April 29th, 2024

Mr. Mason Mantla
Chair
Wek'èezhìi Land and Water Board
#1-4905 48th St.
Yellowknife, NT X1A 3S3

Re: 2023 Annual Report for Nighthawk Gold Corp. Exploration Activities

Dear Mr. Mantla:

Attached please find our 2023 Annual Report for the activities related to the Indin Lake Gold Property.

This submission is in fulfillment of the reporting requirements for two Water Licenses held by Nighthawk Gold Corp, namely W2021L2-0004 and W2021L2-0005, both issued on January 13th, 2023. Request for extension to file the 2023 Annual Report was submitted on March 27th and an extension was granted until April 30th, 2024.

Please note that Nighthawk Gold Corp. has recently merged with Moneta Gold Inc. to form STLLR Gold Inc., on whose letterhead this cover letter is prepared. Nighthawk Gold Corp. remains a subsidiary of STLLR Gold Inc.

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

Sincerely,

John McBride

John McBride
Vice President, Exploration

181 Bay Street, Suite 4260, Toronto, ON M5J 32V1
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Table 1: Schedule 1: Annual Water Licence Report Conformity Table

Condition	Section of Report
a) A brief summary of Project activities	3
b) An updated Project schedule	3.3
c) The daily, monthly, and annual quantities in cubic metres of fresh Water obtained from all sources, as required in Part B, Condition 18 of this Licence	4.1.1
d) A summary of the calibration and status of the meters and devices referred to in Part B, Condition 18 of this Licence	4.1.1
e) A summary of engagement activities conducted in accordance with the approved Engagement Plan, referred to in Part B, Condition 20 of this Licence	4.5
f) A summary of how Traditional Knowledge was incorporated into decision making	4.5
g) A summary of Construction activities conducted in accordance with Part E of this Licence	2.2.2
h) A summary of major maintenance activities conducted in accordance with this Licence	2.2.2
i) A summary of activities conducted in accordance with the approved Waste Management Plan, referred to in Part F, Condition 9 of this Licence, including:	4.2
i) i. A summary of approved updates or changes to the process or facilities required for the management of Waste	4.2
i) ii. Monthly and annual quantities, in cubic metres, of deposits of Waste deposited, by location	4.1.2, 4.2.1
i) iii. A map depicting the location of the Sumps	4.1.2
j) A summary of the results and any actions taken as a result of the inspections conducted to fulfill Part F of this Licence	5
k) A summary of activities conducted in accordance with the approved Spill Contingency Plan, referred to in Part G, Condition 2 of this Licence, including:	4.3
k) i. A list and description for all Unauthorized Discharges, including the date, NWT spill number, volume, location, summary of the circumstances and follow-up actions taken, and status (i.e. open or closed), in accordance with the reporting requirements in Part G, Condition 4 of this Licence	4.3
k) ii. An outline of any spill training carried out	4.3
l) A summary of activities conducted in accordance with the Closure and Reclamation Plan, referred to in Part H, Condition 1 of this Licence, including:	4.4
l) i. Details of any Progressive Reclamation undertaken	4.4.1
l) ii. A discussion on whether planning and implementation remains on schedule, and summary of any new scheduling setbacks	4.4.2
l) iii. A summary of Reclamation Research completed	4.4.1
l) iv. A summary of engagement conducted regarding Closure and Reclamation	4.4.2
l) v. A list of any factors that would increase or decrease the Closure Cost Estimate the next time the Estimate is updated	4.4.2
l) vi. Tabular summaries of all data and information generated under the SNP annexed to this Licence, in Excel format	Appendix C, Appendix D
m) A summary of activities conducted in accordance with the Water Management Plan, referred to in Part F, Condition 4 of this Licence, including	4.1
m) i. A summary of approved updates or changes to the process or facilities required for the management of water	4.1
m) ii. Monthly and annual volumes by location of water managed under the Plan	4.1.1

m) iii. A summary and interpretation of any monitoring results	4.1.3, Appendix C, Appendix D
m) iv. A list of any action level exceedances	4.1.3
m) v. A description of actions taken in response to any action level exceedances	4.1.3
n) A summary of activities conducted in accordance with the Explosives Management Plan, referred to in Part F, Condition 6 of this Licence, including:	4.6
n) i. A summary of approved updates or changes to the process required for management of explosives	4.6
n) ii. Monthly and annual quantities by location of explosives managed under the Plan	4.6
o) A summary and interpretation of any monitoring results and a description of any corrective actions implemented	4.1.3
p) A summary of activities conducted in accordance with the Wildlife Mitigation and Monitoring Plan	4.7
q) A list of any non-compliance(s) with the conditions of this Licence or any directive from the Board pursuant to the conditions of this Licence	4.7
r) A summary of actions taken to address concerns, non-conformances, or deficiencies in any reports filed by an Inspector	5
s) Any other details requested by the Board by December 31 of the year being reported	5

Project & Property

Summary for 2023 Annual Report

Indin Lake Gold Property, NWT

NTS Sheet: 086B/02,03,06,07,10,11

Northern Mining District, NWT

Latitude 64° 24 10.11” N, and Longitude -115° 06 23.04” W

UTM NAD 83, Zone 11, 7143262N, 0591274E

John Nicholson, B.Sc., NAPEG P.Geo.

Riley Ledoux, B.Sc., P.Geo

Vancouver, British Colombia

January 16th, 2024

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1 Property Description, Location, and Obligations & Permits

1.1 Location

Nighthawk Gold Corp (“Nighthawk”) owns and controls 100 percent of the mineral rights to the Indin Lake Gold Property, located approximately 220 kilometres north of the city of Yellowknife, NT. Nighthawk’s Indin Lake Gold Property is a land package comprised of owned mining leases within a continuous, north-trending area approximately 60 kilometres in length by 6 to 24 kilometres in width, which covers 90 percent of the Indin Lake Volcanic-Sedimentary Belt.

The Colomac Mine, which comprises mining leases covering a former open pit gold operation and contiguous lands, are located within the northern portion of Nighthawk’s Indin Lake Gold Property. The Colomac camp is the current location for all drilling, logging, and related support, including field activities, on the Indin Lake Gold Property. The Colomac camp is located at Latitude 64° 24’ 10.11” N, and Longitude -115° 06’ 23.04” W (UTM NAD 83, Zone 11, 7143262N, 0591274E) shown on Figure 1.

1.2 Description

The Indin Lake Gold Property comprises 153 mining leases covering approximately 94,736 ha within the North Mining District, Northwest Territories, Canada. The land package forms a continuous, northwardly trending strip, measuring approximately 60 kilometres in length north to south, and by 6 to 24 kilometres in an east-west width (see Figure 2).

In early 2011, Nighthawk optioned from Ursa Polaris Developments Corporation (“Ursa”), the Leta Arm mining leases and three other mining claims, Treasure Island, Laurie Lake, and Barker-Vidie. (Byron, 2011a). The Leta Arm mining leases are registered in the name of George Stephenson and are held by Nighthawk under an option agreement with Ursa.

Nighthawk also owns 100% of the mineral rights to the Colomac Property, a reclaimed open pit mine that historically produced 527,908 ounces of gold with an average head grade of 1.66 grams per tonne gold ("g/t Au"). Nighthawk acquired the mineral claims and leases of the former producing Colomac Gold Mine ("Colomac") from Aboriginal Affairs and Northern Development Canada ("AANDC"). The Colomac Property includes the past producing Colomac Main Zone, four surrounding gold deposits, and several gold showings. (Byron, 2011b).

On December 18, 2013, Nighthawk announced an option/purchase agreement to acquire 4 Mining Leases (Cass and Kim properties) from Geomark Exploration Ltd., a wholly owned subsidiary of Pine Cliff Energy Ltd. (Byron, 2013). On December 29, 2015, Nighthawk Gold Corp announced that it was going to allow its option to acquire the Kim and Cass properties to expire in accordance with the terms of the option agreement with Geomark Exploration Ltd. dated Dec 18, 2013 (Byron, 2015). On February 18, 2021, Nighthawk announced that it had entered into a binding option agreement with Geomark Exploration Ltd. to acquire a 100% undivided leasehold interest in four contiguous mining leases (the Kim & Cass Property), a total of 7,588 acres (31 km^2) that incorporate the historic Kim and Cass zones, immediately adjacent to Nighthawk's Indin Lake Gold Property. Increasing the total Indin Lake Property holdings to the current 94,736 ha.

On January 15, 2020, Nighthawk Gold Corp., announced that it has entered into an agreement (the "Purchase Agreement") to purchase certain net smelter return ("NSR"), and net profit interest ("NPI"), royalties (collectively referred to as the "Royalties"), from the two parties. The Royalties relate to certain claims within the Leta Arm Gold Project (“Leta Arm”), including the Lexindin showing (“Lexindin”), the Treasure Island Gold Project (“Treasure Island”), the Laurie Lake Showing (“Laurie Lake”), and the Barker-Vidie Showing (“Barker-Vidie”). The completion of the transaction was announced by Nighthawk on April 3, 2020 (Byron, 2020).

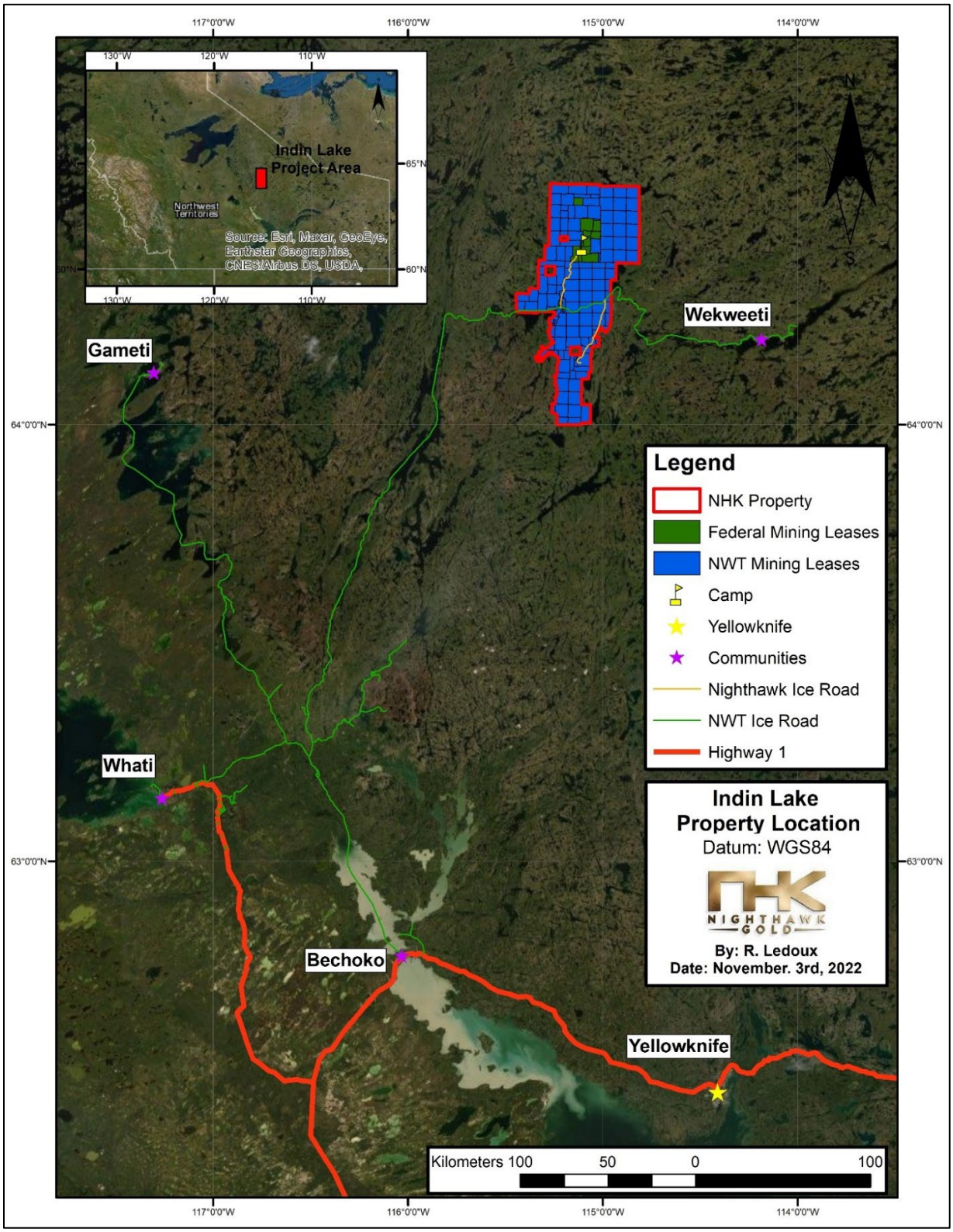

Figure 1: Map of Indin Lake Property Location with inset Regional Map showing Colomac area.

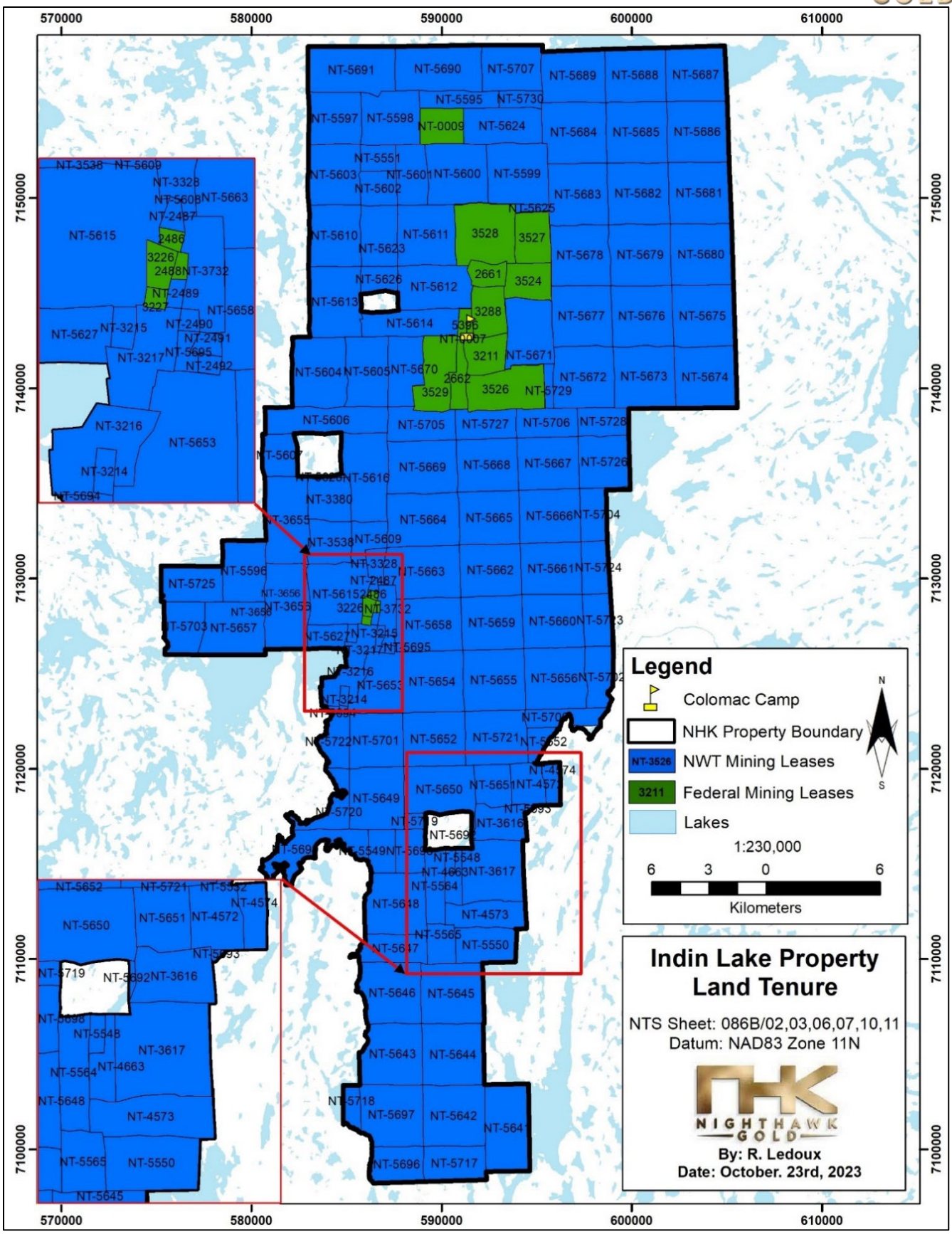

Figure 2: Map of Indin Lake Gold Project with NWT and Federal Land Tenure.

1.3 Obligations and Permits

Under Northwest Territories and Nunavut Mining Regulations, C.R.C., c. 1516, mining claims require representation work (i.e. assessment work) to the value of at least $10 per hectare or part thereof contained in the claim during the two-year period immediately following the date the claim is recorded and at least $5 per hectare during each subsequent one-year period. At the end of 2021 and into 2022 all of Nighthawk Golds claims were converted to lease, therefore no further assessment work is required.

Nighthawk Gold holds two valid Class-A Land Use Permits (LUP):

- W2018X0006 effective February 15th, 2019, and expiring February 14th, 2026.
- W2021C0009 effective January 13th, 2023, and expiring January 12th, 2028.

These LUP were formerly covered in part by, W2018C0007, W2012C0002, W2010C0008, and W2006C0001 Class A.

Nighthawk Gold holds two valid Type-A water licenses:

- W2021L2-0004 Type-A (non-federal lands) effective January 13th, 2023, and expiring January 12th, 2038.
- W2021L2-0005 Type-A (federal lands) effective January 13th, 2023, and expiring January 12th, 2038.

These water licenses were formerly covered in part by, W2018L2-0002, W2018L2-0003, W2012L1-0002, W2010L2-0001, and W2006L2-0001 Type B.

The (LUP) permits and water licenses are issued under the authority of the Wek'èezhìi Land and Water Board ("WLWB"). LUP W2021C0009 is issued for Mining Exploration at the Indin Lake Gold Project. LUP W2018X0006 covers remediation of the Damoti Lake, Diversified, Chalco Lake, and Spider Lake Sites.

Type A water licenses W2021L2-0004 (non-federal lands) and W2021L2-0005 (federal lands) became effective January 13th, 2023, which entitles Nighthawk to withdraw up to 800 m^3 of water per day combined for the project from all lakes listed in Annex B of the water license.

Nighthawk has complied with the terms and conditions of its land use and water permits, including continuing restoration and cleanup of the land and water previously utilized under the Licenses. Nighthawk also holds a valid GNWT Prospector's License #33742, and (NWT-AANDC) Federal prospecting License NEF0012.

2 Accessibility, Local Resources, and Infrastructure

2.1 Accessibility & Local Resources

The Indin Lake Gold Property is located approximately 220 kilometres north-northwest of the city of Yellowknife, NT. Yellowknife has population of 20,340 (2021 census) and is both the capital of the Northwest Territories, and the main supply enter for personnel, goods, and services within the area. The village of Behchoko, formerly Rae-Edzo, populated primarily by people of the Tlicho Nation, lies southwest of the Indin Lake Gold Property, and is accessible to Yellowknife via Highway 3. The Tlicho community of Wekweèti is the closest to the project and is approximately 55km to the east.

Figure 3: Aerial view of Colomac camp facing S-SE with Steeves Lake to the SW, Truck Lake to the NE, and the Truck Lake Channel north of camp (Summer 2023).

For the 2023 Indin Lake drilling program an Astar AS350B3 helicopter was used for all drill moves and supporting flights. The helicopter was provided by Great Slave Helicopters (GSH) of Yellowknife, NWT. The helicopter was based at the Colomac camp (Figure 3) located on the former Colomac Gold Mine property. Colomac also has an airstrip, which can accommodate large aircraft up to a Dash 7 (figure 4).

Figure 4: Dash 7 at Colomac Airstrip (2021).

During the winter season, access to Colomac is also possible by the annual Wekweètì Winter Road from Yellowknife and then by a 13-kilometre winter trail/road into Colomac with eleven portages. This method of access was again employed during 2023 to conduct bulk fuel transfers to the work site (Figure 1 with Wekweètì Winter Road in green and Colomac Winter Road in yellow, and shown in green/blue in Figure 6). In total 18 days were spent building the Colomac Winter Road and an additional ten days were spent on road maintenance.

Four new fuel berms were built in 2022 around the apron at the Colomac airstrip to house the incoming fuel. This site is the official refueling area and ensured minimum transport of hydrocarbons during the field season. All fuel transported was in new 45-gallon drums and sealed with plastic water seals on all bungs. All P-50 is palletized in berms and standing upright. Grade A & B jet fuel is laid down according to Transport Canada regulations and is supported by rough-cut 3" x 9" lumber to protect the berm from damage.

The Colomac camp is also located less than 130 kilometres north-northeast of the Snare Lake Hydro Generation facility and approximately 120 kilometres northeast of the Nico gold-cobalt-bismuth-copper deposit.

Figure 5: Bird's-eye photograph of the Colomac airstrip apron, showing the four new fuel berms (2022).

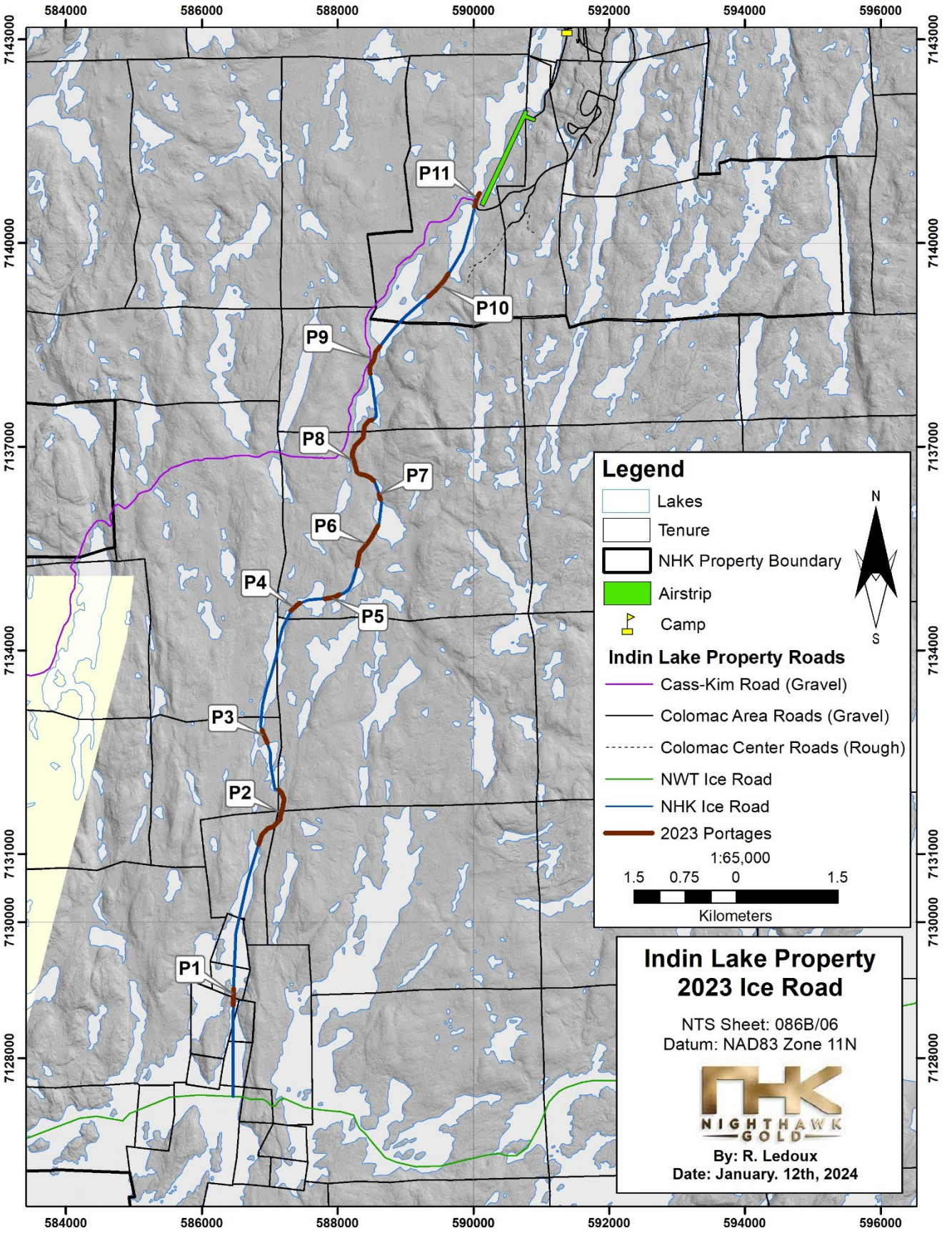

Figure 6: Map of Nighthawk's 2023 winter road with portage locations labelled.

2.2 Colomac Infrastructure

2.2.1 Colomac Camp

All drilling, logging, and related support, including field activities were serviced from the Colomac Camp. Nighthawk Gold Corp constructed the Colomac camp commencing in March 2012 and occupied the camp in May 2012. The camp underwent upgrades and had additional structures added during early 2014 and again in 2016, 2017, 2018, 2019, 2020, 2021, 2022, and 2023. The camp, which is located at 7143262N and 0591274E (UTM NAD 83, Zone 11N), is built on a coarse rock and gravel pad 1-2 metres above ground and is enclosed by a gated electric bear fence (see Figure 3, Figure 7, & Figure 8). The camp is located east of Steeves Lake and located approximately 2.2 kilometres north of the Colomac airstrip.

Figure 7: Aerial view of Colomac camp looking east showing new trailers and new construction almost finished (2023).

The authorization to construct the Colomac camp specified that it must be located 30 metres or greater away from the Truck Lake Channel. The latter is an attempt by CARD to encourage fish to breed. Truck Lake Channel connects Truck Lake to Steeves Lake and has generally not contained water for the past ten plus years (see Figure 3), although water did flow along the Truck Lake Channel for a short period during the freshet period of early 2016 through 2023 only to dry up and flow underground thereafter once the ground defrosts.

The blue structure shown near Steeves Lake (see Figure 3 & Figure 7), is a disassembled metal crane. This equipment was included with the sale of the Mining Leases to Nighthawk. It is non-functional and only of scrap metal value.

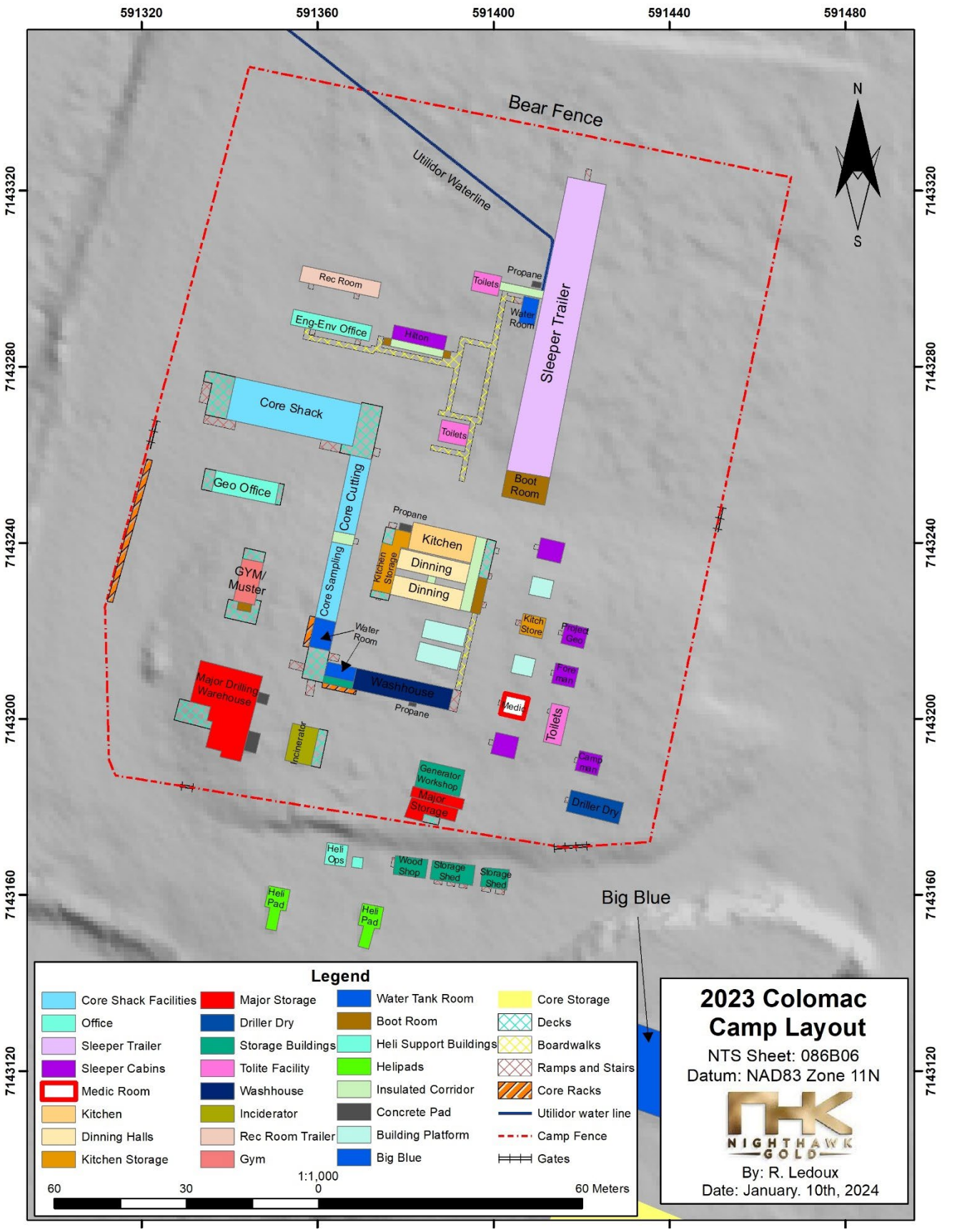

Figure 8: Surveyed schematic drawing of Colomac Camp with changes made during 2023.

The Colomac Camp (Figure 3, Figure 7, & Figure 8) is made up of several wood framed buildings and trailers. Currently it has a maximum capacity of 60 people.

Colomac Camp Housing

The main form of housing at the Colomac Camp is provided by a 49-person dormitory trailer complex (serial number 17745-1256-S(B)-06N08) that was built in June 2008, and brought into camp on the winter ice road in 2023. The dormitory trailers are made up of eight 12 x 58-foot trailers connected by a central hallway (Figure 24), each with independent 56,000 BTU furnaces and air conditioning. There are seven sleeper trailers with individual rooms (Figure 21), and one washroom/laundry room trailer. There are exits at the north and south entrances to the trailers as well as a side entrance that leads to the new toilet house through and insulated corridor. At the main southern entrance, a wood framed building was added on for use as a boot room (Figure 26) There is a central propane heated hot water tank that supplies hot water for the entire trailer. Within the trailer there are three washer-dryer combo machines, six individual bathrooms with a sink, shower stall, and a deactivated toilet that has been covered with plywood, as well as a communal washroom with four sinks, two urinals, and two deactivated toilets that has been covered with plywood (Figure 25). All water used in the showers, sinks, and urinals is emptied with the greywater on the west side of the trailers in a rocky area behind the new toilet facility.

Additional housing can be found in a five-person cabin with individual rooms, an internal corridor, and a boot room on both entrances, as well as six 14 x 16-foot wood cabins used for the Major Drilling Forman, Project Geologist(s), Camp Manager(s), Medic, Mechanic, and one additional sleeper.

Toilet and Shower Facilities

There are three external toilet facilities at the Colomac camp with a total of 14 Incinolet electric incinerating toilets and six Pacto toilets. The original toilet facility, located across from the old core shack (now the washhouse), is also the largest. It has eight Incinolets and two Pacto toilets, as well as a sink with its own 450-gallon water tank (Figure. 39). The other two toilet facilities each have three Incinolet and two Pacto toilets; they are located across from the new core shack and connected by an insulated corridor with dormitory trailer. Additionally, there are two outdoor urinals located at the back of the original toilet facilities and the toilets across from the new core shack. These outdoor urinals are open air troughs covered on three sides for privacy that drain on top of piles of rocks.

In addition to the showers and laundry room (Figure 22, Figure 23, & Figure 25) in the dormitory trailers that are described above, there is a main wash house. The old core shack building was converted into a wash house to make up for the loss of the two-weather haven dry's formerly in use. The building has four showers, five dryers, five washing machines, four-bathroom sinks, an industrial sink, a cubby area for hanging towels and other bathroom supplies (Figure 30). Additionally, in the back of the bathhouse a cleaning supplies storage area was established, as well as a small storage room.

Water and Power

The Colomac camp has capacity to store a total of 10,800 gallons or 40.9 m^3 of water which is used for the kitchen, washhouse, and trailer washrooms. There are also fire hoses and portable Honda generators available to be hooked up to the water tanks in the event of a fire. All water is sourced from nearby Steeves Lake and then passes through a filtration system with two separate filtrations and a UV water treatment system (Figure 31). Additionally, newly installed in 2023 the water systems have been equipped with a fill trigger that is activated at low water level and turns off when the tanks are close to full (Figure 32). Water usage is tracked daily with a gauge as water is emptied from the water tanks.

There are two water room locations, the oldest and largest water room is located behind the kitchen in a repurposed wooden structure and has been recently expanded into the back of the new washhouse. Here, four 750-gallon water tanks (Figure 31) are linked with eight 450-gallon tanks that are all fed by a buried heat traced water line. This water room supplies water to the washhouse and kitchen, with hot water heated by an oil burner hot water tank (Figure 31) and an electric hot water tank respectively. The second, and newest water room, is located on the western side of the dormitory trailers. The trailer water room contains six 450-gallon water tanks and is supplied by a heat traced waterline inside of a utilidor newly built in 2023 for use in the 2024 season.

Figure 9: 75Kw and 100 Kw John Deere diesel generators.

Colomac camp is powered by a 75 Kw John Deere diesel generator and a backup 100Kw John Deere diesel generator (Figure 9). The generators are located inside a room of a 20 x 32-foot non-insulated wooden building at the far south end of camp. The other half of the building is used for a workshop and storage area for tools.

Kitchen and Dining Area

The kitchen and dining rooms are located near the center of camp. The dining rooms (Figure 10) are comprised of two 14 X 48-foot wood-frame buildings with a connecting insulated walkway between, and a black-top wood-frame foyer connecting both the dining rooms and the 14 x48-foot kitchen on the eastern side (Figure 10). There is a large storage area with a walk-in fridge and freezer connecting them all together on the eastern side as well as a small storage shed across the main road in camp beside some of the sleeper cabins. The updated kitchen was completed at the end of 2021 season and the new dining rooms were progressively added during 2022.

Figure 10: Colomac camp kitchen (left side) and one of the two dinning rooms (right side); (2023).

Recreation Buildings

In addition to the dining rooms, there is a gym and a rec room trailer. The gym is a 16 x 32-foot wooden building with an attached boot room; inside there is various workout equipment and outside there is a golf putting area and short bouldering wall (Figure 11). The gym also doubles as an emergency muster point for the camp. The rec

room trailer is a 12 x 59.6-foot skid use office trailer that was brought into the camp in winter 2023 for use as recreation room and has been set up with a projector and seating (Figure 28).

Figure 11: Colomac Gym with putting area in the front and bouldering wall partially visible on the back, with the geology office and core shack in the background to the right, and the One Web (white bulbs) internet receivers off to the left (2023).

Helicopter Operations

The helicopter operations area is located immediately outside of camp to the south, beside the main gate. There are two Heli pads constructed of pallets and plywood. The helicopter pilots and engineers have a small (7 x 7-foot) blue wooden building for supplies, as well as a 16 x 16-foot wooden building for the helicopter engineers to work on repairs for the helicopter(s) (Figure 12). Additionally, there is a refueling station set up down at the airstrip apron close by the jet fuel berm.

Figure 12: Helicopter operations workshops (2023).

Driller Facilities and Buildings

Major Drilling has three storage buildings, a 40-foot sea can, dry, and laydown area. The main Warehouse is in the southwest corner of camp (Figure 3, Figure 7, & Figure 8). The building is roughly 50 x 64-foot in the shape of a L with a 16 x 24-foot deck for receiving sling loads (Figure 13). As well, within the camp compound there are several connected sheds close to the main camp entrance making up a 16 x 36-foot storage area. Immediately beside the sheds is a 40-foot sea can for additional secure storage. Outside of the camp compound, at the airstrip apron, Major Drilling has a 16 x 50-foot storage building where snowmobiles, frost fighters, and other miscellaneous

equipment is kept (Figure 16 building on left). The drillers dry, a 16 x 32-foot wood framed building is also located next to the main camp entrance. Additionally, the drillers have a laydown just out of camp up the hill towards the Colomac pits (Figure 13). The area is approximately 75 x 200 metres and is used for storing all the large miscellaneous drilling equipment.

Figure 13: Major Drilling Wearhouse (bottom) and laydown area (top); (2023).

General Storage and Other Buildings

There are several additional storage buildings, as well as a woodshop and incinerator building (Figure 14). “Big Blue”, a 65 x 196-foot uninsulated cold storage blue metal building, owned by the Tlicho nation, is located nearby and to the southeast of the Colomac camp. As of 2023, Tlicho nation has granted access to “Big Blue”. Since gaining access, Nighthawk has converted it into a storage area with shelving and put in a woodworking area on a level platform (Figure 35), as well as building a 24x60-foot wood framed mechanics shop (Figure 35& Figure 36), and a 16 x 60-foot two story storage building (Figure 35, Figure 37, & Figure 38). Immediately outside of camp, beside the helicopter operations area, there is a 14 x 24-foot woodshop, as well as a 14 x 32-foot and 14 x 20-foot storage shed used for storing small equipment like quads and snowmobiles. One of the storage areas can also double as an operation base for field work.

Figure 14: Outside of incinerator shack, with mega bags in front ready to be weighed before being flown out of camp (2023).

At the airstrip apron there is a 16 x 50-foot wooden storage building for miscellaneous camp storage (Figure 16 building on right). The building at the airstrip also has a room inside with a small diesel GeoStove that can be used as a waiting room for fixed wing flights, or in an emergency where camp is completely evacuated. Additionally, at the airstrip apron is a 14 x 16-foot storage shed built by Nighthawk for the government, and two 20-foot sea cans, one owned by the government (Figure 15).

Figure 15: Government storage shed, and 20-foot sea can with government truck on the left (2023).

Figure 16: Colomac apron storage buildings, with Major Drilling's storage building on the left and general storage and waiting room on the right side with a windsock. Further to the right the airstrip and entrance to the apron is visible (2023).

Geological Facilities and Offices

The camp geology/head office is in a 16 x 48-foot wooden framed building on the western edge of camp south of the core shack. It is clearly recognizable by the large satellite dish beside it. The office space has storage, six desk/workstations, a weather station, and is the hub for the camps internet. Internet is provided by Cascom Ltd. and is covered by three separate systems to always ensure quality internet access. The primary internet is provided by One Web (Figure 11 left corner), with Starlink and a large VSAT satellite dish providing backup. Additionally, a 12 x 59.6-foot skid use office trailer was brought up in 2023 for use as an environmental and engineering office.

Figure 17: Inside view of core shack (2023).

All 2023 core logging, cutting, and sampling of core was conducted at the Colomac facilities. The core shack, where all core logging is conducted, is a long building (96+ feet length) and can hold just over 800 metres of core on all the benches at one time (Figure 17). All core was cut with one of the four Vancom electric rock saws (Figure 18) and then sampled in a separate building from the core shack connected by a wooden deck. All water used for cutting core was re-cycled in settling tanks located next to the four rock saws.

Figure 18: Inside view of cutting room (2023).

Drill core from the 2012 through 2023 drill programs is stored on the Colomac property. Most core is flat stacked outdoors within an area immediately south of “Big Blue” (Figure 19). A second core storage area along the side of the road (Figure 19) on the first left after going up the hill towards the Colomac pits was started during 2022 once the area near “Big Blue” was filled.

Figure 19: Big Blue boneyard with Big Blue off to the right and Colomac Camp visible in the background (top image). Mine road boneyard core stacks (bottom image); (2023).

Mobile Equipment

There are several mobile vehicles and equipment onsite that is owned by Nighthawk Gold and several of the contractors. The companies and their equipment onsite are listed below.

- Nighthawk Gold: CAT 289C2 skid steer, CAT 950E loader, 480 John Deere Loader, Kubota KX1613 excavator, 1968 MAC dump truck, two Honda quads, four Kubota Sidekick Side by Sides, wobbly packer, and a 750-litre fuel trailer.
- Geominex Consultants: Two Chevrolet 3500 HD pickup trucks, GMC Suburban truck, and a Ford E350 passenger van.
- Major Drilling: Tucker 4000 Snowcat, CAT D3KGP bulldozer, four Can-am side by sides, two Bombardier 650 snowmobiles, and two Bombardier wide track scandic snowmobiles.
- Aurora Telecom Services: two Pistenbully 200 series Snowcats, two water trucks, Ford support truck, and an Arco plough truck.
- Red Lion: FL60 Freightliner Hiab.

2.2.2 2023 Colomac Camp Improvements

During 2023, Nighthawk undertook a program of camp expansion and upgrading to allow for greater capacity in the future, to save money on fuel costs and time on camp labour, and to alleviate the need for major maintenance activities. Camp improvements consisted of the following new buildings constructed or upgraded.

1. All 39 14x16-foot Weatherhaven tent sleepers, as well as the three 16x32-foot Weatherport tents used as washhouses and a drillers' dry, were deconstructed along with most of their platforms (empty spaces visible in Figure 7 aerial photo). The tents were sent back to Discovery Mining Services in Yellowknife.

2. Storage sheds # 7, 8, and 9 were deconstructed to make more space for a new generator building. All of the wood, along with the wood from the Weatherhaven platforms, was stacked and is ready for demobilization from camp to Yellowknife.

3. A Willscot 49-person dormitory sleeper trailer (Figure 20 and aerial view in Figure 7) with serial number 17745-1256-S(B)-06N08 built in June 2008 was brought up on the winter ice road (Figure 6).
   - The 49-person dormitory is made up by eight 12 x 58 ft trailers connected by a central hallway (Figure 24) with independent 56,000 BTU furnaces and air conditioning.
   - There are seven sleeper trailers with individual rooms (Figure 21) and one washroom and laundry room trailer.
   - There are three washer dryer combo machines (Figure 23), a central hot water tank, linen room, six individual bathrooms with a sink, shower stall and a deactivated toilet (Figure 22), a communal washroom with four sinks, two deactivated toilet stalls, and two urinals (Figure 25) that drain into the greywater.

4. A new boot room was built on the southern entrance to the new dormitory trailers (Figure 26).

5. A new toilet building with a tin roof that is connected to the west side middle entrance of the new dormitory trailers via an insulated corridor was constructed (Figure 27). The new toilet building has two Pacto toilets and three Incinolet toilets.

6. A new insulated water tank building with six 450-gallon water tanks that feed into the dormitory trailer was built.

7. An insulated utilidor with a heat traced waterline that feeds water to the dormitory trailer water tank building was built in the far northwest quadrant of camp connecting to Steeves Lake (Figure 7 aerial view).

8. Two new 12 x 59.6-foot skid use office trailers were brought up on the winter ice road. One is set up for use as a recreation room (Figure 28) and the other will be for environmental and engineering office space (Figure 29).

9. The old core shack building was converted into a bathhouse to make up for the decommissioning of the two Weatherhaven dry's. It now has four showers, five dryers, five washing machines, four bathroom sinks, an industrial sink, a cubby area for hanging towels and other bathroom supplies (Figure 30). Additionally, in the back of the bathhouse a cleaning supplies area was established, as well as a small

storage room, and eight connected 450-gallon water tanks that have been linked with the six 750-gallon water tanks in the existing pump house (Figure 31).

10. Improvements were made to the water systems, along with the greater capacity provided by adding water tanks in the bathhouse. The filling system was automated with a fill trigger that is activated at low water level and turns off when the tanks are close to full (Figure 32).

11. Three concrete pads were set by the new bathhouse, the kitchen, and for the new dormitory trailer (Figure 33) to securely stand propane pigs within their transportation/storage racks.

12. “Big Blue” had several improvements made to as part of the arrangemen with the Tlicho Nation allowing Nighthawk to use the building (top, Figure 19). “Big Blue” was cleaned up and had power restored to it from the Colomac camp generators. Additionally, the roller doors were fixed and are now operational, several storage shelves have been setup within (Figure 34), and a carpentry area with a level wooden floor was built (Figure 35).

13. An insulated 28 x 42-foot mechanic shop was built inside of “Big Blue” with a large entrance that allows access for the CAT 950E and 480 John Deer Loaders for safe maintenance and repairs indoors (Figure 35). The mechanic shop has a mezzanine level at the back for additional storage (Figure 36).

14. An insulated 12 x 60-foot two-story storage building was built inside of “Big Blue”(Figure 37 & Figure 38).

15. A sink and single 450-gallon water tank with a small pump was installed in the oldest toilet facility nearby the drillers dry (Figure 39)

16. After drilling finished for the year, the 16 x 32-foot weather port previously used as the drillers dry was taken apart and a shell of a new wooden building was built (Figure 40). The building was not fully finished by the end of the 2023 season and will need to be completed in 2024 prior to the start of drilling.

17. Two 14 x1 6-foot Weatherhaven and two 16 x 32-foot Weatherport platforms were kept and have been insulated for future use as building platforms (Figure 41).

Figure 20: Outside view of dormitory trailers northern back entrance, with fire fighting equipment by the stairs (2023).

Figure 24: Inside of dormitory trailers looking down the hallway (2023).

Figure 21: Inside of dormitory trailer bedroom (2023).

Figure 23: Dormitory trailer laundry room with washer-dryer combo machines on the left and door to hot water heater straight ahead (2023).

Figure 22: Dormitory trailer individual washroom with shower, sink, and covered toilet (2023).

Figure 25: Dormitory communal washrooms with urinals, sinks, and toilet stalls (2023).

Figure 26: Dormitory trailer boot room (2023).

Figure 27: Insulated corridor between dormitory trailers and new toilet facility (2023).

Figure 28: Inside of new rec room trailer (2023).

Figure 29: Outside of environmental and engineering skid mounted office trailer (2023).

Figure 30: Inside of washhouse with driers and sinks on the left and washing machines and showers on the right (2023).

Figure 31: Inside water tank house at the back of the new washhouse (2023).

Figure 32: Water tanks fill control board (2023).

Figure 33: Concrete pads with propane pigs for the new bathhouse, the kitchen, and for the new dormitory trailer from left to right respectively (2023).

Figure 34: Inside of “Big Blue” showing storage area and shelving (2023).

Figure 35: Inside of “Big Blue” with carpentry area (front left), two story storage building (back left), mechanic shop (back right), and FL60 Freightliner Hiab (front right); (2023).

Figure 36: Inside of mechanic shop within “Big Blue” (2023).

Figure 37: Two story storage building within “Big Blue” (2023).

Figure 38: Inside of two-story storage building within “Big Blue” (2023).

Figure 39: New sink and water tank in the old toilet facility (2023).

Figure 40: Aerial view of the ongoing construction of the new drillers dry (2023).

Figure 41: Photo of platform that has been insulated and wrapped up for use as a building platform in 2024 (2023).

2.3 Damoti Infrastructure

2.3.1 Damoti Horseshoe Camp

The Damoti Horseshoe Camp, which is located at 7114527N and 0591288E (UTM NAD 83 Zone 11N) was decommissioned during 2012 after the new Colomac camp was constructed. The Damoti camp remains as the site for flat-stack storage of historical (legacy) Damoti drill core, as well as core drilled by Nighthawk from the Damoti drilling during 2009 and 2010. Nighthawk's core from the 2011 drilling of Treasure Island and the Leta Arm areas, and the early 2012 drilling of Colomac, are also stored at the former Damoti camp (see Figure 42 & Figure 43) In addition, a large amount of older Damoti historic drill core, of generally pre-1996 vintage, is stored in racks on an island north of the Damoti camp (see Figure 44).

Figure 42: Aerial view of Damoti Camp after remediation in 2017.

A large hard-shell core shack was established at Damoti Horseshoe camp in late 2009, with a separate cutting room added during 2011. Both structures remain valuable assets, and with nominal effort can be returned to operational status if required. The balance of the camp currently comprises a few small hard-shell buildings and several tent floors and standing tent frames.

During 2022 some repairs were made to the roof of the core shack, as well as ensuring that the electrical wiring and lights were available for use. A survival bag with food, sleeping bags, and other survival gear was left in case of an emergency in the area.

Figure 43: Core drilled by Nighthawk during 2009 through to early 2012 stored near the Damoti core shack.

2.3.2 Damoti Ramp Area

In addition, three double-walled, Environmental Protection Tanks (EPT), having a capacity of 75,000 litres each, are located near the Horseshoe ramp area, a short distance east of the Damoti Horseshoe camp (see Figure 45). The Underwriter's Laboratories of Canada (ULC) brass plates affixed to each of the three tanks indicate that they were constructed in 1996 by Northern Steel Industries Limited, Tisdale, Saskatchewan (tel: 306-873-4531). The tanks are entered into Environment Canada database with the following identification numbers, which are also indicated on aluminum tags affixed to the tanks (see inset to Figure 45): EC-00021356, EC-00021357, and EC-

00021359. As of late 2018, two of these tanks are empty while the third (the western tank) contains a minor amount of legacy diesel (dated c.1996) estimated at less than 5 barrels.

Two seacan containers are also located along an ATV trail connecting the Damoti camp and ramp area and provide secured storage for equipment if required.

Figure 44: Core racks at the old camp on the island north of the Damoti camp.

During March 1996, a decision was made to drive a ramp at Damoti to provide underground exploration access on the high-grade portion of the Horseshoe zone, conduct an underground drill program, and obtain a mini-bulk sample. The high-grade gold encountered over long intervals in surface drilling warranted going underground (van Hees, 1996). Both underground programs were conducted by Quest International Management Services under the supervision of Dr. Edmond H. van Hees. Approximately 430 metres of decline/crosscut were driven between June 15 and October 15. Two levels were opened, 120 metres driven on the 25-meter Level, and 30 metres driven on the 40-metre Level. Thirty-five underground drill holes were completed, totalling 792.1 metres. The ramp has since filled with water, with surface access closed and barred with a grate of steel bars/rods.

The underground exploration program resulted in the production of approximately 20,000 tonnes of waste rock and mineralized rock (3,810 tonnes) stored on surface near the portal.

Figure 45: Aerial view of three double, 75,000 litre, bulk tanks at ramp area near Damoti camp. Inset shows metal tag with Environment Canada ID number EC-00021357.

The resulting report of the underground development, prepared by P & E Mining Consultants Inc, indicated a non-compliant 43-101 mineral inventory *"within easy reach of the McPherson Project ramp"* to contain 25,972 troy ounces (in proven, probable, and possible categories) with gold grades ranging from 15.43 g/t Au (0.45 oz/t) for the surface stockpile to between 34.28 and 39.08 g/t Au (1.0 oz/t and 1.14 oz/t) for "in place" zones. This total inventory included the stockpile stored on surface near the portal, as estimated by van Hees, to be 3,810 tonnes of mineralized rock averaging 15.43 g/t Au (i.e. 4,200 short tons grading 0.45 oz/t) for a total of 1,890 contained troy ounces on surface (i.e. 58.78 kg gold) (van Hees, 1996).

No surface water flow was noted at that time at the ramp area where the waste and mineralized rock is stored. It should also be noted that since 2009, both Nighthawk personnel, and staff from Golder & Associates, have not noted any surface water flow at the ramp area where the waste and mineralized rock is stored. The pathway for flow from the waste and ore stockpiles is constrained by bedrock highs to the north, east and west and therefore,

all runoff from this site is expected to drain towards Lardass Lake. The water quality at the SNP stations, as well as downstream towards Lardass Lake, suggest there has been minimal effect to the environment from seepage to date. Seepage from the stockpiles is considered limited, consistent with observations at site during the field investigations (i.e., no surface water flow). (WSP Canada Inc. Damoti Lake Surveillance Network Program Results from June 2023 Monitoring Event 21499891, July 28, 2023) (Golder Associates Report 13-1338-002, Feb 10, 2015)

2.3.3 Importance of Damoti Infrastructure

The Damoti camp infrastructure, and both the historical and Nighthawk drilled core stored on site, are extremely important assets to the future advancement of mineral exploration within the Indin Lake Belt. The core shack and cutting facilities can be returned to operational status, if required, with very nominal effort. They are extremely important to advancing any future drill program at either Damoti or within the southern half of the Indin Lake Project.

During 2012, historical legacy core similar to that located at Damoti, was located and identified by Nighthawk near the new Colomac camp. It appears that during 1997, Royal Oak Mines Inc. drilled these holes in the Colomac sill testing Zone 3.5 mineralization to depth and laterally. These holes had not been included in any previous resource estimate. The Royal Oak logs were lost but we did have the core with Tyvek sample tags and the associated assay values without locations.

During August 2012, Nighthawk re-logged 20 of these historic holes (7,470 metres), and re-assayed 10% of the known mineralization to meet QA/QC requirements. Geological logs were produced and merged with the Royal Oak assays. This work added considerable positive information to the new resource estimate at Colomac. The fact that these historical holes were available also saved Nighthawk more than 4.0 million dollars of drilling/exploration expenditures.

Damoti is important both for its mineral potential and its infrastructure. It is a high-grade, near-surface gold target that offers significant lateral expansion possibilities as well as room for new discoveries. The fact that in 2018 Nighthawk Gold Corp completed 17 diamond drill holes for a total of 5,140 metres reflect this belief. These 17 holes were directed at exploring outside of the main deposit to test several new geological targets within the host Horseshoe and Red Mountain synclines. The holes returned 31 unique samples containing VG., i.e. Visible Gold, in addition to gold defined by assay. These holes also confirmed and extended gold zones and outlined at least one new discovery at Red Mountain that remains open in all dimensions.

3 Work Conducted During 2023

3.1 2023 Drill Program

3.1.1 Drill Staff and Other Personnel / Contractors

Nighthawk's 2023 drilling and field activities covered by this report were supervised by Brian Game, P.Geo., and John Nicholson, P.Geo., 1411-409 Granville Street, Vancouver, B.C., V6C 1T2. John Nicholson acted as the Qualified Person for this project in the preparation and supervision of the preparation of the logs and related scientific or technical information related to the drilling activities.

The diamond drilling program was conducted with personnel, supplies, and ancillary equipment provided under contract by Major Drilling Group International Inc., 111 St. George St., Moncton, NB, Canada. Donald Lafrance and Derek Parker served as drill foreman for the two rig, 11-man crew responsible for drilling. The Major Drilling personnel were on site at the Colomac Camp from February 22nd to April 22nd, and May 16th to July 18th, 2023, with the brief break in between while waiting for the snow to melt off. Major Drilling provided two drillers and

two helpers for each drill to cover night and day shifts, as well a 5th man, and a mechanic to help with drill maintenance and moves.

GeoMinEx Consultants Inc., 1411-409 Granville Street, Vancouver, BC, provided geologists and geotechnical assistance for the 2023 core logging and field activities from March 10th to April 29th, and May 19th to July 18th, 2023, with shifts roughly on three weeks on two weeks off rotation with a couple longer four week and six week shifts mixed in. In general, there were eight to ten Geominex staff on site for two drills, with one camp manager, one coreshack manager, two logging geologists, three Geotech's/samplers, one core cutter, a master's student, and field assistant. Geologists Christopher Fozard and Riley Ledoux, P. Geo were responsible for supervision over the logging geologists and technicians within the core shack and in the field. The Geominex geologists responsible for the 2023 logging were Shirley Tai, Ben Beckie, Jack Armstrong, Ben Ruston, and Antoine Archambault. Geotechnical support was provided by Rayleen Wilson, Carter Hokanson, Alice Xiao, and Genevieve Ramsey. Core sampling was completed by Brendan Muscalu and Ryan Pownall. Fredreich Kaiser and Paul Bingham cut core using Vancom electric rock saws. Additionally, Turner Green and Tshepiso Sekhula were employed by Geominex to help in the core shack and data collection for their master's thesis on the Indin Lake Greenstone belt at Lakehead University.

All 2023 drill moves, and support were done with an AStar AS350B3 provided by Great Slave Helicopters (GSH) of Yellowknife, NWT. One pilot and one engineer were based at the Colomac camp from February 16th to July 16th, 2023. GSH helicopter pilots included: Tanner Pelletier, Troy White, Jacob Pretorius, Carter Pond, Pierre Otish, and Damien Jowett. GSH engineers on site included: Adam Tattrie, Brandon Mercer, Leanne Zaruk, Carlos Sanchez, Anthony Bouchard, Francisco Gasca, Matthew LeMesurrier, and Sheldon McKay.

Camp maintenance, assistance, catering and expediting services for the Colomac camp was provided by personnel supplied by Discovery Mining Services Ltd. ("DMS"), Yellowknife, NT. A small crew was sent in on February 9th to help open camp and the last people left on August 3rd, 2023, when the camp was shutdown. DMS generally had ten personnel onsite. With one head camp guy, two assistants, one mechanic, and four kitchen staff consisting of a head cook, 2nd cook, and two assistants. Dehke Enterprise supplied two additional laborers and a cleaning person. Discovery also provided heavy equipment operators to service the generator, and the CAT950E loader and Kubota KX161-3 Super Series excavator owned by Nighthawk Gold Corp.

Camp construction was mainly completed by Simon Cornellius and an assistant working for Gallant Construction Inc, Yellowknife, NT, with some assistance from Geominex and Discovery personnel. Camp building took place February 16th to August 7th working on a four week on two weeks off rotation.

Sub-Arctic Geomatics Ltd, 226 Utsingi Drive, Kam Lake Industrial Area, Yellowknife, NT, provided land surveyors with GPS base station and related equipment, to survey the planned 2023 drill collar locations and azimuths as well as the final 2023 collar locations. Sub-Arctic conducted surveying during visits of March 1st to 2nd (Dylan Foote), May 18th to 20th (Bailey Simpson), and July 5th to 6th (Bailey Simpson).

62 Degrees North Inc., 100 Borden Dr Bay 25, Yellowknife, NT, X1A 2P22, provided a paramedic for the camp. One paramedic was on site from February 23rd to July 25th, 2023. Coverage was provided by Jery Dhaliwal, Ethan Forgue, Travis Moir, and Nicole Mantey.

Terrane Geoscience Inc., 2089 Maitland Street, Halifax, NS, B3K 2Z8, provided structural consulting. Edward Wu was on site from May 25th to June15th, 2023.

WSP Canada Inc., 4905 48th Street, Yellowknife, NT, X1A 3S3, was responsible for environmental monitoring on the Indin Lake property staff were on site on June 20th and September 20th, 2023.

Air Tindi., 107 Berry Street, Yellowknife, NT, Canada, X1A 3T2, provided fixed wing air support to bring personnel and supplies to the Colomac camp from February 11th to August 4th, 2023. Dash-7 and Twin Otter aircraft were the main fixed wing aircraft used.

Cascom Ltd., 11 Coronation Drive, Yellowknife, NT, Canada, X1A 0G5, provided satellite telecommunications equipment and services.

3.1.2 2023 Drill Program Summary

The Colomac camp opened February 9th, 2023, with a small group from Discovery Mining Services personnel to start opening the camp and begin work on the winter ice road. The 2023 drill program was made up of two parts, a winter program, and a summer program, with a break in between for the winter breakup. Geology and drilling staff were onsite from February 22nd to April 22nd, and May 16th to July 18th, 2023.

The winter program had a staggered start with the first drill (SDD 129) starting on March 14th and the second drill (SDD 131) starting on March 16th. The end of the winter program was also staggered with SDD 131 finishing on April17th and SDD 129 finishing on April 18th.

The summer program had a staggered start with the first drill (SDD 129) starting on May 22nd and the second drill (SDD 131) starting on May 23rd. The end of the season was staggered with SDD 131 finishing on July 11th and SDD 129 finishing on July 12th.

Once drilling was completed, a small crew of drillers remained until July 18th to winterize and store the drills for next season. The logging, cutting, and sampling of drill core was completed a few days after the last drill was shut down. A small crew from Geominex remained until July 18th to put away core, complete specific gravity sampling, clean, and organize items to ensure everything was ready for the start for the 2024 drill program.

During 2023, Nighthawk drilled four separate deposits/showing areas: Cass, Albatross, Zone 24-27, and Leta Arm (Diversified & North Inca). A total of 62 NQ-sized diamond drill holes were completed during 2023, for a total of 14,821.6 metres drilled with 6,864 samples submitted for gold analysis. Additionally, a total of 4,796.5 m^3 of water was used while drilling throughout the 2023 season (see Table 2). The breakdown of holes completed per area, with drill hole details including hole labels, start date, stop date, days spent drilling, water usage, local zone, UTM collar locations, hole attitude, final core depth, number of samples submitted for analysis, number of samples with visible gold, the water source land tenure, is summarized in Table 3 through Table 7. Nighthawk's 2023 drill collar locations, as well as mineral tenure can be seen on Figure 46, Figure 47, Figure 48, Figure 52, Figure 56, & Figure 57.

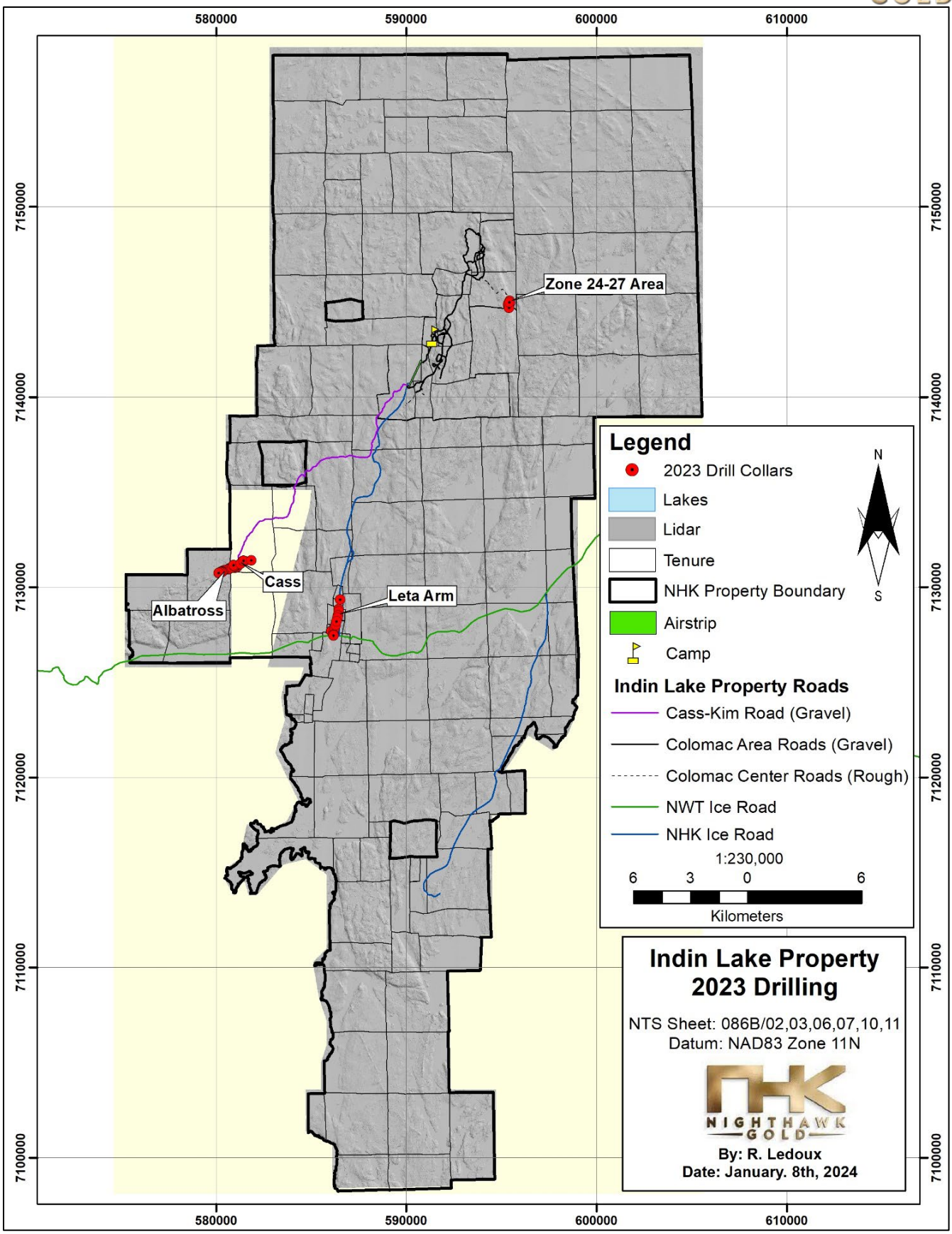

Figure 46: Map of 2023 drilling area locations on the Indin Lake Property.

3.1.3 2023 Drill Results

Drill results, including both intercept values, drill hole cross sections and longitudinal sections, and commentary regarding the results and their interpretations are well documented on the Nighthawk Gold Corp. website at www.nighthawkgold.com. The information can be located within the various press releases posted on the Website.

A total of 62 NQ diamond drill holes were completed during 2023 for a combined total of 14,821.60 metres on the Indin Lake Gold Property. A total of 6,864 samples were analyzed for gold by either F.A. – AA procedures using a 30-gram charge or by Metallic procedures with crushing, pulverization, and screening of the entire sample. Pulverization and screening of the entire sample was conducted as part of the metallic procedure to address the nuggety nature of the gold, when visible gold was seen. Several select additional samples were analyzed by a four-acid /ICP-AES 33-element package, or by whole rock XRF Fusion for 13 major elements plus LOI. All sample analyses were conducted by ALS Laboratories with sample preparation in Yellowknife, NT, and analysis in North Vancouver, BC.

All holes were logged in detail with downhole surveys, lithology, alteration, structures, mineralization, veining, and sampling data recorded in MX Deposit. All holes had basic geotechnical data recorded for every three-metre run including recovery, rock quality index (RQD), and number of joints. Both drills had ACT-III structural orientation to take oriented structural measurements. All oriented holes had relevant structural data recorded with a REFLEX Easy Shot to record the alpha and beta angles, and gamma angles where applicable, of structures. For sections of core where an orientation line was not able to be drawn alpha measurements were recorded manually. On all drill holes a specific gravity measurement was taken every 10 metres or on every interval that was selected for sampling. In total 6,617 specific gravity measurements were taken.

The following plans, cross sections, and comments summarize and highlight the achieved milestones of Nighthawk's 2023 drill program.

Table 2: Summary of Each Areas Total Drilling

Area	Drill Holes	Start Date	Stop Date	Drill Days	Water Usage (m^3)	Final EOH (m)	# Of Samples	VG # Of Samples
Cass	19	2023-05-22	2023-06-28	45.5	1661.0	5442.00	2067	38
Albatross	10	2023-05-25	2023-06-15	18.5	631.2	1974.00	927	9
Zone 24-27	12	2023-06-26	2023-07-12	25	967.0	2850.80	1515	21
Diversified	6	2023-03-14	2023-04-18	20.5	587.4	1434.80	633	2
North Inca	15	2023-03-21	2023-04-17	39.5	949.9	3120.00	1722	16
TOTALS	**62**	**2023-03-14**	**2023-07-12**	**149**	**4796.5**	**14821.6**	**6864**	**86**

3.1.4 Leta Arm

Major Objectives and Drilling Completed for 2023 Leta Arm Drill Program

The 2023 Leta Arm drill program targeted along a 12 kilometres shear zone in the Leta Arm area. Previous surface sampling work, as well as previous drilling around the Leta Arm zone had suggested high grade, narrow vein mineralization at depth. The major objective for the 2023 Leta Arm drill program was to test the potential for resource expansion in the Leta Arm Zone.

During 2023, a total of 21 drill holes were completed over the Leta Arm area totalling 4,554.8 metres, with 2,355 samples taken for assay. A total of 60 total drill days were spent between two diamond drills using 1,537.3 m^3 of water from March 14th to April 18th, 2023 (with more details in Table 3 & Table 4).

Diversified

A total of six drill holes were completed at the Diversified area on federal leases 3226 and territorial lease NT-2487, located approximately 13 kilometres southwest of Colomac camp (with collar locations shown on Figure 47 and details in Table 3). In total, 1,434.80 metres were drilled with 633 core samples taken for assay. A total of 20.5 drill days were spent by one to two diamond drill(s) using 587 m^3 of water from March 14th to April 18th, 2023.

Table 3: Leta Arm- Diversified 2023 Drill Collar Info

Description (Hole ID)	Start Date	Stop Date	Drill Days	Water Usage (m^3)	Zone	UTM Easting Actual (NAD 83 Zone 11N)	UTM Northing Actual (NAD 83 Zone 11N)	Elevation (m) Actual	Collar Azim.	Collar Dip	Final EOH (m)	Total # of Samples	VG # of Samples	Water Source (Claim ID)
DV23-01	3/14/2023	3/16/2023	2	65.00	Diversified-#3 Gap	586440	7128835	287	100	-45	204	90	1	3226
DV23-02	3/16/2023	3/19/2023	3.5	125.20	Diversified-#3 Gap	586443	7128711	271	100	-45	177	46	-	3226
DV23-03	3/16/2023	3/20/2023	4	125.60	Diversified-#3 Gap	586439	7128835	287	100	-65	252	128	1	3226
DV23-04	3/20/2023	3/24/2023	4	129.10	Diversified-#3 Gap	586443	7128711	271	100	-65	276	142	-	3226
DV23-05	3/25/2023	3/30/2023	4	82.50	Diversified #3	586410	7128500	271	100	-55	324.8	145	-	3226
DV23-06	4/15/2023	4/18/2023	3	60.00	Diversified North	586523	7129334	271	100	-50	201	82	-	2487
Totals	**3/14/2023**	**4/18/2023**	**20.5**	**587**					**6 DDH**		**1434.80**	**633**	**2**	

North Inca

A total of 15 drill holes were completed at the North Inca area on federal lease 3226 and 3227, as well as on territorial lease NT-3217, located approximately 13.5 kilometres southwest of camp Colomac (with collar locations shown on Figure 47 and details in Table 4). In total, 3,120.00 metres were drilled with 1,722 core samples taken for assay. A total of 39.5 drill days were spent by one to two diamond drill(s) using 950 m^3 of water from March 14th to July 12th, 2023.

Table 4: Leta Arm - North Inca 2023 Drill Collar Info

Description (Hole ID)	Start Date	Stop Date	Drill Days	Water Usage (m^3)	Zone	UTM Easting Actual	UTM Northing Actual	Elevation (m) Actual	Collar Azim.	Collar Dip	Final EOH (m)	Total # of Samples	VG # of Samples	Water Source (Claim ID)
						(NAD 83 Zone 11N)								
NI23-01	3/21/2023	3/23/2023	2	57.70	North Inca	586208	7127805	271	110	-46	204	82	-	3227
NI23-02	3/23/2023	3/26/2023	3.5	39.40	North Inca	586208	7127805	271	110	-60	225	91	-	3227
NI23-03	3/26/2023	3/27/2023	1.5	36.00	North Inca	586047	7127680	272	100	-45	120	71	-	3227
NI23-04	3/28/2023	3/29/2023	1.5	24.60	North Inca	586047	7127680	272	100	-65	150	88	5	3227
NI23-05	3/30/2023	4/1/2023	2	34.90	North Inca	586174	7127592	271	280	-52	201	103	-	3227
NI23-06	3/30/2023	4/2/2023	3	49.20	NI - DV#3 Gap	586390	7128384	271	110	-47	225	130	-	3226
NI23-07	4/1/2023	4/3/2023	2	50.30	North Inca	586174	7127592	271	225	-60	180	45	2	3227
NI23-08	4/2/2023	4/5/2023	3	100.00	North Inca	586233	7127849	271	110	-50	249	155	-	3227
NI23-09	4/3/2023	4/6/2023	2.5	60.70	North Inca S Ext	586164	7127502	271	110	-50	225	192	4	3217
NI23-10	4/5/2023	4/8/2023	3	121.00	North Inca	586233	7127849	271	110	-70	252	106	1	3227
NI23-11	4/6/2023	4/10/2023	4	116.20	North Inca S Ext	586164	7127502	271	110	-70	252	154	-	3217
NI23-12	4/8/2023	4/11/2023	3	47.40	NI - DV#3 Gap	586285	7128000	272	110	-48	225	143	1	3226
NI23-13	4/11/2023	4/14/2023	3	72.40	NI - DV#3 Gap	586285	7128000	272	110	-62	225	156	1	3226
NI23-14	4/11/2023	4/14/2023	3	42.30	North Inca S Ext	586167	7127451	271	110	-50	207	107	-	3217
NI23-15	4/15/2023	4/17/2023	2.5	97.80	NI - DV#3 Gap	586327	7128194	271	110	-47	180	99	2	3226
Totals	**3/14/2023**	**7/12/2023**	**39.5**	**950**					**15 DDH**		**3120.00**	**1722**	**16**	

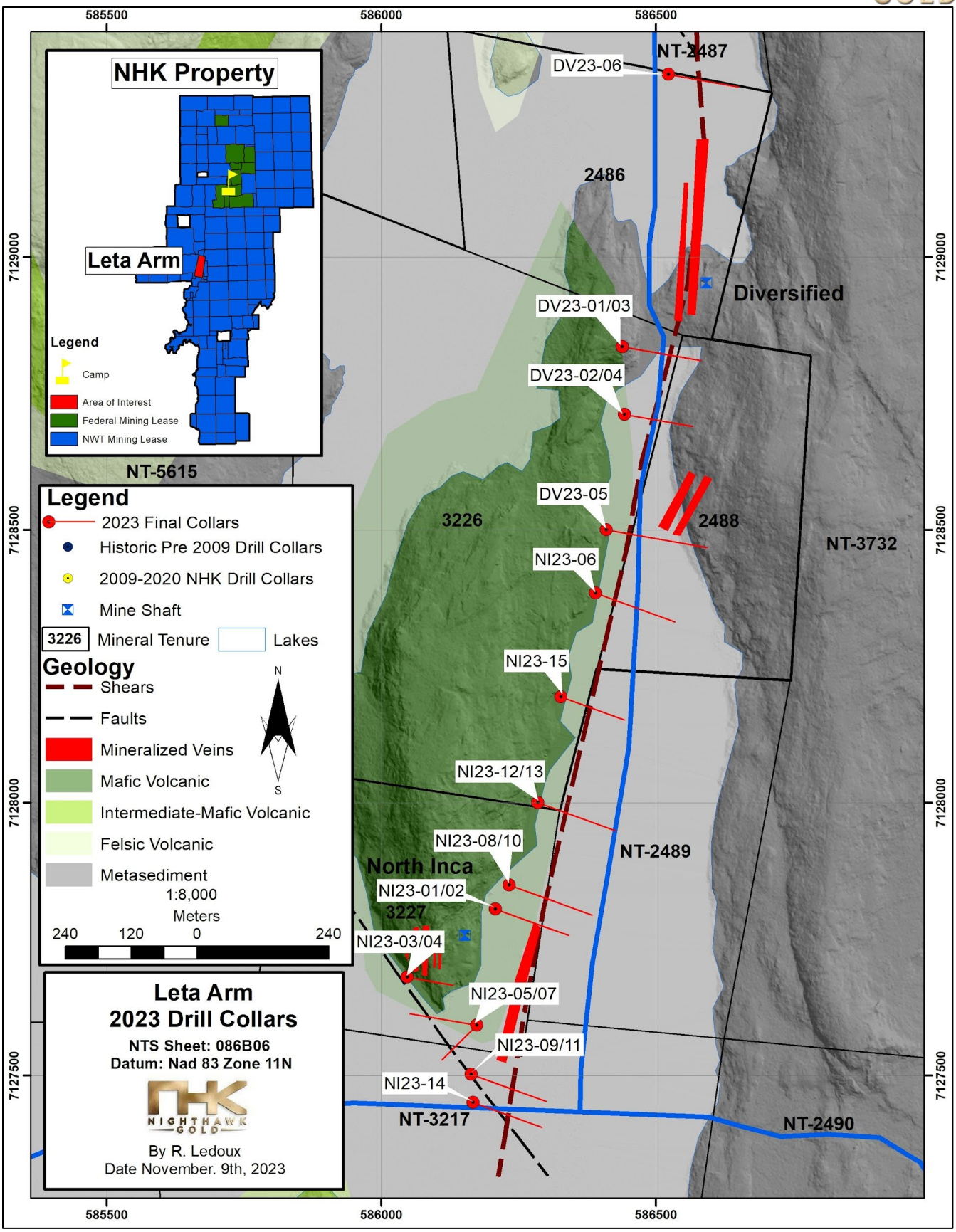

Figure 47: Geological map of Leta Arm with 2023 drill collar locations.

Leta Arm 2023 Drill Results

No press release has been issued as of the writing of this report for the results of 2023 drilling at Leta Arm zone.

3.1.5 Zone 24-27 Area

Major Objectives and Drilling Completed for 2023 Zone 24-27 Drill Program

The major objectives for the 2023 Zone 24-27 drill program were three-fold:

- To extend the strike and depth of the Zone 27 deposit, particularly outside of the 2022 MRE pit-shell.
- To test for co-genetic stacked structures to the west of the main mineralization zone.
- To test for another zone of mineralization between the Zone 24 and Zone 27 deposits.

During 2023 a total of 12 drill holes were completed over the Zone 24-27 area (Figure 48) totalling 2,850.80 metres, with 1,515 samples taken for assay. A total of 25 drill days were spent by two diamond drills using 967.00 m^3 of water from June 26th to July 12th, 2023 (with details in Table 5).

Table 5: Zone 24-27 2023 Area Drill Collar Info

Description (Hole ID)	Start Date	Stop Date	Drill Days	Water Usage (m^3)	Zone	UTM Easting Actual (NAD 83 Zone 11N)	UTM Northing Actual (NAD 83 Zone 11N)	Elevation (m) Actual	Collar Azim.	Collar Dip	Final EOH (m)	Total # of Samples	VG # of Samples	Water Source (Claim ID)
TFS23-01	6/26/2023	6/26/2023	0.5	6.00	Zone 27	595400	7144734	388	95	-58	15.8	15	-	3524
TFS23-02	6/26/2023	6/29/2023	2.5	92.00	Zone 27	595400	7144734	388	95	-58	300	161	-	3524
TFS23-03	6/29/2023	7/3/2023	3.5	108.00	Zone 27	595391	7144780	388	95	-61	351	128	1	3524
TFS23-04	6/30/2023	7/2/2023	2.5	140.00	Zone 27 North	595440	7145050	359	95	-50	306	152	1	3524
TFS23-05	7/3/2023	7/4/2023	1	47.00	Zone 27 North	595460	7144950	369	95	-45	99	70	-	3524
TFS23-06	7/3/2023	7/6/2023	3	121.00	Zone 27	595360	7144819	385	95	-58	360	199	1	3524
TFS23-07	7/4/2023	7/6/2023	2	70.00	Zone 27 North	595400	7144951	383	95	-50	195	100	2	3524
TFS23-08	7/6/2023	7/8/2023	2	82.00	Zone 27 North	595400	7144951	383	95	-61	180	133	5	3524
TFS23-09	7/7/2023	7/9/2023	2	65.00	Zone 27	595388	7144850	390	95	-53	282	160	1	3524
TFS23-10	7/9/2023	7/11/2023	2.5	86.00	Zone 27	595357	7144885	380	95	-54	270	105	2	3524
TFS23-11	7/9/2023	7/11/2023	2.5	95.00	Zone 27 South	595407	7144691	391	95	-57	342	166	5	3524
TFS23-12	7/11/2023	7/12/2023	1	55.00	Zone 27 North	595409	7144972	379	95	-45	150	126	3	3524
Totals	**6/26/2023**	**7/12/2023**	**25**	**967**					**12 DDH**		**2850.80**	**1515**	**21**	

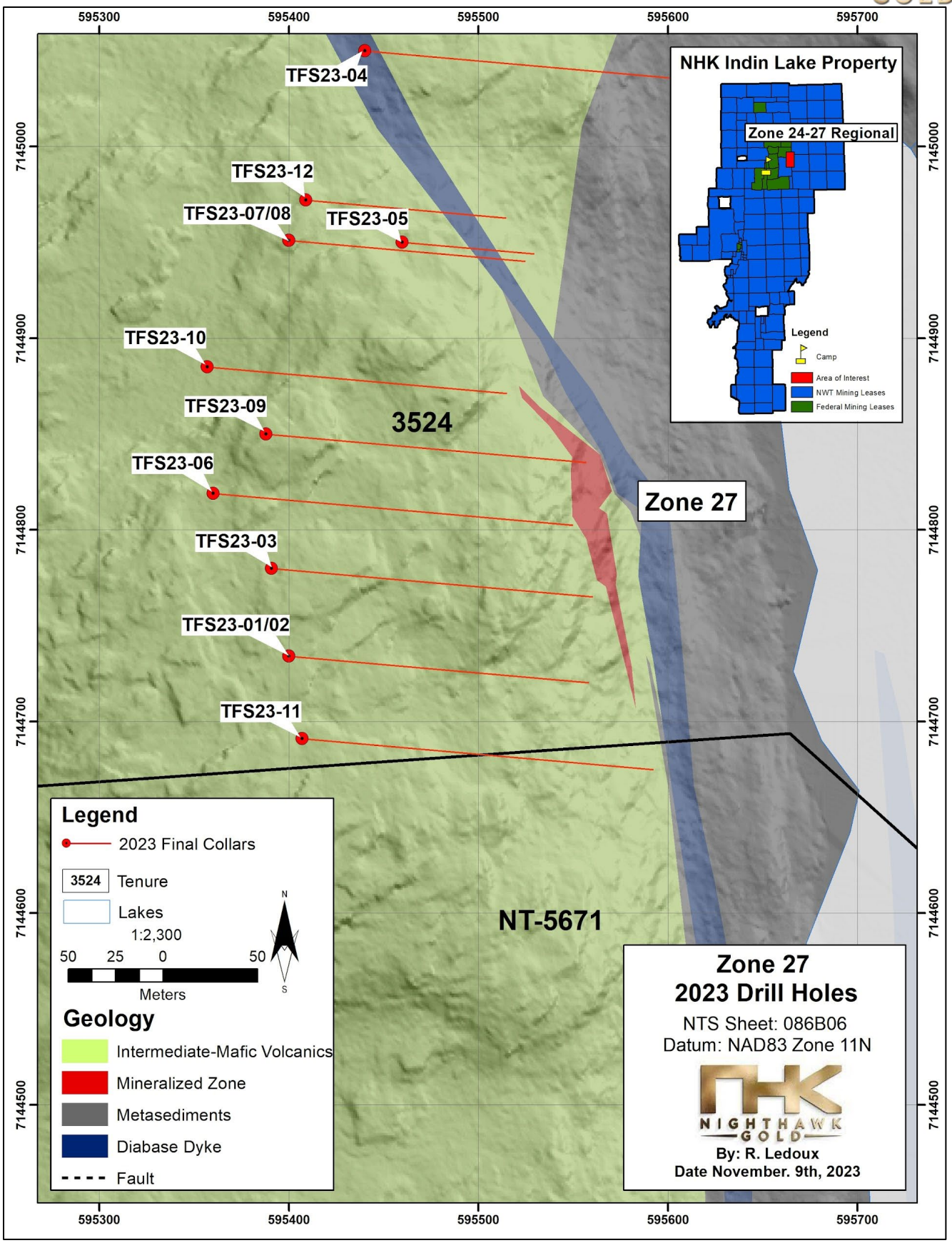

Figure 48: Geological map of Zone 24-27 Regional area with 2023 drill collar locations.

Zone 24-27 Drill Results

The results of Nighthawk's 2023 drill program are summarized and presented in tables, plans, and drill hole cross sections, along with commentary and context, on Nighthawk Gold Corp's Web site www.nighthawkgold.com as press releases. The following summary highlights a few select drill cross sections and related comments to highlight discoveries and the objectives met.

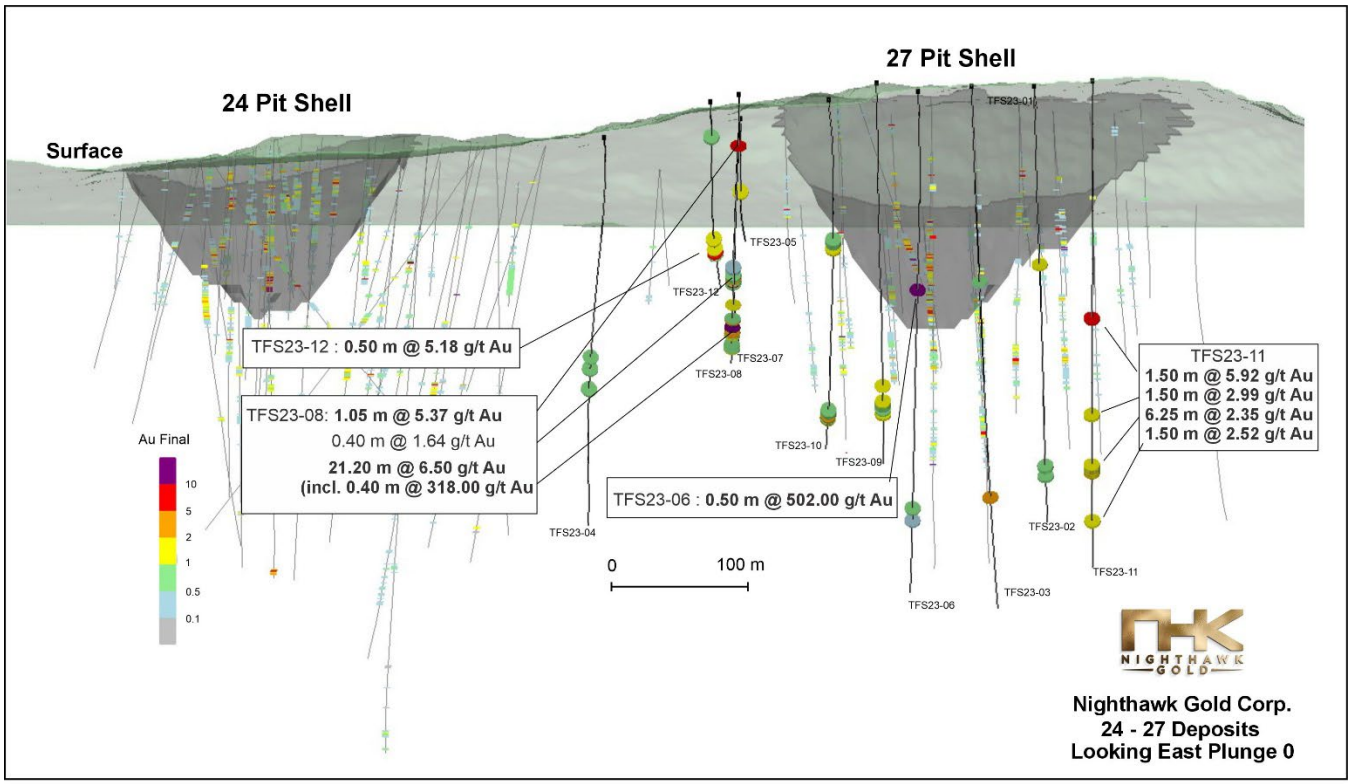

Figure 49: 2023 Zone 24-27 drill holes plotted in 2022 MRE pit shell Isomeric.

Zone 27

A total of 6 drill holes were completed at Zone 27 on federal lease 3524, located approximately 4.5 kilometres northeast of the Colomac camp and three kilometres east of the Colomac Sill (with collar locations shown on Figure 48, with details in Table. 5). In total, 1,578.80 metres, with 768 core samples taken for assay. A total of 14 drill days were spent between two diamond drills using 478.00 m^3 of water from June 26th to July 11th, 2023.

Zone 27 Drilling Highlights

- Hole TFS23-03 intersected 3.59 g/t Au over 0.95 metres starting at 274.50 metres.
- Hole TFS23-06 intersected 502 g/t Au over 0.50 metres starting at 137.10 metres (Figure 49 & Figure 50).
- Hole TFS23-10 intersected 1.04 g/t Au over 7.50 metres starting at 237.00 metres.

2023 drilling intercepted some very significant high grades just below and to the west of the Zone 27 deposit 2022 MRE pit-shell. These results show the potential for western expansion of the width of the mineral resources in the area.

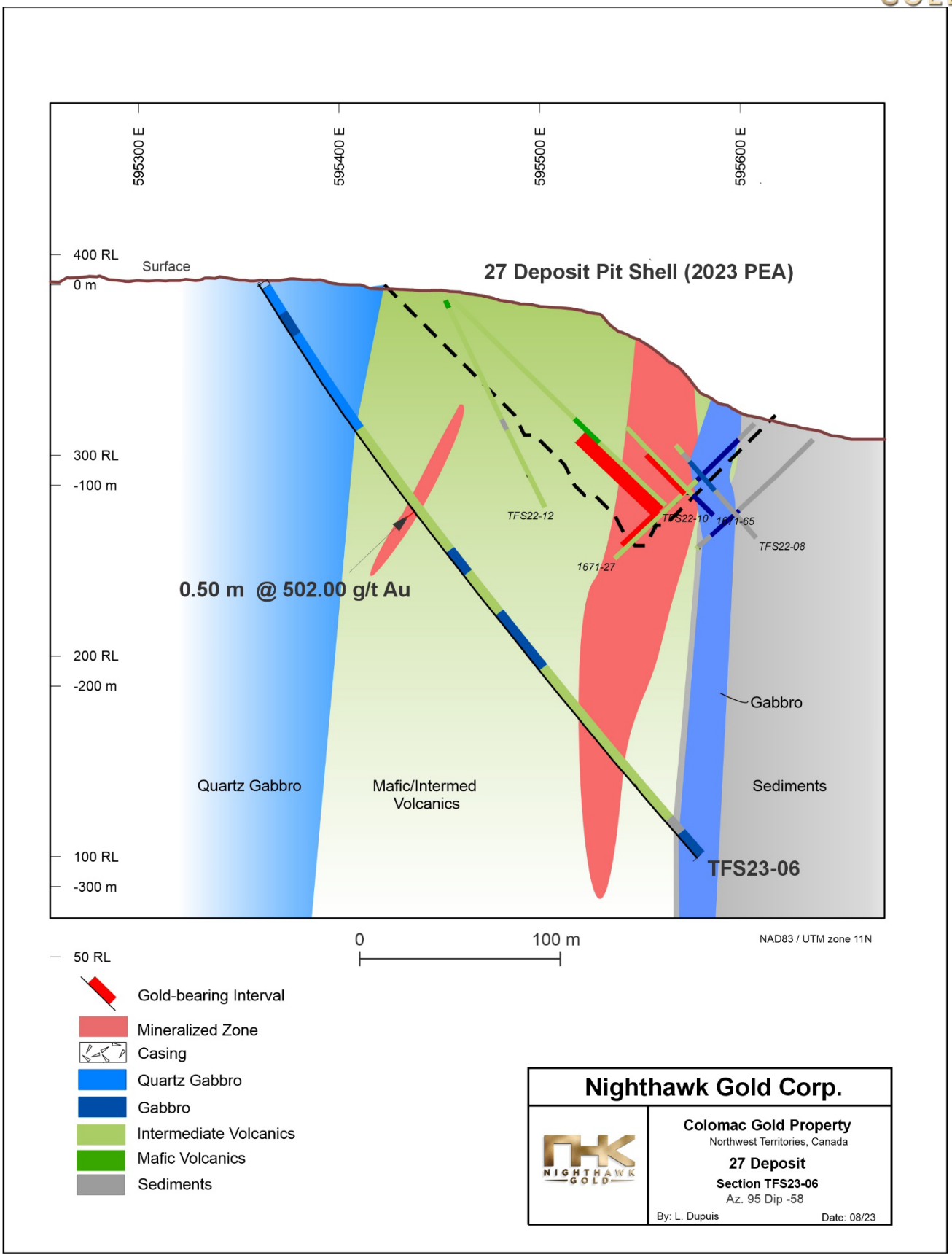

Figure 50: Cross section of drillhole TFS22-06 with assays, lithology, and the 2023 PEA pit shell.

North of Zone 27

A total of 5 drill holes were completed at Zone 27 north on federal lease 3524, located approximately 4.4 kilometres northeast of the Colomac camp and approximately 400 metres south of Zone 24 (with collar locations shown on Figure 48 with details in Table 5). In total, 930 metres were drilled with 581 core samples taken for assay. A total of 8.5 drill days were spent between two diamond drills using 394 m^3 of water from June 30th to July 12th, 2023.

North of Zone 27 Drilling Highlights

- Hole TFS23-08 intersected 5.37 g/t Au over 1.05 metres starting at 33.00 metres and 6.50 g/t Au over 21.20 metres starting at 149.00 metres (including 318 g/t Au over 0.40 metres starting at 155.00 metres; Figure 49 & Figure 51)

- Hole TFS23-12 intersected 0.86 g/t Au over 5.00 metres starting at 117.00 metres (including 5.18 g/t Au over 0.50 metres).

Drilling North of the Zone 27 deposit was successful at intersecting near surface high grade mineralization outside of the 2022 MRE pit-shell. These intercepts expanded gold mineralization into untested areas, potentially expanding the Zone 27 pit-shell and reducing the mineralization gap between Zone 24 and Zone 27 (highlighted in holes TFS23-08/12 in Figure 51).

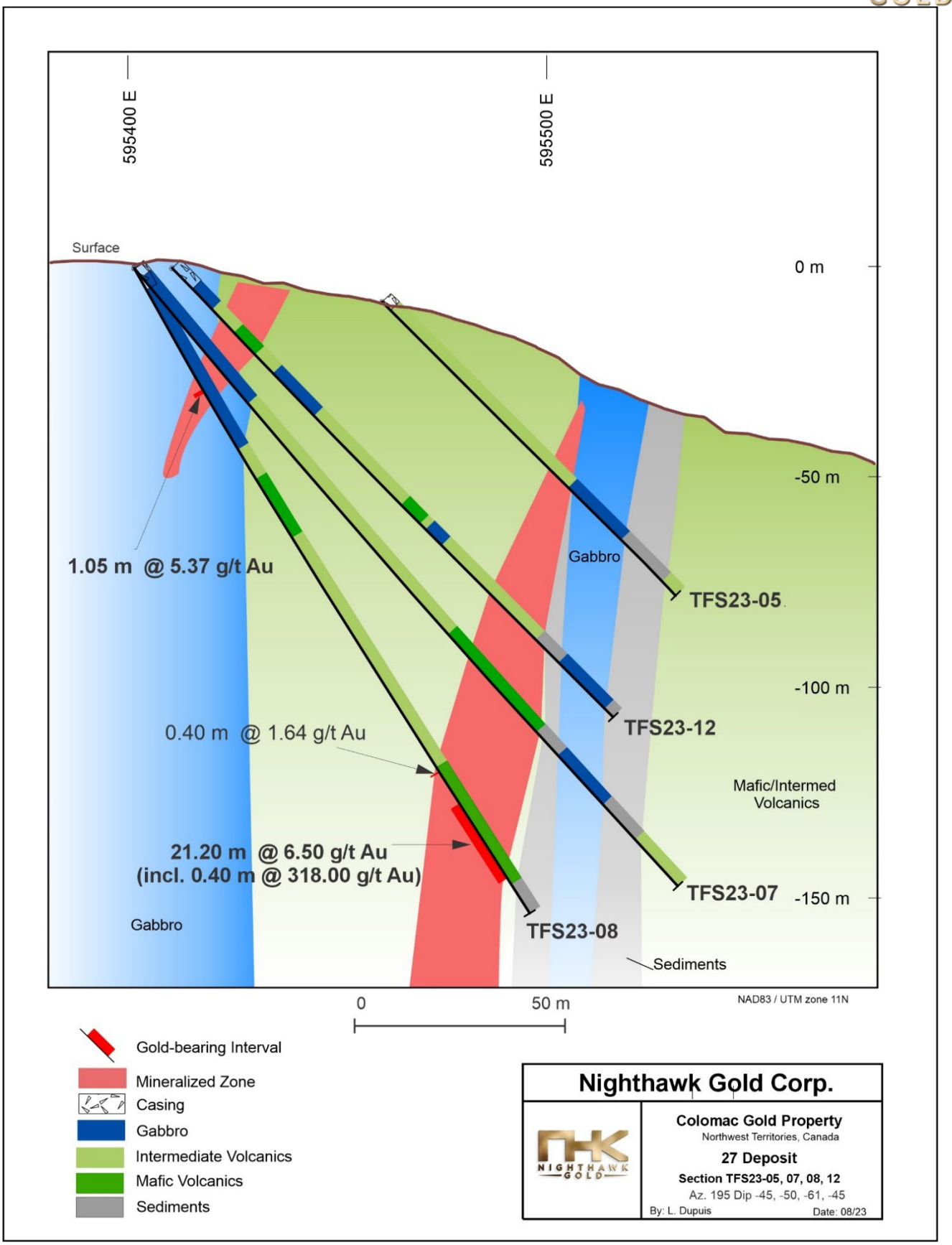

Figure 51: Cross section of drillholes TFS23-05, 07, 08, & 12 with assays and lithology.

South of Zone 27

A total of one drill hole was completed in the area south of Zone 27 on territorial lease 3524, located approximately 3.9 kilometres east of camp Colomac (with collar locations shown on Figure 48 and details in Table 5). In total, 342 metres were drilled with 166 core samples taken for assay. A total of 2.5 drill days were spent by one diamond drill using 95 m^3 of water from July 9th to 11th, 2023.

South of Zone 27 Drilling Highlights

- Hole TFS23-11 intersected 5.92 g/t Au over 1.50 metres starting at 164.00 metres.
- Hole TFS23-11 intersected 2.99 g/t Au over 1.50 metres starting at 232.00 metres.
- Hole TFS23-11 intersected 2.35 g/t Au over 6.25 metres starting at 268.00 metres.
- Hole TFS23-11 intersected 2.52 g/t Au over 1.50 metres starting at 308.00 metres.

The southern exploration hole successfully intersected several zones with mineralization above 2.0 g/t Au (up to 5.92 g/t Au), illustrating that there are mineralizing fluids along the structure south of Zone 27. Most intersections were quite thin (1.5 metres in width), with only one intersection over six metres wide. The Zone 24-27 trend still has good potential to host more mineralization on the scale of the Zone 24 and Zone 27 deposits, possibly just at a different depth or stepped back from the main structure. More geophysical work and exploration holes are required to evaluate the area fully.

3.1.6 Cass

Major Objectives and Drilling Completed for 2023 Cass Drill Program

The major objectives for the 2023 Cass drill program were four-fold:

- To test new mineralized zones parallel and along strike from the Cass Deposit to expand the open-pit mineralization at the deposit.
- To test the extension of mineralization to the west of the Cass Deposit along strike of a gabbroic intrusion.
- To confirm the continuity of mineralization between the Cass Deposit estimated pit-shell bottom (as part of the Colomac Gold Project PEA).
- To explore previously untested areas between the main Cass Deposit pit-shell and the smaller pit-shell to the east.

A total of 19 drill holes were completed at Cass on territorial leases NT-3655, located approximately 15.5 kilometres southwest of camp Colomac and approximately three kilometres southwest of the Kim deposit (with collar locations shown on Figure 52 and details in Table 6). In total, 5,442 metres were drilled with 2,067 core samples taken for assay. A total of 45.5 drill days were spent between two diamond drills using 1,661 m^3 of water from May 22nd to June 28th, 2023.

Table 6: Cass 2023 Drill Collar Info

Description (Hole ID)	Start Date	Stop Date	Drill Days	Water Usage (m^3)	Zone	UTM Easting Actual (NAD 83 Zone 11N)	UTM Northing Actual (NAD 83 Zone 11N)	Elevation (m) Actual	Collar Azim.	Collar Dip	Final EOH (m)	Total # of Samples	VG # of Samples	Water Source (Claim ID)
CM23-01	5/22/2023	5/25/2023	3	97.00	Cass West	580982	7131027	333	280	-60	300	207	8	NT-3655
CM23-02	5/23/2023	5/25/2023	2	45.60	Cass West	580829	7131009	331	100	-45	177	44	-	NT-3655
CM23-03	5/25/2023	5/27/2023	2	73.00	Cass West	581022	7131058	335	280	-45	300	151	1	NT-3655
CM23-04	5/27/2023	5/29/2023	2	130.40	Cass West	581022	7131058	335	280	-58	300	193	2	NT-3655
CM23-05	5/30/2023	6/1/2023	1.5	76.00	Cass West	581104	7131057	340	100	-45	225	70	-	NT-3655
CM23-06	6/1/2023	6/5/2023	3.5	96.00	Cass Main	581096	7131140	350	100	-56	381	145	7	NT-3655
CM23-07	6/5/2023	6/8/2023	3	67.00	Cass West	581012	7131124	345	100	-55	384	167	-	NT-3655
CM23-08	6/8/2023	6/10/2023	2.5	90.00	Cass West	580975	7131108	340	100	-45	300	121	1	NT-3655
CM23-09	6/10/2023	6/12/2023	2	77.00	Cass West	580975	7131108	340	100	-54	324	106	7	NT-3655
CM23-10	6/13/2023	6/15/2023	2.5	89.00	Cass West	580936	7131090	341	100	-50	348	124	-	NT-3655
CM23-11	6/15/2023	6/18/2023	2.5	137.00	Cass West	580935	7131090	341	100	-59	396	152	6	NT-3655
CM23-12	6/16/2023	6/18/2023	2.5	68.00	Cass NE	581389	7131360	350	100	-45	273	72	3	NT-3655
CM23-13	6/18/2023	6/19/2023	1.5	54.50	Cass West	580907	7131146	336	100	-45	189	91	1	NT-3655
CM23-14	6/18/2023	6/20/2023	2	87.00	Cass NE	581389	7131360	350	100	-55	300	82	2	NT-3655
CM23-15	6/19/2023	6/21/2023	1.5	60.50	Cass West	580907	7131146	336	100	-65	222	99	-	NT-3655
CM23-16	6/21/2023	6/24/2023	3	67.00	Cass NE	581501	7131375	360	100	-50	270	40	-	NT-3655
CM23-17	6/21/2023	6/25/2023	4.5	148.00	Cass Main	581271	7131230	358	100	-54	297	60	-	NT-3655
CM23-18	6/24/2023	6/26/2023	3	165.00	Cass NE	581439	7131394	356	100	-52	336	125	-	NT-3655
CM23-19	6/27/2023	6/28/2023	1	33.00	Cass Explo	581853	7131409	370	100	-45	120	18	-	NT-3655

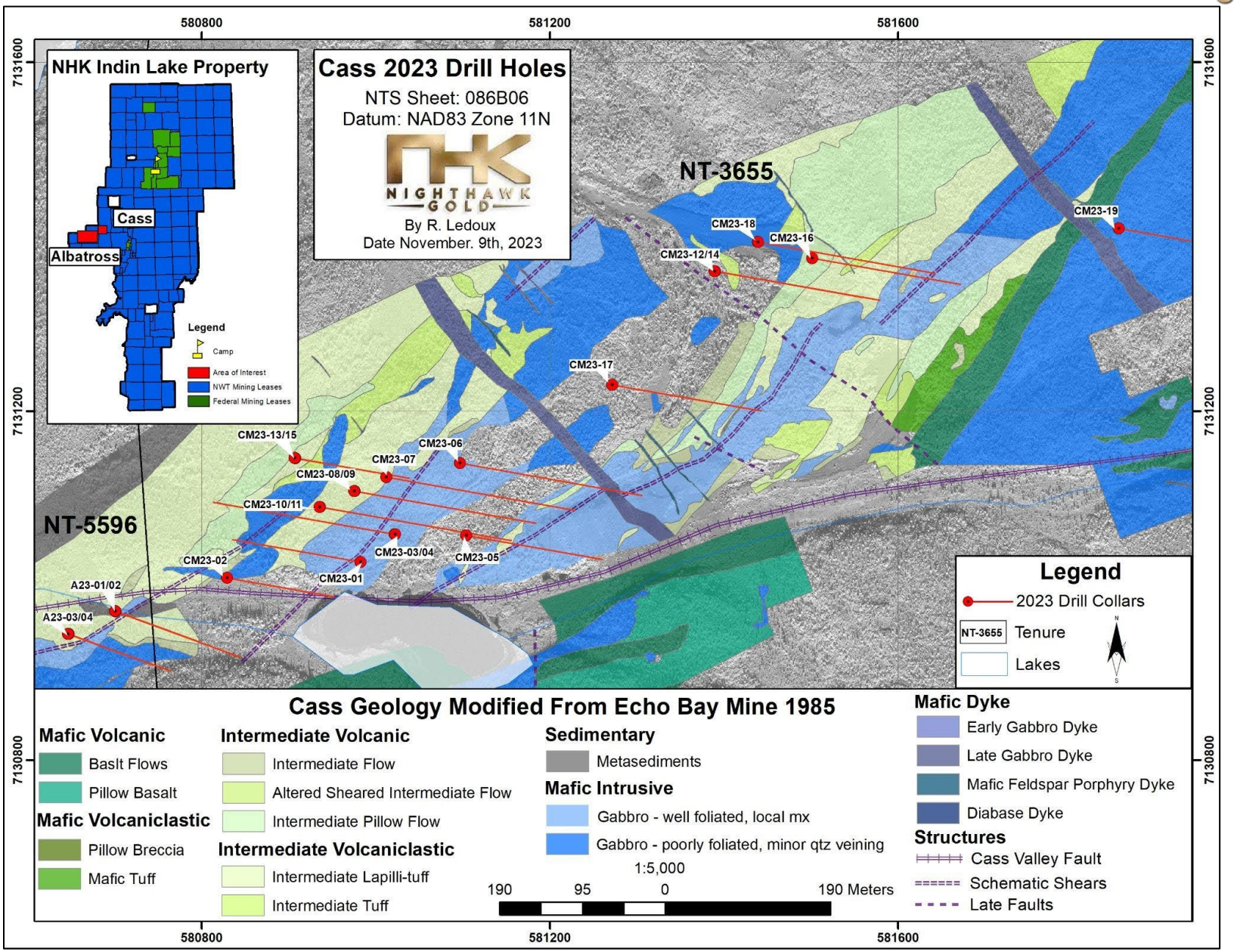

Figure 52: Geological map of Cass with 2023 drill collar locations.

Cass Drill Results

The results of Nighthawk's 2023 drill program are summarized and presented in tables, plans, and drill hole cross sections, along with commentary and context, on Nighthawk Gold Corp's Web site www.nighthawkgold.com as press releases. The following summary highlights a few select drill cross sections and related comments to highlight discoveries and the objectives met.

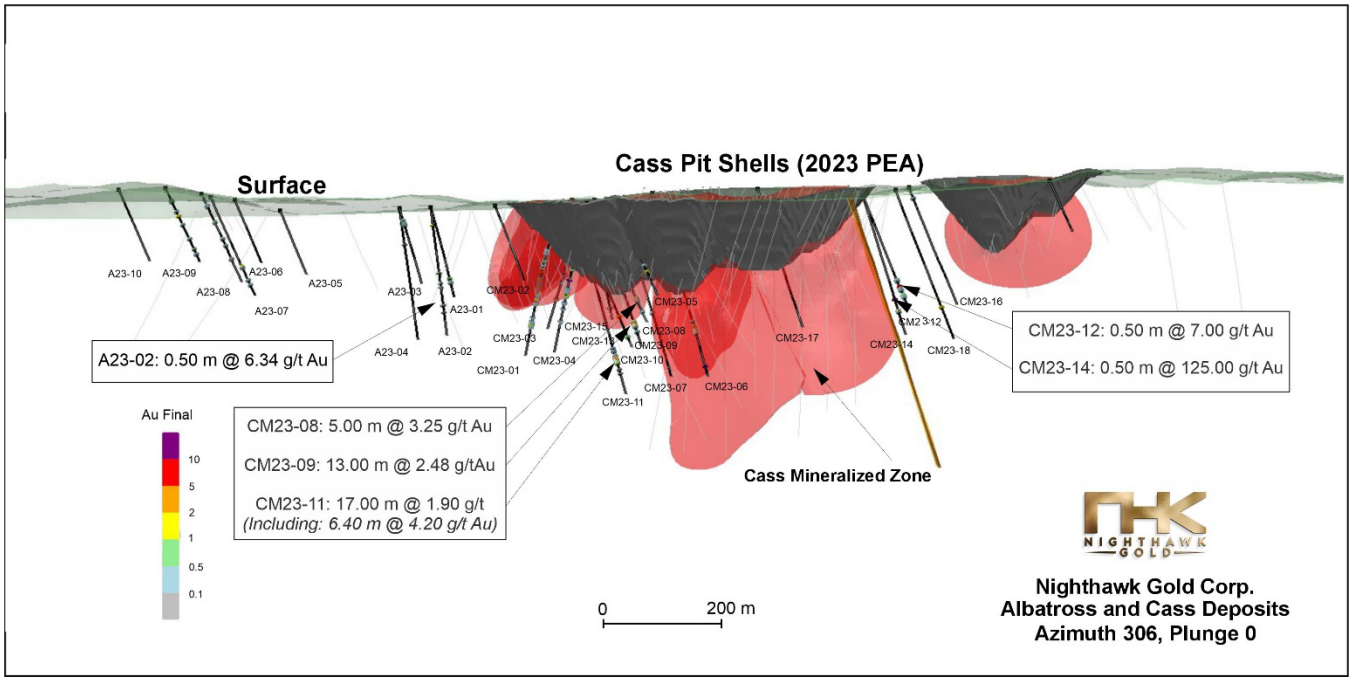

Figure 53: 2023 Cass drill holes plotted in 2023 PEA pit shell Isomeric looking Northwest.

Cass West

A total of 12 drill holes were completed in Cass West on territorial leases NT-3655 (with collar locations shown on Figure 52 and details in Table 6). In total, 3,465 metres were drilled with 1,525 core samples taken for assay. A total of 26 drill days were spent between two diamond drills using 997 m^3 of water from May 22nd to June 21st, 2023.

Cass Western Extension Drilling Highlights

- Hole CM23-09 intersected 2.48 g/t Au over 13.00 metres starting at 266.50 metres (Figure 53 & Figure 54).
- Hole CM23-11 intersected 1.90 g/t Au over 17.50 metres starting at 317.00 metres (including 4.20 g/t Au over 6.40 metres; Figure 53 & Figure 58).
- Hole CM23-08 intersected 1.74 g/t Au over 0.75 metres starting at 59.00 metres and 3.25 g/t Au over 5.00 metres starting at 239.75 metres (Figure 53 & Figure 54)

Drilling in Cass West successfully confirmed the extension of mineralization along strike and at depth. Drill holes CM23-08, 09 & 11 each intersected high-grade mineralization at depth outside of the 2023 PEA pit-shell boundary (shown in Figure 53 & Figure 54).

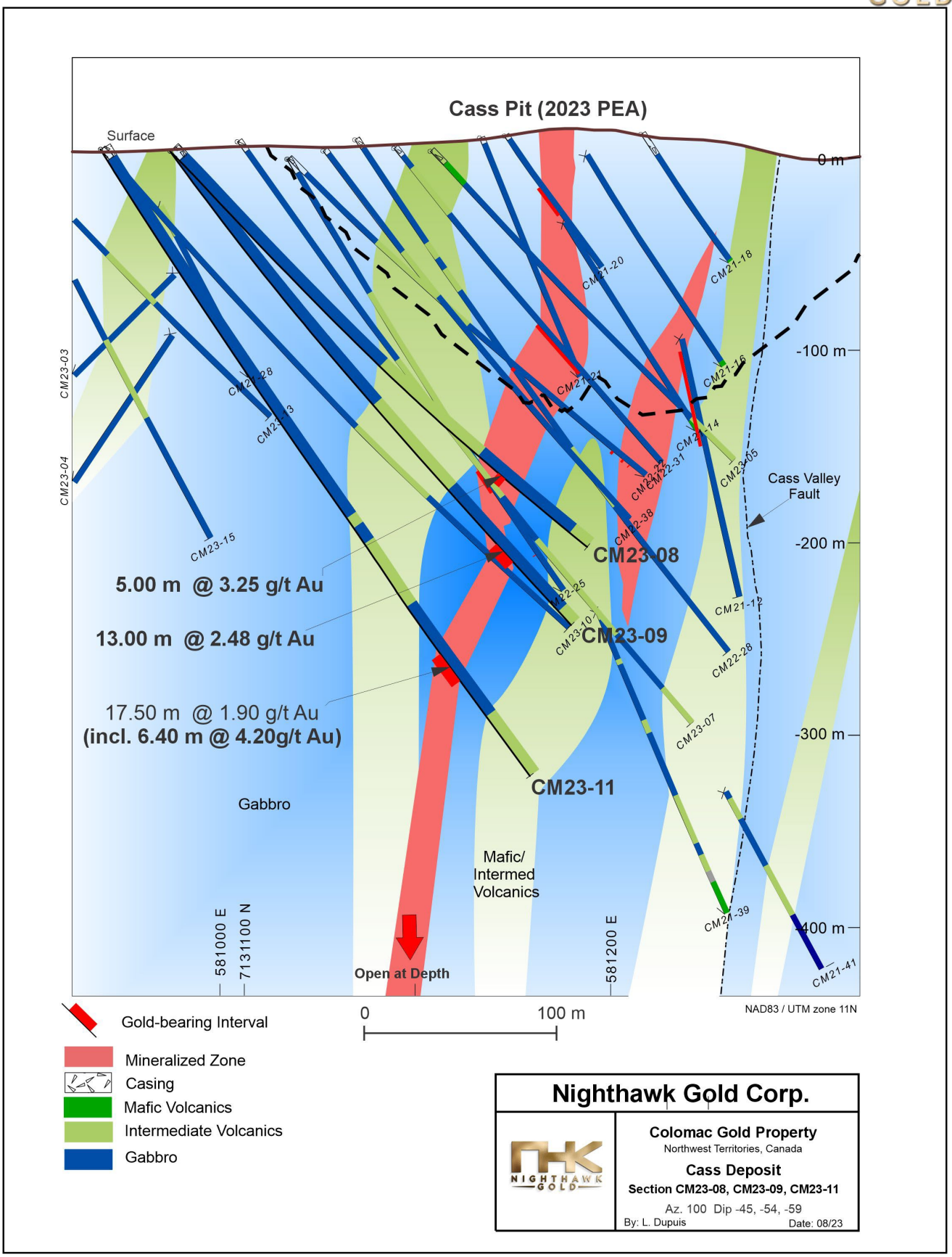

Figure 54: Cross section of drillholes CM23-08, 09 & 11 with assays, lithology, and the 2023 PEA pit shell.

Cass Main Zone

Two drill holes were completed at the Cass Main Zone on territorial lease NT-3655 (with collar locations shown on Figure 52 and details in Table 6). In total, 678 metres were drilled with 205 core samples taken for assay. A total of eight drill days were spent by one diamond drill using 244 m^3 of water during the period June 1st to June 25th, 2023.

Cass Main Zone Drilling Highlights

- Hole CM23-06 intersected 2.24 g/t Au over 1.00 metres starting at 149.50 metres and 1.05 g/t Au over 15.50 metres starting at 274.50 metres (including 3.34 g/t Au over 2.90 metres) and 18.80 g/t Au over 0.50 metres starting at 359.50 metres.

Though drilling at Cass Main was limited, drill hole CM23-06 confirmed the continuity of mineralization between the Cass Deposit estimated pit-shell bottom (as part of the Colomac Gold Project PEA) and deeper drill hole intercepts.

Cass NE Extension

A total of four drill holes were completed on the Cass NE extension on territorial lease NT-3655 (with collar locations shown on Figure 52 and details in Table 6). In total, 1,179 metres were drilled with 319 core samples taken for assay. A total of 10.5 drill days were spent by one diamond drill using 387.00 m^3 of water from June 16th to June 26th, 2023.

Cass NE Extension Drilling Highlights

- Hole CM23-14 intersected 125.00 g/t Au over 0.50 metres starting at 223.00 metres and 2.27 g/t Au over 1.00 metres starting at 249.10 metres (Figure 53 & Figure 55).
- Hole CM23-12 intersected 7.00 g/t Au over 0.50 metres starting at 218.50 metres (Figure 53 & Figure 55).
- Hole CM23-18 intersected 1.43 g/t Au over 1.05 metres starting at 261.45 metres.

Drilling in the Cass NE extension successfully intersected high-grade, near surface intervals of mineralization in an area on the western side of a fault structure where there was previously no data (highlighted in Figure 53 & Figure 55). Drill holes CM23-14 and 12 intercepted narrow high-grade mineralization in a previously untested area between the main Cass Deposit pit-shell and the smaller pit-shell to the east. These mineralized intercepts confirm that mineralization and the host geology continue across structural boundaries identified in the most recent structural models.

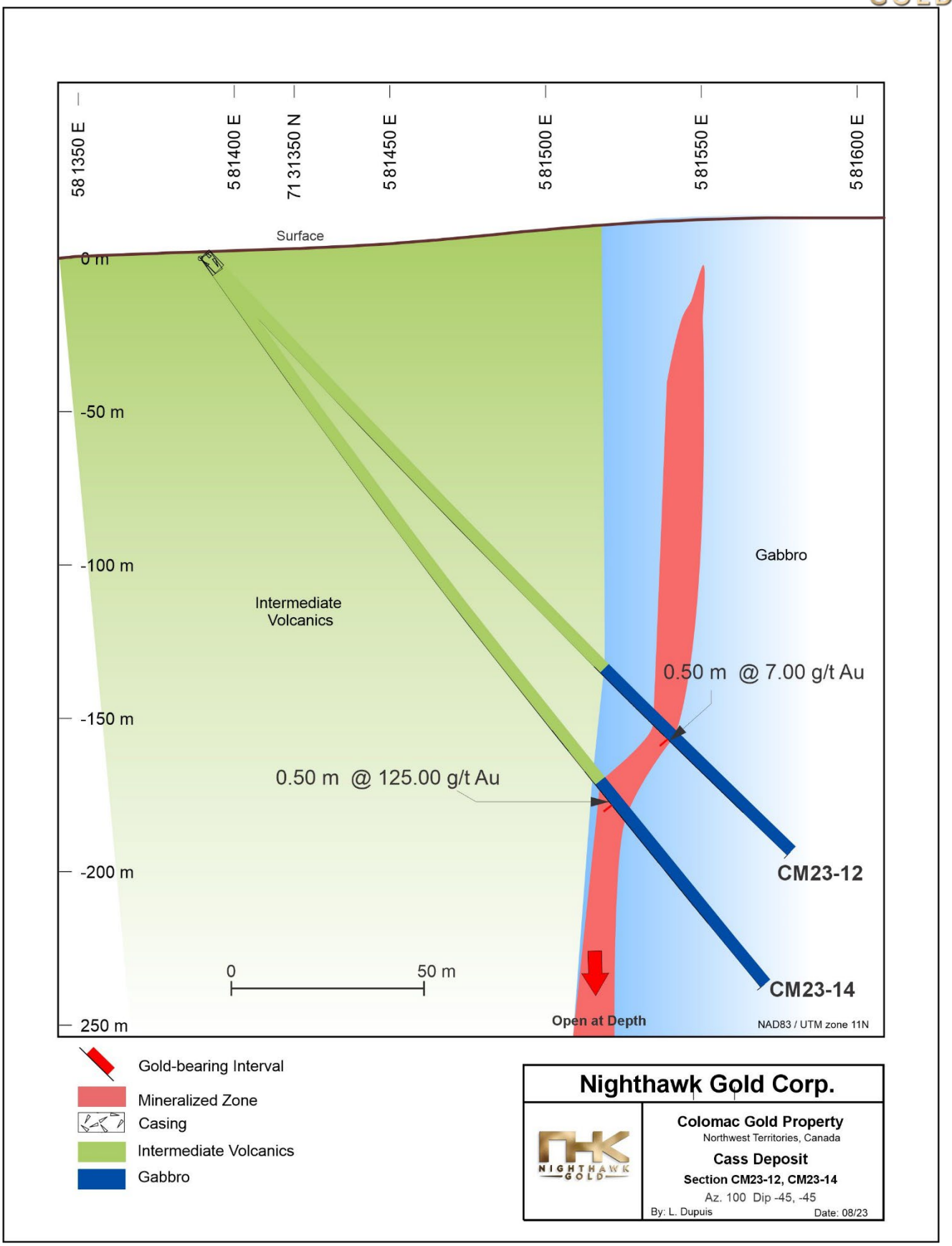

Figure 55: Cross section looking Northeast of drillholes CM23-12 & 14 with assays and lithology.

Cass Northern Mineralization Exploration

One drill hole was completed on the Cass northernmost mineralized zone on territorial lease NT-3655 (with collar location shown on Figure 52 and details in Table 6). In total 120.00 metres were drilled with 18 core samples taken for assay. One drill day was spent by one drill using 33.00 m^3 of water from June 27th to June 28th, 2023.

This drillhole was unsuccessful following up on mineralization observed on the surface. No significant intervals of mineralization were intercepted.

3.1.7 Albatross

Major Objectives and Drilling Completed for 2023 Albatross Drill Program

The major objectives for the 2023 Albatross drill program were two-fold:

- To test the extension of the Cass Gabbro into the Albatross Zone.
- To expand and focus in on the drilling completed in 2021.

A total of 10 drill holes were completed at Albatross on territorial lease NT-5596, located approximately 16 kilometres southwest of camp Colomac and just to the west of the Cass deposit (with collar locations shown on Figure 56 and details in Table 7). In total, 1,974 metres were drilled with 927 core samples taken for assay. A total of 18.5 drill days were spent with one diamond drill using 631.20 m^3 of water from May 25th to June 15th, 2023.

Table 7: Albatross 2023 Drill Collar Info

Description (Hole ID)	Start Date	Stop Date	Drill Days	Water Usage (m^3)	Zone	UTM Easting Actual	UTM Northing Actual	Elevation (m) Actual	Collar Azim.	Collar Dip	Final EOH (m)	Total # of Samples	VG # of Samples	Water Source (Claim ID)
						(NAD 83 Zone 11N)								
A23-01	2023-05-25	2023-05-27	2	102.20	Albatross NE	580701	7130970	328	110	-45	216	90	2	NT-5596
A23-02	2023-05-28	2023-05-30	2	81.00	Albatross NE	580700	7130970	328	110	-65	240	160	3	NT-5596
A23-03	2023-05-30	2023-06-01	1.5	65.00	Albatross NE	580647	7130944	327	110	-45	177	106	-	NT-5596
A23-04	2023-06-01	2023-06-03	2	71.00	Albatross NE	580646	7130944	327	110	-65	246	166	-	NT-5596
A23-05	2023-06-03	2023-06-04	1	34.00	Albatross	580405	7130874	323	100	-45	150	-	-	NT-5596
A23-06	2023-06-05	2023-06-06	1	42.00	Albatross	580336	7130830	342	100	-45	150	27	-	NT-5596
A23-07	2023-06-07	2023-06-10	3.5	85.00	Albatross	580285	7130818	346	100	-45	240	98	-	NT-5596
A23-08	2023-06-10	2023-06-11	2	64.00	Albatross	580295	7130792	351	100	-45	210	109	-	NT-5596
A23-09	2023-06-12	2023-06-13	2	46.00	Albatross	580206	7130781	362	100	-45	177	134	3	NT-5596
A23-10	2023-06-14	2023-06-15	1.5	41.00	Albatross	580124	7130745	359	100	-45	168	37	1	NT-5596
Totals	**2023-05-25**	**2023-06-15**	**18.5**	**631**					**10 DDH**		**1974.00**	**927**	**9**	

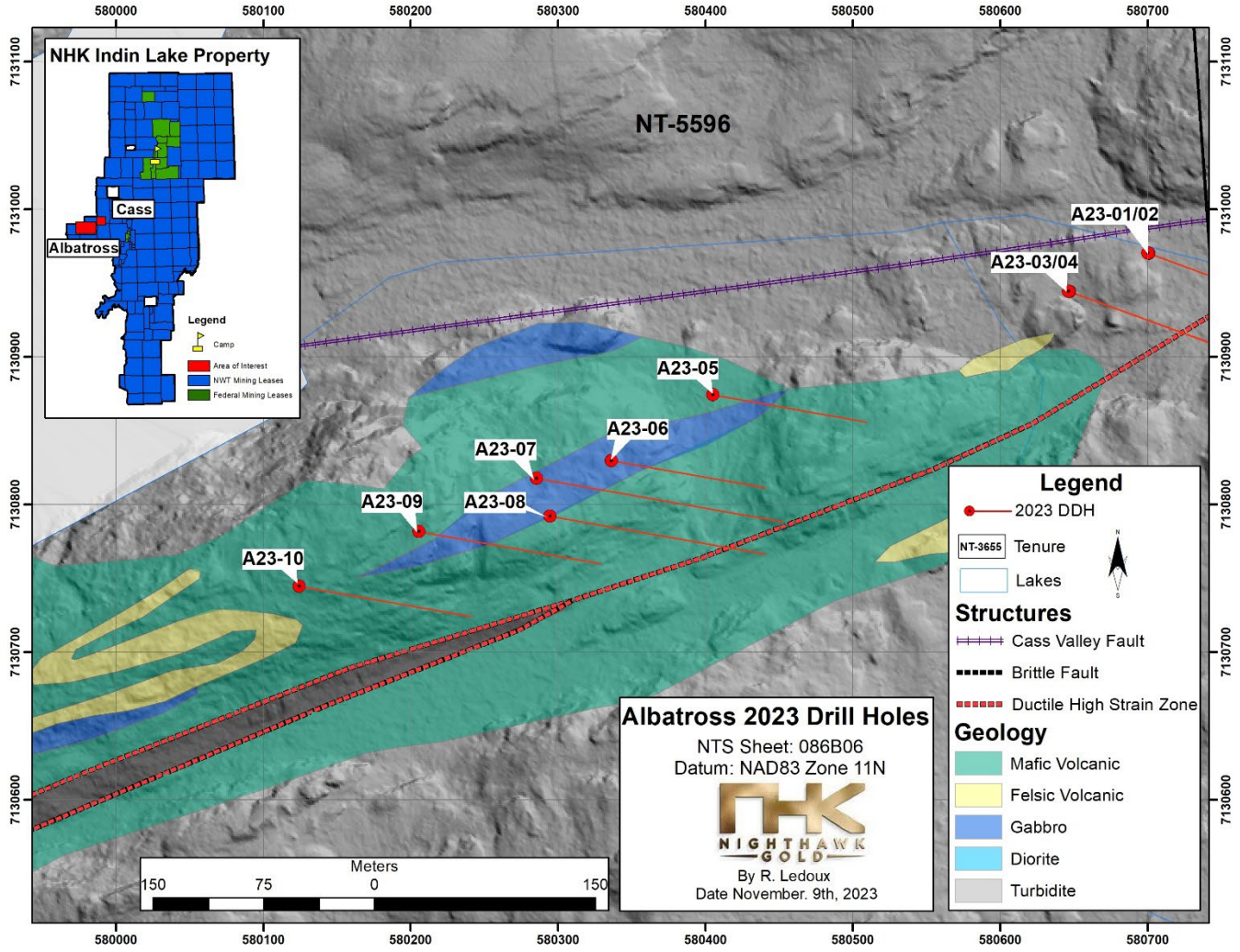

Figure 56: Geological map of Albatross with 2023 drill collar locations.

Albatross Drill Results

The results of Nighthawk's 2023 drill program are summarized and presented in tables, plans, and drill hole cross sections, along with commentary and context, on Nighthawk Gold Corp's Web site www.nighthawkgold.com as press releases. The following summary highlights a few select drill cross sections and related comments to highlight discoveries and the objectives met.

Albatross Main Zone

A total of six drill holes were completed in the Albatross Main Zone on territorial lease NT-5596 (with collar locations shown on Figure 56 and details in Table 7). In total, 1,095 metres were drilled with 405 core samples taken for assay. A total of 11 drill days were spent by one diamond drill using 312.00 m^3 of water from June 3rd to June 15th, 2023.

Albatross Main Zone Drilling Highlights

- Hole A23-07 intersected 1.26 g/t Au over 1.00 metres starting at 169.50 metres.
- Hole A23-09 intersected 1.68 g/t Au over 1.00 metres starting at 67.50 metres.

Although the target gabbro lithological package was intercepted and hosted some veining with a few coarse gold showings, the results from the 2023 Albatross Main Zone drilling program were disappointing. Visible gold was intercepted in only two of the Albatross Main holes (A23-07 and A23-09), resulting in the only notable mineralization intervals.

3.1.8 Albatross Northeast Zone

A total of four drill holes were completed in the Albatross Northeast Zone on territorial lease NT-5596 (with collar locations shown on Figure 56 and details in Table 7). In total, 879 metres were drilled with 522 core samples taken for assay. A total of 7.5 drill days were spent by one diamond drill using 319.20 m^3 of water from May 25th to June 3rd, 2023.

Albatross NE Zone Drilling Highlights

- Hole A23-02 intersected 1.69 g/t Au over 0.75 metres starting at 33.75 metres and 6.34 g/t Au over 0.5 metres starting at 182.00 metres (Figure 53 isometric model).

The gold results returned are near-surface and could represent a western extension of the Cass mineralization, found just to the east of the Albatross NE Zone. However, additional mapping and surface work is required to understand the potential of this zone and its possible links to Cass.

3.2 2023 Fieldwork

3.2.1 Zone 24 Prospecting

A small prospecting program was undertaken at the end of the season as drilling was wrapping up. Three days were spent prospecting from July 5th to 7th, 2023 north of the Zone 24 deposit (Figure 57) where 18 grab samples were collected and sent for assay. The main objective of the prospecting program was to find surface mineralization north of the known deposit.

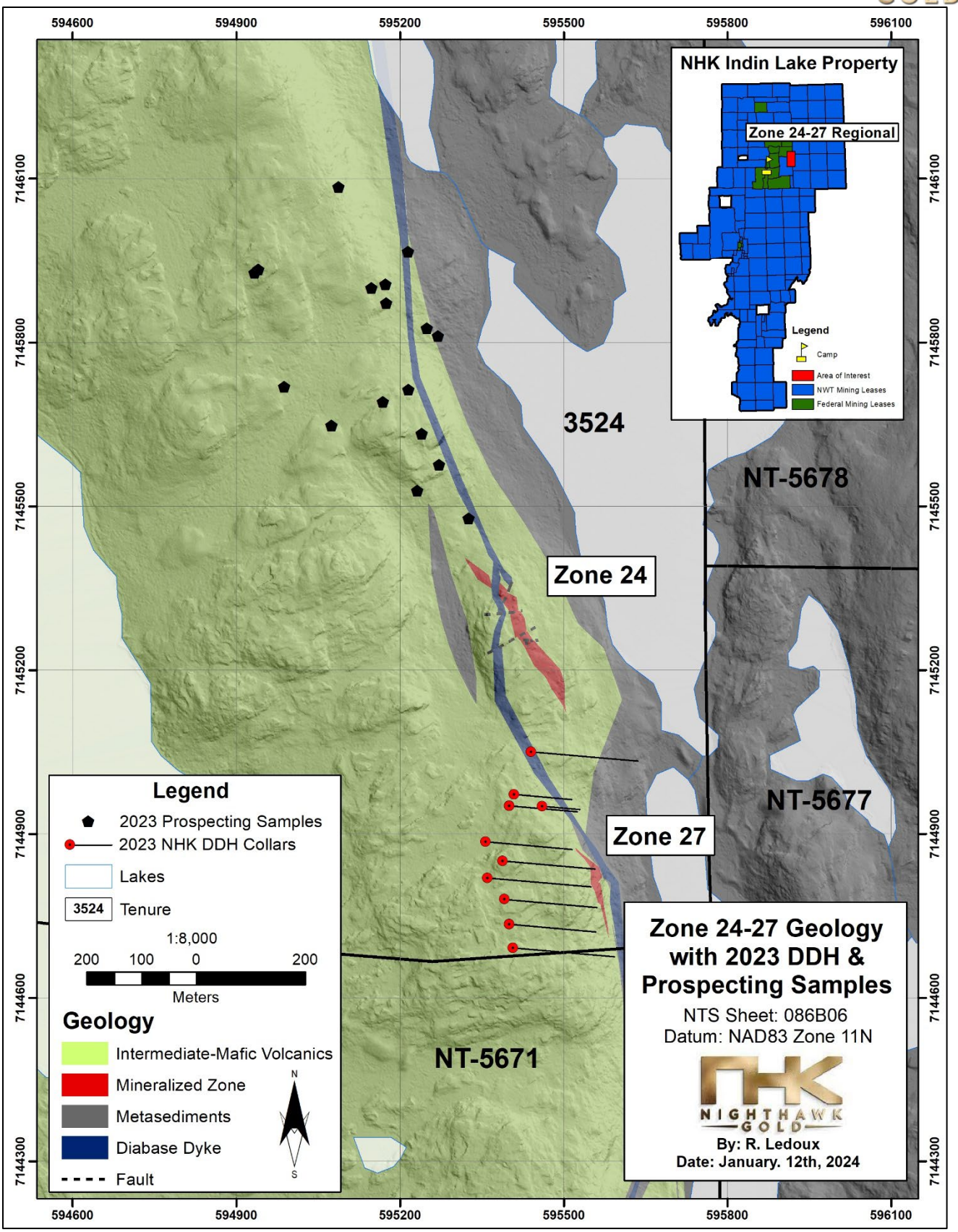

Figure 57: Geological map of Zone 24-27 area with 2023 grab samples (black), and 2023 DDH collars (red).

3.2.2 2022 Structural Analysis

Terraine Geoscience Inc. provided structural geological consulting on the Grizzly Bear, Goldcrest, Leta Arm and Zone 24-27 deposits to help with resource estimation, with the main goal to help move some of the resources into the measured category. Edward Wu was on site from May 25th to June15th, 2023. While conducting the Leta Arm site visit seven grab samples were collected and sent for assay.

3.2.3 Lakehead Masters Program

Two MSc studies were started on the Indin Lake property in 2023 by Turner Green and Tshepiso Sekhula from Lakehead University. Both students were onsite for two rotations collecting data for their thesis and helping in the core shack. Their overall goals are to integrate petrography, whole rock geochemistry, geochronology, and radiogenic isotopes into the overall understanding of the Indin Lake project.

Turner Green is working on paragenesis and alteration of the Colomac deposit, and the genetic association, if any, with the Goldcrest sill to the south of the Colomac Sill. He collected a total of 458 samples from three drill holes (C22-17, C20-20, C20-11) from different sections of the Colomac sill and one drill hole (G19-05) from the Goldcrest sill (Figure 58)

Tshepiso Sekhula is working to characterize the timing and lithostratigraphy of the Leta Arm Group to place the mineral systems in context with the host volcanic rocks. She conducted three traverses collecting 110 samples (shown in Figure 58) from the Colomac centre area (Colomac, Goldcrest, Grizzly Bear, Nice Lake, & Zone 24-27), Swamp area, and from the Kim deposit within Hewitt Lake group rocks and transitioning into Leta Arm group rocks.

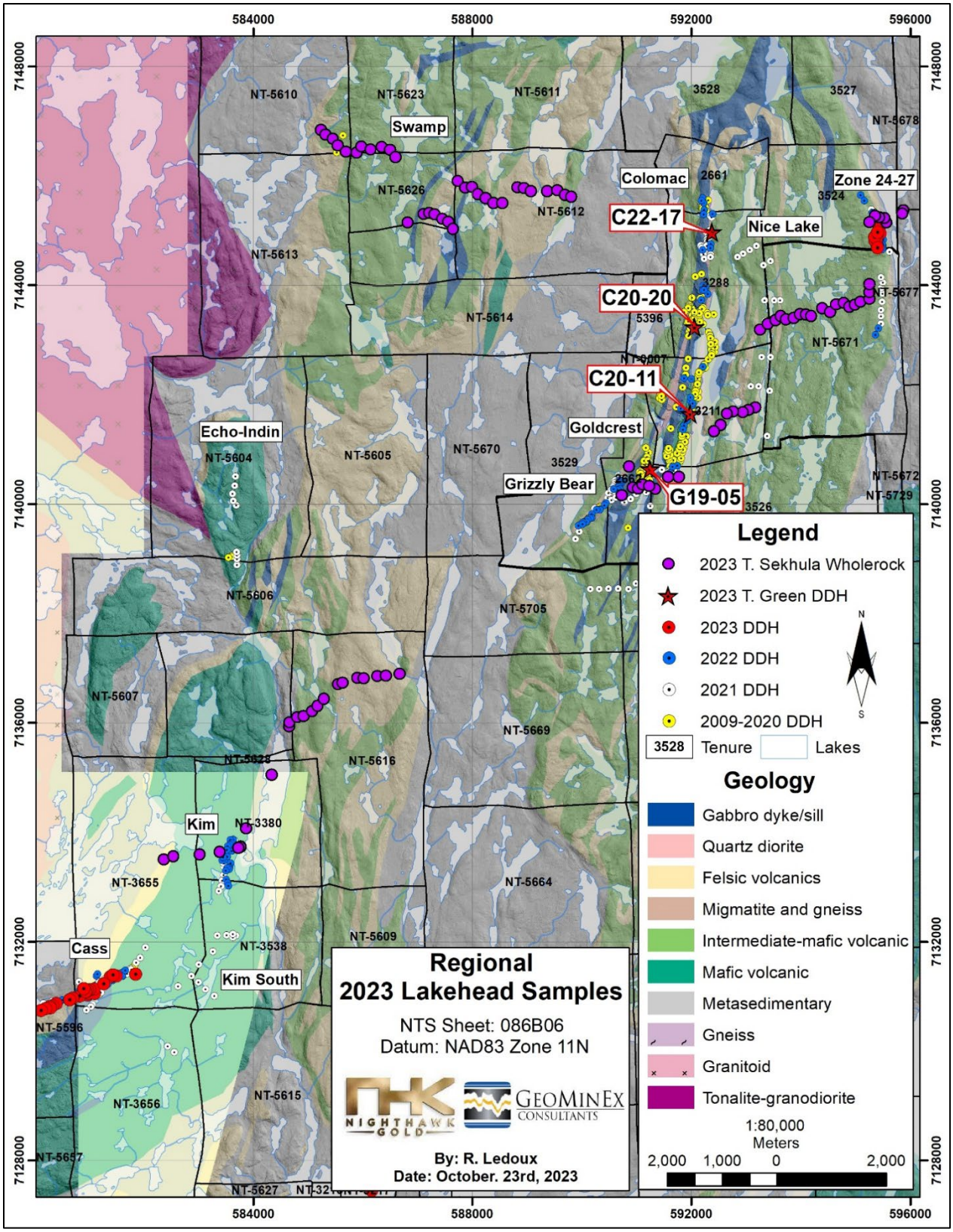

Figure 58: Geological map showing 2023 whole rock sample locations (purple) and selected drill holes (red stars) over regional geology with 2009-2023 DDH.

3.3 Project Schedule

Since the original acquisition of the Colomac Gold project by Nighthawk Gold Corp., the project has been in the discovery and exploration phase, focusing on defining the global mineral resource. The exploration and discovery phase has no set timeline and can range from years to decades. Predevelopment, or advanced exploration, is the next phase of the projects and includes technical engineering studies, baseline environmental studies, metallurgical studies, and economic feasibility studies. Timelines for advanced exploration vary based on the location, size, and complexity of the project. To transition from exploration to predevelopment requires significant capital investment, and positive preliminary economic studies. In tandem with the technical studies, major development projects require an environmental assessment. Upon successful studies and approval from the environmental assessment, the permitting phase would follow. All this must occur prior to the construction and production phases of a mine.

4 Activities Under Management Plans

4.1 Water Management Plan

No changes or updates were undertaken to the process or facilities required for the management of water during 2023.

4.1.1 Water Drawn

Camp water usage, sourced from Steeves Lake, is tracked daily by recording the readings on water metres at the outflow of both water tank houses. In total 426.98 m^3 of water was used from February 14th to July 30th, 2023, by the Colomac camp. With 306.53 m^3 used by the kitchen and main washhouse, and 120.44 m^3 used by the dormitory trailers. A summary is available in Table 8 below, with detailed daily water usage in Appendix B. Water meters are inspected at the beginning of each year during camp opening and are calibrated based on initial filling of a tank with a known volume. Regular calibration records will be kept going forward.

Table 8: Camp Water Usage Summary

Period	Daily Average (m^3/day)	Total (m^3)
March	3.08	95.6
April	3.39	101.7
May	1.98	61.3
June	3.43	102.9
July	2.19	65.6
Annual	**2.81**	**427**

Table 9: Drill Water Usage Summary

Source		Indin Lake		Indin River		Hewitt Lake	
Metric		Daily Average (m^3/day)	Total (m^3)	Daily Average (m^3/day)	Total (m^3)	Daily Average (m^3/day)	Total (m^3)
Period	March	25.7	719	0	0	0	0
	April	25.6	818	0	0	0	0
	May	0	0	0	0	41.2	576
	June	0	0	36.4	200	34.3	1716
	July	0	0	39.3	767	0	0
	Annual	**25.6**	**1537**	**38.7**	**967**	**35.8**	**2292**

Daily averages are per drill day. Up to 2 drills drew on each water source at a time.

4.1.2 Greywater

Greywater is generated at both the camp and drill sites.

Grey water from the camp area is generated from the kitchen, the washhouse, and the trailers at Colomac. To minimize the effects of the greywater, biodegradable and eco-friendly cleaning products are employed at all locations whenever possible. The greywater from the kitchen area is also processed through a grease trap located within the pump house building before it is released into the environment. Thereafter, greywater from the kitchen, along with that from the washhouse, is released in an area west of and behind the kitchen/dining structures and washhouse. The greywater from the trailers is released on the west side behind the new toilet facility. No sumps are employed in the release; rather the water enters a 1-2 metre-plus thick groundcover of broken rock. This system works well and allows for natural filtration; there was no residual accumulation of water, or other extraneous debris on surface during either the winter or summer periods during 2012-23. The government inspectors have regularly reviewed the release site during their visits and found no issues with this process. Volumes of greywater generated in camp are assumed to be equal to volumes drawn from the lake for use.

Greywater from drilling is discharged into topographic depressions away from bodies of water. Often return drill water is lost underground, but otherwise volumes discharged are assumed to equal those drawn. No unauthorized discharges took place during 2023.

Waste from the lavatories is processed within the lavatory buildings, which during 2023 comprised eleven Incinolet Electric Incinerating toilets and four Pacto toilets. The Incinolet toilets produce minor residual ash, and the Pactos keep the waste sealed inside induvial plastic bags; both of which are accumulated and shipped within marked, sealed drums to KBL in Yellowknife for proper disposal. There were no unauthorized discharges during 2023.

4.1.3 Damoti Lake Surveillance Network Program

Nighthawk continued its Surveillance Network Program at Damoti Lake in 2023. Nighthawk and WSP Canada Inc. staff were on site on June 20th and September 20th, recording water quality parameters and collecting water samples for laboratory testing, including the collection of a bulk sample at SNP station 5-6 for toxicity on June 20th, as part of Type A Water License compliance. For the September 20th

monitoring event, a Water Resources Officer from the Department of Environment and Climate Change, Government of the Northwest Territories, accompanied them to carry out an inspection of the site to ensure continued Water License compliance.

All parameters, including acute toxicity at SNP 5-6, were found to be below applicable guideline exceedance thresholds and Water License limits during the June monitoring event. Laboratory results indicated a guideline exceedance for total iron at SNP 5-4, however this is attributable to the low water depth of 0.3m (the minimum depth at which a water sample may be collected); as such no remedial actions were taken in response to monitoring.

See Appendices C and D for further details of the June and September monitoring events, respectively, including tabular summaries of data including the QAQC program.

4.2 Waste Management Plan

4.2.1 Solid Waste Management

Waste stream management is implemented to ensure that only non-hazardous, combustible waste is incinerated. Other types of waste that are not suitable for incineration (based on the applicable guidelines and standards) will be transported to Yellowknife for disposal at an approved facility following the procedures outlined in the Waste Management Plan.

One component of waste stream management is the "Three R's": reducing, reusing, and recycling. The first consideration for waste materials (or potential waste) generated is to reduce the amount of overall waste. This can include using products that have less packaging or come in bulk containers. Reusing items (if safe to do so) can also reduce the input into the waste stream as well as result in cost savings. Recycling appropriate wastes will also divert wastes from incinerators, landfills, and other disposal methods. Recyclables, including but not limited to pop cans and glass, are also sent to approved recycling facilities in Yellowknife. To increase recycling, a protocol change occurred during late 2017 with most of the clean cardboard brought to Colomac as part of the grocery delivery being strapped and returned to Yellowknife for recycling.

Waste streams that are not incinerated at Colomac include (but are not limited to the following):

- Hydrocarbons and hydrocarbon containing products, including waste and sludge oils; hydrocarbon impacted drill waste.
- Spray cans.
- Plastics and rubber.
- Metal and glass.
- Batteries of all types.
- Treated wood products.
- All scrap poly-foam insulation and
- Chemicals and their containers.

Such materials are packed into sealed and marked drums and shipped to Yellowknife for proper disposal by KBL Environmental of Yellowknife.

No solid waste is deposited on the property.

No updates or changes to the process or facilities required for the management of waste took place during 2023.

4.2.2 Waste Incineration

The incinerator building at the Colomac camp (Figure 14) is equipped with an Inciner8, Model A600(sec) Incinerator (Figure 59). It is a diesel-fired version with a secondary chamber for additional gas burn. It operates at a thermostatically controlled temperature with a minimum 900° C to maximum of 1350° C. It has a capacity of 300 kg and burns at an average rate of 75 kg per hour.

The unit is contained within an isolated (from other buildings), framed wood and metal structure that contains digital weigh scales, and separate bins for partitioning different types of waste (Figure 59).

Incinerator Training

The incinerator is owned by Nighthawk and trained Discovery Mining personnel (who administer the camp), are the primary operators of the incinerator. Generally, only the camp person, a DMS employee, is authorized to operate the incinerator at Colomac. This maintains better control over operating procedures and record keeping. The operator is trained in the following areas prior to incinerator operations and must read the Nighthawk Incinerator Management Plan. An attestation from the incinerator operator is presented as Appendix A.

As was done in previous years, training was continuously provided as required to key personnel at the camp. Training of any additional personnel as needed is handled by those already trained and familiar with operations.

- Incinerator waste streams and load limitations.
- Incinerator start-up and operating procedures.
- Clean-out procedures and safe packaging of ashes.
- Troubleshooting procedures.
- Maintenance schedule.
- Record keeping and reporting.

Figure 59: Incinerator building (interior) at Colomac camp. Inciner8, Model A600(sec) Incinerator on the left and bins on the right are for partitioning different types of waste based on burn rate (2014).

Incinerator Records

As part of the daily routine, waste at the Colomac camp is sorted, weighed, and recorded prior to incineration. Paper records are kept onsite, and a digital file updated regularly and prior to camp closure. Materials are sorted as “kitchen waste”, “other sources” (i.e. tent or drill waste), “cardboard”, and “construction materials”. All ash from incineration is collected in recycled drums, weighed, and recorded before the drums are sealed.

The Nighthawk Colomac Camp Incinerator Records for 2023 cover the period February 14th to July 27th, 2023, and are summarized within Table 10 showing what is incinerated (orange header) and what was

shipped out (blue header) during 2023. Daily records of the Colomac Camp waste and Incinerator records are presented as a table in Appendix B.

Table 10: Summary of Colomac Incinerator Feed and Shipped Waste for 2023 Season

Colomac Camp	Incinerated		Shipped Out					
	Kitchen Waste (lb)	Other Sources (lb)	Ash Outgoing (lb)	Cardboard (lb)	Construction Material & Pallets (lb)	Refundable Bottles (lb)	Driller Garbage (lb)	Other Non-Burnable (lb)
Totals for 2017 Season	20,925.00	6,533.50	2,416.00	2,709.00	413.00	Not Recorded	Not Recorded	Not Recorded
Totals for 2018 Season	23,396.90	5,124.00	2,286.00	343.00	5,532.00	Not Recorded	Not Recorded	Not Recorded
Totals for 2019 Season	22,448.00	2,339.00	884.00	196.00	2,024.00	Not Recorded	Not Recorded	Not Recorded
Totals for 2020 Season	13,015.50	1,944.00	360.00	2,555.00	903.90	Not Recorded	Not Recorded	Not Recorded
Totals for 2021 Season	36,345.10	5,122.70	2,717.00	7,617.00	14,907.00	1,814.00	26,465.00	22,152.00
Totals for 2022 Season	36,276.00	8,049.00	2,286.00	7,273.00	28,310.00	1,838.00	17,311.00	9,261.00
Totals for 2023 Season	21,936.00	4,662.00	2,058.00	3,544.00	7,201.00	1,253.00	9,561.00	47,593.00

4.3 Spill Contingency Plan

During the weekly site meeting of June 25th, personnel in attendance were trained on the use of an enclosed drum spill kit. Numerous 55 and 95 gallon drum spill kits (as well as soft-case spill kits inside vehicles) produced by Uline are located on site and are regarded as the primary response tool in a spill scenario. Topics of discussion were the contents of the spill kit and their application, the use of the drum container as a secondary containment vessel in the event of primary containment failure, as well as spill reporting requirements.

No unauthorized discharges or reportable spills occurred during the 2023 program.

4.4 Closure and Reclamation Plan

4.4.1 2023 Closure and Remediation

During 2023 ongoing remediation work was undertaken at the Diversified Mine site area. The remediation work that was undertaken consisted of the following:

1. Removal of scrap wood and metal (3 sling nets).
2. Removal of assorted garbage (3 bags).

All material was sent back to Colomac camp and then to Yellowknife for disposal.

No reclamation research was completed in 2023.

4.4.2 2024 Proposed Closure and Remediation

A multi-year plan is in place to complete the remediation work under Land Use Permit W2018X006 at Spider and Diversified. In 2024, Nighthawk plans to completely remediate of the Spider Lake area with the goal to have the existing bond on the area released. Treasure Island on Spider Lake was impacted by the 2023 wildfire season, and most of the wood that was planned for removal in the Closure and Reclamation Plan no longer remains. The impact of the wildfires on the contaminated soil by hydrocarbons is unknown. Preliminary soil testing will be done prior to remediation to reassess the scope of contaminated soil and the impacts of the wildfires. Additionally, ongoing remediation will continue at the Diversified shaft, as well as the possibility to set up the area for complete remediation during 2025.

Land Use Permit W2018X006 was originally scheduled to expired on February 14, 2024, however an extension request was approved for two additional years, with an updated expiration date of February 14, 2026. Engagement for this renewal was completed along with explanations of the proposed work plan, Table 11.

Table 11: Summary of Engagement for the LUP W2018X006 Extension Request and Work Plan

Date	Party	Method Of Engagement	Action/Comments	Attendees
Sept 27, 2023	Tlicho Government	Email, NHK LUP W2018X0006 Extension PDF	No concerns	Longinus Ekwe, Violet Camsell-Blondin, Brett Wheler and Jessica Pacunayen
Sept 28, 2023	North Slave Métis Alliance	Email & Video Conference, NHK LUP W2018X0006 Extension PDF	No concerns	Alan Alex
Sept 28, 2023	Wek'èezhii Renewable Resource Board	Email, NHK LUP W2018X0006 Extension PDF	Interested in understanding the impacts of the wildfires	Jody Pelissey and Laura Meinert

4.5 Engagement Plan

The Engagement Plan version 4.1 for the Colomac Gold Project was developed following the Mackenzie Valley Land and Water Board's Engagement Guidelines and Holders of Water Licenses (MVLWB 2014), the Land Use Permits and Engagement and Consultation Policy (MVLWB 2013) and the Weghàà Eleyatits'eedi: Tlicho Government Guidelines for Proponents of Development (Tlicho Government 2022). Nighthawk's Engagement Plan version 4.1 was last revised as of February 2023. The intent of the Engagement Plan is to respectfully and effectively collaborate and inform affected parties. Engagement was carried out by email, virtual meetings, presentations, in person meetings, and weekly activity reporting. Table 12 is a summary of engagement activities carried out in 2023 for Water Licenses W2021L2-0004, W2021L2-0005 and Land Use Permit W2021C0009.

Table 12: Summary of Engagement 2023

Date	Party	Method Of Engagement	Discussion	Attendees
Feb 6, 2023	Tlicho Government	Email	Notice of camp opening, description of planned activities and timelines and a map of proposed ice road	Brett Wheler, Grace Mackanzie, Violet Camsell-Blondin, Morgan Schauerte, John McBride
Feb 6, 2023	North Slave Metis Alliance	Email	Notice of camp opening, description of planned activities and timelines and a map of proposed ice road	Alan Alex, Morgan Schauerte, John McBride
Feb 6, 2023	Wek'èezhii Renewable Resource Board	Email	Notice of camp opening, description of planned activities and timelines and a map of proposed ice road	Jody Pellissey, Morgan Schauerte, John McBride
Feb 10, 2023	Wek'èezhii Renewable Resource Board	Email	Proposed environmental baseline field work, winter monitoring program, planned exploration activities, economic opportunities, meeting schedule	Jody Pelissey, Laura Meinert, John McBride
Feb 11, 2023	Tlicho Government	Email	Notice of News Release, updating on mineral resource estimate	Grace Mackenzie, Brett Wheler, Morgan Schauerte, John McBride
Feb 11, 2023	North Slave Metis Alliance	Email	Notice of News Release, updating on mineral resource estimate	Alan Alex, Morgan Schauerte, John McBride
Feb 11, 2023	Wek'èezhii Renewable Resource Board	Email	Notice of News Release, updating on mineral resource estimate	Jody Pelissey Morgan Schauerte, John McBride
Feb 13, 2023	Tlicho Government	Email and Virtual Presentation	Proposed environmental baseline field work, winter monitoring program, planned exploration activities, economic opportunities, meeting schedule	Brett Wheler, Grace Mackenzie, Violet Camsell-Blondin, Morgan Schauerte, Kelly Hillie, Lynnette Dagenais, Patrick Young, Kate Sinclaire, Erin Ashead, John McBride
Feb 13, 2023	North Slave Metis Alliance	Email and Virtual Presentation	Proposed environmental baseline field work, winter monitoring program,	Alan Alex, Noah Johnson, Morgan Schauerte, Kelly Hillie, Lynnette Dagenais,

			planned exploration activities, economic opportunities, meeting schedule	Patrick Young, Kate Sinclaire, Erin Ashead, John McBride
Mar, 6, 2023	Tlicho Government	In Person Meeting	Discussing, 2022 results and planning and opportunities for 2023 activities	Chief Adeline Football, Chief Doreen Arrowmaker, Brett-Anne Nickerson, Wheler, Grace Mackenzie, Morgan Schauerte, Sal Curcio, Allan Candelario, John McBride
Mar 17, 2023	Tlicho Government	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Grace Mackenzie, Violet Camsell-Blondin, Brett Wheler, John McBride
Mar 17, 2023	North Slave Metis Alliance	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Alan Alex, John McBride
Mar 17, 2023	Wek'èezhii Renewable Resource Board	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Jody Pelissey and Laura Meinert, John McBride
May 04, 2023	Tlicho Government	Email	Notice of News Release, updating on preliminary economic assessment (PEA)	Grace Mackenzie, Violet Camsell-Blondin, Lands@tlicho.ca, John McBride
May 04, 2023	North Slave Metis Alliance	Email	Notice of News Release, updating on preliminary economic assessment (PEA)	Alan Alex, John McBride
May 04, 2023	Wek'èezhii Renewable Resource Board	Email	Notice of News Release, updating on preliminary economic assessment (PEA)	Jody Pelissey Laura Meinert, John McBride
May 23, 2023	Tlicho Government	Virtual Presentation	Reviewing the Colomac 2023 PEA	Brett Wheler, Grace Mackenzie, Violet Camsell-Blondin, Zaby Nevitt, Michael Birlea, Morgan Schauerte, Salvatore Curcio, Allan Candelario, John McBride
Mar 24, 2023	Tlicho Government	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Grace Mackenzie, Violet Camsell-Blondin, Brett Wheler, John McBride

Mar 24, 2023	North Slave Metis Alliance	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Alan Alex, John McBride
Mar 24, 2023	Wek'èezhii Renewable Resource Board	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Jody Pelissey and Laura Meinert, John McBride
Mar 31, 2023	Tlicho Government	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Grace Mackenzie, Violet Camsell-Blondin, Brett Wheler, John McBride
Mar 31, 2023	North Slave Metis Alliance	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Alan Alex, John McBride
Mar 31, 2023	Wek'èezhii Renewable Resource Board	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Jody Pelissey and Laura Meinert, John McBride
Apr 21, 2023	Tlicho Government	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Grace Mackenzie, Violet Camsell-Blondin, Brett Wheler, John McBride
Apr 21, 2023	North Slave Metis Alliance	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Alan Alex, John McBride
Apr 21, 2023	Wek'èezhii Renewable Resource Board	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Jody Pelissey and Laura Meinert, John McBride
Jun 23, 2023	Tlicho Government	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Grace Mackenzie, Violet Camsell-Blondin, Brett Wheler, John McBride
Jun 23, 2023	North Slave Metis Alliance	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Alan Alex, John McBride
Jun 23, 2023	Wek'èezhii Renewable Resource Board	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Jody Pelissey and Laura Meinert, John McBride
Jul 07, 2023	Tlicho Government	Email	Weekly Activity Report; Exploration, Environment,	Grace Mackenzie, Violet Camsell-Blondin, Brett Wheler, John McBride

			Camp, Employment, Health and Safety	
Jul 07, 2023	North Slave Metis Alliance	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Alan Alex, John McBride
Jul 07, 2023	Wek'èezhii Renewable Resource Board	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Jody Pelissey and Laura Meinert, John McBride
July 24, 2023	Tlicho Government	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Grace Mackenzie, Violet Camsell-Blondin, Brett Wheler, John McBride
July 24, 2023	North Slave Metis Alliance	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Alan Alex, John McBride
July 24, 2023	Wek'èezhii Renewable Resource Board	Email	Weekly Activity Report; Exploration, Environment, Camp, Employment, Health and Safety	Jody Pelissey and Laura Meinert, John McBride
Aug 04, 2023	Tlicho Government	Email	Notice of Bought Deal Financing	Grace Mackenzie, Lands@tlicho.ca, John McBride
Aug 04, 2023	North Slave Metis Alliance	Email	Notice of Bought Deal Financing	Alan Alex, John McBride
Aug 04, 2023	Wek'èezhii Renewable Resource Board	Email	Notice of Bought Deal Financing	Jody Pelissey and Laura Meinert, John McBride
Aug 06, 2023	Tlicho Government	Email	Notice of camp closure	Grace Mackenzie, Violet Camsell-Blondin, Lands@tlicho.ca, John McBride
Aug 06, 2023	North Slave Metis Alliance	Email	Notice of camp closure	Alan Alex, John McBride
Aug 06, 2023	Wek'èezhii Renewable Resource Board	Email	Notice of camp closure	Jody Pelissey and Laura Meinert, John McBride
Aug 08, 2023	North Slave Metis Alliance	Email	Notice of Cass Drill Results	Alan Alex, John McBride

Aug 08, 2023	Wek'èezhii Renewable Resource Board	Email	Notice of Cass Drill Results	Jody Pelissey and Laura Meinert, John McBride
Aug 08, 2023	Tlicho Government	Email	Notice of Cass Drill Results	Grace Mackenzie, Violet Camsell-Blondin, Lands@tlicho.ca, John McBride
Nov 20, 2023	Tlicho Government	Email	Yellowknife Geoscience Colomac Project Update presentation	Grace Mackenzie, Violet Camsell-Blondin, Brett Wheler, John McBride
Nov 20, 2023	North Slave Metis Alliance	Email	Yellowknife Geoscience Colomac Project Update presentation	Alan Alex, John McBride
Nov 28, 2023	Tlicho Government	Email	Notice of news release, merger of Nighthawk Gold Corp and Moneta Gold Corp	Grace Mackenzie, Violet Camsell-Blondin, Brett Wheler, John McBride
Nov 28, 2023	North Slave Metis Alliance	Email	Notice of news release, merger of Nighthawk Gold Corp and Moneta Gold Corp	Alan Alex, John McBride
Nov 28, 2023	Wek'èezhii Renewable Resource Board	Email	Notice of news release, merger of Nighthawk Gold Corp and Moneta Gold Corp	Jody Pelissey and Laura Meinert, John McBride

Through the engagement process, an open dialog and feedback on program design, timing and activity have been received by Nighthawk. This includes priorities on closure criteria, archaeological sites, caribou and other wildlife, and transparent project updating.

A GIS template for early archaeological mapping has been designed and set up to spatially record traditional knowledge provided for archeological sites and local area of interest. This GIS system will also provide spatial reference for baseline data collection, such as wildlife data which can be shared with interested groups.

Weekly project activities reports have been provided to increase transparency and more timely communication of activities, focusing on site specific activities, health and safety, and employment numbers. Increased frequency of communication during active programming allows for traditional knowledge and feedback received to be integrated more promptly into the programing.

4.6 Explosives Management Plan

An Explosives Management Plan has not been developed as no explosives were brought to, stored at, or used on the property, and there are no plans to do so at this time.

4.7 Wildlife Mitigation and Management Plan

The Wildlife Mitigation and Management Plan (WMMP) encompasses the Colomac, Damoti Lake and Diversified camps. The WMMP describes the steps necessary to protect personnel, wildlife and wildlife habitat within the project direct footprint and actions to take to minimized and monitor indirect impacts to wildlife and their habitats beyond the footprint. There were no non-compliance(s) with the Wildlife Mitigation and Monitoring Plan or any directive from the Board during 2023 season. Annual training will be completed for all camp staff on the Wildlife Mitigation and Monitoring Plan. No Wildlife incidents occurred during the 2023 season.

4.7.1 Mitigation

To reduce the impact of direct habitat loss, all exploration activities were kept to the authorized areas, and the transition from tent sleepers to trailer facilities reduced the footprint of the camp and outdoor walking corridor. All drill sites were remediated progressively and reviewed by supervising geologists. No wildlife encounters were recorded during the 2023 season. Recreation vehicle use was prohibited, along with hunting, trapping, and feeding of wildlife. All other protocols within the WMMP were observed by staff and contractors on site.

4.7.2 Monitoring

Wildlife sightings were recorded however due to rotational staffing, additional training and weekly reminders to complete record sightings will help improve frequency and effectiveness of the wildlife sighting monitoring.

5 Inspections

The Indin Lake Gold Property was visited by two inspectors in 2023. No additional requests by the Board were received during the reporting period.

5.1 W2021C0009; CIRNAC Lands

Tim Morton, Resource Management Officer for CIRNAC Lands, conducted an inspection of the property on June 26th with respect to Land Use Permit W2021C0009.

The inspector found all completed drill locations to have been satisfactorily remediated but did note minor drilling grease at three locations; these were remediated shortly after his departure.

No concerns were raised concerning the camp area, however multiple pieces of equipment were observed without drip pans used as secondary containment. Drip pans were located and placed under the equipment in question, and personnel were reminded of the need for secondary containment during subsequent weekly meetings.

5.2 W2021L2-0004; Department of Environment and Climate Change

Meaghan McIntyre-Newell, Water Resource Officer for the Department of Environment and Climate Change, Government of the Northwest Territories, was on hand during June 20th's Damoti Lake SNP monitoring event, conducting an inspection with respect to Water License W2021L2-0004, concurrent to monitoring activities by Nighthawk and WSP staff.

Some SNP signage was knocked over or damaged; Nighthawk believes this was likely due to breakup and wildlife, respectively. Nighthawk intends to replace this signage during the next freshet monitoring event in 2024, as the Damoti Lake site is a significant distance from Colomac Camp, and the company wishes to avoid the expanded carbon footprint caused by repeated helicopter access.

A tarp was observed floating in SNP 5-8 (a portal), and the inspector requested its removal when it is safe to do so. This tarp is within deeper water and is hooked on or constrained by an object below the water's surface. Nighthawk will attempt its removal at a later SNP monitoring event if the water level within the portal continues to drop, and those on site are able to assess a safe working environment.

6 References

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2015: Nighthawk Gold Corp. Press Releases: *Nighthawk's Option on Kim and Cass Properties Expires,* dated December 29, 2015.

Golder Associated Ltd.

2015: Geochemical Characterization of Waste Rock – Damoti Lake Site; Report # 13-1328-002 prepared for Nighthawk Gold Corp.

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Byron, Michael

2020: Nighthawk Gold Corp. Press Release: *Nighthawk Completes Purchase of Royalties Pertaining to Certain Regional Assets Within its Indin Lake Gold Property,* dated April 3, 2020.

WSP Canada Inc.

2023: Damoti Lake Surveillance Network Program Results from June 2023 Monitoring Event 21499891, July 28, 2023

WSP Canada Inc.

2023: Damoti Lake Surveillance Network Program Results from September 2023 Monitoring Event 21499891, October 30, 2023

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Updated Mineral Resource Estimate Demonstrates Significant Boost to the Global and Open-Pit Mineral Resources,* dated February 8, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Announces 2023 Exploration and Environmental Programs and Files the Technical Report for the 2023 MRE,* dated March 16, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold's Maiden PEA: C$1.2 Billion NPV 5% and 35% IRR after-taxes at US$1,600/oz Gold,* dated April 26, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Files the NI 43-101 Technical Report for the Colomac Gold Project PEA,* dated June 9, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Announces Results from its 2023 Annual Meeting of Shareholders,* dated June 22, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Announces C$10.6 Million Bought Deal Private Placement,* dated July 17, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Closes C$11.3 Million Bought Deal Private Placement,* dated August 4, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Intersects 4 Ounces Per Tonne (125.00 g/t Au) over 0.50 Metres at the Cass Deposit,* dated August 8, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Provides an Update on the Wildfires in the Northwest Territories,* dated August 18, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Intersects 16.14 oz/t Au (502 g/t Au) over 0.50 m and 10.22 oz/t Au (318 g/t Au) over 0.40 m at the 24/27 Deposit*, dated September 6, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Delivers Inaugural ESG Report*, dated October 23, 2023.

John McBride and Jason Dankowski

2023: Nighthawk Gold Corp. Press Release: *Nighthawk and Moneta Announce At-Market Merger to Create a Leading Canadian Gold Development Company; Concurrent C$12.5 Million Bought Deal Equity Financing,* dated November 28, 2023.

John McBride

2023: Nighthawk Gold Corp. Press Release: *Nighthawk Gold Closes C$13.0 Million Bought Deal Equity Financing,* dated December 19, 2023.

7 Certificate of Qualifications

I John A. Nicholson, of the City of Vancouver, Province of British Columbia do hereby CERTIFY that:

1. I am a Professional Geologist and a qualified person ("QP"), and a principal of Geominex Consultants Inc. (EGBC Permit to Practise # 1002226 and NAPEG Permit to Practise # P1330) with a postal address at 1411-409 Granville Street Vancouver B.C V6C1T2.

2. I am a graduate of University of British Columbia, with a B.Sc. degree (1986) in Geology

3. I am registered as a Licensee with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG reg. no. L3197) and entitled to Practice as a Professional Geologist in the Northwest Territories. I am also registered as a Professional Geoscientist (P.Geo.) with the Engineers and Geoscientist of British Columbia (EGBC reg.no. 19933).

4. I have practised my profession as a geologist continuously for over thirty-five years. I have prepared reports, and conducted, supervised, and managed programs for various major and junior mining companies, and have evaluated projects for clients both domestically and internationally.

5. I have no direct or indirect interest, nor do I expect to receive any interest either directly or indirectly in the Indin Lake Gold Property, North Mining District, Northwest Territories, Canada as a result of my involvement with the work covered by this report.

6. I have prepared or supervised the preparation of the scientific and technical information presented in this report and related attached documents.

7. This report, *Project and Property Summary for 2023 Annual Report Indin Lake Project, NWT.,* was prepared by J. Nicholson for the account of Nighthawk Gold Corp., at the request of Nighthawk Gold Corp. The material in this report reflects my best judgement in light of information available to me at the time of preparation. Any use which a third party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such third parties. J. Nicholson accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions based on this report and related attached documents.

8. Permission is granted for use of this report, in whole or in part, for assessment and qualification requirements with any regulatory authority.

DATED at Vancouver, British Columbia this 16th day of January 2023

"signed and sealed"

John A. Nicholson. P.Geo.

I Riley T. Ledoux, of the City of North Vancouver, Province of British Columbia do hereby CERTIFY that:

1. I am a Professional Geologist and a qualified person ("QP"), and a responsible registrant of Geominex Consultants Inc. (EGBC Permit to Practise # 1002226 and NAPEG Permit to Practise # P1330) with a postal address at 1411-409 Granville Street Vancouver B.C V6C1T2.

2. I am a graduate of University of British Columbia, with a B.Sc. degree (2019) in Geology

3. I am registered as a Professional Geoscientist (P.Geo.) with the Engineers and Geoscientists of British Columbia (EGBC reg.no. 59191).

4. I have practiced my profession as a geologist continuously for eight years. I have prepared reports, and conducted, supervised, and managed programs for major and junior mining companies in the Northwest Territories and Manitoba.

5. I have no direct or indirect interest, nor do I expect to receive any interest either directly or indirectly in the Indin Lake Gold Property, North Mining District, Northwest Territories, Canada as a result of my involvement with the work covered by this report.

6. I have prepared or supervised the preparation of the scientific and technical information presented in this report and related attached documents.

7. This report, *Project and Property Summary for 2023 Annual Report Indin Lake Project, NWT.,* was prepared by R. Ledoux for the account of Nighthawk Gold Corp., at the request of Nighthawk Gold Corp. The material in this report reflects my best judgement in light of information available to me at the time of preparation. Any use which a third party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such third parties. R. Ledoux accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions based on this report and related attached documents.

9. Permission is granted for use of this report, in whole or in part, for assessment and qualification requirements with any regulatory authority.

DATED at Vancouver, British Columbia this 16th day of January 2023

"signed and sealed"

Riley T. Ledoux. P.Geo.

Appendix A: Attestation from Incinerator Operator

This document confirms Mark Luzny of Discovery Mining Services as a trained and principal operator of the Inciner8, Model A600(Sec) Incinerator with a secondary combustion chamber, located at Nighthawk Gold Corp's Indin Lake Camp, approximately 220 km's North of Yellowknife, NT.

The Inciner8, Model A600(Sec) Incinerator is a diesel-fired unit with a high temperature, secondary burner/chamber for additional gas burn. It operates at a thermostatically controlled temperature with a minimum 900 degrees Celsius (°C) and up to a maximum of 1350°C. It has a capacity of 300 kilograms (kg) and burns at an average 75 kg per hour.

The unit is contained within an isolated (from other buildings), framed wood and metal structure that contains weight scales, and separate bins for segregating different types of waste. Bins allocated for combustible waste include the following: 1) kitchen waste; 2) non-hazardous building materials; and 3) cardboard. Paper and digital records are kept of the daily weights of the materials for incineration, weights of the resulting ash, and any other relevant information.

Signed by,

John Nicholson, P. Geo
Project Manager
Geominex Consultants Inc.

Signed by,

Mark Luzny
Discovery Mining Services

Signed on July , 19 , 2023

Appendix B: 2023 Summary of Waste and Camp Water Use

Colomac		Water Usage			Incinerated		Shipped Out								
Date	Camp Population	Washhouse /Kitchen (m3)	Dorm Trailer (m3)	Total (m3)	Kitchen Waste (lb)	Other Sources (lb)	Ash Outgoing (lb)	Cardboard (lb)	Refundable Bottles (lb)	Construction Material & Pallets (lb)	Metal (lb)	Driller Garbage (lb)	Hydrocarbon Contaminated Material (lb)	Used Oil (lb)	Other Non-Burnable (lb)
14-Feb-23	5				40	0									
15-Feb-23	12				57	10									
16-Feb-23	12				18	0									
17-Feb-23	12				0	15									
18-Feb-23	12				67	0									
19-Feb-23	12				54	8									
20-Feb-23	12				68	0									
21-Feb-23	12				48	0									
22-Feb-23	12				155	11									
23-Feb-23	14				26	0									
24-Feb-23	19				122	0									
25-Feb-23	19				33	25									
26-Feb-23	19				166	0									
27-Feb-23	19				46	0									
28-Feb-23	19				68	12									
1-Mar-23	21	1.8486		1.8486	136	17									
2-Mar-23	21	1.8602		1.8602	135	0									
3-Mar-23	22	1.6907		1.6907	43	11									
4-Mar-23	22	1.4209		1.4209	79	0									
5-Mar-23	22	2.0909		2.0909	95	0									
6-Mar-23	22	1.7791		1.7791	98	25									
7-Mar-23	22	3.1427		3.1427	173	7									

Date	Camp Population	Washhouse /Kitchen (m3)	Dorm Trailer (m3)	Total (m3)	Kitchen Waste (lb)	Other Sources (lb)	Ash Outgoing (lb)	Cardboard (lb)	Refundable Bottles (lb)	Construction Material & Pallets (lb)	Metal (lb)	Driller Garbage (lb)	Hydrocarbon Contaminated Material (lb)	Used Oil (lb)	Other Non-Burnable (lb)
8-Mar-23	22	1.6486		1.6486	134	9									
9-Mar-23	22	2.7367		2.7367	129	0									
10-Mar-23	25	2.3482		2.3482	70	0									
11-Mar-23	28	2.3288		2.3288	146	34									
12-Mar-23	28	2.4059		2.4059	106	12									
13-Mar-23	28	2.7873		2.7873	168	0									
14-Mar-23	31	2.7758		2.7758	164	11									
15-Mar-23	34	2.8843		2.8843	171	55									
16-Mar-23	34	3.3194		3.3194	152	9									
17-Mar-23	38	2.8758		2.8758	121	14									
18-Mar-23	38	0.7975		0.7975	161	37			141						
19-Mar-23	38	2.5992		2.5992	232	99									
20-Mar-23	41	7.2947		7.2947	47	0									
21-Mar-23	38	4.2463		4.2463	111	8									
22-Mar-23	38	3.6855		3.6855	126	40									
23-Mar-23	35	4.4867		4.4867	173	11									
24-Mar-23	35	3.0578		3.0578	216	113									
25-Mar-23	36	3.7553		3.7553	241	21									
26-Mar-23	36	4.1262		4.1262	179	15									
27-Mar-23	36	3.7555		3.7555	183	17									
28-Mar-23	34	3.9533		3.9533	215	23		73				1253			
29-Mar-23	34	3.7248		3.7248	131	23									
30-Mar-23	33	5.086		5.0860	136	8									
31-Mar-23	33	5.0617		5.0617	184	24	497				261		702	580	
1-Apr-23	38	4.1057		4.1057	226	23									
2-Apr-23	38	3.3		3.3000	111	21		78	95	5401		380			176
3-Apr-23	38	4.149		4.1490	92	10									

4-Apr-23	38	3.0802		3.0802	104	24					400	270		350	322

Date	Camp Population	Washhouse /Kitchen (m3)	Dorm Trailer (m3)	Total (m3)	Kitchen Waste (lb)	Other Sources (lb)	Ash Outgoing (lb)	Cardboard (lb)	Refundable Bottles (lb)	Construction Material & Pallets (lb)	Metal (lb)	Driller Garbage (lb)	Hydrocarbon Contaminated Material (lb)	Used Oil (lb)	Other Non-Burnable (lb)
5-Apr-23	38	2.3978		2.3978	166	0					24000				
6-Apr-23	37	3.2255		3.2255	133	29									
7-Apr-23	37	3.6901		3.6901	159	16									
8-Apr-23	37	4.2274		4.2274	111	21									
9-Apr-23	37	4.4612		4.4612	214	16		107				209			
10-Apr-23	36	3.7303		3.7303	142	19									
11-Apr-23	36	4.2988		4.2988	203	20	275	144	93		596	656			
12-Apr-23	36	3.3053		3.3053	179	18									
13-Apr-23	38	7.2894		7.2894	198	25						330			
14-Apr-23	38	2.6836		2.6836	88	23				1000					
15-Apr-23	37	1.6891		1.6891	132	23		115							158
16-Apr-23	37	3.9048		3.9048	152	15									
17-Apr-23	37	3.918		3.9180	164	134									
18-Apr-23	37	3.7487		3.7487	92	25		91				304			110
19-Apr-23	39	4.0919		4.0919	105	0									
20-Apr-23	30	5.313		5.3130	127	28					628	232			
21-Apr-23	30	3.6877		3.6877	136	10									
22-Apr-23	23	4.3127		4.3127	120	65									
23-Apr-23	23	2.0405		2.0405	60	2									
24-Apr-23	23	2.713		2.7130	104	2									
25-Apr-23	17	2.4327		2.4327	78	20		80	109			264			369
26-Apr-23	17	1.5693		1.5693	122	26									
27-Apr-23	15	2.3276		2.3276	90	2		317				516			
28-Apr-23	14	1.9574		1.9574	74	13									
29-Apr-23	12	2.362		2.3620	124	0									
30-Apr-23	12	1.6663		1.6663	32	10									

Date	Camp Population	Washhouse /Kitchen (m3)	Dorm Trailer (m3)	Total (m3)	Kitchen Waste (lb)	Other Sources (lb)	Ash Outgoing (lb)	Cardboard (lb)	Refundable Bottles (lb)	Construction Material & Pallets (lb)	Metal (lb)	Driller Garbage (lb)	Hydrocarbon Contaminated Material (lb)	Used Oil (lb)	Other Non-Burnable (lb)
1-May-23	10	1.4838		1.4838	79	0									
2-May-23	10	0.9005		0.9005	121	11									
3-May-23	10	1.3944		1.3944	41	0									
4-May-23	8	1.342		1.3420	98	0			103						223
5-May-23	8	1.6209		1.6209	45	5									
6-May-23	8	1.1147		1.1147	37	0									
7-May-23	8	0.8128		0.8128	108	8									
8-May-23	8	1.7802		1.7802	50	1									
9-May-23	8	1.2887		1.2887	106	11	502	161			560		1784	333	
10-May-23	13	1.2437		1.2437	78	133									
11-May-23	13	1.413		1.4130	121	67		143			405		826		277
12-May-23	13	1.5874		1.5874	89	17									
13-May-23	13	2.1778		2.1778	132	8									
14-May-23	19	0.5821		0.5821	109	13									
15-May-23	19	0.853		0.8530	98	9									
16-May-23	19	1.4704		1.4704	75	19		50							824
17-May-23	21	0.6729		0.6729	173	22									
18-May-23	22	0.7204	0.6604	1.3808	215	12	246	79	63					221	636
19-May-23	24	0.3091	0.3091	0.6182	74	42									
20-May-23	25	0.4125	0.4297	0.8422	159	10		104							308
21-May-23	31	1.7119	2.2112	3.9231	211	6									
22-May-23	31	1.3197	1.7046	3.0243	84	54									
23-May-23	31	1	1.2917	2.2917	170	15		57			177	274		424	217
24-May-23	37	1.1475	1.7691	2.9166	84	13									
25-May-23	37	1.1838	1.8250	3.0088	184	12		105				242			254
26-May-23	37	1.0812	1.6669	2.7481	176	22									
27-May-23	35	1.3305	1.9403	3.2708	90	4									

Date	Camp Population	Washhouse /Kitchen (m3)	Dorm Trailer (m3)	Total (m3)	Kitchen Waste (lb)	Other Sources (lb)	Ash Outgoing (lb)	Cardboard (lb)	Refundable Bottles (lb)	Construction Material & Pallets (lb)	Metal (lb)	Driller Garbage (lb)	Hydrocarbon Contaminated Material (lb)	Used Oil (lb)	Other Non-Burnable (lb)
28-May-23	39	1.3132	2.1340	3.4472	200	38									
29-May-23	39	1.531	2.4879	4.0189	159	37									
30-May-23	37	1.8687	2.8809	4.7496	206	142					500	146			310
31-May-23	37	1.3	2.0042	3.3042	70	67									
1-Jun-23	37	1.8801	2.8985	4.7786	75	25		152	67	800		141			417
2-Jun-23	38	0.9948	1.5751	2.5699	202	50									
3-Jun-23	38	1.7774	2.8142	4.5916	168	62									
4-Jun-23	38	1.5328	2.4269	3.9597	159	49									
5-Jun-23	38	1.5138	2.3969	3.9107	162	18									
6-Jun-23	38	1.7764	2.8126	4.5890	130	21		208				698			113
7-Jun-23	37	1.5044	2.3193	3.8237	136	20									
8-Jun-23	37	1.5023	2.3160	3.8183	207	58		73	70			350			237
9-Jun-23	37	2.2294	3.4370	5.6664	79	66									
10-Jun-23	36	0.9391	1.4087	2.3478	89	39									
11-Jun-23	36	1.7464	2.6196	4.3660	184	52									
12-Jun-23	36	1.4292	2.1438	3.5730	148	58									
13-Jun-23	36	1.5719	2.3578	3.9297	155	25		241	51			438			360
14-Jun-23	38	2.9624	4.6905	7.6529	212	34									
15-Jun-23	37	0.5593	0.8623	1.4216	142	54		56	57		125				
16-Jun-23	37	1.2157	1.8742	3.0899	119	118									
17-Jun-23	35	1.7159	2.5024	4.2183	150	36		68							
18-Jun-23	35	1.1356	1.6561	2.7917	212	35									
19-Jun-23	35	1.4403	2.1004	3.5407	250	162									
20-Jun-23	35	1.1581	1.6889	2.8470	178	39	310	83			380	330		470	133
21-Jun-23	36	1.5115	2.2673	3.7788	134	74									
22-Jun-23	36	1.4936	2.2404	3.7340	254	57		71	73			494			394
23-Jun-23	31	1.0996	1.4203	2.5199	134	12									

24-Jun-23	31	0.9203	1.1887	2.1090	164	33									493

Date	Camp Population	Washhouse /Kitchen (m3)	Dorm Trailer (m3)	Total (m3)	Kitchen Waste (lb)	Other Sources (lb)	Ash Outgoing (lb)	Cardboard (lb)	Refundable Bottles (lb)	Construction Material & Pallets (lb)	Metal (lb)	Driller Garbage (lb)	Hydrocarbon Contaminated Material (lb)	Used Oil (lb)	Other Non-Burnable (lb)
25-Jun-23	32	0.9573	1.2764	2.2337	148	12									
26-Jun-23	32	0.7718	1.0291	1.8009	133	50									
27-Jun-23	32	0.0899	0.1199	0.2098	177	13		126	80			294			537
28-Jun-23	33	1.9139	2.6316	4.5455	175	117									
29-Jun-23	33	0.794	1.0917	1.8857	199	0		127			1361				121
30-Jun-23	35	1.0502	1.5315	2.5817	98	22									
1-Jul-23	32	1.4972	1.9963	3.4935	143	15									
2-Jul-23	32	1.4823	1.9764	3.4587	141	39									
3-Jul-23	32	1.099	1.4653	2.5643	151	20									
4-Jul-23	32	1.2012	1.6016	2.8028	108	30									
5-Jul-23	34	1.6608	2.3528	4.0136	100	20									
6-Jul-23	34	1.6575	2.3481	4.0056	251	2						163			709
7-Jul-23	41	0.4025	0.6876	1.0901	150	45									
8-Jul-23	37	1.1977	1.8465	3.0442	101	59									
9-Jul-23	37	1.5369	2.3694	3.9063	207	217									
10-Jul-23	37	1.2901	1.9889	3.2790	171	58									
11-Jul-23	37	1.1434	1.7627	2.9061	140	23		207	81			490			238
12-Jul-23	37	1.675	2.5823	4.2573	187	34									
13-Jul-23	35	1.379	2.0110	3.3900	194	95	228	112			151	239			849
14-Jul-23	35	1.8706	2.7280	4.5986	161	23									
15-Jul-23	25	0.9253	0.9639	1.8892	142	40		73			439	352			
16-Jul-23	23	1.2506	1.1985	2.4491	162	60									
17-Jul-23	23	1.3526	1.2962	2.6488	78	33									
18-Jul-23	16	0.9698	0.6465	1.6163	163	75		38	80			496			838
19-Jul-23	16	0.688	0.4587	1.1467	169	75									
20-Jul-23	15	0.6498	0.4061	1.0559	189	10		77			131			413	388

Date	Camp Population	Washhouse /Kitchen (m3)	Dorm Trailer (m3)	Total (m3)	Kitchen Waste (lb)	Other Sources (lb)	Ash Outgoing (lb)	Cardboard (lb)	Refundable Bottles (lb)	Construction Material & Pallets (lb)	Metal (lb)	Driller Garbage (lb)	Hydrocarbon Contaminated Material (lb)	Used Oil (lb)	Other Non-Burnable (lb)
21-Jul-23	15	0.5159	0.3224	0.8383	210	18									
22-Jul-23	15	0.5698	0.3561	0.9259	147	37									
23-Jul-23	15	0.7097	0.4436	1.1533	144	21									109
24-Jul-23	16	0.5528	0.3685	0.9213	169	7									
25-Jul-23	14	0.6112	0.3565	0.9677	132	18		71			208		748		161
26-Jul-23	14	0.6033	0.3519	0.9552	188	10									
27-Jul-23	8	0.4924	0.1641	0.6565	97	5		57	90						139
28-Jul-23	8	0.3721	0.1240	0.4961	65	0									
29-Jul-23	8	0.6	0.2000	0.8000											
30-Jul-23	8	0.1673	0.0558	0.2231											
Totals	**4548**	**307**	**120**	**427**	**21936**	**4662**	**2058**	**3544**	**1253**	**7201**	**30322**	**9561**	**4060**	**2791**	**10420**

REPORT

DAMOTI LAKE SURVEILLANCE NETWORK PROGRAM

RESULTS FROM JUNE 2023 MONITORING EVENT

Submitted to:

Nighthawk Gold Corporation
150 York St., Suite 410
Toronto, ON M5H 3S5

Submitted by:

WSP Canada Inc.
9, 4905 - 48 Street, Yellowknife, Northwest Territories, X1A 3S3, Canada

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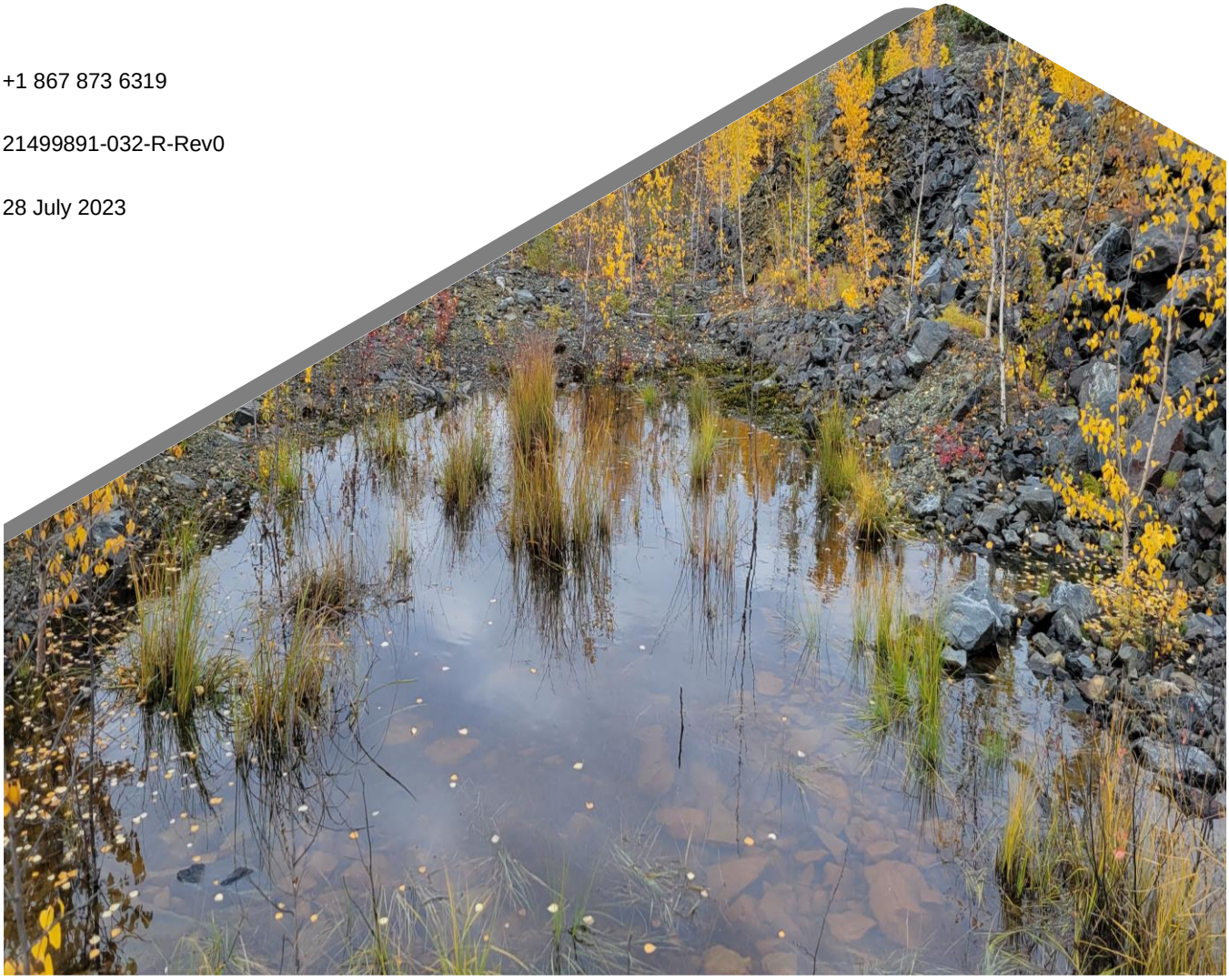
21499891-032-R-Rev0

28 July 2023



Distribution List

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Study Limitations

This report was prepared for the exclusive use of Nighthawk Gold Corporation (Nighthawk). The report, which specifically includes tables and figures, is based on data and information collected by WSP Canada Inc. (WSP) at the time of the field investigations. The services performed as described in this report were conducted in a manner consistent with the level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services. Any use of this report by a third party, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. WSP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. In addition, WSP disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The content of this report is based on information collected during the investigation, our present understanding of the site conditions, and our professional judgment in light of such information at the time of this report. This report provides a professional opinion and, therefore, no warranty is expressed, implied, or made as to the conclusions, advice and recommendations offered. This report does not provide a legal opinion regarding compliance with applicable laws. Regarding regulatory compliance issues, it should be noted that regulatory statutes and their interpretation are subject to change. The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, WSP should be requested to re-evaluate the conclusions of this report, and to provide amendments as required.

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TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

The Damoti Lake Site (Damoti) is located 200 km north of Yellowknife in the Northwest Territories (NT), within the Wek'èezhìı co-management land boundaries. Nighthawk Gold Corporation (Nighthawk) currently holds the leases to Damoti. WSP Canada Inc. (WSP), carried out the Surveillance Network Program (SNP) monitoring on behalf of Nighthawk on 20 June 2023, to meet the Type A Water Licence W2021L2-0004 (Water Licence) requirements (WLWB 2023). This report summarizes the results of the June 2023 SNP field program.

2.0 METHODS

2.1 Sampling Locations

2.1.1 Water Licence Surveillance Network Program

In situ measurements and surface water grab samples were collected from nine SNP stations on 20 June 2023 (Table 1, Figure 1 and Figure 2, Appendix A).

Table 1: Surveillance Network Program Stations Sampled on 20 June 2023

Station[a]	Location[b]	UTM Coordinates[c,d]	
		Easting (m)	Northing (m)
SNP 5-4	Inflow from wetlands into Lardass Lake	591826	7113647
SNP 5-5	Lardass Lake	591757	7113642
SNP 5-6	Combined runoff from Damoti rock piles	591876	7113870
SNP 5-8	Damoti Lake site decline ramp (minewater pooled at entrance of adit)	591861	7113980
SNP 5-9	Pool of standing water immediately west of waste rock pile	591894	7113985
SNP 5-11	Pool of standing water between waste rock/ore stockpiles	591905	7113947
SNP 5-12	Pool of standing water in rock pile area	591911	7113939
SNP 5-13	Pool of standing water in rock pile area	591882	7113922
SNP 5-14[e]	Flow pathway between the rock/ore pile area and Lardass Lake	591820	7113750

Notes:

a) SNP 5-7 and SNP 5-10 are not part of the program as per the Water Licence (WLWB 2023). SNP 5-1, SNP 5-2, SNP 5-3, and SNP 5-15 are currently inactive based on-site conditions. SNP 5-1 and SNP 5-2 were not sampled because minewater was not being discharged from the adit into the settling pond, SNP 5-3 was not sampled because water was not being pumped for camp use, and SNP 5-15 was not sampled because no artesian aquifers have been encountered.

b) Photographs of stations visited during the June 2023 field program are provided in Appendix A.

c) UTM coordinates are in NAD83, Zone 11W.

d) The Surveillance Network Program in Annex A, Part A, Condition 9, requires that the Licensee must submit exact coordinates for the locations of each SNP station described above within sixty (60) days of licence issuance. The first available opportunity to collect GPS coordinates after issuance of the licence was in June 2023. The coordinates in Table 1 are therefore provided to as the exact coordinates of each sampling station per the Water Licence requirements.

e) Previously referred to as FB-100.

SNP = Surveillance Network Program; UTM = Universal Transverse Mercator; m = metres.

LEGEND

- SNP SAMPLING LOCATION
- ELEVATION CONTOUR (m)
- FLOW PATH

0 50 100
1:2,500 METRES

REFERENCE(S)

1. BACKGROUND IMAGERY OBTAINED FROM BING MAPS FOR ARCGIS PUBLISHED BY MICROSOFT CORPORATION, REDMOND, WA.
PROJECTION: UTM ZONE 11 DATUM: NAD83

CLIENT

NIGHTHAWK GOLD

PROJECT

DAMOTI LAKE SNP JUNE 2023

TITLE

DAMOTI LAKE SURVEILLANCE NETWORK PROGRAM (SNP) STATIONS

YYYY-MM-DD	2023-07-28
DESIGNED	SP
PREPARED	NB
REVIEWED	MI
APPROVED	KS

PROJECT NO.	PHASE/TASK	REV.	FIGURE
21499891	10,000.10,005	0	1

PATH: I:\CLIENTS\NIGHTHAWK_GOLD\21499891\Mapping\Products\General\Fig1_21499891-2000-2020_SNP_Stations_Rev0.mxd PRINTED ON: 2023-07-28 AT 9:18:46 AM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

25mm

0

Last Edited By: asohrevardi Date: 2023-07-28 Time:10:33:22 AM | Printed By: ASohrevardi Date: 2023-07-28 Time:10:37:03 AM
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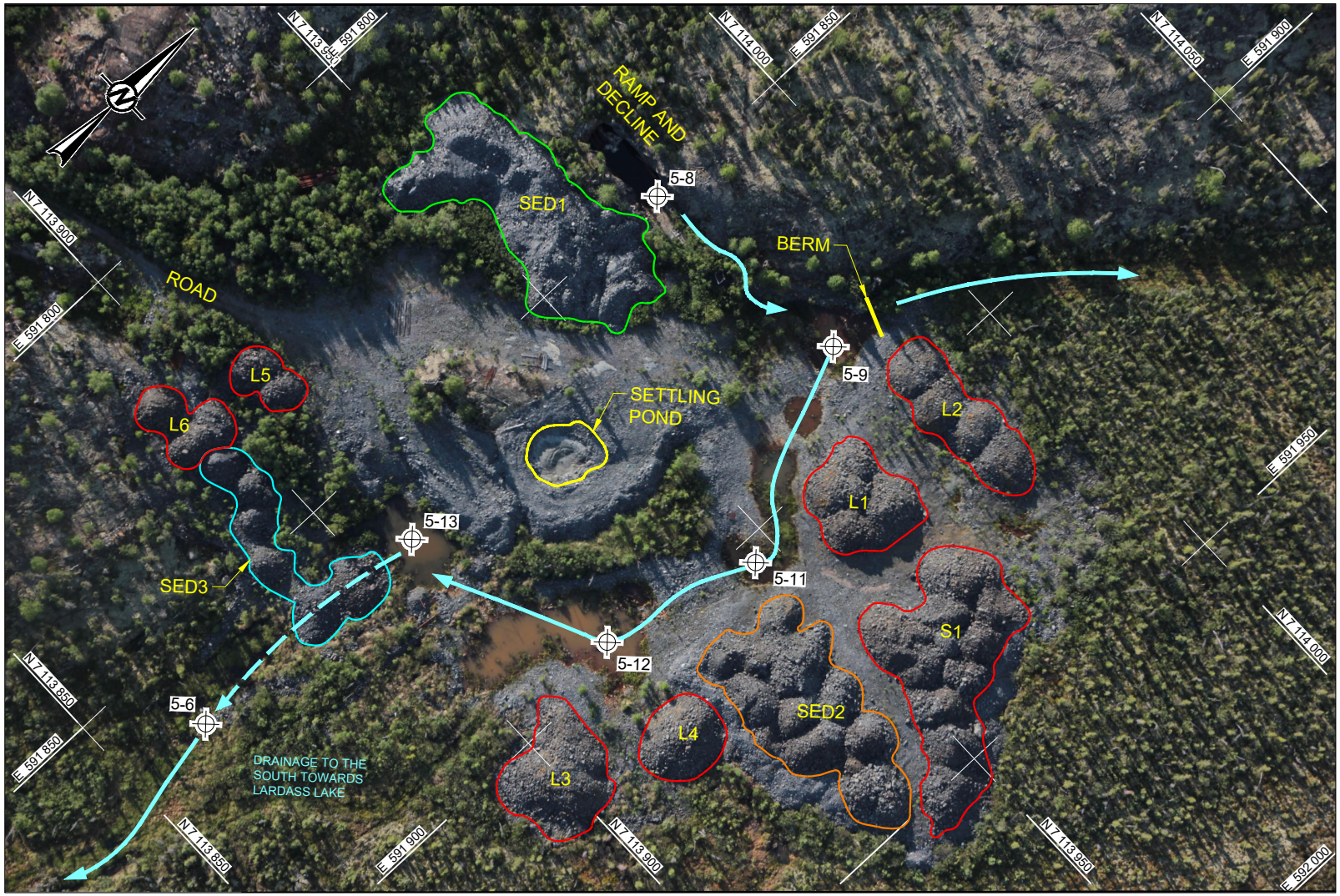


LEGEND

- S1, L1, L2, L3, L4, L5, L6
- SED1
- SED2
- SED3
- SNP STATION
- SURFICIAL DRAINAGE PATTERNS
- GENERAL DRAINAGE PATTERNS

DOMINANT WASTE ROCK TYPE IN PILE

S = SULPHIDE BANDED IRON FORMATION
L = LOW SULPHIDE BANDED IRON FORMATION
SED = SEDIMENTARY

NOTES

1. GRID IS DISPLAYED IN NAD83 UTM ZONE 11 COORDINATES.
2. AIRPHOTO SCALE IS APPROXIMATE.

REFERENCE

JUNE 2012 AIRPHOTO TAKEN BY GOLDER ASSOCIATES LTD. FIELD STAFF.

PLAN VIEW

SCALE 1:1,000

DRAFT

0 25 50
1:1,000 METRES

CLIENT: NIGHTHAWK GOLD

CONSULTANT: wsp

YYYY-MM-DD	2023-07-28
DESIGNED	KS
PREPARED	JEF
REVIEWED	MI
APPROVED	KS

PROJECT
DAMOTI LAKE SNP JUNE 2023

TITLE
SITE DRAINAGE PATTERNS AT THE DAMOTI LAKE ROCK PILE AREA

PROJECT NO.	PHASE/TASK	REV.	FIGURE
21499891	10,000/10,005	0	2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
0 25 mm

2.2 Sampling Methods

2.2.1 Field Measurements

Prior to collecting surface water grab samples, ambient wind and weather conditions were recorded along with in situ measurements of the following water quality parameters:

- water temperature (°C)
- pH
- dissolved oxygen (DO; milligrams per litre [mg/L] and percent saturation [%])
- specific conductivity (microsiemens per centimetre [µS/cm])

An AquaTROLL multiparameter water quality meter was used for the in situ measurements. An Oakton 30 handheld pH meter was used to confirm in situ pH readings. Water depth was measured at each sampling location. Flow and volume measurements were not recorded because water was not being pumped for camp or industrial use.

2.2.2 Water Quality and Acute Toxicity Sampling

Surface water quality grab samples were collected in accordance with WSP's technical procedures for surface water sample collection, using plastic and glass bottles depending on the parameter or parameter group being sampled. Sample bottles were submerged approximately 0.3 m below the water surface at each SNP station. Water quality samples were field-filtered and preserved according to laboratory instructions and were kept cool until delivery to ALS Environmental (ALS) in Yellowknife, Northwest Territories. After delivery to ALS in Yellowknife, samples were shipped to Burnaby, British Columbia, for analysis.

Acute toxicity samples from SNP 5-6 were collected at the same depth of the water quality sample (i.e., approximately 0.3 m below the water surface) using a peristaltic pump, tubing, and 10 litre low-density polyethylene plastic carboys. Carboys and lids were rinsed three times with sample water prior to sample collection. Acute toxicity samples were kept cool and shipped to Nautilus Environmental (Nautilus) in Calgary, Alberta. Upon receipt at Nautilus, samples were refrigerated at 4°C and acute toxicity tests were initiated within five days of sample collection (within the recommended hold time for acute toxicity tests).

2.3 Laboratory Analyses

Surface water samples were analyzed for the parameters outlined in Table 2. These parameters are either required by the SNP annexed to the Water Licence or were analyzed to support the Interim Closure and Reclamation Plan and to develop the historical dataset for the aquatic receiving environment.

Table 2: Parameter List for Each Surveillance Network Program Station

Station	Parameters
SNP 5-4	Conventional (including pH, conductivity, dissolved organic carbon, and total suspended solids), major ions (including sulphate), nutrients (including total ammonia, nitrate, and low-level total phosphorus), total metals[(a)] (plus total mercury), dissolved metals[(a)]
SNP 5-5	Conventional (including pH, conductivity, dissolved organic carbon, and total suspended solids), major ions (including sulphate), nutrients (including total ammonia, nitrate, and low-level total phosphorus), total metals[(a)] (plus total mercury)
SNP 5-6	Conventional (including pH, conductivity, and total suspended solids), major ions (including sulphate), nutrients (including total ammonia, nitrate, and low-level total phosphorus), total metals[(a)], dissolved metals[(a)], acute toxicity (Rainbow Trout [*Oncorhynchus mykiss*] and *Daphnia magna*)[(b)]
SNP 5-8	Conventional (including pH, conductivity, and total suspended solids), major ions (including sulphate), nutrients (including total ammonia, nitrate, and low-level total phosphorus), total metals[(a)]
SNP 5-9	
SNP 5-11	
SNP 5-12	
SNP 5-13	
SNP 5-14	Conventional (including pH, conductivity, and total suspended solids), major ions (including sulphate), nutrients (including total ammonia, nitrate, and low-level total phosphorus), total metals[(a)] (plus total mercury), dissolved metals[(a)]

Notes:

a) Total and dissolved metals include metalloids such as arsenic and non-metals such as selenium (WLWB 2023). The list of elements include: aluminum (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), cobalt (Co), copper (Cu), chromium (Cr), cesium (Cs), iron (Fe), lead (Pb), lithium (Li), manganese (Mn), molybdenum (Mo), nickel (Ni), rubidium (Rb), selenium (Se), strontium (Sr), titanium (Ti), thallium (Tl), uranium (U), vanadium (V), and zinc (Zn).

b) Static pass/fail (single-concentration) test for Rainbow Trout and *Daphnia magna* per Environment Canada's Biological Test Methods Environment Protection Series (EPS 1/RM/13 – Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout [Environment Canada 2007], and EPS 1/RM/14 – Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* [Environment Canada 2000]).

SNP = Surveillance Network Program.

2.4 Data Analysis

Analytical results from station SNP 5-6 were compared to applicable effluent quality criteria (EQC) as specified in the Water Licence, i.e., maximum average concentration and maximum concentration of any grab sample. For SNP stations at Lardass Lake (SNP 5-4 and SNP 5-5), analytical results were compared to the Canadian Council of Ministers of the Environment (CCME) guidelines for the protection of aquatic life and livestock (wildlife) health (CCME 1999 with updates) as well as the federal environmental quality guidelines (FEQG) for cobalt (ECCC 2017), strontium (ECCC 2020), and vanadium (ECCC 2016).

Field pH values were used to calculate CCME guideline ranges. Laboratory pH is considered less reliable than field pH because the recommended holding time of 15 minutes cannot be met due to sample transport and shipping.

Results of acute toxicity testing for samples collected at SNP 5-6 were expressed as percent survival for Rainbow Trout (*Oncorhynchus mykiss*) and percent survival and immobility for *Daphnia magna.* A sample was considered acutely lethal if survival less than 50% was observed in the full-strength sample, per regulatory definition (WLWB 2023).

2.5 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures and requirements are an important aspect of any field or laboratory testing program. The objective of the QA/QC program is to standardize methods such that field sampling, data entry, data analysis, and report preparation produce technically sound and scientifically defensible results.

As part of routine practices for field operations, the following QA procedures were undertaken:

- AquaTROLL water quality and Oakton pH meters were calibrated according to manufacturer recommendations prior to sample collection for the day.
- Field measured pH values were verified using a second pH meter at the time of sample collection.
- Surface water samples were collected by experienced personnel following WSP's technical procedures for surface water sample collection.
- Detailed field notes were recorded in a waterproof field notebook.
- Field data were checked at the end of the sampling event for completeness and accuracy.
- Chain-of-custody (COC) forms were used to track all sample shipments from the field to the analytical laboratory.

The following QC samples were collected:

- A duplicate sample at SNP 5-6 to assess variability potentially introduced during sample collection, sample handling, and laboratory analytical procedures.
- A field blank at SNP 5-11 to assess potential contamination during sample collection.
- A travel blank to determine whether any contamination may have occurred during transportation, storage, or analysis.

The analytical laboratories, ALS and Nautilus, also have their own QA/QC programs, including laboratory replicate samples, sample blanks and control standards.

Upon receipt of the final Nautilus toxicity test reports, the following information was verified:

- The condition of samples received by Nautilus was acceptable (e.g., no broken containers or lids).
- The appropriate test species and test methods were used.
- Sample hold times were met.
- Sample temperatures at the time of sample receipt were within an acceptable range.

- Test conditions were within the required range and no unusual results were reported (e.g., pH, specific conductivity, storage temperature, or loading density).
- Test validity criteria were met for the laboratory control water as it pertains to the health histories and sensitivities of the organisms.
- No deviations from test procedures occurred that would influence the reliability of the data.

In addition, internal laboratory QC results were reviewed, and toxicity results were checked for completeness.

3.0 RESULTS

3.1 Water Quality and Acute Toxicity

Water quality results from the June 2023 program are presented in Appendix B. Ambient weather at the time of sampling included temperatures ranging from 16°C to 19°C, cloud cover ranging from 20% to 100%, and calm conditions with wind from the east.

Water quality and toxicity results for station SNP 5-6, with comparisons to Water Licence limits are provided in Table B-1. Results from Lardass Lake, SNP 5-4 and SNP 5-5, are provided in Table B-2, including comparisons to applicable CCME guidelines (CCME 1999 with updates). Results from the remaining SNP stations are presented in Table B-3. Analytical results provided by the laboratories (i.e., the Certificate of Analysis and the final toxicity report provided by Nautilus) for the June 2023 SNP sampling event are included in Appendix C.

At station SNP 5-6, parameter concentrations were within Water Licence limits. The acute toxicity sample was not acutely toxic to Rainbow Trout or *D. magna* (survival = 100%) per the regulatory definition (Appendix B, Table B-1).

At Lardass Lake, SNP 5-4 and SNP 5-5, parameter concentrations were below the CCME acute and chronic guidelines for the protection of aquatic life, the wildlife health guidelines, and applicable FEQG (Appendix B, Table B-2).

3.2 Quality Assurance/Quality Control

The QA/QC assessment of the data collected during the 20 June 2023 sampling event indicated limited potential for contamination, e.g., during field filtration for dissolved metals or during transport (Appendix D). Duplicate sample results indicated that intrastation variability was low (i.e., sampling precision was high). No parameters were detected at concentrations greater than five times the detection limit in the field or travel blank. Overall, the data are considered adequate to address the objectives of the program.

All QA/QC requirements the acute toxicity testing with samples collected from SNP 5-6 (Section 2.5) were met except for the following deviations (Appendix D):

- The acute toxicity samples from SNP 5-6 were outside of the recommended temperature range of 4°C ± 3°C upon receipt at Nautilus (9.4°C). The temperature variation is considered minimal and is not uncommon, particularly during spring/summer sampling programs. Because the constituents of primary interest in the samples (i.e., metals and components of total dissolved solids) are not readily degraded or strongly influenced by temperature, these temporary temperature changes are not expected to affect the test results or interpretations.

- The Rainbow Trout reference toxicant survival LC_{50}[1] result (3.16 g/L potassium chloride [KCl]) was above two standard deviations (SDs) of the historical mean (3.91 g/L KCl). The result was outside the warning range (3.23 to 4.73 g/L KCl) but remained within three SDs. Nautilus investigated and confirmed that all testing and culturing procedures were followed appropriately, concluding that the result falls within the range of negative control variability (i.e., one result out of 20 will fall outside the warning range by chance alone). Thus, the sensitivity of the organisms used in these tests was considered appropriate.

4.0 CLOSURE

We trust the above information satisfies the Water Licence requirements. If you have any questions or require additional information, please contact the undersigned.

WSP Canada Inc.

Original Signed By:

Saad Pasha
Water Quality Scientist

Original Signed By:

Kate Sinclair, Ph.D.
Principal Water Quality Scientist

Original Signed By:

Michael Iwanyshyn, Ph.D.
Senior Water Quality Scientist

SP/KS/MI/jlb/jr

[1] LC_{50} = percent concentration that results in a lethal effect to 50% of the test population.

5.0 REFERENCES

CCME (Canadian Council of Ministers of the Environment). 1999. Canadian Environmental Quality Guidelines 1999, with updates to 2020. Winnipeg, MB. Accessed July 2023.

EC (Environment Canada). 2000. Reference method for determining acute lethality of effluents to *Daphnia magna*, 2000. Environment Canada, EPS 1/RM/14. Second Edition.

EC. 2007. Reference method for determining acute lethality of effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13. Second Edition (amended May 2007 and February 2016).

ECCC (Environment and Climate Change Canada). 2016. Federal Environmental Quality Guidelines – Vanadium. Available at: FEQG Vanadium EN.pdf (ec.gc.ca).

ECCC. 2017. Federal Environmental Quality Guidelines – Cobalt. Available at: FEQG Cobalt Final EN.pdf (ec.gc.ca).

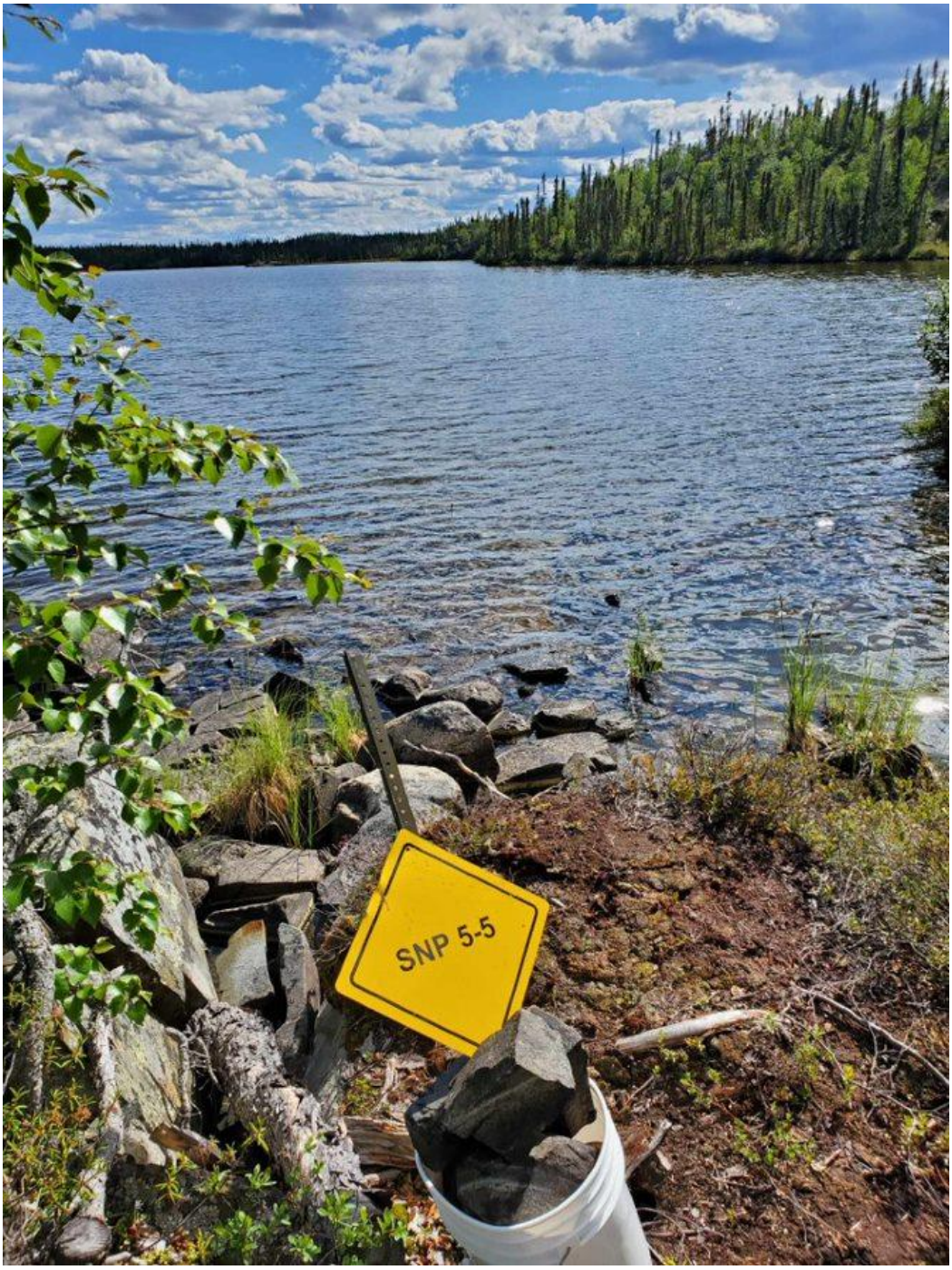
ECCC. 2020. Federal Environmental Quality Guidelines – Strontium. Available at: Federal-environmental-quality-guidelines-strontium.pdf.

WLWB (Wek'èezhìı Land and Water Board). 2023. Type A Water Licence W2021L2-0004. Issued 13 January 2023.

APPENDIX A

Site Photographs

Photograph A-1: SNP 5-4, Inflow from Wetlands into Lardass Lake. Photo Orientation: Southwest.



Photograph A-2: SNP 5-5, Lardass Lake. Photo Orientation: South.

Photograph A-3: SNP 5-6, Combined Runoff from Damoti Rock Piles. Photo Orientation: West.

Photograph A-4: SNP 5-8, Damoti Lake Site Decline Ramp (Minewater Pooled at Entrance of Adit). Photo Orientation: Northwest.

Photograph A-5: SNP 5-9, Pool of Standing Water Immediately West of Waste Rock Pile. Photo Orientation: North.

Photograph A-6: SNP 5-11, Pool of Standing Water Between Waste Rock/Ore Stockpiles. Photo Orientation: North.

Photograph A-7: SNP 5-12, Pool of Standing Water in Rock Pile Area. Photo Orientation: West.

Photograph A-8: SNP 5-13, Pool of Standing Water in Rock Pile Area. Photo Orientation: South.

Photograph A-9: Aerial View of Pool at SNP 5-6 and Drainage to Lardass Lake. Photo Orientation: Southeast.

APPENDIX B

Water Quality Data

Table B-1: Surveillance Network Program Results at SNP 5-6 Compared to Water Licence Limits, 20 June 2023

Parameter	Unit	Maximum Concentration of Any Grab Sample or Acute Toxicity Pass Threshold[a]	Maximum Average Concentration[b]	Station
				SNP 5-6
Field Measured Parameters				
pH	unitless	5.5 - 9.5	-	6.4
Conductivity	µS/cm	-	-	276
Temperature	°C	-	-	16.3
Dissolved oxygen	mg/L	-	-	6.3
Dissolved oxygen	%	-	-	67
Conventional Parameters				
pH	unitless	5.5 - 9.5	-	7.5
Conductivity	µS/cm	-	-	333
Hardness, as $CaCO_3$[c]	mg/L	-	-	150
Total suspended solids	mg/L	30	15	6.8
Total alkalinity, as $CaCO_3$	mg/L	-	-	33
Total dissolved solids (calculated)	mg/L	-	-	210
Turbidity	NTU	-	-	1.1
Major Ions				
Bromide	mg/L	-	-	<0.05
Calcium	mg/L	-	-	38
Chloride	mg/L	-	-	2
Fluoride	mg/L	-	-	0
Magnesium	mg/L	-	-	14
Potassium	mg/L	-	-	2.9
Sodium	mg/L	-	-	4.2
Sulphate	mg/L	-	-	120
Silica	mg/L	-	-	7
Nutrients				
Nitrate	mg-N/L	-	-	<0.005
Nitrite	mg-N/L	-	-	<0.001
Total ammonia	mg-N/L	-	12	0.010
Total phosphorus	mg-P/L	-	-	0.048
Dissolved phosphorus	mg-P/L	-	-	<0.05
Total Metals				
Aluminum	mg/L	-	-	0.049
Antimony	mg/L	-	-	<0.0001
Arsenic	mg/L	0.2	0.1	0.00056
Barium	mg/L	-	-	0.013
Beryllium	mg/L	-	-	<0.00002
Bismuth	mg/L	-	-	<0.00005
Boron	mg/L	-	-	0.032
Cadmium	mg/L	0.002	0.001	0.000013
Calcium	mg/L			38
Cesium	mg/L	-	-	0.00081
Chromium	mg/L	-	-	<0.0005
Cobalt	mg/L	-	-	0.00062
Copper	mg/L	0.02	0.01	0.0016
Iron	mg/L	-	-	0.76
Lead	mg/L	0.04	0.02	0.000098
Lithium	mg/L	-	-	0.014
Magnesium	mg/L			14
Manganese	mg/L	-	-	0.071
Molybdenum	mg/L	-	-	<0.00005
Nickel	mg/L	0.5	0.25	0.013
Potassium	mg/L			2.8
Rubidium	mg/L	-	-	0.0064
Selenium	mg/L	-	-	<0.00005
Silicon	mg/L	-	-	3.2
Silver	mg/L	-	-	<0.00001
Sodium	mg/L			4.2
Strontium	mg/L	-	-	0.11
Sulphur	mg/L	-	-	42
Tellurium	mg/L	-	-	<0.0002
Thallium	mg/L	-	-	<0.00001
Thorium	mg/L	-	-	<0.0001
Tin	mg/L	-	-	<0.0001
Titanium	mg/L	-	-	0.00038
Tungsten	mg/L	-	-	<0.0001
Uranium	mg/L	-	-	0.000070
Vanadium	mg/L	-	-	<0.0005
Zinc	mg/L	0.2	0.1	<0.003
Zirconium	mg/L	-	-	<0.0002

Table B-1: Surveillance Network Program Results at SNP 5-6 Compared to Water Licence Limits, 20 June 2023

Parameter	Unit	Maximum Concentration of Any Grab Sample or Acute Toxicity Pass Threshold[a]	Maximum Average Concentration[b]	Station
				SNP 5-6
Dissolved Metals				
Aluminum	mg/L	-	-	0.027
Antimony	mg/L	-	-	<0.0001
Arsenic	mg/L	-	-	0.00060
Barium	mg/L	-	-	0.013
Beryllium	mg/L	-	-	<0.00002
Bismuth	mg/L	-	-	<0.00005
Boron	mg/L	-	-	0.031
Cadmium	mg/L	-	-	0.0000064
Cesium	mg/L	-	-	0.00081
Chromium	mg/L	-	-	<0.0005
Cobalt	mg/L	-	-	0.00055
Copper	mg/L	-	-	0.0013
Iron	mg/L	-	-	0.36
Lead	mg/L	-	-	<0.00005
Lithium	mg/L	-	-	0.015
Manganese	mg/L	-	-	0.070
Molybdenum	mg/L	-	-	<0.00005
Nickel	mg/L	-	-	0.013
Rubidium	mg/L	-	-	0.0068
Selenium	mg/L	-	-	<0.00005
Silicon	mg/L	-	-	3.1
Silver	mg/L	-	-	<0.00001
Strontium	mg/L	-	-	0.11
Sulphur	mg/L	-	-	38
Tellurium	mg/L	-	-	<0.0002
Thallium	mg/L	-	-	<0.00001
Thorium	mg/L	-	-	<0.0001
Tin	mg/L	-	-	<0.0001
Titanium	mg/L	-	-	<0.0003
Tungsten	mg/L	-	-	<0.0001
Uranium	mg/L	-	-	0.000059
Vanadium	mg/L	-	-	<0.0005
Zinc	mg/L	-	-	0.0017
Zirconium	mg/L	-	-	<0.0003
Acute Toxicity				
Daphnia magna survival	%	≥ 50	-	100%
Daphnia magna immobility	%	-	-	0%
Rainbow trout survival	%	≥ 50	-	100%

Notes:

a) Maximum Concentration of Any Grab Sample or Acute Toxicity Pass Threshold as per Type A Water Licence W2021L2-0004 (WLWB 2023).

b) Maximum average concentration as per Type A Water Licence W2021L2-0004 (WLWB 2023).

c) Hardness was calculated using the following formula: hardness [mg equivalent $CaCO_3$/L] = 2.497 [calcium in mg/L] + 4.118 [magnesium in mg/L].

WLWB = Wek'èezhii Land and Water Board; SNP = Surveillance Network Program; $CaCO_3$ = calcium carbonate; µS/cm = microsiemens per centimetre; NTU = nephelometric turbidity units; mg/L = milligrams per litre; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorus per litre; % = percent; °C = degrees Celsius; < = less than; ≥ = greater than or equal to; - = no Water Licence limit or acute toxicity pass threshold.

Reference:

WLWB (Wek'èezhii Land and Water Board). 2023.Type A Water Licence W2021L2-0004. Issued 13 January 2023.

Table B-2: Surveillance Network Program Sample Results at Lardass Lake Compared to CCME Guidelines, 20 June 2023

Parameter	Unit	Guidelines:			Station	
		For the Protection of Aquatic Life		Wildlife Health (Livestock)	SNP 5-4	SNP 5-5
		Acute	Chronic			
Field Measured Parameters						
pH	unitless	-	6.5 - 9.0	-	8.3	7.7
Conductivity	µS/cm	-	-	-	62	60
Temperature	°C	-	-	-	19	17
Dissolved oxygen	mg/L	-	6.5	-	11	10
Dissolved oxygen	%	-	-	-	124	107
Conventional Parameters						
pH	unitless	-	6.5 - 9.0	-	7.8	7.8
Conductivity	µS/cm	-	-	-	116	112
Hardness, as $CaCO_3$ [(a)]	mg/L	-	-	-	56	51[(a)]
Total suspended solids	mg/L	-	-	-	7.0	13.5
Dissolved organic carbon	mg/L	-	-	-	18	18
Total organic carbon	mg/L	-	-	-	18	17
Total alkalinity, as $CaCO_3$	mg/L	-	-	-	39	39
Total dissolved solids (calculated)	mg/L	-	-	3000	81	79
Turbidity	NTU	-	-	-	1	1
Major Ions						
Bromide	mg/L	-	-	-	<0.05	<0.05
Calcium	mg/L	-	-	1,000	15	-
Chloride	mg/L	640	120	-	1	1
Fluoride	mg/L	-	0.12	2	0.070	0.068
Magnesium	mg/L	-	-	-	4.4	-
Potassium	mg/L	-	-	-	1.5	-
Sodium	mg/L	-	-	-	2.6	-
Sulphate	mg/L	-	-	1,000	16	13
Silica	mg/L	-	-	-	<3	<3
Nutrients						
Nitrate	mg-N/L	124	2.9	-	<0.0050	<0.005
Nitrite	mg-N/L	-	0.06	10	<0.0010	<0.001
Total ammonia	mg-N/L	-	0.22 - 0.97[(b)]	-	0.020	0.013
Total phosphorus	mg-P/L	-	-	-	0.018	0.017
Dissolved phosphorus	mg-P/L	-	-	-	<0.05	-
Total Metals						
Aluminum	mg/L	-	0.10[(c)]	5.0	0.097	0.097
Antimony	mg/L	-	-	-	<0.0001	<0.0001
Arsenic	mg/L	-	0.0050	0.025	0.00029	0.00029
Barium	mg/L	-	-	-	0.009	0.009
Beryllium	mg/L	-	-	0.10	<0.00002	<0.00002
Bismuth	mg/L	-	-	-	<0.00005	<0.00005
Boron	mg/L	29	1.5	5.0	<0.010	<0.010
Cadmium	mg/L	0.0011 - 0.0012[(d)]	0.000091 - 0.000098[(d)]	0.080	<0.000005	<0.000005
Calcium	mg/L	-	-	-	14	14
Cesium	mg/L	-	-	-	0.000024	0.000025
Chromium	mg/L	-	0.0010[(e)]	0.050	<0.0005	<0.0005
Cobalt	mg/L	-	0.00078[(f)]	1.0	0.0001	0.0001
Copper	mg/L	-	0.0020[(d)]	0.50	0.00080	0.00095
Iron	mg/L	-	0.30	-	0.06	0.049
Lead	mg/L	-	0.0010[(d)]	0.10	0.00009	<0.00005
Lithium	mg/L	-	-	-	0.0024	0.0021
Magnesium	mg/L	-	-	-	4.1	3.9
Manganese	mg/L	-	-	-	0.033	0.034
Mercury	mg/L	-	0.000026	0.0030	0.0000014	0.0000015
Molybdenum	mg/L	-	0.073	0.50	0.00011	0.00011
Nickel	mg/L	-	0.025[(d)]	1.0	0.0014	0.0014
Potassium	mg/L	-	-	-	1.4	1.4
Rubidium	mg/L	-	-	-	0.0023	0.0022
Selenium	mg/L	-	0.001	0.05	<0.00005	<0.00005
Silicon	mg/L	-	-	-	0.2	0.24
Silver	mg/L	-	0.00025	-	<0.00001	<0.00001
Sodium	mg/L	-	-	-	2.4	2.3
Strontium	mg/L	-	2.5[(g)]	-	0.038	0.039
Sulphur	mg/L	-	-	-	5.8	5.1
Tellurium	mg/L	-	-	-	<0.0002	<0.0002
Thallium	mg/L	-	0.0008	-	<0.00001	<0.00001
Thorium	mg/L	-	-	-	<0.0001	<0.0001
Tin	mg/L	-	-	-	<0.0001	<0.0001
Titanium	mg/L	-	-	-	<0.0003	<0.0006
Tungsten	mg/L	-	-	-	<0.0001	<0.0001
Uranium	mg/L	0.033	0.015	0.20	0.00013	0.00013
Vanadium	mg/L	-	0.12[(h)]	0.10	<0.0005	<0.0005

Table B-2: Surveillance Network Program Sample Results at Lardass Lake Compared to CCME Guidelines, 20 June 2023

Parameter	Unit	Guidelines:			Station	
		For the Protection of Aquatic Life		Wildlife Health (Livestock)	SNP 5-4	SNP 5-5
		Acute	Chronic			
Zinc	mg/L	-	-	50	<0.003	<0.003
Zirconium	mg/L	-	-	-	<0.0002	<0.0002
Dissolved Metals						
Aluminum	mg/L	-	-	-	0.082	-
Antimony	mg/L	-	-	-	<0.0001	-
Arsenic	mg/L	-	-	-	0.00040	-
Barium	mg/L	-	-	-	0.009	-
Beryllium	mg/L	-	-	-	<0.00002	-
Bismuth	mg/L	-	-	-	<0.00005	-
Boron	mg/L	-	-	-	0.012	-
Cadmium	mg/L	-	-	-	<0.000005	-
Cesium	mg/L	-	-	-	0.000028	-
Chromium	mg/L	-	-	-	<0.0005	-
Cobalt	mg/L	-	-	-	<0.0001	-
Copper	mg/L	-	-	-	0.00088	-
Iron	mg/L	-	-	-	0.02	-
Lead	mg/L	-	-	-	<0.00005	-
Lithium	mg/L	-	-	-	0.0025	-
Manganese	mg/L	4.0[(d)]	0.22[(i)]	-	0.003	-
Molybdenum	mg/L	-	-	-	0.00011	-
Nickel	mg/L	-	-	-	0.0014	-
Rubidium	mg/L	-	-	-	0.0024	-
Selenium	mg/L	-	-	-	<0.00005	-
Silicon	mg/L	-	-	-	0.2	-
Silver	mg/L	-	-	-	<0.00001	-
Strontium	mg/L	-	2.5[(g)]	-	0.041	-
Sulphur	mg/L	-	-	-	5.3	-
Tellurium	mg/L	-	-	-	<0.0002	-
Thallium	mg/L	-	-	-	<0.00001	-
Thorium	mg/L	-	-	-	<0.0001	-
Tin	mg/L	-	-	-	0.0002	-
Titanium	mg/L	-	-	-	<0.0003	-
Tungsten	mg/L	-	-	-	<0.0001	-
Uranium	mg/L	-	-	-	0.000126	-
Vanadium	mg/L	-		-	<0.0005	-
Zinc	mg/L	0.096[(j)]	0.019[(k)]	-	0.002	-
Zirconium	mg/L	-	-	-	<0.0003	-

Notes:

a) Hardness was calculated using the following formula: hardness [mg equivalent $CaCO_3$/L] = 2.497 [calcium in mg/L] + 4.118 [magnesium in mg/L].

b) The ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (0.22 mg-N/L) is based on the combination of field pH (8.3) and water temperature (19°C).

c) Guideline is pH dependent. The guideline shown is based on the pH observed in the dataset (7.7 to 8.3).

d) Guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (51 to 56 mg/L). The guideline is calculated based on the individual hardness value for each sample.

e) Guideline is for chromium VI.

f) Federal environmental quality guideline (ECCC 2017).

g) Federal environmental quality guideline for strontium. Given that dissolved strontium concentrations are approximately equivalent to total strontium concentrations, this guideline can be comapred to total strontium concentrations when dissolved strontium concentrations are unavailable (ECCC 2020).

h) Federal environmental quality guideline (ECCC 2016).

i) The chronic dissolved manganese guideline is pH, and hardness dependent. The guideline that results in the chronic manganese guideline (0.22 mg/L) is based on the combination of field pH (8.3) and hardness (56 mg/L).

j) The acute dissolved zinc guideline is dependent on hardness and dissolved organic carbon (DOC). The acute zinc guideline (0.096 mg/L) is based on the combination of hardness (56 mg/L), and DOC (18 mg/L) [CCME 1999]).

k) The chronic dissolved zinc guideline is dependent on pH , hardness, and dissolved organic carbon (DOC). The chronic zinc guideline (0.019 mg/L) is based on the combination of field pH (8.3), hardness (56 mg/L), and DOC (18 mg/L) (CCME 1999).

CCME = Canadian Council of Ministers of the Environment; SNP = Surveillance Network Program; µS/cm = microsiemens per centimetre; NTU = nephelometric turbidity units; mg/L = milligrams per litre; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorus per litre; $CaCO_3$ = calcium carbonate; DOC = dissolved organic carbon; % = percent; °C = degrees Celsius; < = less than; - = no guideline or no data available.

Reference:

CCME (Canadian Council of Ministers of the Environment). 1999. Canadian Environmental Quality Guidelines 1999, with updates to 2020. Winnipeg, MB. Accessed October 2022.

ECCC (Environment and Climate Change Canada). 2016. Federal Environmental Quality Guidelines – Vanadium. Available at: FEQG Vanadium EN.pdf (ec.gc.ca).

ECCC. 2017. Federal Environmental Quality Guidelines – Cobalt. Available at: FEQG Cobalt Final EN.pdf (ec.gc.ca).

ECCC. 2020. Federal Environmental Quality Guidelines - Strontium. Available at: FEQC Strontium EN.pdf (ec.gc.ca).

Table B-3: Surveillance Network Program Sample Results, 20 June 2023

Parameter	Unit	SNP 5-8	SNP 5-9	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14
Field Measured Parameters							
pH	unitless	7.2	6.6	6.9	6.7	6.7	6.5
Conductivity	µS/cm	229	316	388	239	248	193
Temperature	°C	3.8	14	17	18	17	12
Dissolved oxygen	mg/L	1.9	8.5	9.4	8.4	7.6	6.5
Dissolved oxygen	%	14	85	100	92	81	64
Conventional Parameters							
pH	unitless	7.9	7.8	7.7	7.5	7.5	7.3
Conductivity	µS/cm	296	399	463	324	323	262
Hardness, as $CaCO_3$[(a)]	mg/L	-	-	-	-	-	92
Total suspended solids	mg/L	2.0	6.9	5.1	3.7	2.8	32
Dissolved organic carbon	mg/L	-	-	-	-	-	-
Total organic carbon	mg/L	8.5	20	16	16	15	17
Total alkalinity, as $CaCO_3$	mg/L	78	82	43	27	27	23
Total dissolved solids (calculated)	mg/L	180	250	295	207	205	164
Turbidity	NTU	2.6	3.9	6.7	3.9	3.7	1.4
Major Ions							
Bromide	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Calcium	mg/L	-	-	-	-	-	23
Chloride	mg/L	6.7	3.7	3.0	2.1	1.9	2
Fluoride	mg/L	0.12	0.18	0.27	0.24	0.24	0.13
Magnesium	mg/L	-	-	-	-	-	8.6
Potassium	mg/L	-	-	-	-	-	2.2
Sodium	mg/L	-	-	-	-	-	3.9
Sulphate	mg/L	60	111	177	122	121	94
Silica	mg/L	8.3	9.4	5.5	7.6	7.6	5.9
Nutrients							
Nitrate	mg-N/L	0.014	<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
Total ammonia	mg-N/L	0.013	0.022	0.018	0.012	0.0094	0.012
Total phosphorus	mg-P/L	0.0048	0.014	0.0083	0.012	0.0081	0.080
Dissolved phosphorus	mg-P/L	-	-	-	-	-	<0.05
Total Metals							
Aluminum	mg/L	0.035	0.094	0.066	0.19	0.18	0.36
Antimony	mg/L	<0.0001	0.00035	0.00011	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.00084	0.00072	0.00068	0.00074	0.00074	0.00026
Barium	mg/L	0.020	0.040	0.016	0.011	0.011	0.015
Beryllium	mg/L	<0.00002	0.000033	0.000021	0.000029	0.000033	<0.00002
Bismuth	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Boron	mg/L	0.022	0.026	0.039	0.032	0.031	0.023
Cadmium	mg/L	0.000043	0.000017	0.000015	0.000012	0.000013	<0.000005
Calcium	mg/L	37	50	53	35	35	28
Cesium	mg/L	0.00026	0.00031	0.00055	0.00070	0.00069	0.00014
Chromium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008
Cobalt	mg/L	0.00032	0.0018	0.0023	0.0015	0.0014	0.00033
Copper	mg/L	0.0027	0.0040	0.0024	0.0033	0.0031	0.00081
Iron	mg/L	0.80	1.9	1.8	1.6	1.6	0.59
Lead	mg/L	0.00061	0.00022	0.00018	0.00026	0.00025	0.00011
Lithium	mg/L	0.0047	0.011	0.018	0.015	0.015	0.0095
Magnesium	mg/L	10	14	18	13	13	11
Manganese	mg/L	0.11	0.22	0.23	0.11	0.12	0.020
Mercury	mg/L	-	-	-	-	-	0.0000015
Molybdenum	mg/L	0.0013	0.000072	0.000050	<0.00005	<0.00005	0.000093
Nickel	mg/L	0.0061	0.022	0.027	0.023	0.022	0.0071
Potassium	mg/L	3.1	2.1	3.6	2.6	2.6	1.6
Rubidium	mg/L	0.0036	0.0054	0.0087	0.0064	0.0065	0.0043
Selenium	mg/L	0.000069	0.00010	0.000057	0.000057	0.000075	<0.00005
Silicon	mg/L	3.8	4.4	2.5	3.5	3.5	3.1
Silver	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium	mg/L	5.0	5.0	5.1	3.8	3.7	3.7
Strontium	mg/L	0.091	0.14	0.16	0.11	0.11	0.087
Sulphur	mg/L	21	39	61	43	42	34
Tellurium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Thallium	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Thorium	mg/L	0.00019	0.00023	0.00013	0.00013	0.00012	0.0001
Tin	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium	mg/L	0.00031	0.00062	<0.0003	<0.0003	0.00039	<0.012
Tungsten	mg/L	0.0011	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium	mg/L	0.0027	0.00023	0.00017	0.00017	0.00016	0.000058
Vanadium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008
Zinc	mg/L	<0.003	0.0040	0.0041	0.0051	0.0049	<0.003
Zirconium	mg/L	<0.0002	0.00038	<0.0002	<0.0002	<0.0002	0.00021
Dissolved Metals							
Aluminum	mg/L	-	-	-	-	-	0.041
Antimony	mg/L	-	-	-	-	-	<0.0001
Arsenic	mg/L	-	-	-	-	-	0.00034
Barium	mg/L	-	-	-	-	-	0.0094

Table B-3: Surveillance Network Program Sample Results, 20 June 2023

Parameter	Unit	SNP 5-8	SNP 5-9	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14
Beryllium	mg/L	-	-	-	-	-	<0.00002
Bismuth	mg/L	-	-	-	-	-	<0.00005
Boron	mg/L	-	-	-	-	-	0.023
Cadmium	mg/L	-	-	-	-	-	<0.000005
Cesium	mg/L	-	-	-	-	-	0.000062
Chromium	mg/L	-	-	-	-	-	<0.0005
Cobalt	mg/L	-	-	-	-	-	0.00034
Copper	mg/L	-	-	-	-	-	0.00072
Iron	mg/L	-	-	-	-	-	0.17
Lead	mg/L	-	-	-	-	-	<0.00005
Lithium	mg/L	-	-	-	-	-	0.0046
Manganese	mg/L	-	-	-	-	-	0.0326
Molybdenum	mg/L	-	-	-	-	-	0.00063
Nickel	mg/L	-	-	-	-	-	0.0051
Rubidium	mg/L	-	-	-	-	-	0.0030
Selenium	mg/L	-	-	-	-	-	<0.000050
Silicon	mg/L	-	-	-	-	-	2.6
Silver	mg/L	-	-	-	-	-	<0.00001
Strontium	mg/L	-	-	-	-	-	0.064
Sulphur	mg/L	-	-	-	-	-	18
Tellurium	mg/L	-	-	-	-	-	<0.0002
Thallium	mg/L	-	-	-	-	-	<0.00001
Thorium	mg/L	-	-	-	-	-	<0.0001
Tin	mg/L	-	-	-	-	-	<0.0001
Titanium	mg/L	-	-	-	-	-	0.00062
Tungsten	mg/L	-	-	-	-	-	<0.0001
Uranium	mg/L	-	-	-	-	-	0.000054
Vanadium	mg/L	-	-	-	-	-	<0.0005
Zinc	mg/L	-	-	-	-	-	0.0034
Zirconium	mg/L	-	-	-	-	-	<0.0003

Notes:

SNP = Surveillance Network Program; µS/cm = microsiemens per centimetre; mg/L = milligrams per litre; NTU = nephelometric turbidity units; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorus per litre; $CaCO_3$ = calcium carbonate; DOC = dissolved organic carbon; % = percent; °C = degrees Celsius; < = less than; - = no data available.

a) Hardness was calculated using the following formula: hardness [mg equivalent $CaCO_3$/L] = 2.497 [calcium in mg/L] + 4.118 [magnesium in mg/L].

APPENDIX C

Laboratory Certificate of Analysis

Acute Toxicity Test Results

Sample collected June 20, 2023

Final Report

July 12, 2023

Submitted to: **WSP**
Calgary, AB

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				Receipt temperature
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* test initiation	
SNP 5-6/ 2223-2951	20-Jun-23	22-Jun-23 at 1445h	23-Jun-23 at 1425h	23-Jun-23 at 1455h	9.4°C

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna*
SNP 5-6	100	100

Sample ID	*Daphnia magna* Percent Immobility in 100% (v/v)
SNP 5-6	0

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.16 (2.69-3.55) g/L KCl[1]	6.1 (5.8-6.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.91 (3.23-4.73) g/L KCl	6.3 (5.6-7.1) g/L NaCl
Reference toxicant CV	6.3%	3.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 30, 2023; [2] Test Date June 21, 2023

LC = Lethal Concentration, CL = Confidence Limit, SD = Standard Deviation, CV = Coefficient of Variation

The LC50 result of the reference toxicant test initiated on May 30, 2023, fell outside of two standard deviations of the historical mean; this is expected to happen 5% of the time. An investigation occurred and all testing and culturing procedures were followed appropriately.

Christine Chanhao

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 - 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client WSP100 Reference 2223-2951 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2023/06/23	1105 *	KZ/BS	7	NA
1	2023/06/24	0930	MO	-	NA
2	2023/06/25	0955	JT	-	CC
3	2023/06/26	0910	AT	-	AM
4	2023/06/27	1100	MS/SK	7	BS

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.0
Initial EC (µS/cm): 338
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	7.1						
Day 4	~~7.5~~ 8.0	7.7						
EC (uS/cm)								
Day 0	416	351						
Day 4	~~394~~ 400	450						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.4
2	3.6	0.3
3	3.7	0.4
4	4.2	0.7
5	4.2	0.6
6	3.8	0.5
7	4.0	0.6
8	3.7	0.4
9	4.0	0.6
10	4.1	0.7

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.6-4.2
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20230309TR
Source Trout Lodge
Tank # Holding Tank 1
Days Held at 15± 2°C 82 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :

Reviewed By: KO Date Reviewed: 2023/06/27

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method MAS Client WSP100 Reference 2223-2951

Test Log 1455 BS

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2023-06-23	~~1355~~	BS/AM	2	AC
1	2023-06-24	0900	ET	-	NA
2	2023-06-25	0950	AI	2	CC

Sample Information

Initial pH: 7.0
Initial EC (µS/cm): 338
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5) — BS BS

day										
0	7.9	7.9	7.9	7.84	7.84	7.4				
2	8.1	8.2	8.2	8.0	7.8	7.7				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	389	398	399	357	355	355				
2	387	404	415	356	358	365				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed 21 — Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.9 — Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100% — Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 98 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): —

Dilution Water
Pail label / preparation date P1:06/17
Hardness of dilution water (mg/L) 166

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C — 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C — 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:

Reviewed By: KO Date Reviewed: 2023/06/27

APPENDIX C – Chain-of-custody form

NAUTILUS ENVIRONMENTAL

TESTING LOCATION (Please Circle)

Burnaby ( )
8664 Commerce Court
Burnaby, British Columbia, Canada
V5A 4N7
Phone 604.420.8773

Calgary (•)
10823 27 Street SE
Calgary, Alberta, Canada
T2Z 3V9
Phone 403.253.7121

Point Edward ( )
704 Mara Street, Suite 122
Point Edward, Ontario, Canada
N7V 1X4
Phone 519.339.8787

Chain of Custody

Date_____ Page 1 of 1

Report to:		**Invoice To:**	
Company	WSP Canada Inc.	**Company**	WSP Canada Inc.
Address	3300 - 237 4th Ave SW	**Address**	3300 - 237 4th Ave SW
City/Prov/PC	Calgary, AB	**City/Prov/PC**	Calgary, AB
Contact	Chelsea Grimard	**Contact**	Chelsea Grimard, Erin Adshead
Phone	403-299-4607	**Phone**	403-299-4607
Email	chelsea.grimard@wsp.com	**Email**	chelsea.grimard@wsp.com; erin.adshead@wsp.com
		PO No.	21499891/10000.10003

Sample Collection By: **Sample Type:** Grab (•) OR Composite ( )

	SAMPLE ID	DATE (DD/MM/YY)	TIME	MATRIX	# OF CONTAINERS AND VOLUME (e.g. 1 x 20 L)	COMMENTS	ANALYSES REQUIRED: Acute D. magna pass/fail	Acute RBT pass/fail	Receipt Temperature (°C)
1	SNP 5-6	20-Jun-23		water	2 x 10L	Number of containers is 2 x 10L for D. magn and RBT	✓	✓	
2	2223-2951								
3	2023/06/22								
4	14:45								
5	Raffalo								
6	JC								
7	3x10L carboys								
8	NaS/NaI								
9	Good Condition								
10	9.4°C								

SPECIAL INSTRUCTIONS/COMMENTS (CLIENT)

2 coolers with 3 carboys.

SAMPLE RECEIPT DETAILS (LABORATORY)

1. Total No. of Containers		4. Ice Present in Cooler?	Y / N
2. Courier		5. Seal Present?	Y / N
3. Good Condition?	Y / N	6. Initials Present on Seal?	Y / N

SAMPLE DESCRIPTION AND COMMENTS (LABORATORY)

RELINQUISHED BY (CLIENT)

Justine Crowe (Printed Name) (Signature)

WSP (Company) 20-Jun-23 20:00 (Date DD/MM/YY and Time)

RECEIVED BY (LABORATORY)

(Printed Name) (Signature)

(Company) (Date DD/MM/YY and Time)

Additional costs may be required for sample disposal or storage. Payment net 30 unless otherwise contracted.

END OF REPORT

CERTIFICATE OF ANALYSIS

Work Order	: **YL2300651**	Page	: 1 of 14
Amendment	: **1**		
Client	: **WSP Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Erin Adshead	Account Manager	: Oliver Gregg
Address	: 2800, 700 - 2nd Street SW Calgary AB Canada T2P 2W2	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 867 334 7423	Telephone	: 1 867 445 7143
Project	: Damoti Lake SNP	Date Samples Received	: 22-Jun-2023 10:55
PO	: ----	Date Analysis Commenced	: 24-Jun-2023
C-O-C number	: ----	Issue Date	: 25-Jul-2023 16:55
Sampler	: ----		
Site	: Damoti Lake		
Quote number	: YL22-GOLD100-013		
No. of samples received	: 12		
No. of samples analysed	: 12		

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*
Delson Resende	Lab Assistant	Metals, Burnaby, British Columbia
Elke Tabora		Inorganics, Calgary, Alberta
Hannah Phung	Lab Assistant	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Parnian Sane	Analyst	Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sukhman Khosa	Lab Assistant	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*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
DTC	*Dissolved concentration exceeds total. Results were confirmed by re-analysis.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-4	SNP 5-5	SNP 5-6	SNP 5-8	SNP 5-9
					Client sampling date / time	20-Jun-2023 15:35	20-Jun-2023 16:00	20-Jun-2023 13:25	20-Jun-2023 14:05	20-Jun-2023 14:15
						YL2300651-001	YL2300651-002	YL2300651-003	YL2300651-004	YL2300651-005
						Result	Result	Result	Result	Result
Physical Tests										
Acidity (as CaCO3)	----	E283/VA	2.0	mg/L		2.1	2.0	4.5	4.9	6.9
Conductivity	----	E100/VA	2.0	µS/cm		116	112	333	296	399
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L		56.0	----	150	----	----
pH	----	E108/VA	0.10	pH units		7.77	7.79	7.47	7.90	7.77
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		109	104	256	192	308
Solids, total dissolved [TDS], calculated	----	EC103.B/VA	1.0	mg/L		80.7	78.7	210	180	250
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L		7.0	13.5	6.8	2.0	6.9
Turbidity	----	E121/VA	0.10	NTU		1.32	1.20	1.14	2.59	3.85
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		38.9	39.4	33.4	78.1	82.3
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/CG	0.0050	mg/L		0.0196	0.0127	0.0097	0.0128	0.0224
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		0.80	0.72	2.15	6.65	3.72
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.070	0.068	0.207	0.116	0.183
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		<0.0050	<0.0050	<0.0050	0.0140	<0.0050
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-U/CG	0.0020	mg/L		0.0184	0.0172	0.0478	0.0048	0.0141
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L		<2.50 DLM	<2.50 DLM	6.76 DLM	8.32 DLM	9.40 DLM
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		15.7	13.4	120	59.9	111
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/CG	0.50	mg/L		17.9	18.3	----	----	----
Carbon, total organic [TOC]	----	E355-L/CG	0.50	mg/L		17.6	17.3	15.3	8.53	19.8
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.0965	0.0968	0.0488	0.0350	0.0940
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00035
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00029	0.00029	0.00056	0.00084	0.00072
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00897	0.00885	0.0126	0.0197	0.0399
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	0.000033

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-4	SNP 5-5	SNP 5-6	SNP 5-8	SNP 5-9
					Client sampling date / time	20-Jun-2023 15:35	20-Jun-2023 16:00	20-Jun-2023 13:25	20-Jun-2023 14:05	20-Jun-2023 14:15
						YL2300651-001	YL2300651-002	YL2300651-003	YL2300651-004	YL2300651-005
						Result	Result	Result	Result	Result
Total Metals										
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	7440-42-8	E420/VA	0.010	mg/L		<0.010	<0.010	0.032	0.022	0.026
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000129	0.0000425	0.0000174
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		14.4	14.2	37.9	36.8	50.3
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000024	0.000025	0.000811	0.000261	0.000314
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00010	0.00011	0.00062	0.00032	0.00180
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00080	0.00095	0.00156	0.00266	0.00398
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.061	0.049	0.758	0.800	1.93
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000093	<0.000050	0.000098	0.000609	0.000216
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0024	0.0021	0.0142	0.0047	0.0114
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		4.08	3.85	13.6	10.3	14.3
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0332	0.0336	0.0705	0.113	0.219
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L		1.39	1.48	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.000108	0.000113	<0.000050	0.00126	0.000072
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00135	0.00140	0.0127	0.00607	0.0221
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	0.062	<0.050	<0.050
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		1.36	1.37	2.81	3.08	2.11
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00225	0.00222	0.00644	0.00360	0.00540
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	0.000069	0.000104
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		0.18	0.24	3.19	3.80	4.37
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		2.36	2.30	4.17	4.95	4.99
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0377	0.0388	0.111	0.0907	0.144
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		5.77	5.06	42.3	20.8	39.1
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00019	0.00023
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		<0.00030	<0.00060 DLM	0.00038	0.00031	0.00062

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-4	SNP 5-5	SNP 5-6	SNP 5-8	SNP 5-9
					Client sampling date / time	20-Jun-2023 15:35	20-Jun-2023 16:00	20-Jun-2023 13:25	20-Jun-2023 14:05	20-Jun-2023 14:15
						YL2300651-001	YL2300651-002	YL2300651-003	YL2300651-004	YL2300651-005
						Result	Result	Result	Result	Result
Total Metals										
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00105	<0.00010
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000125	0.000131	0.000070	0.00270	0.000230
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	<0.0030	<0.0030	<0.0030	0.0040
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	0.00038
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0819	----	0.0266	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	----	<0.00010	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00040	----	0.00060	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00936	----	0.0130	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L		<0.000020	----	<0.000020	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	----	<0.000050	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		0.012	----	0.031	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000050	----	0.0000064	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		15.2	----	37.5	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000028	----	0.000811	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	----	<0.00050	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	----	0.00055	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00088	----	0.00126	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.020	----	0.360	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	----	<0.000050	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0025	----	0.0145	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		4.37	----	13.8	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00311	----	0.0699 DTC	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.000113	----	<0.000050	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		0.00141	----	0.0130	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	----	<0.050	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		1.47	----	2.90 DTC	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00237	----	0.00681	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	----	<0.000050	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-4	SNP 5-5	SNP 5-6	SNP 5-8	SNP 5-9
					Client sampling date / time	20-Jun-2023 15:35	20-Jun-2023 16:00	20-Jun-2023 13:25	20-Jun-2023 14:05	20-Jun-2023 14:15
						YL2300651-001	YL2300651-002	YL2300651-003	YL2300651-004	YL2300651-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		0.178	----	3.07	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	----	<0.000010	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		2.58	----	4.18	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0406	----	0.114	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		5.31	----	38.4	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	----	<0.00020	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	----	<0.000010	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	----	<0.00010	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		0.00020	----	<0.00010	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	----	<0.00030	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	----	<0.00010	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000126	----	0.000059	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	----	<0.00050	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0021	----	0.0017 DTC	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L		<0.00030	----	<0.00030	----	----
Dissolved metals filtration location	----	EP421/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.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14	SNP 5-6-D
					Client sampling date / time	20-Jun-2023 14:35	20-Jun-2023 14:25	20-Jun-2023 13:55	20-Jun-2023 15:00	20-Jun-2023 13:40
						YL2300651-006	YL2300651-007	YL2300651-008	YL2300651-009	YL2300651-010
						Result	Result	Result	Result	Result
Physical Tests										
Acidity (as CaCO3)	----	E283/VA	2.0	mg/L		3.4	4.3	4.1	5.3	4.7
Conductivity	----	E100/VA	2.0	µS/cm		463	324	323	262	329
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L		----	----	----	92.0	151
pH	----	E108/VA	0.10	pH units		7.67	7.45	7.45	7.27	7.50
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		366	275	262	210	250
Solids, total dissolved [TDS], calculated	----	EC103.B/VA	1.0	mg/L		295	207	205	164	206
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L		5.1	3.7	2.8	31.7	10.5
Turbidity	----	E121/VA	0.10	NTU		6.69	3.91	3.70	1.38	1.37
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		43.3	26.6	27.2	23.3	33.0
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/CG	0.0050	mg/L		0.0180	0.0120	0.0094	0.0124	0.0104
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		3.04	2.07	1.91	2.13	2.12
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.273	0.240	0.238	0.126	0.206
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-U/CG	0.0020	mg/L		0.0083	0.0123	0.0081	0.0801	0.0826
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L		5.52 DLM	7.57 DLM	7.60 DLM	5.92 DLM	6.70 DLM
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		177	122	121	94.4	119
Organic / Inorganic Carbon										
Carbon, total organic [TOC]	----	E355-L/CG	0.50	mg/L		15.6	15.7	15.3	16.6	15.5
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.0660	0.185	0.176	0.358	0.0454
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.00011	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00068	0.00074	0.00074	0.00026	0.00060
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0156	0.0113	0.0114	0.0153	0.0123
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L		0.000021	0.000029	0.000033	<0.000020	<0.000020
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14	SNP 5-6-D
					Client sampling date / time	20-Jun-2023 14:35	20-Jun-2023 14:25	20-Jun-2023 13:55	20-Jun-2023 15:00	20-Jun-2023 13:40
						YL2300651-006	YL2300651-007	YL2300651-008	YL2300651-009	YL2300651-010
						Result	Result	Result	Result	Result
Total Metals										
Boron, total	7440-42-8	E420/VA	0.010	mg/L		0.039	0.032	0.031	0.023	0.031
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.0000151	0.0000115	0.0000132	<0.0000050	0.0000113
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		52.8	35.4	34.8	28.3	36.3
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000549	0.000704	0.000688	0.000137	0.000818
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00081	<0.00050
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00233	0.00147	0.00140	0.00033	0.00060
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00236	0.00326	0.00313	0.00081	0.00150
Iron, total	7439-89-6	E420/VA	0.010	mg/L		1.82	1.57	1.60	0.588	0.751
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000184	0.000264	0.000245	0.000107	0.000086
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0182	0.0153	0.0150	0.0095	0.0138
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		18.3	13.3	13.0	10.8	13.2
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.230	0.112	0.118	0.0204	0.0692
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L		----	----	----	1.46	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.000050	<0.000050	<0.000050	0.000093	<0.000050
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.0269	0.0227	0.0218	0.00714	0.0128
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		3.62	2.63	2.60	1.63	2.77
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00873	0.00635	0.00646	0.00433	0.00643
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000057	0.000057	0.000075	<0.000050	<0.000050
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		2.48	3.52	3.51	3.10	2.98
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		5.06	3.79	3.65	3.70	4.08
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.161	0.111	0.110	0.0867	0.112
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		61.4	42.5	42.4	33.9	41.6
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		0.00013	0.00013	0.00012	0.00011	<0.00010
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		<0.00030	<0.00030	0.00039	<0.0120 DLM	<0.00030
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14	SNP 5-6-D
					Client sampling date / time	20-Jun-2023 14:35	20-Jun-2023 14:25	20-Jun-2023 13:55	20-Jun-2023 15:00	20-Jun-2023 13:40
						YL2300651-006	YL2300651-007	YL2300651-008	YL2300651-009	YL2300651-010
						Result	Result	Result	Result	Result
Total Metals										
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000170	0.000167	0.000156	0.000058	0.000070
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00080	<0.00050
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0041	0.0051	0.0049	<0.0030	<0.0030
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	0.00021	<0.00020
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		----	----	----	0.0412	0.0257
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		----	----	----	<0.00010	<0.00010
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		----	----	----	0.00034	0.00059
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		----	----	----	0.00942	0.0127
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L		----	----	----	<0.000020	<0.000020
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		----	----	----	<0.000050	<0.000050
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		----	----	----	0.023	0.031
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		----	----	----	<0.0000050	0.0000078
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		----	----	----	22.7	37.6
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		----	----	----	0.000062	0.000831
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		----	----	----	<0.00050	<0.00050
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		----	----	----	0.00034	0.00055
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		----	----	----	0.00072	0.00215
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		----	----	----	0.168	0.346
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		----	----	----	<0.000050	0.000056
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		----	----	----	0.0046	0.0143
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		----	----	----	8.58	13.8
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		----	----	----	0.0326 DTC	0.0716
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		----	----	----	0.000628 DTC	<0.000050
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		----	----	----	0.00511	0.0127
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		----	----	----	<0.050	<0.050
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		----	----	----	2.21 DTC	2.98
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		----	----	----	0.00297	0.00674
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		----	----	----	<0.000050	<0.000050
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		----	----	----	2.60	3.06

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14	SNP 5-6-D
					Client sampling date / time	20-Jun-2023 14:35	20-Jun-2023 14:25	20-Jun-2023 13:55	20-Jun-2023 15:00	20-Jun-2023 13:40
						YL2300651-006	YL2300651-007	YL2300651-008	YL2300651-009	YL2300651-010
						Result	Result	Result	Result	Result
Dissolved Metals										
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		----	----	----	<0.000010	<0.000010
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		----	----	----	3.94	4.12
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		----	----	----	0.0641	0.114
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		----	----	----	18.0	37.9
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		----	----	----	<0.00020	<0.00020
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		----	----	----	<0.000010	<0.000010
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		----	----	----	<0.00010	<0.00010
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		----	----	----	<0.00010	<0.00010
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		----	----	----	0.00062	<0.00030
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		----	----	----	<0.00010	<0.00010
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		----	----	----	0.000054	0.000056
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		----	----	----	<0.00050	<0.00050
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		----	----	----	0.0034	0.0027
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L		----	----	----	<0.00030	<0.00030
Dissolved metals filtration location	----	EP421/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.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP 5-11-FB	TB	----	----	----
				Client sampling date / time	20-Jun-2023 14:40	20-Jun-2023 12:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2300651-011	YL2300651-012	--------	--------	--------
					Result	Result	----	----	----
Physical Tests									
Acidity (as CaCO3)	----	E283/VA	2.0	mg/L	<2.0	2.0	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	<2.0	<2.0	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	<0.50	<0.50	----	----	----
pH	----	E108/VA	0.10	pH units	5.58	5.41	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	<10	<10	----	----	----
Solids, total dissolved [TDS], calculated	----	EC103.B/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Turbidity	----	E121/VA	0.10	NTU	<0.10	<0.10	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	<2.0	<2.0	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/CG	0.0050	mg/L	<0.0050	----	----	----	----
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	----	<0.0050	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	<0.50	<0.50	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	<0.020	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	<0.0050	<0.0050	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----
Phosphorus, total	7723-14-0	E372-U/CG	0.0020	mg/L	<0.0020	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	----	<0.0020	----	----	----
Silicate (as SiO2)	7631-86-9	E392/VA	0.50	mg/L	<0.50 DLM	<0.50 DLM	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	<0.30	<0.30	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/CG	0.50	mg/L	<0.50	----	----	----	----
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	----	<0.50	----	----	----
Carbon, total organic [TOC]	----	E355-L/CG	0.50	mg/L	<0.50	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	----	<0.50	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	<0.0030	<0.0030	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SNP 5-11-FB	TB	----	----	----
					Client sampling date / time	20-Jun-2023 14:40	20-Jun-2023 12:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2300651-011	YL2300651-012	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L		<0.000020	<0.000020	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		<0.0050	<0.0050	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L		<0.50	0.54	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		<0.10	<0.10	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		<0.50	<0.50	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SNP 5-11-FB	TB	----	----	----
					Client sampling date / time	20-Jun-2023 14:40	20-Jun-2023 12:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2300651-011	YL2300651-012	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		<0.00030	<0.00030	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	<0.0030	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L		<0.000020	<0.000020	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		<0.0050	<0.0050	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11-FB	TB	----	----	----
					Client sampling date / time	20-Jun-2023 14:40	20-Jun-2023 12:00	----	----	----
						YL2300651-011	YL2300651-012	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		<0.50	<0.50	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	<0.00030	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L		<0.00030	<0.00030	----	----	----
Dissolved metals filtration location	----	EP421/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.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2300651**	Page	: 1 of 37
Amendment	: **1**		
Client	: **WSP Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Erin Adshead	Account Manager	: Oliver Gregg
Address	: 2800, 700 - 2nd Street SW Calgary AB Canada T2P 2W2	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867 334 7423	Telephone	: 1 867 445 7143
Project	: Damoti Lake SNP	Date Samples Received	: 22-Jun-2023 10:55
PO	: ----	Issue Date	: 25-Jul-2023 16:55
C-O-C number	: ----		
Sampler	: ----		
Site	: Damoti Lake		
Quote number	: YL22-GOLD100-013		
No. of samples received	: 12		
No. of samples analysed	: 12		

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								
Dissolved Metals	Anonymous	Anonymous	Selenium, dissolved	7782-49-2	E421	61.6 % 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 / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-11	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-11-FB	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-12	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-13	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-14	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-4	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-5	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-6	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-6-D	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-8	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-9	E298	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
TB	E298	20-Jun-2023	28-Jun-2023	28 days	8 days	✓	28-Jun-2023	20 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-11	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-11-FB	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-12	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-13	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-14	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-4	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-5	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-6	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-6-D	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-8	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-9	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
TB	E235.Br-L	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-11	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-11-FB	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-12	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-13	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-14	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-4	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-5	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-6	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-6-D	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-8	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-9	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
TB	E235.Cl	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-11	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-11-FB	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-12	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-13	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-14	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-4	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-5	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-6	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-6-D	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-8	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-9	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
TB	E235.F	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SNP 5-11	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SNP 5-11-FB	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SNP 5-12	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SNP 5-13	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-14	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-4	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-5	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-6	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-6-D	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-8	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-9	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE TB	E235.NO3-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SNP 5-11	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-11-FB	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-12	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-13	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-14	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-4	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-5	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-6	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-6-D	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-8	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	× EHT	26-Jun-2023	-3 days	0 days	× UCP

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SNP 5-9	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE TB	E235.NO2-L	20-Jun-2023	26-Jun-2023	3 days	6 days	✗ EHT	26-Jun-2023	-3 days	0 days	✗ UCP
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP 5-11	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP 5-11-FB	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP 5-12	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP 5-13	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP 5-14	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP 5-4	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SNP 5-5	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP 5-6	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP 5-6-D	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP 5-8	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SNP 5-9	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
TB	E392	20-Jun-2023	----	----	----		24-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-11	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-11-FB	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-12	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-13	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-14	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-4	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-5	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-6	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-6-D	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-8	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-9	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
TB	E235.SO4	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	26-Jun-2023	22 days	0 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-11	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓

Matrix: **Water**

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Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-11-FB	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-12	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-13	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-14	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-4	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-5	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-6	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-6-D	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-8	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-9	E372-U	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	28-Jun-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
TB	E372-U	20-Jun-2023	28-Jun-2023	28 days	8 days	✓	29-Jun-2023	20 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SNP 5-11-FB	E421	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	27-Jun-2023	176 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SNP 5-14	E421	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	27-Jun-2023	176 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SNP 5-4	E421	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	27-Jun-2023	176 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SNP 5-6	E421	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	27-Jun-2023	176 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SNP 5-6-D	E421	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	27-Jun-2023	176 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
TB	E421	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	27-Jun-2023	176 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SNP 5-11-FB	E358-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SNP 5-4	E358-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SNP 5-5	E358-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
TB	E358-L	20-Jun-2023	28-Jun-2023	28 days	8 days	✓	28-Jun-2023	20 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP 5-11	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP 5-11-FB	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP 5-12	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP 5-13	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP 5-14	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
SNP 5-4	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP 5-5	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP 5-6	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP 5-6-D	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP 5-8	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) SNP 5-9	E355-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	21 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) TB	E355-L	20-Jun-2023	28-Jun-2023	28 days	8 days	✓	28-Jun-2023	20 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-11	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-11-FB	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-12	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE SNP 5-13	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-14	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-4	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-5	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-6	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-6-D	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-8	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE SNP 5-9	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE TB	E283	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	26-Jun-2023	8 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-11	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-11-FB	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-12	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-13	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-14	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-4	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-5	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-6	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-6-D	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-8	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SNP 5-9	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE TB	E290	20-Jun-2023	26-Jun-2023	14 days	6 days	✓	27-Jun-2023	8 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-11	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-11-FB	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-12	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-13	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-14	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-4	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE SNP 5-5	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-6	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-6-D	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-8	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-9	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE TB	E100	20-Jun-2023	26-Jun-2023	28 days	6 days	✓	27-Jun-2023	22 days	1 days	✓
Physical Tests : pH by Meter										
HDPE SNP 5-5	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-146.09 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE SNP 5-4	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-146.51 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE SNP 5-14	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-147.09 hrs	12 hrs	× UCP

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE SNP 5-11-FB	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-147.42 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE SNP 5-11	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-147.51 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE SNP 5-12	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-147.67 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE SNP 5-9	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-147.84 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE SNP 5-8	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-148.01 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE SNP 5-13	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-148.17 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE SNP 5-6-D	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-148.42 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE SNP 5-6	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-148.67 hrs	12 hrs	× UCP
Physical Tests : pH by Meter										
HDPE TB	E108	20-Jun-2023	26-Jun-2023	12 hrs	0.25 hrs	× EHTR-FM	27-Jun-2023	-150.09 hrs	12 hrs	× UCP

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-11	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-11-FB	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-12	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-13	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-14	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-4	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-5	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-6	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-6-D	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-8	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SNP 5-9	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
TB	E162	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-11	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-11-FB	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-12	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-13	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-14	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-4	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-5	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-6	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-6-D	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-8	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-9	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
TB	E160-L	20-Jun-2023	----	----	----		27-Jun-2023	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE										
SNP 5-11	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE										
SNP 5-11-FB	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE										
SNP 5-12	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Turbidity by Nephelometry										
HDPE SNP 5-13	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE SNP 5-14	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE SNP 5-4	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE SNP 5-5	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE SNP 5-6	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE SNP 5-6-D	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE SNP 5-8	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE SNP 5-9	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	×
Physical Tests : Turbidity by Nephelometry										
HDPE TB	E121	20-Jun-2023	----	----	----		24-Jun-2023	3 days	4 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
TB	E508-L	20-Jun-2023	04-Jul-2023	28 days	14 days	✓	04-Jul-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
SNP 5-11-FB	E508-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
SNP 5-14	E508-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
SNP 5-4	E508-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
SNP 5-5	E508-L	20-Jun-2023	27-Jun-2023	28 days	7 days	✓	27-Jun-2023	28 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SNP 5-11	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SNP 5-11-FB	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SNP 5-12	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SNP 5-13	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) SNP 5-14	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) SNP 5-4	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) SNP 5-5	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) SNP 5-6	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) SNP 5-6-D	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) SNP 5-8	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) SNP 5-9	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) TB	E420	20-Jun-2023	24-Jun-2023	180 days	4 days	✓	26-Jun-2023	176 days	2 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).

UCP: Unsuitable Container and/or Preservative used (invalidates standard hold time). Maximum hold time of zero applied. Test results may be biased low / unreliable, and may not meet regulatory requirements.

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)							
Acidity by Titration	E283	1009607	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	1009605	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1011024	2	35	5.7	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1009610	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1009609	1	20	5.0	5.0	✓
Conductivity in Water	E100	1009606	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1006932	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1011135	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	1009608	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1009611	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1009612	1	20	5.0	5.0	✓
pH by Meter	E108	1009604	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1007055	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1009613	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1011137	2	30	6.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1010634	2	32	6.2	5.0	✓
Total metals in Water by CRC ICPMS	E420	1006546	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1011136	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1011577	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1006643	1	13	7.6	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	1009607	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	1009605	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1011024	2	35	5.7	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1009610	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1009609	1	20	5.0	5.0	✓
Conductivity in Water	E100	1009606	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1006932	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1011135	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	1009608	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1009611	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1009612	1	20	5.0	5.0	✓
pH by Meter	E108	1009604	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1007055	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1009613	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1011137	2	30	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							
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1010634	2	32	6.2	5.0	✓
Total metals in Water by CRC ICPMS	E420	1006546	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1011136	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1011577	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1011112	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1006643	1	13	7.6	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	1009607	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	1009605	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1011024	2	35	5.7	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1009610	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1009609	1	20	5.0	5.0	✓
Conductivity in Water	E100	1009606	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1006932	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1011135	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	1009608	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1009611	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1009612	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1007055	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1009613	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1011137	2	30	6.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1010634	2	32	6.2	5.0	✓
Total metals in Water by CRC ICPMS	E420	1006546	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1011136	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1011577	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1011112	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1006643	1	13	7.6	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1011024	2	35	5.7	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1009610	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1009609	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1006932	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1011135	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	1009608	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1009611	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1009612	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1007055	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1009613	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1010634	2	32	6.2	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*
Matrix Spikes (MS) - Continued							
Total metals in Water by CRC ICPMS	E420	1006546	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1011136	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1011577	1	20	5.0	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 ± 5°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 (Low Level)	E160-L 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 ± 1°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 ± 2°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.
Acidity by Titration	E283 ALS Environmental - Vancouver	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
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 - Calgary	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 Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Calgary	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).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Calgary	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 (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
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 Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 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) from Total Metals	EC103.B ALS Environmental - Vancouver	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Total Metals species are used. Minor ions are included where data is present. Samples with particulate are not appropriate for this calculation. This calculation is typically used for drinking waters or potable waters with a turbidity <1NTU

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Calgary	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Calgary	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Calgary	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Calgary	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	ALS Environmental - Vancouver			

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QUALITY CONTROL REPORT

Work Order	: **YL2300651**	Page	: 1 of 18
Amendment	: **1**		
Client	: WSP Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Erin Adshead	Account Manager	: Oliver Gregg
Address	: 2800, 700 - 2nd Street SW Calgary AB Canada T2P 2W2	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	:	Telephone	: 1 867 445 7143
Project	: Damoti Lake SNP	Date Samples Received	: 22-Jun-2023 10:55
PO	: ----	Date Analysis Commenced	: 24-Jun-2023
C-O-C number	: ----	Issue Date	: 25-Jul-2023 16:55
Sampler	: ---- 867 334 7423		
Site	: Damoti Lake		
Quote number	: YL22-GOLD100-013		
No. of samples received	: 12		
No. of samples analysed	: 12		

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*
Delson Resende	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Hannah Phung	Lab Assistant	Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Vancouver Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Parnian Sane	Analyst	Vancouver Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Sukhman Khosa	Lab Assistant	Vancouver Metals, 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.

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: 1006643)											
VA23B4212-008	Anonymous	Turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1009604)											
WR2300570-003	Anonymous	pH	----	E108	0.10	pH units	8.31	8.29	0.241%	4%	----
Physical Tests (QC Lot: 1009605)											
WR2300570-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	163	164	0.803%	20%	----
Physical Tests (QC Lot: 1009606)											
WR2300570-003	Anonymous	Conductivity	----	E100	2.0	µS/cm	505	510	0.985%	10%	----
Physical Tests (QC Lot: 1009607)											
WR2300570-002	Anonymous	Acidity (as CaCO3)	----	E283	2.0	mg/L	3.7	3.7	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1011137)											
VA23B3843-005	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	394	378	4.14%	20%	----
Physical Tests (QC Lot: 1011138)											
YL2300651-003	SNP 5-6	Solids, total dissolved [TDS]	----	E162	20	mg/L	256	259	0.970%	20%	----
Anions and Nutrients (QC Lot: 1007055)											
CG2308278-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	10.0	mg/L	171	169	1.24%	20%	----
Anions and Nutrients (QC Lot: 1007057)											
YL2300651-002	SNP 5-5	Silicate (as SiO2)	7631-86-9	E392	2.50	mg/L	<2.50	<2.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1009608)											
WR2300570-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.130	0.126	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1009609)											
WR2300570-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.80	0.82	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1009610)											
WR2300570-001	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: 1009611)											
WR2300570-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.219	0.220	0.580%	20%	----
Anions and Nutrients (QC Lot: 1009612)											
WR2300570-001	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: 1009613)											
WR2300570-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	123	122	0.171%	20%	----
Anions and Nutrients (QC Lot: 1011024)											

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: 1011024) - continued											
VA23B4251-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0052	<0.0050	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1011025)											
YL2300651-003	SNP 5-6	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0097	0.0097	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1011577)											
CG2308536-010	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0046	0.0048	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1012934)											
VA23B4219-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0081	0.0081	0.00001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1012936)											
VA23B4219-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1011135)											
YL2300651-001	SNP 5-4	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	17.9	18.0	0.735%	20%	----
Organic / Inorganic Carbon (QC Lot: 1011136)											
YL2300651-001	SNP 5-4	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	17.6	17.7	0.390%	20%	----
Organic / Inorganic Carbon (QC Lot: 1012937)											
VA23B4219-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	6.27	6.69	6.49%	20%	----
Organic / Inorganic Carbon (QC Lot: 1012938)											
VA23B4219-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	7.40	7.14	3.58%	20%	----
Total Metals (QC Lot: 1006546)											
FJ2301480-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0076	0.0074	0.0001	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00291	0.00292	0.402%	20%	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00028	0.00026	0.00002	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.193	0.196	1.26%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.247	0.243	1.58%	20%	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.000322	0.000319	0.638%	20%	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	240	240	0.249%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000070	0.000074	0.000004	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00160	0.00167	4.60%	20%	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.017	0.020	0.002	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.354	0.356	0.521%	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: 1006546) - continued											
FJ2301480-001	Anonymous	Magnesium, total	7439-95-4	E420	0.0050	mg/L	63.2	62.4	1.36%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0494	0.0492	0.406%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00742	0.00758	2.06%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.0368	0.0363	1.25%	20%	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	3.44	3.41	0.904%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00482	0.00474	1.66%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.00680	0.00679	0.0816%	20%	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	2.72	2.75	0.915%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	244	243	0.541%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.344	0.343	0.336%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	245	246	0.193%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	0.000039	0.000041	0.000001	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	0.00010	<0.00010	0.000004	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.0236	0.0230	2.23%	20%	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0358	0.0354	1.17%	20%	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1010634)											
CG2308276-002	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 1021111)											
FC2301721-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	2.09	1.68	0.41	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1006932)											
YL2300647-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0287	0.0283	1.37%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00266	0.00266	0.205%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.577	0.584	1.24%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0271	0.0271	0.00165%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	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: 1006932) - continued											
YL2300647-001	Anonymous	Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.791	0.807	2.04%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000260	0.0000240	0.0000020	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	49.8	49.9	0.188%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000109	0.000106	3.16%	20%	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	0.00476	0.00492	0.00016	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00185	0.00188	1.49%	20%	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.0135	0.0138	2.40%	20%	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.190	0.195	2.31%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000155	0.000155	0.0000003	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0439	0.0437	0.466%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	28.6	29.0	1.46%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0466	0.0473	1.64%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00136	0.00133	1.95%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0273	0.0277	1.32%	20%	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	0.206	0.191	0.015	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.55	3.59	1.24%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00186	0.00185	0.00001	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000200	0.000203	0.000003	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	5.08	5.19	2.12%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	0.000026	0.000028	0.000002	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	134	137	1.81%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.941	0.915	2.78%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	74.5	77.4	3.77%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	0.00060	0.00061	0.000007	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	0.00070	0.00070	0.000001	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000090	0.000092	0.000002	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0535	0.0539	0.800%	20%	----
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	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: 1006643)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1009605)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1009606)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1009607)						
Acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 1011112)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1011137)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1011138)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1007055)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1007057)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1009608)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1009609)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1009610)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1009611)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1009612)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1009613)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1011024)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1011025)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1011577)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1012934)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1012936)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1011135)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1011136)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1012937)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1012938)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1006546)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1006546) - continued						
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1010634)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (QCLot: 1021111)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 1006932)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1006932) - continued						
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----

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	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1006643)									
Turbidity	----	E121	0.1	NTU	200 NTU	98.5	85.0	115	----
Physical Tests (QCLot: 1009604)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1009605)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1009606)									
Conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.7	90.0	110	----
Physical Tests (QCLot: 1009607)									
Acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	96.2	85.0	115	----
Physical Tests (QCLot: 1011112)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	100	85.0	115	----
Physical Tests (QCLot: 1011137)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1011138)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1007055)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1007057)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1009608)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1009609)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1009610)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	94.5	85.0	115	----
Anions and Nutrients (QCLot: 1009611)									
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: 1009612)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.5	90.0	110	----
Anions and Nutrients (QCLot: 1009613)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1011024)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.5	85.0	115	----
Anions and Nutrients (QCLot: 1011025)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1011577)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	98.9	80.0	120	----
Anions and Nutrients (QCLot: 1012934)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	95.1	80.0	120	----
Anions and Nutrients (QCLot: 1012936)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1011135)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1011136)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	102	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1012937)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1012938)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Total Metals (QCLot: 1006546)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	106	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	104	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	106	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.2	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	103	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.4	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.6	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	105	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.5	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1006546) - continued									
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	104	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	99.9	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	102	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	110	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.5	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	108	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	105	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	111	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	98.5	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.7	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	94.8	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	94.0	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	104	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	99.2	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	93.1	80.0	120	----
Total Metals (QCLot: 1010634)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	94.5	80.0	120	----
Total Metals (QCLot: 1021111)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	109	80.0	120	----
Dissolved Metals (QCLot: 1006932)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	104	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	109	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.9	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.8	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1006932) - continued									
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.6	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	105	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	99.8	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	101	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	107	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	103	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	106	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	108	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	96.8	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	90.7	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.3	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	92.7	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	98.2	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	97.2	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	90.7	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 (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1007055)										
CG2308278-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	ND mg/L	10 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 1007057)										
YL2300651-003	SNP 5-6	Silicate (as SiO2)	7631-86-9	E392	9.59 mg/L	10 mg/L	95.9	75.0	125	----
Anions and Nutrients (QCLot: 1009608)										
WR2300570-002	Anonymous	Fluoride	16984-48-8	E235.F	1.06 mg/L	1 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1009609)										
WR2300570-002	Anonymous	Chloride	16887-00-6	E235.Cl	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1009610)										
WR2300570-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.493 mg/L	0.5 mg/L	98.6	75.0	125	----
Anions and Nutrients (QCLot: 1009611)										
WR2300570-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.66 mg/L	2.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1009612)										
WR2300570-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.522 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1009613)										
WR2300570-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 1011024)										
VA23B4251-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1011025)										
YL2300651-004	SNP 5-8	Ammonia, total (as N)	7664-41-7	E298	0.100 mg/L	0.1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1011577)										
CG2308536-011	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0472 mg/L	0.05 mg/L	94.4	70.0	130	----
Anions and Nutrients (QCLot: 1012934)										
VA23B4219-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	0.05 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 1012936)										
VA23B4219-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0983 mg/L	0.1 mg/L	98.3	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1011135)										
YL2300651-001	SNP 5-4	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	5 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
Organic / Inorganic Carbon (QCLot: 1011136)										
YL2300651-001	SNP 5-4	Carbon, total organic [TOC]	----	E355-L	ND mg/L	5 mg/L	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1012937)										
VA23B4219-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	5 mg/L	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1012938)										
VA23B4219-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	5 mg/L	ND	70.0	130	----
Total Metals (QCLot: 1006546)										
FJ2301498-001	Anonymous	Aluminum, total	7429-90-5	E420	0.191 mg/L	0.2 mg/L	95.6	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0196 mg/L	0.02 mg/L	98.2	70.0	130	----
		Barium, total	7440-39-3	E420	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0376 mg/L	0.04 mg/L	94.0	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00957 mg/L	0.01 mg/L	95.7	70.0	130	----
		Boron, total	7440-42-8	E420	0.089 mg/L	0.1 mg/L	89.5	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00388 mg/L	0.004 mg/L	97.1	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0182 mg/L	0.02 mg/L	90.9	70.0	130	----
		Copper, total	7440-50-8	E420	0.0174 mg/L	0.02 mg/L	87.1	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0185 mg/L	0.02 mg/L	92.4	70.0	130	----
		Lithium, total	7439-93-2	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0353 mg/L	0.04 mg/L	88.3	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.1 mg/L	10 mg/L	101	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0446 mg/L	0.04 mg/L	112	70.0	130	----
		Silicon, total	7440-21-3	E420	9.12 mg/L	10 mg/L	91.2	70.0	130	----
		Silver, total	7440-22-4	E420	0.00381 mg/L	0.004 mg/L	95.3	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.02 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
Total Metals (QCLot: 1006546) - continued										
FJ2301498-001	Anonymous	Sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0426 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00357 mg/L	0.004 mg/L	89.3	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		Tin, total	7440-31-5	E420	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0364 mg/L	0.04 mg/L	91.1	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0182 mg/L	0.02 mg/L	91.3	70.0	130	----
		Uranium, total	7440-61-1	E420	ND mg/L	0.004 mg/L	ND	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0985 mg/L	0.1 mg/L	98.5	70.0	130	----
		Zinc, total	7440-66-6	E420	0.353 mg/L	0.4 mg/L	88.2	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0424 mg/L	0.04 mg/L	106	70.0	130	----
Total Metals (QCLot: 1010634)										
CG2308276-003	Anonymous	Mercury, total	7439-97-6	E508-L	4.62 ng/L	5 ng/L	92.4	70.0	130	----
Total Metals (QCLot: 1021111)										
FC2301721-002	Anonymous	Mercury, total	7439-97-6	E508-L	3.77 ng/L	5 ng/L	75.4	70.0	130	----
Dissolved Metals (QCLot: 1006932)										
YL2300647-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.198 mg/L	0.2 mg/L	99.1	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0198 mg/L	0.02 mg/L	98.9	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00846 mg/L	0.01 mg/L	84.6	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00400 mg/L	0.004 mg/L	100.0	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0104 mg/L	0.01 mg/L	104	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0400 mg/L	0.04 mg/L	100.0	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0183 mg/L	0.02 mg/L	91.3	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.94 mg/L	2 mg/L	97.0	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0188 mg/L	0.02 mg/L	94.3	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0984 mg/L	0.1 mg/L	98.4	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 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: 1006932) - continued										
YL2300647-002	Anonymous	Molybdenum, dissolved	7439-98-7	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.8 mg/L	10 mg/L	108	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0246 mg/L	0.04 mg/L	61.6	70.0	130	MES
		Silicon, dissolved	7440-21-3	E421	9.03 mg/L	10 mg/L	90.3	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00338 mg/L	0.004 mg/L	84.6	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0359 mg/L	0.04 mg/L	89.8	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00381 mg/L	0.004 mg/L	95.2	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00382 mg/L	0.004 mg/L	95.5	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.381 mg/L	0.4 mg/L	95.2	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0404 mg/L	0.04 mg/L	101	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

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Justine Crowe		SA 9:55	
DATE/TIME: 20-Jun-23 20:00	DATE/TIME:	DATE/TIME: JUNE 22/23	DATE/TIME:

CLIENT:	Nighthawk Gold Corp	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):
PROJECT:	Damoti Lake SNP		☐ Non Standard or urgent TAT (List due date):
SITE:	Damoti Lake		
PURCHASE ORDER NO.:		ALS QUOTE NO.:	YL22-GOLD100-013
PROJECT MANAGER:	Erin Adshead CONTACT PH: 867 333 0821	Job Number:	
SAMPLER:	Justine Crowe SAMPLER MOBILE: 867 445-3126	EQUIS Facility Code: 171683648	
EMAIL REPORTS TO:	Saad.pasha@wsp.com, michael.iwanyshyn@wsp.com	EMAIL INVOICE TO:	erin.adshead@wsp.com

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	(N/A)
Free ice / frozen ice bricks present upon receipt?	(Yes)	No	N/A
Random Sample Temperature on Receipt	7.3 °C		
Other comments:			

SPECIAL HANDLING/STORAGE OR DISPOSAL:

Environmental Division
Yellowknife
Work Order Reference
YL2300651

Telephone : +1 867 873 5593

ALS USE ONLY	SAMPLE DETAILS (Solid(S) Water(W))		CONTAINER INFORMATION		ANALYSIS REQUIRED										Additional Information
SAMPLE	Sample Identification (This description will appear on the report)	DATE / TIME (dd-mm-yyyy)	MATRIX	TOTAL CONTAINERS	Routine	Nutrients (ammonia)	Nitrate	Low level total phosphorous (Colourimetric)	Dissolved Organic Carbon (DOC)	Total Metals	Dissolved Metals	Total Mercury (Low Level)			Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	SNP 5-4	20-Jun-23 / 15:35	WS	#6	X	X	X	X	X	X	X	X			
	SNP 5-5	/ 16:00	WS	#5	X	X	X	X	X	X		X			
	SNP 5-6	/ 13:25	WS	#4	X	X	X	X		X	X				
	SNP 5-8	/ 14:05	WS	#3	X	X		X		X					
	SNP 5-9	/ 14:15	WS	#3	X	X		X		X					
	~~SNP 5-10~~	/	WS	#3	X	X		X		X					
	SNP 5-11	/ 14:35	WS	#3	X	X		X		X					
	SNP 5-12	/ 14:25	WS	#3	X	X		X		X					
	SNP 5-13	/ 13:55	WS	#3	X	X		X		X					
	SNP 5-14	/ 15:00	WS	#5	X	X		X		X	X	X			
	SNP 5-6-D	/ 13:40	WS	#4	X	X	X	X		X	X				
	SNP 5[illegible]FB	/ 14:40	WS	#6	X	X	X	X	X	X	X	X			
	TB	/ 12:00	WS	#6	X	X	X	X	X	X	X	X			
			TOTAL												

APPENDIX D

Quality Assurance and Quality Control

QUALITY ASSURANCE/QUALITY CONTROL RESULTS

1.0 INTRODUCTION

Key findings of the quality assurance and quality control (QA/QC) review for water quality and toxicity are summarized below. For water quality, the field QC program included collecting one duplicate sample, one field blank, and one travel blank. The assessment of QC sample results was completed using analytical data provided by ALS Canada Ltd. (ALS). For toxicity, QA/QC was completed for the sample collected at SNP 5-6 using the test report provided by Nautilus Environmental (Nautilus).

2.0 WATER QUALITY

2.1 Parameter List

All parameters required by the Type A Water Licence W2021L2-0004 (WLWB 2023) were analyzed, as requested.

2.2 Detection Limits

Standard ALS detection limits (DLs) were used when analyzing all samples collected during the June 2023 field program.

2.3 Hold Times

Hold times between sample collection and analysis for each parameter are specified by ALS and should be met to obtain reliable data. For this program, the 15-minute hold time for pH (APHA 2012) was not met because the samples cannot be processed by ALS Canada Ltd. (ALS) within this time limit. Additionally, the three-day hold time (APHA 2012) was not met for nitrite and nitrate; ALS analyzed this parameter six days after sample collection for all samples. The hold times were met for all other parameters.

2.4 Units

All reported units were correct, and no issues were identified during the review of electronic data against the final certificate of analysis provided by ALS.

2.5 Qualifiers

The ALS internal data quality report indicates that detection limits were adjusted due to sample matrix effects for silicate concentrations in all samples and total titanium concentrations for samples collected at SNP 5-5 and SNP 5-14.

2.6 Total versus Dissolved Metal Concentrations

Dissolved metal concentrations were compared to corresponding total metal concentrations. Dissolved and total concentrations were considered notable if the dissolved concentration was more than 20% higher than the total concentration.

Dissolved concentrations were within 20% higher of total concentrations for all samples, except for manganese (46%) and molybdenum (148%) at SNP 5-14 and copper (36%) in the duplicate sample at SNP 5-6. The differences between dissolved and total concentrations for these metals could be related to contamination during field filtering, particularly if a small amount of unfiltered water was captured in the dissolved metals sample bottle, or contamination may have occurred during sample transport to the laboratory.

2.7 Duplicate Sample Results

A duplicate water sample was collected from SNP 5-6 on 20 June 2023 to assess variability during sample collection, handling, and analysis.

The relative percent difference (RPD) was used to determine the variability between the primary and duplicate sample and was calculated using the following formula:

$$RPD = ABS\left(\frac{(field\ sample\ concentration - duplicate\ sample\ concentration)}{average\ concentration}\right)\ x\ 100$$

where ABS = absolute value.

All values reported below the DL were included in the calculations at half the applicable DL. For some parameters, the RPD was not calculated because the concentrations in both samples were less than five times the detection limit (i.e., within the range of analytical uncertainty).

The variability in parameter concentrations between primary and duplicate sample was considered notable if:

- the parameter concentration in at least one sample was greater than five times the DL
- the RPD was greater than 20%

These criteria are consistent with those used by ALS for internal QC procedures (Dang 2015, pers. comm.) and account for the potential for analytical uncertainty when concentrations approach DLs (Weiner 2000). Variability between the field and duplicate samples was rated as follows:

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

The results of the comparison between the SNP 5-6 primary and duplicate samples are summarized in Table D-1. The total suspended solids, total phosphorus, and dissolved copper concentrations in the duplicate samples collected at SNP 5-6 had RPDs greater than 20%. Data re-checks for these concentrations in the duplicate sample were requested from the laboratory and the results were confirmed. Overall, the variability between the primary and duplicate sample was rated as low; less than 10% of parameters included in the analysis were notably different from one another.

Table D-1: Duplicate Results for the Surveillance Network Program at Damoti Lake, 20 June 2023

Parameter	Unit	Detection Limit	SNP 5-6		Relative Percent Difference
			Sample	Duplicate	
Conventional Parameters					
pH[(a)]	unitless	0.1	7.5	7.5	7%
Conductivity	µS/cm	2	333	329	1%
Hardness, as $CaCO_3$[(b)]	mg/L	0.5	150	151	1%
Total alkalinity, as $CaCO_3$	mg/L	2	33	33	1%
Total dissolved solids	mg/L	20	256	250	2%
Total suspended solids	mg/L	1	6.8	11	**43%**
Total organic carbon	mg/L	0.5	15	16	1%
Turbidity	NTU	0.1	1.1	1.4	18%
Total acidity	mg/L	2	4.5	4.7	-
Major Ions					
Bromide	mg/L	0.05	<0.05	<0.05	-
Calcium	mg/L	0.05	38	38	0%
Chloride	mg/L	0.5	2.2	2.1	-
Fluoride	mg/L	0.02	0.21	0.21	0%
Magnesium	mg/L	0.005	14	14	0%
Potassium	mg/L	0.05	2.9	3.0	3%
Sodium	mg/L	0.05	4.2	4.1	1%
Sulphate	mg/L	0.3	120	119	1%
Silica	mg/L	2.5	6.8	6.7	-
Nutrients					
Nitrate	mg-N/L	0.005	<0.005	<0.005	-
Nitrite	mg-N/L	0.001	<0.001	<0.001	-
Total ammonia	mg-N/L	0.005	0.010	0.010	-
Total phosphorus	mg-P/L	0.002	0.048	0.083	**53%**
Dissolved phosphorus	mg-P/L	0.05	<0.05	<0.05	-
Total Metals					
Aluminum	mg/L	0.003	0.049	0.045	7%
Antimony	mg/L	0.0001	<0.0001	<0.0001	-
Arsenic	mg/L	0.0001	0.00056	0.00060	7%
Barium	mg/L	0.0001	0.013	0.012	2%
Beryllium	mg/L	0.00002	<0.00002	<0.00002	-
Bismuth	mg/L	0.00005	<0.00005	<0.00005	-
Boron	mg/L	0.01	0.032	0.031	-
Cadmium	mg/L	0.000005	0.000013	0.000011	-
Calcium	mg/L	0.05	38	36	4%
Cesium	mg/L	0.00001	0.00081	0.00082	1%

Table D-1: Duplicate Results for the Surveillance Network Program at Damoti Lake, 20 June 2023

Parameter	Unit	Detection Limit	SNP 5-6		Relative Percent Difference
			Sample	Duplicate	
Chromium	mg/L	0.0005	<0.0005	<0.0005	-
Cobalt	mg/L	0.0001	0.00062	0.0006	3%
Copper	mg/L	0.0005	0.0016	0.0015	-
Iron	mg/L	0.01	0.76	0.75	1%
Lead	mg/L	0.00005	0.000098	0.000086	-
Lithium	mg/L	0.001	0.014	0.014	3%
Magnesium	mg/L	0.005	14	13	3%
Manganese	mg/L	0.0001	0.071	0.069	2%
Molybdenum	mg/L	0.00005	<0.00005	<0.00005	-
Nickel	mg/L	0.0005	0.013	0.013	1%
Potassium	mg/L	0.05	2.8	2.8	1%
Rubidium	mg/L	0.0002	0.0064	0.0064	0%
Selenium	mg/L	0.00005	<0.00005	<0.00005	-
Silicon	mg/L	0.1	3.2	3.0	7%
Silver	mg/L	0.00001	<0.00001	<0.00001	-
Sodium	mg/L	0.05	4.2	4.1	2%
Strontium	mg/L	0.0002	0.11	0.11	1%
Sulphur	mg/L	0.5	42	42	2%
Tellurium	mg/L	0.0002	<0.0002	<0.0002	-
Thallium	mg/L	0.00001	<0.00001	<0.00001	-
Thorium	mg/L	0.0001	<0.0001	<0.0001	-
Tin	mg/L	0.0001	<0.0001	<0.0001	-
Titanium	mg/L	0.0003	0.00038	<0.0003	-
Tungsten	mg/L	0.0001	<0.0001	<0.0001	-
Uranium	mg/L	0.00001	0.00007	0.00007	0%
Vanadium	mg/L	0.0005	<0.0005	<0.0005	-
Zinc	mg/L	0.003	<0.003	<0.003	-
Zirconium	mg/L	0.0002	<0.0002	<0.0002	-
Dissolved Metal					
Aluminum	mg/L	0.001	0.027	0.026	3%
Antimony	mg/L	0.0001	<0.0001	<0.0001	-
Arsenic	mg/L	0.0001	0.0006	0.00059	2%
Barium	mg/L	0.0001	0.013	0.013	2%
Beryllium	mg/L	0.00002	<0.00002	<0.00002	-
Bismuth	mg/L	0.00005	<0.00005	<0.00005	-
Boron	mg/L	0.01	0.031	0.031	-
Cadmium	mg/L	0.000005	0.0000064	0.0000078	-

Table D-1: Duplicate Results for the Surveillance Network Program at Damoti Lake, 20 June 2023

Parameter	Unit	Detection Limit	SNP 5-6		Relative Percent Difference
			Sample	Duplicate	
Cesium	mg/L	0.00001	0.00081	0.00083	2%
Chromium	mg/L	0.0005	<0.0005	<0.0005	-
Cobalt	mg/L	0.0001	0.00055	0.00055	0%
Copper	mg/L	0.0002	0.0013	0.0022	**52%**
Iron	mg/L	0.01	0.36	0.35	4%
Lead	mg/L	0.00005	<0.00005	0.000056	-
Lithium	mg/L	0.001	0.015	0.014	1%
Manganese	mg/L	0.0001	0.070	0.072	2%
Molybdenum	mg/L	0.00005	<0.00005	<0.00005	-
Nickel	mg/L	0.0005	0.013	0.013	2%
Rubidium	mg/L	0.0002	0.0068	0.0067	1%
Selenium	mg/L	0.00005	<0.00005	<0.00005	-
Silicon	mg/L	0.05	3.1	3.1	0%
Silver	mg/L	0.00001	<0.00001	<0.00001	-
Strontium	mg/L	0.0002	0.11	0.11	0%
Sulphur	mg/L	0.5	38	38	1%
Tellurium	mg/L	0.0002	<0.0002	<0.0002	-
Thallium	mg/L	0.00001	<0.00001	<0.00001	-
Thorium	mg/L	0.0001	<0.0001	<0.0001	-
Tin	mg/L	0.0001	<0.0001	<0.0001	-
Titanium	mg/L	0.0003	<0.0003	<0.0003	-
Tungsten	mg/L	0.0001	<0.0001	<0.0001	-
Uranium	mg/L	0.00001	0.000059	0.000056	5%
Vanadium	mg/L	0.0005	<0.0005	<0.0005	-
Zinc	mg/L	0.001	0.0017	0.0027	-
Zirconium	mg/L	0.0003	<0.0003	<0.0003	-

Notes:

Bolded RPD values are greater than 20%.

The RPD is calculated for duplicate samples using the following formula: RPD = (absolute value (difference in concentration between field sample and duplicate sample) / average concentration) x 100%.

a) pH values were converted to hydrogen ion concentrations prior to calculating the RPD.

b) Hardness was calculated using the following formula: hardness [mg equivalent $CaCO_3$/L] = 2.497 [calcium in mg/L] + 4.118 [magnesium in mg/L].

SNP = Surveillance Network Program; < = less than; $CaCO_3$ = calcium carbonate; mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; % = percent; NTU = nephelometric turbidity units; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorous per litre; RPD = relative percent difference; - = the relative percent difference was not calculated because the concentration in both samples was less than five times the detection limit.

2.8 Field Blank Results

A field blank water sample was collected at SNP 5-11 during the 20 June 2023 sampling event, with results summarized in Table D-2. Concentrations of all parameters were less than the DL in the field blank, indicating low potential for contamination during sampling.

Table D-2: Field Blank Results for the Surveillance Network Program at Damoti Lake, 20 June 2023

Parameter	Unit	Detection Limit	Field Blank (SNP 5-11)
Conventional Parameters			
pH	unitless	0.1	5.6
Specific conductivity	µS/cm	2	<2
Hardness, as $CaCO_3$	mg/L	0.5	<0.5
Total alkalinity, as $CaCO_3$	mg/L	2	<2
Total dissolved solids	mg/L	10	<10
Total suspended solids	mg/L	1	<1
Total organic carbon	mg/L	0.5	<0.5
Dissolved organic carbon	mg/L	0.5	<0.5
Turbidity	NTU	0.1	<0.1
Total acidity	mg/L	2	<2
Major Ions			
Bromide	mg/L	0.05	<0.05
Calcium	mg/L	0.05	<0.05
Chloride	mg/L	0.5	<0.5
Fluoride	mg/L	0.02	<0.02
Magnesium	mg/L	0.005	<0.005
Potassium	mg/L	0.05	<0.05
Sodium	mg/L	0.05	<0.05
Sulphate	mg/L	0.3	<0.3
Silica	mg/L	0.5	<0.5
Nutrients			
Nitrate	mg-N/L	0.005	<0.005
Nitrite	mg-N/L	0.001	<0.001
Total ammonia	mg-N/L	0.005	<0.005
Total phosphorus	mg-P/L	0.002	<0.002
Dissolved phosphorus	mg-P/L	0.05	<0.05
Total Metals			
Aluminum	mg/L	0.003	<0.003
Antimony	mg/L	0.0001	<0.0001
Arsenic	mg/L	0.0001	<0.0001
Barium	mg/L	0.0001	<0.0001
Beryllium	mg/L	0.00002	<0.00002
Bismuth	mg/L	0.00005	<0.00005

Table D-2: Field Blank Results for the Surveillance Network Program at Damoti Lake, 20 June 2023

Parameter	Unit	Detection Limit	Field Blank (SNP 5-11)
Boron	mg/L	0.01	<0.01
Cadmium	mg/L	0.000005	<0.000005
Calcium	mg/L	0.05	<0.05
Cesium	mg/L	0.00001	<0.00001
Chromium	mg/L	0.0005	<0.0005
Cobalt	mg/L	0.0001	<0.0001
Copper	mg/L	0.0005	<0.0005
Iron	mg/L	0.01	<0.01
Lead	mg/L	0.00005	<0.00005
Lithium	mg/L	0.001	<0.001
Magnesium	mg/L	0.005	<0.005
Manganese	mg/L	0.0001	<0.0001
Mercury	mg/L	0.0000005	<0.0000005
Molybdenum	mg/L	0.00005	<0.00005
Nickel	mg/L	0.0005	<0.0005
Potassium	mg/L	0.05	<0.05
Rubidium	mg/L	0.0002	<0.0002
Selenium	mg/L	0.00005	<0.00005
Silicon	mg/L	0.1	<0.1
Silver	mg/L	0.00001	<0.00001
Sodium	mg/L	0.05	<0.05
Strontium	mg/L	0.0002	<0.0002
Sulphur	mg/L	0.5	<0.5
Tellurium	mg/L	0.0002	<0.0002
Thallium	mg/L	0.00001	<0.00001
Thorium	mg/L	0.0001	<0.0001
Tin	mg/L	0.0001	<0.0001
Titanium	mg/L	0.0003	<0.0003
Tungsten	mg/L	0.0001	<0.0001
Uranium	mg/L	0.00001	<0.00001
Vanadium	mg/L	0.0005	<0.0005
Zinc	mg/L	0.003	<0.003
Zirconium	mg/L	0.0002	<0.0002
Dissolved Metals			
Aluminum	mg/L	0.001	<0.001
Antimony	mg/L	0.0001	<0.0001
Arsenic	mg/L	0.0001	<0.0001
Barium	mg/L	0.0001	<0.0001

Table D-2: Field Blank Results for the Surveillance Network Program at Damoti Lake, 20 June 2023

Parameter	Unit	Detection Limit	Field Blank (SNP 5-11)
Beryllium	mg/L	0.00002	<0.00002
Bismuth	mg/L	0.00005	<0.00005
Boron	mg/L	0.01	<0.01
Cadmium	mg/L	0.000005	<0.000005
Cesium	mg/L	0.00001	<0.00001
Chromium	mg/L	0.0005	<0.0005
Cobalt	mg/L	0.0001	<0.0001
Copper	mg/L	0.0002	<0.0002
Iron	mg/L	0.01	<0.01
Lead	mg/L	0.00005	<0.00005
Lithium	mg/L	0.001	<0.001
Manganese	mg/L	0.0001	<0.0001
Molybdenum	mg/L	0.00005	<0.00005
Nickel	mg/L	0.0005	<0.0005
Rubidium	mg/L	0.0002	<0.0002
Selenium	mg/L	0.00005	<0.00005
Silicon	mg/L	0.05	<0.05
Silver	mg/L	0.00001	<0.00001
Strontium	mg/L	0.0002	<0.0002
Sulphur	mg/L	0.5	<0.5
Tellurium	mg/L	0.0002	<0.0002
Thallium	mg/L	0.00001	<0.00001
Thorium	mg/L	0.0001	<0.0001
Tin	mg/L	0.0001	<0.0001
Titanium	mg/L	0.0003	<0.0003
Tungsten	mg/L	0.0001	<0.0001
Uranium	mg/L	0.00001	<0.00001
Vanadium	mg/L	0.0005	<0.0005
Zinc	mg/L	0.001	<0.001
Zirconium	mg/L	0.0003	<0.0003

Notes:

Bolded values are greater than five times the detection limit.

< = less than; mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; $CaCO_3$ = calcium carbonate; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorous per litre.

2.9 Travel Blank

A travel blank was prepared by the analytical laboratory and accompanied the field team during travel to/from the site and sampling activities. Results for the travel blank sample are summarized in Table D-3. All parameter

concentrations were less than five times the DL, indicating low potential for contamination during sample handling, transport, and storage.

Table D-3: Travel Blank Results for the Surveillance Network Program at Damoti Lake, 20 June 2023

Parameter	Unit	Detection Limit	Travel Blank
Conventional Parameters			
pH	unitless	0.1	5.4
Specific conductivity	µS/cm	2	<2
Hardness, as $CaCO_3$	mg/L	0.5	<0.5
Total alkalinity, as $CaCO_3$	mg/L	2	<2
Total dissolved solids	mg/L	10	<10
Total suspended solids	mg/L	1	<1
Total organic carbon	mg/L	0.5	<0.5
Dissolved organic carbon	mg/L	0.5	<0.5
Turbidity	NTU	0.1	<0.1
Total acidity	mg/L	2	2
Major Ions			
Bromide	mg/L	0.05	<0.05
Calcium	mg/L	0.05	<0.05
Chloride	mg/L	0.5	<0.5
Fluoride	mg/L	0.02	<0.02
Magnesium	mg/L	0.005	<0.005
Potassium	mg/L	0.05	<0.05
Sodium	mg/L	0.05	<0.05
Sulphate	mg/L	0.3	<0.3
Silica	mg/L	0.5	<0.5
Nutrients			
Nitrate	mg-N/L	0.005	<0.005
Nitrite	mg-N/L	0.001	<0.001
Total ammonia	mg-N/L	0.005	<0.005
Total phosphorus	mg-P/L	0.002	<0.002
Dissolved phosphorus	mg-P/L	0.05	<0.05
Total Metals			
Aluminum	mg/L	0.003	<0.003
Antimony	mg/L	0.0001	<0.0001
Arsenic	mg/L	0.0001	<0.0001
Barium	mg/L	0.0001	<0.0001
Beryllium	mg/L	0.00002	<0.00002
Bismuth	mg/L	0.00005	<0.00005
Boron	mg/L	0.01	<0.01
Cadmium	mg/L	0.000005	<0.000005

Table D-3: Travel Blank Results for the Surveillance Network Program at Damoti Lake, 20 June 2023

Parameter	Unit	Detection Limit	Travel Blank
Calcium	mg/L	0.05	<0.05
Cesium	mg/L	0.00001	<0.00001
Chromium	mg/L	0.0005	<0.0005
Cobalt	mg/L	0.0001	<0.0001
Copper	mg/L	0.0005	<0.0005
Iron	mg/L	0.01	<0.01
Lead	mg/L	0.00005	<0.00005
Lithium	mg/L	0.001	<0.001
Magnesium	mg/L	0.005	<0.005
Manganese	mg/L	0.0001	<0.0001
Mercury	mg/L	0.0000005	0.00000054
Molybdenum	mg/L	0.00005	<0.00005
Nickel	mg/L	0.0005	<0.0005
Potassium	mg/L	0.05	<0.05
Rubidium	mg/L	0.0002	<0.0002
Selenium	mg/L	0.00005	<0.00005
Silicon	mg/L	0.1	<0.1
Silver	mg/L	0.00001	<0.00001
Sodium	mg/L	0.05	<0.05
Strontium	mg/L	0.0002	<0.0002
Sulphur	mg/L	0.5	<0.5
Tellurium	mg/L	0.0002	<0.0002
Thallium	mg/L	0.00001	<0.00001
Thorium	mg/L	0.0001	<0.0001
Tin	mg/L	0.0001	<0.0001
Titanium	mg/L	0.0003	<0.0003
Tungsten	mg/L	0.0001	<0.0001
Uranium	mg/L	0.00001	<0.00001
Vanadium	mg/L	0.0005	<0.0005
Zinc	mg/L	0.003	<0.003
Zirconium	mg/L	0.0002	<0.0002
Dissolved Metals			
Aluminum	mg/L	0.001	<0.001
Antimony	mg/L	0.0001	<0.0001
Arsenic	mg/L	0.0001	<0.0001
Barium	mg/L	0.0001	<0.0001
Beryllium	mg/L	0.00002	<0.00002
Bismuth	mg/L	0.00005	<0.00005

Table D-3: Travel Blank Results for the Surveillance Network Program at Damoti Lake, 20 June 2023

Parameter	Unit	Detection Limit	Travel Blank
Boron	mg/L	0.01	<0.01
Cadmium	mg/L	0.000005	<0.000005
Cesium	mg/L	0.00001	<0.00001
Chromium	mg/L	0.0005	<0.0005
Cobalt	mg/L	0.0001	<0.0001
Copper	mg/L	0.0002	<0.0002
Iron	mg/L	0.01	<0.01
Lead	mg/L	0.00005	<0.00005
Lithium	mg/L	0.001	<0.001
Manganese	mg/L	0.0001	<0.0001
Molybdenum	mg/L	0.00005	<0.00005
Nickel	mg/L	0.0005	<0.0005
Rubidium	mg/L	0.0002	<0.0002
Selenium	mg/L	0.00005	<0.00005
Silicon	mg/L	0.05	<0.05
Silver	mg/L	0.00001	<0.00001
Strontium	mg/L	0.0002	<0.0002
Sulphur	mg/L	0.5	<0.5
Tellurium	mg/L	0.0002	<0.0002
Thallium	mg/L	0.00001	<0.00001
Thorium	mg/L	0.0001	<0.0001
Tin	mg/L	0.0001	<0.0001
Titanium	mg/L	0.0003	<0.0003
Tungsten	mg/L	0.0001	<0.0001
Uranium	mg/L	0.00001	<0.00001
Vanadium	mg/L	0.0005	<0.0005
Zinc	mg/L	0.001	<0.001
Zirconium	mg/L	0.0003	<0.0003

Notes:

< = less than; mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; $CaCO_3$ = calcium carbonate; NTU = nephelometric turbidity units; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorous per litre.

3.0 TOXICITY

The QA/QC results for the acute toxicity test results at SNP 5-6 are as follows:

- Samples were received in good condition.
- Tests were initiated within the recommended holding time, i.e., five days from sample collection for acute tests.
- The acute toxicity sample was outside of the recommended temperature range of 4°C ± 3°C upon receipt at Nautilus Environmental (9.4°C). The temperature variation is considered minimal and is not uncommon, particularly during spring/summer sampling programs. Because the constituents of primary interest in the sample (i.e., metals and components of total dissolved solids) are not readily degraded or strongly influenced by temperature, these temporary temperature changes are not expected to affect the test results or interpretations.
- Health culture criteria were met for all test species.
- Water quality data were within acceptable ranges per standard protocols for each test species.
- Test acceptability for laboratory control performance was met in all tests (Table D-4).
- Results of the *Daphnia magna* reference toxicant test were within acceptable ranges per the standard protocol. The Rainbow Trout reference toxicant survival LC_{50}[1] result (3.16 g/L potassium chloride [KCl]) was above two standard deviations (SDs) of the historical mean (3.91 g/L KCl). The result was outside the warning range (3.23 to 4.73 g/L KCl) but remained within three SDs. Nautilus Environmental investigated and confirmed that all testing and culturing procedures were followed appropriately, concluding that the result falls within the range of negative control variability (i.e., one result out of 20 will fall outside the warning range by chance alone). Thus, the sensitivity of the organisms used in these tests was considered appropriate.

Table D-4: Test Validity and Quality Assurance Results for SNP 5-6 Acute Toxicity Tests in Laboratory Control Water, June 2023

Test Species	Acceptable Control Criteria	SNP 5-6
		20 June 2023
***Oncorhynchus mykiss* (Rainbow Trout)**		
Mean Control Mortality and Abnormal Behaviour	≤10%	0%
***Daphnia magna* (water flea)**		
Mean Control Mortality and Immobility	≤10%	0%

4.0 SUMMARY

The QA/QC assessment of the data collected during the 20 June 2023 sampling event indicated limited potential for contamination during sampling, handling, or transport. Duplicate sample results indicate that intrastation variability was low (i.e., sampling precision was high). Deviations in the acute toxicity tests for SNP 5-6 were minor and not expected to affect data quality. Overall, the data are considered adequate to address the objectives of the program.

[1] LC_{50} = percent concentration that results in a lethal effect to 50% of the test population.

5.0 REFERENCES

APHA (American Public Health Association). 2012. Standard Methods for the Examination of Water and Wastewater. 22nd Edition, with updates to 2015. Washington, D.C.

Dang C. 2015. ALS Laboratory Group, Environmental Division. Personal Communication at ALS Vancouver, 11 February 2015.

Weiner ER. 2000. Applications of Environmental Chemistry: A Practical Guide for Environmental Professionals. Lewis Publishers, Boca Raton, FL. 288 pp.

WLWB (Wek'èezhìı Land and Water Board). 2023. Type A Water Licence W2021L2-0004. Issued 13 January 2023.

wsp.com

REPORT

Damoti Lake Surveillance Network Program

Results From September 2023 Monitoring Event

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Submitted by:

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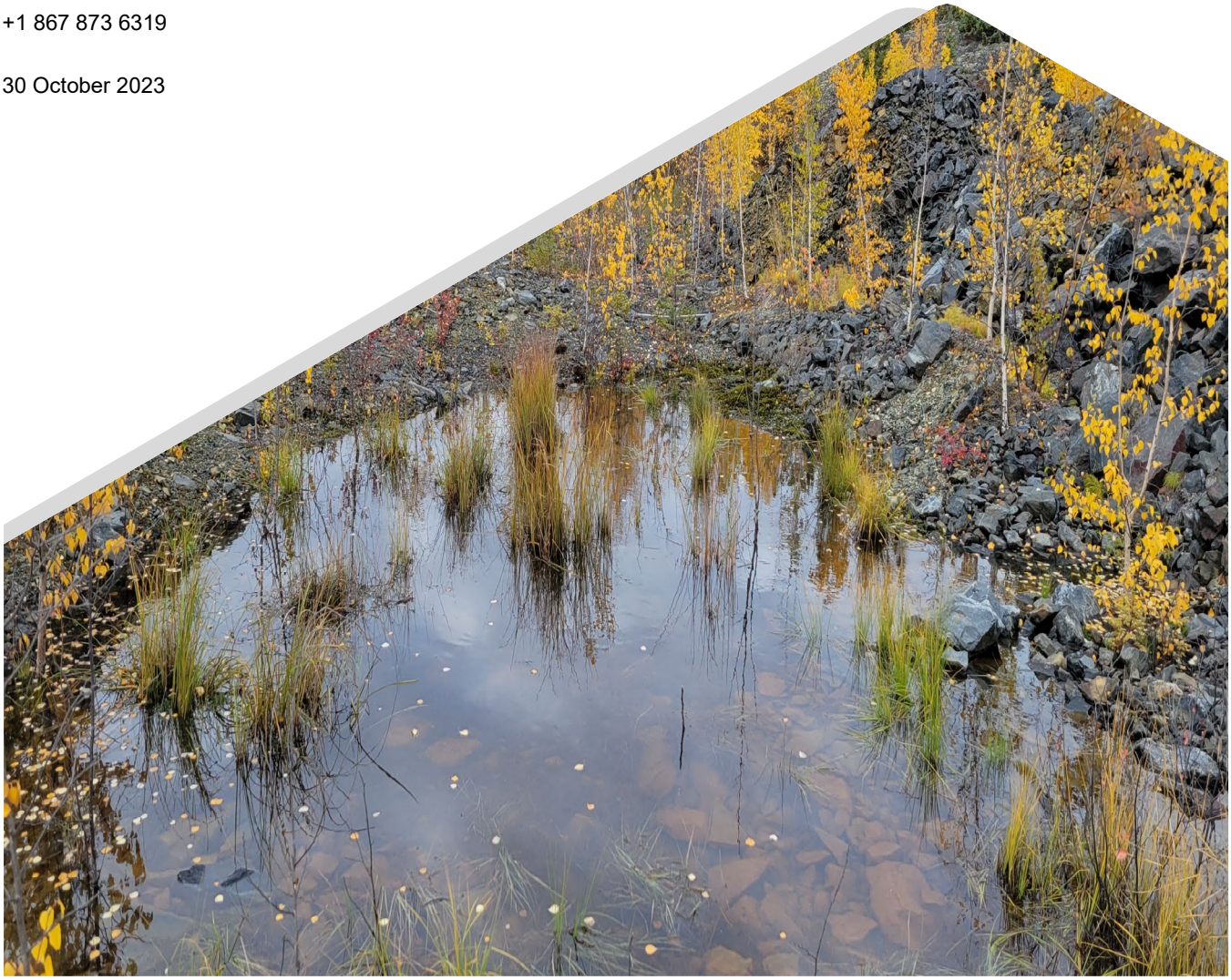
30 October 2023



Distribution List

1 copy Nighthawk Gold Corporation

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Table of Contents

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

The Damoti Lake Site (Damoti) is located 200 km north of Yellowknife in the Northwest Territories (NT), within the Wek'èezhìı co-management land boundaries. Nighthawk Gold Corporation (Nighthawk) currently holds the leases to Damoti. WSP Canada Inc. (WSP), carried out the Surveillance Network Program (SNP) monitoring on behalf of Nighthawk on 20 September 2023, to meet the Type A Water Licence W2021L2-0004 (Water Licence) requirements (WLWB 2023). This report summarizes the results of the September 2023 SNP field program.

2.0 METHODS

2.1 Sampling Locations

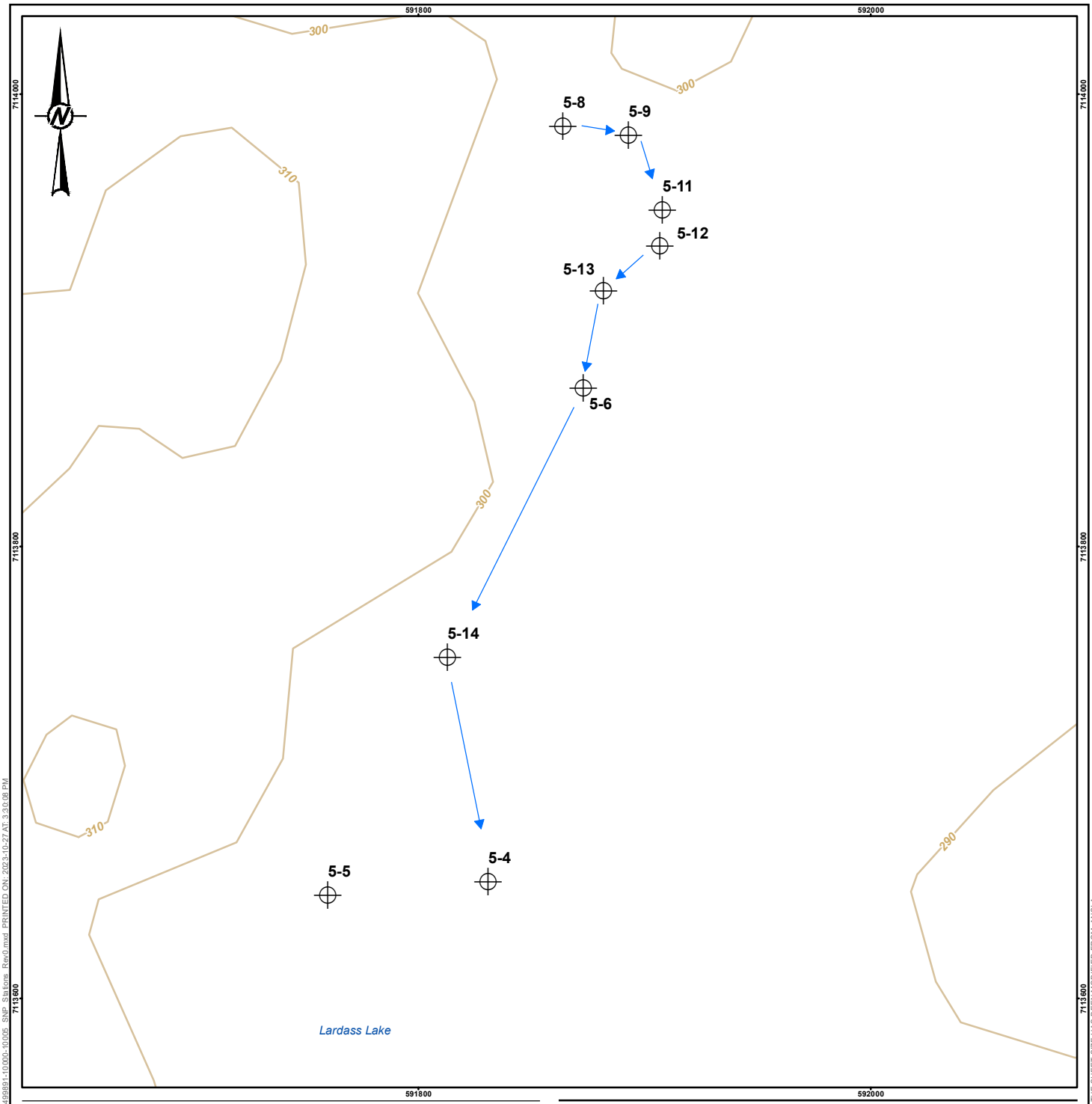
2.1.1 Water Licence Surveillance Network Program

In situ measurements and surface water grab samples were collected from nine SNP stations on 20 September 2023 (Table 2, Figure 1 and Figure 2, Appendix A).

Table 1: Surveillance Network Program Stations Sampled on 20 September 2023

Station[a]	Location[b]	UTM Coordinates [c]	
		Easting (m)	Northing (m)
SNP 5-4	Inflow from wetlands into Lardass Lake	591819	7113643
SNP 5-5	Lardass Lake	591759	7113637
SNP 5-6	Runoff from ore rock pile	591878	7113874
SNP 5-8	Damoti Lake site decline ramp (water pooled at entrance)	591857	7113979
SNP 5-9	Pool of standing water immediately west of waste rock pile	591895	7113984
SNP 5-11	Pool of standing water next to waste rock/ore stockpiles	591905	7113949
SNP 5-12	Pool of standing water in rock pile area	591909	7113937
SNP 5-13	Pool of standing water in waste rock/ore pile area	591886	7113922
SNP 5-14[d]	Flow pathway between the rock/ore pile area and Lardass Lake	591822	7113757

Notes:
a) SNP 5-7 and SNP 5-10 are not part of the program as per the Water Licence (WLWB 2023). SNP 5-1, SNP 5-2, SNP 5-3, and SNP 5-15 are currently inactive based on-site conditions. SNP 5-1 and SNP 5-2 were not sampled because minewater was not being discharged from the adit into the settling pond, SNP 5-3 was not sampled because water was not being pumped for camp use, and SNP 5-15 was not sampled because no artesian aquifers have been encountered.
b) Photographs of stations visited during the September 2023 field program are provided in Appendix A.
c) UTM coordinates are in NAD83, Zone 11W.
d) Previously referred to as FB-100.
SNP = Surveillance Network Program; UTM = Universal Transverse Mercator; m = metres.



LEGEND

- SNP SAMPLING LOCATION
- ELEVATION CONTOUR (m)
- FLOW PATH

0 50 100

1:2,500 METRES

REFERENCE(S)

1. BACKGROUND IMAGERY OBTAINED FROM BING MAPS FOR ARCGIS PUBLISHED BY MICROSOFT CORPORATION, REDMOND, WA.
PROJECTION: UTM ZONE 11 DATUM: NAD83

CLIENT

PROJECT
DAMOTI LAKE SNP SEPTEMBER 2023

TITLE
DAMOTI LAKE SURVEILLANCE NETWORK PROGRAM (SNP) STATIONS

[redacted]

YYYY-MM-DD	2023-10-27
DESIGNED	SP
PREPARED	NB
REVIEWED	MI
APPROVED	KS

PROJECT NO.	PHASE/TASK	REV.	FIGURE
21499891	10,000.10,005	0	1

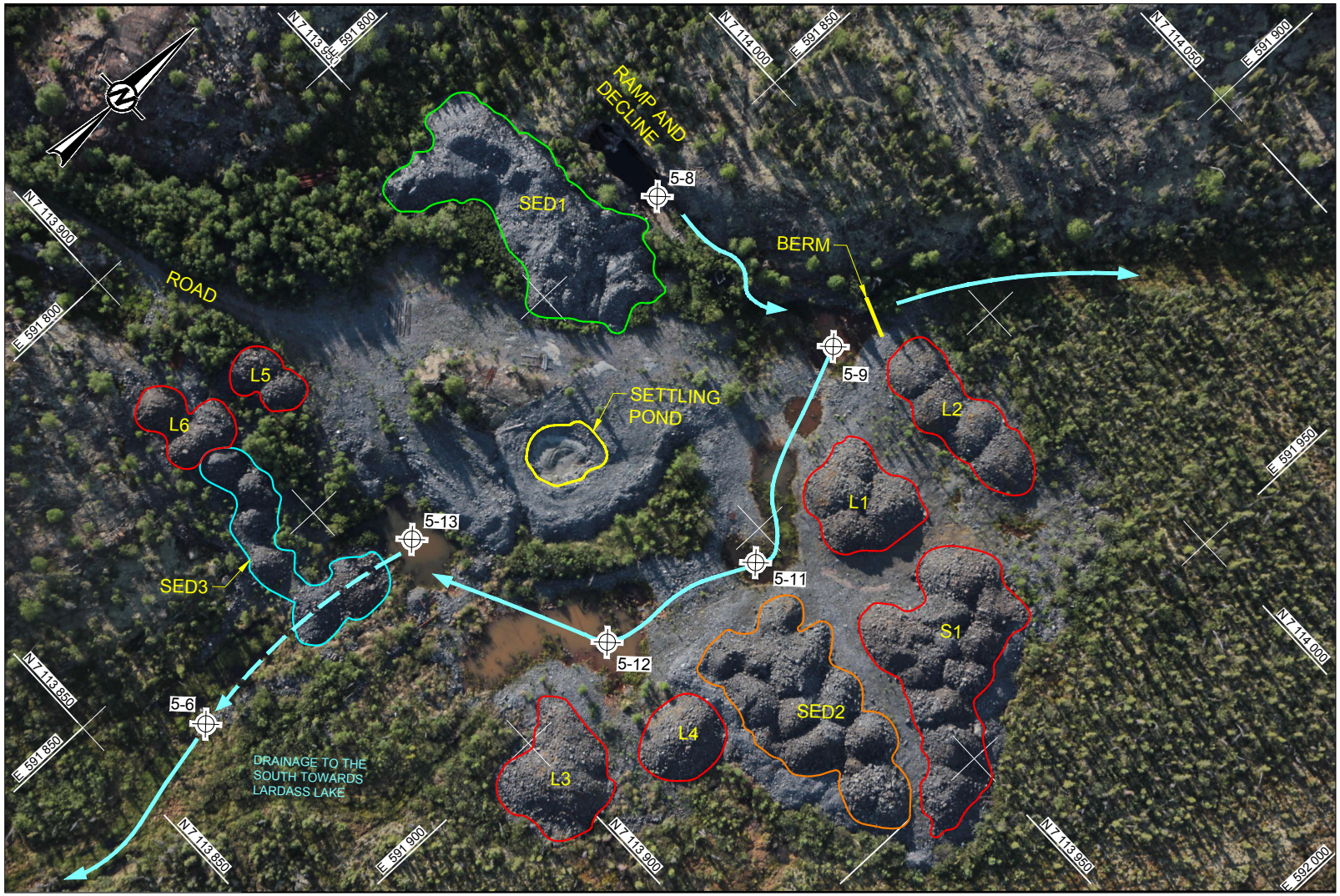
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

25mm

0

PATH: I:\CLIENTS\NIGHTHAWK GOLD\21499891\Mapping\Products\General\SNP September 2023\Fig 1 21499891-10000-10005 SNP Stations Rev0.mxd PRINTED ON: 2023-10-27 AT: 3:30:08 PM

Last Edited By: asohrevardi Date: 2023-10-30 Time:12:07:22 PM | Printed By: ASohrevardi Date: 2023-10-30 Time:12:07:50 PM
Path: \\golder.gds\complexdata\office\Vancouver\CAD-GIS\Client\Nighthawk Gold Corporation\Damoti Lake\99_PROJECTS\21499891_2022_Damoti_SNP\10000\10005\NA\02_PRODUCTION\DWG\ | File Name: 21499891-10000-10005-002.dwg



LEGEND

- S1, L1, L2, L3, L4, L5, L6
- SED1
- SED2
- SED3
- SNP STATION
- SURFICIAL DRAINAGE PATTERNS
- GENERAL DRAINAGE PATTERNS

DOMINANT WASTE ROCK TYPE IN PILE

S = SULPHIDE BANDED IRON FORMATION
L = LOW SULPHIDE BANDED IRON FORMATION
SED = SEDIMENTARY

NOTES

1. GRID IS DISPLAYED IN NAD83 UTM ZONE 11 COORDINATES.
2. AIRPHOTO SCALE IS APPROXIMATE.

REFERENCE

JUNE 2012 AIRPHOTO TAKEN BY GOLDER ASSOCIATES LTD. FIELD STAFF.

PLAN VIEW

SCALE 1:1,000

0 25 50
1:1,000 METRES

CLIENT: NIGHTHAWK GOLD

CONSULTANT: wsp

YYYY-MM-DD	2023-10-30
DESIGNED	SP
PREPARED	JEF
REVIEWED	MI
APPROVED	KS

PROJECT
DAMOTI LAKE SNP SEPTEMBER 2023

TITLE
SITE DRAINAGE PATTERNS AT THE DAMOTI LAKE ROCK PILE AREA

PROJECT NO.	PHASE/TASK	REV.	FIGURE
21499891	10,000/10,005	0	2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
0 25 mm

2.2 Sampling Methods

2.2.1 Field Measurements

Prior to collecting surface water grab samples, ambient wind and weather conditions were recorded along with in-situ measurements of the following water quality parameters:

- water temperature (degrees Celsius [°C])
- pH
- dissolved oxygen (DO; milligrams per litre [mg/L] and percent saturation [%])
- specific conductivity (microsiemens per centimetre [µS/cm])

An AquaTROLL multiparameter water quality meter was used for the in-situ measurements. An Oakton 30 handheld pH meter was used to confirm field measurements. Water depth was measured at each sampling location. Flow and volume measurements were not recorded because water was not being pumped for camp or industrial use.

2.2.2 Water Quality Sampling

Surface water quality grab samples were collected in accordance with WSP's technical procedures for surface water sample collection, using plastic and glass bottles depending on the parameter or parameter group being sampled. Sample bottles were submerged approximately 0.3 m below the water surface at each SNP station, except at the following stations where water depths were <0.3 m:

- SNP 5-14: A syringe was used to collect water from the surface and fill the sample bottle.
- SNP 5-4: The sample bottle was submerged approximately 0.2 m below the water surface.

Water quality samples were field-filtered and preserved according to laboratory instructions and were kept cool until delivery to ALS Environmental (ALS) in Yellowknife, Northwest Territories. After delivery to ALS in Yellowknife, samples were shipped to Burnaby, British Columbia, for analysis.

2.3 Laboratory Analyses

Surface water samples were analyzed for the parameters outlined in Table 2. These parameters are either required by the SNP annexed to the Water Licence or were analyzed to support the Interim Closure and Reclamation Plan and to develop the historical dataset for the aquatic receiving environment.

Table 2: Parameter List for Each Surveillance Network Program Station

Station	Parameters
SNP 5-4	Conventional (pH, conductivity, hardness, total suspended solids, total dissolved solids, and dissolved organic carbon), major ions (calcium, magnesium, potassium, sodium, and sulphate), nutrients (nitrate, total ammonia, low-level total phosphorus, and dissolved phosphorus), total metals[(a)] (plus total mercury), dissolved metals[(a)]
SNP 5-5	Conventional (pH, conductivity, hardness, total suspended solids, total dissolved solids, and dissolved organic carbon), major ions (calcium, magnesium, potassium, sodium, and sulphate), nutrients (nitrate, total ammonia, and low-level total phosphorus), total metals[(a)] (plus total mercury)

Table 2: Parameter List for Each Surveillance Network Program Station

Station	Parameters
SNP 5-6	Conventional (pH, conductivity, hardness, total suspended solids, and total dissolved solids), major ions (calcium, magnesium, potassium, sodium, and sulphate), nutrients (nitrate, total ammonia, low-level total phosphorus, and dissolved phosphorus), total metals[(a)], dissolved metals[(a)]
SNP 5-8	Conventional (pH, conductivity, hardness, total suspended solids, and total dissolved solids), major ions (calcium, magnesium, potassium, sodium, and sulphate), nutrients (nitrate, total ammonia, and low-level total phosphorus), total metals[(a)]
SNP 5-9	
SNP 5-11	
SNP 5-12	
SNP 5-13	
SNP 5-14	Conventional (pH, conductivity, hardness, total suspended solids, and total dissolved solids), major ions (calcium, magnesium, potassium, sodium, and sulphate), nutrients (nitrate, total ammonia, low-level total phosphorus, and dissolved phosphorus), total metals[(a)] (plus total mercury), dissolved metals[(a)]

Notes:

a) Total and dissolved metals include metalloids such as arsenic and non-metals such as selenium (WLWB 2023). The list of elements include: aluminum (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), cobalt (Co), copper (Cu), chromium (Cr), cesium (Cs), iron (Fe), lead (Pb), lithium (Li), manganese (Mn), molybdenum (Mo), nickel (Ni), rubidium (Rb), selenium (Se), strontium (Sr), titanium (Ti), thallium (Tl), uranium (U), vanadium (V), and zinc (Zn).

SNP = Surveillance Network Program.

2.4 Data Analysis

Analytical results from station SNP 5-6 were compared to applicable effluent quality criteria (EQC) as specified in the Water Licence, i.e., maximum average concentration and maximum concentration of any grab sample. For SNP stations at Lardass Lake (SNP 5-4 and SNP 5-5), analytical results were compared to the Canadian Council of Ministers of the Environment (CCME) guidelines for the protection of aquatic life and livestock (wildlife) health (CCME 1999 with updates) as well as the federal environmental quality guidelines (FEQG) for cobalt (ECCC 2017), strontium (ECCC 2020), and vanadium (ECCC 2016).

Laboratory pH is considered less reliable than field pH because the recommended holding time of 15 minutes cannot be met due to sample transport and shipping. Field pH values were therefore used to calculate CCME guideline ranges, where applicable.

2.5 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures and requirements are an important aspect of any field or laboratory testing program. The objective of the QA/QC program is to standardize methods such that field sampling, data entry, data analysis, and report preparation produce technically sound and scientifically defensible results.

As part of routine practices for field operations, the following QA procedures were undertaken:

- AquaTROLL water quality and Oakton pH meters were calibrated according to manufacturer recommendations prior to sample collection for the day
- field measured pH values were verified using a second pH meter at the time of sample collection

- surface water samples were collected by experienced personnel following WSP's technical procedures for surface water sample collection
- detailed field notes were recorded in a waterproof field notebook
- field data were checked at the end of the sampling event for completeness and accuracy
- chain-of-custody (COC) forms were used to track all sample shipments from the field to the analytical laboratory

The following QC samples were collected:

- a duplicate sample at SNP 5-6 to assess variability potentially introduced during sample collection, sample handling, and laboratory analytical procedures
- a field blank at SNP 5-11 to assess potential contamination during sample collection
- a travel blank to determine whether any contamination may have occurred during transportation, storage, or analysis

The analytical laboratory, ALS, also has their own QA/QC programs, including laboratory replicate samples, sample blanks and control standards.

3.0 RESULTS

3.1 Water Quality and Acute Toxicity

Water quality results from the September 2023 program are presented in Appendix B. Ambient weather at the time of sampling included an air temperature of approximately 8°C, cloud coverage ranging from 90% to 100%, and calm conditions with wind from the north.

Water quality results for station SNP 5-6 are provided in Table B-1, including comparisons to applicable Water Licence limits (WLWB 2023). Results from Lardass Lake, SNP 5-4 and SNP 5-5 are provided in Table B-2, including comparisons to applicable CCME guidelines (CCME 1999 with updates). Results from the remaining SNP stations are presented in Table B-3. Analytical results provided by the laboratory (i.e., the Certificate of Analysis) for the September 2023 SNP sampling event are included in Appendix C.

At station SNP 5-6, parameter concentrations were within Water Licence limits. At Lardass Lake, SNP 5-4 and SNP 5-5, parameter concentrations were below the CCME acute and chronic guidelines for the protection of aquatic life, wildlife health guidelines, and applicable FEQG (Appendix B, Table B-2), except for total iron at SNP 5-4 (Table 3).

Iron is an abundant element in the earth's crust and is typically sorbed to the sediment or suspended particulate matter within aquatic environments (McNeely et al. 1979). The total suspended solids concentration in the sample collected at SNP 5-4 was similar to other stations at the site, indicating that the sample was likely not compromised by the incorporation of sediment during sampling. However, low water levels were noted across the site, particularly at SNP 5-4, which had a total depth of approximately 0.3 m at the time of sampling at the established SNP station which may have contributed to observed results (Appendix A, Photograph A-1).

Table 3: Total Iron Concentrations at Lardass Lake Stations, September 2022 to September 2023

Parameter	Unit	CCME Chronic Guideline	Station	
			SNP 5-4	SNP 5-5
Total iron				
September 2022	mg/L	0.30	0.19	0.046
June 2023			0.06	0.049
September 2023			**0.42**	0.056

Notes:

Bolded value is above the CCME guideline for total iron (CCME 1999).

CCME = Canadian Council of Ministers of the Environment; mg/L = milligrams per litre; SNP = Surveillance Network Program.

3.2 Quality Assurance/Quality Control

The QA/QC assessment of the data collected during the 20 September 2023 sampling event indicated limited potential for contamination during sampling, transport, and laboratory analysis (Appendix D). Duplicate sample results indicated that intrastation variability was low (i.e., sampling precision was high). Parameter concentrations were consistently less than five times the detection limit in the field and travel blanks. Overall, the data are considered adequate to address the objectives of the program.

4.0 CLOSURE

We trust the above information satisfies the Water Licence requirements. If you have any questions or require additional information, please contact the undersigned.

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https://golderassociates.sharepoint.com/sites/154805/project files/5 technical work/04_snp/04_sept 2023 program/rev0/21499891_damoti lake september 2023 snp report_rev0.docx

5.0 REFERENCES

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ECCC (Environment and Climate Change Canada). 2016. Federal Environmental Quality Guidelines – Vanadium. Available at: https://www.ec.gc.ca/ese-ees/48D3A655-0F43-4BCD-905D-631B1402B61A/FEQG_Vanadium_EN.pdf.

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ECCC. 2020. Federal Environmental Quality Guidelines – Strontium. Available at: https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/federal-environmental-quality-guidelines-strontium.html.

McNeely RN, Neimanis VP, and Dwyer L. 1979. Water Quality Sourcebook: A Guide to Water Quality Parameters. Second Printing. Ottawa CA: Inland Waters Directorate, Water Quality Branch.

WLWB (Wek'èezhìı Land and Water Board). 2023. Type A Water Licence W2021L2-0004. Issued 13 January 2023.

APPENDIX A

Site Photographs

Photograph A-1: SNP 5-4, Inflow from Wetlands into Lardass Lake. Photo Orientation: South

Photograph A-2: SNP 5-5, Lardass Lake. Photo Orientation: South.

Photograph A-3: SNP 5-6, Combined Runoff from Damoti Rock Piles. Photo Orientation: West.

Photograph A-4: **SNP 5-8, Damoti Lake Site Decline Ramp (Minewater Pooled at Entrance of Adit). Photo Orientation: Northwest.**

Photograph A-5: SNP 5-9, Pool of Standing Water Immediately West of Waste Rock Pile. Photo Orientation: North.

Photograph A-6: **SNP 5-11, Pool of Standing Water Between Waste Rock/Ore Stockpiles. Photo Orientation: North.**

Photograph A-7: SNP 5-12, Pool of Standing Water in Rock Pile Area. Photo Orientation: West.

Photograph A-8: SNP 5-13, Pool of Standing Water in Rock Pile Area. Photo Orientation: South.

Photograph A-9: **SNP 5-14, flow pathway between the rock/ore pile area and Lardass Lake. Photo Orientation: Southwest.**

APPENDIX B

Water Quality Data

Table B-1: Surveillance Network Program Results at SNP 5-6 Compared to Water Licence Limits, 20 September 2023

Parameter	Unit	Maximum Concentration of Any Grab Sample[a]	Maximum Average Concentration[b]	Station
				SNP 5-6
Field Measured Parameters				
pH	unitless	5.5 - 9.5	-	6.9
Conductivity	µS/cm	-	-	384
Temperature	°C	-	-	8.3
Dissolved oxygen	mg/L	-	-	5.6
Dissolved oxygen	%	-	-	48
Conventional Parameters				
pH	unitless	5.5 - 9.5	-	7.2
Conductivity	µS/cm	-	-	392
Hardness, as $CaCO_3$	mg/L	-	-	179[c]
Total suspended solids	mg/L	30	15	4.9
Total dissolved solids (calculated)	mg/L	-	-	281
Major Ions				
Calcium	mg/L	-	-	44
Magnesium	mg/L	-	-	17
Potassium	mg/L	-	-	4.3
Sodium	mg/L	-	-	6.3
Sulphate	mg/L	-	-	68
Nutrients				
Nitrate	mg-N/L	-	-	<0.005
Total ammonia	mg-N/L	-	12	0.007
Total phosphorus	mg-P/L	-	-	0.042
Dissolved phosphorus	mg-P/L	-	-	<0.05
Total Metals				
Aluminum	mg/L	-	-	0.051
Antimony	mg/L	-	-	<0.0001
Arsenic	mg/L	0.2	0.1	0.00088
Barium	mg/L	-	-	0.014
Beryllium	mg/L	-	-	<0.00002
Bismuth	mg/L	-	-	<0.00005
Boron	mg/L	-	-	0.026
Cadmium	mg/L	0.002	0.001	0.0000088
Calcium	mg/L	-	-	44
Cesium	mg/L	-	-	0.0012
Chromium	mg/L	-	-	<0.0005
Cobalt	mg/L	-	-	0.0014
Copper	mg/L	0.02	0.01	0.0013
Iron	mg/L	-	-	1.4
Lead	mg/L	0.04	0.02	0.00011
Lithium	mg/L	-	-	0.015
Magnesium	mg/L	-	-	17
Manganese	mg/L	-	-	0.39
Molybdenum	mg/L	-	-	<0.00005
Nickel	mg/L	0.5	0.25	0.011
Potassium	mg/L	-	-	4.2
Rubidium	mg/L	-	-	0.0090
Selenium	mg/L	-	-	0.000057
Silicon	mg/L	-	-	1.8
Silver	mg/L	-	-	<0.00001
Sodium	mg/L	-	-	6.4
Strontium	mg/L	-	-	0.14
Sulphur	mg/L	-	-	26
Tellurium	mg/L	-	-	<0.0002
Thallium	mg/L	-	-	<0.00001
Thorium	mg/L	-	-	<0.0001
Tin	mg/L	-	-	<0.0001
Titanium	mg/L	-	-	0.00061
Tungsten	mg/L	-	-	<0.0001
Uranium	mg/L	-	-	0.00019
Vanadium	mg/L	-	-	<0.0005
Zinc	mg/L	0.2	0.1	<0.003
Zirconium	mg/L	-	-	0.00023

Table B-1: Surveillance Network Program Results at SNP 5-6 Compared to Water Licence Limits, 20 September 2023

Parameter	Unit	Maximum Concentration of Any Grab Sample[(a)]	Maximum Average Concentration[(b)]	Station
				SNP 5-6
Dissolved Metals				
Aluminum	mg/L	-	-	0.028
Antimony	mg/L	-	-	<0.0001
Arsenic	mg/L	-	-	0.00064
Barium	mg/L	-	-	0.012
Beryllium	mg/L	-	-	<0.00002
Bismuth	mg/L	-	-	<0.00005
Boron	mg/L	-	-	0.024
Cadmium	mg/L	-	-	<0.000005
Cesium	mg/L	-	-	0.0011
Chromium	mg/L	-	-	<0.0005
Cobalt	mg/L	-	-	0.0011
Copper	mg/L	-	-	0.00091
Iron	mg/L	-	-	0.78
Lead	mg/L	-	-	<0.00005
Lithium	mg/L	-	-	0.014
Manganese	mg/L	-	-	0.34
Molybdenum	mg/L	-	-	0.000052
Nickel	mg/L	-	-	0.0099
Rubidium	mg/L	-	-	0.0088
Selenium	mg/L	-	-	0.000061
Silicon	mg/L	-	-	1.6
Silver	mg/L	-	-	<0.00001
Strontium	mg/L	-	-	0.13
Sulphur	mg/L	-	-	23
Tellurium	mg/L	-	-	<0.0002
Thallium	mg/L	-	-	<0.00001
Thorium	mg/L	-	-	<0.0001
Tin	mg/L	-	-	<0.0001
Titanium	mg/L	-	-	0.00030
Tungsten	mg/L	-	-	<0.0001
Uranium	mg/L	-	-	0.00018
Vanadium	mg/L	-	-	<0.0005
Zinc	mg/L	-	-	0.0012
Zirconium	mg/L	-	-	<0.0003

Notes:
a) Maximum concentration of any grab sample as per Type A Water Licence W2021L2-0004 (WLWB 2023).
b) Maximum average concentration as per Type A Water Licence W2021L2-0004 (WLWB 2023).
c) Hardness was calculated using the following formula: hardness [mg equivalent $CaCO_3$/L] = 2.497[calcium in mg/L] + 4.118[magnesium in mg/L].

WLWB = Wek'èezhii Land and Water Board; SNP = Surveillance Network Program; $CaCO_3$ = calcium carbonate; µS/cm = microsiemens per centimetre; mg/L = milligrams per litre; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorus per litre; % = percent; °C = degrees Celsius; < = less than; ≥ = greater than or equal to; - = no Water Licence limit.

Reference:
WLWB (Wek'èezhii Land and Water Board). 2023.Type A Water Licence W2021L2-0004. Issued 13 January 2023.

Table B-2: Surveillance Network Program Sample Results at Lardass Lake Compared to CCME Guidelines, 20 September 2023

Parameter	Unit	Guidelines:			Station	
		For the Protection of Aquatic Life		Wildlife Health (Livestock)	SNP 5-4	SNP 5-5
		Acute	Chronic			
Field Measured Parameters						
pH	unitless	-	6.5 - 9.0	-	7.3	7.4
Conductivity	µS/cm	-	-	-	144	143
Temperature	°C	-	-	-	9.9	10
Dissolved oxygen	mg/L	-	6.5	-	11	10
Dissolved oxygen	%	-	-	-	94	95
Conventional Parameters						
pH	unitless	-	6.5 - 9.0	-	7.4	7.7
Conductivity	µS/cm	-	-	-	143	133
Hardness, as $CaCO_3$	mg/L	-	-	-	66	61[(a)]
Total suspended solids	mg/L	-	-	-	12	9.6
Total dissolved solids (calculated)	mg/L	-	-	3000	130	123
Dissolved organic carbon	mg/L	-	-	-	20	20
Major Ions						
Calcium	mg/L	-	-	1,000	18	17
Magnesium	mg/L	-	-	-	5.1	4.4
Potassium	mg/L	-	-	-	1.4	1.4
Sodium	mg/L	-	-	-	2.9	2.8
Sulphate	mg/L	-	-	1,000	21	14
Nutrients						
Nitrate	mg-N/L	124	2.9	-	<0.005	<0.005
Total ammonia	mg-N/L	-	3.3 - 4.3[(b)]	-	0.062	0.026
Total phosphorus	mg-P/L	-	-	-	0.014	0.016
Dissolved phosphorus	mg/-P/L	-	-	-	<0.05	-
Total Metals						
Aluminum	mg/L	-	0.10[(c)]	5.0	0.072	0.062
Antimony	mg/L	-	-	-	<0.0001	<0.0001
Arsenic	mg/L	-	0.005	0.025	0.00029	0.00027
Barium	mg/L	-	-	-	0.013	0.0090
Beryllium	mg/L	-	-	0.10	<0.00002	<0.00002
Bismuth	mg/L	-	-	-	<0.00005	<0.00005
Boron	mg/L	29	1.5	5.0	0.012	0.011
Cadmium	mg/L	0.0013 - 0.0014[(d)]	0.00011 - 0.00011[(d)]	0.080	<0.000005	<0.000005
Calcium	mg/L	-	-	-	18	17
Cesium	mg/L	-	-	-	0.000028	0.000031
Chromium	mg/L	-	0.001[(e)]	0.050	<0.0005	<0.0005
Cobalt	mg/L	-	0.00080 - 0.00083[(f)]	1.0	0.00012	0.00010
Copper	mg/L	-	0.002[(d)]	0.50	0.00057	0.00065
Iron	mg/L	-	0.30	-	**0.42**	0.056
Lead	mg/L	-	0.0017 - 0.0019[(d)]	0.10	<0.00005	<0.00005
Lithium	mg/L	-	-	-	0.0032	0.0025
Magnesium	mg/L	-	-	-	5.1	4.4
Manganese	mg/L	-	-	-	0.070	0.061
Mercury	mg/L	-	0.000026	0.0030	0.0000011	0.00000082
Molybdenum	mg/L	-	0.073	0.50	0.00012	0.00013
Nickel	mg/L	-	0.066 - 0.070[(d)]	1.0	0.0012	0.0013
Potassium	mg/L	-	-	-	1.4	1.4
Rubidium	mg/L	-	-	-	0.0027	0.0025
Selenium	mg/L	-	0.001	0.05	<0.00005	<0.00005
Silicon	mg/L	-	-	-	0.72	0.30
Silver	mg/L	-	0.00025	-	<0.00001	<0.00001
Sodium	mg/L	-	-	-	3.0	2.8
Strontium	mg/L	-	-	-	0.050	0.049
Sulphur	mg/L	-	-	-	8.1	5.6
Tellurium	mg/L	-	-	-	<0.0002	<0.0002
Thallium	mg/L	-	0.0008	-	<0.00001	<0.00001
Thorium	mg/L	-	-	-	<0.0001	<0.0001
Tin	mg/L	-	-	-	<0.0001	<0.0001
Titanium	mg/L	-	-	-	0.00053	<0.0003
Tungsten	mg/L	-	-	-	<0.0001	<0.0001
Uranium	mg/L	0.033	0.015	0.20	0.00013	0.00015
Vanadium	mg/L	-	0.12[(g)]	0.10	<0.0005	<0.0005
Zinc	mg/L	-	-	50	<0.003	<0.003
Zirconium	mg/L	-	-	-	<0.0002	<0.0002

Table B-2: Surveillance Network Program Sample Results at Lardass Lake Compared to CCME Guidelines, 20 September 2023

Parameter	Unit	Guidelines:			Station	
		For the Protection of Aquatic Life		Wildlife Health (Livestock)	SNP 5-4	SNP 5-5
		Acute	Chronic			
Dissolved Metals						
Aluminum	mg/L	-	-	-	0.041	-
Antimony	mg/L	-	-	-	<0.0001	-
Arsenic	mg/L	-	-	-	0.00024	-
Barium	mg/L	-	-	-	0.013	-
Beryllium	mg/L	-	-	-	<0.00002	-
Bismuth	mg/L	-	-	-	<0.00005	-
Boron	mg/L	-	-	-	0.011	-
Cadmium	mg/L	-	-	-	<0.000005	-
Cesium	mg/L	-	-	-	0.000024	-
Chromium	mg/L	-	-	-	<0.0005	-
Cobalt	mg/L	-	-	-	<0.0001	-
Copper	mg/L	-	-	-	0.00043	-
Iron	mg/L	-	-	-	0.26	-
Lead	mg/L	-	-	-	<0.00005	-
Lithium	mg/L	-	-	-	0.0031	-
Manganese	mg/L	4.6[(d)]	0.43[(h)]	-	0.052	-
Molybdenum	mg/L	-	-	-	0.00013	-
Nickel	mg/L	-	-	-	0.0011	-
Rubidium	mg/L	-	-	-	0.0026	-
Selenium	mg/L	-	-	-	<0.00005	-
Silicon	mg/L	-	-	-	0.75	-
Silver	mg/L	-	-	-	<0.00001	-
Strontium	mg/L	-	2.5[(i)]	-	0.048	-
Sulphur	mg/L	-	-	-	7.8	-
Tellurium	mg/L	-	-	-	<0.0002	-
Thallium	mg/L	-	-	-	<0.00001	-
Thorium	mg/L	-	-	-	<0.0001	-
Tin	mg/L	-	-	-	<0.0001	-
Titanium	mg/L	-	-	-	<0.0003	-
Tungsten	mg/L	-	-	-	<0.0001	-
Uranium	mg/L	-	-	-	0.00010	-
Vanadium	mg/L	-		-	<0.0005	-
Zinc	mg/L	0.11[(j)]	0.047[(k)]	-	<0.001	-
Zirconium	mg/L	-	-	-	<0.0003	-

Notes:

a) Hardness was calculated using the following formula: hardness [mg equivalent $CaCO_3$/L] = 2.497[calcium in mg/L] + 4.118[magnesium in mg/L].

b) The ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (3.3 mg-N/L) is based on the combination of field pH (7.4) and water temperature (10°C).

c) Guideline is pH dependent. The guideline shown is based on the field pH observed in the dataset (7.3 and 7.4).

d) Guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (61 to 66 mg/L). The guideline is calculated based on the individual hardness value for each sample.

e) Guideline is for chromium VI.

f) Federal environmental quality guideline for cobalt is dependent on water hardness. The guideline shown is based on the hardness range observed in the dataset (61 to 66 mg/L; ECCC 2017).

g) Federal environmental quality guideline for vanadium (ECCC 2016).

h) The chronic dissolved manganese guideline is pH, and hardness dependent. The chronic manganese guideline (0.43 mg/L) is based on the combination of field pH (7.3) and hardness (66 mg/L).

i) Federal environmental quality guideline for strontium (ECCC 2020).

j) The acute dissolved zinc guideline is dependent on hardness and dissolved organic carbon. The acute zinc guideline (0.11 mg/L) is based on the combination of hardness (66 mg/L), and DOC (20 mg/L) (CCME 1999).

k) The chronic dissolved zinc guideline is dependent on pH, hardness, and dissolved organic carbon. The chronic zinc guideline (0.047 mg/L) is based on the combination of field pH (7.3), hardness (66 mg/L), and DOC (20.3 mg/L) (CCME 1999).

CCME = Canadian Council of Ministers of the Environment; SNP = Surveillance Network Program; µS/cm = microsiemens per centimetre; mg/L = milligrams per litre; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorus per litre; $CaCO_3$ = calcium carbonate; DOC = dissolved organic carbon; % = percent; °C = degrees Celsius; < = less than; - = no guideline or no data available.

Reference:

CCME (Canadian Council of Ministers of the Environment). 1999. Canadian Environmental Quality Guidelines 1999, with updates to 2020. Winnipeg, MB. Accessed October 2022.

ECCC (Environment and Climate Change Canada). 2016. Federal Environmental Quality Guidelines – Vanadium. Available at: https://www.ec.gc.ca/ese-ees/48D3A655-0F43-4BCD-905D-631B1402B61A/FEQG_Vanadium_EN.pdf.

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Table B-3: Surveillance Network Program Sample Results, 20 September 2023

Parameter	Unit	Stations					
		SNP 5-8	SNP 5-9	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14
Field Measured Parameters							
pH	unitless	7.1	7.3	7.7	6.9	6.8	6.7
Conductivity	µS/cm	295	623	766	574	571	236
Temperature	°C	2.5	8.6	9.0	9.4	9.7	7.7
Dissolved oxygen	mg/L	3.4	5.3	11	7.4	6.3	3.7
Dissolved oxygen	%	25	46	97	65	55	31
Conventional Parameters							
pH	unitless	7.4	7.6	7.3	7.1	7.1	7.0
Conductivity	µS/cm	297	636	795	599	584	230
Hardness, as $CaCO_3$ [(a)]	mg/L	131	310	387	277	268	103
Total suspended solids	mg/L	<1.0	8.9	2.2	3.1	6.6	127
Total dissolved solids (calculated)	mg/L	211	486	638	492	471	192
Major Ions							
Calcium	mg/L	36	80	96	66	64	26
Magnesium	mg/L	10	26.7	35.8	27.2	26.3	9.3
Potassium	mg/L	2.89	4.13	5.57	4.41	4.42	1.9
Sodium	mg/L	5.1	9.96	8.91	7.34	7.21	4.5
Sulphate	mg/L	59	185	352	246	243	48
Nutrients							
Nitrate	mg-N/L	0.022	0.0052	<0.025	0.0056	0.0055	<0.005
Total ammonia	mg-N/L	<0.005	0.066	0.075	0.028	0.020	0.0065
Total phosphorus	mg-P/L	0.0039	0.014	0.0076	0.0069	0.0086	0.033
Dissolved phosphorus	mg-P/L	-	-	-	-	-	<0.05
Total Metals							
Aluminum	mg/L	0.021	0.017	0.022	0.038	0.029	0.20
Antimony	mg/L	<0.0001	0.00040	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.00062	0.00073	0.00054	0.00058	0.00063	0.00046
Barium	mg/L	0.018	0.055	0.016	0.013	0.013	0.016
Beryllium	mg/L	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Bismuth	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Boron	mg/L	0.023	0.036	0.075	0.060	0.057	0.015
Cadmium	mg/L	0.000025	<0.000005	0.000021	0.0000066	0.0000089	0.0000057
Calcium	mg/L	36	80	96	66	64	26
Cesium	mg/L	0.00027	0.00023	0.00067	0.00100	0.0010	0.00015
Chromium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00096
Cobalt	mg/L	0.00010	0.00047	0.0013	0.0015	0.0013	0.00027
Copper	mg/L	0.0024	0.0010	0.0012	0.00086	0.00085	0.0011
Iron	mg/L	0.60	0.75	2.0	1.7	1.9	4.6
Lead	mg/L	0.00053	<0.00005	0.00017	0.000071	0.000070	0.00016
Lithium	mg/L	0.0049	0.016	0.029	0.025	0.024	0.0076
Magnesium	mg/L	10	27	36	27	26	9.8
Manganese	mg/L	0.035	0.13	0.21	0.19	0.20	0.013
Mercury	mg/L	-	-	-	-	-	0.0000028
Molybdenum	mg/L	0.0013	0.000080	<0.00005	<0.00005	<0.00005	0.00010
Nickel	mg/L	0.0048	0.011	0.021	0.017	0.016	0.0064
Potassium	mg/L	2.9	4.1	5.6	4.4	4.4	2.0
Rubidium	mg/L	0.0033	0.0090	0.013	0.0097	0.0098	0.0045
Selenium	mg/L	0.000066	0.000083	<0.00005	<0.00005	<0.00005	<0.00005
Silicon	mg/L	4.0	0.34	2.4	4.7	4.8	4.5
Silver	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium	mg/L	5.1	10.0	8.9	7.3	7.2	4.6
Strontium	mg/L	0.097	0.24	0.30	0.22	0.22	0.081
Sulphur	mg/L	21	69	129	89	87	18
Tellurium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Thallium	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Thorium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00014
Tin	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium	mg/L	<0.0003	0.00041	<0.0003	<0.0003	0.00033	<0.0075
Tungsten	mg/L	0.00082	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium	mg/L	0.0029	0.00066	0.00024	0.00011	0.00010	0.000078
Vanadium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0012
Zinc	mg/L	<0.003	<0.003	0.0040	<0.003	<0.003	<0.003
Zirconium	mg/L	<0.0002	0.00029	<0.0002	<0.0002	<0.0002	0.00031

Table B-3: Surveillance Network Program Sample Results, 20 September 2023

Parameter	Unit	Stations					
		SNP 5-8	SNP 5-9	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14
Dissolved Metals							
Aluminum	mg/L	-	-	-	-	-	0.040
Antimony	mg/L	-	-	-	-	-	<0.0001
Arsenic	mg/L	-	-	-	-	-	0.00031
Barium	mg/L	-	-	-	-	-	0.011
Beryllium	mg/L	-	-	-	-	-	<0.00002
Bismuth	mg/L	-	-	-	-	-	<0.00005
Boron	mg/L	-	-	-	-	-	0.014
Cadmium	mg/L	-	-	-	-	-	<0.000005
Cesium	mg/L	-	-	-	-	-	0.000094
Chromium	mg/L	-	-	-	-	-	<0.0005
Cobalt	mg/L	-	-	-	-	-	0.00014
Copper	mg/L	-	-	-	-	-	0.00040
Iron	mg/L	-	-	-	-	-	0.22
Lead	mg/L	-	-	-	-	-	<0.00005
Lithium	mg/L	-	-	-	-	-	0.0071
Manganese	mg/L	-	-	-	-	-	0.0050
Molybdenum	mg/L	-	-	-	-	-	0.000060
Nickel	mg/L	-	-	-	-	-	0.0048
Rubidium	mg/L	-	-	-	-	-	0.0037
Selenium	mg/L	-	-	-	-	-	<0.00005
Silicon	mg/L	-	-	-	-	-	3.9
Silver	mg/L	-	-	-	-	-	<0.00001
Strontium	mg/L	-	-	-	-	-	0.075
Sulphur	mg/L	-	-	-	-	-	15
Tellurium	mg/L	-	-	-	-	-	<0.0002
Thallium	mg/L	-	-	-	-	-	<0.00001
Thorium	mg/L	-	-	-	-	-	0.00010
Tin	mg/L	-	-	-	-	-	<0.0001
Titanium	mg/L	-	-	-	-	-	0.0011
Tungsten	mg/L	-	-	-	-	-	<0.0001
Uranium	mg/L	-	-	-	-	-	0.000044
Vanadium	mg/L	-	-	-	-	-	<0.0005
Zinc	mg/L	-	-	-	-	-	<0.001
Zirconium	mg/L	-	-	-	-	-	<0.0003

Notes:

a) Hardness was calculated using the following formula: hardness [mg equivalent $CaCO_3$/L] = 2.497[calcium in mg/L] + 4.118[magnesium in mg/L].

SNP = Surveillance Network Program; µS/cm = microsiemens per centimetre; mg/L = milligrams per litre; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorus per litre; $CaCO_3$ = calcium carbonate; % = percent; °C = degrees Celsius; < = less than; - = no data available.

APPENDIX C

Laboratory Certificate of Analysis

CERTIFICATE OF ANALYSIS

Work Order	: **YL2301194**	Page	: 1 of 14
Client	: **WSP Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Sarah Beattie	Account Manager	: Oliver Gregg
Address	: 2800, 700 - 2nd Street SW Calgary AB Canada T2P 2W2	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 867 873 6319	Telephone	: 1 867 445 7143
Project	: Damoti Lake SNP	Date Samples Received	: 21-Sep-2023 09:25
PO	: ----	Date Analysis Commenced	: 26-Sep-2023
C-O-C number	: ----	Issue Date	: 03-Oct-2023 11:35
Sampler	: ----		
Site	: Damoti Lake		
Quote number	: YL22-GOLD100-013		
No. of samples received	: 12		
No. of samples analysed	: 12		

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*
Angelo Salandanan	Lab Assistant	Metals, Burnaby, British Columbia
Brieanna Allen	Production/Validation Manager	Inorganics, Burnaby, British Columbia
Erin Sanchez		Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sam Silveira	Lab Assistant	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
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*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-4	SNP 5-5	SNP 5-6	SNP 5-8	SNP 5-9
					Client sampling date / time	20-Sep-2023 13:20	20-Sep-2023 13:35	20-Sep-2023 12:30	20-Sep-2023 11:30	20-Sep-2023 11:40
						YL2301194-001	YL2301194-002	YL2301194-003	YL2301194-004	YL2301194-005
						Result	Result	Result	Result	Result
Physical Tests										
Conductivity	----	E100/VA	2.0	µS/cm		143	133	392	297	636
pH	----	E108/VA	0.10	pH units		7.40	7.67	7.16	7.41	7.57
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		130	123	281	211	486
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L		12.2	9.6	4.9	<1.0	8.9
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0615	0.0257	0.0072	<0.0050	0.0656
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		1.38	0.88	5.48	6.85	8.68
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.085	0.088	0.185	0.108	0.232
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		<0.0050	<0.0050	<0.0050	0.0223	0.0052
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0143	0.0159	0.0417	0.0039	0.0140
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		21.2	13.9	68.4	59.1	185
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		20.3	20.3	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.0719	0.0619	0.0511	0.0212	0.0165
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00040
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00029	0.00027	0.00088	0.00062	0.00073
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0127	0.00900	0.0141	0.0178	0.0550
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	7440-42-8	E420/VA	0.010	mg/L		0.012	0.011	0.026	0.023	0.036
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000088	0.0000248	<0.0000050
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		17.6	17.1	43.7	35.9	80.3
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000028	0.000031	0.00116	0.000273	0.000225
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00012	0.00010	0.00140	0.00010	0.00047

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-4	SNP 5-5	SNP 5-6	SNP 5-8	SNP 5-9
					Client sampling date / time	20-Sep-2023 13:20	20-Sep-2023 13:35	20-Sep-2023 12:30	20-Sep-2023 11:30	20-Sep-2023 11:40
						YL2301194-001	YL2301194-002	YL2301194-003	YL2301194-004	YL2301194-005
						Result	Result	Result	Result	Result
Total Metals										
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00057	0.00065	0.00128	0.00240	0.00100
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.417	0.056	1.41	0.602	0.754
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	<0.000050	0.000106	0.000534	<0.000050
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0032	0.0025	0.0147	0.0049	0.0157
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		5.07	4.44	17.1	10.0	26.7
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0699	0.0610	0.390	0.0346	0.126
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L		1.12	0.82	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.000118	0.000131	<0.000050	0.00127	0.000080
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00123	0.00127	0.0108	0.00482	0.0105
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		1.37	1.43	4.18	2.89	4.13
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00274	0.00250	0.00900	0.00332	0.00899
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000050	<0.000050	0.000057	0.000066	0.000083
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		0.72	0.30	1.78	3.97	0.34
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		2.98	2.75	6.37	5.10	9.96
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0501	0.0487	0.138	0.0972	0.237
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		8.12	5.64	26.0	21.3	69.4
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		0.00053	<0.00030	0.00061	<0.00030	0.00041
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00082	<0.00010
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000127	0.000154	0.000194	0.00285	0.000662
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	0.00023	<0.00020	0.00029
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0408	----	0.0282	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-4	SNP 5-5	SNP 5-6	SNP 5-8	SNP 5-9
					Client sampling date / time	20-Sep-2023 13:20	20-Sep-2023 13:35	20-Sep-2023 12:30	20-Sep-2023 11:30	20-Sep-2023 11:40
						YL2301194-001	YL2301194-002	YL2301194-003	YL2301194-004	YL2301194-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	----	<0.00010	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00024	----	0.00064	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.0125	----	0.0123	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L		<0.000020	----	<0.000020	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	----	<0.000050	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		0.011	----	0.024	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000050	----	<0.0000050	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		18.1	----	43.9	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000024	----	0.00109	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	----	<0.00050	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	----	0.00107	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00043	----	0.00091	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.264	----	0.784	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	----	<0.000050	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0031	----	0.0139	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		5.10	----	16.8	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.0524	----	0.338	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.000126	----	0.000052	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		0.00113	----	0.00993	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	----	<0.050	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		1.40	----	4.27	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00255	----	0.00877	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	----	0.000061	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		0.750	----	1.63	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	----	<0.000010	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		2.88	----	6.30	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0482	----	0.126	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		7.81	----	23.0	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	----	<0.00020	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	----	<0.000010	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-4	SNP 5-5	SNP 5-6	SNP 5-8	SNP 5-9
					Client sampling date / time	20-Sep-2023 13:20	20-Sep-2023 13:35	20-Sep-2023 12:30	20-Sep-2023 11:30	20-Sep-2023 11:40
						YL2301194-001	YL2301194-002	YL2301194-003	YL2301194-004	YL2301194-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	----	<0.00010	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	----	<0.00010	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	----	0.00030	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	----	<0.00010	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000102	----	0.000178	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	----	<0.00050	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		<0.0010	----	0.0012	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L		<0.00030	----	<0.00030	----	----
Dissolved metals filtration location	----	EP421/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.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14	SNP 5-6-D
					Client sampling date / time	20-Sep-2023 11:55	20-Sep-2023 12:10	20-Sep-2023 11:15	20-Sep-2023 12:50	20-Sep-2023 13:35
						YL2301194-006	YL2301194-007	YL2301194-008	YL2301194-009	YL2301194-010
						Result	Result	Result	Result	Result
Physical Tests										
Conductivity	----	E100/VA	2.0	µS/cm		795	599	584	230	393
pH	----	E108/VA	0.10	pH units		7.33	7.13	7.14	7.00	7.19
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		638	492	471	192	281
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L		2.2	3.1	6.6	127	7.6
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0750	0.0276	0.0202	0.0065	0.0092
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L		<0.250 DLDS	<0.050	<0.050	<0.050	<0.050
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L		6.39	4.64	4.61	8.62	5.49
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.301	0.280	0.276	0.128	0.189
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		<0.0250 DLDS	0.0056	0.0055	<0.0050	<0.0050
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		<0.0050 DLDS	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0076	0.0069	0.0086	0.0326	0.0384
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		352	246	243	47.9	67.2
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.0218	0.0379	0.0289	0.195	0.0469
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00054	0.00058	0.00063	0.00046	0.00083
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0162	0.0128	0.0132	0.0156	0.0136
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	7440-42-8	E420/VA	0.010	mg/L		0.075	0.060	0.057	0.015	0.025
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.0000210	0.0000066	0.0000089	0.0000057	0.0000092
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		95.9	66.1	64.2	26.1	43.7
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000674	0.000998	0.00102	0.000146	0.00120
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00096	<0.00050
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00129	0.00152	0.00128	0.00027	0.00136
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00118	0.00086	0.00085	0.00106	0.00122
Iron, total	7439-89-6	E420/VA	0.010	mg/L		2.01	1.73	1.85	4.61	1.32

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14	SNP 5-6-D
					Client sampling date / time	20-Sep-2023 11:55	20-Sep-2023 12:10	20-Sep-2023 11:15	20-Sep-2023 12:50	20-Sep-2023 13:35
						YL2301194-006	YL2301194-007	YL2301194-008	YL2301194-009	YL2301194-010
						Result	Result	Result	Result	Result
Total Metals										
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000165	0.000071	0.000070	0.000164	0.000098
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0285	0.0247	0.0236	0.0076	0.0144
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		35.8	27.2	26.3	9.75	17.1
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.213	0.187	0.197	0.0132	0.390
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L		----	----	----	2.75	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	0.000100	0.000053
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.0213	0.0173	0.0156	0.00641	0.0106
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	<0.050	0.115	<0.050
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		5.57	4.41	4.42	2.00	4.05
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.0132	0.00972	0.00982	0.00450	0.00919
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	0.000054
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		2.42	4.73	4.81	4.47	1.75
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		8.91	7.34	7.21	4.56	6.26
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.303	0.220	0.223	0.0809	0.138
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		129	89.3	86.9	17.5	26.0
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00014	<0.00010
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		<0.00030	<0.00030	0.00033	<0.00750 DLM	0.00056
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000237	0.000110	0.000104	0.000078	0.000198
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00118	<0.00050
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0040	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	0.00031	0.00022
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		----	----	----	0.0400	0.0292
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		----	----	----	<0.00010	<0.00010
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		----	----	----	0.00031	0.00067

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14	SNP 5-6-D
					Client sampling date / time	20-Sep-2023 11:55	20-Sep-2023 12:10	20-Sep-2023 11:15	20-Sep-2023 12:50	20-Sep-2023 13:35
						YL2301194-006	YL2301194-007	YL2301194-008	YL2301194-009	YL2301194-010
						Result	Result	Result	Result	Result
Dissolved Metals										
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		----	----	----	0.0107	0.0121
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L		----	----	----	<0.000020	<0.000020
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		----	----	----	<0.000050	<0.000050
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		----	----	----	0.014	0.025
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		----	----	----	<0.0000050	<0.0000050
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		----	----	----	25.8	43.6
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		----	----	----	0.000094	0.00111
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		----	----	----	<0.00050	<0.00050
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		----	----	----	0.00014	0.00108
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		----	----	----	0.00040	0.00090
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		----	----	----	0.217	0.772
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		----	----	----	<0.000050	<0.000050
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		----	----	----	0.0071	0.0140
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		----	----	----	9.31	16.6
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		----	----	----	0.00498	0.340
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		----	----	----	0.000060	0.000052
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		----	----	----	0.00477	0.0100
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		----	----	----	<0.050	<0.050
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		----	----	----	1.87	4.16
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		----	----	----	0.00370	0.00874
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		----	----	----	<0.000050	0.000052
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		----	----	----	3.89	1.63
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		----	----	----	<0.000010	<0.000010
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		----	----	----	4.47	6.20
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		----	----	----	0.0754	0.129
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		----	----	----	15.3	22.9
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		----	----	----	<0.00020	<0.00020
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		----	----	----	<0.000010	<0.000010
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		----	----	----	0.00010	<0.00010
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		----	----	----	<0.00010	<0.00010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11	SNP 5-12	SNP 5-13	SNP 5-14	SNP 5-6-D
					Client sampling date / time	20-Sep-2023 11:55	20-Sep-2023 12:10	20-Sep-2023 11:15	20-Sep-2023 12:50	20-Sep-2023 13:35
						YL2301194-006	YL2301194-007	YL2301194-008	YL2301194-009	YL2301194-010
						Result	Result	Result	Result	Result
Dissolved Metals										
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		----	----	----	0.00106	<0.00030
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		----	----	----	<0.00010	<0.00010
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		----	----	----	0.000044	0.000171
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		----	----	----	<0.00050	<0.00050
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		----	----	----	<0.0010	0.0011
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L		----	----	----	<0.00030	<0.00030
Dissolved metals filtration location	----	EP421/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.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SNP 5-11-FB	TB	----	----	----
				Client sampling date / time	20-Sep-2023 12:00	20-Sep-2023 15:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	YL2301194-011	YL2301194-012	--------	--------	--------
					Result	Result	----	----	----
Physical Tests									
Conductivity	----	E100/VA	2.0	µS/cm	<2.0	<2.0	----	----	----
pH	----	E108/VA	0.10	pH units	5.59	5.56	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	<10	<10	----	----	----
Solids, total suspended [TSS]	----	E160-L/VA	1.0	mg/L	<1.0	<1.0	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	<0.0050	<0.0050	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	<0.50	<0.50	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	<0.020	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	<0.0050	<0.0050	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	<0.0020	<0.0020	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	<0.30	<0.30	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	<0.50	<0.50	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	<0.0030	<0.0030	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L	<0.000020	<0.000020	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	<0.010	<0.010	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	<0.050	<0.050	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SNP 5-11-FB	TB	----	----	----
					Client sampling date / time	20-Sep-2023 12:00	20-Sep-2023 15:00	----	----	----
						YL2301194-011	YL2301194-012	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		<0.0050	<0.0050	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L		<0.50	<0.50	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		<0.10	<0.10	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		<0.50	<0.50	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		<0.00030	<0.00030	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	<0.0030	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SNP 5-11-FB	TB	----	----	----
					Client sampling date / time	20-Sep-2023 12:00	20-Sep-2023 15:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2301194-011	YL2301194-012	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L		<0.000020	<0.000020	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		<0.0050	<0.0050	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		<0.50	<0.50	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SNP 5-11-FB	TB	----	----	----
					Client sampling date / time	20-Sep-2023 12:00	20-Sep-2023 15:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		YL2301194-011	YL2301194-012	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	<0.00030	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L		<0.00030	<0.00030	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	N/A	----	----	----

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.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **YL2301194**	Page	: 1 of 27
Client	: **WSP Canada Inc.**	Laboratory	: ALS Environmental - Yellowknife
Contact	: Sarah Beattie	Account Manager	: Oliver Gregg
Address	: 2800, 700 - 2nd Street SW Calgary AB Canada T2P 2W2	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 867 873 6319	Telephone	: 1 867 445 7143
Project	: Damoti Lake SNP	Date Samples Received	: 21-Sep-2023 09:25
PO	: ----	Issue Date	: 03-Oct-2023 11:35
C-O-C number	: ----		
Sampler	: ----		
Site	: Damoti Lake		
Quote number	: YL22-GOLD100-013		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

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 / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) TB	E298	20-Sep-2023	26-Sep-2023	28 days	5 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP 5-11	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP 5-11-FB	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP 5-12	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP 5-13	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP 5-14	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SNP 5-4	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / 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)										
SNP 5-5	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-6	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-6-D	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-8	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SNP 5-9	E298	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-11	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-11-FB	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-12	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-13	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / 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										
SNP 5-14	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-4	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-5	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-6	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-6-D	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-8	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
SNP 5-9	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
TB	E235.Br-L	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-11	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-11-FB	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-12	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-13	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-14	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-4	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-5	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-6	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-6-D	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-8	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SNP 5-9	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
TB	E235.Cl	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-11	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-11-FB	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-12	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-13	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-14	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-4	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-5	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-6	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-6-D	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-8	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SNP 5-9	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
TB	E235.F	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SNP 5-11	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SNP 5-11-FB	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SNP 5-12	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SNP 5-13	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-14	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-4	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-5	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-6	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-6-D	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-8	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SNP 5-9	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE TB	E235.NO3-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SNP 5-11	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / 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										
SNP 5-11-FB	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-12	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-13	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-14	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-4	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-5	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-6	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-6-D	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SNP 5-8	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	× EHT	27-Sep-2023	3 days	6 days	× EHT

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / 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										
SNP 5-9	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	✗ EHT	27-Sep-2023	3 days	6 days	✗ EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
TB	E235.NO2-L	20-Sep-2023	27-Sep-2023	3 days	6 days	✗ EHT	27-Sep-2023	3 days	6 days	✗ EHT
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-11	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-11-FB	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-12	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-13	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-14	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-4	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-5	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-6	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-6-D	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-8	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SNP 5-9	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
TB	E235.SO4	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
TB	E372-U	20-Sep-2023	26-Sep-2023	28 days	5 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-11	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-11-FB	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-12	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / 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 (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-13	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-14	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-4	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-5	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-6	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-6-D	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-8	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SNP 5-9	E372-U	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	27-Sep-2023	28 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP 5-11-FB	E421	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	28-Sep-2023	180 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP 5-14	E421	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	28-Sep-2023	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP 5-4	E421	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	28-Sep-2023	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP 5-6	E421	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	28-Sep-2023	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SNP 5-6-D	E421	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	28-Sep-2023	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
TB	E421	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	28-Sep-2023	180 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
TB	E358-L	20-Sep-2023	26-Sep-2023	28 days	5 days	✓	26-Sep-2023	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SNP 5-11-FB	E358-L	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SNP 5-4	E358-L	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SNP 5-5	E358-L	20-Sep-2023	26-Sep-2023	28 days	6 days	✓	26-Sep-2023	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE SNP 5-11	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-11-FB	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-12	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-13	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-14	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-4	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-5	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-6	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-6-D	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE SNP 5-8	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE SNP 5-9	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE TB	E100	20-Sep-2023	27-Sep-2023	28 days	7 days	✓	27-Sep-2023	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE TB	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	160 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	164 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-5	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	161 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	165 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-6-D	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	161 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	165 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-4	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	162 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	165 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-14	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	162 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	166 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-6	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	162 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	166 hrs	× EHTR-FM

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE SNP 5-12	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	163 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	166 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-11	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	163 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	167 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-11-FB	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	163 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	167 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-8	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	163 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	167 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-9	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	163 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	167 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SNP 5-13	E108	20-Sep-2023	27-Sep-2023	0.25 hrs	164 hrs	× EHTR-FM	27-Sep-2023	0.25 hrs	167 hrs	× EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-11	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-11-FB	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-12	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-13	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-14	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-4	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-5	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-6	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-6-D	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-8	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SNP 5-9	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE TB	E162	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP 5-11	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP 5-11-FB	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP 5-12	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP 5-13	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP 5-14	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP 5-4	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP 5-5	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP 5-6	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SNP 5-6-D	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-8	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SNP 5-9	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
TB	E160-L	20-Sep-2023	----	----	----		27-Sep-2023	7 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned HDPE - total (lab preserved)										
TB	E508-L	20-Sep-2023	29-Sep-2023	0 days	8 days	× UCP	29-Sep-2023	0 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned HDPE - total (lab preserved)										
SNP 5-11-FB	E508-L	20-Sep-2023	29-Sep-2023	0 days	9 days	× UCP	29-Sep-2023	0 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned HDPE - total (lab preserved)										
SNP 5-14	E508-L	20-Sep-2023	29-Sep-2023	0 days	9 days	× UCP	29-Sep-2023	0 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
SNP 5-4	E508-L	20-Sep-2023	29-Sep-2023	28 days	9 days	✓	29-Sep-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
SNP 5-5	E508-L	20-Sep-2023	29-Sep-2023	28 days	9 days	✓	29-Sep-2023	28 days	0 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-11	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / 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 Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-11-FB	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-12	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-13	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-14	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-4	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-5	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-6	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-6-D	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-8	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SNP 5-9	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
TB	E420	20-Sep-2023	26-Sep-2023	180 days	6 days	✓	29-Sep-2023	180 days	9 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)							
Ammonia by Fluorescence	E298	1153190	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1155559	1	12	8.3	5.0	✓
Chloride in Water by IC	E235.Cl	1155558	1	12	8.3	5.0	✓
Conductivity in Water	E100	1155561	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1152355	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1153186	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	1155557	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1155554	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1155555	1	20	5.0	5.0	✓
pH by Meter	E108	1155560	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	1155556	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1157340	2	30	6.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1161757	2	21	9.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1152415	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1153188	1	18	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Ammonia by Fluorescence	E298	1153190	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1155559	1	12	8.3	5.0	✓
Chloride in Water by IC	E235.Cl	1155558	1	12	8.3	5.0	✓
Conductivity in Water	E100	1155561	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1152355	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1153186	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	1155557	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1155554	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1155555	1	20	5.0	5.0	✓
pH by Meter	E108	1155560	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	1155556	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1157340	2	30	6.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1161757	2	21	9.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1152415	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1153188	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1157351	2	30	6.6	5.0	✓
Method Blanks (MB)							
Ammonia by Fluorescence	E298	1153190	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1155559	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*
Method Blanks (MB) - Continued							
Chloride in Water by IC	E235.Cl	1155558	1	12	8.3	5.0	✓
Conductivity in Water	E100	1155561	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1152355	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1153186	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	1155557	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1155554	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1155555	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1155556	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1157340	2	30	6.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1161757	2	21	9.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1152415	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1153188	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	1157351	2	30	6.6	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1153190	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1155559	1	12	8.3	5.0	✓
Chloride in Water by IC	E235.Cl	1155558	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1152355	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1153186	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	1155557	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1155554	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1155555	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1155556	1	12	8.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1161757	1	21	4.7	5.0	✗
Total Metals in Water by CRC ICPMS	E420	1152415	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1153188	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 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry (Low Level)	E160-L 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 ± 1°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 ± 2°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.
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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	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)
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	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 CO2. 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 (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
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.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

QUALITY CONTROL REPORT

Work Order	: **YL2301194**	Page	: 1 of 18
Client	: WSP Canada Inc.	Laboratory	: ALS Environmental - Yellowknife
Contact	: Sarah Beattie	Account Manager	: Oliver Gregg
Address	: 2800, 700 - 2nd Street SW Calgary AB Canada T2P 2W2	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	:	Telephone	: 1 867 445 7143
Project	: Damoti Lake SNP	Date Samples Received	: 21-Sep-2023 09:25
PO	: ----	Date Analysis Commenced	: 26-Sep-2023
C-O-C number	: ----	Issue Date	: 03-Oct-2023 11:39
Sampler	: ---- 867 873 6319		
Site	: Damoti Lake		
Quote number	: YL22-GOLD100-013		
No. of samples received	: 12		
No. of samples analysed	: 12		

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*
Angelo Salandanan	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Brieanna Allen	Production/Validation Manager	Vancouver Inorganics, Burnaby, British Columbia
Erin Sanchez		Vancouver Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Vancouver Metals, 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.

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: 1155560)											
YL2301194-001	SNP 5-4	pH	----	E108	0.10	pH units	7.40	7.43	0.404%	4%	----
Physical Tests (QC Lot: 1155561)											
YL2301194-001	SNP 5-4	Conductivity	----	E100	2.0	µS/cm	143	145	0.903%	10%	----
Physical Tests (QC Lot: 1157340)											
VA23C2389-001	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	106	104	2	Diff <2x LOR	----
Physical Tests (QC Lot: 1157341)											
YL2301194-003	SNP 5-6	Solids, total dissolved [TDS]	----	E162	20	mg/L	281	275	2.34%	20%	----
Anions and Nutrients (QC Lot: 1153188)											
YL2301193-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0200	mg/L	<0.0200	<0.0200	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1153190)											
YL2301193-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0277	0.0250	0.0028	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1155554)											
YL2301194-001	SNP 5-4	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: 1155555)											
YL2301194-001	SNP 5-4	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: 1155556)											
YL2301194-001	SNP 5-4	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	21.2	21.3	0.365%	20%	----
Anions and Nutrients (QC Lot: 1155557)											
YL2301194-001	SNP 5-4	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.085	0.084	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1155558)											
YL2301194-001	SNP 5-4	Chloride	16887-00-6	E235.Cl	0.50	mg/L	1.38	1.38	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1155559)											
YL2301194-001	SNP 5-4	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1153186)											
YL2301193-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	23.1	24.2	4.51%	20%	----
Total Metals (QC Lot: 1152415)											
YL2301195-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0539	0.0558	3.51%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00020	0.00019	0.00001	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00342	0.00342	0.203%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0264	0.0260	1.48%	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: 1152415) - continued											
YL2301195-001	Anonymous	Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.011	0.010	0.0004	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	18.3	17.4	4.82%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00117	0.00116	0.000007	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.062	0.063	0.0009	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000053	0.000051	0.000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0032	0.0031	0.00007	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	4.90	4.77	2.78%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00516	0.00518	0.281%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000503	0.000484	0.000018	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00075	0.00076	0.00002	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	1.15	1.14	0.629%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00154	0.00153	0.00002	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000138	0.000111	0.000027	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.13	1.13	0.0518%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	5.50	5.31	3.37%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0975	0.0951	2.49%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	5.36	5.49	2.43%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00166	0.00158	0.00009	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000335	0.000332	0.900%	20%	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	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 (QC Lot: 1152415) - continued											
YL2301195-001	Anonymous	Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1161757)											
FJ2302438-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 1161758)											
YL2301194-012	TB	Mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1152355)											
YL2301195-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0116	0.0121	4.43%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00016	0.00016	0.0000006	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00279	0.00288	3.39%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0252	0.0259	2.63%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.011	0.011	0.00009	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	18.1	18.2	0.721%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00100	0.00105	0.00005	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0030	0.0030	0.00006	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	4.58	4.55	0.687%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00149	0.00148	0.733%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000450	0.000474	0.000024	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00065	0.00067	0.00003	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.16	1.18	1.76%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00144	0.00142	0.00002	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000122	0.000102	0.000020	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	0.924	0.976	5.45%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.35	5.38	0.550%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0897	0.0904	0.788%	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: 1152355) - continued											
YL2301195-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	4.75	4.86	0.12	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000302	0.000305	1.05%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	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: 1155561)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1157340)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1157341)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1157351)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 1157352)						
Solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 1153188)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1153190)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1155554)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1155555)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1155556)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1155557)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1155558)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1155559)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Organic / Inorganic Carbon (QCLot: 1153186)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1152415)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1152415) - continued						
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1161757)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Total Metals (QCLot: 1161758)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 1152355)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1152355) - continued						
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----

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	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1155560)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1155561)									
Conductivity	----	E100	1	µS/cm	146.9 µS/cm	95.7	90.0	110	----
Physical Tests (QCLot: 1157340)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	99.6	85.0	115	----
Physical Tests (QCLot: 1157341)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1157351)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	93.2	85.0	115	----
Physical Tests (QCLot: 1157352)									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	93.2	85.0	115	----
Anions and Nutrients (QCLot: 1153188)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	92.0	80.0	120	----
Anions and Nutrients (QCLot: 1153190)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1155554)									
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: 1155555)									
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: 1155556)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1155557)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.2	90.0	110	----
Anions and Nutrients (QCLot: 1155558)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1155559)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	103	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1153186)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.6	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1152415)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	97.4	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	104	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	92.7	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	107	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	98.5	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	98.5	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	97.5	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	117	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	104	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	102	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	99.1	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	106	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	98.5	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	102	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	98.0	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	103	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	107	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	112	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	102	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	106	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	105	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	105	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	95.9	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	100	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	104	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1152415) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	95.7	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	109	80.0	120	----
Total Metals (QCLot: 1161757)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	101	80.0	120	----
Total Metals (QCLot: 1161758)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	92.4	80.0	120	----
Dissolved Metals (QCLot: 1152355)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	96.3	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.0	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	96.8	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.1	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	96.0	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.0	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.3	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.0	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	100	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.5	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.2	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	95.9	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	99.7	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	98.7	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	99.0	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	100	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1152355) - continued									
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	95.7	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	98.6	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	93.7	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	97.5	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	95.3	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.5	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.9	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	91.6	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.

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: 1153188)										
YL2301193-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0530 mg/L	0.05 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 1153190)										
YL2301193-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1155554)										
YL2301194-002	SNP 5-5	Nitrate (as N)	14797-55-8	E235.NO3-L	2.66 mg/L	2.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1155555)										
YL2301194-002	SNP 5-5	Nitrite (as N)	14797-65-0	E235.NO2-L	0.536 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1155556)										
YL2301194-002	SNP 5-5	Sulfate (as SO4)	14808-79-8	E235.SO4	105 mg/L	100 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1155557)										
YL2301194-002	SNP 5-5	Fluoride	16984-48-8	E235.F	1.08 mg/L	1 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 1155558)										
YL2301194-002	SNP 5-5	Chloride	16887-00-6	E235.Cl	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1155559)										
YL2301194-002	SNP 5-5	Bromide	24959-67-9	E235.Br-L	0.536 mg/L	0.5 mg/L	107	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1153186)										
YL2301193-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	5 mg/L	ND	70.0	130	----
Total Metals (QCLot: 1152415)										
KS2303622-002	Anonymous	Aluminum, total	7429-90-5	E420	0.183 mg/L	0.2 mg/L	91.6	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0372 mg/L	0.04 mg/L	93.0	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0100 mg/L	0.01 mg/L	100	70.0	130	----
		Boron, total	7440-42-8	E420	0.090 mg/L	0.1 mg/L	90.4	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00396 mg/L	0.004 mg/L	99.0	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0373 mg/L	0.04 mg/L	93.3	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 (QCLot: 1152415) - continued										
KS2303622-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0187 mg/L	0.02 mg/L	93.5	70.0	130	----
		Copper, total	7440-50-8	E420	0.0183 mg/L	0.02 mg/L	91.5	70.0	130	----
		Iron, total	7439-89-6	E420	1.83 mg/L	2 mg/L	91.7	70.0	130	----
		Lead, total	7439-92-1	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0910 mg/L	0.1 mg/L	91.0	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0378 mg/L	0.04 mg/L	94.6	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.72 mg/L	10 mg/L	97.2	70.0	130	----
		Potassium, total	7440-09-7	E420	3.51 mg/L	4 mg/L	87.7	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.6 mg/L	20 mg/L	97.9	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0406 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0211 mg/L	0.02 mg/L	106	70.0	130	----
		Tin, total	7440-31-5	E420	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0374 mg/L	0.04 mg/L	93.5	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0955 mg/L	0.1 mg/L	95.5	70.0	130	----
		Zinc, total	7440-66-6	E420	0.357 mg/L	0.4 mg/L	89.2	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0418 mg/L	0.04 mg/L	105	70.0	130	----
Total Metals (QCLot: 1161757)										
FJ2302438-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.40 ng/L	5 ng/L	87.9	70.0	130	----
Dissolved Metals (QCLot: 1152355)										
KS2303622-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.182 mg/L	0.2 mg/L	91.2	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	0.02 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: 1152355) - continued										
KS2303622-001	Anonymous	Beryllium, dissolved	7440-41-7	E421	0.0387 mg/L	0.04 mg/L	96.7	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00944 mg/L	0.01 mg/L	94.4	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.090 mg/L	0.1 mg/L	90.4	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00367 mg/L	0.004 mg/L	91.8	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00977 mg/L	0.01 mg/L	97.7	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0182 mg/L	0.02 mg/L	91.3	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0912 mg/L	0.1 mg/L	91.2	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0372 mg/L	0.04 mg/L	93.1	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.69 mg/L	10 mg/L	96.9	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.72 mg/L	4 mg/L	92.9	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0187 mg/L	0.02 mg/L	93.7	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00379 mg/L	0.004 mg/L	94.7	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	18.7 mg/L	20 mg/L	93.7	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0392 mg/L	0.04 mg/L	97.9	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00376 mg/L	0.004 mg/L	94.1	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0188 mg/L	0.02 mg/L	94.1	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0383 mg/L	0.04 mg/L	95.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0966 mg/L	0.1 mg/L	96.6	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.375 mg/L	0.4 mg/L	93.8	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0373 mg/L	0.04 mg/L	93.3	70.0	130	----

CHAIN OF CUSTODY

ALS Laboratory

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Tamara Krowski Dep	MT		
DATE/TIME: 20 Sep 2023 17:35	DATE/TIME: Sept 21/23 9:25	DATE/TIME:	DATE/TIME:

CLIENT:	Nighthawk Gold Corp	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	☐ Standard TAT (List due date):
PROJECT:	Damoti Lake SNP		☐ Non Standard or urgent TAT (List due date):
SITE:	Damoti Lake		
PURCHASE ORDER NO.:		ALS QUOTE NO.:	YL22-GOLD100-013
PROJECT MANAGER:	Harleen Kahlon	CONTACT PH: 905-567-4444	Job Number: 21499891
SAMPLER:	Dylan Cook	SAMPLER MOBILE: 867-765-8658	EQUIS Facility Code: 171683648
EMAIL REPORTS TO:	saad.pasha@wsp.com, michael.iwanyshyn@wsp.com		EMAIL INVOICE TO: harleen.kahlon@wsp.com
SPECIAL HANDLING/STORAGE OR DISPOSAL:			

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:	1.8 °C		
Other comments:			

ALS USE ONLY	SAMPLE DETAILS (Solid(S) Water(W))		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	pH, TDS (calculated), specific conductivity, TSS, sulphate (from bottle makred Routine)	Ammonia (bottle maked Nutrients)	Nitrate	Low level total phosphorous (Colourimetric)	Dissolved Organic Carbon (DOC)	Total Metals	Dissolved Metals	Total Mercury (Low Level)			Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	SNP 5-4	20 Sep 2023 13:20	WS	6	X	X	X	X	X	X	X	X			
	SNP 5-5	20 Sep 2023 13:35	WS	5	X	X	X	X	X	X		X			
	SNP 5-6	20 Sep 2023 12:30	WS	4	X	X	X	X		X	X				
	SNP 5-8	20 Sep 2023 11:30	WS	3	X	X		X		X					
	SNP 5-9	20 Sep 2023 11:40	WS	3	X	X		X		X					
	SNP 5-11	20 Sep 2023 11:55	WS	3	X	X		X		X					
	SNP 5-12	20 Sep 2023 12:10	WS	3	X	X		X		X					
	SNP 5-13	20 Sep 2023 11:15	WS	3	X	X		X		X					
	SNP 5-14	20 Sep 2023 12:50	WS	5	X	X		X		X	X	X			
	SNP 5-6-D	20 Sep 2023 12:35	WS	4	X	X	X	X		X	X				
	SNP 5-11-FB	20 Sep 2023 12:00	WS	6	X	X	X	X	X	X	X	X			
	TB	20 Sep 2023 15:00	WS	6	X	X	X	X	X	X	X	X			
			TOTAL	51											

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Work Order Reference
YL2301194

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APPENDIX D

Quality Assurance and Quality Control

QUALITY ASSURANCE/QUALITY CONTROL

1.0 INTRODUCTION

Key findings of the quality assurance and quality control (QA/QC) review for water quality are summarized below. For water quality, the field QC program included collecting one duplicate sample, one field blank, and one travel blank. The assessment of QC sample results was completed using analytical data provided by ALS Canada Ltd. (ALS).

2.0 WATER QUALITY

2.1 Parameter List

All parameters required by the Type A Water Licence W2021L2-0004 (WLWB 2023) were analyzed, as requested.

2.2 Detection Limits

Standard ALS detection limits (DLs) were used when analyzing samples collected during the September 2023 field program.

2.3 Hold Times

Hold times between sample collection and analysis for each parameter are specified by ALS and should be met to obtain reliable data. For this program, the 15-minute hold time for pH (APHA 2012) was not met because the samples cannot be processed by ALS Canada Ltd. (ALS) within this time limit. The 3-day hold time (APHA 2012) was not met for nitrite and nitrate; ALS analyzed this parameter 6 days after sample collection for all samples. The hold times were met for all other parameters.

2.4 Units

All reported units were correct, and no issues were identified during the review of electronic data against the final certificate of analysis provided by ALS.

2.5 Qualifiers

The ALS internal data quality report indicated that the DL was adjusted due to sample matrix effects for total titanium in the sample collected at SNP 5-14. Additionally, the DL was adjusted for nitrate due to high electrical conductivity/dissolved solids concentrations for the sample collected at SNP 5-11.

2.6 Total versus Dissolved Metal Concentrations

Dissolved metal concentrations in water samples were compared to corresponding total metal concentrations. Dissolved and total concentrations were considered notable if the dissolved concentration was more than 20% higher than the total concentration. Dissolved concentrations were within 20% of total concentrations for all samples collected in September 2023.

2.7 Duplicate Sample Results

A duplicate water sample was collected from SNP 5-6 on 20 September 2023 to assess variability during sample collection, handling, and analysis.

The relative percent difference (RPD) was used to determine the variability between the primary and duplicate sample and was calculated using the following formula:

$$RPD = ABS\left(\frac{(field\ sample\ concentration - duplicate\ sample\ concentration)}{average\ concentration}\right) x\ 100$$

where ABS = absolute value.

Values reported below the DLs were included in the calculations at half the applicable DL. The RPD was not calculated in cases where the concentration in both samples was less than five times the DL (i.e., within the range of analytical uncertainty).

The variability in parameter concentrations between primary and duplicate samples was considered notable if:

- the parameter concentration in at least one sample was greater than five times the DL
- the RPD was greater than 20%

These criteria are consistent with those used by ALS for internal QC procedures (Dang 2015, pers. comm.) and account for potential analytical uncertainty when concentrations approach DLs (Weiner 2000). Variability between the field and duplicate samples was rated as follows:

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

The results of the comparison between the SNP 5-6 primary and duplicate samples are summarized in Table D-1. The total suspended solids concentrations in the duplicate samples collected at SNP 5-6 had an RPD greater than 20%. Data re-checks were requested from the laboratory and the results were confirmed. Overall, the variability between the primary and duplicate sample was rated as low; less than 10% of parameters included in the analysis were notably different from one another.

Table D-1: Duplicate Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	SNP 5-6		Relative Percent Difference
			Sample	Duplicate	
Conventional Parameters					
pH[(a)]	unitless	0.1	7.2	7.2	7%
Conductivity	µS/cm	2	392	393	0%
Hardness, as $CaCO_3$[(b)]	mg/L	-	179	177	**1%**
Total suspended solids	mg/L	1	4.9	7.6	**43%**
Total dissolved solids (calculated)	mg/L	20	281	281	0%

Table D-1: Duplicate Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	SNP 5-6		Relative Percent Difference
			Sample	Duplicate	
Major Ions					
Calcium	mg/L	0.05	44	44	1%
Magnesium	mg/L	0.005	17	17	1%
Potassium	mg/L	0.05	4.3	4.2	3%
Sodium	mg/L	0.05	6.3	6.2	2%
Sulphate	mg/L	0.3	68	67	2%
Nutrients					
Nitrate	mg-N/L	0.005	<0.005	<0.005	-
Total ammonia	mg-N/L	0.005	0.0072	0.0092	-
Total phosphorus	mg-P/L	0.002	0.042	0.038	8%
Dissolved phosphorus	mg-P/L	0.05	<0.05	<0.05	-
Total Metals					
Aluminum	mg/L	0.003	0.051	0.047	9%
Antimony	mg/L	0.0001	<0.0001	<0.0001	-
Arsenic	mg/L	0.0001	0.00088	0.00083	6%
Barium	mg/L	0.0001	0.014	0.014	4%
Beryllium	mg/L	0.00002	<0.00002	<0.00002	-
Bismuth	mg/L	0.00005	<0.00005	<0.00005	-
Boron	mg/L	0.01	0.026	0.025	-
Cadmium	mg/L	0.000005	0.0000088	0.0000092	-
Calcium	mg/L	0.05	44	44	0%
Cesium	mg/L	0.00001	0.0012	0.0012	3%
Chromium	mg/L	0.0005	<0.0005	<0.0005	-
Cobalt	mg/L	0.0001	0.0014	0.0014	3%
Copper	mg/L	0.0005	0.0013	0.0012	-
Iron	mg/L	0.01	1.4	1.3	7%
Lead	mg/L	0.00005	0.00011	0.000098	-
Lithium	mg/L	0.001	0.015	0.014	2%
Magnesium	mg/L	0.005	17	17	0%
Manganese	mg/L	0.0001	0.39	0.39	0%
Molybdenum	mg/L	0.00005	<0.00005	0.000053	-
Nickel	mg/L	0.0005	0.011	0.011	2%
Potassium	mg/L	0.05	4.2	4.1	3%
Rubidium	mg/L	0.0002	0.009	0.009	2%
Selenium	mg/L	0.00005	0.000057	0.000054	-
Silicon	mg/L	0.1	1.8	1.8	2%
Silver	mg/L	0.00001	<0.00001	<0.00001	-

Table D-1: Duplicate Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	SNP 5-6		Relative Percent Difference
			Sample	Duplicate	
Sodium	mg/L	0.05	6.4	6.3	2%
Strontium	mg/L	0.0002	0.14	0.14	0%
Sulphur	mg/L	0.5	26	26	0%
Tellurium	mg/L	0.0002	<0.0002	<0.0002	-
Thallium	mg/L	0.00001	<0.00001	<0.00001	-
Thorium	mg/L	0.0001	<0.0001	<0.0001	-
Tin	mg/L	0.0001	<0.0001	<0.0001	-
Titanium	mg/L	0.0003	0.00061	0.00056	-
Tungsten	mg/L	0.0001	<0.0001	<0.0001	-
Uranium	mg/L	0.00001	0.00019	0.00020	2%
Vanadium	mg/L	0.0005	<0.0005	<0.0005	-
Zinc	mg/L	0.003	<0.003	<0.003	-
Zirconium	mg/L	0.0002	0.00023	0.00022	-
Dissolved Metals					
Aluminum	mg/L	0.001	0.028	0.029	3%
Antimony	mg/L	0.0001	<0.0001	<0.0001	-
Arsenic	mg/L	0.0001	0.00064	0.00067	5%
Barium	mg/L	0.0001	0.012	0.012	2%
Beryllium	mg/L	0.00002	<0.00002	<0.00002	-
Bismuth	mg/L	0.00005	<0.00005	<0.00005	-
Boron	mg/L	0.01	0.024	0.025	-
Cadmium	mg/L	0.000005	<0.000005	<0.000005	-
Cesium	mg/L	0.00001	0.0011	0.0011	2%
Chromium	mg/L	0.0005	<0.0005	<0.0005	-
Cobalt	mg/L	0.0001	0.0011	0.0011	1%
Copper	mg/L	0.0002	0.0009	0.0009	-
Iron	mg/L	0.01	0.78	0.77	2%
Lead	mg/L	0.00005	<0.00005	<0.00005	-
Lithium	mg/L	0.001	0.014	0.014	1%
Manganese	mg/L	0.0001	0.34	0.34	1%
Molybdenum	mg/L	0.00005	0.000052	0.000052	-
Nickel	mg/L	0.0005	0.01	0.01	1%
Rubidium	mg/L	0.0002	0.0088	0.0087	0%
Selenium	mg/L	0.00005	0.000061	0.000052	-
Silicon	mg/L	0.05	1.6	1.6	0%
Silver	mg/L	0.00001	<0.00001	<0.00001	-
Strontium	mg/L	0.0002	0.13	0.13	2%
Sulphur	mg/L	0.5	23	23	0%
Tellurium	mg/L	0.0002	<0.0002	<0.0002	-
Thallium	mg/L	0.00001	<0.00001	<0.00001	-
Thorium	mg/L	0.0001	<0.0001	<0.0001	-

Table D-1: Duplicate Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	SNP 5-6		Relative Percent Difference
			Sample	Duplicate	
Tin	mg/L	0.0001	<0.0001	<0.0001	-
Titanium	mg/L	0.0003	0.0003	<0.0003	-
Tungsten	mg/L	0.0001	<0.0001	<0.0001	-
Uranium	mg/L	0.00001	0.00018	0.00017	4%
Vanadium	mg/L	0.0005	<0.0005	<0.0005	-
Zinc	mg/L	0.001	0.0012	0.0011	-
Zirconium	mg/L	0.0003	<0.0003	<0.0003	-

Notes:

Bolded relative percent difference value is greater than 20%.

The relative percent difference is calculated for duplicate samples using the following formula: RPD = (absolute value (difference in concentration between field sample and duplicate sample) / average concentration) x 100%.

a) pH values were converted to hydrogen ion concentrations prior to calculating the relative percent difference.

b) Hardness was calculated using the following formula: hardness [mg equivalent $CaCO_3$/L] = 2.497[calcium in mg/L] + 4.118[magnesium in mg/L].

SNP = Surveillance Network Program; < = less than; $CaCO_3$ = calcium carbonate; mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; % = percent; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorous per litre; - = the relative percent difference was not calculated because the concentration in both samples was less than five times the detection limit or no unit.

2.8 Field Blank Results

A field blank was collected at SNP 5-11 during the 20 September 2023 sampling event, with results summarized in Table D-2. Concentrations of all parameters were less than applicable DLs in the field blank, indicating low potential for contamination during sampling.

Table D-2: Field Blank Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	Field Blank (SNP 5-11)
Conventional Parameters			
pH	unitless	0.1	5.6
Conductivity	µS/cm	2	<2
Total suspended solids	mg/L	1	<1
Total dissolved solids (calculated)	mg/L	10	<10
Dissolved organic carbon	mg/L	0.5	<0.5

Table D-2: Field Blank Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	Field Blank (SNP 5-11)
Major Ions			
Calcium	mg/L	0.05	<0.05
Magnesium	mg/L	0.005	<0.005
Potassium	mg/L	0.05	<0.05
Sodium	mg/L	0.05	<0.05
Sulphate	mg/L	0.3	<0.3
Nutrients			
Nitrate	mg-N/L	0.005	<0.005
Total ammonia	mg-N/L	0.005	<0.005
Total phosphorus	mg-P/L	0.002	<0.002
Dissolved phosphorus	mg-P/L	0.05	<0.05
Total Metals			
Aluminum	mg/L	0.003	<0.003
Antimony	mg/L	0.0001	<0.0001
Arsenic	mg/L	0.0001	<0.0001
Barium	mg/L	0.0001	<0.0001
Beryllium	mg/L	0.00002	<0.00002
Bismuth	mg/L	0.00005	<0.00005
Boron	mg/L	0.01	<0.01
Cadmium	mg/L	0.000005	<0.000005
Calcium	mg/L	0.05	<0.05
Cesium	mg/L	0.00001	<0.00001
Chromium	mg/L	0.0005	<0.0005
Cobalt	mg/L	0.0001	<0.0001
Copper	mg/L	0.0005	<0.0005
Iron	mg/L	0.01	<0.01
Lead	mg/L	0.00005	<0.00005
Lithium	mg/L	0.001	<0.001
Magnesium	mg/L	0.005	<0.005
Manganese	mg/L	0.0001	<0.0001
Mercury	mg/L	0.0000005	<0.0000005
Molybdenum	mg/L	0.00005	<0.00005
Nickel	mg/L	0.0005	<0.0005
Potassium	mg/L	0.05	<0.05
Rubidium	mg/L	0.0002	<0.0002
Selenium	mg/L	0.00005	<0.00005
Silicon	mg/L	0.1	<0.1
Silver	mg/L	0.00001	<0.00001

Table D-2: Field Blank Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	Field Blank (SNP 5-11)
Sodium	mg/L	0.05	<0.05
Strontium	mg/L	0.0002	<0.0002
Sulphur	mg/L	0.5	<0.5
Tellurium	mg/L	0.0002	<0.0002
Thallium	mg/L	0.00001	<0.00001
Thorium	mg/L	0.0001	<0.0001
Tin	mg/L	0.0001	<0.0001
Titanium	mg/L	0.0003	<0.0003
Tungsten	mg/L	0.0001	<0.0001
Uranium	mg/L	0.00001	<0.00001
Vanadium	mg/L	0.0005	<0.0005
Zinc	mg/L	0.003	<0.003
Zirconium	mg/L	0.0002	<0.0002
Dissolved Metals			
Aluminum	mg/L	0.001	<0.001
Antimony	mg/L	0.0001	<0.0001
Arsenic	mg/L	0.0001	<0.0001
Barium	mg/L	0.0001	<0.0001
Beryllium	mg/L	0.00002	<0.00002
Bismuth	mg/L	0.00005	<0.00005
Boron	mg/L	0.01	<0.01
Cadmium	mg/L	0.000005	<0.000005
Cesium	mg/L	0.00001	<0.00001
Chromium	mg/L	0.0005	<0.0005
Cobalt	mg/L	0.0001	<0.0001
Copper	mg/L	0.0002	<0.0002
Iron	mg/L	0.01	<0.01
Lead	mg/L	0.00005	<0.00005
Lithium	mg/L	0.001	<0.001
Manganese	mg/L	0.0001	<0.0001
Molybdenum	mg/L	0.00005	<0.00005
Nickel	mg/L	0.0005	<0.0005
Rubidium	mg/L	0.0002	<0.0002
Selenium	mg/L	0.00005	<0.00005
Silicon	mg/L	0.05	<0.05
Silver	mg/L	0.00001	<0.00001
Strontium	mg/L	0.0002	<0.0002
Sulphur	mg/L	0.5	<0.5

Table D-2: Field Blank Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	Field Blank (SNP 5-11)
Tellurium	mg/L	0.0002	<0.0002
Thallium	mg/L	0.00001	<0.00001
Thorium	mg/L	0.0001	<0.0001
Tin	mg/L	0.0001	<0.0001
Titanium	mg/L	0.0003	<0.0003
Tungsten	mg/L	0.0001	<0.0001
Uranium	mg/L	0.00001	<0.00001
Vanadium	mg/L	0.0005	<0.0005
Zinc	mg/L	0.001	<0.001
Zirconium	mg/L	0.0003	<0.0003

Notes:

< = less than; mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorous per litre.

2.9 Travel Blank

A travel blank was prepared by the analytical laboratory and accompanied the field team during travel to/from the site and sampling activities. Results for the travel blank sample are summarized in Table D-3. Parameter concentrations were less than five times the applicable DLs, indicating low potential for contamination during sample handling, transport, and storage.

Table D-3: Travel Blank Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	Travel Blank
Conventional Parameters			
pH	unitless	0.1	5.6
Conductivity	µS/cm	2	<2
Total suspended solids	mg/L	1	<1
Total dissolved solids (calculated)	mg/L	10	<10
Dissolved organic carbon	mg/L	0.5	<0.5
Major Ions			
Calcium	mg/L	0.05	<0.05
Magnesium	mg/L	0.005	<0.005
Potassium	mg/L	0.05	<0.05
Sodium	mg/L	0.05	<0.05
Sulphate	mg/L	0.3	<0.3

Table D-3: Travel Blank Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	Travel Blank
Nutrients			
Nitrate	mg-N/L	0.005	<0.005
Total ammonia	mg-N/L	0.005	<0.005
Total phosphorus	mg-P/L	0.002	<0.002
Dissolved phosphorus	mg-P/L	0.05	<0.05
Total Metals			
Aluminum	mg/L	0.003	<0.003
Antimony	mg/L	0.0001	<0.0001
Arsenic	mg/L	0.0001	<0.0001
Barium	mg/L	0.0001	<0.0001
Beryllium	mg/L	0.00002	<0.00002
Bismuth	mg/L	0.00005	<0.00005
Boron	mg/L	0.01	<0.01
Cadmium	mg/L	0.000005	<0.000005
Calcium	mg/L	0.05	<0.05
Cesium	mg/L	0.00001	<0.00001
Chromium	mg/L	0.0005	<0.0005
Cobalt	mg/L	0.0001	<0.0001
Copper	mg/L	0.0005	<0.0005
Iron	mg/L	0.01	<0.01
Lead	mg/L	0.00005	<0.00005
Lithium	mg/L	0.001	<0.001
Magnesium	mg/L	0.005	<0.005
Manganese	mg/L	0.0001	<0.0001
Mercury	mg/L	0.0000005	<0.0000005
Molybdenum	mg/L	0.00005	<0.00005
Nickel	mg/L	0.0005	<0.0005
Potassium	mg/L	0.05	<0.05
Rubidium	mg/L	0.0002	<0.0002
Selenium	mg/L	0.00005	<0.00005
Silicon	mg/L	0.1	<0.1
Silver	mg/L	0.00001	<0.00001
Sodium	mg/L	0.05	<0.05
Strontium	mg/L	0.0002	<0.0002
Sulphur	mg/L	0.5	<0.5
Tellurium	mg/L	0.0002	<0.0002
Thallium	mg/L	0.00001	<0.00001

Table D-3: Travel Blank Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	Travel Blank
Thorium	mg/L	0.0001	<0.0001
Tin	mg/L	0.0001	<0.0001
Titanium	mg/L	0.0003	<0.0003
Tungsten	mg/L	0.0001	<0.0001
Uranium	mg/L	0.00001	<0.00001
Vanadium	mg/L	0.0005	<0.0005
Zinc	mg/L	0.003	<0.003
Zirconium	mg/L	0.0002	<0.0002
Dissolved Metals			
Aluminum	mg/L	0.001	<0.001
Antimony	mg/L	0.0001	<0.0001
Arsenic	mg/L	0.0001	<0.0001
Barium	mg/L	0.0001	<0.0001
Beryllium	mg/L	0.00002	<0.00002
Bismuth	mg/L	0.00005	<0.00005
Boron	mg/L	0.01	<0.01
Cadmium	mg/L	0.000005	<0.000005
Cesium	mg/L	0.00001	<0.00001
Chromium	mg/L	0.0005	<0.0005
Cobalt	mg/L	0.0001	<0.0001
Copper	mg/L	0.0002	<0.0002
Iron	mg/L	0.01	<0.01
Lead	mg/L	0.00005	<0.00005
Lithium	mg/L	0.001	<0.001
Manganese	mg/L	0.0001	<0.0001
Molybdenum	mg/L	0.00005	<0.00005
Nickel	mg/L	0.0005	<0.0005
Rubidium	mg/L	0.0002	<0.0002
Selenium	mg/L	0.00005	<0.00005
Silicon	mg/L	0.05	<0.05
Silver	mg/L	0.00001	<0.00001
Strontium	mg/L	0.0002	<0.0002
Sulphur	mg/L	0.5	<0.5
Tellurium	mg/L	0.0002	<0.0002
Thallium	mg/L	0.00001	<0.00001
Thorium	mg/L	0.0001	<0.0001
Tin	mg/L	0.0001	<0.0001

Table D-3: Travel Blank Results for the Surveillance Network Program at Damoti Lake, 20 September 2023

Parameter	Unit	Detection Limit	Travel Blank
Titanium	mg/L	0.0003	<0.0003
Tungsten	mg/L	0.0001	<0.0001
Uranium	mg/L	0.00001	<0.00001
Vanadium	mg/L	0.0005	<0.0005
Zinc	mg/L	0.001	<0.001
Zirconium	mg/L	0.0003	<0.0003

Notes:

< = less than; mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; mg-N/L = milligrams of nitrogen per litre; mg-P/L = milligrams of phosphorous per litre.

3.0 SUMMARY

The QA/QC assessment of the data collected during the 20 September 2023 sampling event indicated limited potential for contamination during sampling, handling, or transport. Duplicate sample results indicate that intrastation variability was low (i.e., sampling precision was high). Overall, the data are considered adequate to address the objectives of the program.

4.0 REFERENCES

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