	0.000194	0.00000005	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.00502	0.00502	0.0353%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00368	0.00376	2.02%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0480	0.0484	0.710%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.00139	0.00136	1.90%	20%	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000306	0.0000281	0.0000024	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00271	0.00266	1.83%	20%	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	8.58	8.50	0.901%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.0828	0.0831	0.392%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000040	0.000041	0.000002	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.0227	0.0229	1.10%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	1.90	1.88	1.05%	20%	----

Page : 7 of 21
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1674763) - continued											
YL2401543-001	BRP-31-1	Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	0.0000059	0.0000057	0.0000002	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00463	0.00466	0.785%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000164	0.000167	0.000003	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	1.92	1.93	0.168%	20%	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	0.0000029	0.0000028	0.0000006	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	2.62	2.57	1.70%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.116	0.117	1.27%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	14.3	14.2	1.03%	20%	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000109	0.0000100	8.33%	20%	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000398	0.0000320	0.0000078	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	0.000250	0.000288	0.000038	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000210	0.0000222	5.93%	20%	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000062	0.000067	0.000005	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000547	0.000538	1.61%	20%	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00900	0.00896	0.528%	20%	----
		Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000201	0.000195	2.83%	20%	----
Dissolved Metals (QC Lot: 1675068)											
VA24C4866-042	Anonymous	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	<0.00000050 mg/L	<0.50	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1673214)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1673215)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1673598)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1674749)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1674783)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1674873)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1676455)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1671744)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1672194)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1673218)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1673219)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1673220)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1673221)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1673222)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1673223)						

Page : 9 of 21
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1673223) - continued						
Sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1673225)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1673369)						
Silicate (as SiO ₂)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1673915)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1674152)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Cyanides (QCLot: 1675645)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1675646)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1675650)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1680233)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1680379)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1673072)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1675043)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (QCLot: 1675046)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1674744)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1674744) - continued						
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----

Page : 11 of 21
 Work Order : YL2401543
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1674744) - continued						
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1674763)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1674763) - continued						
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1675068)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1673214)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	97.1	90.0	110	----
Physical Tests (QCLot: 1673215)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	105	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	101	85.0	115	----
Physical Tests (QCLot: 1673216)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1673598)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	92.8	85.0	115	----
Physical Tests (QCLot: 1674749)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	89.1	85.0	115	----
Physical Tests (QCLot: 1674783)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1674873)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	99.8	85.0	115	----
Physical Tests (QCLot: 1676455)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.5	85.0	115	----
Anions and Nutrients (QCLot: 1671744)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 1672194)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1673218)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1673219)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 1673220)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1673221)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	98.0	90.0	110	----
Anions and Nutrients (QCLot: 1673222)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 1673223)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1673223) - continued									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 1673225)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	97.8	80.0	120	----
Anions and Nutrients (QCLot: 1673369)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1673915)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	95.5	80.0	120	----
Anions and Nutrients (QCLot: 1674152)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	92.7	80.0	120	----
Cyanides (QCLot: 1675645)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Cyanides (QCLot: 1675646)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	89.8	80.0	120	----
Cyanides (QCLot: 1675650)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	105	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1680233)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	106	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1680379)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	116	80.0	120	----
Total Sulfides (QCLot: 1673072)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	103	80.0	120	----
Total Metals (QCLot: 1675043)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	110	80.0	120	----
Total Metals (QCLot: 1675046)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	102	80.0	120	----
Total Metals (Undigested) (QCLot: 1674744)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	95.0	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	99.9	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	108	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	98.0	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	103	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	97.6	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1674744) - continued									
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	99.8	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	101	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	93.7	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	97.4	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	91.4	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	90.2	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	92.2	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	93.0	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	98.7	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	96.6	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	92.4	80.0	120	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	92.1	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	93.6	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	92.9	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	114	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	111	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	92.4	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	91.8	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	100	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	106	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	92.5	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	95.0	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	89.6	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	108	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	97.6	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	104	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	107	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	98.6	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	100	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	92.6	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Target Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1674744) - continued									
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	94.6	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
Dissolved Metals (QCLot: 1674763)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	93.0	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	98.7	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	107	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	95.9	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	99.1	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	94.4	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	97.2	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	98.4	80.0	120	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	90.8	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	97.7	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	89.2	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	89.3	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	88.0	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	91.8	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	95.4	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	95.1	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	89.4	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	88.4	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	91.0	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	89.1	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	109	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	108	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	91.1	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	88.8	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	96.0	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	105	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	86.4	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	92.6	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1674763) - continued									
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	89.3	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	105	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	94.5	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	95.1	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	94.0	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	98.8	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	92.5	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	92.1	80.0	120	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	84.9	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method						
Anions and Nutrients (QCLot: 1671744)										
GP2401855-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.39 mg/L	2.5 mg/L	95.7	70.0	130	----
Anions and Nutrients (QCLot: 1672194)										
FC2402611-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1673218)										
VA24C5354-002	Anonymous	Fluoride	16984-48-8	E235.F	4.85 mg/L	5 mg/L	97.1	75.0	125	----
Anions and Nutrients (QCLot: 1673219)										
VA24C5354-002	Anonymous	Chloride	16887-00-6	E235.Cl	491 mg/L	500 mg/L	98.3	75.0	125	----
Anions and Nutrients (QCLot: 1673220)										
VA24C5354-002	Anonymous	Bromide	24959-67-9	E235.Br-L	2.51 mg/L	2.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1673221)										
VA24C5354-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	12.3 mg/L	12.5 mg/L	98.5	75.0	125	----
Anions and Nutrients (QCLot: 1673222)										
VA24C5354-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	2.45 mg/L	2.5 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 1673223)										
VA24C5354-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	480 mg/L	500 mg/L	96.0	75.0	125	----
Anions and Nutrients (QCLot: 1673225)										
VA24C5354-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0350 mg/L	0.03 mg/L	117	70.0	130	----
Anions and Nutrients (QCLot: 1673369)										
EO2408336-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.2 mg/L	10 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1673915)										
YL2401543-002	BRP-31-2	Phosphorus, total dissolved	7723-14-0	E375-U	0.0677 mg/L	0.067 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 1674152)										
FC2402632-001	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Cyanides (QCLot: 1675645)										
YL2401543-001	BRP-31-1	Cyanide, weak acid dissociable	----	E336	0.121 mg/L	0.125 mg/L	96.7	75.0	125	----
Cyanides (QCLot: 1675646)										
YL2401543-001	BRP-31-1	Cyanide, strong acid dissociable (Total)	----	E333	0.202 mg/L	0.25 mg/L	80.6	75.0	125	----
Cyanides (QCLot: 1675650)										
YL2401543-001	BRP-31-1	Cyanide, free	----	E339	0.122 mg/L	0.125 mg/L	97.8	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1680233)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1680233) - continued										
GP2401833-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.18 mg/L	5 mg/L	104	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1680379)										
GP2401833-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1673072)										
YL2401543-002	BRP-31-2	Sulfide, total (as S)	18496-25-8	E395	0.222 mg/L	0.2 mg/L	111	75.0	125	----
Total Metals (QCLot: 1675043)										
CG2413739-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.04 ng/L	5 ng/L	80.9	70.0	130	----
Total Metals (QCLot: 1675046)										
VA24C4866-032	Anonymous	Mercury, total	7439-97-6	E508-L	5.04 ng/L	5 ng/L	101	70.0	130	----
Total Metals (Undigested) (QCLot: 1674744)										
YL2401543-002	BRP-31-2	Aluminum, total	7429-90-5	E466	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		Barium, total	7440-39-3	E466	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00918 mg/L	0.01 mg/L	91.8	70.0	130	----
		Boron, total	7440-42-8	E466	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00415 mg/L	0.004 mg/L	104	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00980 mg/L	0.01 mg/L	98.0	70.0	130	----
		Chromium, total	7440-47-3	E466	0.0381 mg/L	0.04 mg/L	95.3	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Copper, total	7440-50-8	E466	0.0182 mg/L	0.02 mg/L	90.8	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00268 mg/L	0.002 mg/L	107	70.0	130	----
		Iron, total	7439-89-6	E466	1.91 mg/L	2 mg/L	95.5	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00252 mg/L	0.002 mg/L	101	70.0	130	----
		Lead, total	7439-92-1	E466	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Lithium, total	7439-93-2	E466	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0364 mg/L	0.04 mg/L	91.0	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00275 mg/L	0.002 mg/L	110	70.0	130	----
		Phosphorus, total	7723-14-0	E466	10.9 mg/L	10 mg/L	109	70.0	130	----
		Potassium, total	7440-09-7	E466	3.74 mg/L	4 mg/L	93.6	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00268 mg/L	0.002 mg/L	107	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0431 mg/L	0.04 mg/L	108	70.0	130	----
		Silicon, total	7440-21-3	E466	9.51 mg/L	10 mg/L	95.1	70.0	130	----
		Silver, total	7440-22-4	E466	0.00380 mg/L	0.004 mg/L	95.0	70.0	130	----
				Sodium, total	7440-23-5	E466	ND mg/L	----	ND	70.0



Sub-Matrix: Water					Matrix Spike (MS) Report							
					Spike		Recovery (%)	Recovery Limits (%)				
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier		
Total Metals (Undigested) (QCLot: 1674744) - continued												
YL2401543-002	BRP-31-2	Strontium, total	7440-24-6	E466	ND mg/L	----	ND	70.0	130	----		
		Sulfur, total	7704-34-9	E466	20.2 mg/L	20 mg/L	101	70.0	130	----		
		Tantalum, total	7440-25-7	E466	0.00265 mg/L	0.002 mg/L	106	70.0	130	----		
		Tellurium, total	13494-80-9	E466	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----		
		Thallium, total	7440-28-0	E466	0.00375 mg/L	0.004 mg/L	93.7	70.0	130	----		
		Thorium, total	7440-29-1	E466	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----		
		Tin, total	7440-31-5	E466	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----		
		Titanium, total	7440-32-6	E466	0.0429 mg/L	0.04 mg/L	107	70.0	130	----		
		Tungsten, total	7440-33-7	E466	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----		
		Uranium, total	7440-61-1	E466	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----		
		Vanadium, total	7440-62-2	E466	0.0976 mg/L	0.1 mg/L	97.6	70.0	130	----		
		Yttrium, total	7440-65-5	E466	0.00273 mg/L	0.002 mg/L	109	70.0	130	----		
		Zinc, total	7440-66-6	E466	0.412 mg/L	0.4 mg/L	103	70.0	130	----		
		Zirconium, total	7440-67-7	E466	0.0412 mg/L	0.04 mg/L	103	70.0	130	----		
Dissolved Metals (QCLot: 1674763)												
YL2401543-002	BRP-31-2	Aluminum, dissolved	7429-90-5	E465	0.177 mg/L	0.2 mg/L	88.7	70.0	130	----		
		Antimony, dissolved	7440-36-0	E465	0.0181 mg/L	0.02 mg/L	90.5	70.0	130	----		
		Arsenic, dissolved	7440-38-2	E465	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----		
		Barium, dissolved	7440-39-3	E465	ND mg/L	----	ND	70.0	130	----		
		Beryllium, dissolved	7440-41-7	E465	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----		
		Bismuth, dissolved	7440-69-9	E465	0.00834 mg/L	0.01 mg/L	83.4	70.0	130	----		
		Boron, dissolved	7440-42-8	E465	0.0926 mg/L	0.1 mg/L	92.6	70.0	130	----		
		Cadmium, dissolved	7440-43-9	E465	0.00374 mg/L	0.004 mg/L	93.6	70.0	130	----		
		Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----		
		Cesium, dissolved	7440-46-2	E465	0.00916 mg/L	0.01 mg/L	91.6	70.0	130	----		
		Chromium, dissolved	7440-47-3	E465	0.0346 mg/L	0.04 mg/L	86.4	70.0	130	----		
		Cobalt, dissolved	7440-48-4	E465	0.0175 mg/L	0.02 mg/L	87.5	70.0	130	----		
		Copper, dissolved	7440-50-8	E465	0.0169 mg/L	0.02 mg/L	84.4	70.0	130	----		
		Gallium, dissolved	7440-55-3	E465	0.00262 mg/L	0.002 mg/L	105	70.0	130	----		
		Iron, dissolved	7439-89-6	E465	1.75 mg/L	2 mg/L	87.3	70.0	130	----		
		Lanthanum, dissolved	7439-91-0	E465	0.00243 mg/L	0.002 mg/L	97.3	70.0	130	----		
		Lead, dissolved	7439-92-1	E465	0.0176 mg/L	0.02 mg/L	88.1	70.0	130	----		
		Lithium, dissolved	7439-93-2	E465	0.0944 mg/L	0.1 mg/L	94.4	70.0	130	----		
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----		
		Manganese, dissolved	7439-96-5	E465	ND mg/L	----	ND	70.0	130	----		
		Molybdenum, dissolved	7439-98-7	E465	0.0174 mg/L	0.02 mg/L	87.2	70.0	130	----		
		Nickel, dissolved	7440-02-0	E465	0.0336 mg/L	0.04 mg/L	83.9	70.0	130	----		
		Niobium, dissolved	7440-03-1	E465	0.00271 mg/L	0.002 mg/L	108	70.0	130	----		
		Phosphorus, dissolved	7723-14-0	E465	10.1 mg/L	10 mg/L	101	70.0	130	----		
		Potassium, dissolved	7440-09-7	E465	3.46 mg/L	4 mg/L	86.6	70.0	130	----		
		Rhenium, dissolved	7440-15-5	E465	0.00258 mg/L	0.002 mg/L	103	70.0	130	----		
		Rubidium, dissolved	7440-17-7	E465	0.0172 mg/L	0.02 mg/L	86.0	70.0	130	----		
		Selenium, dissolved	7782-49-2	E465	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----		
				Silicon, dissolved	7440-21-3	E465	8.77 mg/L	10 mg/L	87.7	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1674763) - continued										
YL2401543-002	BRP-31-2	Silver, dissolved	7440-22-4	E465	0.00353 mg/L	0.004 mg/L	88.2	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	19.2 mg/L	20 mg/L	96.1	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00259 mg/L	0.002 mg/L	104	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00345 mg/L	0.004 mg/L	86.2	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0183 mg/L	0.02 mg/L	91.5	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0174 mg/L	0.02 mg/L	87.1	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00370 mg/L	0.004 mg/L	92.6	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0908 mg/L	0.1 mg/L	90.8	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00259 mg/L	0.002 mg/L	104	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.378 mg/L	0.4 mg/L	94.4	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
Dissolved Metals (QCLot: 1675068)										
VA24C4866-043	Anonymous	Mercury, dissolved	7439-97-6	E509-L	4.53 ng/L	5 ng/L	90.7	70.0	130	----

CERTIFICATE OF ANALYSIS

Work Order	: YL2401580		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Edmonton
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver British Columbia Canada V7X 1M7	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 23-Sep-2024 14:10
PO	: 17852	Date Analysis Commenced	: 26-Sep-2024
C-O-C number	: ----	Issue Date	: 23-Oct-2024 14:37
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 14		
No. of samples analysed	: 14		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Leon Yang	Analyst	Inorganics, Burnaby, British Columbia
Logan Carroll	Laboratory Analyst	Inorganics, Edmonton, Alberta
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Michael Webb	Analyst	Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	Description
mg/L	milligrams per litre
NTU	nephelometric turbidity units
µS/cm	microsiemens per centimetre
pH units	pH units
ng/L	nanograms per litre
-	no units
Bq/L	becquerels per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Qualifiers

Qualifier	Description
CNP	Cyanide test sample appears to have been preserved, but pH was <10 at time of testing. Results may be biased low, particularly for Free CN species.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV	Reported result verified by repeat analysis.
SFP	Sample was filtered and preserved at the laboratory.
SP	Sample was preserved at the laboratory.



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Client sample ID					BRP-34	BRP-18	BRP-30	GIROF	WOLFOF
Client sampling date / time					22-Sep-2024 13:00	21-Sep-2024 15:55	21-Sep-2024 12:00	22-Sep-2024 16:10	21-Sep-2024 10:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-001	YL2401580-002	YL2401580-003	YL2401580-004	YL2401580-005
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as CaCO ₃)	----	E290/VA	1.0	mg/L	6.0	2.6	5.5	6.4	7.2
Alkalinity, carbonate (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO ₃)	----	E290/VA	1.0	mg/L	6.0	2.6	5.5	6.4	7.2
Conductivity	----	E100/VA	2.0	µS/cm	72.7	214	71.4	69.8	61.4
Hardness (as CaCO ₃), dissolved	----	EC100/VA	0.50	mg/L	27.6	86.3	29.7	27.8	24.7
pH	----	E108/VA	0.10	pH units	7.05	6.39	6.82	7.04	7.08
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	50	151	71	47	53
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	44.8	127	62.0	45.6	43.4
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity	----	E121/VA	0.10	NTU	0.66	0.26	0.22	0.46	0.85
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0712	0.755	0.0092	0.0141	0.0112
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	0.159	<0.050	<0.050	<0.050
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	6.59	26.3	0.96	1.03	3.20
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.028	0.024	0.024	0.032	0.026
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.289	1.10	0.494	0.204	0.333
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.441	3.59	<0.0050	0.0058	0.0171
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0037	0.0145	<0.0010	<0.0010	<0.0010
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-34	BRP-18	BRP-30	GIROF	WOLFOF
Client sampling date / time						22-Sep-2024 13:00	21-Sep-2024 15:55	21-Sep-2024 12:00	22-Sep-2024 16:10	21-Sep-2024 10:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-001	YL2401580-002	YL2401580-003	YL2401580-004	YL2401580-005	
					Result	Result	Result	Result	Result	
Anions and Nutrients										
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0041	0.0031	0.0028	0.0028	0.0041	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0012	0.0027	0.0030	0.0011	0.0028	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	0.74	3.50	7.28	2.07	2.72	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	13.5	36.3	21.5	21.6	14.2	
Cyanides										
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cyanide, weak acid dissociable	----	E336/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	7.31 ^{DTC}	7.80	15.4	6.16	8.41	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	5.51 ^{RRV}	7.30	14.6	6.55	8.78	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	0.0016	0.0043	<0.0015	0.0030	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	0.0017	0.0046	<0.0016	0.0032	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	0.67	1.72	2.87	1.01	1.51	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0166	0.0747	0.106	0.0307	0.0343	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000161	0.0000127	0.0000130	0.0000095	0.0000100	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000263	0.000283	0.000329	0.000263	0.000350	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00982	0.0315	0.0158	0.00708	0.00783	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-34	BRP-18	BRP-30	GIROF	WOLFOF
Client sampling date / time						22-Sep-2024 13:00	21-Sep-2024 15:55	21-Sep-2024 12:00	22-Sep-2024 16:10	21-Sep-2024 10:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-001	YL2401580-002	YL2401580-003	YL2401580-004	YL2401580-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000034	0.0000152	0.0000074	0.0000072	0.0000031	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000070	0.0000803	0.0000061	0.0000094	0.0000043	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	5.92	20.2	5.26	4.85	5.13	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000136	0.0000502	0.0000057	0.0000081	0.0000064	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000084	0.000189	0.000668	0.000126	0.000239	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000331	0.00355	0.000389	0.000807	0.000227	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00152	0.00404	0.00236	0.00262	0.00179	
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0474	0.0238	0.144	0.0590	0.129	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000139	0.00177	0.000304	0.000540	0.000302	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000078	0.0000195	0.0000093	0.0000116	0.0000150	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00099	0.00163	0.00116	0.00115	0.00095	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	3.11	8.18	4.01	3.85	3.06	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00542	0.0883	0.00176	0.00344	0.00468	
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000022	<0.000010	0.000010	0.000019	0.000013	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00446	0.0178	0.00594	0.0115	0.00455	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.621	1.67	0.400	0.506	0.478	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-34	BRP-18	BRP-30	GIROF	WOLFOF
Client sampling date / time						22-Sep-2024 13:00	21-Sep-2024 15:55	21-Sep-2024 12:00	22-Sep-2024 16:10	21-Sep-2024 10:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-001	YL2401580-002	YL2401580-003	YL2401580-004	YL2401580-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00161	0.00407	0.00100	0.00104	0.00119	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000039	0.000144	0.000038	0.000033	0.000025	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.338	1.67	3.37	0.960	1.26	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	0.0000043	<0.0000020	0.0000024	0.0000033	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.03	2.59	1.49	1.08	1.14	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0317	0.116	0.0211	0.0187	0.0225	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	4.39	12.3	7.17	7.29	4.75	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000015	0.0000100	0.0000026	0.0000017	0.0000014	
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000097	0.0000275	0.0000796	0.0000220	0.0000271	
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000169	0.000283	0.000617	0.000374	0.00139	
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000067	0.0000198	0.0000106	0.0000151	0.0000127	
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000052	0.000052	0.000193	0.000069	0.000091	
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000061	0.000543	0.000287	0.000231	0.000149	
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00074	0.00615	0.00297	0.00163	0.00087	
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000042	0.000162	0.000336	0.000116	0.000193	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-34	BRP-18	BRP-30	GIROF	WOLFOF
Client sampling date / time						22-Sep-2024 13:00	21-Sep-2024 15:55	21-Sep-2024 12:00	22-Sep-2024 16:10	21-Sep-2024 10:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-001	YL2401580-002	YL2401580-003	YL2401580-004	YL2401580-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0103	0.0699	0.104	0.0226	0.0265	
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000171	0.0000122	0.0000120	0.0000112	0.0000101	
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000263	0.000268	0.000323	0.000246	0.000308	
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00953	0.0330	0.0155	0.00704	0.00767	
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000024	0.0000155	0.0000075	0.0000054	0.0000027	
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000061	0.0000832	0.0000060	0.0000084	0.0000042	
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	6.02	21.0	5.24	4.80	4.98	
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000132	0.0000565	<0.0000050	0.0000068	0.0000053	
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000074	0.000182	0.000642	0.000120	0.000217	
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000292	0.00391	0.000377	0.000780	0.000213	
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00150	0.00395	0.00235	0.00250	0.00168	
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field	
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0214	0.0196	0.135	0.0279	0.0910	
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000103	0.00182	0.000302	0.000459	0.000270	
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000154	0.0000189	0.0000061	0.0000125	0.0000089	
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00099	0.00168	0.00125	0.00120	0.00098	
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	3.04	8.22	4.03	3.85	2.98	
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00463	0.0977	0.00167	0.00311	0.00418	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					BRP-34	BRP-18	BRP-30	GIROF	WOLFOF
Client sampling date / time					22-Sep-2024 13:00	21-Sep-2024 15:55	21-Sep-2024 12:00	22-Sep-2024 16:10	21-Sep-2024 10:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-001	YL2401580-002	YL2401580-003	YL2401580-004	YL2401580-005
					Result	Result	Result	Result	Result
Dissolved Metals									
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	1.51	3.15	0.72	1.18
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000028	<0.000010	0.000012	0.000016	0.000010
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00434	0.0184	0.00591	0.0111	0.00442
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.651	1.75	0.396	0.501	0.468
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00157	0.00426	0.000970	0.000995	0.00114
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000038	0.000145	0.000039	0.000035	0.000032
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.337	1.65	3.45	0.976	1.29
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	0.0000031	<0.0000020	<0.0000020	<0.0000020
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.04	2.63	1.50	1.08	1.14
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0316	0.124	0.0206	0.0184	0.0220
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	4.50	12.5	7.21	7.13	4.81
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000018	0.0000093	0.0000024	0.0000014	0.0000014
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000111	0.0000286	0.0000790	0.0000261	0.0000287
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000068	0.000124	0.000523	0.000082	0.000211
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-34	BRP-18	BRP-30	GIROF	WOLFOF
Client sampling date / time						22-Sep-2024 13:00	21-Sep-2024 15:55	21-Sep-2024 12:00	22-Sep-2024 16:10	21-Sep-2024 10:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-001	YL2401580-002	YL2401580-003	YL2401580-004	YL2401580-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000064	0.0000190	0.0000100	0.0000140	0.0000112	
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000036	0.000048	0.000190	0.000044	0.000066	
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000054	0.000544	0.000287	0.000200	0.000141	
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00087	0.00646	0.00280	0.00198	0.00078	
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000046	0.000157	0.000344	0.000119	0.000193	
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-23	BRP-19	FD-2	BRP-38-1	BRP-38-2
Client sampling date / time						22-Sep-2024 11:05	22-Sep-2024 10:05	22-Sep-2024 11:05	20-Sep-2024 10:30	20-Sep-2024 11:00
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-006	YL2401580-007	YL2401580-008	YL2401580-009	YL2401580-010	
					Result	Result	Result	Result	Result	
Physical Tests										
Alkalinity, bicarbonate (as CaCO ₃)	----	E290/VA	1.0	mg/L	8.2	16.7	8.0	8.7	8.8	
Alkalinity, carbonate (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, hydroxide (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, total (as CaCO ₃)	----	E290/VA	1.0	mg/L	8.2	16.7	8.0	8.7	8.8	
Conductivity	----	E100/VA	2.0	µS/cm	104	394	102	32.4	31.7	
Hardness (as CaCO ₃), dissolved	----	EC100/VA	0.50	mg/L	35.1	136	35.6	13.2	13.3	
pH	----	E108/VA	0.10	pH units	7.12	7.34	7.14	7.22	7.20	



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

					Client sample ID	BRP-23	BRP-19	FD-2	BRP-38-1	BRP-38-2
Client sampling date / time						22-Sep-2024 11:05	22-Sep-2024 10:05	22-Sep-2024 11:05	20-Sep-2024 10:30	20-Sep-2024 11:00
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-006	YL2401580-007	YL2401580-008	YL2401580-009	YL2401580-010	
					Result	Result	Result	Result	Result	
Physical Tests										
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	71	227	77	25	24	
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	66.7	268	67.6	21.2	21.2	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
Turbidity	----	E121/VA	0.10	NTU	0.72	2.16	0.74	0.47	0.53	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.944	6.46	0.969	0.0136	0.0085	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	0.060	<0.050	<0.050	<0.050	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	4.20	6.28	4.20	0.59	0.58	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.030	0.069	0.030	0.022	0.022	
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	1.28	7.10	1.37	0.268	0.277	
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	2.40	17.7	2.39	0.0094	0.0082	
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0225	0.117	0.0226	<0.0010	<0.0010	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0040	0.0078	0.0037	0.0030	0.0030	
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0018	0.0046	0.0023	0.0011	0.0022	
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	2.54	8.53	2.55	0.56	0.55	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	20.3	81.6	20.3	4.94	4.96	
Cyanides										
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	0.0056	0.0507	0.0063	<0.0050	<0.0050	
Cyanide, weak acid dissociable	----	E336/WT	0.0050	mg/L	<0.0050	0.0101	<0.0050	<0.0050	<0.0050	



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

					Client sample ID	BRP-23	BRP-19	FD-2	BRP-38-1	BRP-38-2
Client sampling date / time						22-Sep-2024 11:05	22-Sep-2024 10:05	22-Sep-2024 11:05	20-Sep-2024 10:30	20-Sep-2024 11:00
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-006	YL2401580-007	YL2401580-008	YL2401580-009	YL2401580-010	
					Result	Result	Result	Result	Result	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	8.18	16.0	8.96	4.62	4.49	
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	8.40	15.9	8.55	5.30	4.77	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	0.0062	0.0019	<0.0015	<0.0015	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	0.0066	0.0020	<0.0016	<0.0016	
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	1.25	2.34	1.27	<0.50	<0.50	
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.0293	0.162	0.0300	0.00565	0.00533	
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	0.0000784	0.0000876	0.0000797	<0.0000050	<0.0000050	
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000370	0.00178	0.000396	0.000191	0.000185	
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00923	0.0473	0.00930	0.00358	0.00360	
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	0.0000035	0.0000128	0.0000035	<0.0000020	<0.0000020	
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	0.0000036	<0.0000010	<0.0000010	<0.0000010	
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	0.0156	<0.0050	<0.0050	<0.0050	
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	0.0000075	0.0000414	0.0000075	<0.0000025	<0.0000025	
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	7.11	25.2	7.39	2.33	2.33	
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000138	0.0000878	0.0000156	0.0000064	0.0000061	
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000203	0.000645	0.000200	0.000079	<0.000040	
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.000780	0.00748	0.000800	0.0000729	0.0000748	
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.00167	0.00539	0.00171	0.000671	0.000675	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-23	BRP-19	FD-2	BRP-38-1	BRP-38-2
Client sampling date / time						22-Sep-2024 11:05	22-Sep-2024 10:05	22-Sep-2024 11:05	20-Sep-2024 10:30	20-Sep-2024 11:00
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-006	YL2401580-007	YL2401580-008	YL2401580-009	YL2401580-010	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.121	0.378	0.126	0.0671	0.0659	
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000255	0.00123	0.000259	0.000057	0.000052	
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000157	0.000166	0.0000157	0.0000053	0.0000052	
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00152	0.00503	0.00149	0.00046	0.00047	
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	4.27	18.4	4.40	1.84	1.83	
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.0214	0.171	0.0223	0.00296	0.00292	
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	0.000181	0.00104	0.000187	<0.000010	<0.000010	
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00495	0.0283	0.00501	0.00105	0.00105	
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	0.012	
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	1.05	7.27	1.08	0.371	0.374	
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	0.0000308	<0.0000050	<0.0000050	<0.0000050	
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.00214	0.0126	0.00220	0.000980	0.000997	
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	0.000095	0.000607	0.000100	<0.000025	<0.000025	
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	1.15	4.17	1.18	0.234	0.238	
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	0.0000026	0.0000046	0.0000029	<0.0000020	<0.0000020	
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	1.56	5.27	1.61	0.650	0.668	
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.0342	0.0984	0.0354	0.00784	0.00783	
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	6.52	27.8	6.81	1.68	1.68	
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-23	BRP-19	FD-2	BRP-38-1	BRP-38-2
Client sampling date / time						22-Sep-2024 11:05	22-Sep-2024 10:05	22-Sep-2024 11:05	20-Sep-2024 10:30	20-Sep-2024 11:00
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-006	YL2401580-007	YL2401580-008	YL2401580-009	YL2401580-010	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	0.0000031	0.0000236	0.0000033	<0.0000010	<0.0000010	<0.0000010
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	0.0000271	0.0000912	0.0000259	0.0000054	0.0000062	0.0000062
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000360	0.00259	0.000338	0.000128	0.000070	0.000070
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000272	0.0000921	0.0000268	0.0000037	0.0000045	0.0000045
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000095	0.000356	0.000092	0.000029	0.000027	0.000027
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000130	0.000659	0.000131	0.000024	0.000024	0.000024
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00103	0.00322	0.00103	0.00013	0.00018	0.00018
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000182	0.000690	0.000177	0.000030	0.000026	0.000026
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.0223	0.0852	0.0223	0.00271	0.00468	0.00468
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	0.0000825	0.0000871	0.0000818	<0.0000050	0.0000059	0.0000059
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000350	0.00155	0.000362	0.000174	0.000181	0.000181
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00936	0.0454	0.00900	0.00345	0.00352	0.00352
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	0.0000039	0.0000098	0.0000034	<0.0000020	<0.0000020	<0.0000020
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	0.0000019	<0.0000010	<0.0000010	<0.0000010	<0.0000010
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	0.0159	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	0.0000085	0.0000412	0.0000055	<0.0000025	<0.0000025	<0.0000025
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	6.97	24.4	7.06	2.26	2.29	2.29



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					BRP-23	BRP-19	FD-2	BRP-38-1	BRP-38-2
Client sampling date / time					22-Sep-2024 11:05	22-Sep-2024 10:05	22-Sep-2024 11:05	20-Sep-2024 10:30	20-Sep-2024 11:00
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-006	YL2401580-007	YL2401580-008	YL2401580-009	YL2401580-010
					Result	Result	Result	Result	Result
Dissolved Metals									
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000128	0.0000800	0.0000126	0.0000051	0.0000056
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	0.000178	0.000485	0.000184	0.000279 ^{DTC}	0.000046
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.000764	0.00720	0.000767	0.0000454	0.0000487
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.00156	0.00501	0.00157	0.000617	0.000637
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field	Field
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Iron, dissolved	7439-89-6	E465/VA	0.000050	mg/L	0.0875	0.264	0.0883	0.0232	0.0246
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000218	0.00100	0.000208	0.000032	0.000035
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	0.0000086	0.000100	0.0000083	<0.0000050	0.0000505 ^{DTC}
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00160	0.00513	0.00156	0.00049	0.00050
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	4.29	18.3	4.36	1.83	1.85
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.0208	0.166	0.0212	0.00174	0.00178
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	0.90	1.99	0.92	<0.50	<0.50
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	0.000177	0.000997	0.000175	<0.000010	<0.000010
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00490	0.0271	0.00488	0.00103	0.00104
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	1.02	7.14	1.03	0.367	0.373
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	0.0000327	<0.0000050	<0.0000050	<0.0000050
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.00204	0.0117	0.00201	0.000929	0.000953
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	0.000108	0.000625	0.000114	0.000026	0.000026



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Sub-Matrix: Water (Matrix: Water)					Client sample ID		BRP-23	BRP-19	FD-2	BRP-38-1	BRP-38-2
Client sampling date / time					22-Sep-2024 11:05	22-Sep-2024 10:05	22-Sep-2024 11:05	20-Sep-2024 10:30	20-Sep-2024 11:00		
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-006	YL2401580-007	YL2401580-008	YL2401580-009	YL2401580-010		
					Result	Result	Result	Result	Result		
Dissolved Metals											
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	1.17	4.05	1.20	0.237	0.245		
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	0.0000042	<0.0000020	<0.0000020	<0.0000020		
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	1.56	5.26	1.58	0.651	0.668		
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.0334	0.0946	0.0334	0.00760	0.00768		
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	6.95	27.8	7.15	1.69	1.72		
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	0.0000033	0.0000217	0.0000032	<0.0000010	<0.0000010		
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000245	0.0000906	0.0000269	0.0000053	0.0000055		
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	0.000166	0.000787	0.000163	<0.000050	0.000075		
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000304	0.0000936	0.0000311	0.0000027	0.0000033		
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000065	0.000226	0.000068	0.000015	0.000020		
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000117	0.000589	0.000116	0.000019	0.000019		
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00101	0.00300	0.00101	0.00026	0.00064 ^{DTC}		
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000176	0.000588	0.000191	0.000026	0.000029		
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field	Field		
Radiological Parameters											
Radium-226	13982-63-3	Ra-226/2l	0.005	Bq/L	----	----	----	<0.005	<0.005		

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

					Client sample ID	BRP-38-3	BRP-38-4	BRP-38-5	TB-2	----
					Client sampling date / time	20-Sep-2024 11:15	20-Sep-2024 11:35	20-Sep-2024 11:50	20-Sep-2024 10:35	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-011	YL2401580-012	YL2401580-013	YL2401580-014	----	----
					Result	Result	Result	Result		----
Physical Tests										
Alkalinity, bicarbonate (as CaCO ₃)	----	E290/VA	1.0	mg/L	8.7	8.6	8.7	<1.0	----	----
Alkalinity, carbonate (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	----
Alkalinity, total (as CaCO ₃)	----	E290/VA	1.0	mg/L	8.7	8.6	8.7	<1.0	----	----
Conductivity	----	E100/VA	2.0	µS/cm	31.9	32.6	32.0	<2.0	----	----
Hardness (as CaCO ₃), dissolved	----	EC100/VA	0.50	mg/L	13.0	12.9	13.2	<0.50	----	----
pH	----	E108/VA	0.10	pH units	7.21	7.15	7.16	5.49	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	21	23	24	<10	----	----
Solids, total dissolved [TDS], calculated	----	EC103/VA	1.0	mg/L	21.0	22.4	21.6	<1.0	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	----	----
Turbidity	----	E121/VA	0.10	NTU	0.46	0.44	0.45	<0.10	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/EO	0.0050	mg/L	0.0096	0.0081	0.0091	<0.0050 ^{SP}	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	0.58	0.56	0.58	<0.50	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.022	<0.020	<0.020	<0.020	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/EO	0.050	mg/L	0.249	0.258	0.290	<0.050 ^{SP}	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0069	0.0065	0.0065	<0.0050	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-38-3	BRP-38-4	BRP-38-5	TB-2	----
					Client sampling date / time	20-Sep-2024 11:15	20-Sep-2024 11:35	20-Sep-2024 11:50	20-Sep-2024 10:35	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-011	YL2401580-012	YL2401580-013	YL2401580-014	----	----
					Result	Result	Result	Result		----
Anions and Nutrients										
Phosphorus, total	7723-14-0	E372-S/EO	0.0010	mg/L	0.0028	0.0035	0.0090	0.0012 ^{RRV}	----	----
Phosphorus, total dissolved	7723-14-0	E375-U/EO	0.0010	mg/L	0.0014	0.0014	<0.0010	0.0014 ^{RRV}	----	----
Silicate (as SiO ₂)	7631-86-9	E392/VA	0.50	mg/L	0.53	0.54	0.54	0.54	----	----
Sulfate (as SO ₄)	14808-79-8	E235.SO4/VA	0.30	mg/L	4.94	5.06	5.06	<0.30	----	----
Cyanides										
Cyanide, free	----	E339/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050 ^{CNP}	----	----
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050 ^{CNP}	----	----
Cyanide, weak acid dissociable	----	E336/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050 ^{CNP}	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/EO	0.50	mg/L	4.52	5.96	4.94	<0.50 ^{SFP}	----	----
Carbon, total organic [TOC]	----	E355-L/EO	0.50	mg/L	4.78	4.96	5.04	<0.50	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	----	----
Sulfide, total (as H ₂ S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	<0.0016	<0.0016	----	----
Total Metals										
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L	<0.50	0.51	<0.50	<0.50	----	----
Total Metals (Undigested)										
Aluminum, total	7429-90-5	E466/VA	0.00020	mg/L	0.00539	0.00533	0.00565	<0.00020	----	----
Antimony, total	7440-36-0	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	----	----
Arsenic, total	7440-38-2	E466/VA	0.000010	mg/L	0.000175	0.000183	0.000184	<0.000010	----	----
Barium, total	7440-39-3	E466/VA	0.000020	mg/L	0.00353	0.00357	0.00355	<0.000020	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-38-3	BRP-38-4	BRP-38-5	TB-2	----
					Client sampling date / time	20-Sep-2024 11:15	20-Sep-2024 11:35	20-Sep-2024 11:50	20-Sep-2024 10:35	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-011	YL2401580-012	YL2401580-013	YL2401580-014	----	----
					Result	Result	Result	Result	----	----
Total Metals (Undigested)										
Beryllium, total	7440-41-7	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	----
Bismuth, total	7440-69-9	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	----
Boron, total	7440-42-8	E466/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	----
Cadmium, total	7440-43-9	E466/VA	0.0000025	mg/L	<0.0000025	<0.0000025	<0.0000025	<0.0000025	<0.0000025	----
Calcium, total	7440-70-2	E466/VA	0.010	mg/L	2.29	2.25	2.31	<0.010	<0.010	----
Cesium, total	7440-46-2	E466/VA	0.0000050	mg/L	0.0000059	0.0000054	0.0000055	<0.0000050	<0.0000050	----
Chromium, total	7440-47-3	E466/VA	0.000040	mg/L	0.000042	<0.000040	0.000081	<0.000040	<0.000040	----
Cobalt, total	7440-48-4	E466/VA	0.0000050	mg/L	0.0000670	0.0000711	0.0000718	<0.0000050	<0.0000050	----
Copper, total	7440-50-8	E466/VA	0.000050	mg/L	0.000687	0.000660	0.000683	<0.000050	<0.000050	----
Gallium, total	7440-55-3	E466/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	----
Iron, total	7439-89-6	E466/VA	0.00050	mg/L	0.0596	0.0626	0.0638	<0.00050	<0.00050	----
Lanthanum, total	7439-91-0	E466/VA	0.000010	mg/L	0.000051	0.000053	0.000051	<0.000010	<0.000010	----
Lead, total	7439-92-1	E466/VA	0.0000050	mg/L	0.0000058	0.0000053	0.0000057	<0.0000050	<0.0000050	----
Lithium, total	7439-93-2	E466/VA	0.00010	mg/L	0.00047	0.00048	0.00048	<0.00010	<0.00010	----
Magnesium, total	7439-95-4	E466/VA	0.0010	mg/L	1.81	1.82	1.87	<0.0010	<0.0010	----
Manganese, total	7439-96-5	E466/VA	0.0000050	mg/L	0.00266	0.00276	0.00278	<0.0000050	<0.0000050	----
Molybdenum, total	7439-98-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	----
Nickel, total	7440-02-0	E466/VA	0.000020	mg/L	0.00106	0.00108	0.00108	<0.000020	<0.000020	----
Niobium, total	7440-03-1	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	----
Phosphorus, total	7723-14-0	E466/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	----
Potassium, total	7440-09-7	E466/VA	0.0050	mg/L	0.368	0.362	0.372	<0.0050	<0.0050	----



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

					Client sample ID	BRP-38-3	BRP-38-4	BRP-38-5	TB-2	----
					Client sampling date / time	20-Sep-2024 11:15	20-Sep-2024 11:35	20-Sep-2024 11:50	20-Sep-2024 10:35	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-011	YL2401580-012	YL2401580-013	YL2401580-014	----	----
					Result	Result	Result	Result	----	----
Total Metals (Undigested)										
Rhenium, total	7440-15-5	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	----
Rubidium, total	7440-17-7	E466/VA	0.0000050	mg/L	0.000975	0.000956	0.000987	<0.0000050	<0.0000050	----
Selenium, total	7782-49-2	E466/VA	0.000025	mg/L	<0.000025	0.000027	<0.000025	<0.000025	<0.000025	----
Silicon, total	7440-21-3	E466/VA	0.050	mg/L	0.234	0.242	0.237	<0.050	<0.050	----
Silver, total	7440-22-4	E466/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	----
Sodium, total	7440-23-5	E466/VA	0.010	mg/L	0.650	0.650	0.667	<0.010	<0.010	----
Strontium, total	7440-24-6	E466/VA	0.000020	mg/L	0.00773	0.00761	0.00783	<0.000020	<0.000020	----
Sulfur, total	7704-34-9	E466/VA	0.50	mg/L	1.69	1.72	1.71	<0.50	<0.50	----
Tantalum, total	7440-25-7	E466/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	----
Tellurium, total	13494-80-9	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	----
Thallium, total	7440-28-0	E466/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	----
Thorium, total	7440-29-1	E466/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	----
Tin, total	7440-31-5	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	----
Titanium, total	7440-32-6	E466/VA	0.000050	mg/L	0.000079	0.000073	0.000073	<0.000050	<0.000050	----
Tungsten, total	7440-33-7	E466/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	----
Uranium, total	7440-61-1	E466/VA	0.0000010	mg/L	0.0000041	0.0000035	0.0000032	<0.0000010	<0.0000010	----
Vanadium, total	7440-62-2	E466/VA	0.000010	mg/L	0.000027	0.000025	0.000028	<0.000010	<0.000010	----
Yttrium, total	7440-65-5	E466/VA	0.000010	mg/L	0.000024	0.000024	0.000024	<0.000010	<0.000010	----
Zinc, total	7440-66-6	E466/VA	0.00010	mg/L	0.00015	0.00020	0.00010	<0.00010	<0.00010	----
Zirconium, total	7440-67-7	E466/VA	0.000010	mg/L	0.000028	0.000032	0.000026	<0.000010	<0.000010	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-38-3	BRP-38-4	BRP-38-5	TB-2	----
					Client sampling date / time	20-Sep-2024 11:15	20-Sep-2024 11:35	20-Sep-2024 11:50	20-Sep-2024 10:35	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-011	YL2401580-012	YL2401580-013	YL2401580-014	----	----
					Result	Result	Result	Result		----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E465/VA	0.00020	mg/L	0.00276	0.00261	0.00280	<0.00020		----
Antimony, dissolved	7440-36-0	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050		----
Arsenic, dissolved	7440-38-2	E465/VA	0.000010	mg/L	0.000184	0.000177	0.000178	<0.000010		----
Barium, dissolved	7440-39-3	E465/VA	0.000020	mg/L	0.00345	0.00350	0.00355	<0.000020		----
Beryllium, dissolved	7440-41-7	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020		----
Bismuth, dissolved	7440-69-9	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010		----
Boron, dissolved	7440-42-8	E465/VA	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050		----
Cadmium, dissolved	7440-43-9	E465/VA	0.0000025	mg/L	<0.0000025	<0.0000025	<0.0000025	<0.0000025		----
Calcium, dissolved	7440-70-2	E465/VA	0.010	mg/L	2.24	2.20	2.27	<0.010		----
Cesium, dissolved	7440-46-2	E465/VA	0.0000050	mg/L	0.0000051	0.0000051	0.0000050	<0.0000050		----
Chromium, dissolved	7440-47-3	E465/VA	0.000040	mg/L	<0.000040	<0.000040	<0.000040	<0.000040		----
Cobalt, dissolved	7440-48-4	E465/VA	0.0000050	mg/L	0.0000460	0.0000439	0.0000438	<0.0000050		----
Copper, dissolved	7440-50-8	E465/VA	0.000050	mg/L	0.000561	0.000601	0.000632	<0.000050		----
Dissolved metals filtration location	----	EP465/VA	-	-	Field	Field	Field	Field		----
Gallium, dissolved	7440-55-3	E465/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050		----
Iron, dissolved	7439-89-6	E465/VA	0.00050	mg/L	0.0227	0.0235	0.0228	<0.00050		----
Lanthanum, dissolved	7439-91-0	E465/VA	0.000010	mg/L	0.000032	0.000033	0.000034	<0.000010		----
Lead, dissolved	7439-92-1	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050		----
Lithium, dissolved	7439-93-2	E465/VA	0.00010	mg/L	0.00049	0.00049	0.00050	<0.00010		----
Magnesium, dissolved	7439-95-4	E465/VA	0.0010	mg/L	1.80	1.80	1.83	<0.0010		----
Manganese, dissolved	7439-96-5	E465/VA	0.0000050	mg/L	0.00162	0.00166	0.00168	<0.0000050		----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	BRP-38-3	BRP-38-4	BRP-38-5	TB-2	----
					Client sampling date / time	20-Sep-2024 11:15	20-Sep-2024 11:35	20-Sep-2024 11:50	20-Sep-2024 10:35	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-011	YL2401580-012	YL2401580-013	YL2401580-014	----	----
					Result	Result	Result	Result		----
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509-L/VA	0.50	ng/L	<0.50	<0.50	<0.50	<0.50		----
Molybdenum, dissolved	7439-98-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010		----
Nickel, dissolved	7440-02-0	E465/VA	0.000020	mg/L	0.00101	0.00103	0.00104	<0.000020		----
Niobium, dissolved	7440-03-1	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010		----
Phosphorus, dissolved	7723-14-0	E465/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010		----
Potassium, dissolved	7440-09-7	E465/VA	0.0050	mg/L	0.354	0.359	0.366	<0.0050		----
Rhenium, dissolved	7440-15-5	E465/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050		----
Rubidium, dissolved	7440-17-7	E465/VA	0.0000050	mg/L	0.000933	0.000936	0.000948	<0.0000050		----
Selenium, dissolved	7782-49-2	E465/VA	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025		----
Silicon, dissolved	7440-21-3	E465/VA	0.050	mg/L	0.242	0.236	0.239	<0.050		----
Silver, dissolved	7440-22-4	E465/VA	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020		----
Sodium, dissolved	7440-23-5	E465/VA	0.010	mg/L	0.646	0.639	0.650	<0.010		----
Strontium, dissolved	7440-24-6	E465/VA	0.000020	mg/L	0.00747	0.00748	0.00768	<0.000020		----
Sulfur, dissolved	7704-34-9	E465/VA	0.50	mg/L	1.74	1.70	1.73	<0.50		----
Tantalum, dissolved	7440-25-7	E465/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010		----
Tellurium, dissolved	13494-80-9	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010		----
Thallium, dissolved	7440-28-0	E465/VA	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010		----
Thorium, dissolved	7440-29-1	E465/VA	0.0000050	mg/L	0.0000056	<0.0000050	0.0000062	<0.0000050		----
Tin, dissolved	7440-31-5	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010		----
Titanium, dissolved	7440-32-6	E465/VA	0.000050	mg/L	<0.000050	0.000080	<0.000050	<0.000050		----
Tungsten, dissolved	7440-33-7	E465/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010		----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-38-3	BRP-38-4	BRP-38-5	TB-2	----
Client sampling date / time						20-Sep-2024 11:15	20-Sep-2024 11:35	20-Sep-2024 11:50	20-Sep-2024 10:35	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401580-011	YL2401580-012	YL2401580-013	YL2401580-014		----
					Result	Result	Result	Result		----
Dissolved Metals										
Uranium, dissolved	7440-61-1	E465/VA	0.0000010	mg/L	0.0000036	0.0000031	0.0000028	<0.0000010		----
Vanadium, dissolved	7440-62-2	E465/VA	0.000010	mg/L	0.000017	0.000017	0.000016	<0.000010		----
Yttrium, dissolved	7440-65-5	E465/VA	0.000010	mg/L	0.000018	0.000018	0.000019	<0.000010		----
Zinc, dissolved	7440-66-6	E465/VA	0.00010	mg/L	0.00019	0.00014	0.00024	<0.00010		----
Zirconium, dissolved	7440-67-7	E465/VA	0.000010	mg/L	0.000025	0.000024	0.000026	<0.000010		----
Dissolved mercury filtration location	----	EP509-L/VA	-	-	Field	Field	Field	Field		----
Radiological Parameters										
Radium-226	13982-63-3	Ra-226/2I	0.005	Bq/L	<0.005	0.008	<0.005	<0.005		----

Please refer to the General Comments section for an explanation of any result qualifiers detected.
 Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2401580	Page	: 1 of 55
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 23-Sep-2024 14:10
PO	: 17852	Issue Date	: 23-Oct-2024 14:37
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 14		
No. of samples analysed	: 14		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-19	E298	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-23	E298	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-34	E298	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FD-2	E298	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) GIROF	E298	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-18	E298	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-30	E298	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WOLFOF	E298	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-1	E298	20-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-2	E298	20-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-3	E298	20-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-4	E298	20-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-38-5	E298	20-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) TB-2	E298	20-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-34	E235.Br-L	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE GIROF	E235.Br-L	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-18	E235.Br-L	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-19	E235.Br-L	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-23	E235.Br-L	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FD-2	E235.Br-L	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-30	E235.Br-L	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WOLFOF	E235.Br-L	21-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-1	E235.Br-L	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-2	E235.Br-L	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-3	E235.Br-L	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-4	E235.Br-L	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BRP-38-5	E235.Br-L	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE TB-2	E235.Br-L	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-34	E235.Cl	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GIROF	E235.Cl	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-18	E235.Cl	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-19	E235.Cl	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-23	E235.Cl	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FD-2	E235.Cl	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-30	E235.Cl	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WOLFOF	E235.Cl	21-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-1	E235.Cl	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-2	E235.Cl	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-3	E235.Cl	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-4	E235.Cl	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-38-5	E235.Cl	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE TB-2	E235.Cl	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-34	E378-U	22-Sep-2024	26-Sep-2024	3 days	4 days	✖ EHT	27-Sep-2024	3 days	5 days	✖ EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE GIROF	E378-U	22-Sep-2024	26-Sep-2024	3 days	4 days	* EHT	27-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-19	E378-U	22-Sep-2024	26-Sep-2024	3 days	5 days	* EHT	27-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-23	E378-U	22-Sep-2024	26-Sep-2024	3 days	5 days	* EHT	27-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE FD-2	E378-U	22-Sep-2024	26-Sep-2024	3 days	5 days	* EHT	27-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-18	E378-U	21-Sep-2024	26-Sep-2024	3 days	5 days	* EHT	27-Sep-2024	3 days	6 days	* EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-30	E378-U	21-Sep-2024	26-Sep-2024	3 days	5 days	* EHT	27-Sep-2024	3 days	6 days	* EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE WOLFOF	E378-U	21-Sep-2024	26-Sep-2024	3 days	6 days	* EHT	27-Sep-2024	3 days	6 days	* EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-1	E378-U	20-Sep-2024	26-Sep-2024	3 days	7 days	* EHTL	27-Sep-2024	3 days	7 days	* EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-2	E378-U	20-Sep-2024	26-Sep-2024	3 days	7 days	* EHTL	27-Sep-2024	3 days	7 days	* EHTL



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-3	E378-U	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-4	E378-U	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE BRP-38-5	E378-U	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE TB-2	E378-U	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-34	E235.F	22-Sep-2024	26-Sep-2024	28 days	4 days	✔	27-Sep-2024	28 days	4 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE GIROF	E235.F	22-Sep-2024	26-Sep-2024	28 days	4 days	✔	27-Sep-2024	28 days	4 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-18	E235.F	21-Sep-2024	26-Sep-2024	28 days	5 days	✔	27-Sep-2024	28 days	5 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-19	E235.F	22-Sep-2024	26-Sep-2024	28 days	5 days	✔	27-Sep-2024	28 days	5 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-23	E235.F	22-Sep-2024	26-Sep-2024	28 days	5 days	✔	27-Sep-2024	28 days	5 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE FD-2	E235.F	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-30	E235.F	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WOLFOF	E235.F	21-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-1	E235.F	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-2	E235.F	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-3	E235.F	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-4	E235.F	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-38-5	E235.F	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE TB-2	E235.F	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-34	E235.NO3-L	22-Sep-2024	26-Sep-2024	3 days	4 days	✖ EHT	27-Sep-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GIROF	E235.NO3-L	22-Sep-2024	26-Sep-2024	3 days	4 days	✖ EHT	27-Sep-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-18	E235.NO3-L	21-Sep-2024	26-Sep-2024	3 days	5 days	✖ EHT	27-Sep-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-19	E235.NO3-L	22-Sep-2024	26-Sep-2024	3 days	5 days	✖ EHT	27-Sep-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-23	E235.NO3-L	22-Sep-2024	26-Sep-2024	3 days	5 days	✖ EHT	27-Sep-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FD-2	E235.NO3-L	22-Sep-2024	26-Sep-2024	3 days	5 days	✖ EHT	27-Sep-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-30	E235.NO3-L	21-Sep-2024	26-Sep-2024	3 days	5 days	✖ EHT	27-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WOLFOF	E235.NO3-L	21-Sep-2024	26-Sep-2024	3 days	6 days	✖ EHT	27-Sep-2024	3 days	6 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-1	E235.NO3-L	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-2	E235.NO3-L	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-3	E235.NO3-L	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-4	E235.NO3-L	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-38-5	E235.NO3-L	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE TB-2	E235.NO3-L	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-34	E235.NO2-L	22-Sep-2024	26-Sep-2024	3 days	4 days	✖ EHT	27-Sep-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE GIROF	E235.NO2-L	22-Sep-2024	26-Sep-2024	3 days	4 days	✖ EHT	27-Sep-2024	3 days	4 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-18	E235.NO2-L	21-Sep-2024	26-Sep-2024	3 days	5 days	✖ EHT	27-Sep-2024	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-19	E235.NO2-L	22-Sep-2024	26-Sep-2024	3 days	5 days	✖ EHT	27-Sep-2024	3 days	5 days	✖ EHT

Page : 13 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-23	E235.NO2-L	22-Sep-2024	26-Sep-2024	3 days	5 days	* EHT	27-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FD-2	E235.NO2-L	22-Sep-2024	26-Sep-2024	3 days	5 days	* EHT	27-Sep-2024	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-30	E235.NO2-L	21-Sep-2024	26-Sep-2024	3 days	5 days	* EHT	27-Sep-2024	3 days	6 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WOLFOF	E235.NO2-L	21-Sep-2024	26-Sep-2024	3 days	6 days	* EHT	27-Sep-2024	3 days	6 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-1	E235.NO2-L	20-Sep-2024	26-Sep-2024	3 days	7 days	* EHTL	27-Sep-2024	3 days	7 days	* EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-2	E235.NO2-L	20-Sep-2024	26-Sep-2024	3 days	7 days	* EHTL	27-Sep-2024	3 days	7 days	* EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-3	E235.NO2-L	20-Sep-2024	26-Sep-2024	3 days	7 days	* EHTL	27-Sep-2024	3 days	7 days	* EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-4	E235.NO2-L	20-Sep-2024	26-Sep-2024	3 days	7 days	* EHTL	27-Sep-2024	3 days	7 days	* EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-38-5	E235.NO2-L	20-Sep-2024	26-Sep-2024	3 days	7 days	* EHTL	27-Sep-2024	3 days	7 days	* EHTL

Page : 14 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE TB-2	E235.NO2-L	20-Sep-2024	26-Sep-2024	3 days	7 days	✖ EHTL	27-Sep-2024	3 days	7 days	✖ EHTL
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-19	E392	22-Sep-2024	----	----	----		27-Sep-2024	28 days	5 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-23	E392	22-Sep-2024	----	----	----		27-Sep-2024	28 days	5 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-34	E392	22-Sep-2024	----	----	----		27-Sep-2024	28 days	5 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FD-2	E392	22-Sep-2024	----	----	----		27-Sep-2024	28 days	5 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE GIROF	E392	22-Sep-2024	----	----	----		27-Sep-2024	28 days	5 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-18	E392	21-Sep-2024	----	----	----		27-Sep-2024	28 days	6 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-30	E392	21-Sep-2024	----	----	----		27-Sep-2024	28 days	6 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE WOLFOF	E392	21-Sep-2024	----	----	----		27-Sep-2024	28 days	6 days	✔

Page : 15 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-1	E392	20-Sep-2024	----	----	----		27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-2	E392	20-Sep-2024	----	----	----		27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-3	E392	20-Sep-2024	----	----	----		27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-4	E392	20-Sep-2024	----	----	----		27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-38-5	E392	20-Sep-2024	----	----	----		27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE TB-2	E392	20-Sep-2024	----	----	----		27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-34	E235.SO4	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GIROF	E235.SO4	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-18	E235.SO4	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-19	E235.SO4	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-23	E235.SO4	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FD-2	E235.SO4	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-30	E235.SO4	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WOLFOF	E235.SO4	21-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-1	E235.SO4	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-2	E235.SO4	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-3	E235.SO4	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-4	E235.SO4	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-38-5	E235.SO4	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE TB-2	E235.SO4	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-1	E375-U	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-2	E375-U	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-3	E375-U	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-4	E375-U	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-38-5	E375-U	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) TB-2	E375-U	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-19	E375-U	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-23	E375-U	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-34	E375-U	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FD-2	E375-U	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) GIROF	E375-U	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-18	E375-U	21-Sep-2024	30-Sep-2024	28 days	9 days	✓	30-Sep-2024	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-30	E375-U	21-Sep-2024	30-Sep-2024	28 days	9 days	✓	30-Sep-2024	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) WOLFOF	E375-U	21-Sep-2024	30-Sep-2024	28 days	9 days	✓	30-Sep-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-1	E318	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	01-Oct-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-2	E318	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	01-Oct-2024	28 days	11 days	✓

Page : 19 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-3	E318	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	01-Oct-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-4	E318	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	01-Oct-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-38-5	E318	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	01-Oct-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) TB-2	E318	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	01-Oct-2024	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-19	E318	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	01-Oct-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-23	E318	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	01-Oct-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E318	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	01-Oct-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FD-2	E318	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	01-Oct-2024	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) GIROF	E318	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	01-Oct-2024	28 days	9 days	✓

Page : 20 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-18	E318	21-Sep-2024	30-Sep-2024	28 days	9 days	✓	01-Oct-2024	28 days	10 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-30	E318	21-Sep-2024	30-Sep-2024	28 days	9 days	✓	01-Oct-2024	28 days	10 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) WOLFOF	E318	21-Sep-2024	30-Sep-2024	28 days	9 days	✓	01-Oct-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-1	E372-S	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-2	E372-S	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-3	E372-S	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-4	E372-S	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-38-5	E372-S	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) TB-2	E372-S	20-Sep-2024	30-Sep-2024	28 days	10 days	✓	30-Sep-2024	28 days	10 days	✓

Page : 21 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-19	E372-S	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-23	E372-S	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-34	E372-S	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FD-2	E372-S	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) GIROF	E372-S	22-Sep-2024	30-Sep-2024	28 days	8 days	✓	30-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-18	E372-S	21-Sep-2024	30-Sep-2024	28 days	9 days	✓	30-Sep-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-30	E372-S	21-Sep-2024	30-Sep-2024	28 days	9 days	✓	30-Sep-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) WOLFOF	E372-S	21-Sep-2024	30-Sep-2024	28 days	9 days	✓	30-Sep-2024	28 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-1	E339	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-2	E339	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-3	E339	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-4	E339	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-5	E339	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB-2	E339	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E339	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E339	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E339	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-2	E339	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E339	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E339	21-Sep-2024	30-Sep-2024	14 days	9 days	✓	30-Sep-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E339	21-Sep-2024	30-Sep-2024	14 days	9 days	✓	30-Sep-2024	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E339	21-Sep-2024	30-Sep-2024	14 days	9 days	✓	30-Sep-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-1	E333	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-2	E333	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-3	E333	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-4	E333	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-5	E333	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB-2	E333	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E333	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E333	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E333	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-2	E333	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E333	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E333	21-Sep-2024	30-Sep-2024	14 days	9 days	✓	30-Sep-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E333	21-Sep-2024	30-Sep-2024	14 days	9 days	✓	30-Sep-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E333	21-Sep-2024	30-Sep-2024	14 days	9 days	✓	30-Sep-2024	14 days	9 days	✓

Page : 25 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-1	E336	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-2	E336	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-3	E336	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-4	E336	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-38-5	E336	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB-2	E336	20-Sep-2024	30-Sep-2024	14 days	10 days	✓	30-Sep-2024	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-19	E336	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-23	E336	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E336	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓

Page : 26 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FD-2	E336	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GIROF	E336	22-Sep-2024	30-Sep-2024	14 days	8 days	✓	30-Sep-2024	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-18	E336	21-Sep-2024	30-Sep-2024	14 days	9 days	✓	30-Sep-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-30	E336	21-Sep-2024	30-Sep-2024	14 days	9 days	✓	30-Sep-2024	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WOLFOF	E336	21-Sep-2024	30-Sep-2024	14 days	9 days	✓	30-Sep-2024	14 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-18	E509-L	21-Sep-2024	01-Oct-2024	28 days	10 days	✓	01-Oct-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-30	E509-L	21-Sep-2024	01-Oct-2024	28 days	10 days	✓	01-Oct-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) WOLFOF	E509-L	21-Sep-2024	01-Oct-2024	28 days	10 days	✓	01-Oct-2024	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-1	E509-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓

Page : 27 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-2	E509-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-3	E509-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-4	E509-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-38-5	E509-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) TB-2	E509-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-19	E509-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-23	E509-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) BRP-34	E509-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) FD-2	E509-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - dissolved (lab preserved) GIROF	E509-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-19	E465	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-23	E465	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-34	E465	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) FD-2	E465	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) GIROF	E465	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-18	E465	21-Sep-2024	29-Sep-2024	180 days	8 days	✓	30-Sep-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-30	E465	21-Sep-2024	29-Sep-2024	180 days	8 days	✓	30-Sep-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) WOLFOF	E465	21-Sep-2024	29-Sep-2024	180 days	8 days	✓	30-Sep-2024	180 days	9 days	✓

Page : 29 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-1	E465	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-2	E465	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-3	E465	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-4	E465	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-38-5	E465	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - dissolved (lab preserved) TB-2	E465	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-18	E358-L	21-Sep-2024	01-Oct-2024	28 days	10 days	✓	01-Oct-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-30	E358-L	21-Sep-2024	01-Oct-2024	28 days	10 days	✓	01-Oct-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WOLFOF	E358-L	21-Sep-2024	01-Oct-2024	28 days	10 days	✓	01-Oct-2024	28 days	10 days	✓

Page : 30 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-1	E358-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-2	E358-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-3	E358-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-4	E358-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-38-5	E358-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) TB-2	E358-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-19	E358-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-23	E358-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-34	E358-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓

Page : 31 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FD-2	E358-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) GIROF	E358-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-19	E355-L	22-Sep-2024	02-Oct-2024	28 days	10 days	✓	02-Oct-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-23	E355-L	22-Sep-2024	02-Oct-2024	28 days	10 days	✓	02-Oct-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E355-L	22-Sep-2024	02-Oct-2024	28 days	10 days	✓	02-Oct-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FD-2	E355-L	22-Sep-2024	02-Oct-2024	28 days	10 days	✓	02-Oct-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) GIROF	E355-L	22-Sep-2024	02-Oct-2024	28 days	10 days	✓	02-Oct-2024	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-18	E355-L	21-Sep-2024	02-Oct-2024	28 days	11 days	✓	02-Oct-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-30	E355-L	21-Sep-2024	02-Oct-2024	28 days	11 days	✓	02-Oct-2024	28 days	11 days	✓

Page : 32 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) WOLFOF	E355-L	21-Sep-2024	02-Oct-2024	28 days	11 days	✓	02-Oct-2024	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-1	E355-L	20-Sep-2024	02-Oct-2024	28 days	12 days	✓	02-Oct-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-2	E355-L	20-Sep-2024	02-Oct-2024	28 days	12 days	✓	02-Oct-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-3	E355-L	20-Sep-2024	02-Oct-2024	28 days	12 days	✓	02-Oct-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-4	E355-L	20-Sep-2024	02-Oct-2024	28 days	12 days	✓	02-Oct-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-38-5	E355-L	20-Sep-2024	02-Oct-2024	28 days	12 days	✓	02-Oct-2024	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) TB-2	E355-L	20-Sep-2024	02-Oct-2024	28 days	12 days	✓	02-Oct-2024	28 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-34	E290	22-Sep-2024	26-Sep-2024	14 days	4 days	✓	27-Sep-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GIROF	E290	22-Sep-2024	26-Sep-2024	14 days	4 days	✓	27-Sep-2024	14 days	5 days	✓

Page : 33 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-19	E290	22-Sep-2024	26-Sep-2024	14 days	5 days	✓	27-Sep-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-23	E290	22-Sep-2024	26-Sep-2024	14 days	5 days	✓	27-Sep-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FD-2	E290	22-Sep-2024	26-Sep-2024	14 days	5 days	✓	27-Sep-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-18	E290	21-Sep-2024	26-Sep-2024	14 days	5 days	✓	27-Sep-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-30	E290	21-Sep-2024	26-Sep-2024	14 days	5 days	✓	27-Sep-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WOLFOF	E290	21-Sep-2024	26-Sep-2024	14 days	6 days	✓	27-Sep-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-1	E290	20-Sep-2024	26-Sep-2024	14 days	7 days	✓	27-Sep-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-2	E290	20-Sep-2024	26-Sep-2024	14 days	7 days	✓	27-Sep-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-3	E290	20-Sep-2024	26-Sep-2024	14 days	7 days	✓	27-Sep-2024	14 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-4	E290	20-Sep-2024	26-Sep-2024	14 days	7 days	✓	27-Sep-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-38-5	E290	20-Sep-2024	26-Sep-2024	14 days	7 days	✓	27-Sep-2024	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE TB-2	E290	20-Sep-2024	26-Sep-2024	14 days	7 days	✓	27-Sep-2024	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-34	E100	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE GIROF	E100	22-Sep-2024	26-Sep-2024	28 days	4 days	✓	27-Sep-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-19	E100	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-23	E100	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE FD-2	E100	22-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-18	E100	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-30	E100	21-Sep-2024	26-Sep-2024	28 days	5 days	✓	27-Sep-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE WOLFOF	E100	21-Sep-2024	26-Sep-2024	28 days	6 days	✓	27-Sep-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-1	E100	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-2	E100	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-3	E100	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-4	E100	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-38-5	E100	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE TB-2	E100	20-Sep-2024	26-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE GIROF	E108	22-Sep-2024	26-Sep-2024	0.25 hrs	103 hrs	✖ EHTR-FM	27-Sep-2024	0.25 hrs	114 hrs	✖ EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-34	E108	22-Sep-2024	26-Sep-2024	0.25 hrs	106 hrs	* EHTR-FM	27-Sep-2024	0.25 hrs	117 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-23	E108	22-Sep-2024	26-Sep-2024	0.25 hrs	108 hrs	* EHTR-FM	27-Sep-2024	0.25 hrs	119 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE FD-2	E108	22-Sep-2024	26-Sep-2024	0.25 hrs	108 hrs	* EHTR-FM	27-Sep-2024	0.25 hrs	119 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-19	E108	22-Sep-2024	26-Sep-2024	0.25 hrs	109 hrs	* EHTR-FM	27-Sep-2024	0.25 hrs	120 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-18	E108	21-Sep-2024	26-Sep-2024	0.25 hrs	127 hrs	* EHTR-FM	27-Sep-2024	0.25 hrs	138 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-30	E108	21-Sep-2024	26-Sep-2024	0.25 hrs	131 hrs	* EHTR-FM	27-Sep-2024	0.25 hrs	142 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE WOLFOF	E108	21-Sep-2024	26-Sep-2024	0.25 hrs	132 hrs	* EHTR-FM	27-Sep-2024	0.25 hrs	143 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-4	E108	20-Sep-2024	26-Sep-2024	0.25 hrs	156 hrs	* EHTR-FM	27-Sep-2024	0.25 hrs	166 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-5	E108	20-Sep-2024	26-Sep-2024	0.25 hrs	156 hrs	* EHTR-FM	27-Sep-2024	0.25 hrs	166 hrs	* EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-38-1	E108	20-Sep-2024	26-Sep-2024	0.25 hrs	156 hrs	✖ EHTR-FM	27-Sep-2024	0.25 hrs	167 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-2	E108	20-Sep-2024	26-Sep-2024	0.25 hrs	156 hrs	✖ EHTR-FM	27-Sep-2024	0.25 hrs	167 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-38-3	E108	20-Sep-2024	26-Sep-2024	0.25 hrs	156 hrs	✖ EHTR-FM	27-Sep-2024	0.25 hrs	167 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE TB-2	E108	20-Sep-2024	26-Sep-2024	0.25 hrs	157 hrs	✖ EHTR-FM	27-Sep-2024	0.25 hrs	167 hrs	✖ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-19	E162	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-23	E162	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-34	E162	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✔
Physical Tests : TDS by Gravimetry										
HDPE FD-2	E162	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✔
Physical Tests : TDS by Gravimetry										
HDPE GIROF	E162	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-18	E162	21-Sep-2024	----	----	----		27-Sep-2024	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-30	E162	21-Sep-2024	----	----	----		27-Sep-2024	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE WOLFOF	E162	21-Sep-2024	----	----	----		27-Sep-2024	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-1	E162	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-2	E162	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-3	E162	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-4	E162	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE BRP-38-5	E162	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✔
Physical Tests : TDS by Gravimetry										
HDPE TB-2	E162	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-19	E160	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-23	E160	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-34	E160	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FD-2	E160	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE GIROF	E160	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-18	E160	21-Sep-2024	----	----	----		27-Sep-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-30	E160	21-Sep-2024	----	----	----		27-Sep-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WOLFOF	E160	21-Sep-2024	----	----	----		27-Sep-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-1	E160	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-2	E160	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-3	E160	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-4	E160	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-38-5	E160	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE TB-2	E160	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-34	E121	22-Sep-2024	----	----	----		28-Sep-2024	3 days	5 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE GIROF	E121	22-Sep-2024	----	----	----		28-Sep-2024	3 days	5 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-18	E121	21-Sep-2024	----	----	----		28-Sep-2024	3 days	6 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-19	E121	22-Sep-2024	----	----	----		28-Sep-2024	3 days	6 days	✖ EHT

Page : 41 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-23	E121	22-Sep-2024	----	----	----		28-Sep-2024	3 days	6 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FD-2	E121	22-Sep-2024	----	----	----		28-Sep-2024	3 days	6 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-30	E121	21-Sep-2024	----	----	----		28-Sep-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE WOLFOF	E121	21-Sep-2024	----	----	----		28-Sep-2024	3 days	7 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-1	E121	20-Sep-2024	----	----	----		28-Sep-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-2	E121	20-Sep-2024	----	----	----		28-Sep-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-3	E121	20-Sep-2024	----	----	----		28-Sep-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-4	E121	20-Sep-2024	----	----	----		28-Sep-2024	3 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-38-5	E121	20-Sep-2024	----	----	----		28-Sep-2024	3 days	8 days	✖ EHTL

Page : 42 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE TB-2	E121	20-Sep-2024	----	----	----		28-Sep-2024	3 days	8 days	✖ EHTL
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-2	Ra-226	20-Sep-2024	----	----	----		17-Oct-2024	----	27 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-4	Ra-226	20-Sep-2024	----	----	----		17-Oct-2024	----	27 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-5	Ra-226	20-Sep-2024	----	----	----		18-Oct-2024	----	28 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-1	Ra-226	20-Sep-2024	----	----	----		21-Oct-2024	----	31 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) BRP-38-3	Ra-226	20-Sep-2024	----	----	----		21-Oct-2024	----	31 days	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)										
HDPE (nitric acid) TB-2	Ra-226	20-Sep-2024	----	----	----		21-Oct-2024	----	31 days	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-19	E466	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-23	E466	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓

Page : 43 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-34	E466	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) FD-2	E466	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) GIROF	E466	22-Sep-2024	29-Sep-2024	180 days	7 days	✓	30-Sep-2024	180 days	8 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-18	E466	21-Sep-2024	29-Sep-2024	180 days	8 days	✓	30-Sep-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-30	E466	21-Sep-2024	29-Sep-2024	180 days	8 days	✓	30-Sep-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) WOLFOF	E466	21-Sep-2024	29-Sep-2024	180 days	8 days	✓	30-Sep-2024	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-1	E466	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-2	E466	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-3	E466	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓

Page : 44 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-4	E466	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) BRP-38-5	E466	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)										
Pre-cleaned HDPE - total (lab preserved) TB-2	E466	20-Sep-2024	29-Sep-2024	180 days	9 days	✓	30-Sep-2024	180 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-18	E508-L	21-Sep-2024	01-Oct-2024	28 days	10 days	✓	01-Oct-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-30	E508-L	21-Sep-2024	01-Oct-2024	28 days	10 days	✓	01-Oct-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) WOLFOF	E508-L	21-Sep-2024	01-Oct-2024	28 days	10 days	✓	01-Oct-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-1	E508-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-2	E508-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-3	E508-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓

Page : 45 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-4	E508-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-38-5	E508-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) TB-2	E508-L	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-19	E508-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-23	E508-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) BRP-34	E508-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) FD-2	E508-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned clear glass - total (lab preserved) GIROF	E508-L	22-Sep-2024	01-Oct-2024	28 days	9 days	✓	01-Oct-2024	28 days	9 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-19	E395	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✓

Page : 46 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-23	E395	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-34	E395	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FD-2	E395	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) GIROF	E395	22-Sep-2024	----	----	----		27-Sep-2024	7 days	5 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-18	E395	21-Sep-2024	----	----	----		27-Sep-2024	7 days	6 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-30	E395	21-Sep-2024	----	----	----		27-Sep-2024	7 days	6 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WOLFOF	E395	21-Sep-2024	----	----	----		27-Sep-2024	7 days	6 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-1	E395	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-2	E395	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✔

Page : 47 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-3	E395	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-4	E395	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-38-5	E395	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) TB-2	E395	20-Sep-2024	----	----	----		27-Sep-2024	7 days	7 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1676343	2	33	6.0	5.0	✓
Ammonia by Fluorescence	E298	1675498	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1676347	2	26	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1676346	2	33	6.0	5.0	✓
Conductivity in Water	E100	1676344	2	36	5.5	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1683456	1	14	7.1	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1677001	1	14	7.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1682584	2	31	6.4	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1676352	2	19	10.5	5.0	✓
Fluoride in Water by IC	E235.F	1676345	2	33	6.0	5.0	✓
Free Cyanide	E339	1681409	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1676348	2	39	5.1	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1676349	2	39	5.1	5.0	✓
pH by Meter	E108	1676342	2	32	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	1678430	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1676350	2	33	6.0	5.0	✓
TDS by Gravimetry	E162	1676907	2	30	6.6	5.0	✓
Total Cyanide	E333	1681407	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1680703	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1677791	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1682788	2	28	7.1	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1677032	1	14	7.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1685166	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1680710	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1677188	1	16	6.2	5.0	✓
TSS by Gravimetry	E160	1676887	2	30	6.6	5.0	✓
Turbidity by Nephelometry	E121	1678789	1	20	5.0	5.0	✓
WAD Cyanide	E336	1681408	1	19	5.2	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1676343	2	33	6.0	5.0	✓
Ammonia by Fluorescence	E298	1675498	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1676347	2	26	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1676346	2	33	6.0	5.0	✓
Conductivity in Water	E100	1676344	2	36	5.5	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1683456	1	14	7.1	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1677001	1	14	7.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1682584	2	31	6.4	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1676352	2	19	10.5	5.0	✔
Fluoride in Water by IC	E235.F	1676345	2	33	6.0	5.0	✔
Free Cyanide	E339	1681409	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1676348	2	39	5.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1676349	2	39	5.1	5.0	✔
pH by Meter	E108	1676342	2	32	6.2	5.0	✔
Reactive Silica by Colourimetry	E392	1678430	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1676350	2	33	6.0	5.0	✔
TDS by Gravimetry	E162	1676907	2	30	6.6	5.0	✔
Total Cyanide	E333	1681407	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1680703	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1677791	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1682788	2	28	7.1	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1677032	1	14	7.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1685166	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1680710	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1677188	1	16	6.2	5.0	✔
TSS by Gravimetry	E160	1676887	2	30	6.6	5.0	✔
Turbidity by Nephelometry	E121	1678789	1	20	5.0	5.0	✔
WAD Cyanide	E336	1681408	1	19	5.2	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1676343	2	33	6.0	5.0	✔
Ammonia by Fluorescence	E298	1675498	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1676347	2	26	7.6	5.0	✔
Chloride in Water by IC	E235.Cl	1676346	2	33	6.0	5.0	✔
Conductivity in Water	E100	1676344	2	36	5.5	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1683456	1	14	7.1	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1677001	1	14	7.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1682584	2	31	6.4	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1676352	2	19	10.5	5.0	✔
Fluoride in Water by IC	E235.F	1676345	2	33	6.0	5.0	✔
Free Cyanide	E339	1681409	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1676348	2	39	5.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1676349	2	39	5.1	5.0	✔
Reactive Silica by Colourimetry	E392	1678430	1	20	5.0	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	1676350	2	33	6.0	5.0	✔
TDS by Gravimetry	E162	1676907	2	30	6.6	5.0	✔
Total Cyanide	E333	1681407	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1680703	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1677791	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1682788	2	28	7.1	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1677032	1	14	7.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1685166	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1680710	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1677188	1	16	6.2	5.0	✔
TSS by Gravimetry	E160	1676887	2	30	6.6	5.0	✔
Turbidity by Nephelometry	E121	1678789	1	20	5.0	5.0	✔
WAD Cyanide	E336	1681408	1	19	5.2	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1675498	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1676347	2	26	7.6	5.0	✔
Chloride in Water by IC	E235.Cl	1676346	2	33	6.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	1683456	1	14	7.1	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	1677001	1	14	7.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1682584	2	31	6.4	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1676352	2	19	10.5	5.0	✔
Fluoride in Water by IC	E235.F	1676345	2	33	6.0	5.0	✔
Free Cyanide	E339	1681409	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1676348	2	39	5.1	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1676349	2	39	5.1	5.0	✔
Reactive Silica by Colourimetry	E392	1678430	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1676350	2	33	6.0	5.0	✔
Total Cyanide	E333	1681407	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	1680703	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1677791	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1682788	2	28	7.1	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	1677032	1	14	7.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1685166	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	1680710	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1677188	1	16	6.2	5.0	✔
WAD Cyanide	E336	1681408	1	19	5.2	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Waterloo	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Waterloo	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Waterloo	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Vancouver	Water	APHA 4500-SiO ₂ E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ -) and reports it as Total Sulphide as (H ₂ S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466 ALS Environmental - Vancouver	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium 226 in Water by Alpha Spectrometry (0.005 Bq/L)	Ra-226 Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Edmonton	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Edmonton	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Edmonton	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon

Page : 55 of 55
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 ALS Environmental - Edmonton	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465 ALS Environmental - Vancouver	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: YL2401580	Page	: 1 of 25
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 23-Sep-2024 14:10
PO	: 17852	Date Analysis Commenced	: 26-Sep-2024
C-O-C number	: ----	Issue Date	: 23-Oct-2024 14:37
Sampler	: ----		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 14		
No. of samples analysed	: 14		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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Page : 2 of 25
Work Order : YL2401580
Client : B2Gold Back River Corp.
Project : 22567626



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Page : 3 of 25
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1676342)											
VA24C5610-003	Anonymous	pH	----	E108	0.10	pH units	8.06	8.06	0.00%	4%	----
Physical Tests (QC Lot: 1676343)											
VA24C5610-003	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	84.4	83.8	0.713%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	84.4	83.8	0.713%	20%	----
Physical Tests (QC Lot: 1676344)											
VA24C5610-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	2160	2180	0.922%	10%	----
Physical Tests (QC Lot: 1676422)											
VA24C5314-001	Anonymous	pH	----	E108	0.10	pH units	8.26	8.26	0.00%	4%	----
Physical Tests (QC Lot: 1676423)											
VA24C5314-001	Anonymous	Conductivity	----	E100	2.0	µS/cm	239	238	0.419%	10%	----
Physical Tests (QC Lot: 1676424)											
VA24C5314-001	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	128	129	0.701%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	128	129	0.701%	20%	----
Physical Tests (QC Lot: 1676887)											
VA24C5354-005	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	22.1	22.1	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1676888)											
YL2401580-005	WOLFOF	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1676907)											
VA24C5354-005	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	393	401	2.01%	20%	----
Physical Tests (QC Lot: 1676908)											
YL2401580-005	WOLFOF	Solids, total dissolved [TDS]	----	E162	13	mg/L	53	48	5	Diff <2x LOR	----
Physical Tests (QC Lot: 1678789)											
YL2401570-004	Anonymous	Turbidity	----	E121	0.10	NTU	2.81	2.91	3.50%	15%	----

Page : 4 of 25
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1675498)											
YL2401580-001	BRP-34	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0712	0.0724	1.67%	20%	----
Anions and Nutrients (QC Lot: 1676345)											
VA24C5610-001	Anonymous	Fluoride	16984-48-8	E235.F	0.400	mg/L	<0.400	<0.400	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676346)											
VA24C5610-001	Anonymous	Chloride	16887-00-6	E235.Cl	10.0	mg/L	<10.0	<10.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676347)											
VA24C5610-001	Anonymous	Bromide	24959-67-9	E235.Br-L	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676348)											
VA24C5610-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676349)											
VA24C5610-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0200	mg/L	<0.0200	<0.0200	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676350)											
VA24C5610-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	6.00	mg/L	1430	1420	0.578%	20%	----
Anions and Nutrients (QC Lot: 1676352)											
YL2401580-001	BRP-34	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676415)											
VA24C5344-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.77	0.78	0.009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676416)											
VA24C5344-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0340	0.0334	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676417)											
VA24C5344-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676418)											
VA24C5344-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	2.85	2.85	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676419)											
VA24C5314-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.220	0.217	1.36%	20%	----
Anions and Nutrients (QC Lot: 1676421)											
VA24C5344-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676427)											
VA24C5314-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0100	mg/L	0.0608	0.0611	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1677791)											
GP2401891-008	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	3.24	3.32	2.39%	20%	----
Anions and Nutrients (QC Lot: 1678430)											
CG2413955-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	5.00	mg/L	16.6	16.8	0.13	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 1680703)											
FC2402640-008	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0082	0.0086	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1680710)											
GP2401891-008	Anonymous	Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0169	0.0156	7.81%	20%	----
Cyanides (QC Lot: 1681407)											
VA24C5509-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1681408)											
VA24C5509-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 1681409)											
VA24C5509-001	Anonymous	Cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1682584)											
EO2408359-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	8.82	7.84	11.8%	20%	----
Organic / Inorganic Carbon (QC Lot: 1683164)											
YL2401580-004	GIROF	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	6.16	6.53	5.71%	20%	----
Organic / Inorganic Carbon (QC Lot: 1685166)											
YL2401580-002	BRP-18	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	7.30	7.23	0.949%	20%	----
Total Sulfides (QC Lot: 1677188)											
WP2422693-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0750	mg/L	0.508	0.465	0.0430	Diff <2x LOR	----
Total Metals (QC Lot: 1682788)											
GP2401833-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	0.94	0.84	0.09	Diff <2x LOR	----
Total Metals (QC Lot: 1683633)											
YL2401580-007	BRP-19	Mercury, total	7439-97-6	E508-L	0.50	ng/L	2.34	2.34	0.005	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 1677032)											
YL2401580-001	BRP-34	Aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0166	0.0160	3.98%	20%	----
		Antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000161	0.0000170	0.0000009	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000263	0.000255	3.03%	20%	----
		Barium, total	7440-39-3	E466	0.000020	mg/L	0.00982	0.00988	0.588%	20%	----
		Beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000034	0.0000021	0.0000013	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000070	0.0000034	0.0000037	Diff <2x LOR	----
		Calcium, total	7440-70-2	E466	0.010	mg/L	5.92	5.90	0.387%	20%	----
		Cesium, total	7440-46-2	E466	0.0000050	mg/L	0.0000136	0.0000141	0.0000006	Diff <2x LOR	----
		Chromium, total	7440-47-3	E466	0.000040	mg/L	0.000084	0.000085	0.0000001	Diff <2x LOR	----

Page : 6 of 25
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 1677032) - continued											
YL2401580-001	BRP-34	Cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000331	0.000334	0.844%	20%	----
		Copper, total	7440-50-8	E466	0.000050	mg/L	0.00152	0.00152	0.123%	20%	----
		Gallium, total	7440-55-3	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E466	0.00050	mg/L	0.0474	0.0479	1.14%	20%	----
		Lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000139	0.000139	0.472%	20%	----
		Lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000078	0.0000077	0.0000001	Diff <2x LOR	----
		Lithium, total	7439-93-2	E466	0.00010	mg/L	0.00099	0.00097	0.00002	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E466	0.0010	mg/L	3.11	3.00	3.67%	20%	----
		Manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00542	0.00540	0.328%	20%	----
		Molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000022	0.000021	0.000002	Diff <2x LOR	----
		Nickel, total	7440-02-0	E466	0.000020	mg/L	0.00446	0.00436	2.13%	20%	----
		Niobium, total	7440-03-1	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E466	0.0050	mg/L	0.621	0.626	0.805%	20%	----
		Rhenium, total	7440-15-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E466	0.0000050	mg/L	0.00161	0.00158	1.52%	20%	----
		Selenium, total	7782-49-2	E466	0.000025	mg/L	0.000039	0.000045	0.000006	Diff <2x LOR	----
		Silicon, total	7440-21-3	E466	0.050	mg/L	0.338	0.331	0.006	Diff <2x LOR	----
		Silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E466	0.010	mg/L	1.03	1.02	0.715%	20%	----
		Strontium, total	7440-24-6	E466	0.000020	mg/L	0.0317	0.0317	0.0553%	20%	----
		Sulfur, total	7704-34-9	E466	0.50	mg/L	4.39	4.40	0.01	Diff <2x LOR	----
		Tantalum, total	7440-25-7	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000015	0.0000017	0.0000002	Diff <2x LOR	----
		Thorium, total	7440-29-1	E466	0.0000050	mg/L	0.0000097	0.0000141	0.0000044	Diff <2x LOR	----
		Tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E466	0.000050	mg/L	0.000169	0.000205	0.000035	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000067	0.0000075	0.0000008	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000052	0.000050	0.000002	Diff <2x LOR	----
		Yttrium, total	7440-65-5	E466	0.000010	mg/L	0.000061	0.000062	0.0000004	Diff <2x LOR	----
		Zinc, total	7440-66-6	E466	0.00010	mg/L	0.00074	0.00075	0.00002	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000042	0.000042	0.0000006	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1677001)											
YL2401580-001	BRP-34	Aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0103	0.0102	1.06%	20%	----
		Antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000171	0.0000172	0.00000003	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000263	0.000243	8.15%	20%	----
		Barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00953	0.00940	1.34%	20%	----
		Beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000024	<0.0000020	0.0000004	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000061	0.0000046	0.0000015	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E465	0.010	mg/L	6.02	5.64	6.37%	20%	----
		Cesium, dissolved	7440-46-2	E465	0.0000050	mg/L	0.0000132	0.0000123	0.0000008	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000074	0.000072	0.000002	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000292	0.000281	3.83%	20%	----
		Copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00150	0.00143	4.72%	20%	----
		Gallium, dissolved	7440-55-3	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0214	0.0201	6.40%	20%	----
		Lanthanum, dissolved	7439-91-0	E465	0.000010	mg/L	0.000103	0.000104	1.36%	20%	----
		Lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000154	0.0000153	0.0000001	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00099	0.00103	4.52%	20%	----
		Magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	3.04	2.98	1.76%	20%	----
		Manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00463	0.00436	6.11%	20%	----
		Molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000028	0.000028	0.0000004	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00434	0.00416	4.25%	20%	----
		Niobium, dissolved	7440-03-1	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.651	0.611	6.28%	20%	----
		Rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E465	0.0000050	mg/L	0.00157	0.00147	6.50%	20%	----
		Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000038	0.000030	0.000008	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.337	0.340	0.003	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.04	1.01	2.28%	20%	----
		Strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0316	0.0298	5.98%	20%	----
		Sulfur, dissolved	7704-34-9	E465	0.50	mg/L	4.50	4.48	0.02	Diff <2x LOR	----
		Tantalum, dissolved	7440-25-7	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1677001) - continued											
YL2401580-001	BRP-34	Tellurium, dissolved	13494-80-9	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000018	0.0000010	0.0000008	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E465	0.0000050	mg/L	0.0000111	0.0000146	0.0000036	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E465	0.000050	mg/L	0.000068	0.000061	0.000006	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000064	0.0000070	0.0000005	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000036	0.000035	0.000001	Diff <2x LOR	----
		Yttrium, dissolved	7440-65-5	E465	0.000010	mg/L	0.000054	0.000052	0.000001	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00087	0.00083	0.00005	Diff <2x LOR	----
	Zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000046	0.000047	0.0000005	Diff <2x LOR	----	
Dissolved Metals (QC Lot: 1683456)											
YL2401580-001	BRP-34	Mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1676343)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1676344)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1676423)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1676424)						
Alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1676887)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1676888)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1676907)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1676908)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1678789)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1675498)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1676345)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1676346)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1676347)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1676347) - continued						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1676348)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1676349)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1676350)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1676352)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1676415)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1676416)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1676417)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1676418)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1676419)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1676421)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1676427)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1677791)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1678430)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1680703)						
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1680710)						
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Cyanides (QCLot: 1681407)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1681408)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Cyanides (QCLot: 1681409)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1682584)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1683164)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1685166)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1677188)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1682788)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (QCLot: 1683633)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (Undigested) (QCLot: 1677032)						
Aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
Barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
Boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
Calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	<0.0000050	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
Copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	<0.000050	----
Iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
Lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
Manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (Undigested) (QCLot: 1677032) - continued						
Nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	<0.00010	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	<0.010	----
Potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	<0.0000050	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	<0.0000050	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
Silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
Sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	<0.00010	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	<0.000010	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	<0.0000050	----
Tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	<0.000010	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	<0.000010	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 1677001)						
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	<0.0000050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1677001) - continued						
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	<0.000050	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	<0.000010	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	<0.00010	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	<0.0000050	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	<0.00010	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	<0.000010	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	<0.0000050	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	<0.000010	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	<0.000010	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1683456)						
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1676342)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1676343)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	97.9	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1676344)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	96.9	90.0	110	----
Physical Tests (QCLot: 1676422)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1676423)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	96.3	90.0	110	----
Physical Tests (QCLot: 1676424)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	114	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1676887)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1676888)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	91.8	85.0	115	----
Physical Tests (QCLot: 1676907)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1676908)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1678789)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Anions and Nutrients (QCLot: 1675498)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.8	85.0	115	----
Anions and Nutrients (QCLot: 1676345)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1676346)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1676347)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	98.5	85.0	115	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1676348)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1676349)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1676350)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1676352)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	94.2	80.0	120	----
Anions and Nutrients (QCLot: 1676415)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 1676416)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 1676417)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 1676418)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1676419)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 1676421)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1676427)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	93.9	80.0	120	----
Anions and Nutrients (QCLot: 1677791)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 1678430)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1680703)									
Phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	94.4	80.0	120	----
Anions and Nutrients (QCLot: 1680710)									
Phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	92.5	80.0	120	----
Cyanides (QCLot: 1681407)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	92.3	80.0	120	----
Cyanides (QCLot: 1681408)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	98.7	80.0	120	----
Cyanides (QCLot: 1681409)									



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Cyanides (QCLot: 1681409) - continued									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	97.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1682584)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	111	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1683164)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	98.4	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1685166)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	110	80.0	120	----
Total Sulfides (QCLot: 1677188)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	113	80.0	120	----
Total Metals (QCLot: 1682788)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	101	80.0	120	----
Total Metals (QCLot: 1683633)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	88.3	80.0	120	----
Total Metals (Undigested) (QCLot: 1677032)									
Aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	106	80.0	120	----
Antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	102	80.0	120	----
Arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	100	80.0	120	----
Barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	96.2	80.0	120	----
Bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	99.7	80.0	120	----
Boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	93.8	80.0	120	----
Cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	99.8	80.0	120	----
Calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	102	80.0	120	----
Cesium, total	7440-46-2	E466	0.000005	mg/L	0.05 mg/L	100	80.0	120	----
Chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	98.0	80.0	120	----
Copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Gallium, total	7440-55-3	E466	0.00005	mg/L	0.25 mg/L	96.6	80.0	120	----
Iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	102	80.0	120	----
Lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	97.4	80.0	120	----
Lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	101	80.0	120	----
Lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	92.7	80.0	120	----
Magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	104	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 1677032) - continued									
Manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	102	80.0	120	----
Molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	104	80.0	120	----
Nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	101	80.0	120	----
Niobium, total	7440-03-1	E466	0.0001	mg/L	0.05 mg/L	102	80.0	120	----
Phosphorus, total	7723-14-0	E466	0.01	mg/L	10 mg/L	97.0	80.0	120	----
Potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	101	80.0	120	----
Rhenium, total	7440-15-5	E466	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
Rubidium, total	7440-17-7	E466	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	97.3	80.0	120	----
Silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	103	80.0	120	----
Silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	89.6	80.0	120	----
Sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	107	80.0	120	----
Strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	103	80.0	120	----
Sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	99.6	80.0	120	----
Tantalum, total	7440-25-7	E466	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tellurium, total	13494-80-9	E466	0.00001	mg/L	0.1 mg/L	97.8	80.0	120	----
Thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	102	80.0	120	----
Thorium, total	7440-29-1	E466	0.000005	mg/L	0.1 mg/L	94.9	80.0	120	----
Tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	96.9	80.0	120	----
Titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	93.6	80.0	120	----
Tungsten, total	7440-33-7	E466	0.00001	mg/L	0.1 mg/L	98.0	80.0	120	----
Uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	99.4	80.0	120	----
Vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	103	80.0	120	----
Yttrium, total	7440-65-5	E466	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
Zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	93.1	80.0	120	----
Dissolved Metals (QCLot: 1677001)									
Aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	103	80.0	120	----
Antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	103	80.0	120	----
Arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	98.9	80.0	120	----
Barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	98.2	80.0	120	----
Bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	98.4	80.0	120	----
Boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	95.6	80.0	120	----
Cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	102	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1677001) - continued									
Calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	100	80.0	120	----
Cesium, dissolved	7440-46-2	E465	0.000005	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	98.3	80.0	120	----
Cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	98.2	80.0	120	----
Copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	98.0	80.0	120	----
Gallium, dissolved	7440-55-3	E465	0.00005	mg/L	0.25 mg/L	97.3	80.0	120	----
Iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	102	80.0	120	----
Lanthanum, dissolved	7439-91-0	E465	0.00001	mg/L	0.1 mg/L	97.5	80.0	120	----
Lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	100.0	80.0	120	----
Lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	97.1	80.0	120	----
Magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	102	80.0	120	----
Manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	99.6	80.0	120	----
Molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	103	80.0	120	----
Nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	101	80.0	120	----
Niobium, dissolved	7440-03-1	E465	0.0001	mg/L	0.05 mg/L	103	80.0	120	----
Phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	96.4	80.0	120	----
Potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	99.2	80.0	120	----
Rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
Rubidium, dissolved	7440-17-7	E465	0.000005	mg/L	0.1 mg/L	99.5	80.0	120	----
Selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	98.2	80.0	120	----
Silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	102	80.0	120	----
Silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	93.9	80.0	120	----
Sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	101	80.0	120	----
Sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	97.9	80.0	120	----
Tantalum, dissolved	7440-25-7	E465	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
Tellurium, dissolved	13494-80-9	E465	0.00001	mg/L	0.1 mg/L	99.0	80.0	120	----
Thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	100.0	80.0	120	----
Thorium, dissolved	7440-29-1	E465	0.000005	mg/L	0.1 mg/L	93.8	80.0	120	----
Tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	99.0	80.0	120	----
Titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	91.5	80.0	120	----
Tungsten, dissolved	7440-33-7	E465	0.00001	mg/L	0.1 mg/L	98.1	80.0	120	----
Uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	99.7	80.0	120	----
Vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
Yttrium, dissolved	7440-65-5	E465	0.00001	mg/L	0.1 mg/L	99.5	80.0	120	----
Zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	101	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1677001) - continued									
Zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	92.4	80.0	120	----
Mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	98.7	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method						
Anions and Nutrients (QCLot: 1675498)										
YL2401580-001	BRP-34	Ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1676345)										
VA24C5610-002	Anonymous	Fluoride	16984-48-8	E235.F	20.6 mg/L	20 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1676346)										
VA24C5610-002	Anonymous	Chloride	16887-00-6	E235.Cl	2030 mg/L	2000 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1676347)										
VA24C5610-002	Anonymous	Bromide	24959-67-9	E235.Br-L	9.92 mg/L	10 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 1676348)										
VA24C5610-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	50.5 mg/L	50 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1676349)										
VA24C5610-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	10.2 mg/L	10 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1676350)										
VA24C5610-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	2150 mg/L	2000 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 1676352)										
YL2401580-002	BRP-18	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0279 mg/L	0.03 mg/L	93.0	70.0	130	----
Anions and Nutrients (QCLot: 1676415)										
VA24C5344-002	Anonymous	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1676416)										
VA24C5344-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.54 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1676417)										
VA24C5344-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1676418)										
VA24C5344-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1676419)										
VA24C5344-002	Anonymous	Fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1676421)										
VA24C5344-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.516 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1676427)										
VA24C5644-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0298 mg/L	0.03 mg/L	99.5	70.0	130	----
Anions and Nutrients (QCLot: 1677791)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1677791) - continued										
GP2401891-009	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1678430)										
YL2401580-001	BRP-34	Silicate (as SiO2)	7631-86-9	E392	9.80 mg/L	10 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 1680703)										
FC2402640-009	Anonymous	Phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1680710)										
GP2401891-009	Anonymous	Phosphorus, total	7723-14-0	E372-S	ND mg/L	----	ND	70.0	130	----
Cyanides (QCLot: 1681407)										
VA24C5509-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.203 mg/L	0.25 mg/L	81.4	75.0	125	----
Cyanides (QCLot: 1681408)										
VA24C5509-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.122 mg/L	0.125 mg/L	97.5	75.0	125	----
Cyanides (QCLot: 1681409)										
VA24C5509-001	Anonymous	Cyanide, free	----	E339	0.121 mg/L	0.125 mg/L	96.8	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1682584)										
EO2408359-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1683164)										
YL2401580-004	GIROF	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1685166)										
YL2401580-002	BRP-18	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1677188)										
WP2422695-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.220 mg/L	0.2 mg/L	110	75.0	125	----
Total Metals (QCLot: 1682788)										
GP2401833-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.77 ng/L	5 ng/L	95.5	70.0	130	----
Total Metals (QCLot: 1683633)										
YL2401580-008	FD-2	Mercury, total	7439-97-6	E508-L	4.38 ng/L	5 ng/L	87.5	70.0	130	----
Total Metals (Undigested) (QCLot: 1677032)										
YL2401580-002	BRP-18	Aluminum, total	7429-90-5	E466	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		Antimony, total	7440-36-0	E466	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Arsenic, total	7440-38-2	E466	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Barium, total	7440-39-3	E466	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E466	0.0376 mg/L	0.04 mg/L	94.0	70.0	130	----
		Bismuth, total	7440-69-9	E466	0.00882 mg/L	0.01 mg/L	88.2	70.0	130	----
		Boron, total	7440-42-8	E466	0.0925 mg/L	0.1 mg/L	92.5	70.0	130	----
		Cadmium, total	7440-43-9	E466	0.00381 mg/L	0.004 mg/L	95.3	70.0	130	----
		Calcium, total	7440-70-2	E466	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E466	0.00925 mg/L	0.01 mg/L	92.5	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Total Metals (Undigested) (QCLot: 1677032) - continued										
YL2401580-002	BRP-18	Chromium, total	7440-47-3	E466	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		Cobalt, total	7440-48-4	E466	0.0188 mg/L	0.02 mg/L	94.1	70.0	130	----
		Copper, total	7440-50-8	E466	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		Gallium, total	7440-55-3	E466	0.00239 mg/L	0.002 mg/L	95.5	70.0	130	----
		Iron, total	7439-89-6	E466	1.96 mg/L	2 mg/L	97.9	70.0	130	----
		Lanthanum, total	7439-91-0	E466	0.00226 mg/L	0.002 mg/L	90.2	70.0	130	----
		Lead, total	7439-92-1	E466	0.0184 mg/L	0.02 mg/L	91.9	70.0	130	----
		Lithium, total	7439-93-2	E466	0.0914 mg/L	0.1 mg/L	91.4	70.0	130	----
		Magnesium, total	7439-95-4	E466	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E466	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E466	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Nickel, total	7440-02-0	E466	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		Niobium, total	7440-03-1	E466	0.00254 mg/L	0.002 mg/L	102	70.0	130	----
		Phosphorus, total	7723-14-0	E466	9.55 mg/L	10 mg/L	95.5	70.0	130	----
		Potassium, total	7440-09-7	E466	3.89 mg/L	4 mg/L	97.2	70.0	130	----
		Rhenium, total	7440-15-5	E466	0.00230 mg/L	0.002 mg/L	92.0	70.0	130	----
		Rubidium, total	7440-17-7	E466	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		Selenium, total	7782-49-2	E466	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
		Silicon, total	7440-21-3	E466	9.06 mg/L	10 mg/L	90.6	70.0	130	----
		Silver, total	7440-22-4	E466	0.00362 mg/L	0.004 mg/L	90.6	70.0	130	----
		Sodium, total	7440-23-5	E466	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E466	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E466	18.5 mg/L	20 mg/L	92.3	70.0	130	----
		Tantalum, total	7440-25-7	E466	0.00231 mg/L	0.002 mg/L	92.4	70.0	130	----
		Tellurium, total	13494-80-9	E466	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Thallium, total	7440-28-0	E466	0.00365 mg/L	0.004 mg/L	91.2	70.0	130	----
		Thorium, total	7440-29-1	E466	0.0178 mg/L	0.02 mg/L	89.2	70.0	130	----
		Tin, total	7440-31-5	E466	0.0179 mg/L	0.02 mg/L	89.6	70.0	130	----
		Titanium, total	7440-32-6	E466	0.0356 mg/L	0.04 mg/L	89.0	70.0	130	----
		Tungsten, total	7440-33-7	E466	0.0182 mg/L	0.02 mg/L	90.9	70.0	130	----
		Uranium, total	7440-61-1	E466	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		Vanadium, total	7440-62-2	E466	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Yttrium, total	7440-65-5	E466	0.00249 mg/L	0.002 mg/L	99.5	70.0	130	----
		Zinc, total	7440-66-6	E466	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		Zirconium, total	7440-67-7	E466	0.0355 mg/L	0.04 mg/L	88.8	70.0	130	----
Dissolved Metals (QCLot: 1677001)										
YL2401580-002	BRP-18	Aluminum, dissolved	7429-90-5	E465	0.195 mg/L	0.2 mg/L	97.7	70.0	130	----
		Antimony, dissolved	7440-36-0	E465	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E465	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Barium, dissolved	7440-39-3	E465	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E465	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
		Bismuth, dissolved	7440-69-9	E465	0.00877 mg/L	0.01 mg/L	87.7	70.0	130	----
		Boron, dissolved	7440-42-8	E465	0.0944 mg/L	0.1 mg/L	94.4	70.0	130	----
		Cadmium, dissolved	7440-43-9	E465	0.00372 mg/L	0.004 mg/L	93.0	70.0	130	----

Page : 24 of 25
 Work Order : YL2401580
 Client : B2Gold Back River Corp.
 Project : 22567626



Sub-Matrix: Water

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1677001) - continued										
YL2401580-002	BRP-18	Calcium, dissolved	7440-70-2	E465	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E465	0.00936 mg/L	0.01 mg/L	93.6	70.0	130	----
		Chromium, dissolved	7440-47-3	E465	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		Cobalt, dissolved	7440-48-4	E465	0.0185 mg/L	0.02 mg/L	92.7	70.0	130	----
		Copper, dissolved	7440-50-8	E465	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Gallium, dissolved	7440-55-3	E465	0.00250 mg/L	0.002 mg/L	100	70.0	130	----
		Iron, dissolved	7439-89-6	E465	1.95 mg/L	2 mg/L	97.5	70.0	130	----
		Lanthanum, dissolved	7439-91-0	E465	0.00244 mg/L	0.002 mg/L	97.8	70.0	130	----
		Lead, dissolved	7439-92-1	E465	0.0184 mg/L	0.02 mg/L	91.9	70.0	130	----
		Lithium, dissolved	7439-93-2	E465	0.0922 mg/L	0.1 mg/L	92.2	70.0	130	----
		Magnesium, dissolved	7439-95-4	E465	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E465	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E465	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Nickel, dissolved	7440-02-0	E465	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Niobium, dissolved	7440-03-1	E465	0.00259 mg/L	0.002 mg/L	104	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E465	9.52 mg/L	10 mg/L	95.2	70.0	130	----
		Potassium, dissolved	7440-09-7	E465	3.77 mg/L	4 mg/L	94.3	70.0	130	----
		Rhenium, dissolved	7440-15-5	E465	0.00255 mg/L	0.002 mg/L	102	70.0	130	----
		Rubidium, dissolved	7440-17-7	E465	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		Selenium, dissolved	7782-49-2	E465	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, dissolved	7440-21-3	E465	9.01 mg/L	10 mg/L	90.1	70.0	130	----
		Silver, dissolved	7440-22-4	E465	0.00366 mg/L	0.004 mg/L	91.4	70.0	130	----
		Sodium, dissolved	7440-23-5	E465	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E465	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E465	18.5 mg/L	20 mg/L	92.6	70.0	130	----
		Tantalum, dissolved	7440-25-7	E465	0.00254 mg/L	0.002 mg/L	102	70.0	130	----
		Tellurium, dissolved	13494-80-9	E465	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		Thallium, dissolved	7440-28-0	E465	0.00363 mg/L	0.004 mg/L	90.8	70.0	130	----
		Thorium, dissolved	7440-29-1	E465	0.0182 mg/L	0.02 mg/L	91.2	70.0	130	----
		Tin, dissolved	7440-31-5	E465	0.0182 mg/L	0.02 mg/L	91.3	70.0	130	----
		Titanium, dissolved	7440-32-6	E465	0.0352 mg/L	0.04 mg/L	88.1	70.0	130	----
		Tungsten, dissolved	7440-33-7	E465	0.0184 mg/L	0.02 mg/L	91.9	70.0	130	----
		Uranium, dissolved	7440-61-1	E465	0.00376 mg/L	0.004 mg/L	94.1	70.0	130	----
		Vanadium, dissolved	7440-62-2	E465	0.0987 mg/L	0.1 mg/L	98.7	70.0	130	----
		Yttrium, dissolved	7440-65-5	E465	0.00259 mg/L	0.002 mg/L	104	70.0	130	----
		Zinc, dissolved	7440-66-6	E465	0.403 mg/L	0.4 mg/L	101	70.0	130	----
		Zirconium, dissolved	7440-67-7	E465	0.0357 mg/L	0.04 mg/L	89.3	70.0	130	----
Dissolved Metals (QCLot: 1683456)										
YL2401580-002	BRP-18	Mercury, dissolved	7439-97-6	E509-L	4.63 ng/L	5 ng/L	92.6	70.0	130	----





CHAIN OF CUSTODY
ALS Laboratory

CLIENT:	BRDOLD Nursery	TURNAROUND REQUIREMENTS:	RECEIVED BY:	RECEIVED BY:
PROJECT:	CA020116 E301	☒ Standard TAT (Lab use only) ☐ Hdn Standard for export TAT (Lab use only)	DATE/TIME:	DATE/TIME:
SITE:	BRDOLD		DATE/TIME:	DATE/TIME:
PURCHASE ORDER NO:	Order number: Y123456789000 Date: 09-May-2024	ALS QUOTE NO: Y123456789000	FOR LABORATORY USE ONLY (CENH)	
PROJECT MANAGER:	Maria Kassis	CONTACT PH:	Free for export use only (prior approval) Regulation Number: 1 (permitted for export) Other comments:	
SAMPLER:	Tamara Dzhuravskaya	SAMPLER MOBILE: 867 446 4787		
EMAIL REPORTS TO:	Dzhenya Dzhuravskaya@sup.com, Tamara Dzhuravskaya@sup.com, for export@sup.com, for export@sup.com	EMAIL INVOICE TO:		
SPECIAL HANDLING/STORAGE OR DELIVERY:				

ALS USE ONLY		SAMPLE DETAILS		MATRIX: (Guided) (Maximum)		CONTAINER INFORMATION		ANALYSIS REQUIRED										Additional Information		
SAMPLE		(This identifier will appear in the report)		DATE / TIME (dd-mm-yyyy)		MATRIX		TOTAL CONTAINERS		Field Filled (F) / Preserved (P)										
										Conductivity parameters and redox time (specific conductivity, pH, TDS, turbidity, TOB measured, total hardness, total alkalinity, bicarbonate, carbonate, chloride, borate, hydrosulfide, potassium, sulphate, soluble reactive silica)										Dissolved parameters field filled
										Total and Dissolved Nitrate (nitro low level)										
										Total and Dissolved Mercury (nitro low level)										
										Total Nutrients (TOCDOC, nitrate, nitrite, total ammonia, TNH, orthophosphate, TDP, TP)										
										Dissolved Nutrients (TOCDOC, nitrate, nitrite, total ammonia, TNH, orthophosphate, TDP, TP)										
										Total cyanide, WAD cyanide, free cyanide										
										Sulfide										
										Chlorophyll a										
										Radium										
																				↑

CERTIFICATE OF ANALYSIS

Work Order	: YL2401585		
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver British Columbia Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 23-Sep-2024 14:14
PO	: 17852	Date Analysis Commenced	: 01-Oct-2024
C-O-C number	: ----	Issue Date	: 03-Oct-2024 13:33
Sampler	: Tamara Derkowski		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 45		
No. of samples analysed	: 45		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Juanita Martis	Account Manager Assistant	Administration, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	Description
L	litres
µg/sample	micrograms per sample

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-31-1A	BRP-31-1B	BRP-31-1C	BRP-31-2A	BRP-31-2B
Client sampling date / time						19-Sep-2024 10:15	19-Sep-2024 10:15	19-Sep-2024 10:15	19-Sep-2024 10:30	19-Sep-2024 10:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		YL2401585-001	YL2401585-002	YL2401585-003	YL2401585-004	YL2401585-005
						Result	Result	Result	Result	Result
Field Tests										
Sampling volume, field	----	EF003/VA	0.010	L		0.750	0.750	0.750	0.550	0.750
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.828	0.843	0.833	0.506	0.803

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-31-2C	BRP-31-3A	BRP-31-3B	BRP-31-3C	BRP-31-4A
Client sampling date / time						19-Sep-2024 10:30	19-Sep-2024 10:55	19-Sep-2024 10:55	19-Sep-2024 10:55	19-Sep-2024 11:15
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		YL2401585-006	YL2401585-007	YL2401585-008	YL2401585-009	YL2401585-010
						Result	Result	Result	Result	Result
Field Tests										
Sampling volume, field	----	EF003/VA	0.010	L		0.750	1.00	1.00	1.00	0.700
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.791	0.920	1.02	1.06	0.713

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					BRP-31-4B	BRP-31-4C	BRP-31-5A	BRP-31-5B	BRP-31-5C
Client sampling date / time					19-Sep-2024 11:15	19-Sep-2024 11:15	19-Sep-2024 11:40	19-Sep-2024 11:40	19-Sep-2024 11:40
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401585-011	YL2401585-012	YL2401585-013	YL2401585-014	YL2401585-015
					Result	Result	Result	Result	Result
Field Tests									
Sampling volume, field	----	EF003/VA	0.010	L	0.700	0.730	0.700	0.700	0.700
Plant Pigments									
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample	0.566	0.750	0.498	0.741	0.766

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					BRP-32-1A	BRP-32-1B	BRP-32-1C	BRP-32-2A	BRP-32-2B
Client sampling date / time					18-Sep-2024 10:00	18-Sep-2024 10:00	18-Sep-2024 10:00	18-Sep-2024 10:50	18-Sep-2024 10:50
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401585-016	YL2401585-017	YL2401585-018	YL2401585-019	YL2401585-020
					Result	Result	Result	Result	Result
Field Tests									
Sampling volume, field	----	EF003/VA	0.010	L	0.350	0.250	0.500	0.300	0.250
Plant Pigments									
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample	0.791	0.466	1.06	0.703	0.448

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-2C	BRP-32-3A	BRP-32-3B	BRP-32-3C	BRP-32-4A
Client sampling date / time						18-Sep-2024 10:50	18-Sep-2024 11:25	18-Sep-2024 11:25	18-Sep-2024 11:25	18-Sep-2024 11:55
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		YL2401585-021	YL2401585-022	YL2401585-023	YL2401585-024	YL2401585-025
						Result	Result	Result	Result	Result
Field Tests										
Sampling volume, field	----	EF003/VA	0.010	L		0.500	0.300	0.300	0.400	0.350
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.09	0.585	0.511	0.804	0.747

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-4B	BRP-32-4C	BRP-32-5A	BRP-32-5B	BRP-32-5C
Client sampling date / time						18-Sep-2024 11:55	18-Sep-2024 11:55	18-Sep-2024 12:25	18-Sep-2024 12:25	18-Sep-2024 12:25
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		YL2401585-026	YL2401585-027	YL2401585-028	YL2401585-029	YL2401585-030
						Result	Result	Result	Result	Result
Field Tests										
Sampling volume, field	----	EF003/VA	0.010	L		0.400	0.400	0.400	0.500	0.500
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.766	0.842	0.978	1.16	1.32

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-38-1A	BRP-38-1B	BRP-38-1C	BRP-38-2A	BRP-38-2B
Client sampling date / time						20-Sep-2024 10:40	20-Sep-2024 10:40	20-Sep-2024 10:40	20-Sep-2024 11:05	20-Sep-2024 11:05
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		YL2401585-031	YL2401585-032	YL2401585-033	YL2401585-034	YL2401585-035
					Result	Result	Result	Result	Result	Result
Field Tests										
Sampling volume, field	----	EF003/VA	0.010	L		1.00	0.560	0.500	0.400	0.390
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		1.38	0.704	0.677	0.468	0.505

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-38-2C	BRP-38-3A	BRP-38-3B	BRP-38-3C	BRP-38-4A
Client sampling date / time						20-Sep-2024 11:05	20-Sep-2024 11:20	20-Sep-2024 11:20	20-Sep-2024 11:20	20-Sep-2024 11:40
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		YL2401585-036	YL2401585-037	YL2401585-038	YL2401585-039	YL2401585-040
					Result	Result	Result	Result	Result	Result
Field Tests										
Sampling volume, field	----	EF003/VA	0.010	L		0.400	0.540	0.500	0.500	0.500
Plant Pigments										
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample		0.376	0.673	0.599	0.623	0.619

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Client sample ID					BRP-38-4B	BRP-38-4C	BRP-38-5A	BRP-38-5B	BRP-38-5C
Client sampling date / time					20-Sep-2024 11:40	20-Sep-2024 11:40	20-Sep-2024 11:55	20-Sep-2024 11:55	20-Sep-2024 11:55
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	YL2401585-041	YL2401585-042	YL2401585-043	YL2401585-044	YL2401585-045
					Result	Result	Result	Result	Result
Field Tests									
Sampling volume, field	----	EF003/VA	0.010	L	0.500	0.500	0.500	0.700	0.700
Plant Pigments									
Chlorophyll a	479-61-8	E870A/VA	0.0020	µg/sample	0.667	0.674	0.566	1.07	1.27

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2401585	Page	: 1 of 15
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 23-Sep-2024 14:14
PO	: 17852	Issue Date	: 03-Oct-2024 13:33
C-O-C number	: ----		
Sampler	: Tamara Derkowski		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 45		
No. of samples analysed	: 45		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-1A	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-1B	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-1C	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-2A	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-2B	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-2C	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-3A	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-3B	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-3C	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-4A	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-4B	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-4C	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-5A	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-5B	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-38-5C	EF003	20-Sep-2024	----	----	----		03-Oct-2024	----	13 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-1A	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-1B	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-1C	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-2A	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-2B	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-2C	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-3A	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-3B	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-3C	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-4A	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	

Page : 6 of 15
 Work Order : YL2401585
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-4B	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-4C	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-5A	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-5B	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-31-5C	EF003	19-Sep-2024	----	----	----		03-Oct-2024	----	14 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-1A	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-1B	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-1C	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-2A	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-2B	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-2C	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-3A	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-3B	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-3C	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-4A	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-4B	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-4C	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-5A	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-5B	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Field Tests : Field Volume (L)										
Opaque HDPE tube BRP-32-5C	EF003	18-Sep-2024	----	----	----		03-Oct-2024	----	15 days	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-1A	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-1B	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-1C	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-2A	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-2B	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-2C	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-3A	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓

Page : 9 of 15
 Work Order : YL2401585
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-3B	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-3C	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-4A	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-4B	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-4C	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-5A	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-5B	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-38-5C	E870A	20-Sep-2024	01-Oct-2024	28 days	11 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-1A	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓

Page : 10 of 15
 Work Order : YL2401585
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-1B	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-1C	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-2A	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-2B	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-2C	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-3A	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
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Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
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Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-4A	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓

Page : 11 of 15
 Work Order : YL2401585
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-4B	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-4C	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-5A	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-5B	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-31-5C	E870A	19-Sep-2024	01-Oct-2024	28 days	12 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-1A	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-1B	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
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Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-2A	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓

Page : 12 of 15
 Work Order : YL2401585
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-2B	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-2C	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-3A	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-3B	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-3C	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
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Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
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Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-4C	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-5A	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓

Page : 13 of 15
 Work Order : YL2401585
 Client : B2Gold Back River Corp.
 Project : 22567626



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-5B	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Field Filtered µg)										
Opaque HDPE tube BRP-32-5C	E870A	18-Sep-2024	01-Oct-2024	28 days	13 days	✓	01-Oct-2024	28 days	0 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS)							
Chlorophyll-a by Fluorometry (Field Filtered µg)	E870A	1682347	3	45	6.6	5.0	✔
Method Blanks (MB)							
Chlorophyll-a by Fluorometry (Field Filtered µg)	E870A	1682347	3	45	6.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Chlorophyll-a by Fluorometry (Field Filtered µg)	E870A ALS Environmental - Vancouver	Water	EPA 445.0 (mod)	Chlorophyll-a is determined by solvent extraction followed with analysis by fluorometry using the non-acidification procedure. Sampling volume not provided by client.
Field Volume (L)	EF003 ALS Environmental - Vancouver	Water		Field measurement of sampling volume provided by client and recorded on ALS report may affect the validity of results.
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Chlorophyll-a Extraction (Field Filtered)	EP870A ALS Environmental - Vancouver	Water	EPA 445.0 (mod)	Chlorophyll-a solvent extraction.

QUALITY CONTROL REPORT

Work Order	: YL2401585	Page	: 1 of 3
Client	: B2Gold Back River Corp.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 445 7143
Project	: 22567626	Date Samples Received	: 23-Sep-2024 14:14
PO	: 17852	Date Analysis Commenced	: 01-Oct-2024
C-O-C number	: ----	Issue Date	: 03-Oct-2024 13:33
Sampler	: Tamara Derkowski		
Site	: ----		
Quote number	: YL23-SABI100-001		
No. of samples received	: 45		
No. of samples analysed	: 45		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Juanita Martis	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

- Key :
- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
 - CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
 - DQO = Data Quality Objective.
 - LOR = Limit of Reporting (detection limit).
 - RPD = Relative Percent Difference
 - # = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Plant Pigments (QCLot: 1682347)						
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	<0.0020	----
Plant Pigments (QCLot: 1682348)						
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	<0.0020	----
Plant Pigments (QCLot: 1682349)						
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	<0.0020	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Plant Pigments (QCLot: 1682347)									
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	1 µg/sample	98.3	80.0	120	----
Plant Pigments (QCLot: 1682348)									
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	1 µg/sample	98.9	80.0	120	----
Plant Pigments (QCLot: 1682349)									
Chlorophyll a	479-61-8	E870A	0.002	µg/sample	1 µg/sample	98.8	80.0	120	----



CHAIN OF CUSTODY

ALS Laboratory

RECEIVED BY:

RECEIVED BY:

RECEIVED BY:

RECEIVED BY:

DATE/TIME:

DATE/TIME:

DATE/TIME:

DATE/TIME:

CLIENT: Boreal Thermal

PROJECT: CASSIETTE 2331

SITE: B2066

PURCHASE ORDER NO. Order number: V123A8188-001 Date: 18-Aug-2024

PROJECT MANAGER: Mark Kiehl

SAMPLE: Tarsus Darkwell

EMAIL REPORTS TO: jason@borealthermal.com, beth@borealthermal.com, for more info@borealthermal.com

EMAIL INVOICE TO: beth@borealthermal.com

SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS: ☒ Standard TAT (1-2 business days)

☐ Expedited TAT (3-5 business days) (Add'l fee applies)

ALS QUOTE # V123A8188-001

FOR LABORATORY USE ONLY (internal)

Station Name: B2066

Project / Order no (please provide name number)

Station Sample Temperature in Sample

Client / Laboratory

1000 mL

400 mL

300 mL

100 mL

ALS USE ONLY

SAMPLE DETAILS

CONTAINER INFORMATION

ANALYSIS REQUIRED

ANALYSIS INFORMATION

SAMPLE: (This description will appear on the report)

DATE / TIME (dd-mm-yyyy)

MATRIX

TOTAL CONTAINERS

Conventional parameters and major ions (specific conductivity, pH, TDS, turbidity, TDS measured, total hardness, total alkalinity, bicarbonate, carbonate, chloride, fluoride, hydroxide, potassium, sulfate, soluble reactive silica)

Total and Dissolved Metals (ultra low level)

Total and Dissolved Mercury (ultra low level)

Total and Dissolved nutrients (TOC/DIC, nitrate, nitrite, total ammonia, TAN, orthophosphate, TP, TH)

Total cyanide, WAD cyanide, Free cyanide

Sulfide

Chlorophyll a

Redox

Field Filtrate (F) / Preserved (P)

Volume Filtered

300 mL

300 mL

400 mL

350 mL

400 mL

400 mL

400 mL

400 mL

500 mL

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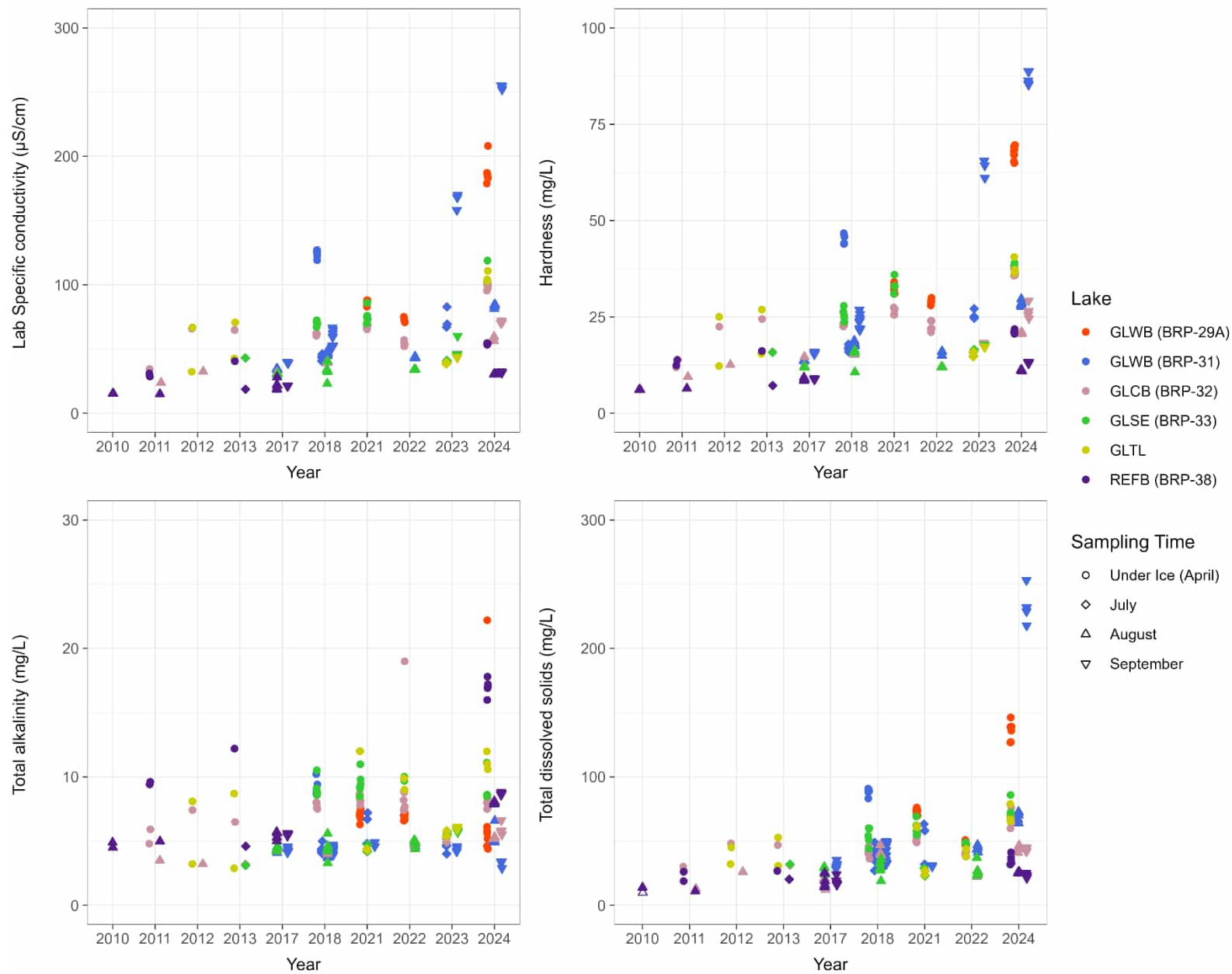
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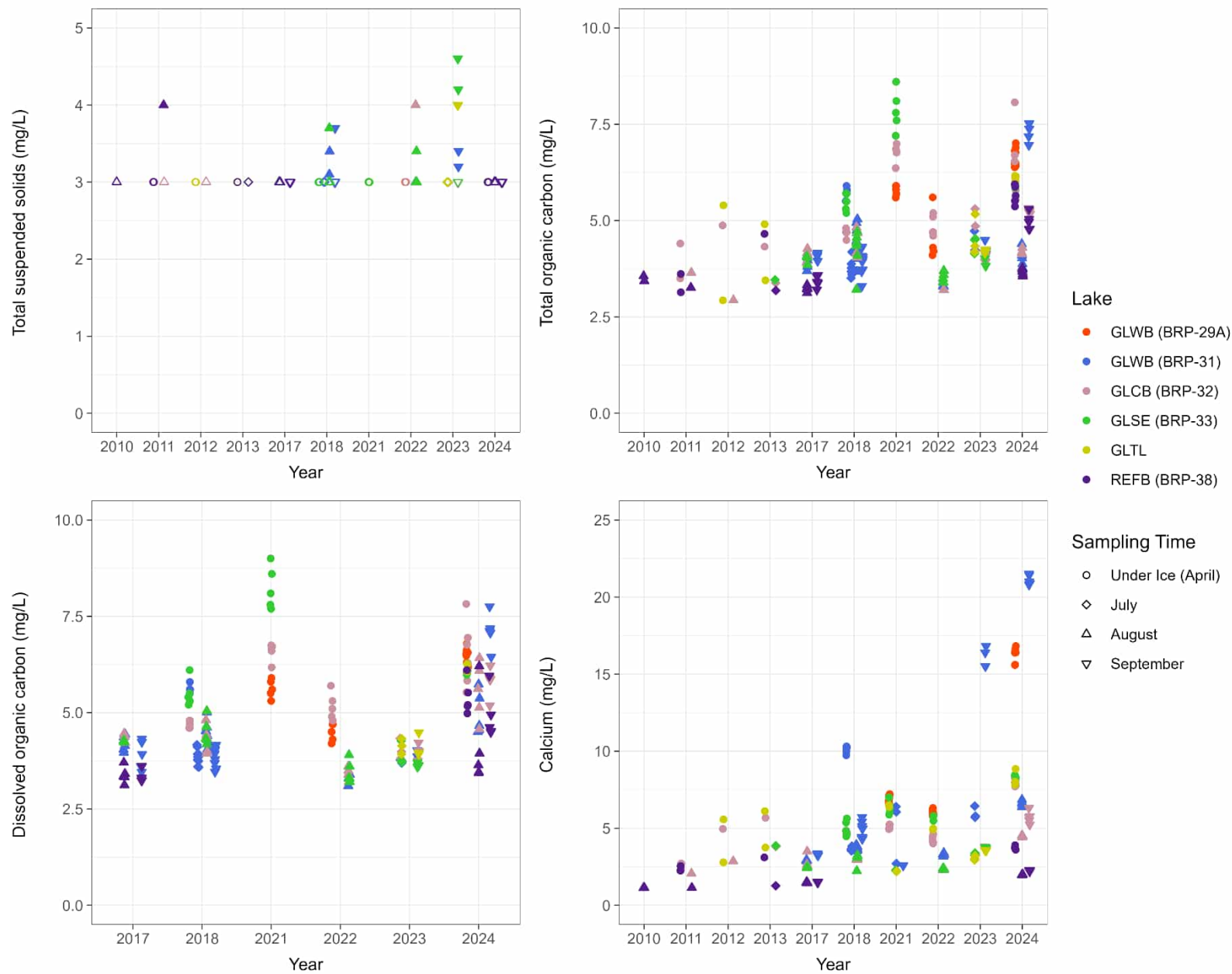
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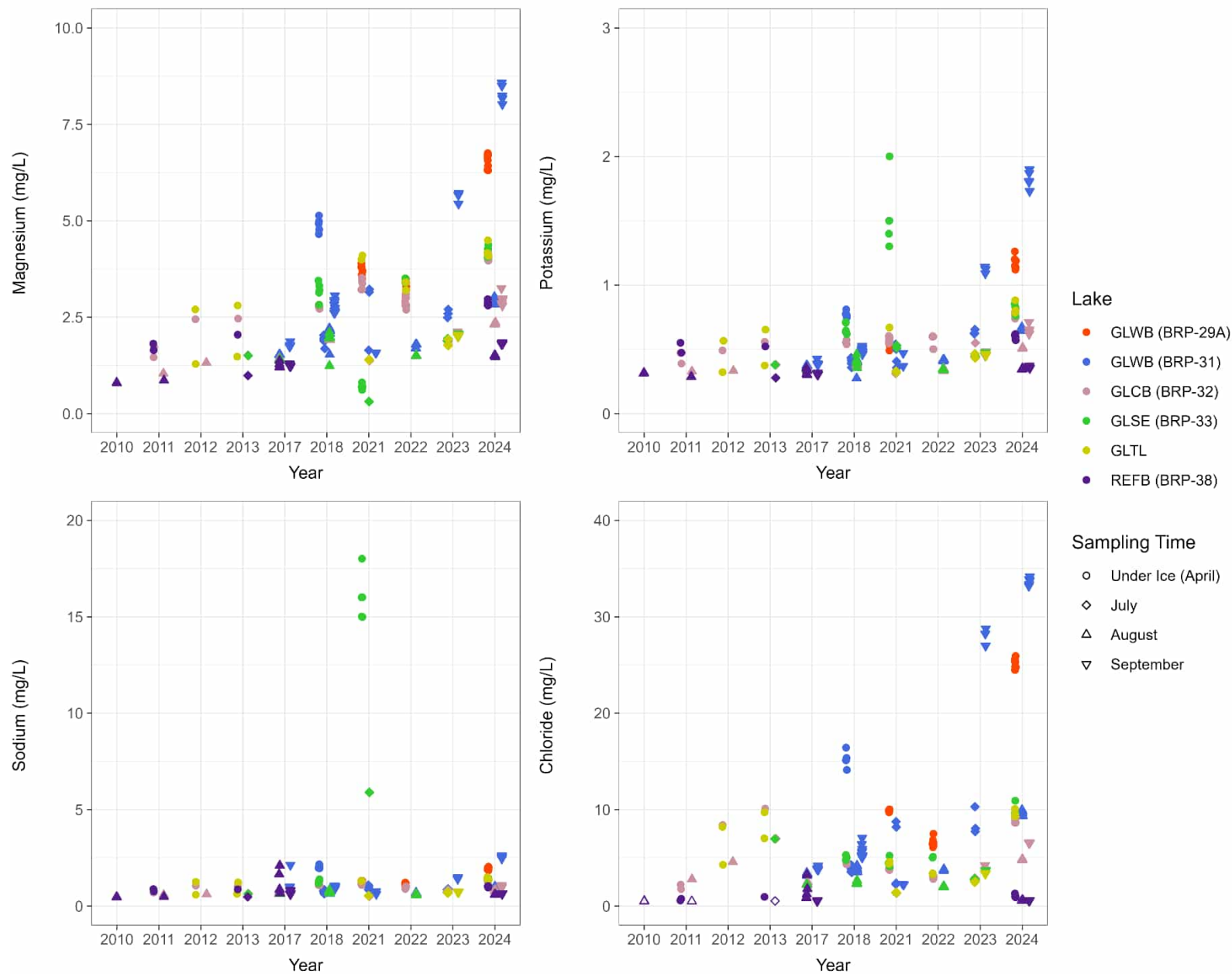
APPENDIX E

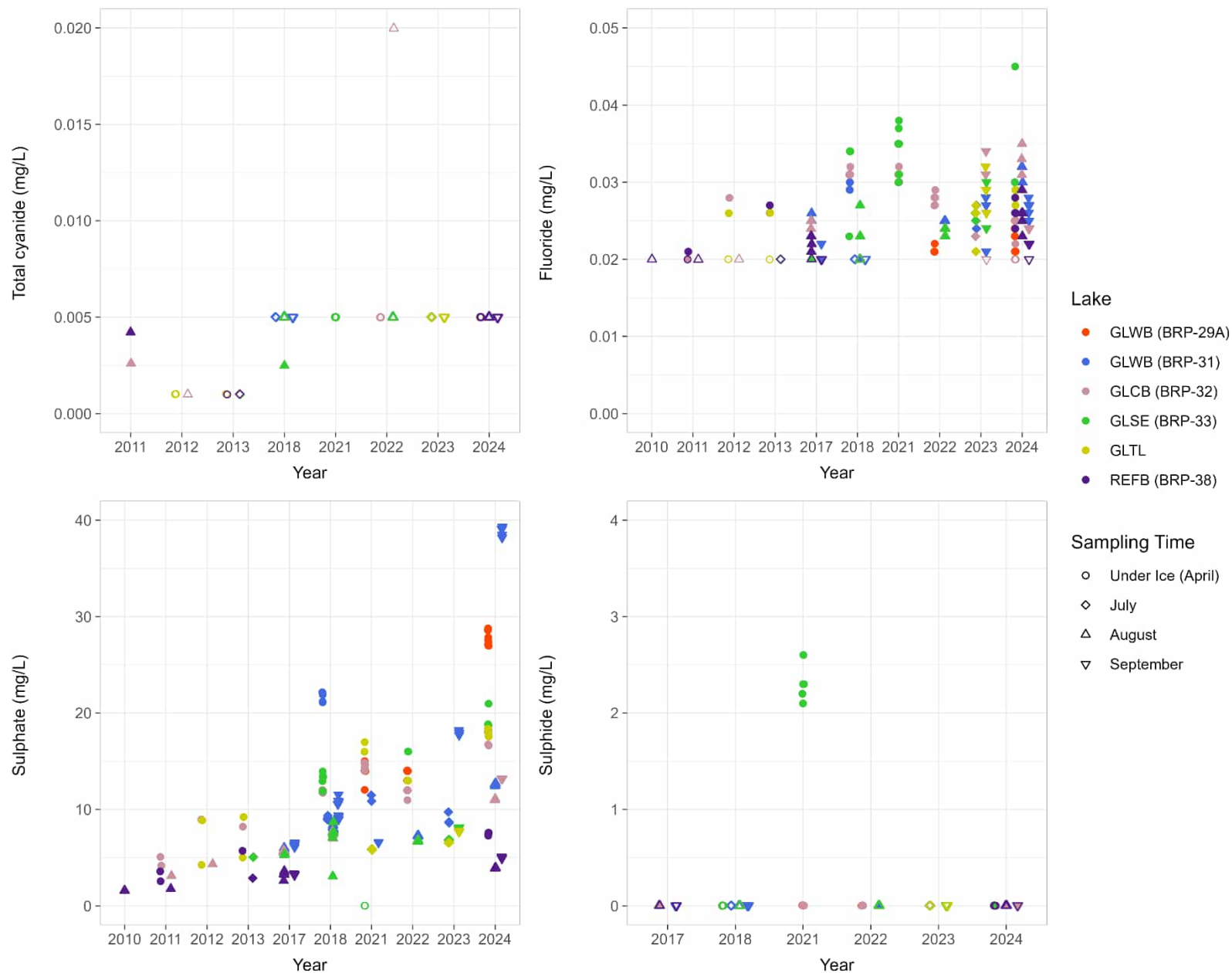
2024 Water Quality – Time Series Plots

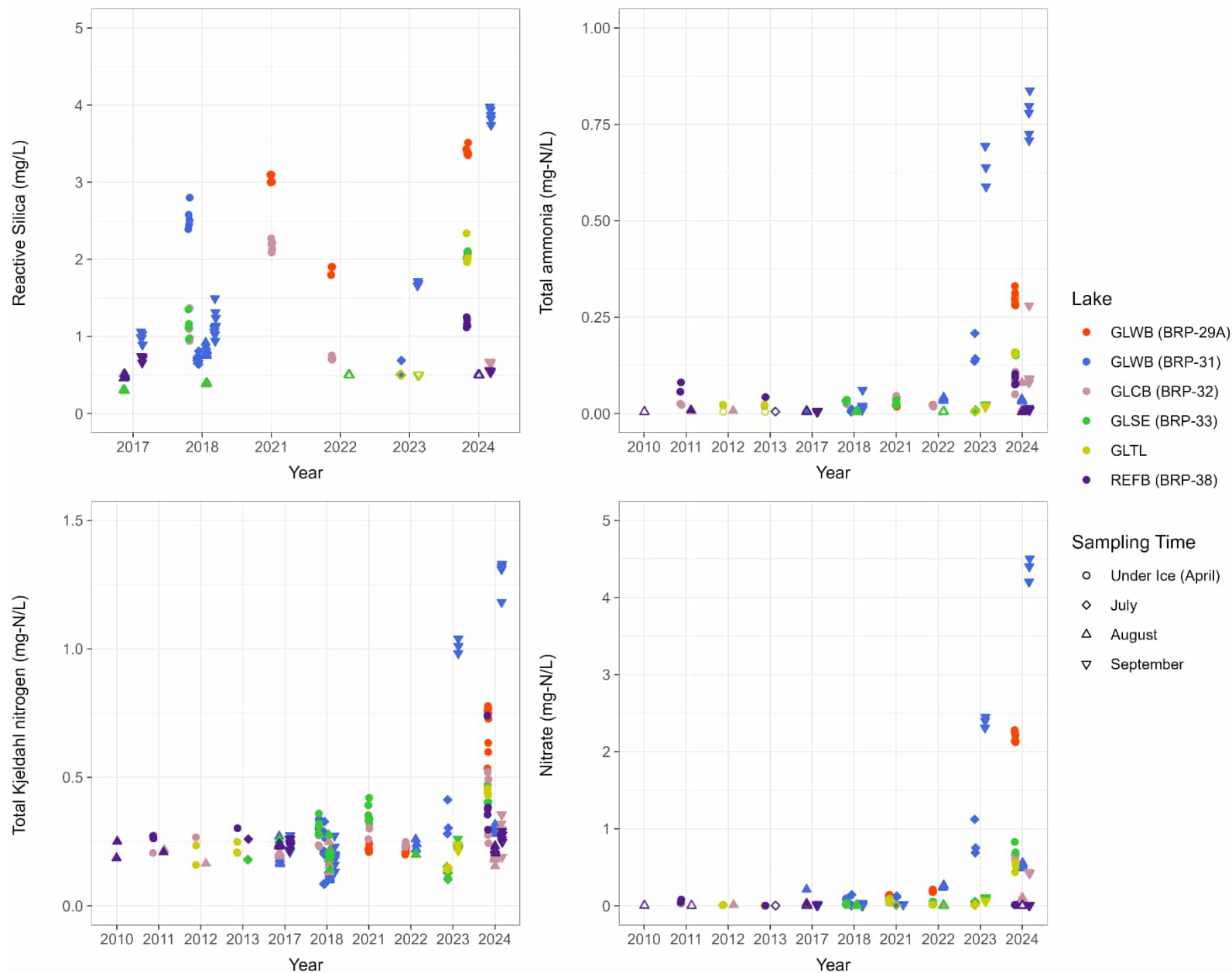
Lake Time Series Plots

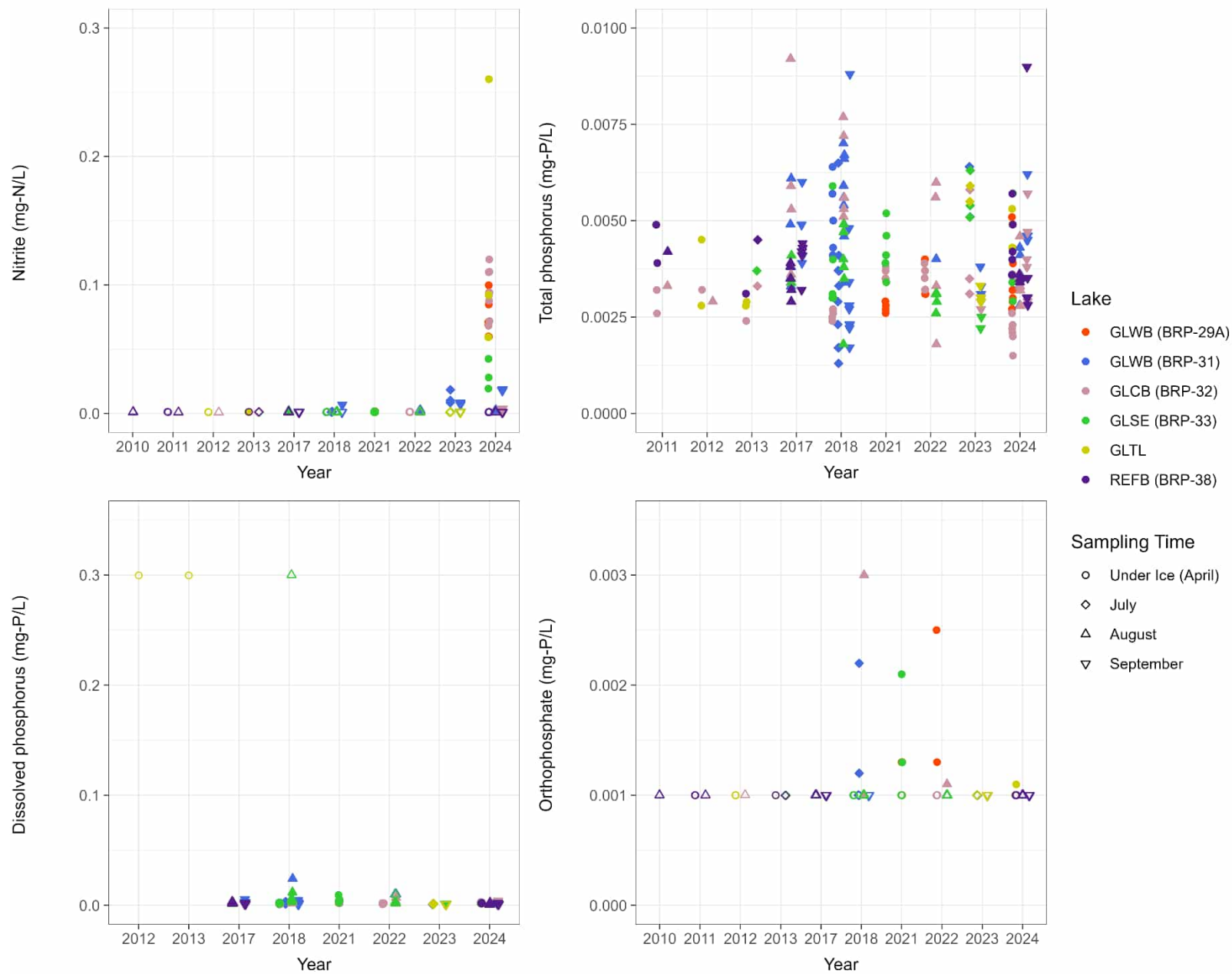


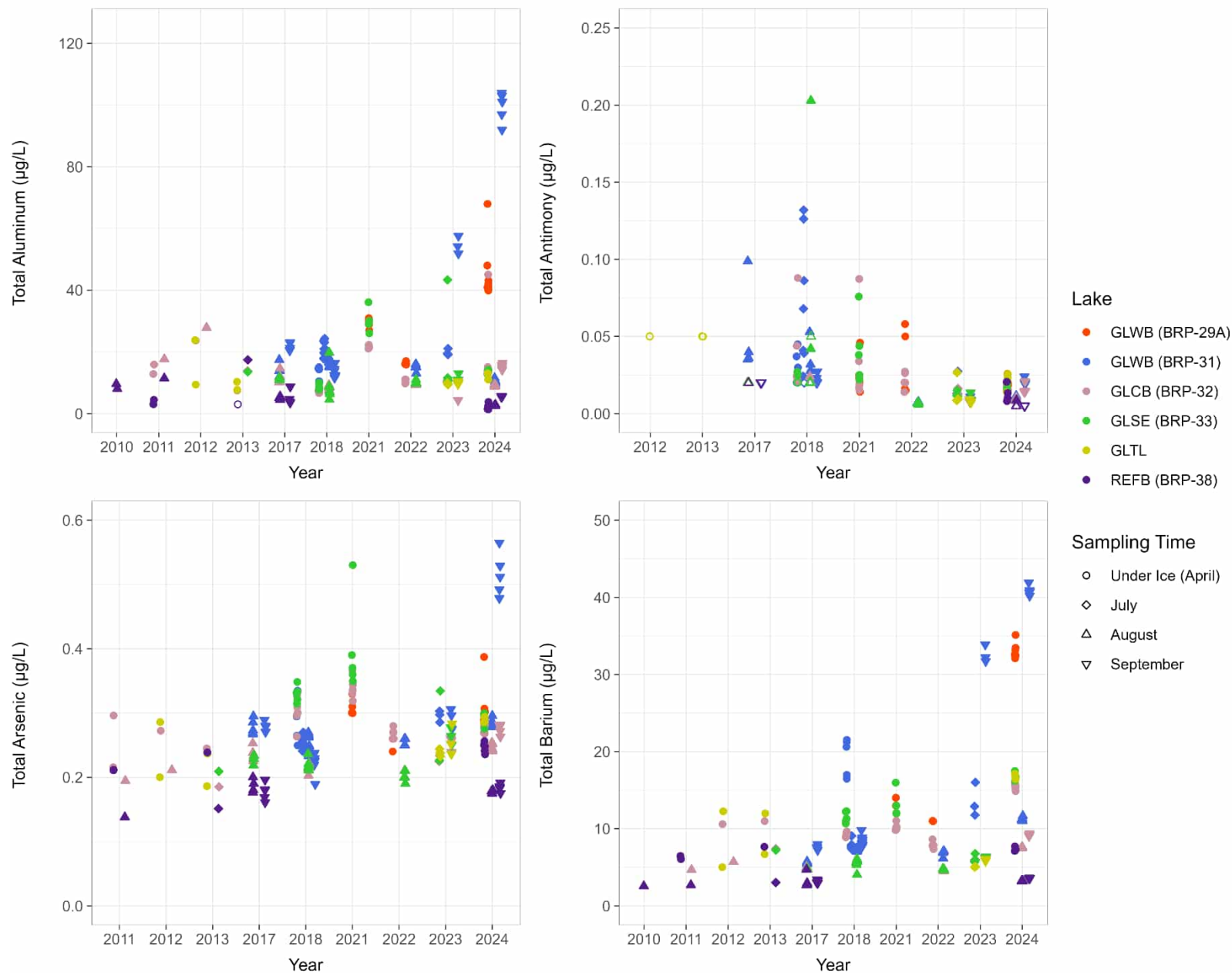


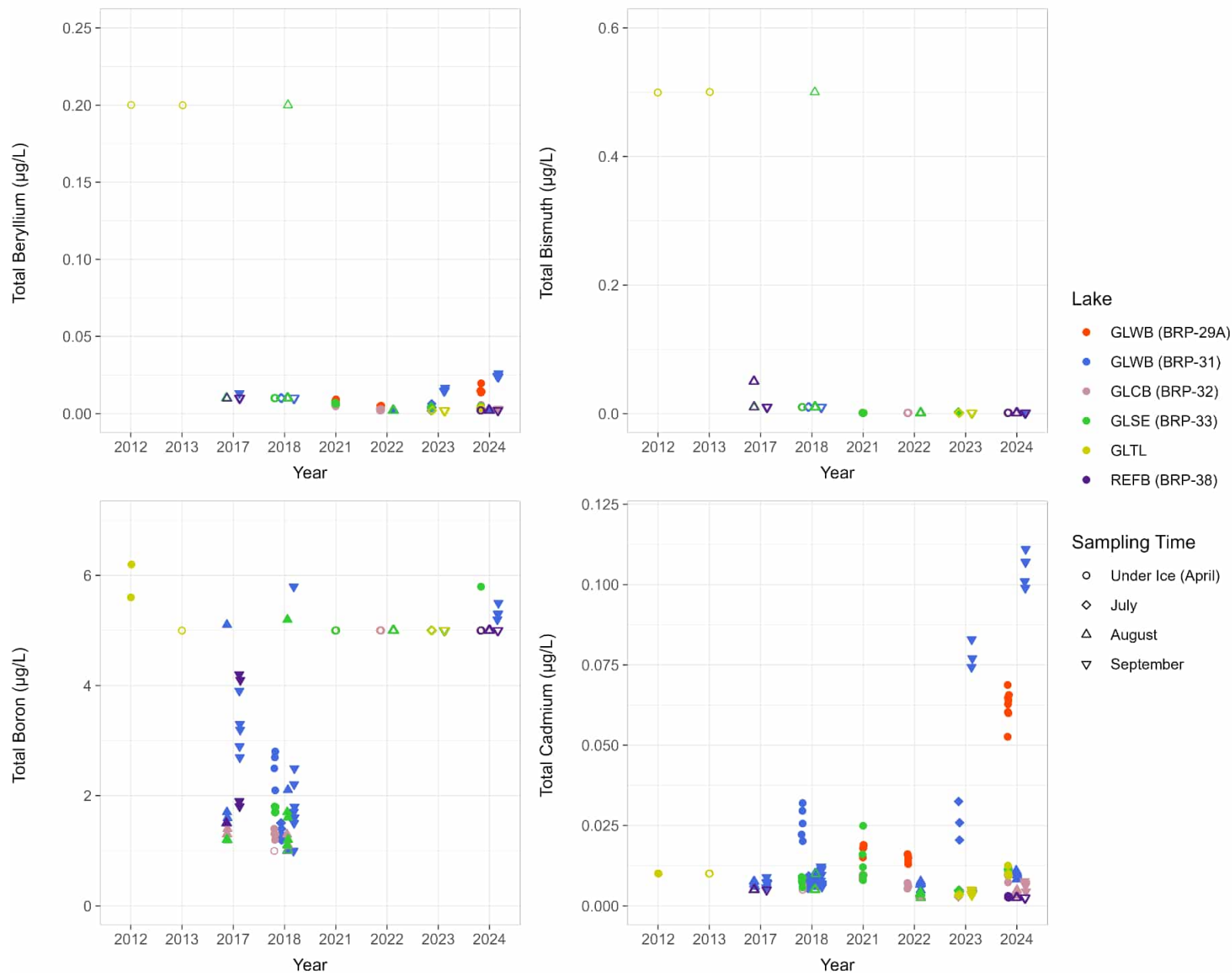


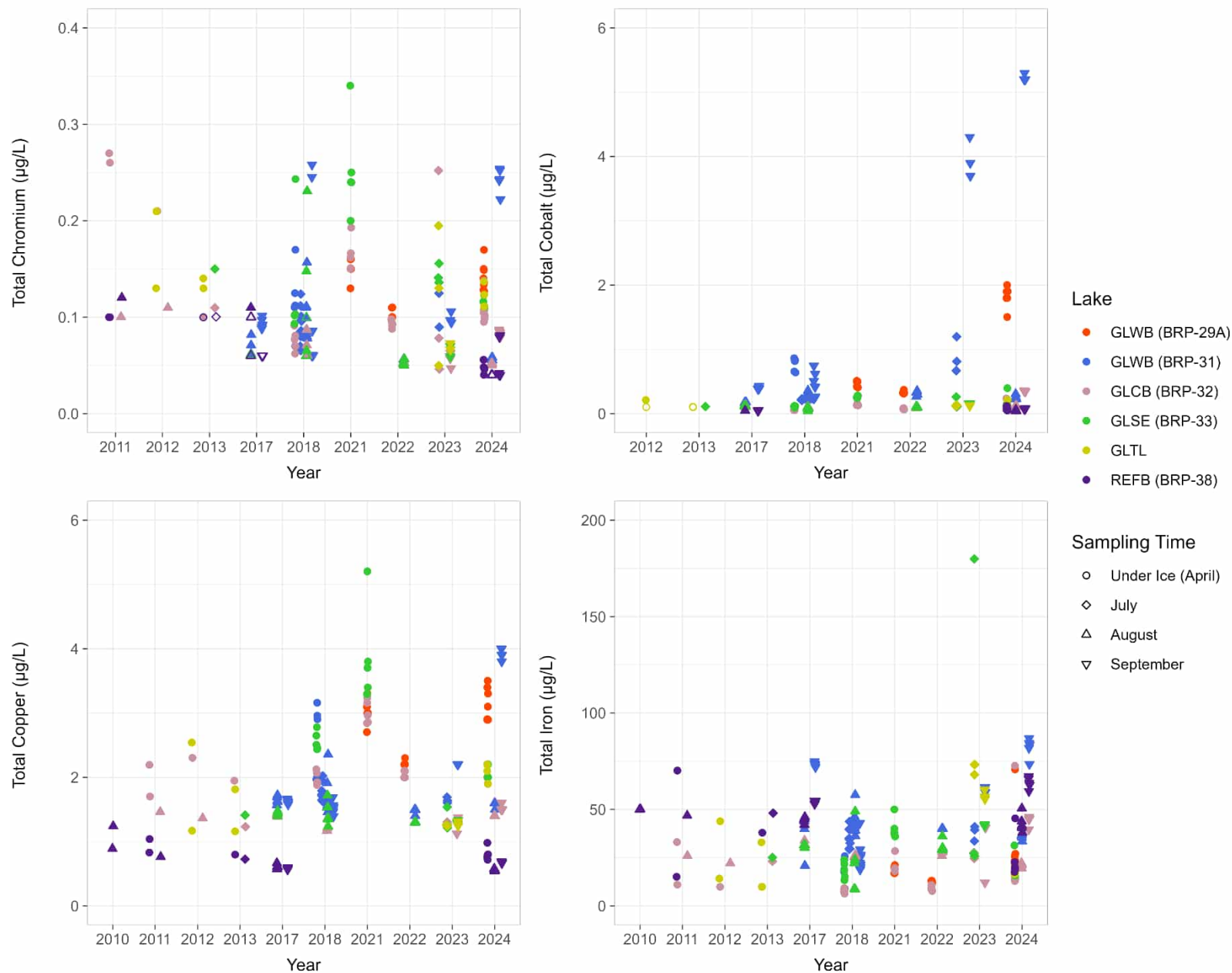


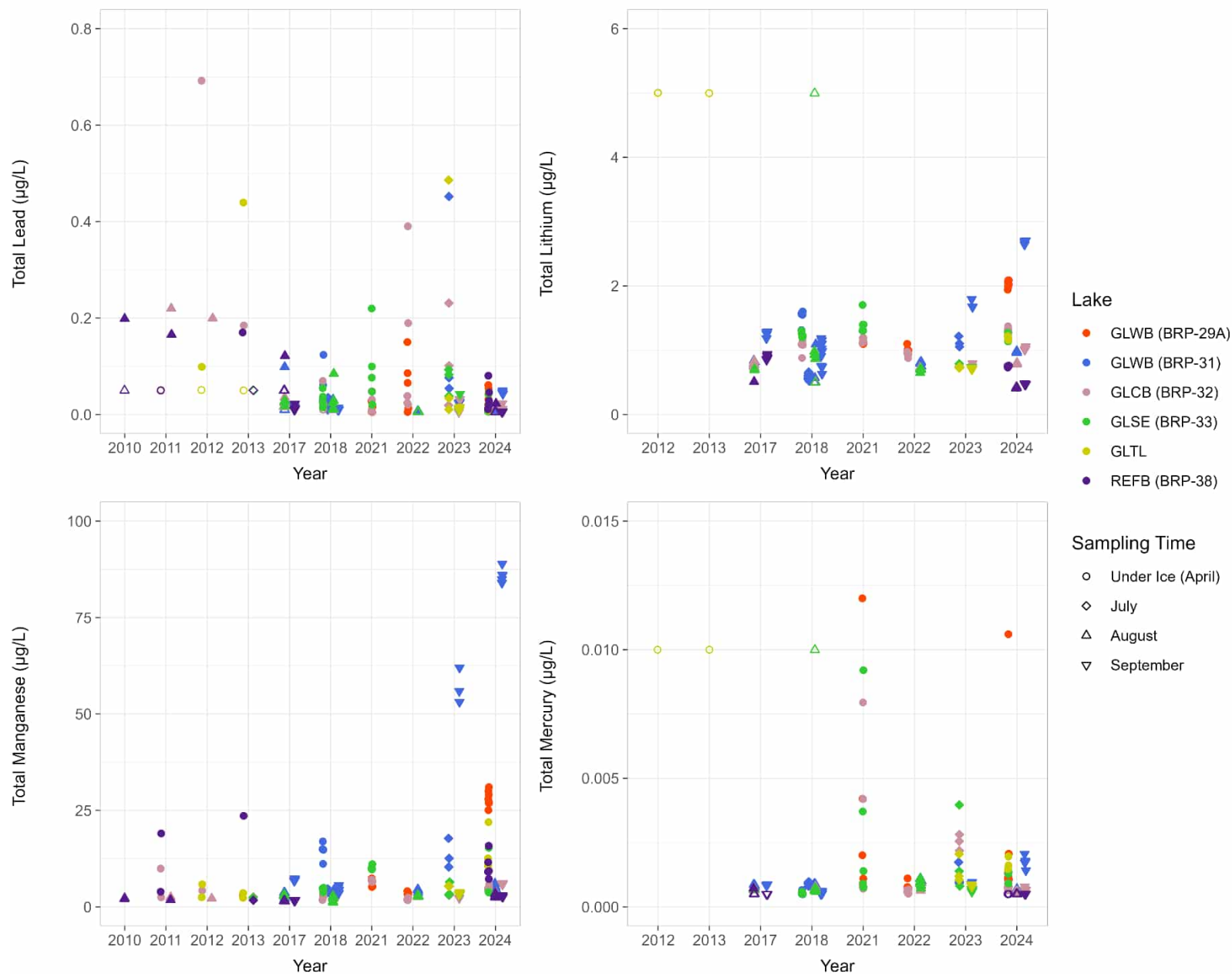


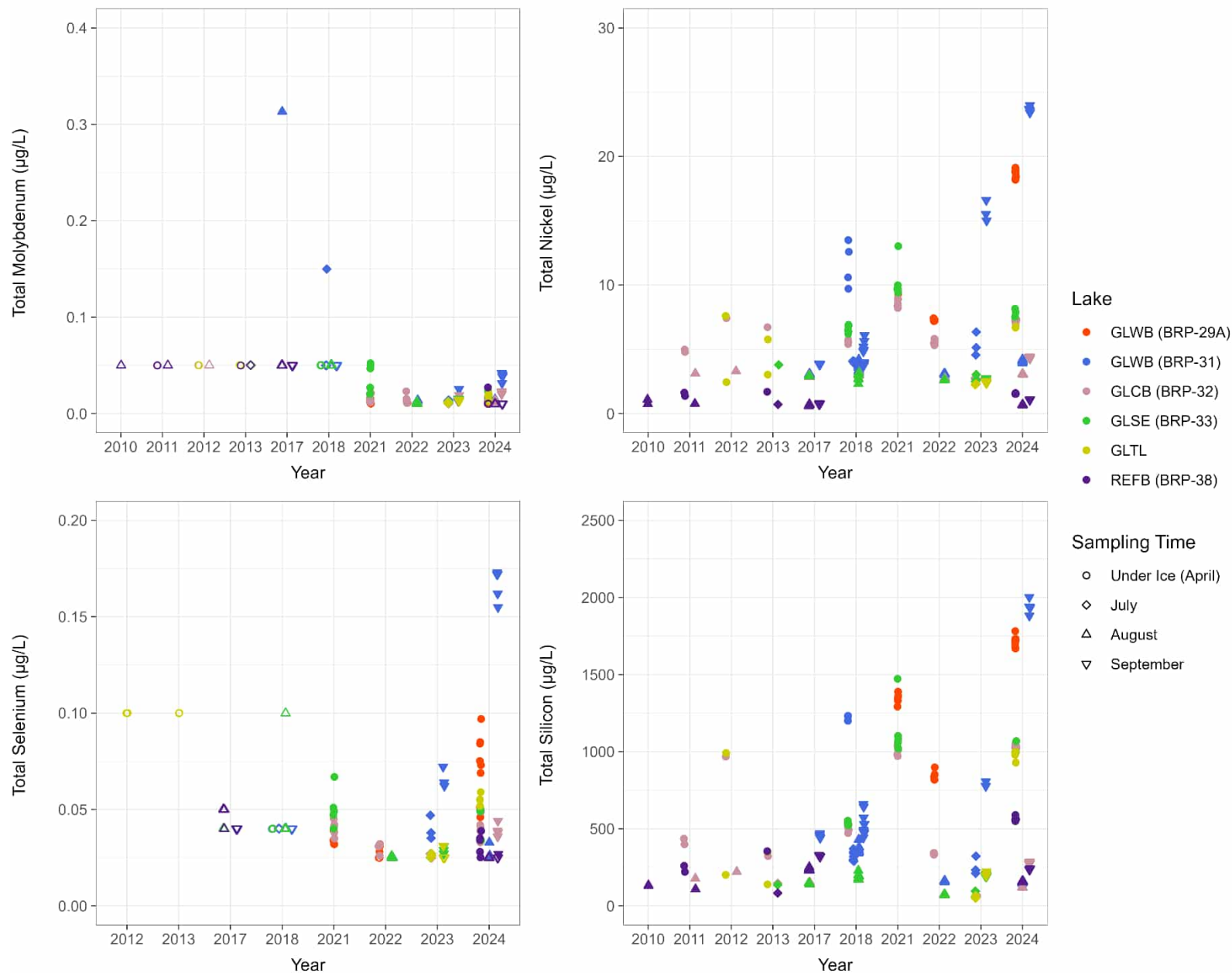


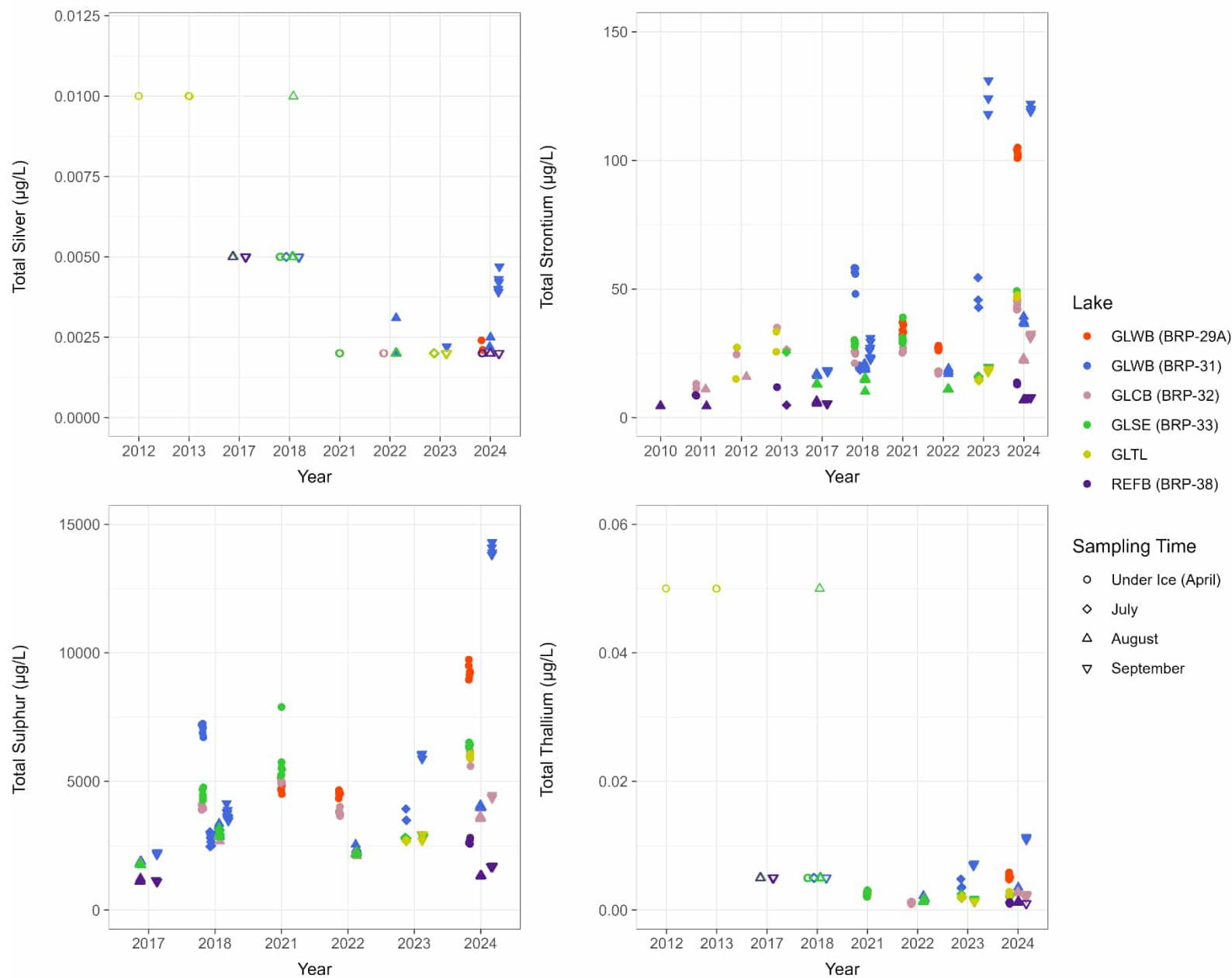


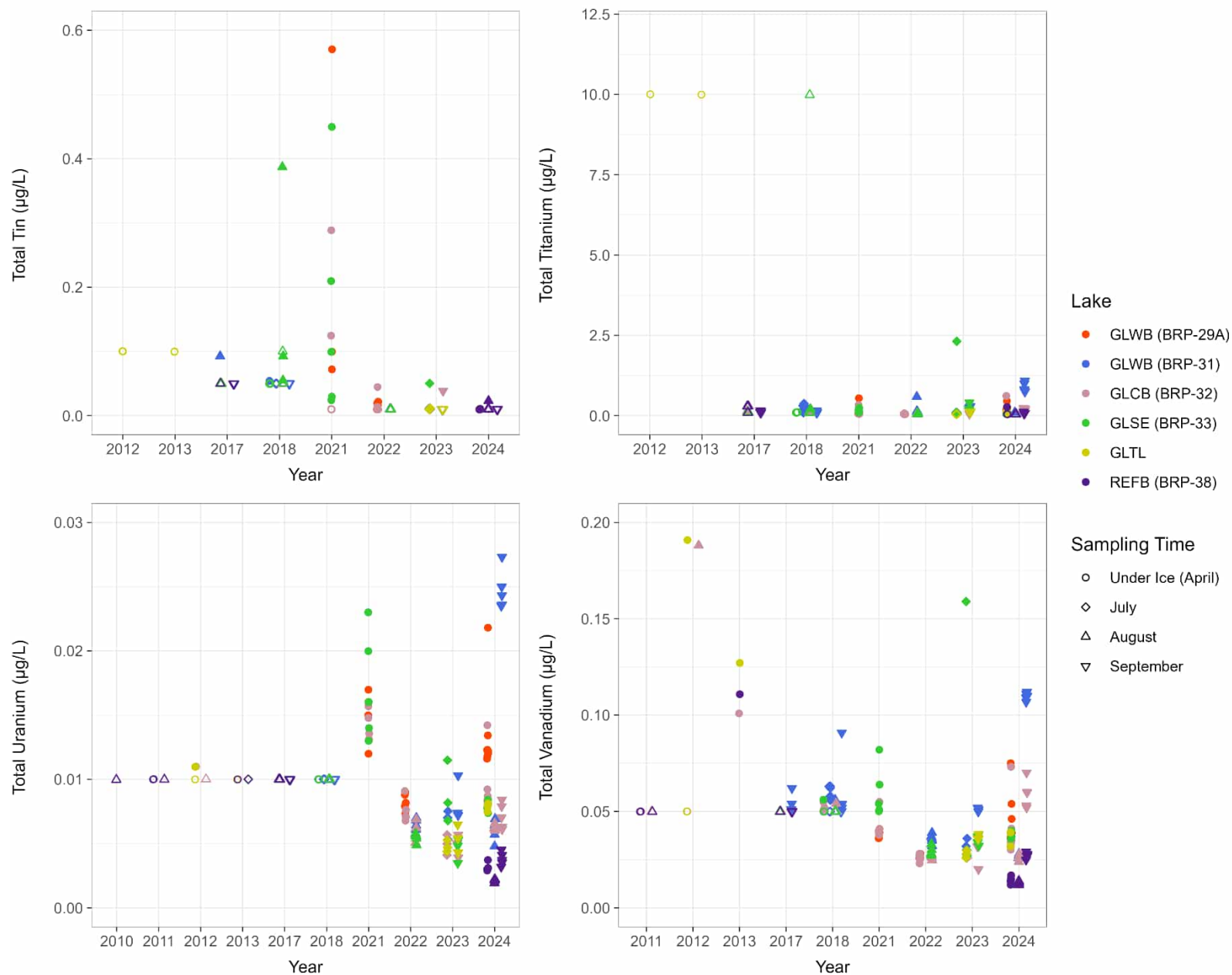


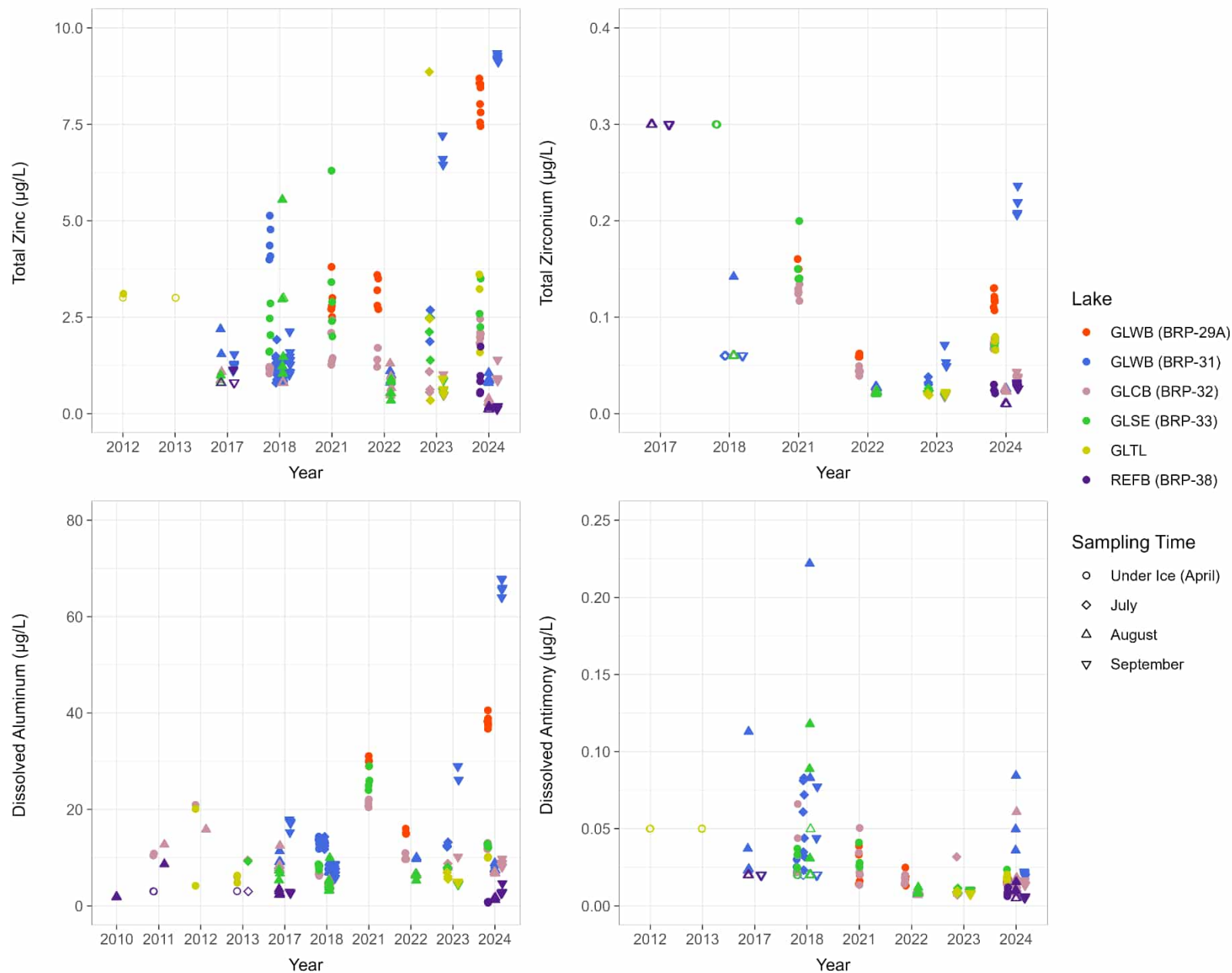


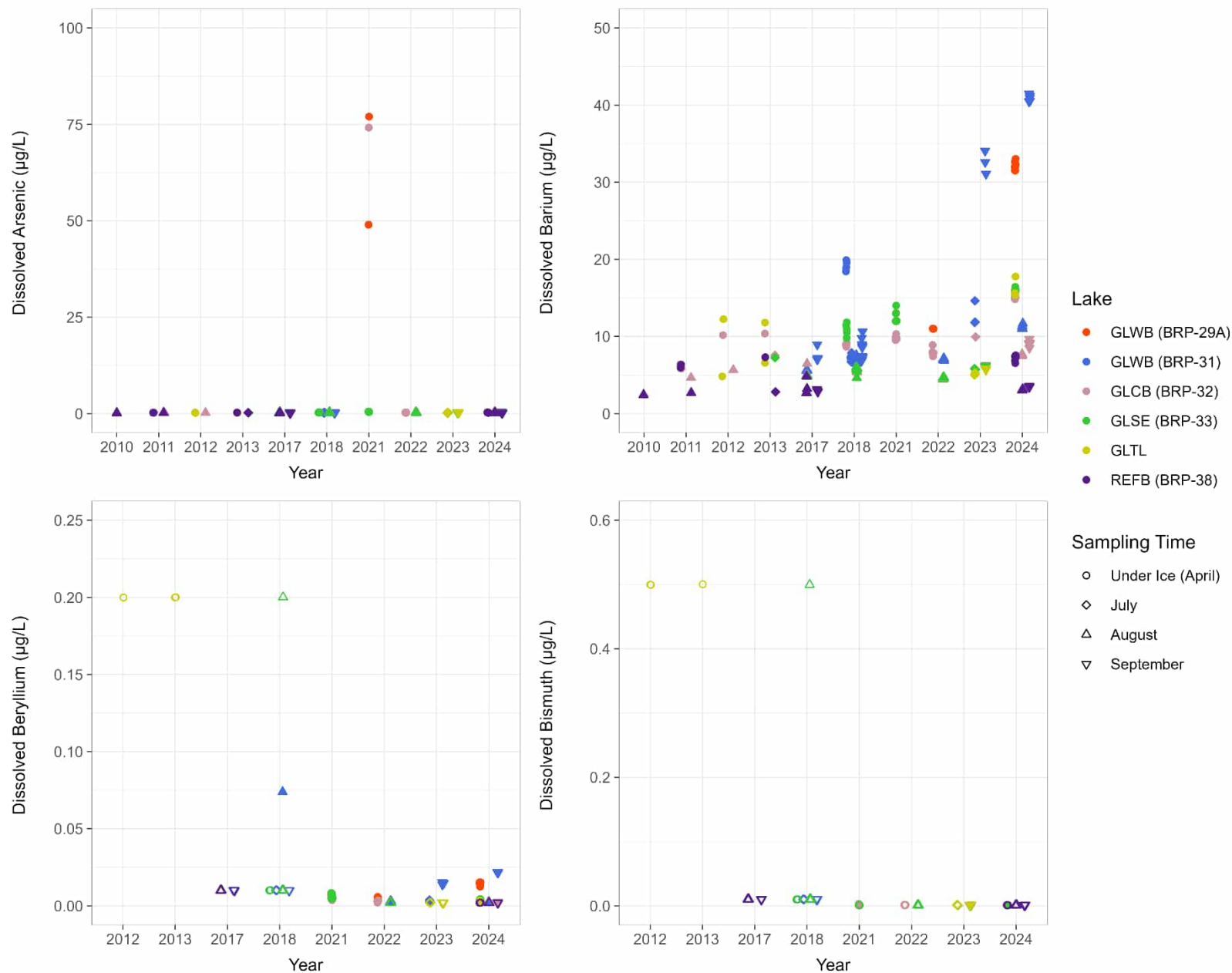


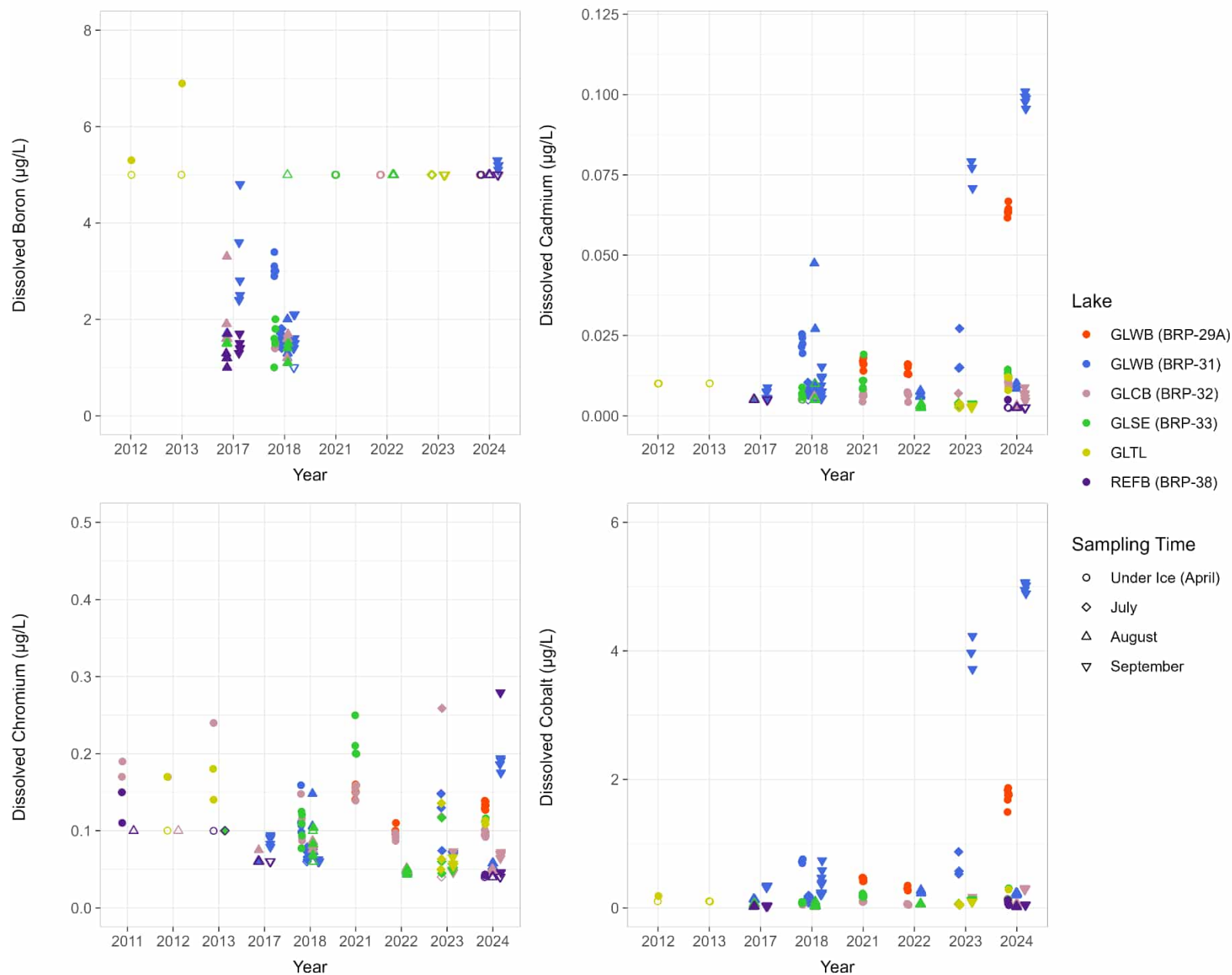


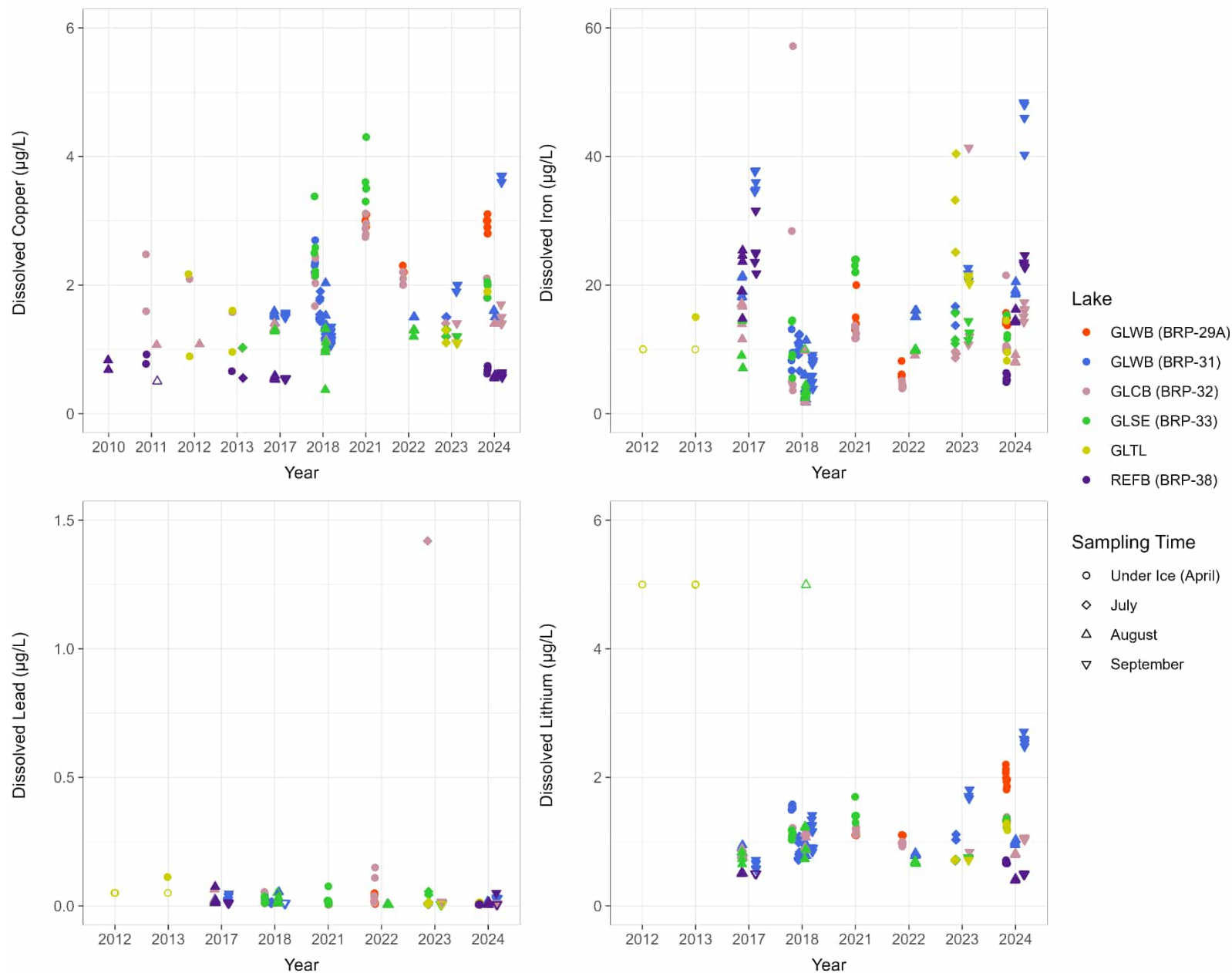


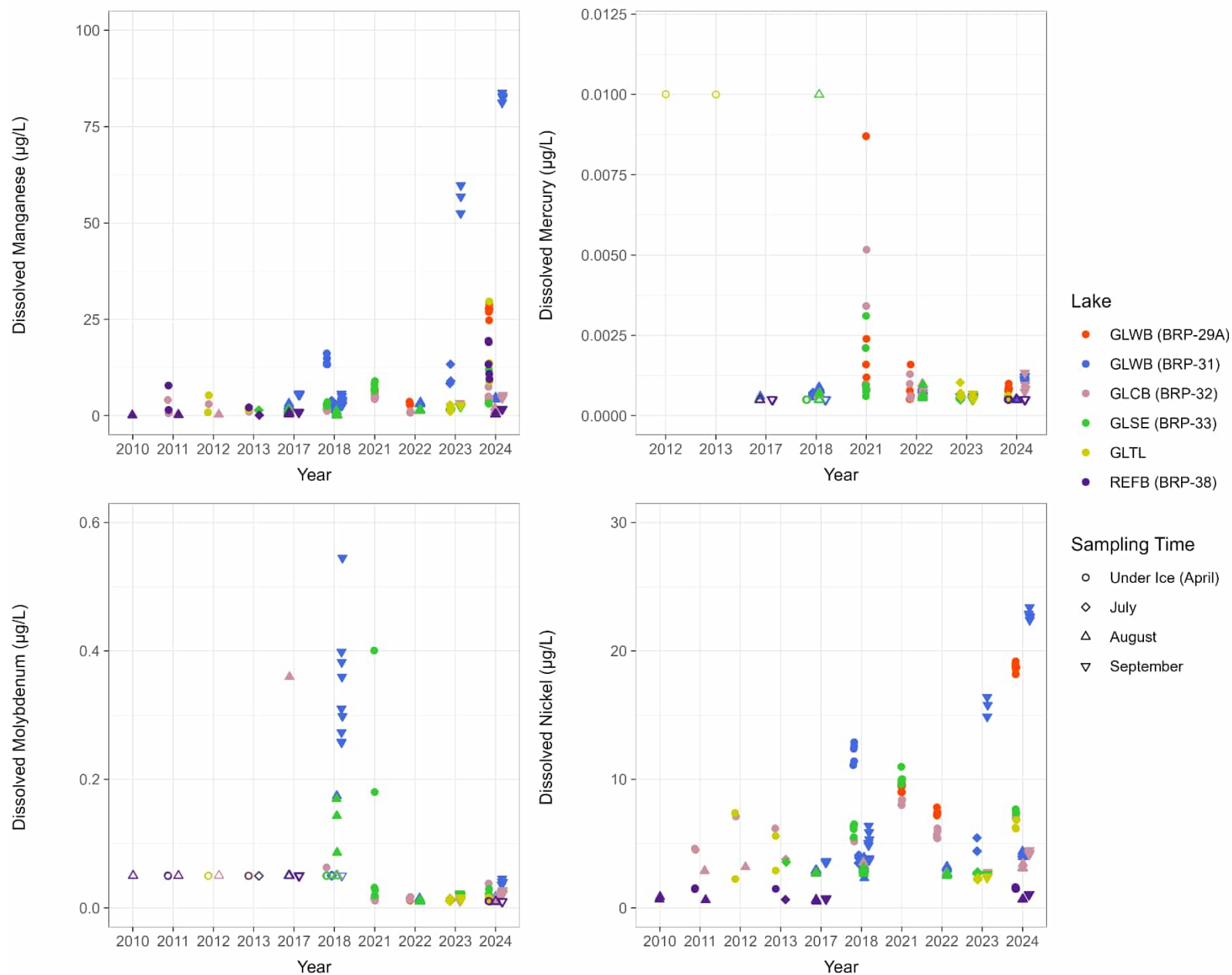


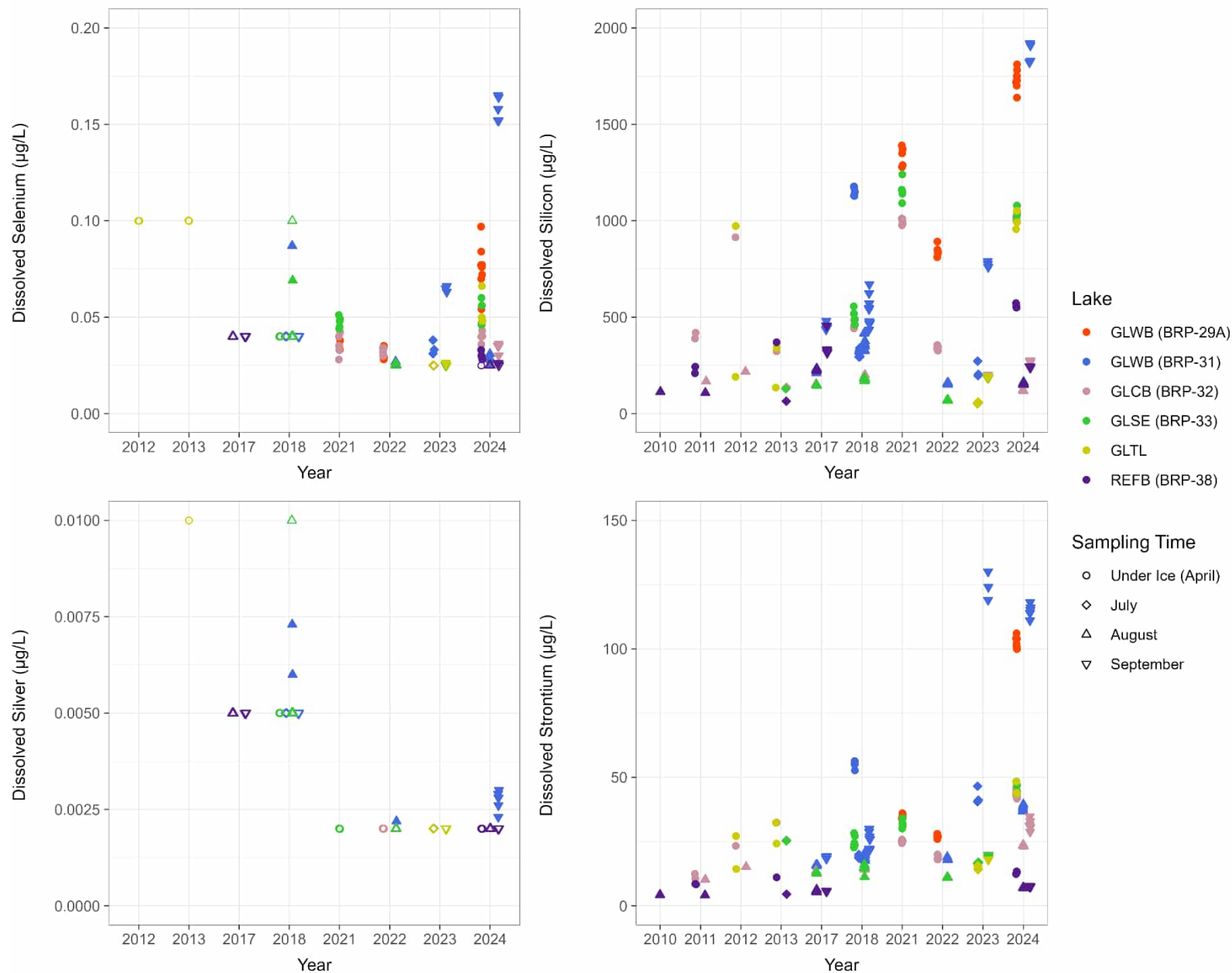


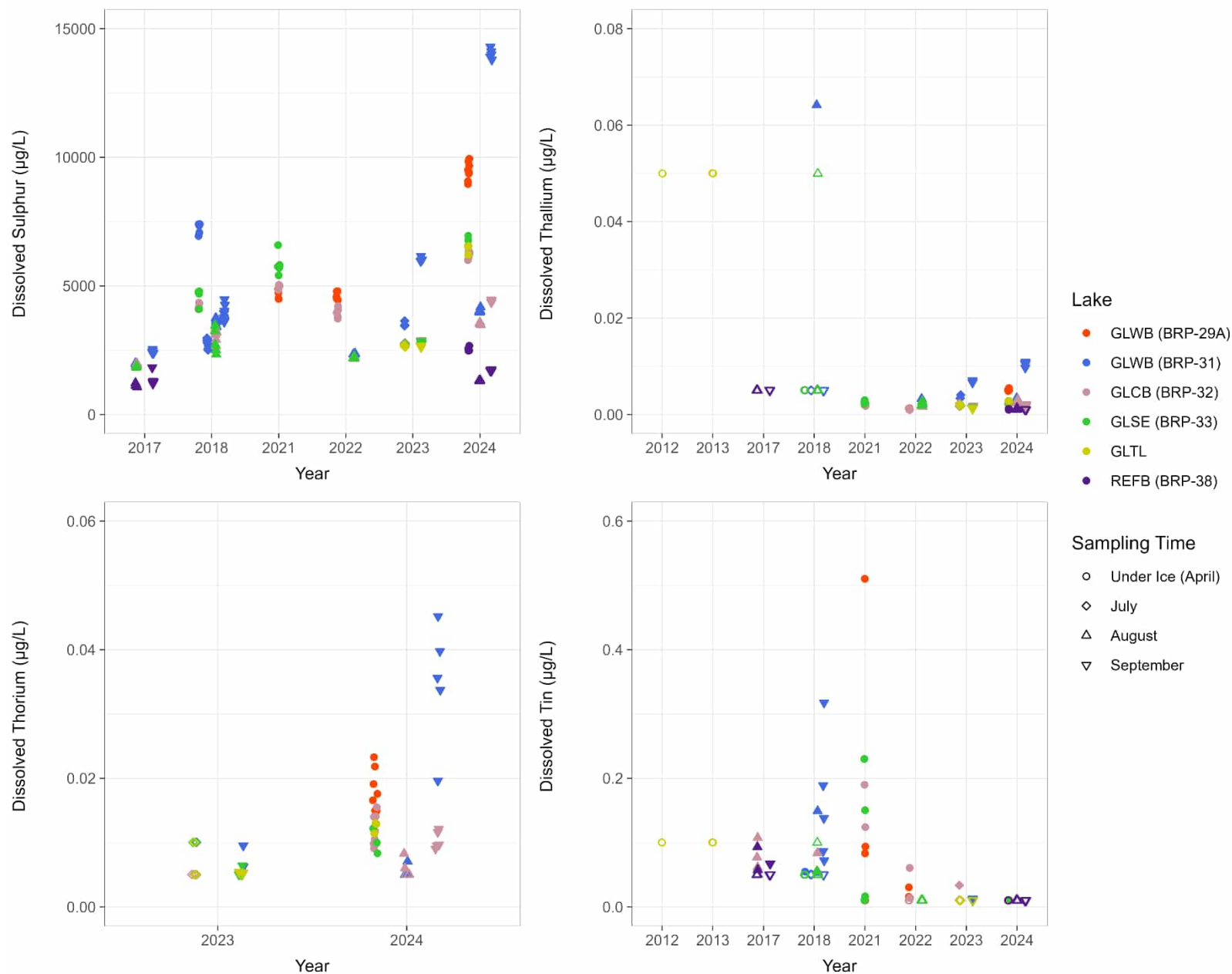


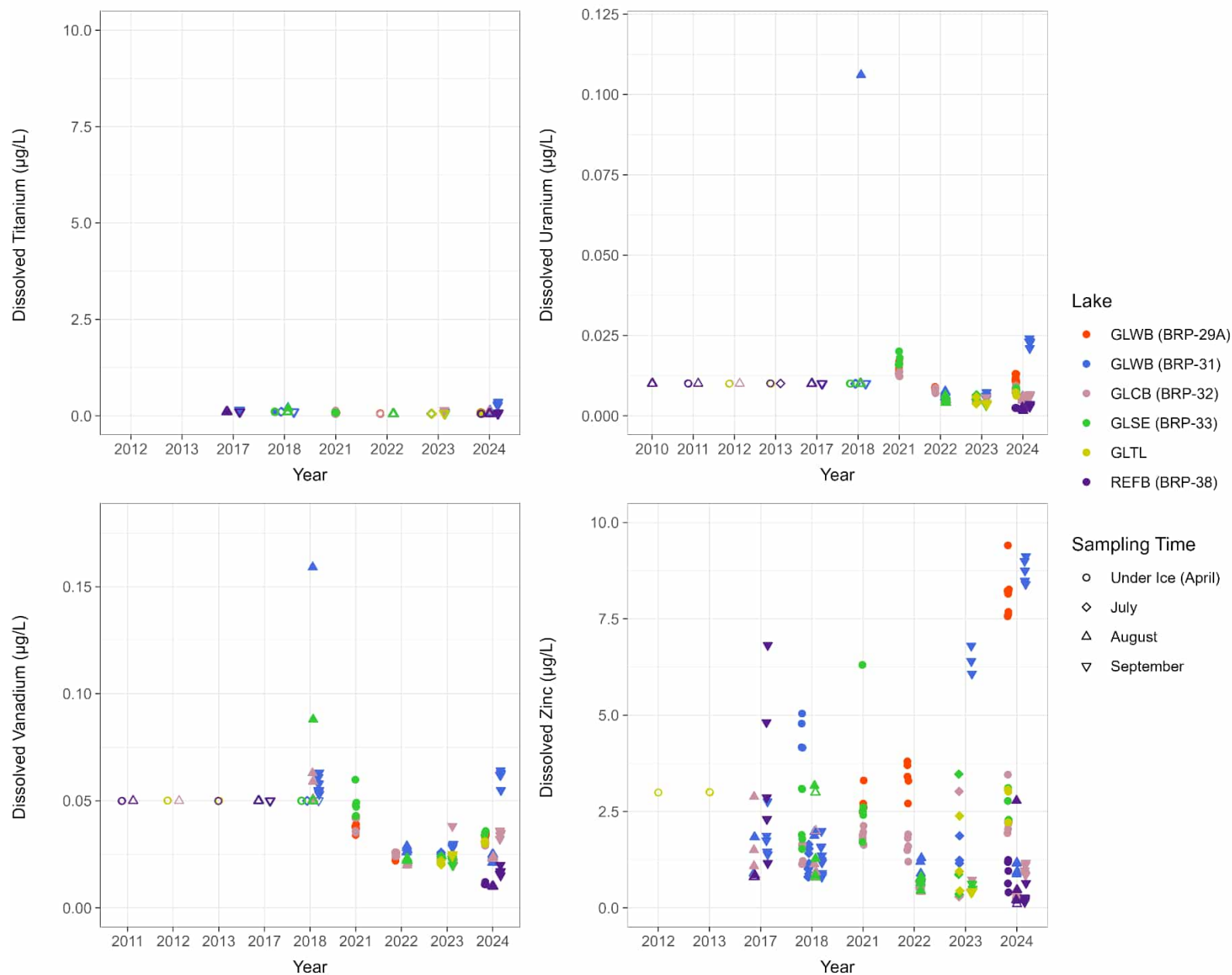


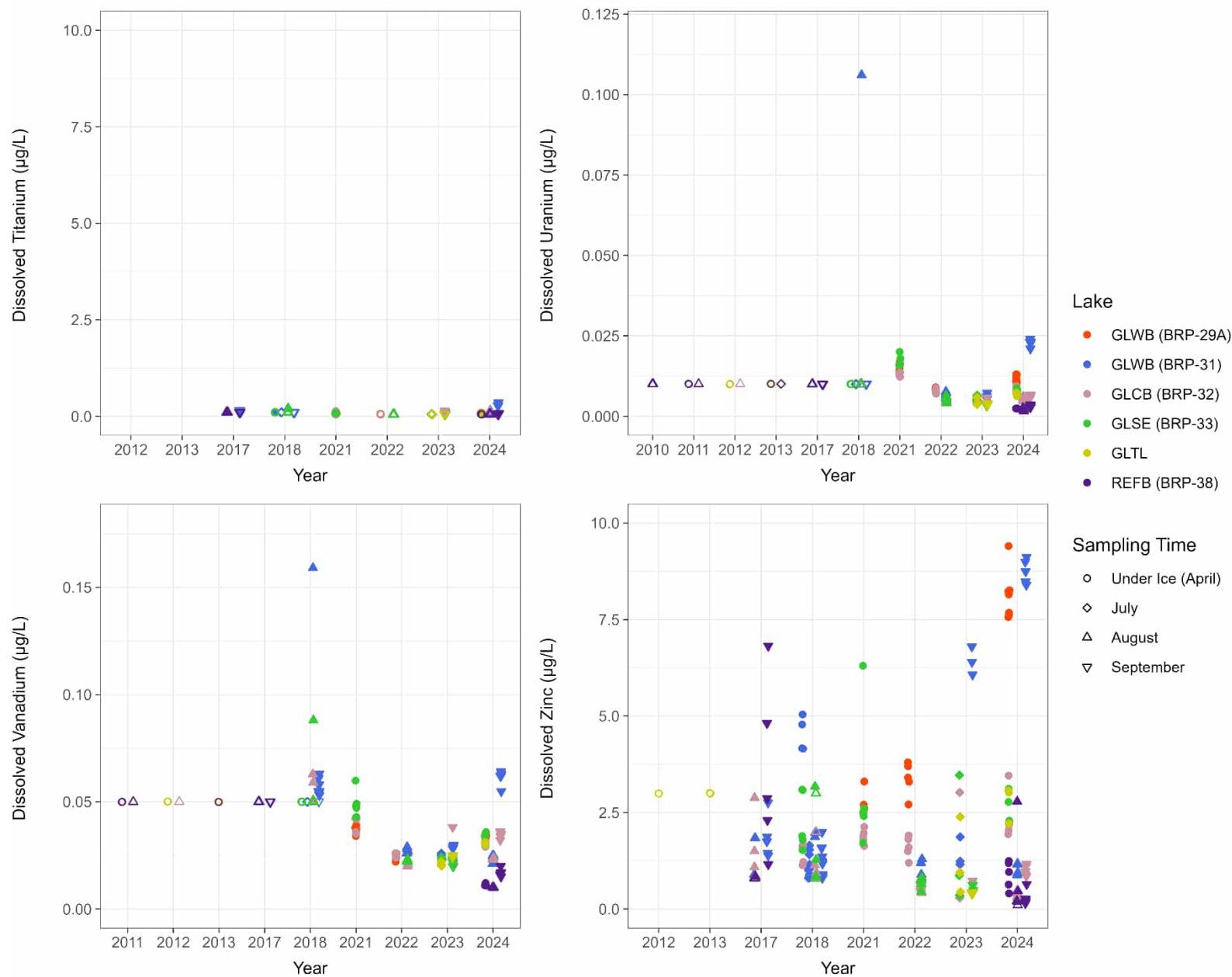




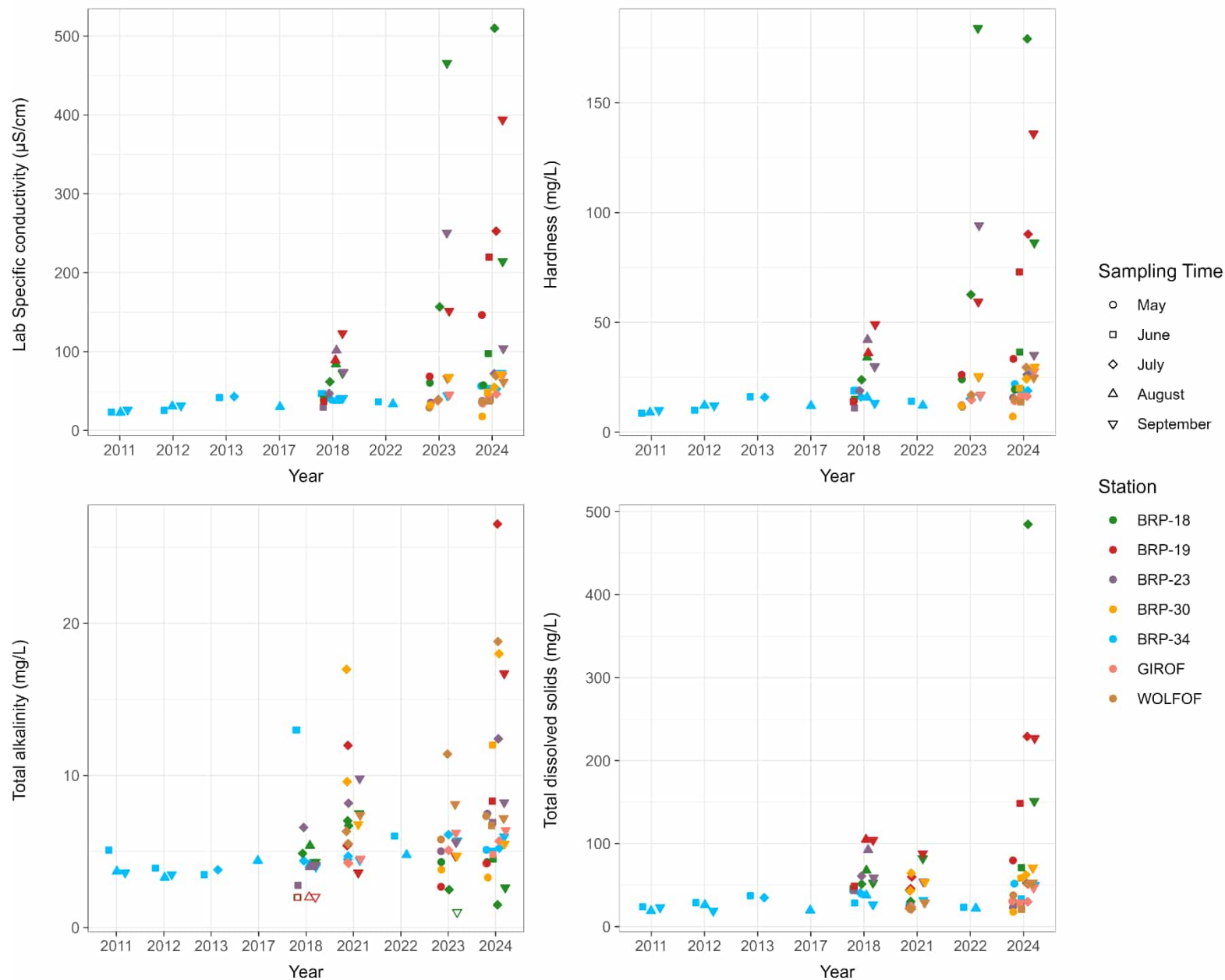


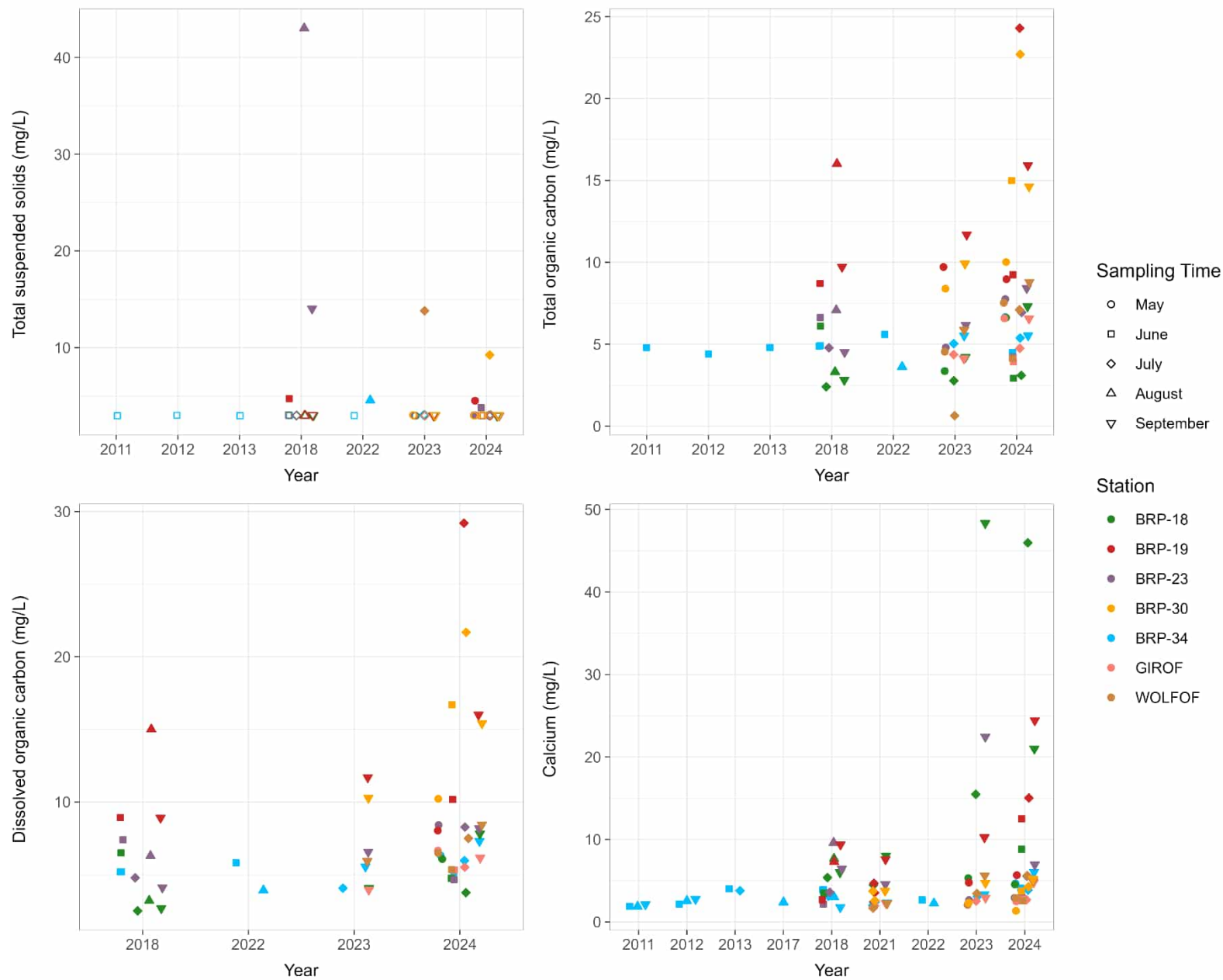


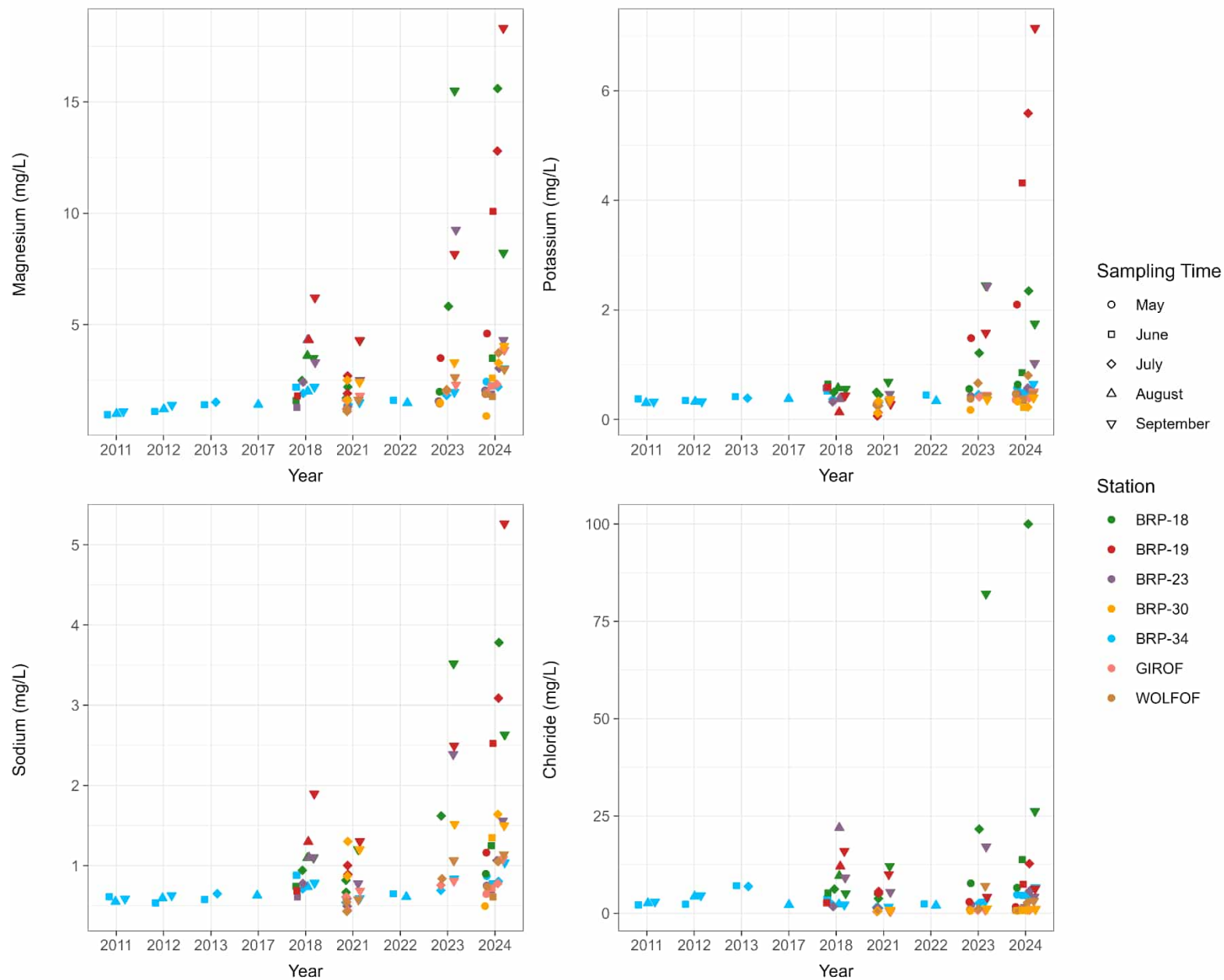


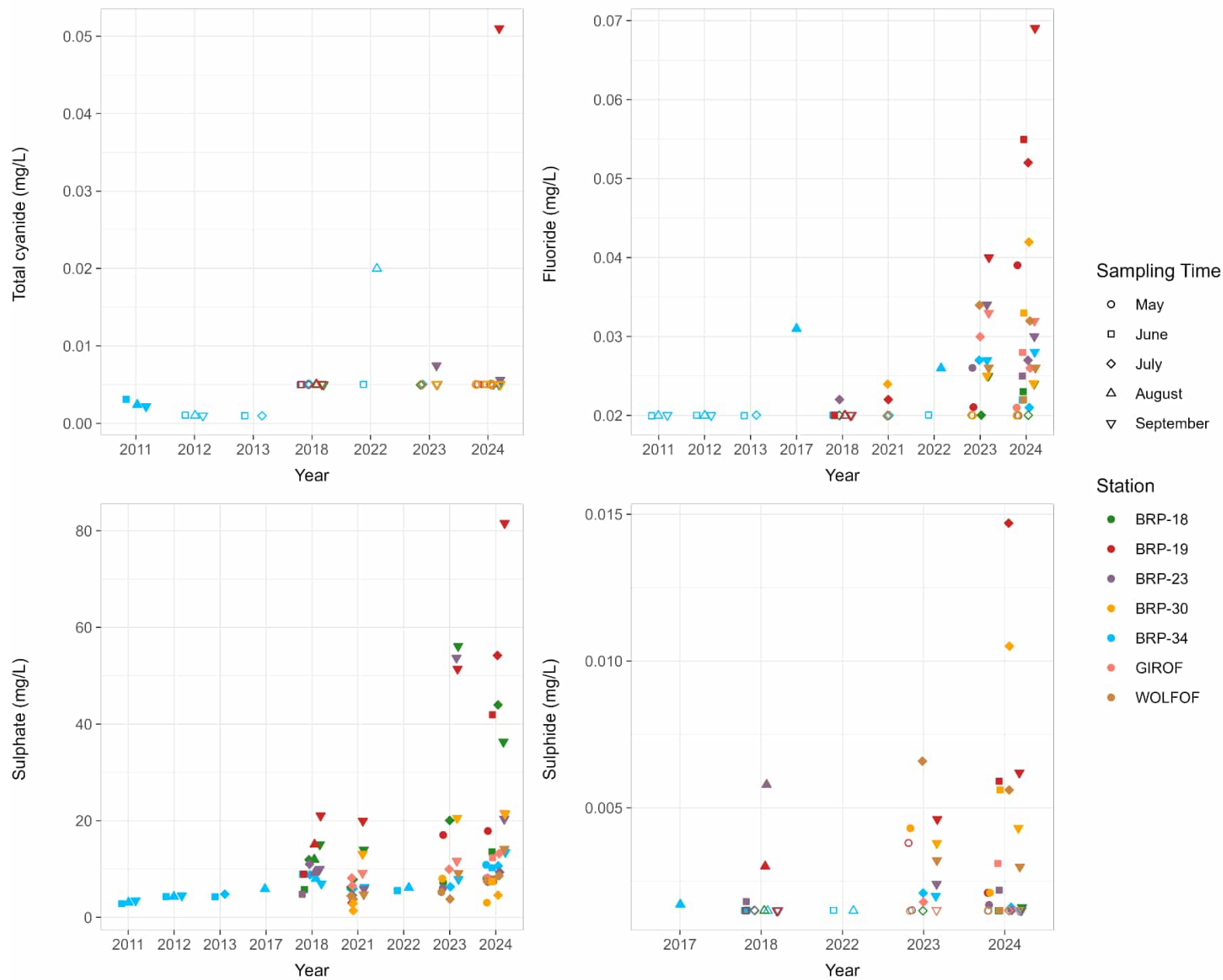


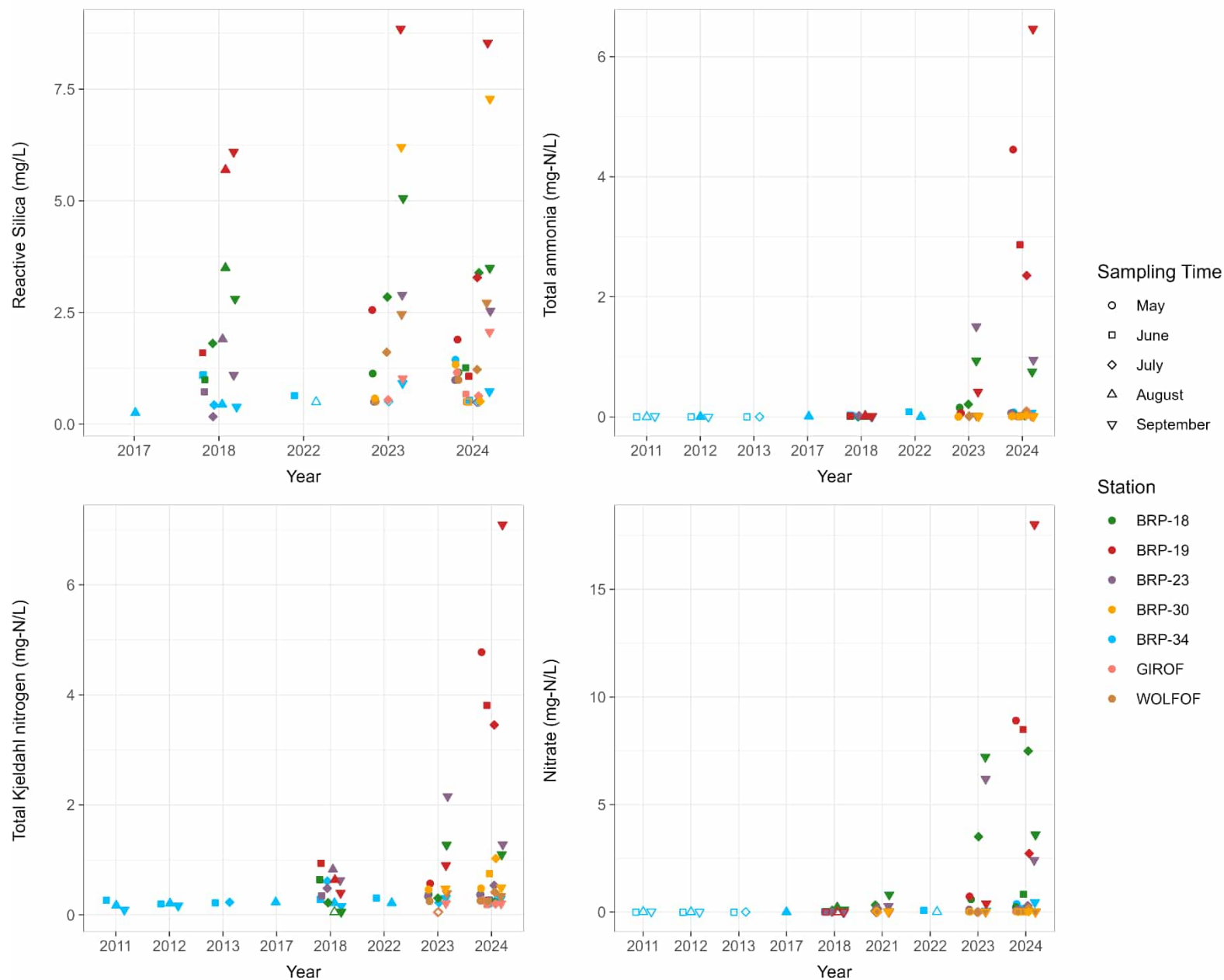
Stream Time Series Plots

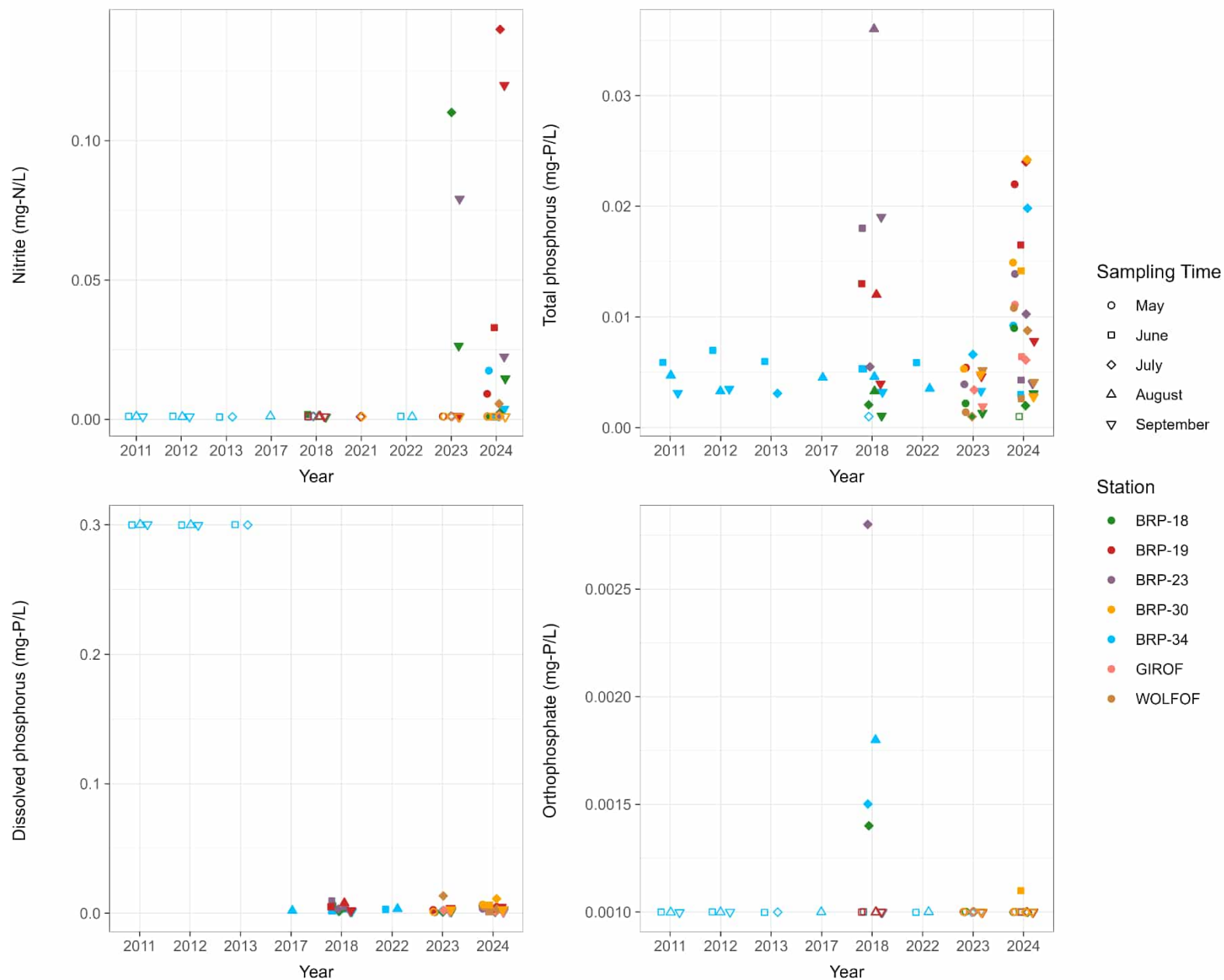


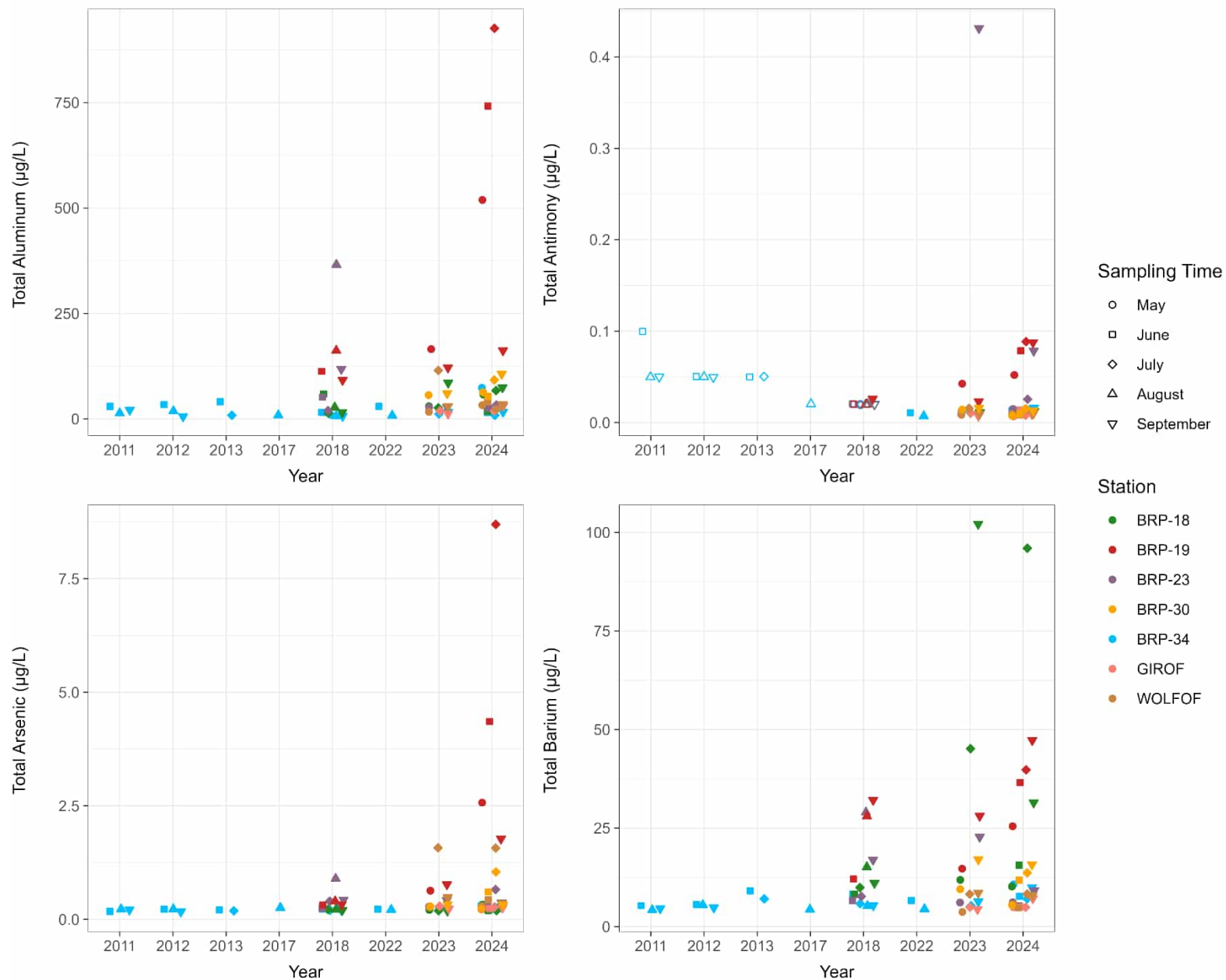


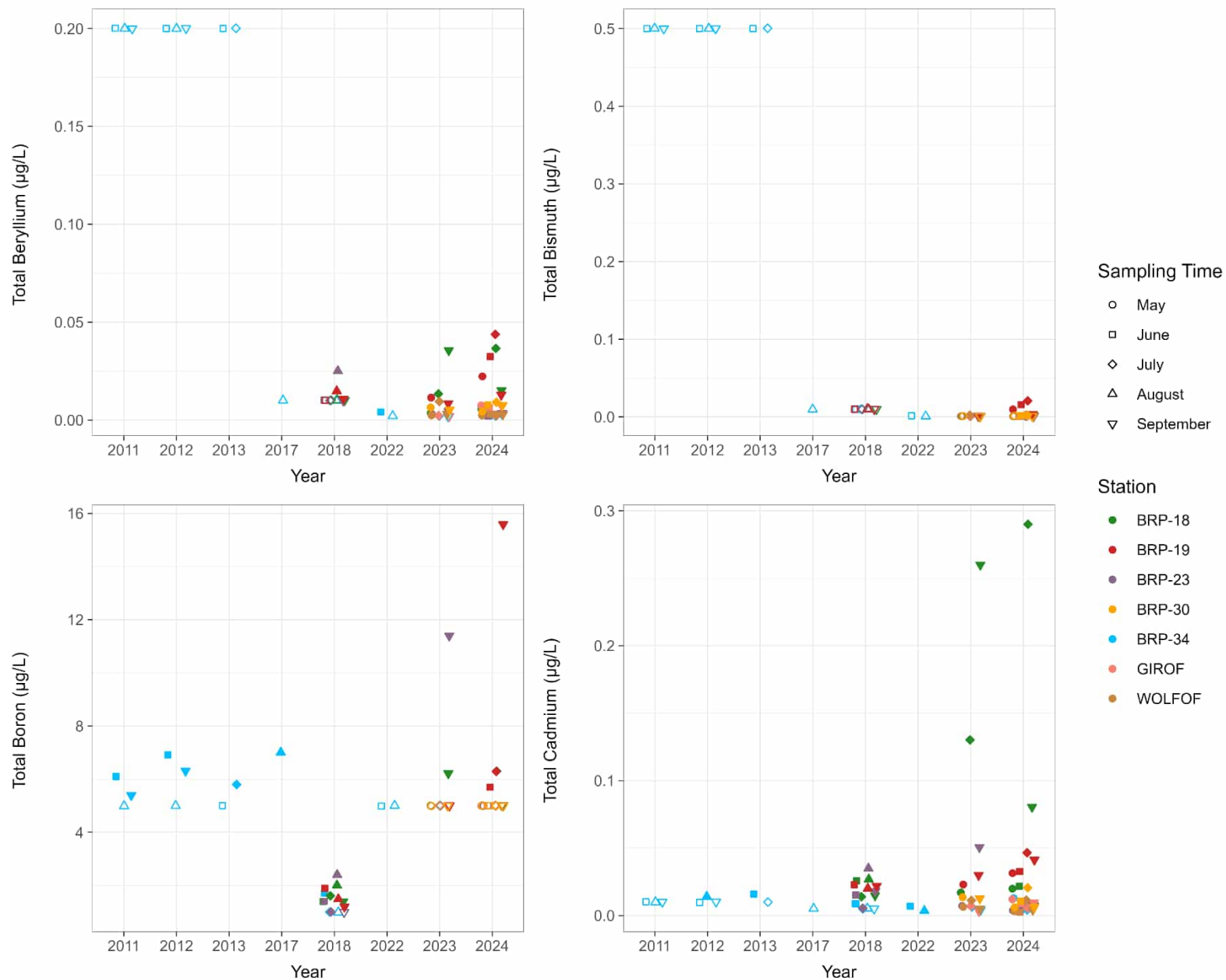


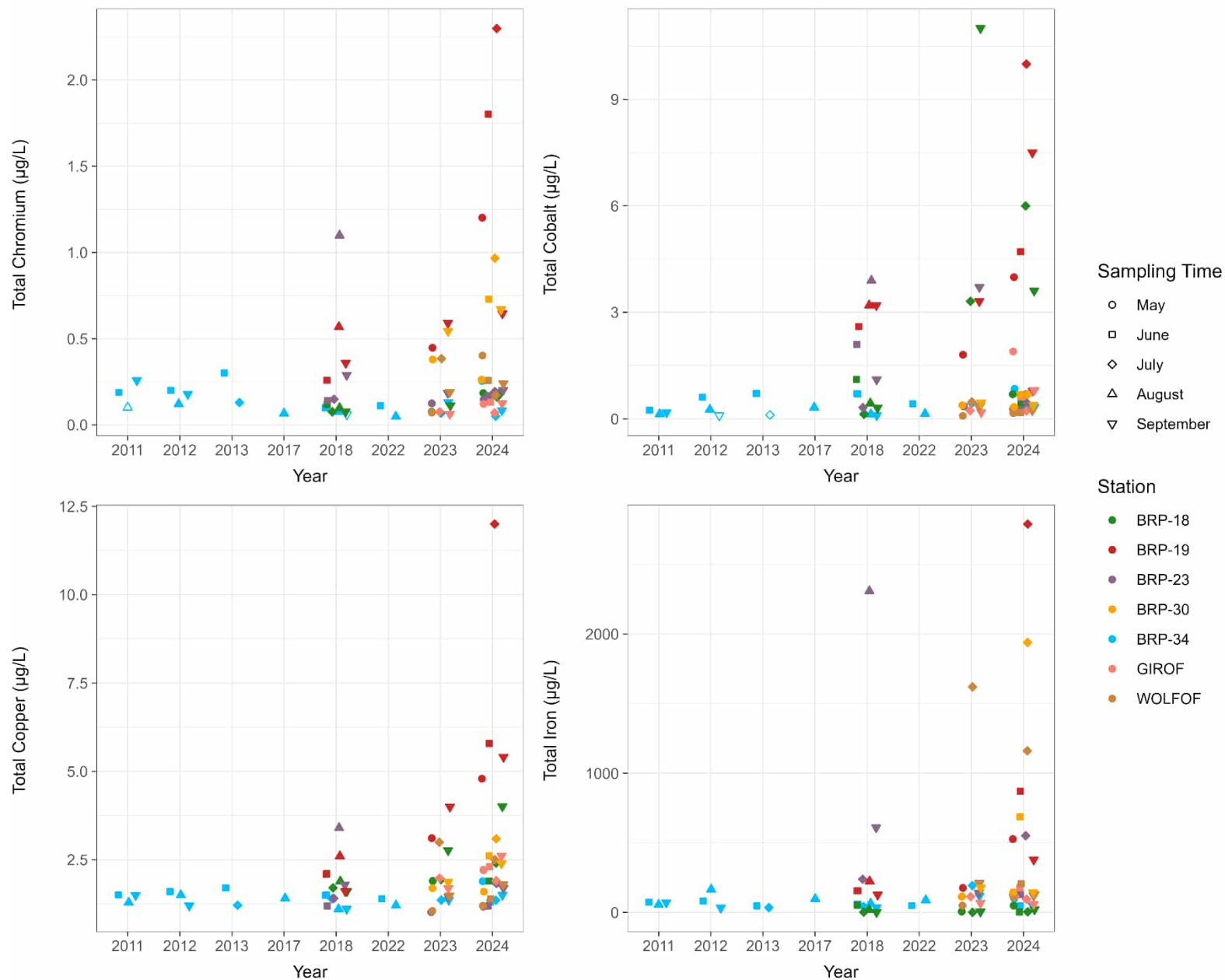


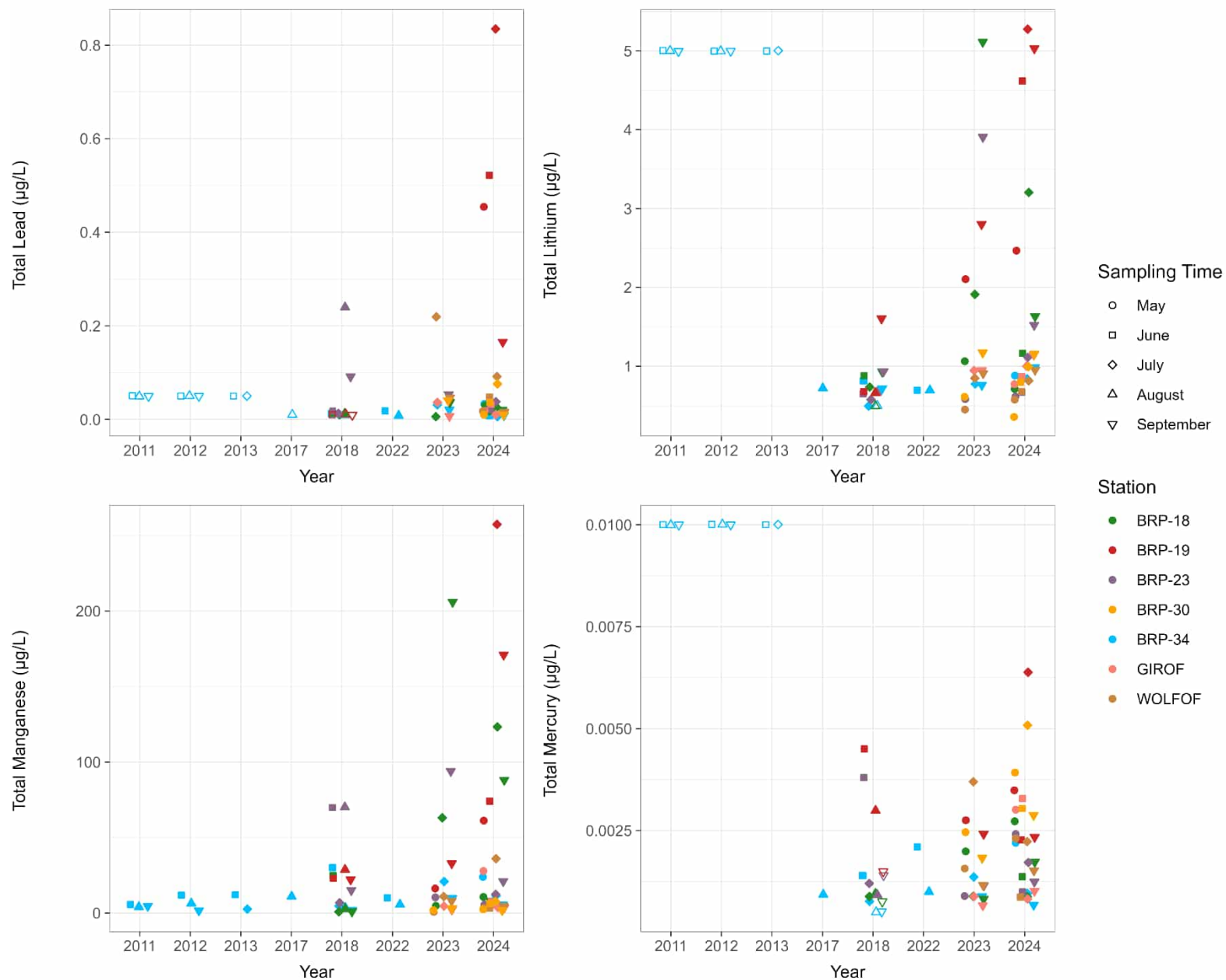


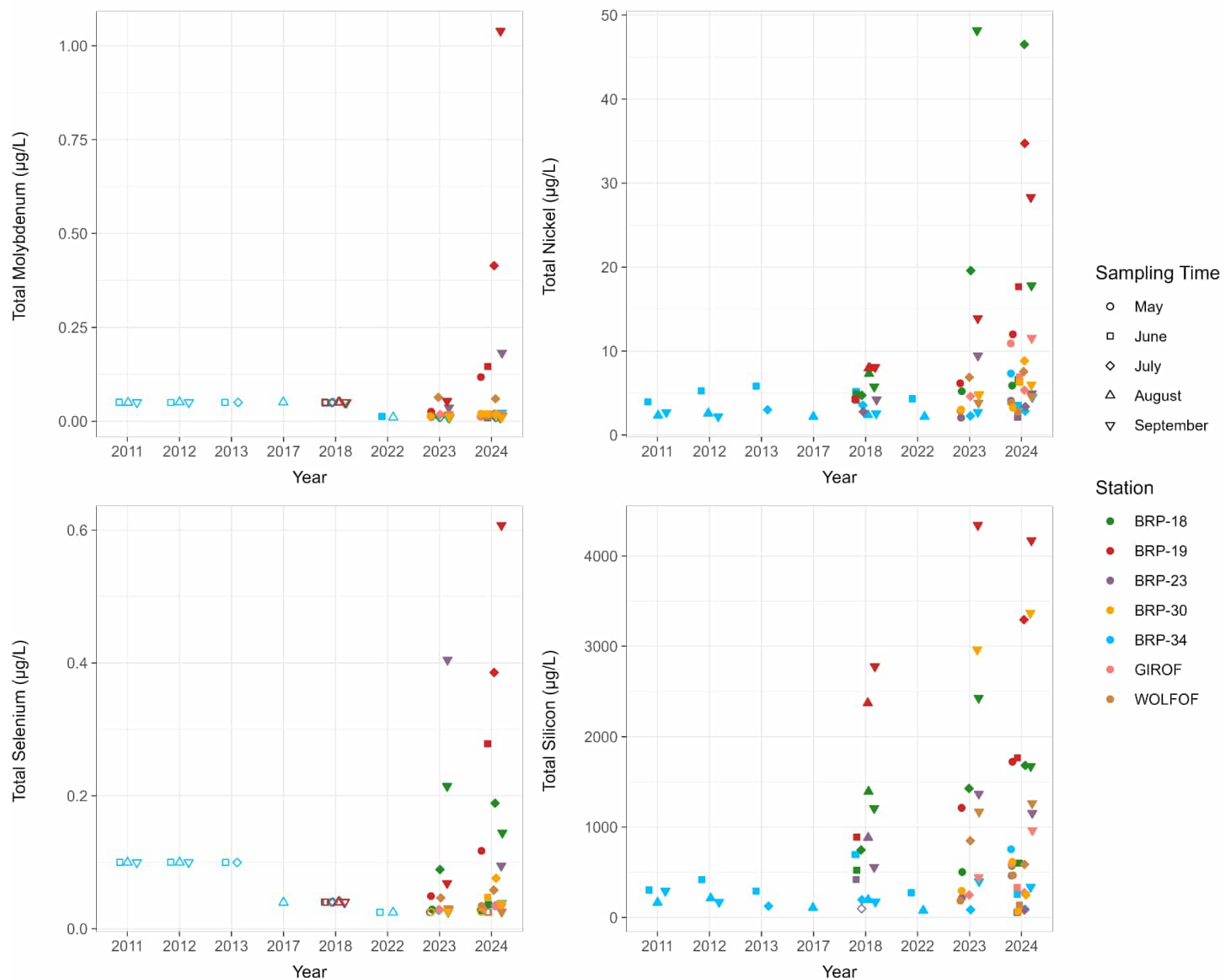


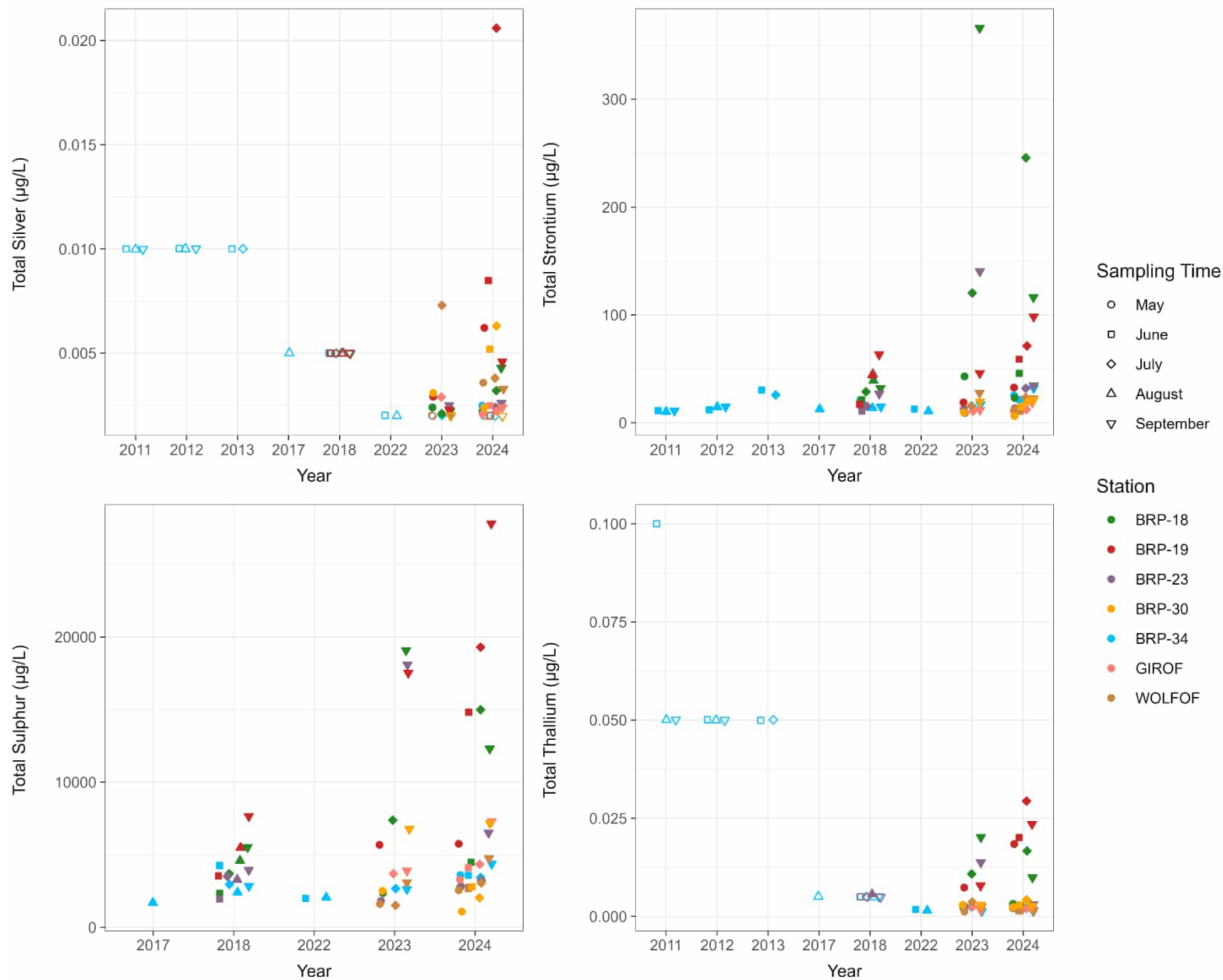


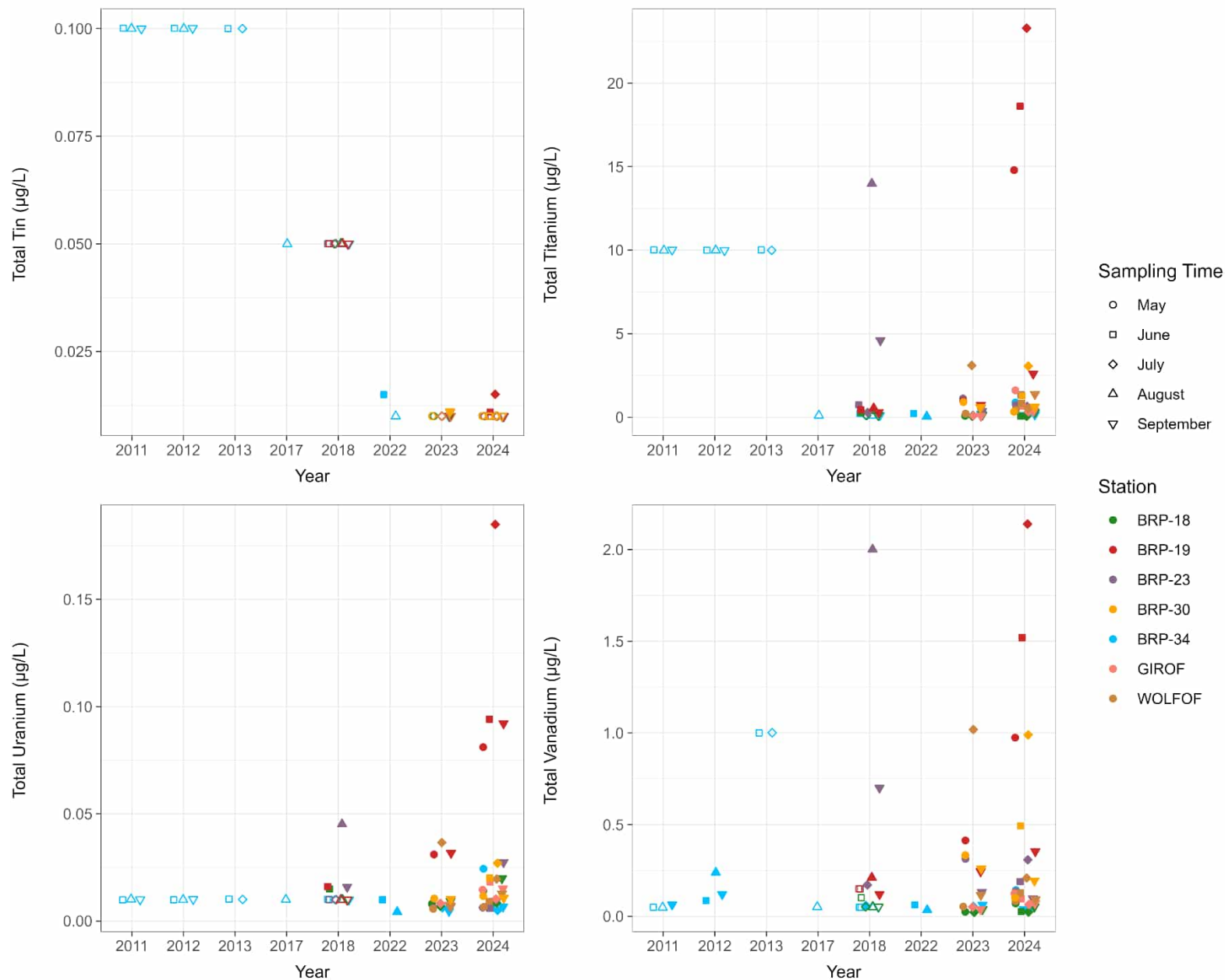


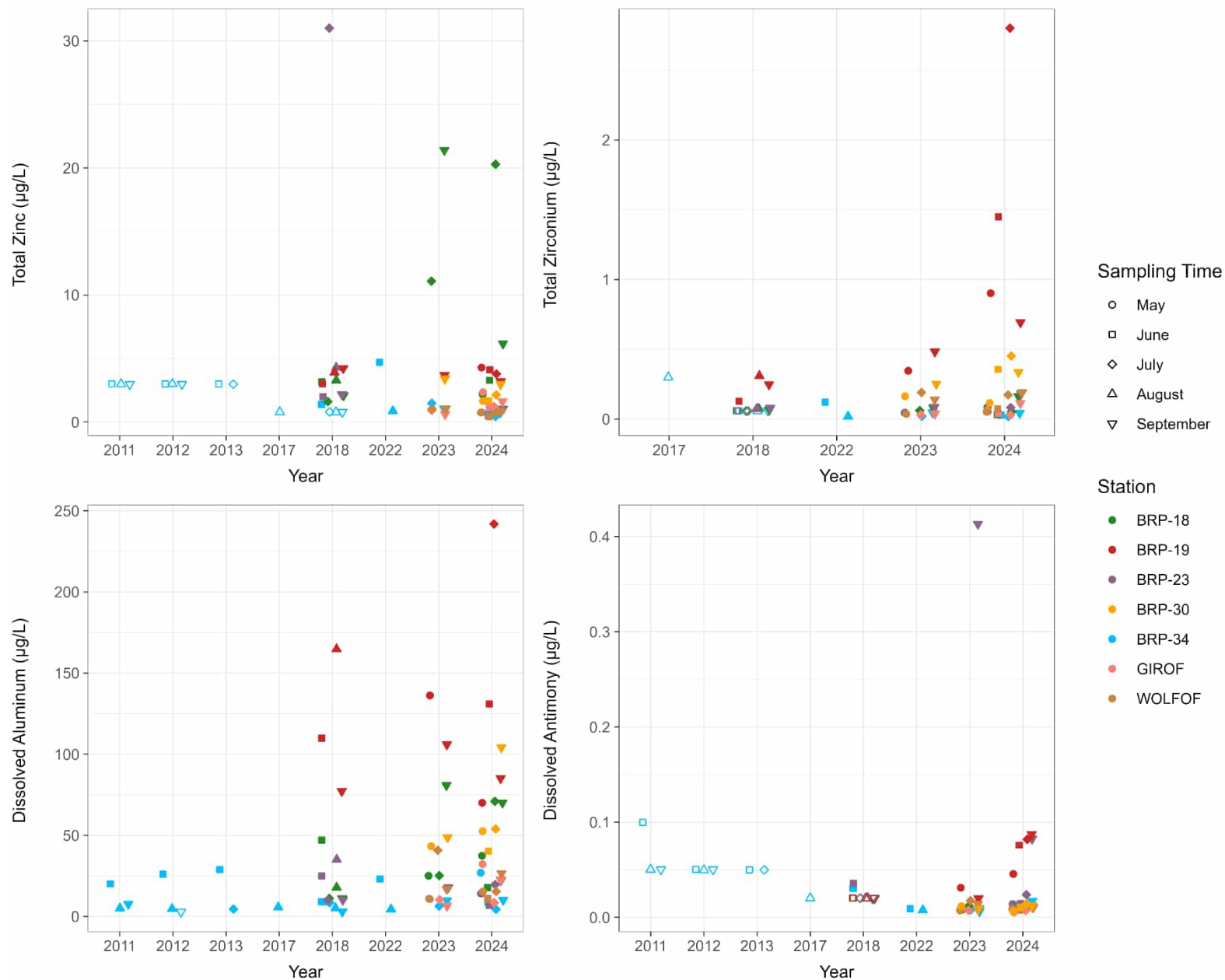


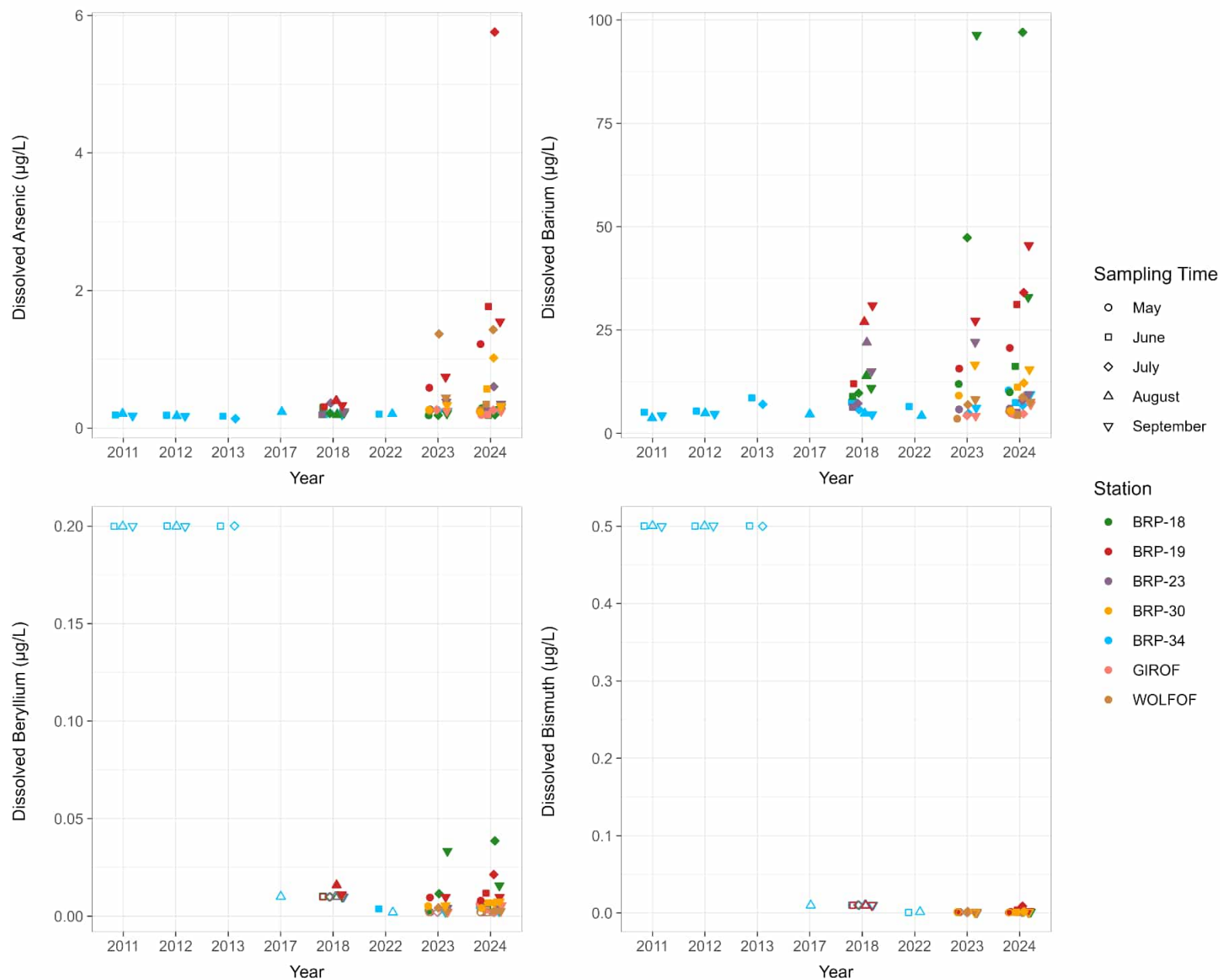


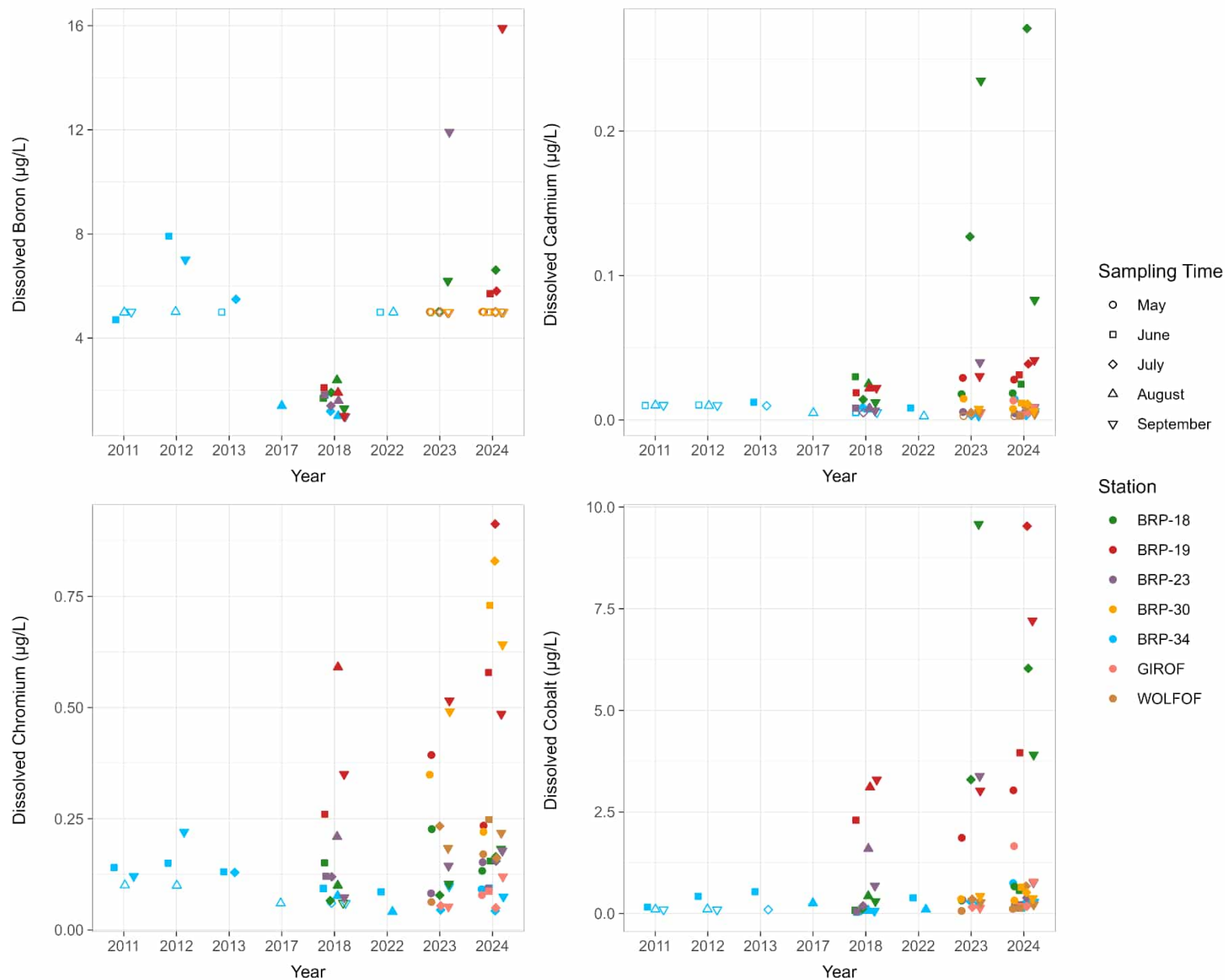


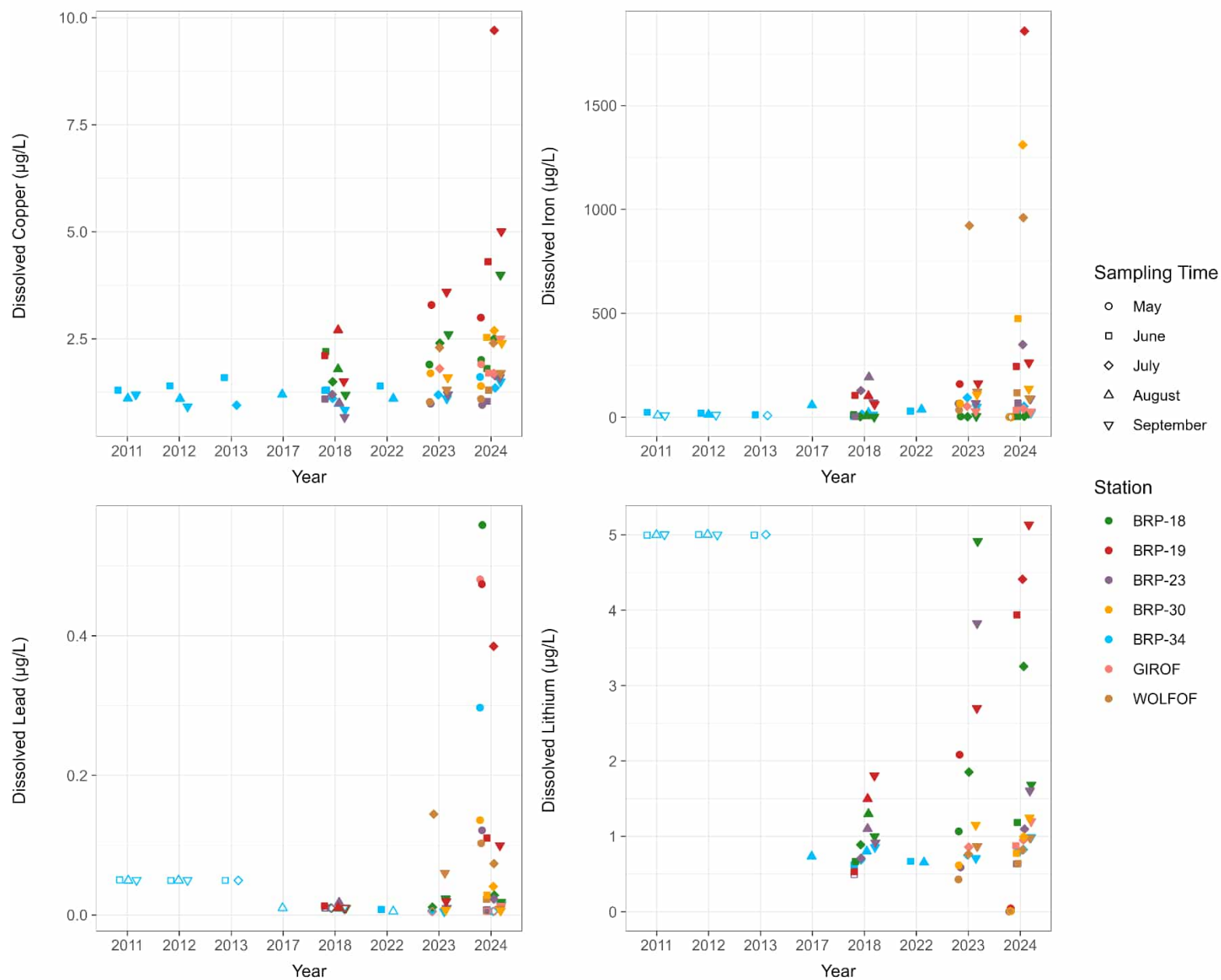


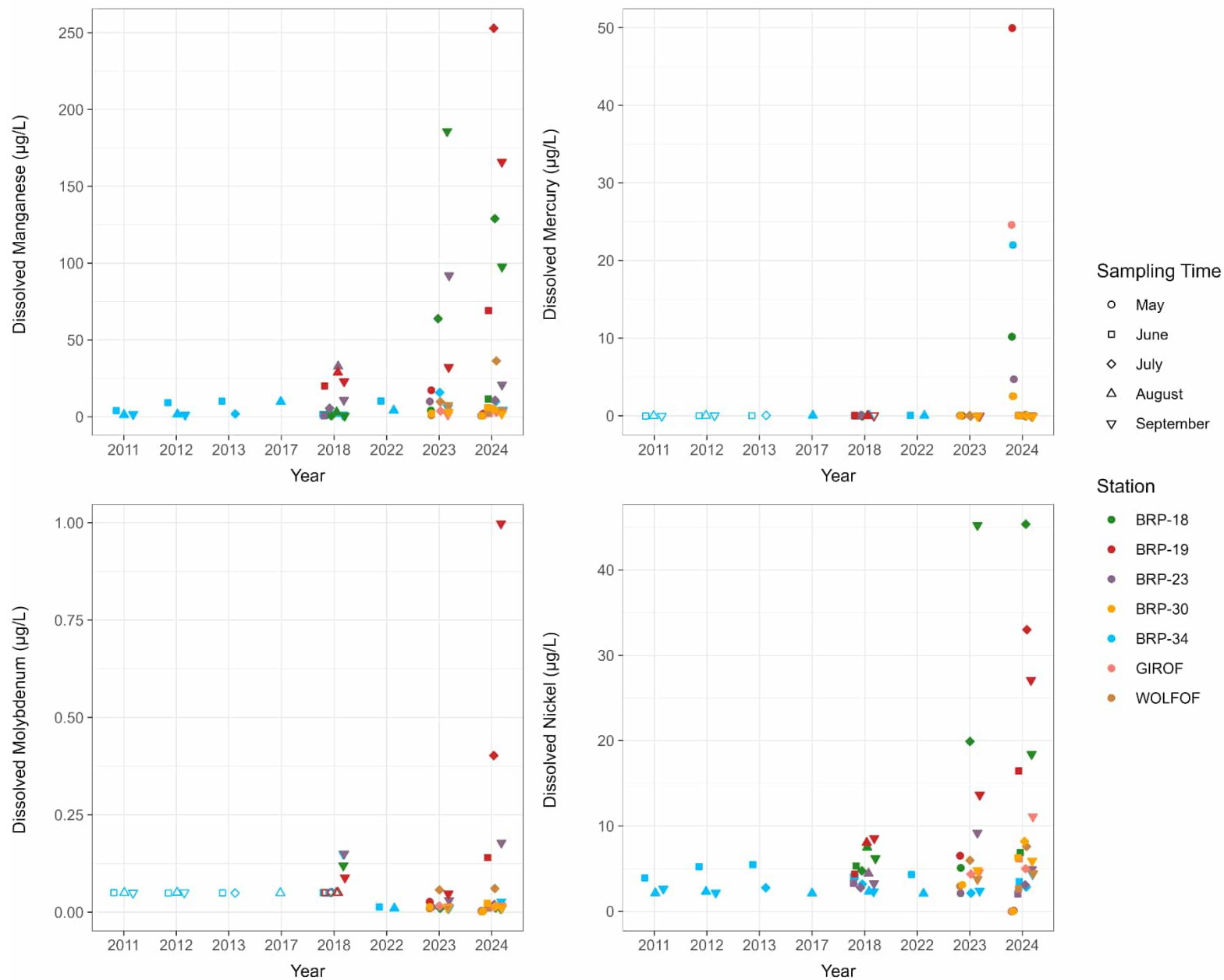


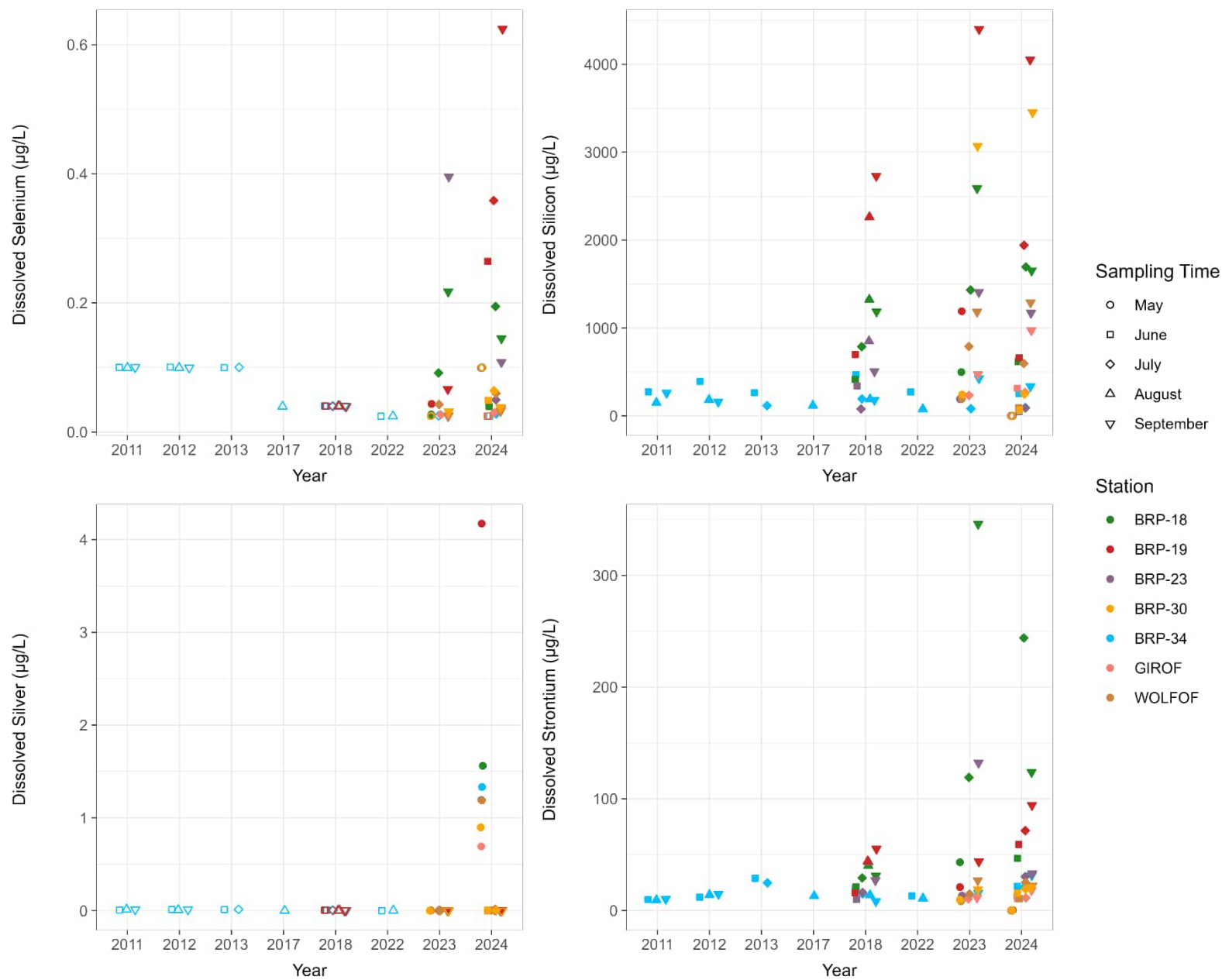


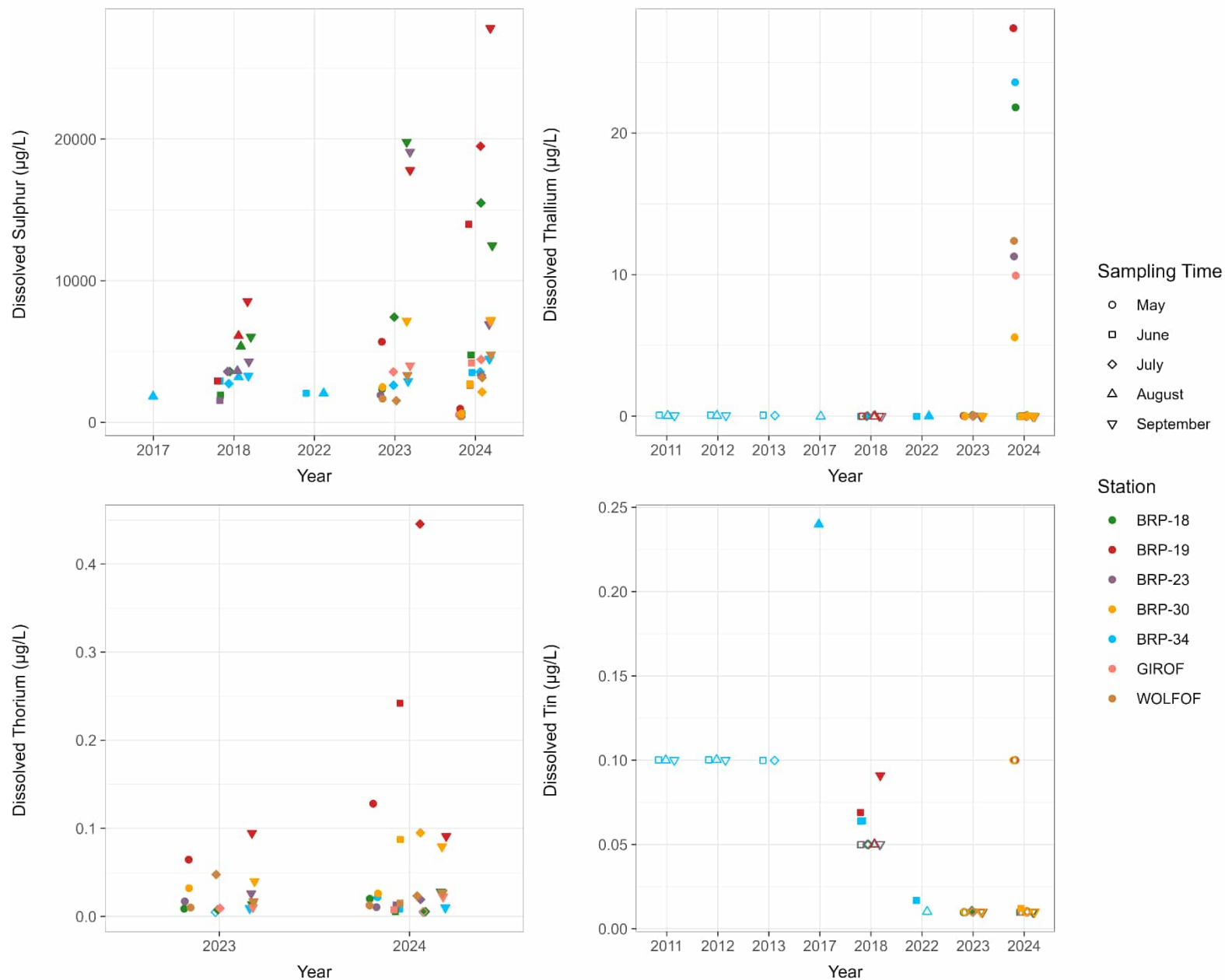


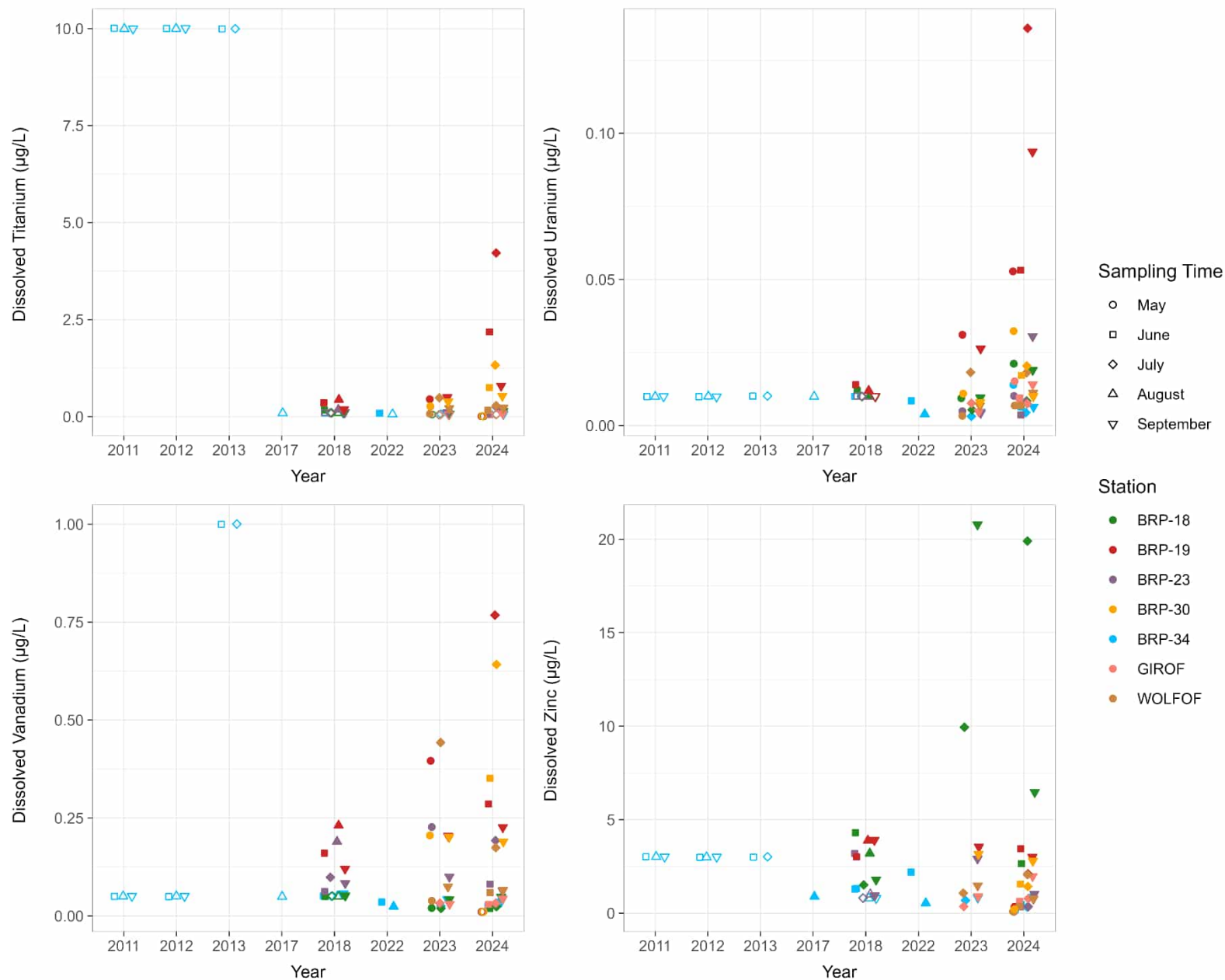


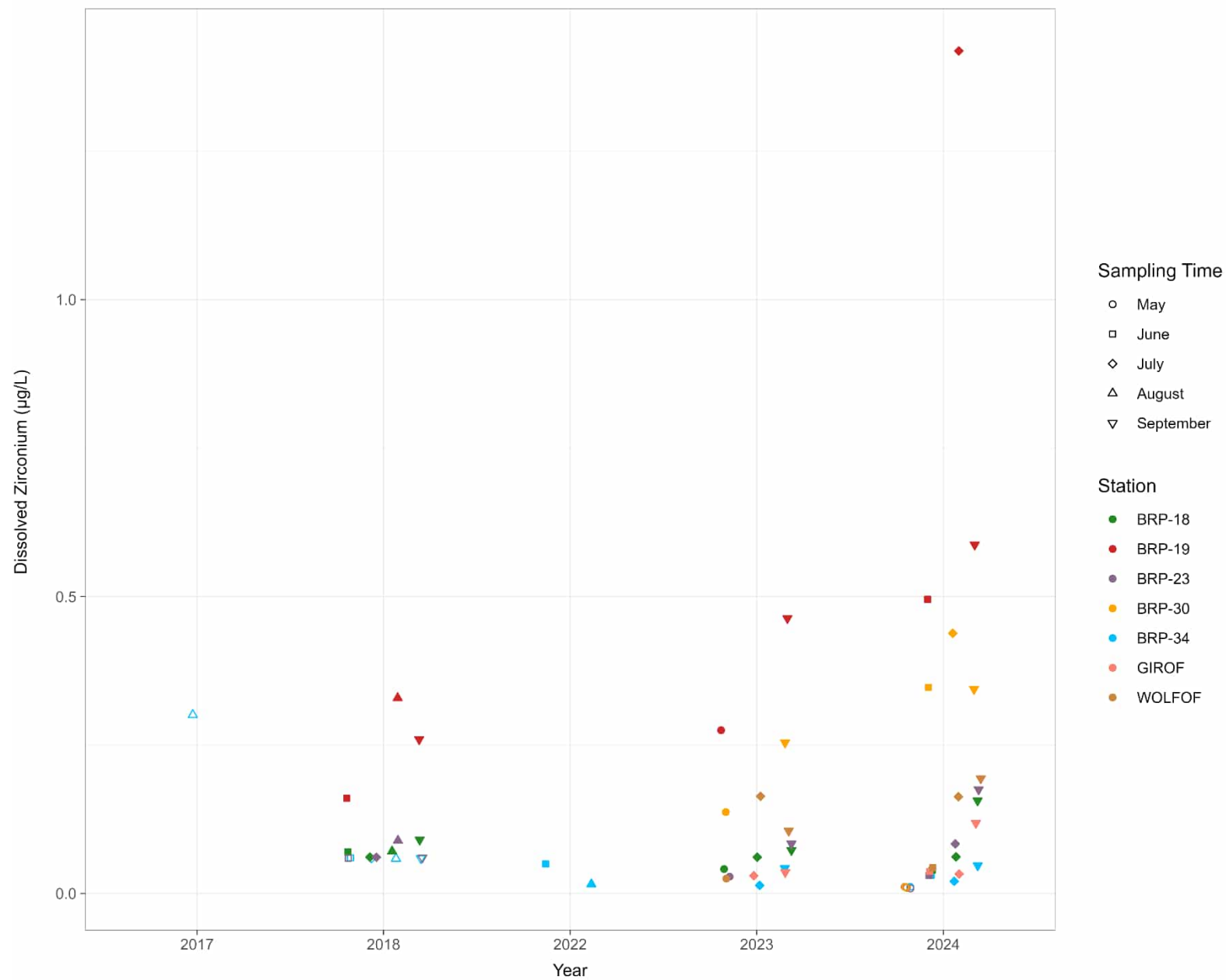












APPENDIX F GEOCHEMICAL MONITORING RESULTS

MEMORANDUM

Date: March 1, 2025

2.6a Operational Acid Base Accounting (ABA) and associated test work used for waste rock designation potential acid generating (PAG) or non-acid generating (NPAG) rock.

B2Gold Nunavut has undertaken a comprehensive testing program to determine the NPAG or PAG composition of blasted waste rock from the planned production pits at the Back River mine site. The NPAG and PAG classification is used to move blasted rock from the pit(s) to the proper location for either long term storage or use in mine construction activities.

In 2024, the geology department collected 3,010 samples from production blast hole drilling to determine whether the waste rock is NPAG or PAG. Blast patterns are developed through the engineering department, then sent to the geology department for sample selection and dig plan determination. The dig plans are then communicated to the survey department for markup in the pit and finally mining operations blast and transports the waste rock to appropriate storage locations.

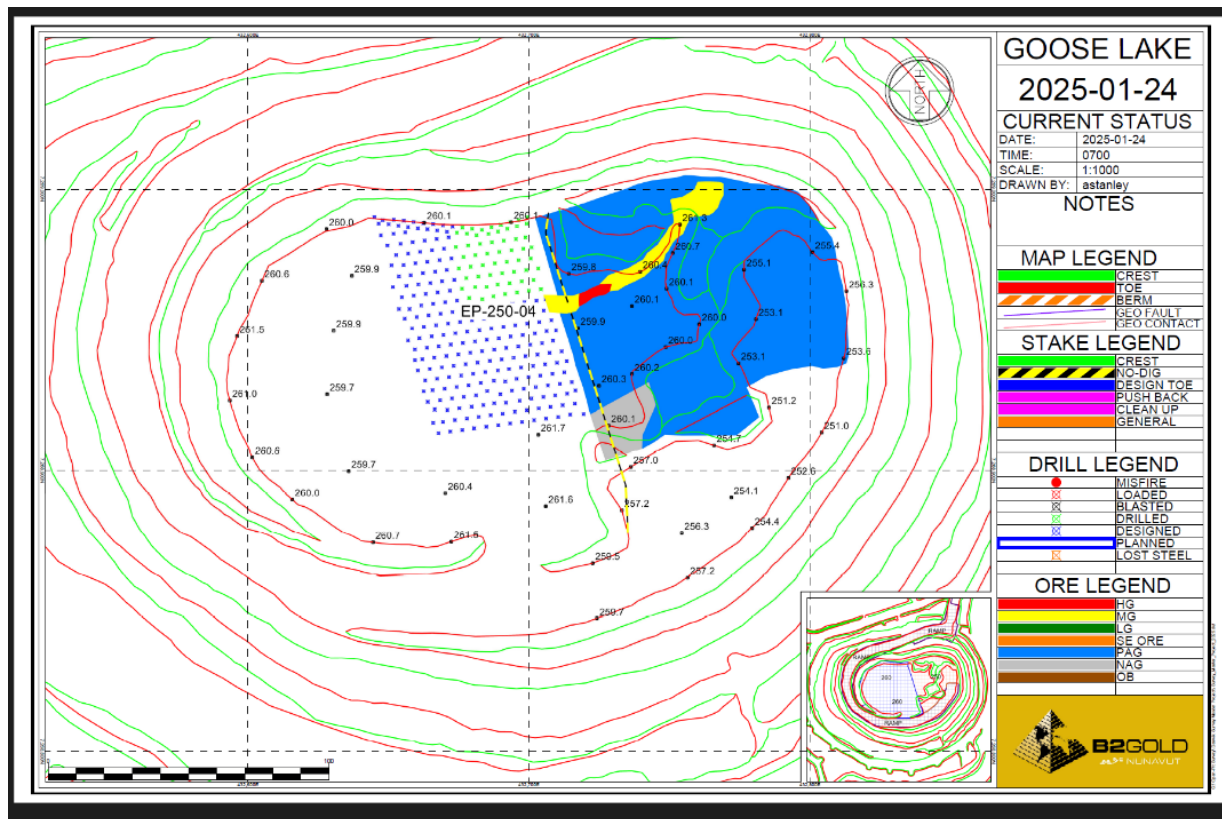


Figure 1: Daily dig plan used by mine operations to review dig limits for ore and NPAG/PAG waste rock markups



The blast rock is loaded into trucks and dumped in the location specific to the material they are hauling. All truck dumps are recorded by the truck operator and input into a central database for record keeping. Weekly volumetric surveys are completed to confirm the quantity of material is ex-pit and placed in the proper location for long term storage. The B2Gold Nunavut geology department simplified all terms related to two classifications, non-acid generating (NPAG) and potential acid generating (PAG), to make material movement easier for mining operations.

When sampling for NPAG or PAG determination, a minimum of 8 samples per 100,000 tonnes of blast rock is applied. B2Gold Nunavut geologists found that 8 samples were sufficient for designation of material, however, B2Gold Nunavut geologist collect additional samples to assist in dig planning.

When a sample is collected from the blast hole cuttings, approximately 1,500 grams of material is collected, and sent to B2Gold Nunavut's inhouse lab for assay. The samples follow a Modified Sobek analysis to obtain the neutralization potential (NP) and testing for total sulphur for calculating the acid generating potential (AP).

To determine if the sample is NPAG or PAG, calculations are as follows:

1. Calculate the acid production potential (AP) of the sample using the following formula:
 - $AP = \text{Total Sulphur} * 31.35$
2. Determine the neutralization potential (NP) of the sample from the Modified Sobek leach test.
3. Calculate the NPR of the sample using the following formula:
 - $NPR = NP / AP$

Once the NPR is calculated, the sample is classified as either NPAG or PAG, using the following site-specific criteria developed during the baseline geochemical assessment:

- An $NPR > 3$ or $S \leq 0.15\%$ is classified as NPAG
- An $NPR < 3$ and $S > 0.15\%$ is classified as PAG. The baseline geochemical assessment identified that PAG samples were determined to have metal leaching potential due to the potential for acidic pH.

Results of the operational segregation sampling are provided in Appendix A.



Figure 2: Survey markers (right side of picture) designating NPAG and PAG dig lines

2.6b As-built volumes of waste rock used in construction and placed in waste rock storage areas (WRSA) with estimated balance of acid generation to neutralization capacity in a given sample, as well as metal toxicity.

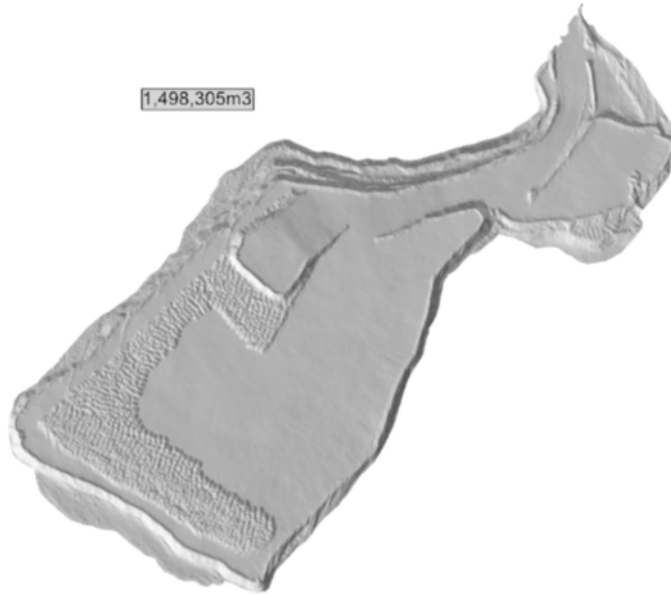


Figure 3: WRSA #1 as of December 2024

As of December 31, 2024, there has been 1,498,305 cubic metres (m³) of waste placed in the only WRSA onsite. Waste rock is segregated into NPAG and PAG based on geochemical criteria developed from baseline geochemical assessment work, as described in the Waste Rock Management Plan. NPAG and PAG and characteristics from the operational segregation program, including balance of acid generation to neutralization capacity are summarized in section 2.6a, noting that PAG material is considered potentially metal leaching.

2.6c All monitoring data with respect to geochemical analyses on site and related to roads and quarries.

All material placed for road construction was NPAG, as determined through the laboratory analyses (summarized in 2.6a), and has been approved for placement and tagged through a production tracking system. The tracking system codes the material to the bench where the material was sourced. The surveyors then confirm the volumes placed for construction to verify the amount removed ex-pit.

2.6d Any leaching observations and tests collected on pit slope and dike exposure.

With very limited placement of rock, we have not observed any leaching to date from the WRSA.

2.6e Geochemical outcomes or observations that could imply or lead to environmental impact.

Geochemical data is regularly reviewed for potential environmental impacts. No geochemical outcomes or observations that could lead to environmental impacts were identified in 2024.



Appendix A: 2024 Results from site lab of acid generating potential and neutralization potential

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EP300241	0.13			NAG
EP300242	0.18			PAG
EP300242101	0.61			PAG
EP300242102	1.56			PAG
EP300242103	1.1			PAG
EP300242104	1.13			PAG
EP300242105	1.67			PAG
EP300242106	0.46			PAG
EP300242107	1.38			PAG
EP300242108	1.64			PAG
EP300242109	1.87			PAG
EP300242110	1.47			PAG
EP300242111	3.45			PAG
EP300242112	2.25			PAG
EP300242113	0.14			NAG
EP300242114	0.27			PAG
EP300242115	1.7			PAG
EP300242116	0.96			PAG
290-24-PS60	0.15	4.69	6.16	NAG
290-24-PS64	0.16	5.00	7.05	PAG
290-24-PS111	0.25	7.50	8.29	PAG
300-24-01	0.17			PAG
300-24-02	0.23			PAG
300-24-03	0.23			PAG
300-24-04	0.15			NAG
300-24-05	0.2			PAG
300-24-06	0.16			PAG
300-24-07	0.14			NAG
300-24-08	0.16			PAG
300-24-09	0.2			PAG
300-24-10	0.26			PAG
UMUG9130001	6.24			PAG
UMUG9160001	6.6			PAG
UMUG9160002	20.23			PAG
UMUG9160003	18.06			PAG
EPOB001	0.07			NAG
EPOB002	0.05			NAG
EPOB003	0.14			NAG
EPOB004	0.19			PAG
EPOB005	0.05			NAG
EPOB006	0.02			NAG
EPOB007	0.07			NAG
EPOB008	0.07			NAG
EPOB009	0.13			NAG
EPOB010	0.04			NAG
EP300242117	0.87			PAG
EP300242118	0.93			PAG
EP300242119	0.84			PAG
EP300242120	1.04			PAG
EPOB011	0.2			PAG
EPOB012	0.26			PAG
EPOB013	0.46			PAG
EPOB014	0.21			PAG
EPBH30030050	0.08	2.50	9.06	NAG
EPBH30030052	0.12			NAG
EPBH30030055	0.22	6.25	8.79	PAG
EPBH30030087	0.1	2.81	7.54	NAG
EPBH30030088	0.16			PAG
EPBH30030099	0.18			PAG
EPBH30030103	0.24			PAG
EPBH30030133	0.07			NAG
EPBH30030135	0.16	5.00	8.38	PAG
EPBH30030149	0.08	2.19	7.14	NAG
EPBH30030175	1.19			PAG
EPBH30030177	0.45	13.44	8.79	PAG
EPBH30030TH	0.16			PAG
UPBH295013	0.24	7.50	26.91	NAG
UPBH295036	0.19	5.63	12.38	PAG
UPBH295064	0.25	7.50	14.72	PAG
UPBH295084	0.32	9.69	13.65	PAG
UPBH295116	0.17	5.00	9.06	PAG
UPBH295132	0.13	3.44	6.88	NAG
UPBH29501259	0.11	3.44	7.39	NAG
UPBH29501267	1.1	34.38	8.88	PAG
UPBH29501051	0.03	0.94	4.63	NAG
UPBH29501065	0.11	3.13	5.30	NAG
UPBH29501103	0.09	2.50	5.28	NAG
UPBH29501121	0.14	4.38	5.58	NAG
UPBH29501123	0.09	2.50	4.66	NAG
UPBH29501155	0.19	5.31	9.85	PAG
UPBH29501176	0.03	0.63	2.99	NAG
UPBH29501197	0.18	5.31	4.48	PAG
UPBH29501237	0.08	2.50	4.25	NAG
UPBH29501238	0.11	3.44	4.43	NAG
UPBH29501239	0.13	3.13	4.50	NAG
UPBH29501247	0.27	8.13	4.02	PAG
UPBH29501248	0.13	3.75	4.62	NAG
UPBH29501249	0.11	2.81	4.59	NAG
UPBH29501250	0.1	2.81	3.73	NAG
UPBH29501289	0.49	14.38	3.83	PAG
UPBH29501290	0.44	13.75	7.07	PAG
UPBH29501291	1.7	51.25	4.57	PAG
UPBH29501292	0.46	14.06	7.29	PAG
UPBH29501293	0.43	13.13	14.45	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH30031006C	0.11	3.13	4.70	NAG
EPBH30031006F	0.11	3.44	6.16	NAG
EPBH30031017C	0.06	1.56	7.25	NAG
EPBH30031017F	0.06	1.88	5.88	NAG
EPBH30031020C	0.11	3.44	6.69	NAG
EPBH30031020F	0.13	4.06	5.63	NAG
EPBH30031022C	0.43	13.13	10.12	PAG
EPBH30031022F	0.57	17.50	7.59	PAG
EPBH30031036C	0.19	5.31	6.59	PAG
EPBH30031036F	0.18	5.31	7.07	PAG
EPBH30031040C	0.23	6.88	5.84	PAG
EPBH30031040F	0.14	4.38	5.17	NAG
EPBH30031042	0.13	3.75	5.28	NAG
EPBH30031045C	0.09	2.50	6.06	NAG
EPBH30031045F	0.06	1.88	5.85	NAG
EPBH30031047C	0.15	4.69	7.14	NAG
EPBH30031047F	0.19	5.63	8.66	PAG
EPBH30031065C	0.2	5.94	6.50	PAG
EPBH30031065F	0.19	5.94	7.21	PAG
UPBH29502005	0.03	0.94	6.16	NAG
UPBH29502039	0.05	1.56	9.88	NAG
UPBH29502048	0.09	2.81	5.63	NAG
UPBH29502077	0.03	0.94	6.38	NAG
UPBH29502108	0.1	3.13	6.75	NAG
UPBH29502116	0.12	3.75	6.25	NAG
UPBH29502007	0.04	1.25	7.00	NAG
UPBH29502036	0.02	0.63	4.17	NAG
UPBH29502038	0.03	0.94	4.04	NAG
UPBH29502050	0.03	0.94	2.99	NAG
UPBH29502074	0.03	0.94	5.03	NAG
UPBH29502076	0.06	1.56	4.68	NAG
UPBH29502088	0.03	0.94	5.22	NAG
UPBH29502117	0.16	5.00	5.25	PAG
UPBH29502118	0.07	2.19	5.45	NAG
UPBH29502119	0.1	3.13	6.37	NAG
UPBH29502121	0.52	16.25	7.18	PAG
UPBH29502124	0.76	22.50	7.92	PAG
UPBH29502125	0.92	28.75	15.76	PAG
UPBH29502126	0.06	1.88	6.35	NAG
UPBH29502127	0.04	0.94	4.21	NAG
UPBH29502128	0.12	3.75	6.55	NAG
UPBH29502129	0.49	14.06	7.18	PAG
UPBH29502138	0.22	6.88	4.80	PAG
UPBH29502139	0.43	12.19	5.24	PAG
UPBH29502140	0.53	15.94	6.91	PAG
UMUG9130002	0.58			PAG
UMUG9130003	0.18			PAG
UMUG9130004	0.2			PAG
UMUG9130005	0.23			PAG
EP30031B001	0.17			PAG
EP30031B002	0.14			NAG
EP30031B003	0.15			NAG
EP30031B004	0.07			NAG
EP30031B005	0.16			PAG
EP30031B006	0.13			NAG
EP30031B007	0.13			NAG
EP30031B008	0.12			NAG
UPBH29502013	0.01	0.31	4.06	NAG
UPBH29502015	0.02	0.63	3.94	NAG
UPBH29502017	0.04	1.25	5.67	NAG
UPBH29502018	0.01	0.31	4.42	NAG
UPBH29502020	0.09	2.81	4.55	NAG
UPBH29502022	0.04	1.25	4.90	NAG
UPBH29502023	0.05	1.56	3.98	NAG
UPBH29502028	0.04	1.25	6.65	NAG
UPBH29502031	0.03	0.63	4.27	NAG
UPBH29502032	0.03	0.94	6.03	NAG
UPBH29502055	0.03	0.94	3.77	NAG
UPBH29502056	0.03	0.63	3.89	NAG
UPBH29502058	0.02	0.63	4.70	NAG
UPBH29502061	0.03	0.94	5.68	NAG
UPBH29502063	0.02	0.63	3.54	NAG
UPBH29502069	0.02	0.63	5.88	NAG
UPBH29502070	0.05	1.56	5.68	NAG
UPBH29502072	0.04	0.94	4.85	NAG
UPBH29502095	0.02	0.63	4.73	NAG
UPBH29502097	0.01	0.31	3.47	NAG
UPBH29502098	0.02	0.63	3.52	NAG
UPBH29502099	0.51	15.94	7.20	PAG
UPBH29502100	0.36	11.25	7.25	PAG
UPBH29502101	0.72	21.56	9.11	PAG
UPBH29502103	0.23	7.19	5.50	PAG
UPBH29502122	0.57	17.50	8.67	PAG
UPBH29502123	0.63	19.38	10.18	PAG
UPBH29503002	0.04	1.25	5.33	NAG
UPBH29503004	0.07	1.88	7.39	NAG
UPBH29503006	0.18	5.00	5.56	PAG
UPBH29503007	0.18	4.69	5.32	PAG
UPBH29503009	0.05	1.56	5.05	NAG
UPBH29503011	0.15	4.69	11.03	NAG
UPBH29503013C	0.1	2.81	5.50	NAG
UPBH29503013F	0.16	4.69	6.16	PAG
UPBH29503097	0.05	1.56	4.27	NAG
UPBH29503101	0.03	0.94	3.77	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
UPBH29503104	0.07	2.19	12.50	NAG
UPBH29503106	0.11	3.13	5.64	NAG
UPBH29503108	0.07	2.19	5.03	NAG
UPBH29503110	0.07	2.19	5.15	NAG
UPBH29503111	0.05	1.25	4.50	NAG
UPBH29503114	0.06	1.88	4.68	NAG
UPBH29503115	0.03	0.94	4.57	NAG
UPBH29503116	0.21	6.56	5.08	PAG
UPBH29503202C	0.07	1.88	14.22	NAG
UPBH29503202F	0.12	3.75	6.22	NAG
UPBH29503206	0.04	1.25	3.88	NAG
UPBH29503214	0.02	0.63	4.21	NAG
UPBH29503299	0.03	0.94	5.15	NAG
UPBH29503301	0.03	0.94	4.10	NAG
UPBH29503015C	0.08	2.50	5.29	NAG
UPBH29503017C	0.06	1.88	3.19	NAG
UPBH29503022C	0.03	0.94	4.45	NAG
UPBH29503024C	0.05	1.56	4.60	NAG
UPBH29503094C	0.08	2.50	5.17	NAG
UPBH29503121C	0.08	2.19	4.63	NAG
UPBH29503127C	0.09	2.81	4.43	NAG
UPBH29503191C	0.15	4.69	5.63	NAG
UPBH29503217C	0.03	0.94	4.08	NAG
UPBH29503219C	0.06	1.88	4.00	NAG
UPBH29503224C	0.07	2.19	5.36	NAG
UPBH29503226C	0.09	2.81	6.81	NAG
UPBH29503287C	0.06	1.88	4.34	NAG
UPBH29503288C	0.05	1.56	5.80	NAG
UPBH29503306C	0.32	10.00	5.79	PAG
UPBH29503310C	0.01	0.31	9.75	NAG
UPBH29503377C	0.05	1.56	5.56	NAG
UPBH29503381C	0.05	1.56	6.31	NAG
UPBH29503393C	0.33	10.31	7.43	PAG
UPBH29503394C	0.34	10.63	4.46	PAG
UPBH29503396C	0.05	1.56	5.00	NAG
UPBH29503457C	0.06	1.56	7.61	NAG
UPBH29503458C	0.06	1.56	7.24	NAG
UPBH29503460C	0.04	1.25	9.16	NAG
UPBH29503464C	0.04	1.25	5.00	NAG
UPBH29503015F	0.18	5.63	5.54	PAG
UPBH29503017F	0.09	2.81	5.39	NAG
UPBH29503022F	0.07	2.19	4.98	NAG
UPBH29503024F	0.19	5.63	5.85	PAG
UPBH29503094F	0.24	6.88	5.00	PAG
UPBH29503121F	0.04	1.25	4.63	NAG
UPBH29503127F	0.3	8.75	6.65	PAG
UPBH29503191F	0.15	4.38	5.91	NAG
UPBH29503217F	0.01	0.31	5.69	NAG
UPBH29503219F	0.14	4.38	13.29	NAG
UPBH29503224F	0.1	2.81	8.21	NAG
UPBH29503226F	0.05	1.56	8.63	NAG
UPBH29503287F	0.07	1.88	5.60	NAG
UPBH29503288F	0.07	1.88	6.85	NAG
UPBH29503306F	0.07	2.19	5.82	NAG
UPBH29503310F	0.66	20.31	12.07	PAG
UPBH29503377F	0.08	2.19	9.14	NAG
UPBH29503381F	0.21	6.56	11.06	PAG
UPBH29503393F	0.11	2.50	4.55	NAG
UPBH29503394F	0.06	1.88	4.29	NAG
UPBH29503396F	0.13	3.75	7.46	NAG
UPBH29503457F	0.18	5.63	5.91	PAG
UPBH29503458F	0.17	5.31	6.16	PAG
UPBH29503460F	0.07	2.19	5.24	NAG
UPBH29503464F	0.01	0.31	5.08	NAG
UPBH29503084C	0.06	1.88	4.38	NAG
UPBH29503084F	0.14	3.75	5.25	NAG
UPBH29503397C	0.03	0.94	5.60	NAG
UPBH29503397F	0.02	0.63	5.25	NAG
UPBH29503456C	0.05	1.56	5.42	NAG
UPBH29503456F	0.05	1.56	5.60	NAG
UPBH29503466C	0.12	3.44	5.97	NAG
UPBH29503466F	0.11	3.44	5.75	NAG
UPBH29503027C	0.08	2.50	4.29	NAG
UPBH29503454C	0.1	3.13	5.72	NAG
UPBH29503455C	0.07	2.19	9.25	NAG
UPBH29503468C	0.09	2.81	5.22	NAG
UPBH29503521C	0.15	4.38	5.02	NAG
UPBH29503027F	0.15	4.38	4.29	NAG
UPBH29503454F	0.16	4.69	4.25	PAG
UPBH29503455F	0.05	1.56	4.27	NAG
UPBH29503468F	0.24	6.56	6.25	PAG
UPBH29503521F	0.36	10.63	5.47	PAG
UPBH29503032C	0.15	4.38	2.17	NAG
UPBH29503037C	0.07	1.88	7.40	NAG
UPBH29503177C	0.05	1.25	3.37	NAG
UPBH29503239C	0.09	2.50	4.55	NAG
UPBH29503274C	0.18	5.00	6.41	PAG
UPBH29503328C	0.06	1.56	4.55	NAG
UPBH29503331C	0.13	4.06	5.90	NAG
UPBH29503361C	0.06	1.88	4.63	NAG
UPBH29503365C	0.03	0.94	5.00	NAG
UPBH29503366C	0.05	1.25	4.75	NAG
UPBH29503403C	0.15	4.69	5.12	NAG
UPBH29503408C	0.04	1.25	4.52	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
UPBH29503411C	0.05	1.56	4.52	NAG
UPBH29503441C	0.04	1.25	5.26	NAG
UPBH29503443C	0.04	1.25	3.55	NAG
UPBH29503445C	0.03	0.63	3.64	NAG
UPBH29503472C	0.04	1.25	5.51	NAG
UPBH29503479C	0.06	1.88	9.10	NAG
UPBH29503480C	0.02	0.63	4.90	NAG
UPBH29503513C	0.07	1.88	4.35	NAG
UPBH29503514C	0.08	2.50	7.86	NAG
UPBH29503523C	0.05	1.56	6.38	NAG
UPBH29503528C	0.14	1.25	5.57	NAG
UPBH29503032F	0.17	3.44	4.74	PAG
UPBH29503037F	0.1	1.88	5.00	NAG
UPBH29503177F	0.18	4.38	3.81	PAG
UPBH29503239F	0.16	4.06	3.94	PAG
UPBH29503274F	0.08	1.88	5.61	NAG
UPBH29503328F	0.11	2.81	5.30	NAG
UPBH29503331F	0.24	6.88	5.33	PAG
UPBH29503361F	0.02	0.31	5.05	NAG
UPBH29503365F	0.04	1.25	5.85	NAG
UPBH29503366F	0.11	3.13	5.81	NAG
UPBH29503403F	0.11	3.13	5.58	NAG
UPBH29503408F	0.04	1.25	3.71	NAG
UPBH29503411F	0.05	1.56	3.84	NAG
UPBH29503441F	0.34	10.00	7.71	PAG
UPBH29503443F	0.17	4.69	6.28	PAG
UPBH29503445F	0.11	3.13	6.44	NAG
UPBH29503472F	0.11	3.13	5.85	NAG
UPBH29503479F	0.05	1.25	5.82	NAG
UPBH29503480F	0.24	6.25	11.63	PAG
UPBH29503513F	0.17	5.31	6.44	PAG
UPBH29503514F	0.2	6.25	12.31	PAG
UPBH29503523F	0.24	7.50	7.02	PAG
UPBH29503528F	0.14	4.38	9.70	NAG
UPBH29503042C	0.05	1.56	4.98	NAG
UPBH29503043C	0.05	1.56	5.20	NAG
UPBH29503144C	0.04	1.25	4.70	NAG
UPBH29503242C	0.02	0.63	4.95	NAG
UPBH29503327C	0.06	1.88	6.19	NAG
UPBH29503330C	0.04	1.25	5.88	NAG
UPBH29503410C	0.05	0.94	5.45	NAG
UPBH29503511C	0.03	0.94	7.18	NAG
UPBH29503525C	0.03	0.94	5.20	NAG
UPBH29503042F	0.8	24.06	5.94	PAG
UPBH29503043F	0.53	15.63	5.75	PAG
UPBH29503144F	0.16	4.69	4.25	PAG
UPBH29503242F	0.17	5.31	4.25	PAG
UPBH29503327F	0.24	6.88	9.11	PAG
UPBH29503330F	0.08	2.50	7.50	NAG
UPBH29503410F	0.03	0.94	4.25	NAG
UPBH29503511F	0.35	10.94	6.75	PAG
UPBH29503525F	0.08	2.50	6.50	NAG
UPBH29503040C	0.02	0.63	4.39	NAG
UPBH29503168C	0.05	1.56	5.37	NAG
UPBH29503248C	0.05	1.56	5.47	NAG
UPBH29503266C	0.14	4.38	5.75	NAG
UPBH29503334C	0.1	3.13	5.00	NAG
UPBH29503335C	0.08	2.50	6.13	NAG
UPBH29503336C	0.11	3.44	5.13	NAG
UPBH29503337C	0.05	1.56	5.47	NAG
UPBH29503338C	0.06	1.88	5.22	NAG
UPBH29503358C	0.06	1.88	5.20	NAG
UPBH29503359C	0.06	1.88	5.25	NAG
UPBH29503040F	0.16	4.69	4.60	PAG
UPBH29503168F	0.14	4.06	5.17	NAG
UPBH29503248F	0.06	1.88	5.47	NAG
UPBH29503266F	0.16	5.00	5.32	PAG
UPBH29503334F	0.2	5.94	8.46	PAG
UPBH29503335F	0.11	3.44	8.46	NAG
UPBH29503336F	0.13	4.06	7.25	NAG
UPBH29503337F	0.15	4.06	6.47	NAG
UPBH29503338F	0.23	6.56	8.00	PAG
UPBH29503358F	0.17	5.00	7.25	PAG
UPBH29503359F	0.03	0.94	6.25	NAG
UPBH29501251	0.09			NAG
UPBH29501283	0.52			PAG
UPBH29501284	0.37			PAG
UPBH29501285	0.43			PAG
UPBH29501286	0.32			PAG
UPBH29501287	0.34			PAG
UPBH29501288	0.58			PAG
UP29503001	0.06			NAG
UP29503002	0.07			NAG
UP29503003	0.04			NAG
UP29503004	0.07			NAG
UP29503006	0.1			NAG
UP29503007	0.03			NAG
UP29503008	0.04			NAG
UP29504P123	0.08	2.19	8.84	NAG
UP29504P171	0.08	2.19	3.05	NAG
UP29504P176	0.38	11.88	2.51	PAG
UP29504P180	0.3	9.38	4.10	PAG
UP29504P207	0.13	3.75	1.27	NAG
UP29504P218	0.04	1.25	5.08	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
UP29504P223	0.07	2.19	5.58	NAG
UP29504P260	0.04	1.25	3.00	NAG
UP29504P267	0.07	2.19	4.77	NAG
UP29504P271	0.06	1.88	4.06	NAG
UP29504P299	0.09	2.81	3.08	NAG
UP29504P308	0.2	5.63	5.61	PAG
UP29505P48	0.1	2.50	3.94	NAG
UP29505P49	0.06	1.88	3.89	NAG
UP29505P50	0.25	7.50	5.38	PAG
UP29505P216	0.1	2.81	4.06	NAG
UP29505P217	0.11	3.13	3.55	NAG
UP29505P218	0.16	4.69	3.03	PAG
UP29505P277	0.11	3.13	3.57	NAG
UP29505P278	0.18	5.00	4.04	PAG
UP29505P284	0.02	0.63	2.17	NAG
UP29505P285	0.06	1.88	2.80	NAG
UP29505P107	0.19	5.31	4.40	PAG
UP29505P108	0.14	4.38	4.27	NAG
UP29505P109	0.1	3.13	3.92	NAG
UP29505P141	0.08	2.19	2.96	NAG
UP29505P188	0.09	2.50	3.23	NAG
UP29505P189	0.13	3.75	3.59	NAG
UP29505P190	0.09	2.81	3.32	NAG
UP29505P75	0.32	8.75	8.90	PAG
UP29505P80	0.22	6.56	6.88	PAG
UP29505P91	0.1	3.13	3.68	NAG
UP29505P159	0.16	5.00	11.00	PAG
UP29505P162	0.2	5.63	4.04	PAG
UP29505P172	0.13	4.06	8.28	NAG
UP29505P259	0.16	5.00	4.99	PAG
UP29505P260	0.08	2.19	2.78	NAG
UP29505P261	0.09	2.81	3.53	NAG
UP29505P315	0.09	2.81	3.28	NAG
UP29505P316	0.21	6.56	4.33	PAG
UP29505P317	0.1	3.13	3.36	NAG
UP29505P338	0.1	3.13	3.24	NAG
UP29505P339	0.08	2.50	3.18	NAG
UP29505P340	0.05	1.56	3.49	NAG
UP29505P405	0.18	5.31	4.00	PAG
UP29506P278	0.01	0.31	3.25	NAG
UP29506P279	0.03	0.94	3.12	NAG
UP29506P374	0.16	4.69	3.13	PAG
UP29506P375	0.06	1.88	3.13	NAG
UP29506P435	0.26	8.13	4.11	PAG
UP29506P436	0.1	3.13	4.00	NAG
UP29506P437	0.2	6.25	3.38	PAG
UP29506P455	0.17	5.31	-7.78	PAG
UP29506P456	0.08	2.50	3.88	NAG
EPBH30034024	0.12	3.75	3.65	NAG
EPBH30034025	0.11	3.44	3.25	NAG
EPBH30034028	0.17	5.00	3.99	PAG
EPBH30034029	0.19	5.94	3.10	PAG
EPBH30034044	0.19	5.63	2.75	PAG
EPBH30034045	0.11	3.44	3.74	NAG
EPBH30034023	0.16	4.38	3.49	PAG
EPBH30034030C	0.16	4.38	3.76	PAG
EPBH30034030F	0.13	3.75	3.75	NAG
EPBH30034043C	0.15	4.38	3.54	NAG
EPBH30034043F	0.19	5.63	3.35	PAG
EPBH30034075C	0.08	2.19	2.49	NAG
EPBH30034075F	0.02	0.63	3.61	NAG
EPBH30034080	0.01	0.31	4.56	NAG
EPBH30034095C	0.08	2.50	3.21	NAG
EPBH30034095F	0.02	0.63	3.21	NAG
EPBH30034125C	0.03	0.94	2.70	NAG
EPBH30034125F	0.01	0.31	3.25	NAG
EPBH30034126C	0.13	4.06	4.41	NAG
EPBH30034126F	0.01	0.31	6.45	NAG
EPBH30034127C	0.06	1.88	3.75	NAG
EPBH30034127F	0.01	0.31	3.53	NAG
EPBH30034128C	0.35	10.94	4.71	PAG
EPBH30034128F	0.24	6.88	5.89	PAG
EPBH30034129C	0.03	0.94	4.26	NAG
EPBH30034129F	0.03	0.63	4.29	NAG
EPBH30034130C	0.03	0.94	3.31	NAG
EPBH30034130F	0.03	0.63	3.31	NAG
EPBH30034143C	0.03	0.94	3.36	NAG
EPBH30034143F	0.02	0.63	4.03	NAG
EPBH30034144C	0.72	22.50	7.86	PAG
EPBH30034144F	2.67	82.81	4.75	PAG
EPBH30034145	0.02	0.63	3.47	NAG
EPBH30034159C	0.41	12.81	2.88	PAG
EPBH30034159F	0.03	0.94	3.29	NAG
EPBH30034160C	0.17	5.31	11.67	PAG
EPBH30034160F	0.09	2.81	3.93	NAG
EPBH30034135	0.18			PAG
EPBH30034138C	0.54			PAG
EPBH30034138F	2.25			PAG
EPBH30034139	0.04			NAG
EPBH30034151C	0.14			NAG
EPBH30034151F	0.33			PAG
EPBH30034152C	0.2			PAG
EPBH30034152F	0.21			PAG
EPBH30034153C	0.41			PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH30034153F	1.27			PAG
EPBH30034154	0.17			PAG
EP30034001	0.37			PAG
EP30034002	0.03			NAG
EP30034003	2			PAG
EP30034004	0.41			PAG
EP30034005	0.42			PAG
EP30034006	0.08			NAG
EP30034007	0.56			PAG
EPBH30035099C	0.03	0.63	4.88	NAG
EPBH30035099F	0.07	2.19	6.40	NAG
EPBH30035125	0.26	8.13	10.70	PAG
EPBH30035079C	0.15	4.38	3.99	NAG
EPBH30035079F	0.12	3.75	3.50	NAG
EPBH30035105C	0.59	18.44	2.79	PAG
EPBH30035105F	0.32	9.69	3.17	PAG
EPBH30035136C	0.09	2.81	3.09	NAG
EPBH30035136F	0.43	13.44	4.31	PAG
EPBH30035177	0.28	8.13	3.43	PAG
EPBH30035183C	0.25	7.50	3.03	PAG
EPBH30035183F	0.17	5.00	4.56	PAG
EPBH30035228	0.15	4.69	4.37	NAG
EPBH30035232C	0.15	4.69	3.88	NAG
EPBH30035232F	0.23	6.88	3.75	PAG
EPBH30035235	0.32	9.69	4.75	PAG
EPBH30035281C	0.2	5.94	5.25	PAG
EPBH30035281F	0.29	7.81	8.75	PAG
EPBH30035287	0.21	5.94	6.12	PAG
EPBH30041351C	0.16	5.00	4.60	PAG
EPBH30041351F	0.2	6.25	5.79	PAG
EPBH30041252C	0.16	4.69	4.94	PAG
EPBH30041252F	0.19	5.94	6.54	PAG
EPBH30041257C	0.19	5.94	6.99	PAG
EPBH30041257F	0.3	9.38	7.93	PAG
EPBH30041144C	0.11	3.44	5.67	NAG
EPBH30041144F	0.17	5.31	6.20	PAG
EPBH30041151	0.13	4.06	5.94	NAG
EPBH30041329C	0.13	4.06	5.31	NAG
EPBH30041329F	0.19	5.94	5.36	PAG
EPBH30041063C	0.12	3.75	6.58	NAG
EPBH30041063F	0.33	10.00	6.39	PAG
EPBH30040124C	0.05	1.56	2.51	NAG
EPBH30040124F	0.09	2.81	5.19	NAG
EPBH30040209C	0.05	1.56	4.03	NAG
EPBH30040209F	0.17	5.31	4.67	PAG
UP29505P65	0.07	2.19	4.24	NAG
UP29505P66	0.07	1.88	4.50	NAG
UP29505P67	0.03	0.94	2.58	NAG
UP29505P99	0.72	22.19	4.42	PAG
UP29505P100	0.74	22.81	4.64	PAG
UP29505P101	0.15	3.75	3.49	NAG
UP29505P349	0.06	1.56	3.49	NAG
UP29505P350	0.18	5.63	3.25	PAG
UP29505P386	0.14	4.06	2.76	NAG
UP29505P387	0.03	0.94	2.62	NAG
UP29504001	0.01	0.31	1.11	NAG
UP29504002	0.02	0.63	1.24	NAG
UP29504003	0.01	0.31	1.98	NAG
EPBH30040108C	0.18	5.31	5.43	PAG
EPBH30040108F	0.2	5.94	5.84	PAG
EPBH30040185C	0.13	4.06	5.46	NAG
EPBH30040185F	0.15	4.69	5.65	NAG
EPBH30040251	0.26	7.81	22.97	PAG
EPBH30040261	0.29	9.06	5.81	PAG
EPBH30040316	2.04	58.13	3.34	PAG
EPBH30040113C	0.16	5.00	8.15	PAG
EPBH30040113F	0.08	2.50	5.88	NAG
EPBH30040118C	0.08	2.50	4.09	NAG
EPBH30040118F	0.16	5.00	5.49	PAG
EPBH30040199C	0.12	3.75	5.27	NAG
EPBH30040199F	0.15	4.69	5.24	NAG
UG930DEC001	0	0.00	33.05	NAG
UG930DEC002	0.27	8.44	10.60	PAG
UG930DEC003	0.25	7.81	10.65	PAG
EP290-01P6	0.14	4.38	5.49	NAG
EP290-01P7	0.16	5.00	5.29	PAG
EP290-01P20	0.15	4.38	4.99	NAG
EP290-01P23	0.15	4.69	5.41	NAG
EPBH30039P132C	0.19	5.94	5.88	PAG
EPBH30039P132F	0.26	8.13	8.61	PAG
EPBH30039P133C	0.21	6.56	4.33	PAG
EPBH30039P133F	0.19	5.63	7.42	PAG
EPBH30039P106F	0.47	14.69	4.75	PAG
EPBH30039P106C	0.26	7.81	4.32	PAG
EPBH30039P105F	0.1	3.13	7.23	NAG
EPBH30039P105C	0.16	5.00	5.39	PAG
EPBH30039P127C	0.25	7.81	6.42	PAG
EPBH30039P234C	0.12	3.75	4.54	NAG
EPBH30039P234F	0.14	4.38	6.94	NAG
EPBH30039P238C	0.15	4.69	5.06	NAG
EPBH30039P238F	0.16	5.00	4.45	PAG
EPBH290R37C	0.18	5.63	6.64	PAG
EPBH290R37F	0.16	5.00	9.06	PAG
EPBH290A13C	0.19	5.94	4.61	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH290A13F	0.16	5.00	4.84	PAG
EPM30039001	0.3	9.06	3.85	PAG
EPM30039002	0.31	9.06	4.39	PAG
EPM30039003	0.1	3.13	8.97	NAG
EPM30039004	0.25	7.81	8.35	PAG
EPM30039005	0.21	6.25	4.45	PAG
EPM30039006	0.16	5.00	4.49	PAG
EPM30039007	0.32	10.00	3.97	PAG
EPM30039008	0.15	4.69	4.34	NAG
EPM30039009	0.16	4.69	4.86	PAG
EPM30039010	0.15	4.69	4.89	NAG
EPM30039011	0.16	4.69	5.43	PAG
EPM30039012	0.15	4.69	4.64	NAG
EPM30039013	0.21	6.25	4.39	PAG
EPM30039014	0.23	6.56	9.62	PAG
EPM30039015	0.18	5.31	8.14	PAG
EPM30039016	0.13	4.06	8.30	NAG
EPM30039017	0.23	7.19	5.38	PAG
EPM30039018	0.14	4.38	5.40	NAG
EPM30039019	0.18	5.31	4.61	PAG
EPM30039020	0.17	5.31	6.45	PAG
EPM30039021	0.23	7.19	4.64	PAG
EPM30039022	0.21	6.25	5.24	PAG
EPM30039023	0.16	4.69	6.32	PAG
EPM30039024	0.07	2.19	5.04	NAG
EPM30039025	0.12	3.44	4.66	NAG
EPM290R001	0.24	6.56	5.04	PAG
EPM290R002	0.21	5.63	5.24	PAG
EPM290R003	0.17	4.69	4.88	PAG
EPM290R004	0.21	6.25	4.30	PAG
EPM290R005	0.15	4.69	5.50	NAG
EPM290R006	0.27	7.81	4.78	PAG
EPM290R007	0.21	5.94	4.40	PAG
EPM290R008	0.16	4.69	4.00	PAG
EPM290R009	0.24	7.19	4.52	PAG
EPM290R010	0.17	5.31	5.43	PAG
EPBH29004P16C	0.422572212	12.55	7.60	PAG
EPBH29004P16F	0.290674862	8.06	7.21	PAG
EPBH29004P19C	0.149513363	4.53	6.74	NAG
EPBH29004P19F	0.211511477	6.43	8.34	PAG
EPBH29004P36C	0.281596715	7.87	7.10	PAG
EPBH29004P36F	0.165105852	5.16	5.51	PAG
EPBH29004P39C	0.172672093	5.37	6.84	PAG
EPBH29004P39F	0.210620947	6.58	6.64	PAG
EPBH29004P63C	0.212844795	6.65	7.93	PAG
EPBH29004P63F	0.206860064	6.46	7.85	PAG
EPBH29004P66C	0.190062766	5.82	6.50	PAG
EPBH29004P66F	0.186982426	5.79	6.37	PAG
EPBH29004P68C	0.143510495	4.48	6.99	NAG
EPBH29004P68F	0.160505455	5.02	8.35	PAG
EPBH29004A4	0.22	6.56	5.89	PAG
EPBH29004P6C	0.11	3.13	3.99	NAG
EPBH29004P22C	0.21	6.56	7.60	PAG
EPBH29004P61C	0.05	1.56	5.56	NAG
EPBH290R60C	0.24	7.50	4.88	PAG
EPBH290R60F	0.23	7.19	4.63	PAG
EPBH290R58C	0.17	5.31	4.65	PAG
EPBH290R58F	0.17	5.31	4.44	PAG
EPBH290R30C	0.2	6.25	5.54	PAG
EPBH290R30F	0.17	5.31	4.79	PAG
EPBH290A1C	0.2	5.63	4.50	PAG
EPBH290A1F	0.21	5.94	4.96	PAG
EPBH290R67C	0.2	6.25	4.64	PAG
EPBH290R67F	0.18	5.63	3.90	PAG
EPBH290R62C	0.17	5.31	4.58	PAG
EPBH290R62F	0.15	4.69	4.22	NAG
EPBH290R24C	0.18	5.63	4.68	PAG
EPBH290R24F	0.17	5.31	4.76	PAG
EPBH290R4C	0.17	5.31	4.33	PAG
EPBH290R4F	0.19	5.63	4.20	PAG
EPBH29002P1C	0.17062188	5.33	6.19	PAG
EPBH29002P3C	0.211069366	6.60	5.61	PAG
EPBH29002P25C	0.212766824	6.53	6.25	PAG
EPBH29002P44C	0.20312316	6.30	6.11	PAG
EPBH29002P54C	0.222982687	6.97	5.41	PAG
EPBH29002P56C	0.22070234	6.90	7.54	PAG
EPBH29002P59C	1.428129139	44.63	7.61	PAG
EPBH29002P64C	0.48074777	15.02	6.33	PAG
EPBH29002P67C	0.801814935	24.60	7.74	PAG
EPBH29004A14C	0.530414827	16.49	14.33	PAG
EPBH29004A20C	0.734730565	22.96	8.51	PAG
EPBH29004P26C	0.464290787	14.23	13.01	PAG
EPBH29004P80C	0.136186858	4.26	5.14	NAG
EPM29004001	0.225820134	7.06	8.86	PAG
EPM29004002	0.344953956	10.78	9.17	PAG
EPM29004003	0.281240963	8.66	9.98	PAG
EPM29004004	0.147788797	4.60	9.24	NAG
EPM29004005	0.198767986	5.94	15.11	PAG
EPM29004006	0.263068667	8.22	12.84	PAG
EPM29004007	0.188180089	5.71	8.48	PAG
EPM29004008	0.197584511	6.17	9.21	PAG
EPM29004009	0.214287449	6.47	7.61	PAG
EPM29004010	0.307134297	9.11	8.08	PAG
EPBH29005P60C	0.130153393	4.07	7.43	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH29005P61C	0.249944025	7.81	7.49	PAG
EPBH29005P62C	1.374156083	42.94	13.07	PAG
EPBH29005P63C	0.354866337	11.09	9.35	PAG
EPBH29005P64C	0.195671409	6.04	9.42	PAG
EPBH29005P85C	0.120266625	3.61	11.25	NAG
EPBH29005P107C	0.179982066	5.62	11.94	PAG
EPBH29005P109C	0.213015018	6.66	11.30	PAG
EPBH29005P111C	0.159699942	4.99	9.33	PAG
EPBH29005P127C	0.185563914	5.50	9.94	PAG
EPBH29005P129C	0.165424269	5.17	10.24	PAG
EPBH29005P131C	0.101601528	3.12	9.52	NAG
EPM29002001	0.347485146	10.64	9.56	PAG
EPM29002002	0.091716513	2.87	6.21	NAG
EPM29002003	0.111582723	3.34	7.02	NAG
EPM29002004	0.113558245	3.55	6.13	NAG
EPM29002005	0.242272187	7.57	6.74	PAG
EPM29002006	0.398600827	12.12	6.30	PAG
EPM29002007	0.123232034	3.85	5.61	NAG
EPM29002008	0.067017626	2.09	6.65	NAG
EPM29002009	0.021294248	0.67	6.23	NAG
EPM29002010	0.277107909	8.66	14.14	PAG
EPM29002011	0.137507558	4.30	6.35	NAG
EPM29002012	0.209668819	6.55	6.31	PAG
EPM29002013	0.221484995	6.92	5.57	PAG
EPM29002014	0.165015399	5.16	6.42	PAG
EPM29002015	0.196079476	6.13	6.56	PAG
EPM29002016	0.202531068	6.32	7.76	PAG
EPM29002017	0.258142028	8.07	7.33	PAG
EPM29002018	0.484723525	14.96	6.35	PAG
EPM29002019	0.292183011	9.13	6.81	PAG
EPM29002020	0.043226741	1.35	7.07	NAG
EPM29004011	0.141956668	4.44	7.80	NAG
EPM29004012	0.176581055	5.52	76.32	NAG
EPM29004013	0.203759806	6.37	11.76	PAG
EPM29004014	0.301556652	9.42	31.85	NAG
EPM29004015	0.123538956	3.86	15.17	NAG
EPM29004016	0.059044433	1.85	11.20	NAG
EPM29004017	0.025093665	0.78	5.68	NAG
EPM29004018	0.213416726	6.67	7.79	PAG
EPM29004019	0.619125617	19.35	13.99	PAG
EPM29004020	0.110054153	3.44	13.46	NAG
EPBH29007P04C	0.12	3.75	6.65	NAG
EPBH29007P06C	0.1	2.81	8.05	NAG
EPBH29007P08C	0.12	3.44	6.59	NAG
EPBH29002P10C	0.16	5.00	6.24	PAG
EPBH29002P18C	0.21	6.56	11.05	PAG
EPBH29002P31C	0.25	7.81	7.84	PAG
EPBH29002P33C	0.3	9.38	7.33	PAG
EPBH29002P39C	0.19	5.94	9.41	PAG
EPBH29002P52C	0.21	6.56	7.80	PAG
EPBH29004P30C	0.1	3.13	13.50	NAG
EPBH29004P56C	0.37	11.56	12.94	PAG
EPBH29007028C	0.150617455	4.71	7.38	PAG
EPBH29007028F	0.133750446	4.08	7.22	NAG
EPBH29007030C	0.142607731	4.40	6.97	NAG
EPBH29007030F	0.161068448	5.03	6.93	PAG
EPBH29007032C	0.149369185	4.67	6.48	NAG
EPBH29007032F	0.118901755	3.72	7.49	NAG
EPBH29007034C	0.244453599	7.46	7.91	PAG
EPBH29007034F	0.146203337	4.42	7.39	NAG
EPBH29007055C	0.099314078	3.10	6.39	NAG
EPBH29007055F	0.185411273	5.60	8.67	PAG
EPBH29007057C	0.158292423	4.81	6.68	PAG
EPBH29007057F	0.170095054	5.32	7.38	PAG
EPBH29007059	0.143119593	4.47	7.00	NAG
EPBH29007078C	0.202391274	6.32	6.61	PAG
EPBH29007078F	0.116841303	3.30	7.12	NAG
EPBH29007080C	0.127462385	3.98	7.14	NAG
EPBH29007080F	0.12664348	3.96	6.88	NAG
EPBH29007082C	0.116514959	3.64	6.70	NAG
EPBH29007082F	0.162958346	5.09	6.54	PAG
EPBH29007102	0.197391229	6.17	8.28	PAG
EPBH29007104	0.206362276	6.40	7.04	PAG
EPBH29007106C	0.162111666	4.74	15.20	NAG
EPBH29007106F	0.18275937	5.63	15.05	PAG
EPBH29007122C	0.225410331	6.80	25.78	NAG
EPBH29007122F	0.133064541	3.87	22.13	NAG
EPBH29007124C	0.150541178	4.60	14.17	NAG
EPBH29007124F	0.14094145	4.36	12.84	NAG
EPBH29007126	0.140286465	4.29	14.87	NAG
EPBH29007010	0.303654606	9.01	7.60	PAG
EPBH29007012C	0.166045522	5.19	10.78	PAG
EPBH29007012F	0.142249979	4.34	9.18	NAG
EPBH29007143C	0.071188262	2.20	8.14	NAG
EPBH29007143F	0.121666204	3.80	16.86	NAG
EPBH29007145C	0.131675587	4.11	7.94	NAG
EPBH29007145F	0.115436856	3.49	8.18	NAG
EPBH29007037	0.187684007	5.48	8.49	PAG
EPBH29007061	0.278580514	8.06	8.56	PAG
EPBH29007063	0.210261091	6.39	9.18	PAG
EPBH29007085	0.20211613	6.20	7.30	PAG
EPBH29007087C	0.140702752	4.03	8.74	NAG
EPBH29007087F	0.161282612	4.82	18.94	NAG
EPBH29007108	0.188402077	5.55	24.57	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH29007128	0.17770528	5.55	10.13	PAG
EPBH29007147	0.197773035	6.05	10.06	PAG
EPBH29007160C	0.135184279	4.18	9.82	NAG
EPBH29007160F	0.165968153	5.19	10.41	PAG
EPBH29007162C	0.148394707	4.64	8.64	NAG
EPBH29007162F	0.199369678	6.04	9.40	PAG
EPBH29007164C	0.173040358	4.83	9.47	PAG
EPBH29007164F	0.140899911	4.40	7.04	NAG
EPBH29007166	0.173742536	5.43	5.80	PAG
EPBH29011031C	0.135773838	4.24	10.73	NAG
EPBH29011031F	0.155241806	4.85	10.69	PAG
EPBH29011044C	0.127793449	3.99	9.65	NAG
EPBH29011044F	0.140392921	4.39	8.04	NAG
EPBH29011049C	0.165466682	5.17	9.16	PAG
EPBH29011049F	0.161268348	5.04	9.62	PAG
EPBH29011060	0.143517393	4.48	7.82	NAG
EPBH29011065	0.139074725	4.35	8.45	NAG
EPBH29011076	0.446925766	13.97	7.26	PAG
EPBH29011080C	0.151976451	4.75	8.49	PAG
EPBH29011080F	0.196368728	6.14	9.08	PAG
EPBH29011091C	0.17955324	5.61	7.33	PAG
EPBH29011091F	0.160659175	5.02	8.14	PAG
EPBH29011094	0.153091638	4.78	7.08	PAG
EPBH29011105C	0.146532404	4.58	7.78	NAG
EPBH29011105F	0.192985492	6.03	8.65	PAG
EPBH29011118C	0.091421396	2.86	7.68	NAG
EPBH29011118F	0.147779916	4.62	10.50	NAG
EPBH29012070C	0.237186685	6.87	7.64	PAG
EPBH29012070F	0.26551444	7.62	8.36	PAG
EPBH29012077C	0.320395766	9.67	5.25	PAG
EPBH29012077F	0.298794291	9.34	7.14	PAG
EPBH29012088C	0.174360969	5.45	8.67	PAG
EPBH29012088F	0.234411022	7.33	6.67	PAG
EPBH29012094C	0.184659445	5.77	8.22	PAG
EPBH29012094F	0.225518815	7.05	8.28	PAG
EPBH29012107C	0.203592578	6.36	28.43	NAG
EPBH29012107F	0.164931991	5.15	12.69	PAG
EPBH29012112	0.136210629	4.26	7.64	NAG
EPBH29012125C	0.183711429	5.74	7.92	PAG
EPBH29012125F	0.204576943	6.19	8.71	PAG
EPBH29012128	0.22390814	7.00	7.36	PAG
EPBH29012141	0.16028959	5.01	9.55	PAG
EPBH29012013C	0.195984459	5.83	23.30	NAG
EPBH29012013F	0.203552914	6.07	23.88	NAG
EPBH29012017C	0.596465673	18.21	6.76	PAG
EPBH29012017F	0.404483988	12.18	7.68	PAG
EPBH29012035C	0.27756248	8.67	9.62	PAG
EPBH29012035F	0.524025646	16.38	8.49	PAG
EPBH29012039C	0.196104752	6.13	7.48	PAG
EPBH29012039F	0.31294814	9.78	9.26	PAG
EPBH29009045C	0.101687827	3.18	8.38	NAG
EPBH29009045F	0.145054822	4.31	7.84	NAG
EPBH29009049C	0.192751358	6.02	7.62	PAG
EPBH29009049F	0.215831518	6.74	9.10	PAG
EPBH29009072C	0.161958231	5.06	8.64	PAG
EPBH29009072F	0.14802812	4.57	8.09	NAG
EPBH29009076	0.136710726	4.27	7.93	NAG
EPBH29009095C	0.12901088	4.03	8.46	NAG
EPBH29009095F	0.112673702	3.52	9.01	NAG
EPBH29009098C	0.242000268	7.56	7.45	PAG
EPBH29009098F	0.17878073	5.59	9.57	PAG
EPBH29009114C	0.359585199	11.06	9.18	PAG
EPBH29009114F	0.09354586	2.92	9.93	NAG
EPBH29009121C	0.143961928	4.50	7.54	NAG
EPBH29009121F	0.12670563	3.89	10.70	NAG
EPBH29009133C	0.195974235	5.83	10.61	PAG
EPBH29009133F	0.175677656	5.48	9.37	PAG
EPBH29009136	0.289429275	9.04	7.72	PAG
EPBH29011016C	0.1558944	4.43	6.17	PAG
EPBH29011016F	0.154305	4.70	7.33	PAG
EPBH29011036C	0.199932223	6.03	7.73	PAG
EPBH29011036F	0.433999561	13.56	5.84	PAG
EPBH29011014C	0.156972705	4.91	6.74	PAG
EPBH29011014F	0.176987924	5.11	5.77	PAG
EPBH29011069C	0.170902249	5.20	6.67	PAG
EPBH29011069F	0.170850248	5.34	7.06	PAG
EPBH29011098	0.281238887	8.79	5.24	PAG
EPBH29003001	0.2128658	6.30	5.46	PAG
EPBH29003003	0.238564686	7.36	5.30	PAG
EPBH29003005	0.218520986	6.50	5.52	PAG
EPBH29003007	0.188318749	5.88	5.27	PAG
EPBH29003009	0.182329568	5.55	6.06	PAG
EPBH29003020	0.16379186	5.12	5.55	PAG
EPBH29003022	0.533885403	16.68	5.46	PAG
EPBH29003024	0.248329343	7.76	6.32	PAG
EPBH29003026C	0.203751047	6.37	6.76	PAG
EPBH29003026F	0.141733348	4.43	8.51	NAG
EPBH29003030	0.156644925	4.90	4.77	PAG
EPBH29003R16C	0.142874542	4.46	6.38	NAG
EPBH29003R16F	0.20936232	6.54	7.39	PAG
EPBH29003R18	0.124071095	3.88	6.71	NAG
EPBH29003R20	0.233880048	7.31	6.87	PAG
EPBH29003R22C	0.206534895	6.45	5.54	PAG
EPBH29003R22F	0.210125803	6.57	5.14	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH29003R24	0.184670457	5.77	7.29	PAG
EPBH29003R26	0.214826307	6.71	5.85	PAG
EPBH29003R29	0.214600548	6.71	5.63	PAG
EPBH29003R36	0.146305412	4.57	4.62	NAG
EPBH29003R38C	0.135780605	4.24	5.32	NAG
EPBH29003R38F	0.147726419	4.62	4.22	NAG
EPBH29003R40	0.189013704	5.91	5.47	PAG
EPBH29003012	0.231807632	6.82	7.25	PAG
EPBH29003015	0.154368019	4.53	6.23	PAG
EPBH29003046	0.261408989	7.73	5.74	PAG
EPBH29003072	0.168371486	5.06	4.54	PAG
EPBH29003076	0.182872513	5.62	4.83	PAG
EPBH29003080	0.186372205	5.74	5.71	PAG
EPBH29008003	0.14	4.38	7.30	NAG
EPBH29008029	0.17	5.31	5.75	PAG
EPBH29008033	0.16	4.69	6.55	PAG
EPBH29008035	0.19	5.94	5.98	PAG
EPBH29008B05	0.04	1.25	5.65	NAG
EPBH29008A08	0.25	7.81	6.36	PAG
EPBH29015P2F	0.22	6.88	5.14	PAG
EPBH29015P5F	0.31	9.69	4.91	PAG
EPBH29015P7F	0.22	6.88	4.73	PAG
EPBH29015P9F	0.25	7.81	5.94	PAG
EPBH29015P11F	0.19	5.94	6.45	PAG
EPBH29015P13F	0.16	5.00	6.45	PAG
EPBH29015P19F	0.18	5.63	7.71	PAG
EPBH29015P23F	0.25	7.81	5.78	PAG
EPBH29015P34F	0.23	7.19	5.24	PAG
EPBH29015P42F	0.1	3.13	6.70	NAG
EPBH29015P47F	0.12	3.75	7.12	NAG
EPBH29015P65F	0.19	5.94	3.61	PAG
EPBH29015P76F	0.11	3.44	7.05	NAG
EPBH29015P51F	0.21	6.56	4.83	PAG
EPBH29015P69F	0.18	5.63	5.14	PAG
EPBH29015P82F	0.27	8.44	7.06	PAG
EPBH29015P101F	0.17	5.31	6.70	PAG
EPBH29010P1F	0.14	4.38	5.75	NAG
EPBH29010P29F	0.23	7.19	5.91	PAG
EPBH29010P6F	0.25	7.81	6.61	PAG
EPBH29010P8F	0.24	7.50	6.68	PAG
EPBH29010P11F	0.56	17.50	6.17	PAG
EPBH29010P23F	0.23	7.19	6.85	PAG
EPBH29010P35F	0.21	6.56	7.79	PAG
EPBH29010P44F	0.72	22.50	4.88	PAG
EPBH29010P20F	0.44	13.75	6.52	PAG
EPBH29010B19F	1.07	32.81	9.88	PAG
EPBH29010B4F	0.2	6.25	5.88	PAG
EPBH29010A14F	0.16	5.00	5.31	PAG
EPBH29013P117F	0.19	5.94	7.23	PAG
EPBH29013P153F	0.28	8.75	7.32	PAG
EPBH29013P155F	0.17	5.31	6.55	PAG
EPBH29013P114F	0.32	10.00	6.63	PAG
EPBH29013P112C	0.39	12.19	6.33	PAG
EPBH29013P112F	0.2	6.25	4.54	PAG
EPBH29013P147C	0.19	5.94	9.61	PAG
EPBH29013P147F	0.21	6.56	6.30	PAG
EPBH29014P9F	0.11	3.44	5.31	NAG
EPBH29014P12F	0.55	17.19	4.51	PAG
EPBH29014P14F	0.02	0.63	3.76	NAG
EPBH29014P22F	0.25	7.81	5.02	PAG
EPBH29014P24F	0.06	1.88	4.36	NAG
EPBH29014P26F	0.01	0.31	3.51	NAG
EPBH29014P38F	0.03	0.94	4.22	NAG
EPBH29014P40F	0.03	0.94	7.15	NAG
EPBH29014P42F	0.38	11.88	5.64	PAG
EPBH29014P44F	0.24	7.50	5.68	PAG
EPBH29014P54F	0.93	29.06	2.46	PAG
EPBH29014P55F	0.18	5.63	12.44	PAG
EPBH29014P56F	0.01	0.31	16.39	NAG
EPBH29014P57F	0	0.00	8.03	NAG
EPBH29014P58F	0.01	0.31	7.31	NAG
EPBH29014P59F	0.3	9.38	5.64	PAG
EPBH29014P60F	0.02	0.63	7.21	NAG
EPBH29014P61F	0.13	4.06	5.59	NAG
EPBH29014P62F	0.67	20.94	10.76	PAG
EPBH29014P67F	0.08	2.50	6.51	NAG
EPBH29014P68F	0.14	4.38	7.76	NAG
EPBH29014P69F	0.13	4.06	10.31	NAG
EPBH29014P70F	0.08	2.50	13.94	NAG
EPBH29014P71F	0.91	28.44	10.49	PAG
EPBH29014P72F	2.37	74.06	14.11	PAG
EPBH29014P80F	0.41	12.81	6.14	PAG
EPBH29014P81F	0.77	24.06	9.36	PAG
EPBH29014P82F	3.03	94.69	26.81	PAG
EPBH29014P88F	0.07	2.19	8.01	NAG
EPBH29014P89F	0.16	5.00	6.76	PAG
EPBH29014P90F	0.16	5.00	6.76	PAG
EPBH29014P91F	0.08	2.50	6.76	NAG
EPBH29014P107F	0.14	4.38	7.64	NAG
EPBH29014P109F	0.21	6.56	8.51	PAG
EPBH29014P111F	0.21	6.56	9.01	PAG
EPBH29014P129F	0.46	14.38	5.21	PAG
EPBH29014P132F	0.21	6.56	5.79	PAG
EPBH29014P134F	0.26	8.13	7.54	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH29014P136F	0.24	7.50	6.74	PAG
EPBH29014P157F	0.12	3.75	5.78	NAG
EPBH29014P159F	0.16	5.00	5.06	PAG
EPBH29014P161F	0.18	5.63	5.65	PAG
EPBH29014P185F	0.2	6.25	5.47	PAG
EPBH29014P187F	0.15	4.69	5.52	NAG
EPBH29008P8F	0.22	5.94	5.11	PAG
EPBH29008P10F	0.16	4.38	5.83	PAG
EPBH29008P13F	0.17	4.38	5.16	PAG
EPBH29008P41F	0.1	2.81	4.96	NAG
EPBH29008P44F	0.11	3.44	4.24	NAG
EPBH29008P47F	0.15	4.69	5.36	NAG
EPBH29013P110F	0.3	9.38	6.94	PAG
EPBH29013P126F	0.35	10.94	5.34	PAG
EPBH29013P145F	0.26	8.13	5.81	PAG
EPBH29013P161F	0.33	10.31	5.56	PAG
EPBH29009061	0.202152771	5.75	5.17	PAG
EPBH29009088	0.4170216	12.42	6.14	PAG
EPBH29009117	0.152076622	4.56	5.97	PAG
EPBH29009145	0.143081309	4.47	5.18	NAG
EPBH29009148	0.171056298	5.19	5.24	PAG
EPBH29011086	0.169184479	5.24	4.23	PAG
EPBH29011101C	0.504907317	15.56	5.28	PAG
EPBH29011101F	0.561262958	17.54	4.86	PAG
EPBH29011112C	0.312485485	9.77	5.86	PAG
EPBH29011112F	0.221738918	6.93	4.73	PAG
EPBH29012030C	0.390474836	12.20	5.27	PAG
EPBH29012030F	0.577567873	18.05	4.82	PAG
EPBH29012050C	0.179129103	5.60	5.07	PAG
EPBH29012050F	0.192749796	6.02	5.07	PAG
EPBH29012P22F	0.14	4.38	5.89	NAG
EPBH29012P64F	0.12	3.75	6.04	NAG
EPBH29012P79F	0.18	5.63	5.09	PAG
EPBH29012P115F	0.17	5.31	6.07	PAG
EPBH29012P135F	0.22	6.88	5.39	PAG
EPBH29013P97F	0.8	25.00	6.11	PAG
EPBH29013P128F	0.16	5.00	5.65	PAG
EPBH29013P132F	0.15	4.69	7.04	NAG
EPBH29013P137F	0.2	6.25	6.66	PAG
EPBH29013P164F	1.04	31.56	6.43	PAG
EPBH29013P169F	0.25	7.81	7.75	PAG
EPBH30031147	0.16	5.00	7.75	PAG
UPBH29503131C	0.07	2.19	4.87	NAG
UPBH29503187C	0.15	4.69	5.65	NAG
UPBH29503188C	0.27	8.13	4.25	PAG
UPBH29503374C	0.04	0.94	4.70	NAG
UPBH29503375C	0.03	0.94	4.82	NAG
UPBH29503398C	0.17	5.31	6.00	PAG
UPBH29503399C	0.16	5.00	7.86	PAG
UPBH29503131F	0.22	6.88	5.57	PAG
UPBH29503187F	0.16	4.69	6.67	PAG
UPBH29503188F	0.29	8.44	5.83	PAG
UPBH29503374F	0.01	0.31	5.84	NAG
UPBH29503375F	0.08	2.50	6.22	NAG
UPBH29503398F	0.21	6.56	6.35	PAG
UPBH29503399F	0.08	2.50	7.60	NAG
UPBH29503045C	0.06	1.56	3.73	NAG
UPBH29503046C	0.03	0.94	2.70	NAG
UPBH29503172C	0.05	1.56	2.75	NAG
UPBH29503245C	0.07	2.19	2.86	NAG
UPBH29503270C	0.09	2.50	5.97	NAG
UPBH29503045F	0.16	4.69	4.25	PAG
UPBH29503046F	0.15	4.38	4.13	NAG
UPBH29503172F	0.13	4.06	3.73	NAG
UPBH29503245F	0.1	3.13	4.25	NAG
UPBH29503270F	0.12	3.75	5.94	NAG
UPBH29503065	0.03	0.94	3.00	NAG
UPBH29503148	0.08	2.50	4.50	NAG
UPBH29503050C	0.1	3.13	4.23	NAG
UPBH29503060C	0.08	2.19	2.50	NAG
UPBH29503050F	0.14	4.06	4.33	NAG
UPBH29503060F	0.16	4.69	5.22	PAG
UPBH29503416	0.08	2.50	4.50	NAG
UPBH29503417	0.13	3.75	4.56	NAG
UPBH29503439	0.05	1.25	4.46	NAG
UPBH29503504	0.17	5.00	5.58	PAG
UPBH29503505	0.16	4.69	7.20	PAG
UPBH29503532	0.08	2.50	3.54	NAG
UPBH29503533	0.5	15.00	7.75	PAG
UPBH29503534	0.46	14.38	6.57	PAG
UPBH29503055	0.07	1.88	3.77	NAG
UPBH29503159	0.18	5.31	5.97	PAG
UPBH29503160	0.12	3.44	5.08	NAG
UPBH29503264	0.11	3.13	5.96	NAG
UPBH29503342	0.07	1.88	5.15	NAG
UPBH29503343	0.1	3.13	5.57	NAG
UPBH29503346	0.08	2.50	5.10	NAG
UPBH29503348	0.04	1.25	4.70	NAG
UPBH29503349	0.11	3.44	4.08	NAG
UPBH29503350	0.49	14.69	5.67	PAG
UPBH29503353	0.11	3.44	6.35	NAG
UPBH29503354	0.09	2.50	3.99	NAG
UPBH29503425	0.07	2.19	7.45	NAG
UPBH29503426	0.09	2.50	5.10	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPGRAB3272024	5.99	187.19	-0.50	PAG
EP30040P51	0.2	6.25	4.52	PAG
EP30040P48	0.18	5.63	6.33	PAG
EP30040P313	0.05	1.56	2.64	NAG
EP30040P333	0.27	8.44	5.23	PAG
EP30040P344	0.07	2.19	10.67	NAG
EP30040P360	0.14	4.38	2.68	NAG
EP30040P394	0.13	4.06	5.51	NAG
EP30040P512	0.22	6.88	5.75	PAG
EP30039P76C	0.21	6.56	6.32	PAG
EP30039P76F	0.14	4.38	9.52	NAG
EP30039P31C	0.09	2.81	12.65	NAG
EP30039P31F	0.04	1.25	12.33	NAG
EP30039P14C	0.4	11.88	4.67	PAG
EP30039P14F	0.34	10.63	4.43	PAG
EP30039P24C	0.23	7.19	5.69	PAG
EP30039P24F	0.23	7.19	5.82	PAG
EP30039P28C	0.11	3.44	14.63	NAG
EP30039P28F	0.22	6.56	4.98	PAG
EPBH290R40C	0.22	6.56	4.86	PAG
EPBH290R19C	0.16	5.00	4.74	PAG
EPBH290R16C	0.2	5.63	4.71	PAG
UPM29501001	0.14	4.06	4.56	NAG
UPM29501002	0.14	4.06	4.16	NAG
UPM29501003	0.12	3.75	3.37	NAG
UPM29501004	0.18	5.31	3.46	PAG
UPM29501005	0.24	7.19	4.20	PAG
UPM29501006	0.64	20.00	3.87	PAG
UPM29501007	0.12	3.75	4.42	NAG
UPM29501008	0.26	8.13	19.68	PAG
EPBH29004P47C	0.35	10.94	18.04	PAG
EPBH29004P74C	0.14	4.38	8.29	NAG
EPBH29013P43F	0.04	1.25	6.65	NAG
EPBH29013P45F	0.21	6.56	8.68	PAG
EPBH29013P55F	0.37	11.56	5.90	PAG
EPBH29013P59F	0.2	6.25	7.25	PAG
EPBH29013P63F	0.21	6.56	5.38	PAG
EPBH29013P67F	0.2	6.25	4.91	PAG
EPBH29013P77F	0.21	6.56	5.33	PAG
EPBH29013P95F	0.07	2.19	7.94	NAG
EPBH29013P24F	0.05	1.56	6.83	NAG
EPBH29013P40F	0.1	3.13	5.79	NAG
EPBH29013P40F-D	0.1	2.81	6.20	NAG
EPBH29013P31F	0.23	6.56	6.24	PAG
EPBH29013P33F	0.44	13.13	6.88	PAG
EPBH29013P15F	0.18	5.31	12.32	PAG
EPBH29013P12F	0.22	6.56	5.52	PAG
EPBH29013P1F	0.19	5.94	6.95	PAG
EPBH29016P22F	0.19	5.63	6.85	PAG
EPBH29016P54F	0.17	5.31	7.04	PAG
EPBH29016P14F	0.16	5.00	8.24	PAG
EPBH29016P20F	0.16	5.00	8.07	PAG
EPBH29016P24F	0.2	6.25	7.60	PAG
EPBH29016P26F	0.15	4.69	7.37	NAG
EPBH29016P3F	0.12	3.44	6.68	NAG
EPBH29016P37F	0.14	4.38	6.92	NAG
EPBH29016P70F	0.2	5.94	7.18	PAG
EPBH29016P91F	0.23	6.56	6.91	PAG
EPBH29016P122F	0.26	8.13	6.34	PAG
EPBH29016P151F	0.22	6.56	6.16	PAG
EPBH29016P5F	0.17	4.69	7.88	PAG
EPBH29016P32F	0.2	5.63	6.87	PAG
EPBH29016P60F	0.16	4.69	6.78	PAG
EPBH29016P64F	0.26	7.81	6.20	PAG
EPBH29016P74F	0.15	4.38	7.75	NAG
EPBH29016P76F	0.2	5.94	7.62	PAG
EPBH29016P80F	0.17	5.00	6.90	PAG
EPBH29016P85F	0.18	5.31	6.96	PAG
EPBH29016P115F	0.17	5.00	6.37	PAG
EPBH29016P120F	0.23	7.19	5.84	PAG
EPBH29018P7	0.21	6.25	6.19	PAG
EPBH29018P16	0.18	4.69	5.25	PAG
EPBH29018P19	0.24	7.50	5.35	PAG
EPBH29018P22	0.13	3.75	4.51	NAG
EPBH29018P33	0.21	6.25	6.19	PAG
EPBH29018P34	0.18	4.69	5.25	PAG
EPBH29018P35	0.24	7.50	5.35	PAG
EPBH29018P36	0.13	3.75	4.51	NAG
EPBH29018P5	0.183625602	5.72	9.32	PAG
EPBH29018P28	0.174270486	5.45	6.83	PAG
EPBH29018P30	0.1194809	3.73	6.10	NAG
EPBH29018P63	1.316108367	40.28	14.48	PAG
EPBH29018P65C	0.413217108	12.55	8.62	PAG
EPBH29018P65F	0.613031017	19.04	9.91	PAG
EPBH29018P69C	0.347730842	10.87	7.66	PAG
EPBH29018P69F	0.295949271	8.84	7.86	PAG
EPBH29018P71	0.26855606	8.39	7.73	PAG
EPBH29018P74	0.113844364	3.56	7.47	NAG
EPBH29018P88	0.274836926	8.59	7.26	PAG
EPBH29018P90C	0.306076099	9.47	7.75	PAG
EPBH29018P90F	0.322478425	9.70	10.83	PAG
EPBH29018P93	0.228410481	7.14	9.56	PAG
EPBH29018P95	0.195439839	6.06	6.41	PAG
EPBH29018P113	0.218685865	6.58	14.88	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH29018P115C	0.283687776	8.52	8.38	PAG
EPBH29018P115F	0.288517658	8.62	8.22	PAG
EPBH29018P117C	0.263925195	8.20	8.56	PAG
EPBH29018P117F	0.365426138	10.99	7.10	PAG
EPBH29019A14	0.220277966	6.77	8.15	PAG
EPBH29019A21	0.152140792	4.75	10.92	PAG
EPBH29019B18	0.191978993	5.86	10.73	PAG
EPBH29019B20	0.26283319	7.83	5.45	PAG
EPBH29019B23	0.223561561	6.15	5.44	PAG
EPBH29019B28	0.23120447	6.93	6.73	PAG
EPBH29019B33	0.249149699	7.74	5.73	PAG
EPBH29019P3	0.203319065	6.35	6.32	PAG
EPBH29019P4	0.24252975	7.34	6.62	PAG
EPBH29019P6	0.258980013	8.09	6.50	PAG
EPBH29019P10	0.229757045	7.02	6.74	PAG
EPBH29019P15	0.11519922	3.60	5.43	NAG
EPBH29019P17	0.037083429	1.16	7.25	NAG
EPBH29019P38	0.181468726	5.40	17.76	NAG
EPBH29019P42	0.238709041	7.10	7.37	PAG
EPBH29019P53	0.200205025	6.24	6.97	PAG
EPBH29019P54	0.218707218	6.52	7.50	PAG
EPBH29019P59	0.204312173	6.38	7.00	PAG
EPBH29019P65	0.203497557	6.29	6.62	PAG
EPBH29019P67	0.170143186	5.15	5.69	PAG
EPBH29019B2	0.153887579	4.74	6.09	PAG
EPBH29019B5	0.214349157	6.33	6.58	PAG
EPBH29019B9	0.162967732	5.04	6.12	PAG
EPBH29019P21	0.265337519	7.27	6.12	PAG
EPBH29019P27	0.240771811	7.04	6.35	PAG
EPBH29019P69	0.273043593	6.92	6.61	PAG
EPBH29020P75	0.204981034	6.41	7.17	PAG
EPBH29020P79	0.245706919	7.68	7.45	PAG
EPBH29020P98	0.292673609	9.15	7.52	PAG
EPBH29020P109C	0.203252627	6.35	5.12	PAG
EPBH29020P109F	0.250552461	7.58	6.11	PAG
EPBH29020P113	0.262448701	8.04	6.90	PAG
EPBH29020P120	0.188419714	5.89	6.55	PAG
EPBH29020P122	0.201340051	5.98	6.64	PAG
EPBH29020P124	0.145911632	4.32	5.55	NAG
EPBH29020P128	0.153685903	4.52	6.21	PAG
EPBH29020P132	0.315196539	9.44	7.46	PAG
EPBH29020P141C	0.250777966	7.84	6.86	PAG
EPBH29020P141F	0.214608989	6.44	6.91	PAG
EPBH29020P145	0.180478885	5.36	5.81	PAG
EPBH29020P148	0.182279739	5.30	7.52	PAG
EPBH29020P152	0.179910606	5.44	6.50	PAG
EPBH29020P13C	0.219826977	6.54	7.44	PAG
EPBH29020P13F	0.173373767	5.35	5.54	PAG
EPBH29020P23	0.174820146	5.44	5.03	PAG
EPBH29020P25C	0.208072369	6.29	5.42	PAG
EPBH29020P25F	0.227411495	6.73	5.41	PAG
EPBH29020P27	0.207588034	6.22	4.41	PAG
EPBH29020P30	0.200339151	5.97	6.53	PAG
EPBH29020P34C	0.047807171	1.49	5.68	NAG
EPBH29020P34F	0.165889924	4.99	5.16	PAG
EPBH29020P42	0.339620326	10.05	5.92	PAG
EPBH29020P46	0.316555315	9.55	5.43	PAG
EPBH29020P54	0.227081413	6.74	5.63	PAG
EPBH29020P60	0.2571297	7.68	7.03	PAG
EPBH29020P64	0.107076154	3.22	5.64	NAG
EPBH29020P81	0.333121438	9.71	5.55	PAG
EPBH29020P86	0.274636992	8.58	4.54	PAG
EPBH29020P89	0.325315949	9.61	4.81	PAG
EPBH29020P94	0.235194829	7.35	5.54	PAG
EPBH29020P72	0.14833808	4.57	5.73	NAG
EPBH29020P100	0.161715119	4.73	5.42	PAG
EPBH29020P134	0.255973783	7.57	5.93	PAG
EPBH29023P38	0.131454831	3.55	16.42	NAG
EPBH29023P41	0.121630378	3.75	5.78	NAG
EPBH29023P45	0.122048087	3.81	5.90	NAG
EPBH290PS30	0.258288683	7.95	4.80	PAG
EPBH290PS47	0.149023489	4.29	5.03	NAG
EPBH290PS56	0.13014036	4.00	4.55	NAG
EPBH290PS2	0.618914131	19.06	5.89	PAG
EPBH290PS9	0.275063885	8.14	5.90	PAG
EPBH290PS19	0.293408946	8.92	5.16	PAG
EPBH29023B18	0.191599946	5.83	5.65	PAG
EPBH29023B22	0.230773864	7.00	4.90	PAG
EPBH29023B24	0.140117305	4.38	5.13	NAG
EPBH29023P09	0.176749347	5.38	4.65	PAG
EPBH29023P11	0.27047107	7.77	7.89	PAG
EPBH29023P13	0.296741221	9.27	6.75	PAG
EPBH29023P32	0.299384914	8.94	5.15	PAG
EPBH29023P40	0.245486394	7.38	4.51	PAG
EPBH29023P43	0.19774229	6.18	5.02	PAG
EPBH29023P66	0.227312994	5.81	6.53	PAG
EPBH29023P68	0.241588722	7.53	5.66	PAG
EPBH29023B7	0.378454729	11.24	5.89	PAG
EPBH29023P16	0.206083735	5.98	5.55	PAG
EPBH29023P18	0.197982922	5.31	5.42	PAG
EPBH29023P22	0.229254942	7.07	5.29	PAG
EPBH29023P23	0.224355578	7.01	6.91	PAG
EPBH29023P27	0.159218466	4.30	6.16	PAG
EPBH29023P52	0.24440096	6.99	6.28	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH29023P60	0.170796923	5.10	5.04	PAG
EPBH29023P62	0.110680054	3.28	4.52	NAG
EPBH29023P79	0.133597456	3.76	4.55	NAG
EPBH29023P82	0.148905092	4.54	4.94	NAG
EPBH29021P12	0.113851568	3.56	5.82	NAG
EPBH29021P17	0.123905584	3.87	5.72	NAG
EPBH29021P19	0.077886805	2.31	5.65	NAG
EPBH29021P33	0.132325905	4.14	7.62	NAG
EPBH29021P40	0.033016461	0.66	7.01	NAG
EPBH29021P43	0.227079112	6.99	7.25	PAG
EPBH29021P60	0.174464407	5.11	6.58	PAG
EPBH29021P67	0.075654357	2.03	12.39	NAG
EPBH29021P69	0.014962901	0.38	5.91	NAG
EPBH29021P92	0.110839844	2.47	13.62	NAG
EPBH29021P94	0.231526388	6.48	6.98	PAG
EPBH29021P111C	0.107689863	2.96	5.31	NAG
EPBH29021P111F	0.105667166	3.19	5.48	NAG
EPBH29021P4	0.14347504	4.45	6.78	NAG
EPBH29021P25	0.137376272	4.29	6.98	NAG
EPBH29021P48	0.093732789	2.93	6.24	NAG
EPBH29021P50	0.170376154	5.32	6.77	PAG
EPBH29021P73	0.164495997	4.90	5.52	PAG
EPBH29021P76	0.075427164	2.36	4.72	NAG
EPBH29021P79	0.108113372	3.25	6.01	NAG
EPBH29021P86	0.142993028	4.22	7.65	NAG
EPBH29021P98	0.049863986	1.56	5.33	NAG
EPBH29021P101	0.034603693	1.08	6.62	NAG
EPBH29021P104	0.119166442	3.62	6.88	NAG
EPBH29021P119	0.120258503	3.76	6.47	NAG
EPBH29021P121	0.260336906	7.92	8.16	PAG
EPBH29021P126	0.151207988	4.39	7.19	PAG
EPBH29021P135	0.16062088	4.79	7.17	PAG
EPBH29022P163	0.103106608	3.10	5.47	NAG
EPBH29022P166	0.05854104	1.83	5.69	NAG
EPBH29022P95	0.156065198	4.35	4.70	PAG
EPBH29022P109C	0.096118475	3.00	4.96	NAG
EPBH29022P109F	0.101584232	3.03	5.08	NAG
EPBH29022P145	0.156091103	4.58	5.33	PAG
EPBH29022P152	0.098103564	3.03	5.45	NAG
EPBH29022P156	0.158956238	4.97	5.45	PAG
EPBH29022P158	0.035024254	1.09	5.70	NAG
EPBH29022P171	0.094631942	2.96	4.60	NAG
EPBH29024P122	0.094800232	2.96	6.58	NAG
EPBH29024P124	0.104712519	3.06	5.34	NAG
EPBH29024P140	0.10423615	3.00	5.70	NAG
EPBH29024P144	0.156404666	4.84	5.44	PAG
EPBH29024P155	0.031151703	0.96	5.44	NAG
EPBH29024P158	0.137716531	3.69	5.22	NAG
EPBH29024P162	0.138280654	3.53	5.33	NAG
EPBH29022P47C	0.128656376	4.02	5.83	NAG
EPBH29022P47F	0.14615285	4.56	5.96	NAG
EPBH29022P58	0.21698606	6.37	6.70	PAG
EPBH29022P60C	0.192057556	5.33	5.96	PAG
EPBH29022P60F	0.205276301	6.14	5.06	PAG
EPBH29022P63	0.140378388	4.36	5.70	NAG
EPBH29022P74	0.223776624	6.80	8.55	PAG
EPBH29022P76C	0.135391779	3.94	5.21	NAG
EPBH29022P76F	0.101459028	3.17	4.98	NAG
EPBH29022P79	0.265007547	8.07	4.48	PAG
EPBH29022P92	0.125821875	3.93	4.59	NAG
EPBH29022P103	0.163761489	5.02	5.32	PAG
EPBH29022P105	0.160144608	4.77	4.85	PAG
EPBH29022P28	0.135329436	4.23	4.71	NAG
EPBH29022P30	0.126391111	3.95	5.18	NAG
EPBH29022P41C	0.169609689	5.08	6.01	PAG
EPBH29022P41F	0.228139149	7.13	6.97	PAG
EPBH29022P43	0.249860813	7.53	5.38	PAG
EPBH29022P45	0.171964261	5.07	5.52	PAG
EPBH29022P107	0.142861378	4.37	6.06	NAG
EPBH29022P120C	0.151482125	4.26	5.40	PAG
EPBH29022P120F	0.114610905	3.58	5.10	NAG
EPBH29022P122	0.115199597	3.35	6.54	NAG
EPBH29022P124C	0.107712764	3.29	6.65	NAG
EPBH29022P124F	0.138380888	4.31	6.48	NAG
EPBH29022P126C	0.174527525	3.97	5.23	PAG
EPBH29022P126F	0.157062929	4.91	6.00	PAG
EPBH29022P135C	0.026215172	0.82	4.89	NAG
EPBH29022P135F	0.11438679	3.57	4.99	NAG
EPBH29022P137C	0.102492121	3.20	5.54	NAG
EPBH29022P137F	0.220647735	6.72	6.73	PAG
EPBH29022P139	0.154431526	4.46	5.55	PAG
EPBH29022P141	0.175808738	5.27	5.49	PAG
EPBH29024P104	0.094218793	2.94	5.51	NAG
EPBH29022B3	0.324931746	9.89	5.70	PAG
EPBH29022B6	0.238383231	7.08	6.04	PAG
EPBH29022B10	0.143180621	4.33	5.21	NAG
EPBH29022P15	0.108524258	3.39	5.57	NAG
EPBH29022P56	0.16217126	4.95	5.69	PAG
EPBH29022P72	0.12717899	3.65	5.70	NAG
EPBH29022P87	0.202702135	6.05	5.95	PAG
EPBH29024P68	0.228133328	7.00	5.20	PAG
EPBH29024P70	0.241016591	7.53	6.07	PAG
EPBH29024P84	0.170953403	5.24	5.70	PAG
EPBH29024P87	0.110051058	3.44	5.45	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH29024P99	0.173512584	5.17	5.19	PAG
EPBH29022P11	0.124554655	3.89	5.94	NAG
EPBH29022P25	0.208929652	6.53	5.70	PAG
EPBH29024P13	0.142498349	4.25	5.20	NAG
EPBH29024P32	0.176053508	5.50	5.33	PAG
EPBH29024P34	0.169222259	4.04	6.19	PAG
EPBH29024P50	0.143490791	3.74	5.95	NAG
EPBH29024P52	0.184929861	5.78	5.95	PAG
EPBH29024P54	0.221101906	5.96	5.70	PAG
EPBH29024P91	0.183875504	5.02	7.19	PAG
EPBH29024P96	0.15391831	4.17	7.20	PAG
EPBH29024P106	0.161514335	5.05	5.57	PAG
EPBH29024P109	0.15663334	4.61	5.97	PAG
EPBH29024P116	0.192400082	5.21	6.45	PAG
EPBH29024P117	0.144821638	4.53	6.07	NAG
EPBH29024P1	0.093163132	2.91	6.59	NAG
EPBH29024P3	0.089356403	2.76	5.53	NAG
EPBH29024P9	0.094001045	2.94	5.05	NAG
EPBH29024P17	0.168416622	5.26	5.39	PAG
EPBH29024P19	0.128496097	4.02	5.58	NAG
EPBH29024P36	0.193459366	6.04	6.68	PAG
EPBH29024P38	0.123247797	3.74	5.40	NAG
EPBH29024P78	0.216563944	6.77	7.21	PAG
EPBH29024P134	0.142015064	4.44	5.62	NAG
EPBH29024P147	0.17034001	5.32	6.67	PAG
EPBH29024P152	0.130966679	4.09	4.89	NAG
EPBH29025P36F	0.1	3.13	7.75	NAG
EPBH29025P68F	0.2	6.25	5.94	PAG
EPBH29025P31F	0.12	2.81	8.40	NAG
EPBH29025P64F	0.13	4.06	7.36	NAG
EPBH29025P29F	0.23	7.19	6.71	PAG
EPBH29025P61F	0.08	2.50	7.06	NAG
EPBH29025P27F	0.16	5.00	6.58	PAG
EPBH29025P14F	0.19	5.94	6.71	PAG
EPBH29025P16F	0.24	7.50	6.64	PAG
EPBH29025P20F	0.12	3.75	6.35	NAG
EPBH29025P84F	0.17	5.31	5.63	PAG
EPBH29025P82F	0.24	7.50	5.58	PAG
EPBH29025P108F	0.15	4.38	5.64	NAG
EPBH29025P106F	0.14	4.38	4.85	NAG
EPBH29025P103F	0.16	5.00	5.64	PAG
EPBH29025P101F	0.15	4.06	5.48	NAG
EPBH29025STD01	0.55	16.56	41.83	PAG
EPBH29025A15	0.37	11.25	5.60	PAG
EPBH29025A19	0.16	4.69	5.58	PAG
EPBH29025P143F	0.16	4.69	6.85	PAG
EPBH29025P150F	0.28	8.13	5.77	PAG
EPBH29025P153F	0.09	2.50	5.13	NAG
EPBH29025P194F	0.03	0.94	5.00	NAG
EPBH29025P199F	0.07	2.19	5.64	NAG
EPBH29025P217F	0.12	3.75	5.77	NAG
EPBH29025P233F	0.17	4.69	5.46	PAG
EPBH29025P235F	0.14	4.06	4.52	NAG
EPBH29025STD02	0.54	16.88	41.42	PAG
EPBH29026B17F	0.11	3.44	8.21	NAG
EPBH29026P91F	0.1	3.13	8.71	NAG
EPBH29026P93F	0.11	3.13	9.90	NAG
EPBH29026P101F	0.08	2.50	7.75	NAG
EPBH29026P104F	0.14	4.06	6.72	NAG
EPBH29026P108F	0.16	4.69	7.25	PAG
EPBH29026P112F	0.22	6.56	7.96	PAG
EPBH29026P116F	0.1	3.13	9.61	NAG
EPBH29026P123F	0.09	2.81	8.96	NAG
EPBH29026P127F	0.11	3.13	7.21	NAG
EPBH29026P137F	0.11	3.44	7.92	NAG
EPBH29026P139F	0.12	3.13	7.46	NAG
EPBH29026P141F	0.11	3.13	7.00	NAG
EPBH29026P150F	0.15	4.38	9.34	NAG
EPBH29026P162F	0.13	3.44	8.54	NAG
EPBH29026P167F	0.15	3.44	6.22	NAG
EPBH29026P169F	0.13	3.75	7.96	NAG
EPBH29026P171F	0.14	4.38	8.54	NAG
EPBH29026STD01	0.51	4.06	41.04	NAG
EPBH29026P2F	0.19	5.94	7.75	PAG
EPBH29026P11F	0.21	6.56	4.70	PAG
EPBH29026P13F	0.15	4.69	6.25	NAG
EPBH29026P6F	0.16	5.00	6.75	PAG
EPBH29026P28F	0.27	8.44	6.03	PAG
EPBH29026P22F	0.15	4.69	6.22	NAG
EPBH29026P3F	0.2	5.63	5.28	PAG
EPBH29026P32F	0.28	8.75	6.97	PAG
EPBH29026P34F	0.29	9.06	4.29	PAG
EPBH29026P40F	0.24	7.50	5.47	PAG
EPBH29026P64F	0.04	0.94	3.77	NAG
EPBH29026P62F	0.16	5.00	4.23	PAG
EPBH29026P82F	0.18	5.00	5.78	PAG
EPBH29026P50F	0.06	1.88	5.25	NAG
EPBH29026P59F	0.09	2.81	6.03	NAG
EPBH29026P89F	0.17	5.31	4.77	PAG
EPBH29026P79F	0.19	5.31	5.25	PAG
EPBH29026P85F	0.2	6.25	4.77	PAG
EPBH29026STD002	0.55	16.25	40.25	PAG
EPBH29027P7F	0.31	9.69	6.22	PAG
EPBH29027P29F	0.15	4.38	6.97	NAG

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH29027P66F	0.11	3.13	7.18	NAG
EPBH29027P120F	0.17	5.00	3.50	PAG
EPBH29027P40F	0.13	3.75	6.00	NAG
EPBH29027P117F	0.1	3.13	8.75	NAG
EPBH29027P20F	0.22	6.56	2.74	PAG
EPBH29027P34F	0.23	7.19	4.98	PAG
EPBH29027P61F	0.11	3.13	4.48	NAG
EPBH29027P113F	0.13	4.06	7.75	NAG
EPBH29027P115F	0.13	4.06	7.46	NAG
EPBH29027P154F	0.11	3.44	6.25	NAG
EPBH29027P151F	0.22	6.88	6.53	PAG
EPBH29027P192F	0.12	3.75	5.20	NAG
EPBH29027P179F	0.23	7.19	5.20	PAG
EPBH29027P187F	0.27	8.44	5.72	PAG
EPBH28002P45F	0.07	2.19	8.42	NAG
EPBH28002P83F	0.14	4.06	7.70	NAG
EPBH28002P49F	0.19	5.63	7.78	PAG
EPBH28002P6F	0.21	6.56	5.81	PAG
EPBH29024P15C	0.11	3.13	6.50	NAG
EPBH29024P15F	0.18	5.00	7.00	PAG
EPBH29024P56C	0.19	5.31	5.50	PAG
EPBH29024P56F	0.11	3.44	5.00	NAG
EPBH29024P73C	0.34	10.63	6.50	PAG
EPBH29024P73F	0.48	14.38	7.25	PAG
EPBH29024P114C	0.13	3.75	6.72	NAG
EPBH29024P114F	0.19	5.31	7.00	PAG
EPBH28002P78F	0.14	4.06	6.57	NAG
EPBH28002P122F	0.23	7.19	8.21	PAG
EPBH28002P39F	0.18	5.31	5.64	PAG
EPBH28002P21F	0.14	4.38	4.49	NAG
EPBH28002STD001	0.55	16.56	44.70	PAG
EPBH29002P89F	0.15	4.69	6.47	NAG
EPBH29002P113F	0.13	4.06	7.75	NAG
EPBH29027P141F	0.15	4.69	7.18	NAG
EPBH29027P158F	0.11	3.44	5.38	NAG
EPBH29022B4C	0.23	6.56	7.16	PAG
EPBH29022B4F	0.28	8.13	7.40	PAG
EPBH29022P85C	0.2	5.63	8.59	PAG
EPBH29022P85F	0.14	4.06	7.99	NAG
EPBH29024P49C	0.18	5.31	7.27	PAG
EPBH29024P49F	0.15	3.75	6.22	NAG
EPBH29027P80F	0.15	4.69	5.58	NAG
EPBH29027P163F	0.08	2.50	5.88	NAG
EPBH29028P139F	0.13	4.06	5.61	NAG
EPBH29028P143F	0.11	3.44	4.57	NAG
EPBH29028P113F	0.19	5.94	4.66	PAG
EPBH29028P123F	0.23	7.19	5.45	PAG
EPBH29028P96F	0.35	10.94	8.12	PAG
EPBH29028P108F	0.18	5.63	4.48	PAG
EPBH29028P90F	0.31	9.38	4.08	PAG
EPBH29028P70C	0.27	8.44	4.36	PAG
EPBH29028P70F	0.25	7.81	4.04	PAG
EPBH29028P92C	0.23	7.19	4.85	PAG
EPBH29028P92F	0.26	8.13	3.96	PAG
EPBH29028P50C	0.21	6.56	6.54	PAG
EPBH29028P50F	0.19	5.94	5.73	PAG
EPBH29028P72F	0.26	8.13	4.72	PAG
EPBH29028P26F	1.09	34.06	10.97	PAG
EPBH29028P48F	0.24	7.50	5.18	PAG
EPBH29028P86	0.64	20.00	37.50	PAG
EPBH29028P08F	0.05	1.56	7.24	NAG
EPBH29028P19F	0.19	4.69	5.90	PAG
EPBH29028B22F	0.05	1.56	6.03	NAG
EPBH29028P36F	0.12	3.75	4.31	NAG
EPBH29028P40F	0.1	3.13	4.57	NAG
EPBH29028P62F	0.13	4.06	4.32	NAG
EPBH29028P64F	0.02	0.63	3.95	NAG
EPBH29028P101F	0	0.00	4.38	NAG
EPBH29028P115F	0.18	5.63	9.41	PAG
EPBH29028P130F	0.19	5.94	3.93	PAG
EPBH28003P114C	0.25	7.81	5.10	PAG
EPBH28003P114F	0.2	6.25	5.20	PAG
EPBH28003P117C	0.31	9.69	4.95	PAG
EPBH28003P117F	0.47	14.69	5.14	PAG
EPBH28003P124C	0.29	8.75	4.92	PAG
EPBH28003P124F	0.36	10.63	6.09	PAG
EPBH28003P94C	0.11	3.44	4.21	NAG
EPBH28003P94F	0.18	5.63	4.53	PAG
EPBH28003P96C	0.11	3.44	5.73	NAG
EPBH28003P96F	0.1	3.13	5.26	NAG
EPBH28003P80F	0.17	5.31	8.08	PAG
EPBH28003P78F	0.27	8.44	4.79	PAG
EPBH28003P92F	0.18	5.63	9.02	PAG
EPBH28003P106F	0.18	5.63	6.99	PAG
EPBH28003P3F	0.24	7.50	4.08	PAG
EPBH28003P21F	0.15	4.69	4.27	NAG
EPBH28003P29F	0.09	2.81	4.17	NAG
EPBH28003P32F	0.11	3.44	4.23	NAG
EPBH28003P37F	0.13	3.75	6.16	NAG
EPBH28003P40F	0.1	2.81	17.45	NAG
EPBH28003STD01	0.53	16.25	43.63	PAG
EPBH28003P49F	0.11	3.44	5.13	NAG
EPBH28003P99F	0.1	3.13	6.57	NAG
EPBH28003P56F	0.1	3.13	5.22	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH28003P65F	0.1	3.13	10.05	NAG
EPBH28003P67F	0.08	2.50	6.25	NAG
EPBH28003P83F	0.17	4.69	5.57	PAG
EPBH28004P157F	0.2549989	7.97	4.19	PAG
EPBH28004P160C	0.343161043	10.72	5.05	PAG
EPBH28004P160F	0.19783802	6.18	5.43	PAG
EPBH28004STD01	0.52005539	16.25	41.83	PAG
EPBH28004P164C	0.244264238	7.49	8.71	PAG
EPBH28004P164F	0.270668305	8.19	8.00	PAG
EPBH28004P164F REP	0.247647897	7.74	7.99	PAG
EPBH28004P62C	0.089790492	2.81	5.07	NAG
EPBH28004P62F	0.189912967	5.92	5.82	PAG
EPBH28004P78C	0.170055722	5.19	4.94	PAG
EPBH28004P78F	0.112622923	3.52	5.68	NAG
EPBH28004P82F	0.110523155	3.45	5.57	NAG
EPBH28004P84F	0.131518149	4.11	6.00	NAG
EPBH28004P90C	0.116571996	3.64	5.84	NAG
EPBH28004P95C	0.08887068	2.78	5.18	NAG
EPBH28004P95F	0.329255908	10.29	5.42	PAG
EPBH28004P97F	0.205886722	6.43	7.75	PAG
EPBH28004P102F	0.228943554	7.15	6.63	PAG
EPBH28004P108C	0.183708599	5.74	6.37	PAG
EPBH28004P108F	0.205798569	6.43	4.92	PAG
EPBH28004P123F	0.086268511	2.70	5.86	NAG
EPBH28004P126F	0.155976521	4.87	4.81	PAG
EPBH28004P139F	0.132476451	4.14	4.81	NAG
EPBH28004STD02	0.525172063	16.13	42.62	PAG
EPBH28004P142F	0.355936108	11.12	4.71	PAG
EPBH28004P8C	0.151161956	4.72	6.22	PAG
EPBH28004P8F	0.236829946	7.12	5.74	PAG
EPBH28004P12F	0.147807465	4.62	5.61	NAG
EPBH28004P15F	0.121729721	3.80	5.68	NAG
EPBH28004P26C	0.252454084	7.61	7.73	PAG
EPBH28004P26F	0.100258333	3.13	6.17	NAG
EPBH28004P34F	0.120408615	3.76	5.33	NAG
EPBH28004P40C	0.124910696	3.90	7.67	NAG
EPBH28004P40F	0.14	3.98	8.13	NAG
EPBH28004STD03	0.535240093	16.22	41.86	PAG
EPBH28004P44F	0.101021178	3.16	6.41	NAG
EPBH28004P58F	0.132930025	4.15	6.19	NAG
EPBH28004P60F	0.092305953	2.88	5.26	NAG
EPBH28004P104F	0.155794155	4.87	5.13	PAG
EPBH28004P149C	0.208029328	6.19	6.15	PAG
EPBH280RSTD02	0	0.00	7.90	NAG
EPBH280B11C	0.2869374	8.24	6.78	PAG
EPBH280B27F	0	0.00	6.42	NAG
EPBH280R18F	0.089545161	2.80	5.73	NAG
EPBH280R20F	0.071034414	1.99	5.63	NAG
EPBH280R30C	0.139558659	4.36	8.17	NAG
EPBH280R30F	0.197828052	6.07	7.96	PAG
EPBH280R42F	0	0.00	4.98	NAG
EPBH280R54F	1.422236974	44.25	7.59	PAG
EPBH280R59F	0.187942059	5.75	8.28	PAG
EPBH280RSTD01	0.533513127	16.23	45.65	PAG
EPBH280R61C	0.096569676	3.02	4.49	NAG
EPBH280R61F	0.160598277	5.02	5.51	PAG
EPBH280R70F	0.004152855	0.13	6.06	NAG
EPBH280R89F	0	0.00	5.34	NAG
EPBH280R94F	0	0.00	5.19	NAG
EPBH280R102F	0.052179768	1.63	12.33	NAG
EPBH280R106C	0.116363734	3.64	7.70	NAG
EPBH280R106F	0.183837231	5.72	7.29	PAG
EPBH280R108F	0.143619391	4.49	5.35	NAG
EPBH280R129F	0.183813389	5.70	7.31	PAG
EPBH280R5F	0.123045574	3.76	4.20	NAG
EPBH280R78F	0.035829378	1.12	4.58	NAG
EPBH280R96C	0.167918787	5.25	4.50	PAG
EPBH280R96F	0.779226669	24.35	3.89	PAG
EPBH280A6C	0.14655658	4.58	6.23	NAG
EPBH28005P28C	0.140678274	4.00	5.53	NAG
EPBH28005P28F	0.171889201	4.90	10.25	PAG
EPBH28005P30C	0.141570636	4.42	7.46	NAG
EPBH28005P30F	0.178776206	5.59	6.89	PAG
EPBH28005P32F	0.128372498	4.01	6.79	NAG
EPBH28005P34F	0.120789162	3.72	7.00	NAG
EPBH28005P39F	0.091462659	2.86	6.54	NAG
EPBH28005P48C	0.194046665	6.06	6.94	PAG
EPBH28005P48F	0.119399311	3.73	7.81	NAG
EPBH28005STD01	0.546946795	15.76	43.76	PAG
EPBH28005P50C	0.044763853	1.40	6.67	NAG
EPBH28005P50F	0.145744968	4.55	6.44	NAG
EPBH28005P52F	0.153515932	4.73	6.51	PAG
EPBH28005P56F	0.10409643	3.25	7.31	NAG
EPBH28005P68C	0.068705212	2.09	7.67	NAG
EPBH28005P68F	0.129480989	4.05	11.83	NAG
EPBH28005P70C	0.092052851	2.88	6.55	NAG
EPBH28005P70F	0.051361802	1.61	10.29	NAG
EPBH28005P72F	0	0.00	9.44	NAG
EPBH28005P75F	0.123895159	3.87	6.91	NAG
EPBH28005P24F	0.13983515	4.22	6.82	NAG
EPBH28005P44F	0.249600634	7.80	9.75	PAG
EPBH28005P59F	0.148621869	4.64	8.34	NAG
EPBH28005P64F	0.157313307	4.89	11.81	PAG
EPBH28005STD02	0.531282361	15.68	42.04	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH28005P79F	0.110555977	3.41	5.14	NAG
EPBH28005P95F	0.187165962	5.55	9.53	PAG
EPBH28005P115C	0.076563808	2.32	10.19	NAG
EPBH28005P115F	0.138612037	4.33	8.94	NAG
EPBH28005P135F	0	0.00	9.81	NAG
EPBH28009P29F	0.05343116	1.67	5.81	NAG
EPBH28009P71F	0.135129154	3.99	6.26	NAG
EPBH28009P73F	0.045708248	1.43	5.40	NAG
EPBH28009P109F	0.004725717	0.15	7.90	NAG
EPBH28009P115F	0.187285828	5.85	8.37	PAG
EPBH28009P153F	0.170567928	5.33	6.41	PAG
EPBH28009STD01	0.511927938	15.81	40.14	PAG
EPBH28009P4F	0.145319746	4.54	6.94	NAG
EPBH28009P6F	0.143958435	4.50	6.20	NAG
EPBH28009P8F	0.139306049	4.35	6.24	NAG
EPBH28009P31F	0.040665803	1.27	8.09	NAG
EPBH28009P34F	0.020726386	0.65	8.13	NAG
EPBH28009P48F	0.129631784	4.05	7.33	NAG
EPBH28009P50F	0.105105054	3.28	6.66	NAG
EPBH28009P52F	0.161068092	5.03	6.41	PAG
EPBH28009P75F	0.022454812	0.70	7.78	NAG
EPBH28009P79C	0.150258894	4.70	7.26	PAG
EPBH28009P79F	0.21462656	6.71	8.09	PAG
EPBH28009P117F	0.335259815	9.99	4.26	PAG
EPBH28009P119F	0.094409925	2.86	4.36	NAG
EPBH28009P124F	0.088721283	2.77	6.68	NAG
EPBH28001P8F	0.168692499	5.27	7.26	PAG
EPBH28001P15F	0.156710188	4.75	10.09	PAG
EPBH28001P17F	0.113718649	3.55	6.70	NAG
EPBH28001P37F	0.03230698	1.01	6.67	NAG
EPBH28001STD01	0.522889947	16.21	44.25	PAG
EPBH28001P40F	0.101850789	3.18	12.94	NAG
EPBH28001P45F	0.080497726	2.51	11.07	NAG
EPBH28001P69F	0	0.00	7.16	NAG
EPBH28001P72F	0.036486601	1.14	5.40	NAG
EPBH28001P2F	0.076087316	1.95	5.54	NAG
EPBH28001P4F	0.04358267	1.36	5.12	NAG
EPBH28001P26F	0.095744445	2.53	5.23	NAG
EPBH28001P51F	0.174414379	5.45	10.40	PAG
EPBH28001P58F	0.115630866	3.61	5.66	NAG
EPBH28001P89F	0.133664502	4.18	6.28	NAG
EPBH28001P102F	0.120975751	3.78	8.20	NAG
EPBH275RSTD01	0.539829429	16.09	44.65	PAG
EPBH275A10F	0.152588307	4.59	7.81	PAG
EPBH275R21F	0.091762355	2.87	6.73	NAG
EPBH275R23F	0.17558948	5.38	8.08	PAG
EPBH275R27F	0.194316554	5.84	7.99	PAG
EPBH275R51F	0.167065131	5.22	7.87	PAG
EPBH275R53F	0	0.00	5.01	NAG
EPBH28001P6F	0.121553209	3.52	6.05	NAG
EPBH28001P30F	0.142836266	4.46	6.31	NAG
EPBH28001P48F	0.027081862	0.85	6.08	NAG
EPBH28001P79F	0	0.00	5.46	NAG
EPBH28001P93F	0.116524107	3.64	6.73	NAG
EPBH28001P97F	0.097665647	3.05	7.35	NAG
EPBH28001P100F	0.193539449	6.05	6.63	PAG
EPBH28001P109F	0.148050732	4.63	7.87	NAG
EPBH28001STD02	0.53149838	16.08	43.01	PAG
EPBH275A14F	0.106167501	3.32	5.93	NAG
EPBH275R10F	0.173464863	5.42	8.85	PAG
EPBH275R13F	0.042948701	1.34	5.80	NAG
EPBH275R18F	0.244442134	7.39	8.41	PAG
EPBH275R32F	0.093392996	2.80	5.65	NAG
EPBH275R35F	0.038950064	1.22	5.12	NAG
EPBH275R37F	0.314304612	9.82	5.37	PAG
EPBH275R55F	0.107270233	3.29	13.06	NAG
EPBH275R59F	0.12089914	3.78	6.61	NAG
EPBH275R63F	0.213372433	6.67	6.04	PAG
EPBH275R65F	0.137149287	4.13	5.05	NAG
EPBH28006P18F	0.174432891	5.45	5.92	PAG
EPBH28006P21F	0.141743161	4.40	7.08	NAG
EPBH28006B25F	0.141676442	4.35	7.10	NAG
EPBH28006P61F	0.175722007	5.49	6.06	PAG
EPBH28006P114F	0.133287839	4.17	7.80	NAG
EPBH28010P18F	0.127656171	3.94	5.76	NAG
EPBH28010P21F	0.175907	5.50	4.76	PAG
EPBH28010P30F	0.103114983	3.06	4.77	NAG
EPBH28010P34F	0.063316179	1.96	4.90	NAG
EPBH28010P56F	0.108312883	3.38	5.21	NAG
EPBH28010P61F	0.114014149	3.56	4.96	NAG
EPBH28010P45F	0.10055057	3.14	5.01	NAG
EPBH28010P84F	0.091000435	2.76	4.86	NAG
EPBH28010P101F	0.104400041	3.26	4.91	NAG
EPBH28010P105F	0.105576862	3.11	5.53	NAG
EPBH28010P130F	0.184365486	5.64	7.04	PAG
EPBH28010P141F	0.414617886	12.84	4.51	PAG
EPBH28010P145F	0.076167941	2.06	3.91	NAG
EPBH28010P149F	0.105915449	3.31	4.24	NAG
EPBH28006A20	0.188482399	5.36	6.43	PAG
EPBH28006P36	0.131037	4.09	5.96	NAG
EPBH28006P125	0.968805565	29.97	5.28	PAG
EPBH28006P139	0.415016459	12.34	4.90	PAG
EPBH28006A33	0	0.00	10.49	NAG
EPBH28006P39	0.187308704	5.85	26.50	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH28006P56	0.122312003	3.56	21.17	NAG
EPBH28006P133	0.166465799	4.92	5.57	PAG
EPBH28006P138	0.532060803	16.63	5.69	PAG
EPBH280077P6	0.099412907	3.11	4.84	NAG
EPBH280077P17	0.261004228	7.73	6.62	PAG
EPBH280077P52	0.237074869	7.41	5.39	PAG
EPBH280077P58	0.155968263	4.80	5.78	PAG
EPBH280077P85	0.120122838	3.64	6.89	NAG
EPBH280077P98	0.118540936	3.70	5.41	NAG
EPBH280077A4	0.213460237	6.40	5.90	PAG
EPBH280077A14	0.12471612	3.85	6.67	NAG
EPBH280077P65	0.199024699	6.22	6.17	PAG
EPBH28009STD02	0.517760005	15.94	41.34	PAG
EPBH280088P5	0.25	7.81	10.16	PAG
EPBH280088P24	0.17	5.00	7.79	PAG
EPBH280088P47	0.16	5.00	8.52	PAG
EPBH280088P74	0.18	5.63	6.95	PAG
EPBH280088P94	0.11	3.13	7.88	NAG
EPBH280088P108	0.17	4.38	8.77	PAG
EPBH280088P16	0.16	4.06	9.67	PAG
EPBH280088B9	0.14	3.75	9.55	NAG
EPBH28008P55F	0.16	5.00	10.78	PAG
EPBH28008P81F	0.15	4.38	11.33	NAG
EPBH28008P103F	0.12	3.75	9.14	NAG
EPBH28011B5F	0.14	4.06	8.95	NAG
EPBH28011B9F	0.15	4.69	6.95	NAG
EPBH28011B13F	0.18	5.31	8.81	PAG
EPBH28011P44F	0.18	5.31	7.14	PAG
EPBH28011P47F	0.19	5.94	7.22	PAG
EPBH28011P49F	0.14	4.38	9.32	NAG
EPBH28011P90F	0.43	13.44	11.06	PAG
EPBH28009P22F	0.24605453	7.39	7.80	PAG
EPBH28009P27F	0.096881443	2.85	6.19	NAG
EPBH28009P66F	0.22355148	5.76	6.67	PAG
EPBH28009P44F	0.098642478	3.05	6.64	NAG
EPBH28009P46F	0.0918853	2.87	5.45	NAG
EPBH28009P95F	0.128403814	3.83	5.95	NAG
EPBH28009STD03	0.52959504	15.70	54.30	NAG
EPBH28009P137C	0.157657642	4.93	7.04	PAG
EPBH28009P137F	0.128323538	4.01	7.05	NAG
EPBH28009P139C	0	0.00	8.13	NAG
EPBH28009P139F	0	0.00	7.96	NAG
EPBH28011P3C	0.13	3.75	9.28	NAG
EPBH28011P3F	0.15	4.69	7.72	NAG
EPBH28012P7F	0.24	7.19	9.24	PAG
EPBH28012P22F	0.21	5.31	9.83	PAG
EPBH28012P26F	0.24	7.19	7.07	PAG
EPBH28012P41F	0.12	3.75	7.21	NAG
EPBH28012P43F	0.16	5.00	7.69	PAG
EPBH28012P45F	0.13	3.75	8.69	NAG
EPBH28012001	0.53	15.63	42.66	PAG
EPBH28012P87F	0.26	7.50	5.70	PAG
EPBH28012P90F	0.13	3.75	5.91	NAG
EPBH28012P92F	0.39	11.25	4.86	PAG
EPBH28013P1F	0.13	4.06	10.79	NAG
EPBH28013P8F	0.22	6.56	8.82	PAG
EPBH28013P32F	0.17	5.00	7.85	PAG
EPBH28013P28F	0.1	2.50	9.16	NAG
EPBH28013P48F	0.14	4.06	9.35	NAG
EPBH28013P55F	0	0.00	9.62	NAG
EPBH28013P53F	0.04	1.25	7.94	NAG
EPBH28013P79F	0.13	4.06	7.47	NAG
EPBH28013P128F	0.14	4.06	10.59	NAG
EPBH28012P1F	0.14	3.75	13.27	NAG
EPBH28012P20F	0.04	1.25	9.26	NAG
EPBH28012P39F	0.25	7.19	7.06	PAG
EPBH28013P84F	0.07	2.19	7.18	NAG
EPBH28013P107F	0.08	2.19	9.36	NAG
EPBH28013P109C	0.12	3.75	8.73	NAG
EPBH28012P36F	0.12	3.75	9.20	NAG
EPBH28012P47F	0.11	3.13	8.47	NAG
EPBH28013P11F	0.15	4.06	10.55	NAG
EPBH28013P37F	0.14	3.75	9.18	NAG
EPBH28013P63F	0.05	1.56	10.22	NAG
EPBH28013001	0.53	15.94	44.57	PAG
EPBH28013P60F	0.14	4.06	9.66	NAG
EPBH28013P89F	0.16	4.69	9.58	PAG
EPBH28020P80F	0.16	4.69	11.64	PAG
EPBH28020P93F	0.05	1.56	9.42	NAG
EPBH28020001	0.52	15.94	42.63	PAG
EPBH28020P96F	0.27	8.13	9.28	PAG
EPBH28020P99F	0.26	7.19	11.57	PAG
EPBH28013P112F	0.13	3.75	8.13	NAG
EPBH28013P114F	0.39	10.94	9.23	PAG
EPBH28013P116F	0.11	3.44	9.29	NAG
EPBH28020P7C	0.09	2.19	6.51	NAG
EPBH28020P7F	0.29	8.13	7.41	PAG
EPBH28020P9F	0.38	11.88	6.33	PAG
EPBH28020P11C	0.79	24.69	9.56	PAG
EPBH28020P11F	0.1	2.19	7.23	NAG
EPBH28020P13C	0.1	3.13	7.32	NAG
EPBH28020P13F	0	0.00	7.89	NAG
EPBH28020004	0.53	15.94	43.75	PAG
EPBH28020P24F	0.24	6.88	6.48	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH28020P26F	0.06	1.56	6.88	NAG
EPBH28020P28F	0	0.00	6.26	NAG
EPBH28014P3F	0.13	4.06	8.43	NAG
EPBH28014P11F	0.1	3.13	7.67	NAG
EPBH28014P14F	0.13	3.75	7.21	NAG
EPBH28014P22F	0.09	2.81	9.69	NAG
EPBH28014P25F	0.11	3.44	6.42	NAG
EPBH28014P30F	0.22	6.25	8.43	PAG
EPBH28014001	0.54	16.56	41.95	PAG
EPBH28014P32F	0.12	3.44	7.25	NAG
EPBH28014P34F	0.12	3.75	7.58	NAG
EPBH28014P44C	0.01	0.31	8.22	NAG
EPBH28014P44F	0.04	1.25	8.22	NAG
EPBH28014P47C	0.13	4.06	5.55	NAG
EPBH28014P49C	0.11	3.44	6.83	NAG
EPBH28014P49F	0.12	3.75	6.51	NAG
EPBH28014P52F	0.79	24.38	5.75	PAG
EPBH28015P37F	0.18	5.31	8.22	PAG
EPBH28015P68F	0.14	4.06	8.52	NAG
EPBH28015001	0.53	16.56	42.34	PAG
EPBH28015P72F	0.24	7.19	7.03	PAG
EPBH28015P89F	0.12	3.13	6.75	NAG
EPBH28015P29F	0.15	4.38	8.94	NAG
EPBH28015P35F	0.12	3.75	11.15	NAG
EPBH28015B12F	0.21	6.25	7.93	PAG
EPBH28015002	0.54	15.63	43.88	PAG
EPBH28015B18F	0.15	4.06	8.69	NAG
EPBH28015B24F	0.12	3.44	8.64	NAG
EPBH28015P41F	0.1	3.13	7.41	NAG
EPBH28015A26F	0.16	5.00	6.20	PAG
EPBH28015B3F	0.58	18.13	5.68	PAG
EPBH28015B6F	0.07	2.19	7.12	NAG
EPBH28015B8F	0.2	6.25	12.13	PAG
EPBH28015B10F	0.33	10.00	14.04	PAG
EPBH28016P27F	0.24	7.19	7.75	PAG
EPBH28016P30F	0.22	6.88	11.70	PAG
EPBH28016P32F	0.26	8.13	9.42	PAG
EPBH28016001	0.52	16.25	42.55	PAG
EPBH28016P52F	0.27	8.13	7.49	PAG
EPBH28016P55F	0.22	6.56	9.64	PAG
EPBH28016P73F	0.21	6.56	6.84	PAG
EPBH28016P75F	0.27	8.44	8.14	PAG
EPBH28016P77F	0.1	3.13	9.91	NAG
EPBH28016P99F	0.2	6.25	8.18	PAG
EPBH28016P101F	0.19	5.94	8.77	PAG
EPBH28016P50F	0.26	8.13	6.48	PAG
EPBH28015P63F	0.17	4.69	7.79	PAG
EPBH28015P65F	0.25	7.50	7.54	PAG
EPBH28015P83F	0.23	7.19	6.68	PAG
EPBH28015P86F	1.07	33.44	17.67	PAG
EPBH28016002	0	0.00	7.72	NAG
EPBH28016B3F	0.13	3.75	7.86	NAG
EPBH28016B5F	0.1	2.81	7.49	NAG
EPBH28016B9F	0.04	1.25	7.88	NAG
EPBH28016P66F	0.47	14.06	8.65	PAG
EPBH28016P89F	0.01	0.00	6.20	NAG
EPBH28017P38F	0.27	8.44	7.03	PAG
EPBH28017001	0.52	15.31	40.67	PAG
EPBH28017P40F	0.5	15.31	8.09	PAG
EPBH28017P63F	0.12	3.75	8.60	NAG
EPBH28017P65F	0.16	4.69	8.60	PAG
EPBH28017P52F	0.14	4.38	7.26	NAG
EPBH28017P86F	0.07	2.19	8.85	NAG
EPBH28017P90F	0.08	2.50	12.27	NAG
EPBH28017003	0.53	15.63	42.59	PAG
EPBH28017P92F	2.15	66.88	28.08	PAG
EPBH28017P103F	0.34	10.63	6.94	PAG
EPBH28017P109F	0.04	1.25	12.96	NAG
EPBH270R01F	0.08	2.50	9.99	NAG
EPBH270R03F	0.11	3.44	8.81	NAG
EPBH270R05F	0.19	5.63	9.40	PAG
EPBH270R07F	0.18	5.63	10.27	PAG
EPBH270R10F	0.17	4.69	9.01	PAG
EPBH270R12F	0.16	4.69	9.23	PAG
EPBH270R15F	0	0.00	8.56	NAG
EPBH270R28F	0.12	3.44	8.56	NAG
EPBH270R30F	0.31	9.06	8.05	PAG
EPBH270R001	0.52	15.63	43.20	PAG
EPBH270R32F	0.12	3.75	12.32	NAG
EPBH270R34F	0.1	2.81	8.43	NAG
EPBH270R37F	0	0.00	10.44	NAG
EPBH270R41F	0.08	2.19	21.04	NAG
EPBH270R42F	0.13	4.06	23.65	NAG
EPBH270R53C	0	0.00	5.53	NAG
EPBH270R55F	0.13	3.75	7.86	NAG
EPBH270R57F	0.11	3.44	7.66	NAG
EPBH270R59F	0	0.00	11.51	NAG
EPBH28017P02F	0.15	3.75	7.19	NAG
EPBH28017P14F	0.2	6.25	9.29	PAG
EPBH28017P16F	0.28	8.44	10.32	PAG
EPBH28017P25F	0.1	2.81	7.36	NAG
EPBH28017P27F	0.15	4.69	6.46	NAG
EPBH28017P50F	0.12	3.44	7.75	NAG
EPBH28017006	0.52	16.25	42.43	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH28017P76F	0.02	0.63	6.68	NAG
EPBH28017P79F	0	0.00	6.75	NAG
EPBH28018P18F	1.03	32.19	14.46	PAG
EPBH28018P28F	0	0.00	7.08	NAG
EPBH28018P50F	0.14	4.06	7.30	NAG
EPBH28018P52F	0.16	5.00	8.30	PAG
EPBH28018P61F	0.406659379	12.30	10.96	PAG
EPBH28018P69F	0	0.00	4.60	NAG
EPBH28018P81F	0.158641772	4.73	12.04	PAG
EPBH28018002	0.534923934	16.21	42.53	PAG
EPBH28018P92F	0.162279681	5.07	8.92	PAG
EPBH28018P103F	0.222662524	6.45	4.08	PAG
EPBH28019P3F	0.301778592	8.31	4.67	PAG
EPBH28019P9F	0.03993862	1.25	5.15	NAG
EPBH28019P26F	0.198788439	5.92	7.06	PAG
EPBH28019P32F	0.559085038	17.47	11.04	PAG
EPBH28019P34F	0.353964059	10.90	7.40	PAG
EPBH28019001	0.540681388	16.15	39.78	PAG
EPBH28019P49F	0.386951696	12.09	4.02	PAG
EPBH28019P56F	0.408151362	12.75	5.99	PAG
EPBH28019P71F	0.195756662	6.12	6.70	PAG
EPBH28019P91F	0.186871295	5.77	8.40	PAG
EPBH28019P105F	0.176941547	5.29	5.95	PAG
EPBH28018P08F	0.087445011	2.70	8.78	NAG
EPBH28018P12F	0.017762621	0.56	9.17	NAG
EPBH28019P61F	0.184005912	5.75	5.29	PAG
EPBH28019P99F	0.030851424	0.96	8.53	NAG
EPBH28018005	0.534228183	16.39	39.04	PAG
EPBH27501P50F	0.086471539	2.70	11.55	NAG
EPBH27501P52F	0.003511167	0.00	5.02	NAG
EPBH27501P68C	0.193500218	6.05	7.66	PAG
EPBH27501P68F	0.666260549	20.82	4.67	PAG
EPBH27501P78C	0.36123262	10.90	6.07	PAG
EPBH27501P78F	0.221953526	6.04	8.46	PAG
EPBH27501001	0.538397077	16.51	39.07	PAG
EPBH27501P80F	0.367986296	10.99	5.45	PAG
EPBH27501P82F	0.163852753	5.12	5.80	PAG
EPBH27501P84F	0.119817076	3.15	5.30	NAG
EPBH27501P110F	0.095281576	2.55	5.20	NAG
EPBH27501P112F	0.237646021	6.59	4.73	PAG
EPBH27501P114F	0.203913943	5.99	4.50	PAG
EPBH27501P142F	0.554738492	17.34	5.66	PAG
EPBH27501P144F	0.171127386	4.73	6.73	PAG
EPBH27501P174F	0.131908118	3.23	6.69	NAG
EPBH27501P9F	0.094997227	2.97	4.99	NAG
EPBH27501P11F	0.146246129	4.40	6.97	NAG
EPBH27501P22F	0.106581838	3.23	5.95	NAG
EPBH27501P29F	0.36488188	10.84	26.42	PAG
EPBH27501P30F	0.170982678	4.89	14.92	NAG
EPBH27501P54F	0.036251158	1.12	6.30	NAG
EPBH27501P70F	0.26342761	8.23	20.31	PAG
EPBH27501P73F	0.037161434	0.90	5.08	NAG
EPBH27501P98F	0.710828133	21.78	4.62	PAG
EPBH27501002	0.540909188	16.42	40.09	PAG
EPBH27501P105F	0.219481888	6.86	4.24	PAG
EPBH27501P126F	0.101560386	3.01	7.30	NAG
EPBH27501P137F	0.385735776	11.88	4.47	PAG
EPBH27501P154F	0.186955584	5.45	5.93	PAG
EPBH27501P169F	0.13104381	4.01	6.19	NAG
EPBH27501P183F	0.166039543	5.11	5.49	PAG
EPBH27501P199F	0.118733254	3.65	6.20	NAG
EPBH27501P202F	0.118028229	3.50	53.53	NAG
EPBH27501P229F	0.112100206	3.37	55.53	NAG
EPBH27501P18F	0.118226247	3.34	12.77	NAG
EPBH27501P34F	0.088481596	2.77	12.17	NAG
EPBH27501P56F	0.166046979	5.08	5.50	PAG
EPBH27501P116F	0.087771857	2.74	7.79	NAG
EPBH27501003	0.535023309	16.32	39.47	PAG
EPBH27501P146F	0.108333213	3.31	6.08	NAG
EPBH27501P180F	0.212276441	6.41	4.92	PAG
EPBH27501P208F	1.819411227	56.54	15.25	PAG
EPBH28021B15F	0.149887554	3.87	5.75	NAG
EPBH28021B19F	0.116416403	3.56	5.38	NAG
EPBH28021P9F	0.123156127	3.20	6.11	NAG
EPBH28021P14F	0.415859908	12.60	4.00	PAG
EPBH28021P19F	0.360422007	11.26	4.24	PAG
EPBH27502P75F	0.107397727	3.36	7.74	NAG
EPBH27502P85F	0.115171656	3.53	8.87	NAG
EPBH27502P221F	0.296468777	9.26	10.97	PAG
EPBH27502P277F	0.141576965	4.42	8.23	NAG
EPBH27001P15F	0.163787157	4.67	7.87	PAG
EPBH27001P19F	0.122233928	3.09	6.57	NAG
EPBH27001P23F	0.112824905	3.39	14.75	NAG
EPBH27001P42F	0.207774502	6.49	6.31	PAG
EPBH27001P54F	0.185977313	5.81	9.68	PAG
EPBH27001P57F	0.207129654	5.71	6.60	PAG
EPBH27001P60F	0.162120007	5.07	8.47	PAG
EPBH27001P68F	0.10465023	3.04	7.39	NAG
EPBH27001P85F	0.105367241	3.27	8.13	NAG
EPBH27001P91F	0.12363979	3.80	7.06	NAG
EPBH27001P113F	0.128656109	4.02	7.05	NAG
EPBH27001P142F	0.189618065	5.77	10.18	PAG
EPBH27001P146F	0.076039309	2.38	7.77	NAG
EPBH27001P28F	0.067507791	2.07	7.04	NAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH27001P72F	0.184714625	5.41	16.18	PAG
EPBH27001P127F	0.085397584	2.44	17.77	NAG
EPBH27001P130F	0.114165081	3.54	7.66	NAG
EPBH27002P15F	0.015056031	0.05	9.71	NAG
EPBH27002P21F	0.139666209	3.80	7.60	NAG
EPBH27002P65F	0.028605483	0.59	7.97	NAG
EPBH27002P71F	0.13030562	3.87	6.70	NAG
EPBH27002P75F	0.178351259	4.86	7.69	PAG
EPBH27002P82F	0.06253106	1.77	9.84	NAG
EPBH27002P158F	0.21661579	6.35	6.26	PAG
EPBH27002P161F	0.098978787	3.09	6.74	NAG
EPBH27002P197F	0.174964253	4.70	8.52	PAG
EPBH27002P201F	0.170636041	4.88	7.40	PAG
EPBH27002P208F	0.014199061	0.36	6.85	NAG
EPBH28018P40F	0.443199079	13.51	6.59	PAG
EPBH28018P42F	0.075276143	2.04	5.73	NAG
EPBH28018006	0	0.00	41.32	NAG
EPBH28018P67F	0.071602923	1.97	5.07	NAG
EPBH27501P294F	0.131900189	3.61	6.78	NAG
EPBH27502P28F	0.155232631	4.77	8.74	PAG
EPBH27502P32F	0.158445034	4.45	7.24	PAG
EPBH27502P67F	0.151918539	4.54	5.91	PAG
EPBH27502P98F	0.132448803	3.98	5.74	NAG
EPBH27502P137F	0.13085079	3.72	7.90	NAG
EPBH27502P140F	0.150482732	4.70	8.12	PAG
EPBH27502P144F	0.123544949	3.50	8.20	NAG
EPBH27502P185F	0.0974072	3.04	7.75	NAG
EPBH27502P188F	0.133469187	4.14	7.09	NAG
EPBH27502P237F	0.074687634	2.33	8.21	NAG
EPBH27502P245F	0.090399527	2.82	7.82	NAG
EPBH27502P201F	0.112686648	3.52	5.12	NAG
EPBH27502P263F	0.092979967	2.91	6.04	NAG
EPBH27502P266F	0.155129589	4.83	5.76	PAG
EPBH27502P276F	0.187553871	5.86	6.57	PAG
EPBH27502P291F	0.10829748	3.38	8.24	NAG
EPBH27502P325F	0.167573618	5.17	7.07	PAG
EPBH27503P6F	0.202729685	6.04	6.36	PAG
EPBH27503P35F	0.185778509	5.81	8.47	PAG
EPBH27503P12F	0.119900221	3.67	7.24	NAG
EPBH27503P41F	0.191084663	5.97	7.01	PAG
EPBH27503P45F	0.14666557	4.41	8.38	NAG
EPBH27503P47F	0.191636692	5.81	6.93	PAG
EPBH27003P139F	0.15	4.38	8.29	NAG
EPBH27003P156F	0.13	3.75	6.61	NAG
EPBH27003P171F	0.08	2.50	9.28	NAG
EPBH27003P189F	0.15	4.69	8.59	NAG
EPBH27003P193F	0.15	4.38	8.63	NAG
EPBH27002P09F	0.22	6.88	8.04	PAG
EPBH27002P45F	0.35	10.63	8.85	PAG
EPBH27002P55F	0.24	7.19	7.95	PAG
EPBH27002P96F	0.28	8.44	9.15	PAG
EPBH27002P133F	0.23	6.56	10.51	PAG
EPBH27002P180F	0.14	3.75	9.95	NAG
EPBH27002P194F	0.08	2.19	11.93	NAG
EPBH28021P43F	0.049539845	1.10	6.44	NAG
EPBH27003P03F	0.19	5.63	10.82	PAG
EPBH27003P13F	0.15	4.38	6.29	NAG
EPBH27003P21F	0.18	4.69	11.56	PAG
EPBH27003P62F	0.09	2.50	7.54	NAG
EPBH27003P65F	0.17	5.00	8.00	PAG
EPBH27003P87F	0.13	3.75	6.95	NAG
EPBH27003P93F	0.11	3.13	7.64	NAG
EPBH27003P38F	0.19	5.63	8.84	PAG
EPBH27003P99F	0.15	4.38	9.17	NAG
EPBH27003P143F	0.12	3.44	8.29	NAG
EPBH27003P148F	0.06	1.88	7.13	NAG
EPBH27005A4F	0.01	0.31	7.58	NAG
EPBH27005P3F	0.1	2.81	15.53	NAG
EPBH27005P12F	0.06	1.88	7.22	NAG
EPBH27005P18F	0.15	4.06	8.04	NAG
EPBH27005P67F	0.12	3.44	8.17	NAG
EPBH27005P81F	0.11	3.13	8.04	NAG
EPBH27005P96F	0.12	3.75	25.04	NAG
EPBH27005P111F	0.13	4.06	8.13	NAG
EPBH27005P161F	0.17	4.69	7.59	PAG
EPBH27005P165F	0.14	4.06	7.47	NAG
EPBH27005P172F	0.19	5.63	6.79	PAG
EPBH27005P178F	0.13	3.44	7.79	NAG
EPBH27005P34F	0.06	1.56	11.04	NAG
EPBH27005P128F	0.17	5.00	10.26	PAG
EPBH27005P155F	0.23	6.25	9.46	PAG
EPBH27004P7F	0.01	0.31	9.98	NAG
EPBH27004P13F	0.13	3.75	10.20	NAG
EPBH27004P21F	0.12	3.44	8.63	NAG
EPBH27004P31F	0.34	10.63	10.59	PAG
EPBH27004P59F	0.17	5.00	10.66	PAG
EPBH27004P64F	0.41	11.88	10.15	PAG
EPBH27004P89F	0.11	3.13	8.55	NAG
EPBH27004P93F	0	0.00	7.82	NAG
EPBH27004P69F	0.42	12.19	7.92	PAG
EPBH27004P86F	0.37	11.56	8.59	PAG
EPBH27004P104F	0.18	5.00	11.00	PAG
EPBH27004P106F	0.11	3.13	9.31	NAG
EPBH27004001	0.55	15.94	42.48	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH27004P115F	0.18	5.00	8.97	PAG
EPBH27004P133F	0.1	3.13	9.33	NAG
EPBH27004P136F	0.17	5.31	9.63	PAG
EPBH27004P138F	0.13	3.75	9.63	NAG
EPBH26002P105F	0.11	2.81	7.71	NAG
EPBH26002P107F	0.08	2.50	8.30	NAG
EPBH26002P109F	0.09	2.50	7.92	NAG
EPBH26002P111F	0.12	3.75	7.87	NAG
EPBH26002P124F	0.11	3.44	8.80	NAG
EPBH26002001	0.5	14.69	41.77	PAG
EPBH26002P126F	0.12	3.44	7.83	NAG
EPBH26002P128F	0.15	4.38	8.51	NAG
EPBH26002P140F	0.18	5.63	7.54	PAG
EPBH26002P142F	0.11	3.13	7.45	NAG
EPBH26002P150F	0.01	0.31	8.63	NAG
EPBH26002P152F	0	0.00	11.38	NAG
EPBH26002P09F	0.12	3.75	7.92	NAG
EPBH26002P21F	0.13	3.75	9.63	NAG
EPBH26002P23F	0.14	4.06	8.50	NAG
EPBH26002P25F	0.1	3.13	7.59	NAG
EPBH26002P43F	0.13	3.75	8.67	NAG
EPBH26002002	0.52	14.69	41.61	PAG
EPBH26002P51F	0.1	3.13	8.91	NAG
EPBH26002P62F	0.12	3.75	7.42	NAG
EPBH26002P77F	0.09	2.81	9.68	NAG
EPBH26002P79F	0.13	4.06	9.36	NAG
EPBH26002P82F	0.14	4.38	10.84	NAG
EPBH26002P02F	0.1	0.31	9.63	NAG
EPBH26002P05F	0.11	3.13	6.82	NAG
EPBH26002P37F	0.08	2.50	10.89	NAG
EPBH26002P53F	0.1	2.81	7.43	NAG
EPBH26002003	0.53	15.63	41.94	PAG
EPBH26002P56F	0.13	4.06	8.08	NAG
EPBH26002P93F	0.09	2.81	10.03	NAG
EPBH26002P114F	0.11	3.13	9.60	NAG
EPBH26001P10	0.1	3.13	9.23	NAG
EPBH26001A32	0.23	6.88	9.85	PAG
EPBH26001B1	0.14	4.06	13.23	NAG
EPBH26001B31	0.15	4.38	8.21	NAG
EPBH26001B5	0.22	6.88	9.17	PAG
EPBH26001A6	0.09	2.81	8.92	NAG
EPBH27007P18F	0.18	5.31	9.60	PAG
EPBH27007P20F	0.16	5.00	7.99	PAG
EPBH27007P32F	0.06	1.88	8.93	NAG
EPBH27007001	0.51	15.63	41.73	PAG
EPBH27007P34F	0.08	2.50	8.42	NAG
EPBH27007P85F	0.06	1.88	9.39	NAG
EPBH27007P87F	0.16	5.00	8.62	PAG
EPBH27007P22F	0.21	6.56	7.75	PAG
EPBH27007P45F	0.14	4.38	10.08	NAG
EPBH27007P48F	0.23	7.19	8.42	PAG
EPBH27007P51F	0.11	3.44	8.63	NAG
EPBH27007P62F	0.1	3.13	7.66	NAG
EPBH27007P76F	0.28	8.75	10.36	PAG
EPBH27007P79F	0.22	6.56	6.07	PAG
EPBH27007P97F	0.23	7.19	7.72	PAG
EPBH27007P107F	0.17	5.31	7.71	PAG
EPBH27007P116F	0.23	6.88	8.55	PAG
EPBH27007P118F	0.25	7.50	7.73	PAG
EPBH27007P127F	0.22	6.88	7.15	PAG
EPBH27007P129F	0.12	3.75	6.32	NAG
EPBH27007P143F	0.19	5.63	8.00	PAG
EPBH260B7F	0.2	6.25	5.93	PAG
EPBH260B30F	0.01	0.31	14.50	NAG
EPBH26044F	0.18	5.63	7.28	PAG
EPBH260B47F	0.2	5.94	7.56	PAG
EPBH260R001	0.51	15.63	40.75	PAG
EPBH260B51F	0.19	5.94	7.09	PAG
EPBH260B54F	0.12	3.75	9.80	NAG
EPBH260B58F	0.14	4.06	8.25	NAG
EPBH260R109F	0.17	5.00	10.05	PAG
EPBH260R158F	0.09	2.81	7.83	NAG
EPBH260R12F	0.13	4.06	7.88	NAG
EPBH260R56F	0.16	5.00	8.46	PAG
EPBH260R58F	0.28	8.75	7.63	PAG
EPBH260R63F	0.14	4.06	9.75	NAG
EPBH260R66F	0.17	5.31	8.88	PAG
EPBH260R101F	0.13	3.75	8.21	NAG
EPBH260R116F	0.2	5.63	9.08	PAG
EPBH260R118F	0.14	4.38	8.71	NAG
EPBH260R120F	0.3	8.75	5.23	PAG
EPBH260R123F	0.11	3.44	9.25	NAG
EPBH260R002	0.51	15.31	41.11	PAG
EPBH260R151F	0.16	5.00	7.75	PAG
EPBH260R165F	0.15	4.69	8.71	NAG
EPBH260R167F	0.1	3.13	6.51	NAG
EPBH260P204F	0.13	3.75	8.75	NAG
EPBH260P215F	0.15	4.06	8.21	NAG
EPBH260P216F	0.14	4.06	5.35	NAG
EPBH260P231F	0.14	4.06	8.38	NAG
EPBH260P234F	0.15	4.38	8.34	NAG
EPBH260P237F	0.15	4.69	5.76	NAG
EPBH260R25F	0.27	8.44	8.25	PAG
EPBH260R28F	0.32	10.00	6.26	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH260R31F	0.17	5.31	5.85	PAG
EPBH260R33F	0	0.00	9.95	NAG
EPBH260R50F	0.18	5.00	8.59	PAG
EPBH260R75F	0.09	2.81	11.88	NAG
EPBH260R003	0.52	15.63	40.53	PAG
EPBH260R77F	0.11	3.44	9.00	NAG
EPBH260R80F	0.27	8.44	5.85	PAG
EPBH260R82F	0.45	14.06	7.09	PAG
EPBH260R127F	0.17	5.00	7.88	PAG
EPBH260R130F	0.25	7.81	8.21	PAG
EPBH260A72F	0.11	3.44	18.27	NAG
EPBH260A75F	0.1	3.13	16.58	NAG
EPBH260B63F	0.21	6.25	8.59	PAG
EPBH260R86F	0.02	0.63	8.84	NAG
EPBH260R90F	0.25	7.50	6.89	PAG
EPBH260R004	0.53	15.63	40.95	PAG
EPBH260R136F	0.22	6.88	6.89	PAG
EPBH260R176F	0.18	5.31	8.38	PAG
EPBH260R179F	0.15	4.38	7.87	NAG
EPBH260P185F	0.15	4.38	4.81	NAG
EPBH260P189F	0.08	2.50	16.41	NAG
EPBH27008P98F	0.38	11.88	9.21	PAG
EPBH27008P113F	0.44	13.75	9.58	PAG
EPBH27008P119F	0.13	3.75	10.25	NAG
EPBH27008P130F	0.11	3.44	12.44	NAG
EPBH27008005	0.52	15.94	41.61	PAG
EPBH27008P147F	0.25	7.81	9.00	PAG
EPBH27008P152F	0.18	5.63	7.38	PAG
EPBH27008P157F	0.13	4.06	10.50	NAG
EPBH27008P160F	0.12	3.75	10.57	NAG
EPBH27008P3F	0.123735187	3.63	6.98	NAG
EPBH27008P6F	0.117678067	3.40	6.48	NAG
EPBH27008P9F	0.075417998	2.07	4.49	NAG
EPBH27008P11F	0.073564607	2.30	6.48	NAG
EPBH27008P14F	0.07079165	1.98	5.24	NAG
EPBH27008006	0.532374573	16.05	40.38	PAG
EPBH27008P18F	0.104296692	2.98	6.11	NAG
EPBH27008P35F	0.574406531	16.89	10.22	PAG
EPBH27008P38F	0.109803653	3.43	3.13	NAG
EPBH27008P40F	0.124809273	3.90	4.50	NAG
EPBH27008P125F	0.12933688	4.04	5.99	NAG
EPBH27009P38F	0.093194836	2.29	5.87	NAG
EPBH27009P60F	0.049828727	1.56	3.99	NAG
EPBH27009P77F	0.026634682	0.80	5.48	NAG
EPBH27009P139F	0.105912787	3.31	8.22	NAG
EPBH27009001	0.54648076	16.06	39.73	PAG
EPBH27009P141F	0.081661366	2.55	8.99	NAG
EPBH27009P163F	0.14887439	4.26	5.00	NAG
EPBH27009P181F	0.27944586	8.37	4.88	PAG
EPBH27009P22F	0.122107667	3.77	7.25	NAG
EPBH27009P24F	0.736324999	22.61	5.70	PAG
EPBH27009P43F	0	0.00	5.12	NAG
EPBH27009P45F	0	0.00	5.62	NAG
EPBH27009P73F	0.842027913	24.57	7.73	PAG
EPBH27009004	0.527483197	16.10	39.94	PAG
EPBH27009P75F	0.254652736	7.78	6.23	PAG
EPBH27009P130F	0.199454938	6.23	8.25	PAG
EPBH27009P136F	0.162624746	5.08	11.46	PAG
EPBH27009P167F	0.289693368	9.05	5.00	PAG
EPBH27009P169F	0.290016666	9.06	8.00	PAG
EPBH27009P3F	0.014957502	0.33	5.45	NAG
EPBH27009P8F	0.102458866	2.80	6.17	NAG
EPBH27009P10F	0	0.00	7.44	NAG
EPBH27009P31F	0.016621505	0.49	5.77	NAG
EPBH27009007	0.534177729	16.03	40.61	PAG
EPBH27009P48F	0.534979219	16.06	11.27	PAG
EPBH27009P67F	0.272923242	8.22	8.90	PAG
EPBH27009P151F	0.231938179	6.49	8.13	PAG
EPBH27009P175F	0.243874231	7.40	4.75	PAG
EPBH27010P25F	0.162033388	4.94	24.94	NAG
EPBH27010P27F	0.18298564	5.44	10.38	PAG
EPBH27010001	0.541970533	16.07	41.09	PAG
EPBH27010P29F	0.152776267	4.70	10.91	PAG
EPBH27010P31F	0.175063076	5.06	10.49	PAG
EPBH27010P15F	0.120547951	3.62	9.85	NAG
EPBH27010P198F	0.099893033	2.90	7.37	NAG
EPBH27010P219F	0.138114389	4.19	14.83	NAG
EPBH27010002	0.522694296	15.78	40.42	PAG
EPBH27010P232F	0	0.00	5.46	NAG
EPBH27010P236F	0	0.00	6.05	NAG
EPBH27010P250F	0.044000144	1.38	5.70	NAG
EPBH27010P267F	0	0.00	7.09	NAG
EPBH27010P95F	0.226866241	7.09	5.26	PAG
EPBH27010P272F	0.549625675	16.34	11.64	PAG
EPBH27010P290F	0.021759641	0.46	4.97	NAG
EPBH27010P4F	0.233382443	7.23	8.27	PAG
EPBH27010P37F	0.626339886	19.52	7.45	PAG
EPBH27010P42F	0.4067485	12.27	9.20	PAG
EPBH26003P61F	0.15	4.34	6.74	NAG
EPBH26003P65F	0.11	3.40	5.75	NAG
EPBH26003P88F	0.2	5.42	5.59	PAG
EPBH26003P136F	0.14	3.87	7.02	NAG
EPBH26003P141F	0.11	3.51	6.02	NAG
EPBH26003P163F	0.27	8.44	5.25	PAG

2024 Results from site lab of acid generating potential (from total sulphur concentration) and neutralization potential (by Modified Sobek)

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
EPBH26003P11F	0.11	3.46	7.24	NAG
EPBH26003P18F	0.41	12.72	6.62	PAG
EPBH26003P34F	0.09	2.80	7.34	NAG
EPBH26003P68F	0.18	5.32	6.19	PAG
EPBH26003P105F	0.15	4.51	8.35	NAG
EPBH26003P144F	0.12	3.71	5.22	NAG
EPBH26003P04F	0.168850111	5.13	7.49	PAG
EPBH26003P53F	0.05101595	1.59	6.50	NAG
EPBH26003P95F	0.112419995	3.51	6.72	NAG
EPBH26003P147F	0.013942807	0.15	6.26	NAG
EPBH26004P4F	0.070480252	2.20	6.36	NAG
EPBH26004P14F	0.134474034	4.20	7.40	NAG
EPBH26004P37F	0.140712742	4.40	7.21	NAG
EPBH26004P42F	0.043753655	1.37	7.99	NAG
EPBH26006P28F	0.150943137	4.61	6.70	PAG
EPBH26004P58F	0.185023121	5.78	7.99	PAG
EPBH26004P70F	0.142588333	4.46	7.73	NAG
EPBH26004P81F	0.270581056	7.87	9.87	PAG
EPBH26004P88F	0.235537988	7.36	8.29	PAG
EPBH26004P104F	0.318515267	9.61	6.97	PAG
EPBH26006P01F	0.176512222	5.52	7.45	PAG
EPBH26004P129F	2.896436302	89.32	14.67	PAG
EPBH26004P132F	0.251039651	7.84	6.84	PAG
EPBH26004P135F	0.266250013	8.19	6.71	PAG
EPBH26006P146F	1.69348517	52.92	27.44	PAG
EPBH26006A02F	0.548397172	17.14	8.45	PAG
EPBH26006P57F	0.16	5.00	12.69	PAG
EPBH26006P60F	0.02	0.63	10.13	NAG
EPBH26006P72F	0.1	2.81	11.68	NAG
EPBH26006P86F	0.24	6.56	12.24	PAG
EPBH26006P106F	0.08	2.19	6.77	NAG
EPBH26006P109F	0.22	6.88	9.15	PAG
EPBH26006P112F	0.21	6.25	6.77	PAG
EPBH26006P136F	0.33	9.69	19.13	PAG
EPBH26006P141F	0.23	7.19	15.35	PAG
EPBH26006P158F	0.24	7.50	5.90	PAG
EPBH26006P175F	0.26	7.81	6.57	PAG
EPBH26006B05F	0.06	1.88	5.78	NAG
EPBH26006P05F	0.14	3.75	9.90	NAG
EPBH26006P17F	0.04	1.25	10.28	NAG
EPBH26006P180F	0.08	2.50	12.69	NAG
EPBH26006P217F	0	0.00	9.28	NAG
EPBH26006P224F	0	0.00	10.66	NAG
UP29701P22C	0.05	1.56	7.53	NAG
UP29701P27C	0	0.00	5.86	NAG
UP29701P30C	0.02	0.31	7.61	NAG
UP29701P34C	0.02	0.31	8.21	NAG
EPBH26007P24F	0.25	7.50	6.35	PAG
EPBH26007P49F	0.01	0.31	5.87	NAG
EPBH26007P52F	0.05	1.56	11.10	NAG
EPBH26007P74F	0.08	2.50	10.90	NAG
EPBH26007P127F	0.62	19.38	14.36	PAG
EPBH26007P130F	0.15	4.69	20.19	NAG
EPBH26007P152F	0.12	3.44	8.78	NAG
UPBH29701P69C	0	0.00	5.90	NAG
UPBH29701P87C	0	0.00	6.38	NAG
UPBH29701P123C	0	0.00	6.26	NAG
UPBH29701P126C	0.32	9.38	6.10	PAG
UPBH29701P129C	0.29	8.75	8.46	PAG
EPBH26007P11F	0	0.00	6.22	NAG
EPBH26007P16F	0	0.00	5.73	NAG
EPBH26007P31F	0	0.00	5.62	NAG
EPBH26007P39F	0.62	19.06	10.47	PAG
EPBH26007P59F	0.03	0.94	7.39	NAG
EPBH26007P67F	0.57	17.50	12.96	PAG
EPBH26007P182F	0.22	6.88	6.88	PAG
EPBH26007P185F	0.32	10.00	7.34	PAG
EPBH26007P202F	0.39	11.56	5.31	PAG
EPBH26007B10F	0.32	9.69	5.70	PAG
EPBH26007B17F	0	0.00	5.44	NAG
UPBH29701P171F	0.72	21.88	9.44	PAG
UPBH29701P186F	0	0.00	5.97	NAG
UPBH29701001	0.54	16.25	41.48	PAG
UPBH29701P188F	0.45	13.75	7.37	PAG
UPBH29701P222F	0.2	5.94	13.79	PAG
EPBH26007P140F	0.26	7.50	14.92	PAG
EPBH26007P162F	0.14	4.06	7.37	NAG
EPBH26007P164F	0.55	17.19	12.88	PAG
EPBH26007001	0.55	15.63	40.77	PAG
EPBH26007P167F	0.15	4.69	5.16	NAG
EPBH26007P192F	0.3	9.38	5.97	PAG
EPBH26007P199F	0.16	5.00	8.25	PAG
UPBH29701P41F	0	0.00	8.21	NAG
UPBH29701P46F	0	0.00	5.88	NAG
UPBH29701P62F	0.37	10.31	6.10	PAG
UPBH29701P67F	0.07	1.88	6.82	NAG
UPBH29701002	0.53	15.94	41.40	PAG
UPBH29701P112F	0.09	2.50	7.84	NAG
UPBH29701P116F	0.07	2.19	7.40	NAG
UPBH29701P194F	0.48	13.75	12.28	PAG
UPBH29701P196F	0.4	11.56	8.42	PAG
UPBH29701P198F	0.01	0.00	6.22	NAG
UPBH29701P54F	0.02	0.63	6.38	NAG
UPBH29701P57F	0	0.00	6.00	NAG

Sample ID	Total Sulphur (wt%)	Acid-generating potential (AP)	Neutralization Potential by Modified Sobek (NP)	Classification
UPBH29701P107F	0.12	3.75	5.94	NAG
UPBH29701P150F	0.12	3.44	6.11	NAG
UPBH29701003	0.53	15.94	40.89	PAG
UPBH29701P157F	0.04	0.63	5.95	NAG
UPBH29701P201F	0.04	0.31	5.13	NAG
UPBH29701P209F	0.08	2.19	5.81	NAG
EPBH26007P213F	0.6	16.56	7.27	PAG
EPBH26007P221F	0.56	17.50	6.71	PAG
EPBH26007P224F	0.5	15.31	11.12	PAG
EPBH26007004	0.54	16.25	41.86	PAG
EPBH26007P239F	0.18	5.31	7.13	PAG
EPBH26007P248F	0.38	11.88	7.22	PAG
EPBH26007P250F	0.19	5.00	7.15	PAG
EPBH26007P233F	0.23	6.56	8.94	PAG
EPBH26007P237F	0.22	6.56	8.17	PAG
EPBH26009P49F	0.14	4.06	10.55	NAG
EPBH26009P59F	0.14	4.38	8.34	NAG
EPBH26009P67F	0.25	7.50	9.50	PAG
EPBH26009P82F	0.23	7.19	7.75	PAG
EPBH26009P85F	0.19	5.94	7.79	PAG
EPBH26009001	0.53	15.31	42.09	PAG
EPBH26009P101F	0.12	3.44	6.80	NAG
EPBH26009P120F	0.18	5.63	8.38	PAG
EPBH26009P123F	0.18	5.31	6.89	PAG
EPBH26009P134F	0.21	6.25	11.99	PAG
EPBH26009P148F	0.17	4.69	10.03	PAG
EPBH26009P163F	0.15	4.69	10.41	NAG
EPBH26009127F	0.14	4.38	9.70	NAG
EPBH26009129F	0.16	5.00	9.36	PAG
EPBH26009140F	0.15	4.38	8.63	NAG
EPBH26009002	0.54	16.25	41.77	PAG
EPBH26009142F	0.18	5.31	11.06	PAG
EPBH26009157F	0.11	3.13	9.19	NAG
EPBH26009159F	0.1	2.50	10.70	NAG
EPBH26009P7F	0.16	4.38	9.44	PAG
EPBH26009P9F	0.1	2.50	8.72	NAG
EPBH26009P15F	0.16	4.69	11.47	PAG
EPBH26009P17F	0.11	3.13	7.71	NAG
EPBH26009P26F	0.16	4.69	8.46	PAG
EPBH26009P29F	0.18	5.63	7.95	PAG
EPBH26009003	0.52	15.63	42.11	PAG
EPBH26009P31F	0.13	4.06	8.70	NAG
EPBH26009P43F	0.14	4.06	8.68	NAG
EPBH26009P54F	0.16	4.69	9.33	PAG
EPBH26009P75F	0.11	2.81	9.88	NAG
EPBH26009P94F	0.11	2.81	12.56	NAG
EPBH26009P96F	0.11	2.50	7.92	NAG
EPBH26008P08F	0.09	2.19	13.01	NAG
EPBH26008P14F	0.64	18.44	5.65	PAG
EPBH26008P21F	0.05	1.56	7.06	NAG
EPBH26008P24F	0.15	4.69	13.32	NAG
EPBH26008001	0.54	15.94	40.58	PAG
EPBH26008P30F	0	0.00	5.45	NAG
EPBH26008P39F	1.35	41.88	9.80	PAG
EPBH26008P45F	0.01	0.00	6.60	NAG
EPBH26008B24F	0	0.00	6.52	NAG
EPBH26008P02F	0.29	8.75	6.35	PAG
EPBH26008P16F	0.09	2.81	6.80	NAG
EPBH26008P41F	0.09	2.81	5.41	NAG
EPBH26008004	0.55	15.94	42.03	PAG
EPBH26008P43F	0.27	8.44	6.42	PAG
EPBH26008P52F	0.32	9.06	5.65	PAG
EPHB30031147	0.17			PAG
EPHB30031168	0.14			NAG
EPHB30031169	0.12			NAG
EPHB30031174	0.16			PAG
EPHB30031175	0.19			PAG

APPENDIX G LANDFILL AND WASTE MANAGEMENT PLAN

BACK RIVER MINE LANDFILL & WASTE MANAGEMENT PLAN V.4.0

DATE

31 March 2025

REFERENCE



DOCUMENT DETAILS

The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from the Word file, but should be deleted from the PDF.

PROJECT NAME	Back River Mine
DOCUMENT TITLE	Landfill & Waste Management Plan
Date	31 March 2025
Version	4.0
Author	B2Gold Back River Corp.

REVISION LOG

Version	Section	Page	Date	Description
1.0	All	All	October 2017	Supporting document for Type A Water License Application submitted to Nunavut Water Board for review and approval.
2.0	All	All	August 2022	Revisions to reflect Construction Phase waste management activities, to align with overall project waste management approach, and to complement and remove overlap with related waste management plans.
3.0	All	All	March 2023	Addition of wind turbine waste disposal.
4.0	All	All	January 2025	Updated management plan to B2Gold Back River Corp template format Updated Section 1.0 – Project Overview: - Included new figure Updated Section 2.0 – Scope & Objectives: - removed figure 2-1 (waste management overview), updated scope and objectives in further detail Updated section 4.0 – Planning and Implementation: - Included additional bullet point on ‘proactive procurement policy’ and included additional bullet point on ‘chemical approval process’. Updated Section 5.0 – Roles and Responsibilities: - Redefined roles and responsibilities so it is current and applicable Updated Section 6.0 – Landfill and Waste Management Infrastructure: - Included new figure indicating location of landfill within WRSAs and where open burns occur Updated Section 7.0 – Waste Management: 7.1 – provided clearer definitions of waste categories 7.3 – updated landfill operation and maintenance to align with new procedure using cells within WRSA 7.3.4 – included new table indicating acceptable landfill wastes 7.3.5 – included new table indicating unacceptable landfill wastes Section 7.6 – Removed Section (Open Burning w/ Burn Cage) Section 8.0 – Environmental Protection: 8.1 – included landfill water quality parameters

ACRONYMNS

Abbreviation / Acronym	Definition
B2Gold Nunavut	B2Gold Back River Corp.
CCME	Canadian Council of Ministers of the Environment
GN	Government of Nunavut
HMMP	Hazardous Materials Management Plan
ICRP	Interim Closure and Reclamation Plan
IMP	Incineration Management Plan
License	Water License 2AM-1831
LMP	Landfill Management Plan
LWMP or Plan	Landfill & Waste Management Plan
MLA	Marine Laydown Area
NIRB	Nunavut Impact Review Board
NWB	Nunavut Water Board
Project	Back River Project
SOP	Standard Operating Procedure
STP	Sewage Treatment Plant
TMP	Tailings Management Plan
WMP	Water Management Plan
WIR	Winter Ice Road
WROMP	Waste Rock & Ore Management Plan
WRSA	Waste Rock Storage Area
TSF	Tailings Storage Facility

CONTENTS

1.	INTRODUCTION	1
2.	SCOPE & OBJECTIVES	3
2.1	Related Documents	3
3.	APPLICABLE LEGISLATION & GUIDELINES	4
4.	PLANNING & IMPLEMENTATION	6
5.	ROLES & RESPONSIBILITIES	8
5.1	General Manager	8
5.2	Environment	8
5.3	Tech Services	8
5.4	Site Services	9
5.5	Mine Operations	9
5.6	Civil Operations	9
5.7	All Personnel	9
5.8	Training	9
6.	LANDFILL & WASTE MANAGEMENT INFRASTRUCTURE	10
6.1	Landfill	13
6.1.1	Landfill Location	13
6.1.2	Landfill Design Considerations	13
6.2	Temporary Waste Storage Facilities	14
6.3	Open Burning	14
7.	WASTE MANAGEMENT	15
7.1	Overview of Waste Types	15
7.1.1	Recyclable Waste	16
7.1.2	Landfill Waste	16
7.1.3	Open Burn Waste	16
7.2	Overview of Waste Handling & Segregation	17
7.2.1	Waste Generation Areas	17
7.2.2	Main Camp (Dining, Accommodation, Administration Areas)	18
7.2.3	General Work Areas	18
7.2.4	Waste Management Areas	18
7.2.5	Medical & Biohazardous Waste	19
7.2.6	Wind Turbine Disposal	19
7.3	Landfill Operation & Maintenance	19
7.3.1	Permafrost Management	20

7.3.2	Leachate Management	21
7.3.3	Surface Water & Erosion Control	21
7.3.4	Acceptable Landfill Waste	22
7.3.5	Unacceptable Landfill waste	22
7.3.6	Waste Asbestos	23
8.	ENVIRONMENTAL PROTECTION MEASURES & MONITORING PROGRAM	24
9.	ENVIRONMENTAL REPORTING	25
10.	ADAPTIVE MANAGEMENT	25
11.	RECLAMATION	25

LIST OF TABLES

Table 3-1: Applicable Legislation to Waste Management in Nunavut	5
Table 7-1: Acceptable Landfill Waste Materials	22
Table 7-2: Unacceptable Landfill waste Materials	22

LIST OF FIGURES

Figure 1: Back River Project Overview	2
Figure 2: Responsible Waste Management Concepts	6
Figure 3: Waste Rock Storage Areas and Potential Landfill Locations	12

1. INTRODUCTION

The Back River Project (the Project) is a gold mine owned by B2Gold Back River Corporation (B2Gold Nunavut) within the West Kitikmeot region of southwestern Nunavut. It is situated approximately 400 kilometers (km) southwest of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet, and 520 km northeast of Yellowknife, Northwest Territories. The Project is located predominantly in the Queen Maud Gulf Watershed (Nunavut Water Regulations, Schedule 4).

The Project is comprised of two main areas with an interconnecting winter ice road (WIR): Goose Property and the Marine Laydown Area (MLA), which is situated along the western shore of southern Bathurst Inlet, as shown in Figure 1. The majority of annual resupply is completed using the MLA and an approximately 160 km long WIR interconnecting these sites seasonally when needed.

This Landfill and Waste Management Plan (LWMP) outlines the waste segregation procedures and overall approach for managing waste materials that are generated at the Project site, which are destined for landfilling, open burning, and recycling or backhauling.

This LWMP is a living document that is to be updated upon changes in related regulatory requirements, management reviews, incident investigations, changes to facility operation or maintenance, and environmental monitoring results, best practice updates or other Mine specific protocols during construction and through to Mine closure. Any updates will be filed with the Annual Report submitted under the Type A Water License 2AM-BRP1831 (the License) and Project Certificate No. 007 (the Project Certificate) issued by the Nunavut Impact Review Board (NIRB).



2. SCOPE & OBJECTIVES

The overall objective of B2Gold Nunavut's Landfill and Waste Management Plan (LWMP) is to minimize the potential effects from the Project on the environment from all waste management activities.

This LWMP is one of the documents that forms part of B2Gold Nunavut's overall waste management program for the Project and specifically address:

- ◆ B2Gold Nunavut's approach to the minimization and management of solid wastes,
- ◆ An overview of Back River waste management infrastructure,
- ◆ Primary waste segregation procedures for non-mineral solid waste, and
- ◆ Management and disposal procedures of dry, non-hazardous solid wastes that are suitable for landfilling, open burning and or recycling.

B2Gold Nunavut's management of various waste streams (i.e., waste rock, liquid wastes, and incinerated wastes) are discussed and addressed in greater detail under other plans.

The scope of this Landfill and Waste Management Plan (LWMP) applies to all B2Gold Nunavut personnel, including contractors, who:

- ◆ generate waste,
- ◆ handle waste,
- ◆ dispose of waste, and
- ◆ backhaul waste.

2.1 RELATED DOCUMENTS

This LWMP compliments additional waste management plans that have been developed to support the Back River Project, which make up the Project's overall 'Waste Management Strategy'. Related waste management plans include:

- ◆ **Incineration Management Plan** (IMP; outlines procedures for the incineration of appropriate wastes),
- ◆ **Hazardous Materials Management Plan** (HMMP; outlines procedures for the proper disposal and recycling of hazardous waste),
- ◆ **Landfarm Management Plan** (LMP; outlines procedures for the remediation of petroleum hydrocarbon contaminated materials),
- ◆ **Tailings Management Plan** (TMP; outlines procedures for the management of tailings waste),
- ◆ **Waste Rock Management Plan** (WRMP; outlines procedures for waste rock management and disposal),
- ◆ **Water Management Plan** (WMP; outlines procedures for the management of liquid wastes including saline water),
- ◆ **Quarry and Borrow Pit Management Plan** (QBPMP; outlines management of quarries, including the identification and avoidance of actinolite).

This LWMP is also related to the following plans:

- ◆ Risk Management and Emergency Plan,
- ◆ Environmental Management System (formerly the Environmental Management and Protection Plan),

- ◆ Fuel Management Plan, and
- ◆ Interim Closure and Reclamation Plan.

3. APPLICABLE LEGISLATION & GUIDELINES

Specific legislation, regulations and guidelines related to waste management in Canada, and specifically within Nunavut, are summarized in Table 2-1. Waste management in Nunavut is regulated under:

- ◆ Nunavut Waters and Nunavut Surface Rights Tribunal Act (2002)
- ◆ Nunavut Public Health Act (1998)
- ◆ Nunavut Environmental Protection Act (1998)
- ◆ Canadian Environmental Protection Act (1999)
- ◆ Federal Transportation of Dangerous Goods Act, 1992 (TDG 1992)

B2Gold Nunavut is also bound by the terms and conditions of its land use permits issued by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) for Crown Lands and the Kitikmeot Association (KIA) for Inuit Owned Lands (IOL), its Type A Water License issued by the Nunavut Water Board (NWB) and Project Certificate No. 007 issued by the Nunavut Impact Review Board (NIRB).

In addition to the mandatory requirements, several waste management guidelines have been considered in the preparation of this Plan and/or will be considered in the design and operations of Project waste management facilities:

- ◆ The Mackenzie Valley Land and Water Board's (2011) guidelines for developing a waste management plan,
- ◆ Guidelines for the Planning, Design, Operations and Maintenance of Modified Solid Waste Sites in the Northwest Territories (Ferguson Simek Clark, 2003),
- ◆ Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories (Government of the Northwest Territories Department of Municipal and Community Affairs 1996),
- ◆ Mine closure guidelines developed by the Department of Crown-Indigenous and Northern Affairs Canada (CIRNAC, 2013) were followed regarding specific landfill design and mitigation for potential impacts pertaining to waste, and
- ◆ Environment Canada's Technical Document for Batch Waste Incineration (EC, 2010).

Table 3-1: Applicable Legislation to Waste Management in Nunavut

Acts	Regulations	Guidelines
Federal		
<i>Canadian Environmental Protection Act</i> (S.C.1999 c. 33)	Schedule 1: List of Toxic Substances Interprovincial Movement of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2002-301)	Environment and Climate Change Canada Technical Document for Batch Waste Incineration (EC 2010) Canada-Wide Standards for Petroleum Hydrocarbons in Soil (CCME 2008).
<i>Transportation of Dangerous Goods Act</i> (S.C. 1992, c. 34)	Transportation of Dangerous Goods Regulations (SOR/2001-286)	
<i>Nunavut Waters and Nunavut Surface Rights Tribunal Act</i> (S.C. 2002, c. 10)	Nunavut Waters Regulations (SOR/2013-69)	
<i>Territorial Lands Act</i> (R.S.C. 1985, c. T-7)	Transportation of Dangerous Goods Regulations (SOR/2001-286) Northwest Territories and Nunavut Mining Regulations (CRC, c.1516)	Implications of Global Warming and the Precautionary Principle in Northern Mine Design and Closure (BGC 2003)
<i>Hazardous Products Act</i> (1985)	Controlled Products Regulations	Workplace Hazardous Materials Information System
Territorial – Nunavut		
<i>Environmental Protection Act</i> (R.S.N.W.T. (Nu) 1988, c. E-7)	Spill Contingency Planning and Reporting Regulations (R-068-93) Used Oil and Waste Fuel Management Regulations (R-064-2003) The removal of hazardous waste materials will require the registration with the Government of Nunavut, Department of Environment as a waste generator as well as carrier (if applicable) prior to transport	Government of Nunavut (GN) Environmental Guidelines for the Management of: ◆ General Management of Special and Hazardous Waste (2010) ◆ Waste Paint (2010) ◆ Mercury-Containing Products and Waste Mercury (2010) ◆ Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities (2011) ◆ Waste Batteries (2011) ◆ Waste Solvent (2011) ◆ Waste Antifreeze (2011) ◆ Used Oil and Waste Fuel (2012) ◆ Biomedical and Pharmaceutical Waste (2014) Canada-Wide Standards for Petroleum Hydrocarbons In Soil (CCME 2008)
<i>Public Health Act</i> (RSNWT (Nu) 1988, c.P12)	Camp Sanitation Regulations (RRNWT (Nu) 1990, c.P-12)	
<i>Mine Health and Safety Act</i> (S.N.W.T. (Nu) 1994, c. 25)	Mine Health and Safety Regulations (R-125-95)	
<i>Fire Safety Act</i> (R.S.N.W.T. (Nu) 1988, c. F-6)	Fire Safety Regulations (R.R.N.W.T. (Nu) 1990, c. F-12)	

4. PLANNING & IMPLEMENTATION

Responsible waste management begins by minimizing waste generation when practical and economical, either by reducing waste, reusing materials, recycling materials, or recovering materials and/or energy. These concepts are illustrated in Figure 2 below.

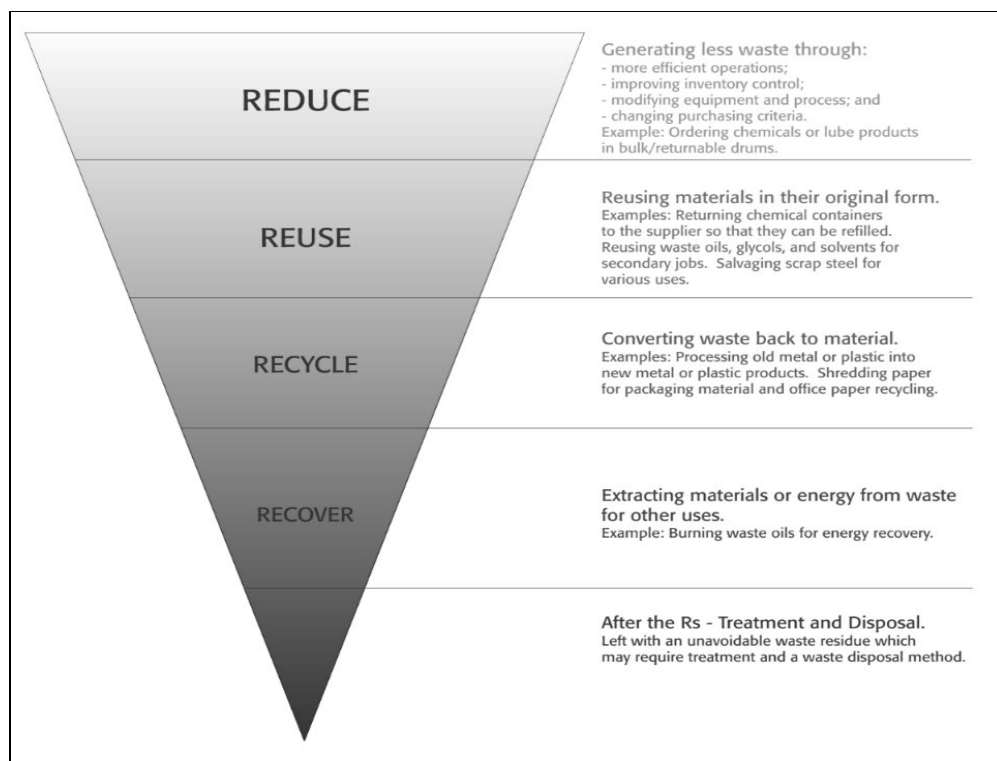


Figure 2: Responsible Waste Management Concepts

B2Gold Nunavut embraces source reduction as a key means of minimizing the quantities of waste to be generated. Reducing the amount of waste produced is an environmentally responsible business principle. Team Leaders are empowered to ensure that each area of operation uses materials in an efficient manner and to take the necessary steps to address these waste management principles.

Operating procedures at the Project have been developed to maximize the volume of materials that can be recycled or reused, where feasible. The basic implementation of this strategy includes eliminating the use of disposable material in everyday use, encouraging the use of personal drink containers, stainless steel cutlery, reusable lunch boxes, and substitution of single use plastic utensils to bamboo based.

All potential contractors are required to comply with all procedures, standards, health and safety regulations, as adopted, varied or amended by B2Gold. This applies to the Proactive Procurement Policy, Strategic and Chemical Substitution Stages and Chemical Approval Processes. In addition to B2Gold's standards, the above-mentioned waste reduction principles will also be achieved by implementing the following strategies:

Proactive Procurement Policy: During the Request For Proposal (RFP) stage, all proponents will be required to submit a copy of their (the proponent's) Health Safety and Environment (HSE) program as well as any applicable standard operating procedure (SOP) to ensure it aligns with and meets B2Gold

Nunavut's HSE and performance standards requirements relative to potential services provided. Proponents will be required to be fully informed of these requirements before submitting a proposal as it relates to all existing conditions and limitations respecting the operational environment the applicable site (e.g., labor conditions, physical conditions, health and safety practices, etc.). As part of this RFP process and depending on the scope of services to be provided/performed, prospective bidders will be encouraged to solicit the use of the most environmentally suitable materials, equipment, and products.

Pollution Prevention: Pollution prevention methods to eliminate the generation of waste will continuously be evaluated and where feasible, appropriate improved methods will be implemented. This will be achieved by applying the reduction and minimization, substitution, segregation, reuse, recycling, and recovery approaches discussed as follows.

Strategic Material Substitution: All contractors are required to comply with all procedures, standards, health and safety regulations as adopted, varied or amended by B2Gold. At the purchasing stage, the possibility of material substitution with less polluting products will be assessed – specifically for materials that are hazardous to handle, generate hazardous waste, or have adverse environmental effects. For example, choosing single sheet paper towel dispensers for paper towels in bathrooms and kitchens instead of rolls of paper towels or installing efficient high velocity hand dryers and promotion of re-usable personal mugs for personnel.

Strategic Chemical Substitution: All contractors are required to comply with all procedures, standards, health and safety regulations as adopted, varied or amended by B2Gold. A policy of using chemicals that are cost effective and accomplish the same results as the original chemicals employed, without or with less hazardous waste generation in the process will be adopted. For instance, preferentially using non-toxic propylene glycol instead of toxic ethylene glycol when possible.

Chemical Approval Process: Contractors are required to document any and all hazardous materials anticipated to be used on site as part of the services, and such documentation shall be provided prior to mobilization or arrival of such materials at site. Contractors are also responsible for compliance with all hazardous waste, health and safety, and environment protection laws and contractors shall require its subcontractors to segregate and dispose of all non-hazardous and hazardous materials generated or encountered during performance of the Services at Owner-identified facilities. When used, the B2Gold Back River Project Packing & Shipping Procedure and Packing & Marking Technical Specifications also lays out the requirements for the shipment of hazardous materials, including ensuring that B2Gold Nunavut is notified and approves of all hazardous materials prior to being shipped to site.

In collaboration with the procurement team, a new procedure will be established to ensure that all materials requested for delivery to the mine are thoroughly reviewed and approved by technical leads (i.e., environmental, health and safety, industrial hygienists, and emergency response) before they arrive. During this review, the inherent hazards of the materials will be assessed as well as the protocols for safe receiving, transportation, storage, and usage. Segregation of waste at its source is the goal to maintain B2Gold Nunavut's environmental stewardship and waste reduction initiatives:

Waste Segregation: Segregating all waste streams at their source and by their type or category will prevent undesirable combined effects and facilitate the reuse, recycling, recovery, and/or disposal of the various waste streams generated. Each waste category will be evaluated, and the following four 'R' principles will be applied:

- ◆ **Reduction and Minimization Initiatives** – The first step in reducing waste generation is to decrease raw material consumption. All processes and materials used will be evaluated for opportunities to minimize the use of raw materials.

- ◆ Reuse Initiatives – The potential for reusing materials in other applications or by other parties will be routinely examined through a waste materials exchange program.
- ◆ Recycling Initiatives – Recycling will be considered as the next most viable option for managing waste streams effectively.
- ◆ Recovering Initiatives – After having reduced, reused, or recycled, recovering will be the second last step in the waste segregation process. Materials that can be recovered such as organic sewage wastes may be incorporated into the soil bioremediation process to promote natural attenuation of contaminated soils and nutrient amendment.
- ◆ Disposal: Disposal is the final option when the four 'R's are no longer applicable or practical.

5. ROLES & RESPONSIBILITIES

5.1 GENERAL MANAGER

The General Manager is ultimately responsible for the success of this plan and approves all relevant policies, documents, auditing, action planning and the verification process.

5.2 ENVIRONMENT

The Manager and Superintendent of Environment, along with their direct reports, are responsible for ensuring that only inert waste materials are destined for the landfill, which will be accomplished through weekly inspections. Environment will provide additional support to other departments, as required, in terms of auditing performance to ensure compliance and adaptive management. Environment will aid in ensuring waste is properly segregated by inspecting waste bins as frequently as possible and at the landfill to ensure only inert materials are being discarded.

5.3 TECH SERVICES

The Tech services group are ultimately responsible for the design of the landfill and ensuring that cells for backfilling mine-generated refuse are created and structurally sound. This will be validated by completing weekly or monthly surveys, as required, and generating figures. Annual geotechnical inspections will also be completed between July and September.

Tech services conduct the following activities in respect to landfill management:

- ◆ Design of waste rock storage areas, incorporating landfills as needed.
- ◆ Design landfill cells within waste dumps.
- ◆ Evaluate stability of waste rock storage areas after inclusion of landfill cells within the designs
 - ◇ Working alongside other skillsets, develop standard procedures for landfill cell construction including environmental, wildlife, safety and operational criteria.
- ◆ Assist in day-to-day execution of waste rock storage areas and landfill cells.
- ◆ Stake out and survey waste rock storage and landfill areas.
- ◆ Ensure cells are surveyed before they are covered.
- ◆ Monitor geotechnical performance of waste rock storage areas and landfill cells.
- ◆ Develop a geochemical monitoring program to ensure appropriate encapsulation of PAG material.

5.4 SITE SERVICES

The Site Services department are responsible for:

- ◆ Ensuring waste material is segregated and approved for landfilling by tracking how many loads of inert landfillable material is deposited and by visually inspecting bins for proper waste segregation,
- ◆ Coordinating with tech services to deposit waste in pre-constructed cells, and
- ◆ Locking the gate and limiting access to prevent unauthorized dumping.

5.5 MINE OPERATIONS

The Mine Operations (Mine Ops) department will be responsible for the construction of landfill cells within the waste rock storage area. This construction will involve the use of heavy equipment to place waste rock and cover materials, according to landfill cell design plans provided by Tech Services. Mine Ops will:

- ◆ Weekly, or more frequently as needed, push waste rock and cover materials within the cells to prevent material loss due to wind, and
- ◆ Construct landfill cells precisely as directed by Tech Services.

5.6 CIVIL OPERATIONS

Civil Operations will be responsible for providing the heavy equipment necessary if and when Mine Ops' equipment is unavailable. This is foreseen to occur when the mine becomes operational.

5.7 ALL PERSONNEL

All personnel who work at the Back River Project and are responsible for the effective implementation of this plan including, but not limited to, completion of required training and maintaining compliance with training requirements set out by this Plan or B2Gold Nunavut's Standard Operating Procedures (SOPs) and Best Management Practices (BMPs). Project personnel are also required to understand waste segregation procedures on-site to avoid commingling waste streams that are prohibited from being landfilled or open burned. All employees are expected to adhere to and comply with applicable Health and Safety Laws and Regulations.

5.8 TRAINING

As part of general on-site orientation, all on-site personnel, including B2Gold Nunavut personnel and contractors will receive basic environmental and waste management training, including:

- ◆ Reducing water use,
- ◆ Managing food waste to minimize wildlife attractants,
- ◆ Reducing waste, and
- ◆ Separating and segregating waste (recyclables, batteries, hazardous waste, food waste).

The B2Gold Nunavut's Sustainable Development Policy is communicated to all on-site personnel during orientation, and it is emphasized that it is everyone's responsibility to properly dispose of waste, including the sorting of waste that can be reused and recycled.

Project personnel responsible for the handling of waste are fully trained in safe work and sorting procedures, and the identification of misdirected waste. Personnel working with waste materials

undertake formal training to ensure compliance with applicable legislation and B2Gold Nunavut's SOPs. Site-specific training is also provided by B2Gold Nunavut or work area supervisors and renewed as required according to SOPs, legislative requirements, and as required. Contractors may be requested to provide copies of safety certificates, including First Aid, Workplace Hazardous materials Information System (WHMIS), and Transportation of Dangerous Goods (TDG). Personal protective equipment (PPE) suitable for the activities undertaken will be worn and safe handling procedures will be used. Hazardous materials management is outlined in the Hazardous Materials Management Plan (HMMP); however, it is noted that all personnel involved in the handling of hazardous wastes must receive WHMIS training and Emergency Response training. Where applicable, personnel must also receive TDG training.

Updated training logs will be maintained to ensure that all on-site staff remain compliant with this plan and have been suitably trained for their respective tasks

6. LANDFILL & WASTE MANAGEMENT INFRASTRUCTURE

The most effective method in managing waste is to segregate it at its source before it ends up in specified infrastructure on-site. Wastes remaining on-site after source segregation, recycling, reduction, or minimization techniques will be managed in a practical and environmentally responsible manner using methods appropriate for each waste type generated.

The Project's waste management procedures include:

- ◆ Sorting of waste at all generation points before it's transferred to specific infrastructure,
- ◆ Incineration of non-hazardous combustible wastes,
- ◆ Open burning of untreated wood and cardboard,
- ◆ Landfilling inert or otherwise non-hazardous wastes,
- ◆ Treatment of wastewater effluent from the main camp,
- ◆ Storage of waste rock in designated Waste Rock Storage Areas (WRSAs),
- ◆ Discharge of greywater and treated effluent water,
- ◆ Managing and storing wastewater,
- ◆ Off-site disposal of hazardous and recyclable materials, and
- ◆ On-site treatment of contaminated soil and oily water containing petroleum hydrocarbons in constructed soil treatment facilities.

The LWMP specifically focuses on the management of materials which will be landfilled, or which are subject to open burning. As such, the LWMP infrastructure includes:

- ◆ Project Landfill(s),
- ◆ Temporary non-hazardous waste storage areas (for the storage of wastes prior to landfilling), and
- ◆ Open Burn Area

Other waste infrastructure is addressed in other waste management plans including incinerators, soil treatment facilities, water management facilities, tailings management structures, hazardous waste management facilities, and waste rock storage areas. As required by the License (Part F, Item 7), a site-specific Sewage Treatment Plant Operations Manual will be submitted to the NWB 90 days prior to its construction and installation.

Landfills for disposal of non-hazardous, non-animal attractant, solid wastes will be constructed within waste rock storage areas as these areas are constructed, as illustrated in Figure 3 (below).

During the advanced Construction Phase, landfillable waste materials will be segregated at the source and then landfilled in an approved cell within a waste rock storage area. Open burning of permissible items in temporary quarries will only be done when wind strengths are low to prevent the unintentional scattering and deposition of wind-blown debris into nearby waterbodies (i.e., Goose Lake). Regular inspections will also be conducted to document the condition of the quarry and landfill(s) to determine if it warrants a clean up to prevent windblown debris from escaping containment. Additionally, the use of a large sea can with holes to allow airflow will be used for open burning to entrap all lighter materials and reduce the likelihood of being deposited outside of the quarry. The Operations Phase waste management facilities will be commissioned as early as possible. All waste management areas on the Project site will be located greater than 31 meters from any water body.

During Active Closure, there will be a migration back to exploration phase type waste management facilities once the main mine facilities are decommissioned. Toward the end of Active Closure, a small closure landfill and camp incinerator will remain, and a landfarm will likely be in use as part of final closure activities. These facilities will be used through the Passive Closure phase as well.

Historically a burn cage was available and used at the Goose Property for the burning of appropriate waste (e.g., cardboard and wood), but this has since been retired and is no longer used. In lieu of this the quarry is used to open burn clean wood and cardboard.

During all Project phases, efforts will be made to maximize backhaul capacity to remove hazardous waste and recyclables and minimize on-site accumulation of wastes.

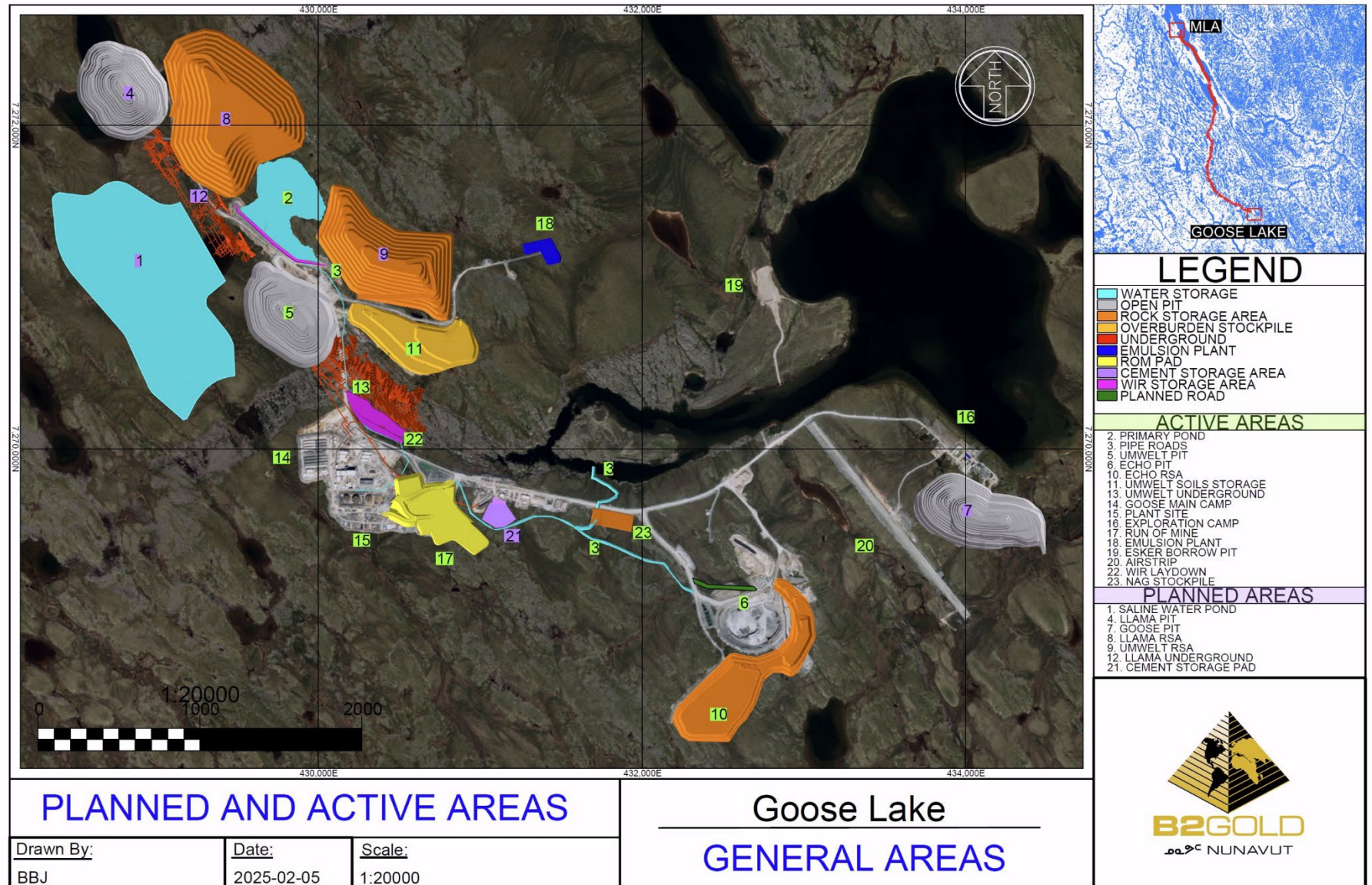


Figure 3: Waste Rock Storage Areas and Potential Landfill Locations

6.1 LANDFILL

Landfills will be required for the disposal of non-hazardous, solid industrial wastes that cannot be reused, recycled, or recovered (or incinerated) as per the waste management hierarchy, as well as for disposal of non-hazardous ash from the incinerators or open burn area. The landfills will be operated as an industrial dry waste landfill and not as a municipal solid waste landfill. Inert waste and non-combustible nonhazardous wastes will be landfilled, as described in Section 7.3.4 – Acceptable Landfill Waste.

6.1.1 LANDFILL LOCATION

Landfill sites will be developed at the Goose Property with the development of waste rock storage areas (WRSAs), within which the landfills will be situated. Siting of landfills has considered distances to sensitive receptors (i.e., being situated more than 31 meters from any waterbody) and consideration of transport routes. Water management monitoring criteria are applied to the WRSAs and therefore seepage from the landfills will be managed as part of the overall Water Management Plan.

Throughout the Project life, additional industrial dry waste landfills may be established within Project WRSAs. WRSAs are logical candidate locations since there is road access, adequate cover material available, and since the runoff from these facilities will already be managed and monitored. Non-hazardous waste generated at the MLA that is not suitable for incineration will be stored in containers that will be transported to landfills at the Goose Property for disposal during each WIR season or backhauled off-site.

6.1.2 LANDFILL DESIGN CONSIDERATIONS

It is anticipated that the landfill sites will be developed using an adaptation of the area fill method as detailed in Ferguson, Simek, Clark (2003). The area fill method is the preferred design method where permafrost and geological rock conditions inhibit the development of trenches. The design allows for the landfill to become fully aggraded into the permafrost over time.

Landfills will be constructed within WRSAs and will be designed to ensure the maintenance and aggradation of permafrost. Landfill locations within the WRSA will be staggered laterally and vertically as the WRSAs are constructed, to avoid potentially creating zones of instability within the WRSA. Figure XX shows the method for construction of landfill cells. The first phase is similar to the method described by Ferguson, Simek, Clark (2003), while the final phase involved burial of the landfill cells in the WRSA, as the waste rock lifts are constructed by mining crews.

Additionally, landfills located within WRSAs will be designed to be protective of watershed boundaries and therefore water quality. Full details on the WRSA design, including measures in place to ensure permafrost is protected can be found in the Waste Rock Management Plan. These measures include placement of WRSAs in areas covered in less than 2 m of overburden, preferentially laying the first layer waste rock during the winter to encapsulate the existing permafrost, building the WRSA in layers promoting progressive freeze-back, capping landfill waste in cells using waste rock, and placement of a closure capping layer.

The total waste volume generated over the life of the mine will dictate the ultimate dimensions of each landfill. Anticipated waste volumes based on predicted waste tonnages during each phase of the Project (Construction, Operations, and Closure) were used to assist in the design of the landfill cells. The designs

will allow flexibility to accommodate layout extension or contraction within the confines of each respective WRSA.

Each of the landfills will be capped and progressively closed as final elevations are achieved. Final grades of the landfill will be graded to a slope of 5% or greater, to minimize ponding and infiltration through the cover, and thus minimize permafrost or cover damage and leachate generation.

The landfills will be monitored both during Operations and Post-Closure to confirm their performance. For details on landfill operation and maintenance refer to Section 7.3.

6.2 TEMPORARY WASTE STORAGE FACILITIES

Solid non-mineral waste may be stored temporarily for the following reasons:

- ◆ **Landfill waste:** prior to construction of the WRSAs, which will be developed during mining activity, landfill waste will be securely stored at designated locations until landfilled.
- ◆ **Recyclable non-hazardous, non-combustible waste:** will be routinely stored in designated areas until transported to an appropriate off-site recycling or disposal facility. This includes recyclables such as tires, electronics and electrical materials and scrap metals.
Sewage sludge waste: organic solids generated from the Sewage Treatment Plant (STP) will be transported directly to an open cell within a landfill and buried. All waste will be incinerated at exploration; however, sewage generated at the MLA, or sewage sludge generated at the Goose Property may alternatively be added to the landfarm as nutrient amendment or be used for revegetation research and reclamation where appropriate.
- ◆ **Wildlife attractant and Food and beverage waste:** including food/beverage containers will be incinerated daily or stored securely (see IMP). This includes storing food waste in wildlife proof containers.
- ◆ **Incineration and Open Burn wastes:** will be temporarily stored in dedicated bins near to the incinerators or burn cage until they are ready to be incinerated/burned. Ash will be contained in drums and stored, until testing results are obtained and reviewed, at which time they will either be disposed of in the on-site landfill (if non-hazardous) or shipped offsite for appropriate disposal (see the HMMP).
- ◆ **Hydrocarbon Contaminated Soil/Water/Snow:** see Landfarm Management Plan.
- ◆ **Hazardous Wastes:** see Hazardous Waste Management Plan.

Waste stored temporarily will be segregated according to its susceptibility to exposure to the elements both indoor (e.g., sea cans) and outdoor storage options will be available. Most other items will be stored in the laydown yard outdoors, or in shipping containers where appropriate. Any materials destined for landfilling, or open burning will be securely stored in closeable sea cans.

6.3 OPEN BURNING

An open burning area is used to burn cardboard packaging and non-preserved-treated wood waste, which is currently situated in the temporary quarry. This area is used to open burn any permissible materials in large quantities that are generated from site operations.

In accordance with both Licence 2AM-BRP1831, Part F, Item 14, and Licence 2BE-GOO2028 Part D, Item 6, open burning of plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood is prohibited.

7. WASTE MANAGEMENT

The purpose of this section is to provide guidance for the proper management of waste materials generated at the Project site including non-hazardous solid waste, hazardous waste, recyclable materials, sewage/sludge, and inert materials for the Goose Property and the MLA.

The management of each classification of waste at the Goose Property and MLA considers the type of waste produces, waste storage, waste handling, waste separation and the final endpoint disposal location. Waste management options vary for the various wastes generated on-site. A general overview of waste types and how they are handled is provided below, followed by details on waste disposal locations.

7.1 OVERVIEW OF WASTE TYPES

This section provides general guidance for the management of non-hazardous solid waste, recyclable materials, and sewage/sewage sludge at the Project including the Goose Property and the MLA.

The management of each classification of waste at the Goose Property and the MLA considers the type of waste produces, waste storage, waste handling, waste separation/segregation and final destination. Waste management options for the various wastes are based on site operations, site resources and the waste hierarchy (i.e., reduce, reuse, recycle, recover, residual disposal). A general overview of waste types and how they are handled is provide below, followed by details on wastes landfilled or subject to open burning.

The types of non-mineral solid waste anticipated to be generated are classified into the following categories:

1. Non-combustible Solid Waste (Inert Waste)

‘Non-Combustible Solid Waste’ refers to materials that do not readily burn or cannot be incinerated. Some examples include glass, metals, ceramics, concrete, bricks, stones, and certain plastics.

2. Open Burn Solid Waste

‘Open Burn Solid Waste’ refers to materials that are non-contaminated and can be open burned. Some examples include wood, cardboard, and paper.

3. Incinerable Waste

‘Incinerable Waste’ refers to materials that can be safely and effectively burned in an incinerator. This process reduces waste volume and destroys hazardous materials. Some examples include plastics, food waste, organic waste, Pacto waste, and oily rags.

4. Sewage and Sewage Sludge Waste

‘Sewage and Sewage Sludge Waste’ refers to the byproducts of wastewater treatment processes and includes the organic solids from the wastewater treatment plant (WWTP) and Pacto waste.

5. Hazardous Waste

‘Hazardous Waste’ refers to materials that pose substantial or potential threats to public health or the environment if not disposed of properly. Some common examples include batteries, mining waste, incinerator ash, contaminated building materials, treated wood, fluorescent lamp tubes, and contaminated packaging materials.

6. Non-Hazardous Waste

'Non-Hazardous Waste' refers to materials that do not pose substantial or potential threats to public health of the environment if not disposed of properly.

7. Recyclable Waste

'Recyclable Waste' refers to materials or products that can be processed and transformed into new products. Some common examples include aluminum cans and plastic bottles, metals, tires, and electronic waste (printers, scanners, monitors, computers, etc.).

8. Attractant and Organic Waste

'Attractant and Organic Waste' refers to materials or substances that draw the attention of animals due to their odor or taste. Common examples include food packaging containers, food waste, coffee cups, organic residues, beverage waste (coffee, juice, tea), animal by-products (bones, dairy products)

7.1.1 RECYCLABLE WASTE

The typical types of waste generated within this category include:

- ◆ Beverage containers (plastic, aluminum, glass, tetra packs)
- ◆ Tires
- ◆ Electronics and electrical wastes
- ◆ Higher value metals (e.g., copper, aluminium).
- ◆ Dry cell batteries for domestic use (e.g., AAA to D cells, 6- and 9-volt batteries).

Waste designated for recycling is backhauled to Yellowknife, Northwest Territories, for recycling.

7.1.2 LANDFILL WASTE

Non-hazardous wastes include discarded materials in a solid, liquid, or semi-solid form that will not be burned or recycled. Such waste does not pose a risk to human or environmental health. These types of wastes generated within this category include bulky items such as mattresses, waste concrete, and other construction wastes (or demolition waste) such as steel, wire, roofing, concrete and asphalt. A description of permissible landfill waste is discussed in Section 7.3.4.

Non-hazardous waste items will be checked for any hydrocarbon contamination and disposed of off-site. All materials with electronics will be removed before being disposed of in the landfill or stored in bulk piles (e.g., some larger scrap metal).

7.1.3 OPEN BURN WASTE

Combustible, dry, non-hazardous wastes that are not a wildlife attractant will be open burned in the quarry. The types of waste generated within this category include:

- ◆ Cardboard and paper, and
- ◆ Unpainted or untreated lumber scraps (non-preserved).

In accordance with both License 2AM-1831, Part F, Item 14, and License 2BE-GOO2028, Part D, Item 6, open burning of plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood is prohibited.

7.2 OVERVIEW OF WASTE HANDLING & SEGREGATION

Waste is segregated at each source to the best extent possible to minimize double-handling as well as cross-contamination of waste streams.

The waste handling system includes specific bins at designated collection areas to promote separation and segregation of materials in the residences, administration, and plant buildings, and each work area. The categories of waste receptacles available at each location will be periodically inspected to ensure receptacle types and quantities are suited to the routinely generated wastes for that area. Any wastes which may be attractive to wildlife are stored in a manner inaccessible to wildlife (such as within a building, shipping container, or wildlife proof containers).

As Project development progresses, standard operating procedures (SOPs) will be developed and updated to ensure new waste types are addressed as needed. Volumes of waste and recycling materials collected at each collection station or waste management area and delivery to its end disposal location will be tracked. Volumes will be assessed using parametric monitoring techniques, which include using drone surveys, estimating bulk material based on the size of bins, and visual inspections. This system will allow auditing of waste stream and identification of areas requiring adaptive management or re-education of staff on Project waste segregation and management practices.

7.2.1 WASTE GENERATION AREAS

Project operations that will generate different types of wastes include the following major areas:

- ◆ Main Camp Area
- ◆ Plant Site Area
- ◆ Assay Lab Area
- ◆ Construction Areas
- ◆ Exploration Area
- ◆ Mobile Maintenance Area
- ◆ Underground Mining Area
- ◆ Open Pit Area
- ◆ General Work Areas
- ◆ Exploration Camp Area
- ◆ Marine Laydown Area (MLA)

The types of non-mineral solid waste¹ anticipated to be generated can be classified into the following general categories:

- ◆ Non-combustible solid waste.
- ◆ Open-burnable solid waste material (e.g., paper, cardboard, non-treated wood).
- ◆ Combustible solid waste for incineration.
- ◆ Sewage and sewage sludge.
- ◆ Organics that may potentially be attractive to wildlife (i.e., food waste and food packaging).
- ◆ Ash from the incinerator.

¹ Tailings, waste rock, and overburden are also considered waste materials. The Mine Waste Rock management Plan (SD-08) and Tailings Management Plan (SD-09) provides details on these wastes.

- ◆ Recyclable materials.
- ◆ Hazardous waste (liquid and solid).

The LWMP details how waste, which is recycled, landfilled, or open burned. These three waste types are discussed further below.

7.2.2 MAIN CAMP (DINING, ACCOMMODATION, ADMINISTRATION AREAS)

Waste materials expected to be generated at Main Camp including dining, accommodation and administration areas include:

- ◆ Food waste
- ◆ Paper/cardboard waste
- ◆ Recycling (returnable/refundable drink containers)
- ◆ Used batteries
- ◆ Other non-hazardous and household/office waste (e.g., plastics, office supplies)
- ◆ Cleaning materials

7.2.3 GENERAL WORK AREAS

Depending on work activity, work areas may have clearly labelled receptacles for:

- ◆ Paper/cardboard waste,
- ◆ Used batteries,
- ◆ Oily rags (metal can with lid),
- ◆ Waste oil (to be located within spill containment),
- ◆ Hazardous wastes materials (within lined containment and per SDS requirements),
- ◆ Untreated wood (may be consolidated in a designated laydown area and taken to the open burn area), and
- ◆ Non-hazardous non-burnable construction/industrial waste (drywall, roofing, plastics, etc.).

No food waste may be disposed of in any areas part form designated secure dining, accommodations, or administration areas. All food waste (including wrappers and recyclable drink containers) must be brought into the main dining area at the end of each shift for appropriate management and disposal of these wildlife attractants

7.2.4 WASTE MANAGEMENT AREAS

Bulky or non-routine wastes may be consolidated within designated waste management temporary storage and/or sorting areas (e.g., instaberm) as they are generated. These may include:

- ◆ Empty large containers (e.g. fuel drums, totes of lubricants, coolant, paints etc.),
- ◆ End-of-life vehicles and equipment are to be stored in a designated 'boneyard' area (pending reuse or to be salvaged for parts),
- ◆ Discarded large tires (e.g., those for ore trucks) will be consolidated and staged for backhaul,
- ◆ Contaminated snow and water will be treated on-site, and
- ◆ Contaminated soil may either be sipped off site for appropriate remediation or disposal or may be land farmed on site once constructed.

All wastes will be segregated by type and stored as appropriate given their potential risks (e.g. wildlife attractants will be secured from wildlife, hazardous waste materials will be in lined areas/spill containment).

Collection and management of recyclable materials may be expanded in future to include cardboard, paper and metals once off-site recycling options are confirmed, which will be determined based on the available markets and economic considerations. Recyclable materials will be labelled and stored in a secure and designated area (to be protective of wildlife) until a sufficient volume is obtained for transport.

7.2.5 MEDICAL & BIOHAZARDOUS WASTE

The handling of medical waste from the health center and sharps collected from various locations across the Project site is considered biomedical waste and will be managed in accordance with applicable territorial and federal guidelines under the Hazardous Materials Management Plan (HMMP).

7.2.6 WIND TURBINE DISPOSAL

Prior to decommissioning, B2Gold Nunavut will discuss the potential to reuse wind turbine materials with communities and the KIA. Upon decommissioning, all hazardous materials will be removed and shipped offsite to an accredited waste management facility per the Hazardous Materials Management Plan (HMMP). Non-hazardous materials such as the turbine and foundations will be disposed of in the approved landfill in accordance with the landfill's operational practices.

7.3 LANDFILL OPERATION & MAINTENANCE

Landfill operation will be performed under the guidelines referenced in Section 3. Landfills will be operated by trained personnel who will carry out regular inspections and monitoring of the facility.

Only authorized personnel may deposit material in the landfill to ensure that only permitted waste is deposited in the landfill. Permitted waste is listed in Section 7.3.4 of the Plan. The landfill operator shall ensure the material being landfilled is inspected and that incoming waste is maintained as described in the below section detailing records management.

The landfill is to be operated as an area-fill landfill within a WRSA and will be gated and locked. Waste is to be deposited in compacted layers and capped with waste rock. Ash meeting the testing requirements for disposal at the landfill should be placed within its container, sewage and sewage sludge may also be landfilled within containers.

Cells will be pre-constructed to accommodate inert landfillable materials, as illustrated in Figure 3 below. Compaction and covering of the waste will occur as needed and waste placement occurs in a limited area minimizing the size of the working face. Compaction is undertaken using 4 to 6 passes of a suitably sized bulldozer over the active area of the landfill, prior to the placement of a minimum of 300 mm of cover. Prior to placing additional lifts of waste, existing intermediate cover can be set aside and reused, where practical. Care is to be taken during compaction to ensure that containers of ash and sewage are not ruptured and that areas containing waste asbestos are not disturbed.

Asbestos may be deposited in the landfill according to the regulations outlined in the LWMP; however, prior to acceptance of asbestos at the landfill the Government of Nunavut is to be notified. The waste asbestos is to be placed in labelled bags and burial is to occur immediately, using a minimum of 500 mm of cover material and temporary signage placed to ensure it is not disturbed. Records are to be

maintained detailing the location of the asbestos burial and shall include coordinates, photographs, and volume. Permanent signage is to be placed around the landfill to ensure it remains undisturbed.

Annual surveys will be undertaken to determine the volume of material placed within the landfill and assist in future planning of landfill cells during operation of the facility.

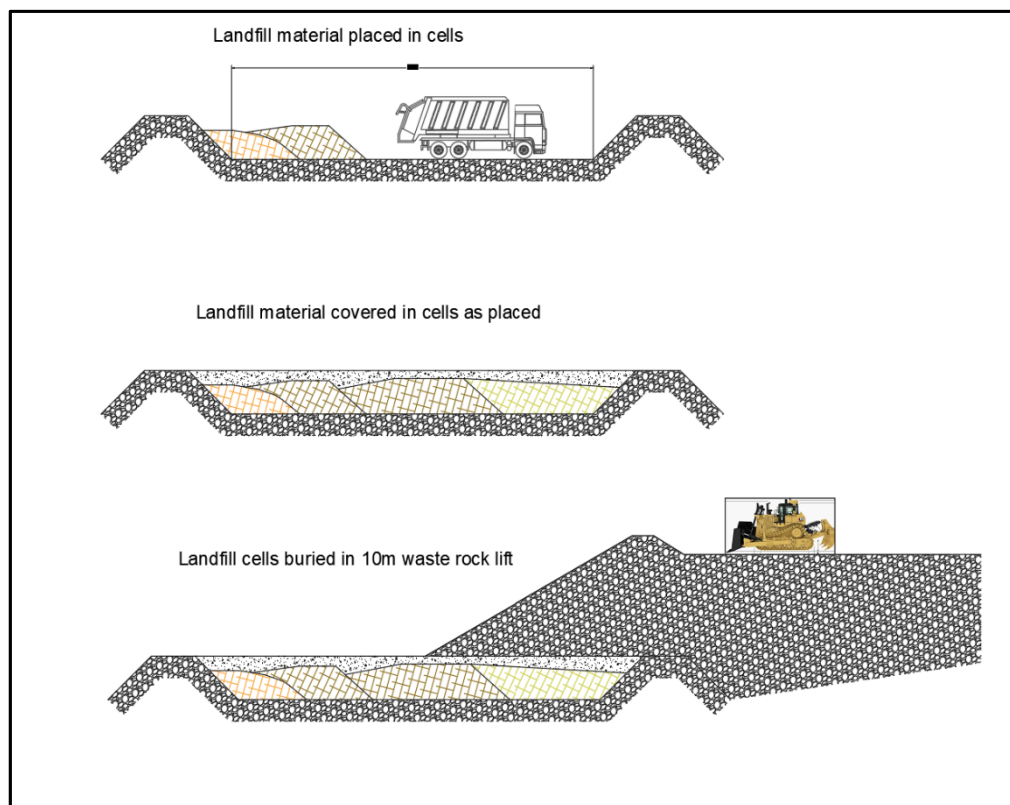


Figure 3: Landfill cell design and fill illustration.

7.3.1 PERMAFROST MANAGEMENT

Landfills will be constructed within WRSAs and will be designed to ensure the maintenance and aggradation of permafrost, as well as the operations methods described above. Full details on the WRSAs design, including measures in place to ensure permafrost is protected can be found in the Waste Rock Management Plan. The design of the waste rock storage areas (inclusive of the landfills) is for permafrost to aggrade back up and into the infrastructure. Waste rock storage areas (WRSAs) will be built up gradually in lifts allowing the permafrost to aggrade while the WRSAs are being built. Waste rock, and any landfill items, will be at ambient temperature when placed in the WRSAs; not at elevated temperatures capable of impacting the existing thermal regime.

Measures used to protect and promote aggradation of permafrost include placement of WRSAs in areas covered in less than 2 m of overburden, preferential placement of the first layer waste rock during the winter to encapsulate the existing permafrost, building the WRSA in layers, laying landfill waste in 1 m thick layers which are compacted and capped daily, encapsulation of landfill cells with waste rock, placement of closure and capping layers. Final grades of the landfill will also be graded to a slope of 5% or greater, to minimize ponding and infiltration through the cover, and thus minimize permafrost or cover damage and leachate generation.

Thermal analysis of the WRSAs has been modelled for operations and after closure and is summarized in the Waste Rock Management Plan and the WRSA Design Report (Sabina 2017, Appendix F-3). Results indicate that freeze-back of the WRSAs and associated landfills will occur within 2.5-5 years. Project landfills will be operated as a dry waste landfill of non-hazardous solid industrial wastes.

7.3.2 LEACHATE MANAGEMENT

The leachate from the landfill is anticipated to be of very low ionic strength (dilute) due to controls on materials to be placed in the landfill and because site-specific landfill leachate management is not considered necessary.

In the event there is leachate from the landfill during periods of heavy rainfall or spring freshet, the runoff will be collected and addressed as outlined in the WMP and per License requirements. However, if greater volumes of leachate or leachate with high ionic strength are found coming from the landfill, an investigation would immediately be undertaken to determine the cause. This could lead to changes in the configuration and/or management of the landfill to further limit water encountering landfill materials and/or modify water management strategy in this area.

The WRSA will also have an annual seep survey completed during freshet (see the WMP).

Because the landfill will be in an area covered by permafrost, deep groundwater contamination from landfill potential leachate is not anticipated.

7.3.3 SURFACE WATER & EROSION CONTROL

The slopes of the landfill will be constructed of waste rock and should not be subject to erosion. Should it prove necessary, surface erosion prevention and sediment control (SEPSC) and surface water control will be incorporated into the landfill design. Final grades of the landfill will be graded to a slope of 5% or greater to minimize ponding and infiltration through the cover and thus minimize cover damage and leachate generation.

7.3.4 ACCEPTABLE LANDFILL WASTE

The following materials set out in Table 7-1 will be acceptable in the proposed landfill:

Table 7-1: Acceptable Landfill Waste Materials

Clean plastics	Wood
Fiberglass insulation	Non-hazardous roofing materials
Asphalt	Concrete
Ceramics	Small appliances (electronics removed)
Bricks	Vehicles (liquids/grease, batteries, & electronics removed)
Carpet	Non-contaminated clothing
Supersacs/megabags/bulk bags	Clean clothing
Sewage sludge (in sealed drums or bags)	Inert materials
Gyproc	Non-hazardous wind turbine components
*Glass	Empty caulking tubes
*Ash	Non-contaminated metals (steel, iron, tin)
*Waste Asbestos	Mattresses
Rubber	Fiberglass

a) *Glass – this does not include light bulbs or fluorescent tubes.

b) *Ash – provided it has cooled to at least 60 °C, is in sealed drums, and is below the applied guidelines for ash in Nunavut.

c) *Waste Asbestos – see below.

7.3.5 UNACCEPTABLE LANDFILL WASTE

Materials not listed in the previous section will be unacceptable for placement in the landfill, unless approved in writing by B2Gold Nunavut's Environment Department. These materials include the following:

- ◆ Organic matter attractive to wildlife, including, food and deceased animals,
- ◆ Food containers, food packaging, and wrappings, unless cleaned,
- ◆ Hazardous wastes including mercury, batteries, solvents, glues, ethylene glycol antifreeze, adhesives (except empty caulking tubes),
- ◆ Electronics,
- ◆ Materials that can be economically recycled,
- ◆ Petroleum production, including materials contaminated with petroleum products, and
- ◆ Expanded polystyrene.

The following materials listed in Table 7-2 are prohibited from being landfilled:

Table 7-2: Unacceptable Landfill waste Materials

Petroleum Hydrocarbons (diesel, gasoline, jet fuel, oil)	Contaminated snow, soil, water
Contaminated materials (spill pads, sorbent materials, clothing, wood, metal, etc.)	Expanded polystyrene
Contaminated industrial plastics or metals, etc.	Tires
Ammonium Nitrate Bags	Batteries (all kinds – lithium, alkaline, lead acid)
Reagents and mill processing chemicals	Painted and treated wood products
Contaminated hydraulic hoses	Copper and Aluminum
Aerosol cans	Contaminated drums or totes
Organic Materials (food, food waste, food packaging)	Mercury containing products/materials

7.3.6 WASTE ASBESTOS²

Waste asbestos includes any type of material with greater than 1 % asbestos by weight (GN 2011b). Asbestos that has been immersed or fixed in a natural or artificial binder or included in a manufactured product is not considered waste asbestos; it is considered a hazardous waste and will be disposed of accordingly. Waste asbestos can either be backhauled off-site for disposal in an approved facility or it can be landfilled. The following are guidelines for landfilling waste asbestos:

- ◆ immediate burial and cover with 0.5 m of cover material,
- ◆ bury where it will not be disturbed, and
- ◆ the location should be maintained on a map or diagram for future reference.

In addition to following the *Environmental Guideline for the General Management of Hazardous Waste* (GN 2010a), B2Gold Nunavut will adhere to the GN's *Environmental Guideline for Waste Asbestos* (GN 2011b). Before landfilling waste asbestos, B2Gold Nunavut will review the steps in this guideline with the GN.

All Government of Nunavut environmental guidelines are publicly available and can be accessed online at <http://env.gov.nu.ca/programareas/environmentprotection/legislation>

7.3.6.1 FLUORESCENT LAMP TUBES

Fluorescent tubes contain mercury phosphorus powder and traces of lead and cadmium, which are considered environmental contaminants under the Nunavut *Environmental Protection Act* (GN 2010b). The only disposal method for fluorescent tubes is through an approved hazardous waste recycling or disposal facility (GN 2003). B2Gold Nunavut followed the Government of Nunavut guidelines on *Mercury-Containing Products and Waste Mercury* (GN 2010b) and *Environmental Guideline for the General Management of Hazardous Waste* (GN 2010a). Waste having mercury will be sent to a certified waste management company for treatment, recycling, and/or disposal.

7.3.6.2 OZONE DEPLETING SUBSTANCES

Ozone depleting substances include chlorofluorocarbons or halons. Common sources include refrigeration equipment, air conditioning equipment, motor vehicle air conditioners, and fire extinguishing equipment (GN 2011c). These materials are hazardous in nature; consequently, all disposal of ozone depleting substances will take place at an approved facility.

Any non-salvageable equipment containing ozone depleting substances will have the ozone depleting substances removed by a certified technician prior to disposal in the proposed landfill. The *Environmental Guideline for Ozone Depleting Substances* was followed by B2Gold Nunavut.

7.3.6.3 MAINTENANCE

Regular maintenance is required, on an as-needed basis, of the following:

- ◆ Storage containers/areas,
- ◆ Equipment,
- ◆ Buildings,

² It is unlikely that asbestos waste will be generated from mine operations. B2Gold Nunavut will avoid using asbestos wherever possible. For further details, see B2Gold Nunavut's Waste Rock Management Plan and Quarry and Borrow Pit Management Plan.

- ◆ Fencing, and
- ◆ Service road to the landfill.

Regular inspections of the waste management facilities shall be carried out as per the LWMP and shall include waste collection, storage, processing, and final-destination facilities.

8. ENVIRONMENTAL PROTECTION MEASURES & MONITORING PROGRAM

B2Gold Nunavut is committed to environmental monitoring of any facility designed for the treatment of waste and or disposal of waste. A summary of general monitoring requirements is provided in the Environmental Management System (formerly known as the Environmental Management and Protection Plan).

Waste materials are segregated first at the source by being placed into specific containers or roll off bins that have signs affixed to them indicating what waste stream they receive (e.g., inert, wood and cardboard, contaminated, etc.). Waste types, quantities, and location of disposal will be documented for all site wastes. Records of waste deposited in the landfill and locations will be maintained, as well a burn log record for each burn. Material tracking logs will be stored digitally and available for review by on-site personnel and inspectors on an as-needed basis.

LWMP monitoring includes:

- ◆ Visual inspections, as applicable, of the integrity of landfill cover, the effectiveness of containment/storage systems, the presence of litter and wildlife, and the appropriate separation of waste categories.
 - ◇ Parametric monitoring of waste materials landfilled is conducted using various techniques (e.g., aerial drone surveys, roll-off bin counts, volumes, etc.).
- ◆ Annual geotechnical inspections of the cells within WRSAs.
- ◆ Quantity and type of materials deposited in the landfill.
- ◆ Record of location of asbestos waste disposed of in the landfill, as required.

In addition, the above LWMP-associated monitoring includes additional monitoring activities, such as:

- ◆ Collection of samples and analysis of runoff quality (surface runoff or shallow groundwater seepage, as appropriate) downstream of the landfill (if observed). Sampling locations will be determined upon final construction of the landfill and surficial runoff will be sampled under snow free conditions monthly for the duration that the landfill exists until mine-closure. In-situ parameters will also be collected during sampling event to monitor pH, oxidation reduction potential (ORP), dissolved oxygen (DO in mg/L and %), temperature (°C), and conductivity (µS/cm). Water samples will be submitted to an accredited laboratory for analysis of multiple parameters.
- ◆ Testing of incinerator ash at an accredited off-site third-party laboratory to determine if it is suitable for landfilling. If ash is determined to exceed applicable guidelines it will be backhauled to an approved waste disposal facility (i.e., KBL in Yellowknife, NT).
- ◆ Inspections of the landfarm, records of soil and water management activities, and laboratory testing of soil and contact water, once constructed.
- ◆ Testing of treated sewage effluent quality from the STP.

B2Gold Nunavut's Spill Contingency Plan outlines measures to prevent and reduce the occurrence of spills, and for eliminating and ameliorating adverse effects to human health and the environment that may result from spills.

Internal audits and inspections are conducted as required by permit and other regulatory requirements on all components related to the LWMP. Appropriate personnel (e.g., B2Gold Nunavut Environment Department) will perform regular inspections of the storage areas, landfarms and landfills to ensure that waste segregation and inventory are being undertaken correctly.

9. ENVIRONMENTAL REPORTING

B2Gold Nunavut will report on the volumes of waste generated and disposed of in the Annual Report for the License per License requirements. The NWB will be notified of any modification associated with any planned changes to waste facilities as needed.

Updates to this Plan will be filed with the NWB and NIRB.

10. ADAPTIVE MANAGEMENT

Monitoring will be the principal mechanism used to provide feedback on the effectiveness of environmental performance. B2Gold Nunavut will periodically assess waste streams to identify areas for improvement related to waste reduction, risk minimization, and waste categorization and segregation.

B2Gold Nunavut will retain all raw data records and annual reporting for at least two years in digital format. The updated LWMP, raw data, and annual reporting will be made available to the lands and waters inspectors, the NWB, and Environment and Climate Change Canada (ECCC), upon request.

11. RECLAMATION

Final closure of the WRSAs and associated landfills is described in B2Gold Nunavut's *Interim Closure & Reclamation Plan*.

APPENDIX H ENGAGEMENT RECORD

Table I-1 Community Engagement Record

Date	Community	Organization / Individual(s)	Type of Engagement	Description
January 10, 2024	Bathurst Inlet and Bay Chimo	Bathurst Inlet and Bay Chimo HTOs	Stakeholder meeting	In-person stakeholder meeting to provide a Back River Project update, discuss the 2023 and 2024 shipping seasons, and NIRB PC T&C 92
January 11, 2024	Cambridge Bay	Hamlet Council	Stakeholder meeting	In-person stakeholder meeting to provide a Back River Project update
January 11, 2024	Cambridge Bay	Deputy Premier Pam Gross	Stakeholder meeting	In-person stakeholder meeting to provide a Back River Project update
January 12, 2024	Cambridge Bay	Ekaluktutiak Hunters & Trappers Organization	Stakeholder meeting	In-person stakeholder meeting to provide a Back River Project update and discuss the 2023 and 2024 shipping seasons
January 19, 2024	Other (see 'Description')	KQBR Firms	Stakeholder meeting	2024 Back River Project Contracting Information Session held in Edmonton, AB with KQBR Firms
February 7, 2024	Cambridge Bay	Kitikmeot Tradeshow	Public meeting	B2Gold Nunavut attended the Kitikmeot Tradeshow and delivered a Project update presentation
February 8, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Q1 2024 IIBA Implementation Committee meeting
March 4, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Annual meeting of the IIBA Presidents
March 4, 2024	Other (see 'Description')	Nunavut Tunngavik Inc.	Public meeting	B2Gold Nunavut attended the NTI PDAC luncheon and delivered a Project update presentation
March 19, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Teams meeting to discuss NWBs stalled review of several management plans
March 20, 2024	Multi-Community (see 'Description')	Kitikmeot Socio-Economic Monitoring Committee	Stakeholder meeting	B2Gold Nunavut participated in the 2024 KSEMC in Cambridge Bay
March 20, 2024	Cambridge Bay	CAO, Hamlet of Cambridge Bay	Stakeholder meeting	Brief Project update meeting
April 3, 2024	Gjoa Haven	Hamlet of Gjoa Haven	Stakeholder meeting	Virtual Project update meeting with Gjoa Haven Hamlet Council
April 8, 2024	Kugluktuk	Kitikmeot School Operations	Stakeholder meeting	Met to discuss Back River Project programming relating to education and B2Gold staff visits to Kitikmeot

Date	Community	Organization / Individual(s)	Type of Engagement	Description
April 9, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Breakfast meeting with KIA staff to discuss ongoing construction progress at the Back River Project, Inuit employment and training
April 9, 2024	Kugluktuk	Kugluktuk HTO	Stakeholder meeting	Project update, Bernard Harbour 2024 season planning, and discussion of additional fisheries offset programming
April 10, 2024	Bathurst Inlet and Bay Chimo	Bay Chimo and Bathurst Inlet HTOs	Stakeholder meeting	Back River Project site tour
April 24, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Dinner meeting during Nunavut Mining Symposium
April 24, 2024	Other (see 'Description')	Premier of Nunavut	Stakeholder meeting	Back River Project update meeting
April 25, 2024	Other (see 'Description')	GN Minister of ED&T	Stakeholder meeting	Back River Project update meeting
May 6, 2024	Other (see 'Description')	SEMWG	Stakeholder meeting	Annual meeting of the Project's Socio-Economic Monitoring Working Group (SEMWG)
June 2024	Multi-Community (see 'Description')	Various	Other (see 'Description')	First edition of the Project's IIBA Newsletter released
June 4, 2024	Kugluktuk	Hamlet of Kugluktuk	Stakeholder meeting	Meeting to discuss potential partnership on community training initiatives
June 6, 2024	Kugluktuk	Kugluktuk HTO	Stakeholder meeting	Meeting to provide updates on Bernard Harbour monitoring and discuss the potential for a new fisheries offset program
June 6, 2024	Cambridge Bay	Hamlet of Cambridge Bay	Stakeholder meeting	Meeting to discuss a potential partnership to develop a recreation center in Cambridge Bay
June 24, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Q2 IIBA Implementation Committee meeting
June 25 to June 28, 2024	Other (see 'Description')	Inuit Environmental Advisory Committee	Stakeholder meeting	Annual meeting and site visit
July 5, 2024	Kugluktuk	Hamlet of Kugluktuk	Other (see 'Description')	Met with Interim SAO. Current lease overview and invoicing. Update on simulator training

Date	Community	Organization / Individual(s)	Type of Engagement	Description
July 9, 2024	Cambridge Bay	Public	Public meeting	B2Gold Nunavut partnered with NTI to hold a Nunavut Day BBQ
July 10, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Informal meeting with KIA President to provide a Project update
July 10, 2024	Other (see 'Description')	Kitikmeot Corporation	Stakeholder meeting	Kitikmeot Inuit Workforce Strategy Q2 virtual meeting with Kitikmeot Corporation
August 1, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Meeting to discuss Back River IIBA implementation-related matters
August 26-28, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Inspection of the Project
September 9, 2024	Other (see 'Description')	KIA and Government of Nunavut	Stakeholder meeting	Meeting with the Government of Nunavut / Kitikmeot Inuit Association to discuss the potential for a tripartite Memorandum of Understanding
September 10, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Q3 IIBA Implementation Committee meeting
September 19, 2024	Other (see 'Description')	KIA	Stakeholder meeting	KIA Q3 2024 Board meeting presentation
September 23, 2024	Kugaaruk	Public	Public meeting	Annual Kitikmeot Community Tour
September 24, 2024	Gjoa Haven	Public	Public meeting	Annual Kitikmeot Community Tour
September 25, 2024	Taloyoak	Public	Public meeting	Annual Kitikmeot Community Tour
September 27, 2024	Kugluktuk	Public	Public meeting	Annual Kitikmeot Community Tour
October 3, 2024	Other (see 'Description')	Otokiak Corporation	Stakeholder meeting	Discussed Inuit employment, training and recruitment with Otokiak Corporation
October 4, 2024	Other (see 'Description')	Kitikmeot Corporation	Stakeholder meeting	Update meeting with Kitikmeot Corporation
October 4, 2024	Cambridge Bay	Kiiliniq High School	Public meeting	Meeting with potential graduates to discuss mining-related training and employment opportunities
October 7, 2024	Other (see 'Description')	KIA	Stakeholder meeting	KIA Board visit to Back River Project sites
October 9, 2024	Other (see 'Description')	Kitikmeot Corporation	Stakeholder meeting	Kitikmeot Inuit Workforce Strategy Q3 virtual meeting with Kitikmeot Corporation
October 17, 2024	Multi-Community	Kitikmeot Mayors	Public meeting	Presentation to the Kitikmeot Regional Mayors Forum in Cambridge Bay

Date	Community	Organization / Individual(s)	Type of Engagement	Description
	(see 'Description')			
October 28, 2024	Kugluktuk	Public	Public meeting	B2Gold Nunavut held a public meeting to discuss Back River Project environmental monitoring and mitigation
October 28, 2024	Kugluktuk	Kugluktuk HTO	Stakeholder meeting	Project update, future fisheries offset partnerships
October 28, 2024	Kugluktuk	Mayor Ryan Nivingalok	Stakeholder meeting	Project update discussion
November 2024	Multi-Community (see 'Description')	Various	Other (see 'Description')	Second edition of the Project's IIBA Newsletter released
November 1, 2024	Other (see 'Description')	NNL Kitikmeot Ltd.	Stakeholder meeting	Discussed business opportunities at the Back River Project with NNL Kitikmeot Ltd.
November 4, 2024	Multi-Community (see 'Description')	Premier of Nunavut, Ministers of ED&T and Environment, and Deputy Premier alongside all Kitikmeot Members of the Legislative Assembly	Stakeholder meeting	Project update meeting in Iqaluit
November 19, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Call with KIA to discuss ongoing IIBA review and meeting schedule
November 21, 2024	Other (see 'Description')	Kitikmeot Corporation	Stakeholder meeting	Kitikmeot Inuit Workforce Strategy virtual meeting with Kitikmeot Corporation
November 29, 2024	Other (see 'Description')	Kitikmeot Corporation	Stakeholder meeting	Monthly update meeting with Kitikmeot Corporation
December 3-4, 2024	Other (see 'Description')	CTAG	Stakeholder meeting	Caribou Technical Advisory Group meeting
December 6, 2024	Other (see 'Description')	KIA	Stakeholder meeting	Q4 IIBA Implementation Committee meeting
December 11, 2024	Kugluktuk	Economic Development Officer	Stakeholder meeting	Discussion on Company-community support programs

Date	Community	Organization / Individual(s)	Type of Engagement	Description
December 12, 2024	Kugluktuk	Bobby Anavialok, MLA	Stakeholder meeting	Call to discuss Inuit employment-related issues
December 31, 2024	Other (see 'Description')	IEAC	Other (see 'Description')	Email update to IEAC re: next meeting and MLA site access

APPENDIX I REPORTABLE SPILLS RECORD

Table J-1 Reportable Spills Record

Date	Product Spilled	Quantity (L)	Spill Description	Site	Approximate Location	Geolocation	NT-NT Spill Number	Mitigation and Corrective Actions
08-Jan-24	Transmission Fluid	150	A broken cap on the transmission fluid reservoir caused the release to Echo Pit	Goose Mine	Echo Pit	65.535, -106.953889	spill-2024008	Sorbent materials were deployed to soak up all free product on the ground. An excavator was then used to scrape up contaminated soil in the pit and was placed into a lined megabag for eventual off-site disposal. Sorbent materials were incinerated. Workers were reminded to complete thorough pre-op inspections before operating equipment to prevent these types of spills.
6-Apr-24	Transmission fluid, oil, coolant	50	Transport truck roll over carrying CAT generator on ice.	WIR	Near Portage 2	65.580084088816, -106.58403318651	spill-2024090	Sorbent materials were deployed initially to soak up free product on the ice. When the truck and generator were righted more product had leaked out. A grader was used to scrape contaminated ice into a pile. Skid-steers and a rubber-tired loader were used to scrape remaining areas. Manual labor was involved to put the contaminated snow in mega bags. Sorbent materials were incinerated. Contaminated snow was allowed to melt in a lined containment and treated on-site. Investigation revealed that speed was a factor. The truck's tires got stuck in a rut on a sharp turn and the weight shifted. Corrective action was to slow down on all corners.
17-Apr-24	Diesel	300	Truck Jack knifed on Lake 11 of WIR and punctured fuel tanks	WIR	Lake 11	65.680709572175, -107.0610763846	spill-2024109	Sorbent materials were deployed initially to soak up free product on the ice. When the truck and generator were righted more product had leaked out. A grader was used to scrape contaminated ice into a pile. Skid-steers and a rubber-tired loader were used to scrape remaining areas. Manual labor was involved to put the contaminated snow in mega bags. Sorbent materials were incinerated. Contaminated snow was allowed to melt in a lined containment and treated on-site.
7-May-24	Hydraulic Oil	120	Ruptured hose on excavator caused hydraulic oil to spill	Goose Mine	Primary Pond	65.557594760154, -106.52314145492	spill-2024139	Spill pads deployed immediately and have absorbed majority of fluid. Once machine is up and fixed, it will be used to clean up any contamination remaining. Machine was repaired and once moved contaminated soil was excavated and put into a megabag for eventual off-site disposal.
17-May-24	Diesel	200	Fuel nozzle left unattended resulting in spill while refueling drill rig	Goose Mine	Rig 10045	65.549306, -106.497472	spill-2024165	Crews deployed to clean up spill. Contaminated material placed in megabags and prepped for backhaul to KBL. Human error - refueling nozzle was 'locked' with a rock while worker left refueling unattended. Change to Major Drilling procedure to ensure workers always present during refueling.
16-Jul-24	Diesel, Hydraulic Fluid/Gear Oil	159.3	Sheared rain drain on instaberm released volume of contaminated water for unknown duration	Goose Mine	Insta Berm north of Site Services	65.545133, -106.511875	spill-2024276	CIRNAC inspectors observed sheared off rain drain w/ valve open. Unknown duration of spill. Conservatively estimated 159.3L based on volume, dimensions, and berm not being level (barely 1/3 full w/ approx. 3" of water in there - highly conservative). Clean up not possible at this time (need to move instaberm and dig into pad). Human error - rain drains not permitted to be used on-site. Corrective action included removing all rain drains and ensuring all water is tested prior to discharge.

Date	Product Spilled	Quantity (L)	Spill Description	Site	Approximate Location	Geolocation	NT-NT Spill Number	Mitigation and Corrective Actions
19-Oct-24	Diesel Fuel	250	Broken drain	Goose Mine	LV Concrete Pad	65.542760032452, -106.5138889	spill-2024399	While building a ramp to a concrete pad, the loader was back blading and made contact with a 1" drain and sheered it off, all contents of the tank were released to the ground and concrete pad, clean up started right away, all contaminated material is placed into lined megabags for back haul to KBL in Yellowknife for disposal. Operator's must be aware of their surroundings and employ extra caution when working near fuel tanks.
27-Nov-24	Hydraulic Oil	150	Hydraulic hose failed on CA506 (dozer)	Goose Mine	Plant Site	(65.543365, -106.508561)	2024440	Sorbent materials deployed to soak up free product. Machine was left in place until repaired. Once repaired contaminated soil was excavated and put into lined megabags and staged for eventual backhaul. Sorbent materials incinerated.