



**Updated Phase II Environmental Site
Assessment, Former Lochaber Mine
Site, Lochaber Mines, Nova Scotia**

Final Report

November 26, 2024

Prepared for:
Build Nova Scotia

Prepared by:
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Executive Summary

Stantec Consulting Ltd. (Stantec) was commissioned by Build Nova Scotia (BNS) in 2023 to carry out a Phase II Environmental Site Assessment (ESA) on the Former Lochaber Mine Site property located in Halifax Regional Municipality, Nova Scotia (Stantec 2023c). The purpose of the site assessment was to identify actual or potential environmental contamination or concerns associated with the former mine operations and delineate identified contamination. . The findings of the ESA completed in 2023 are presented in the Phase II ESA (Stantec 2023c).

Additional work was completed in 2024 to delineate soil and sediment impacts at the Site, as outlined in the Proposal for Former Lochaber Mines Human Health and Ecological Risk Assessment (Stantec 2024a). The sampling program was developed based on the findings and proposed steps presented in the Phase I ESA (Stantec, 2023b) and the findings of the Phase II ESA (Stantec 2023c) prior to Stantec's mobilization to the Site. The updated information has been included in this Updated Phase II ESA.

Scope of Work

The scope of this ESA, as outlined in the Phase I ESA and Proposed Field Program Memo Workplan dated August 30, 2023, (Stantec 2023a) and Proposal for Former Lochaber Mines Human Health and Ecological Risk Assessment (Stantec 2024a) consisted of the following:

- Preparation of a site-specific Health and Safety Plan (HSP) and daily fit-for-duty forms prior to leaving for and while at Site.
- Mobilization of Stantec representatives to the Site to complete the work objectives.
- Collection of surface and subsurface soil samples (where possible) from areas of potential environmental concern (APEC), as identified in the Phase I ESA (Stantec 2023b) and outlined in the Phase I ESA and Proposed Field Program Memo (Stantec 2023a). The exact number of soil samples collected were determined in the field based on visual observations (i.e., areal extent of spills, observed staining).
- Collection of co-located surface water and sediment samples from the Mines Branch River.
- Collection of delineation soil and sediment samples to delineate metals impacts.
- Submission of soil and sediment samples for laboratory analysis of total metals.
- Submission of surface water samples for analysis of total metals and general chemistry.
- Identification of tailings and in-field determination of tailing boundaries.
- Evaluation and interpretation of data.
- Preparation of this report presenting the observations and measurements made during the assessment and providing conclusions and recommendations (if applicable).



Field Program

Preliminary soil samples were collected on July 18, 2023, the Phase II ESA field program was completed on September 6 and 7, 2023 and the delineation field program was completed on May 31, 2024. The APECs that were assessed during the Phase II ESA field program included:

- APEC 1: Former Mine Workings
- APEC 2: Tailings Area
- APEC 3: Mines Branch River

Stantec collected and analyzed 27 soil samples, 6 sediment samples and 4 surface water samples, in addition to 6 quality control samples. The following conclusions were made related to potential environmental contamination associated with historical gold mining operations:

- Exceedances of Nova Scotia Environment and Climate Change (NSECC) Tier 1 Environmental Quality Standards (EQS) for aluminum, arsenic, cobalt, iron, lead, manganese, selenium and/or vanadium were identified in 21 of 27 soil samples collected at the Site.
 - Most of these locations are considered to be indicative of background soil concentrations. Bedrock in the Site area is known to be arsenic containing.
 - Several of the soil sample locations were identified as impacted by the former mine operations. These locations were characterized by relatively high concentrations of arsenic, cobalt and/or lead, and elevated concentrations of aluminum, iron, manganese, selenium, and vanadium above background concentrations, which are indicative of mining operations. The extent of impacted soil has been horizontally delineated; vertical delineation is assumed based on test pit refusal depths.
- Exceedances of arsenic, iron and manganese were identified in one sediment sample in the downstream 'far-stream' sample (LOC24-SD-01). As exceedances of arsenic, iron and manganese were not identified in the near stream or mid-stream samples, these concentrations are attributed to natural conditions.
- Two exceedances of mercury were identified in sediment in the 'mid-stream' samples (LOC23-SD-02 and LOC24-SD-02). As the concentration of mercury is likely attributed to natural conditions or other activities that were completed downstream of the Site since the near stream sample (LOC23-SD-03) didn't have a mercury exceedance, no further assessment is required to delineate impacts in sediment. The sediment impacts were delineated by the mid stream and far-stream samples.
- Exceedances of pH, aluminum, and iron above the NSECC Tier 1 EQS were identified in surface water samples as well as the upstream surface water sample. One exceedance of copper was identified in the downstream midpoint sample; however it was not reported as an exceedance in the upstream surface water sample. Background water conditions in Nova Scotia are often acidic (i.e., low pH levels) and contain elevated concentrations of certain metals, such as aluminum, copper, iron and manganese and therefore no further assessment is required to delineate surface water.



Updated Phase II Environmental Site Assessment, Former Lochaber Mine Site, Lochaber Mines, Nova Scotia
Executive Summary
November 26, 2024

Based on the results of the Updated Phase II ESA sampling program, the following was put forward:

- A remedial options analysis should be prepared to identify appropriate and effective options to address contamination present at the Site.

The statements made in this Executive Summary are subject to the same limitations as Section 10.0 and are meant to be read in conjunction with the remainder of this report.



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Acronyms / Abbreviations

| | |
|---------|--|
| AMO | Abandoned Mine Opening |
| APEC | Area of Potential Environmental Concern |
| BFD | Blind Field Duplicate |
| BNS | Build Nova Scotia |
| BV Labs | Bureau Veritas Laboratories |
| CCME | Canadian Council of Ministers of the Environment |
| CSA | Canadian Standards Association |
| COA | Certificate of Analysis |
| COC | Chain of Custody |
| COPC | Chemical of Potential Concern |
| EQS | Environmental Quality Standard |
| ESA | Environmental Site Assessment |
| HSP | Health and Safety Plan |
| ISO | International Standards Organization |
| ISQG | Interim Sediment Quality Guideline |
| km | Kilometre |
| LD | Lab Duplicate |
| m | Metre |
| mbgs | metres below ground surface |
| NS | Nova Scotia |
| NSDNRR | Nova Scotia Department of Natural Resources and Renewables |
| NSECC | Nova Scotia Environment and Climate Change |
| PID | Property Identification (Numbers) |
| QA/QC | Quality Assurance/Quality Control |
| RDL | Reportable Detection Limit |
| RPD | Relative Percent Difference |
| SAR | Species at Risk |
| SCC | Standards Council of Canada |
| SOCC | Species of Conservation Concern |
| SOP | Standard Operating Procedure |
| Stantec | Stantec Consulting Ltd. |
| °C | Degree Celsius |



1 Introduction

Stantec Consulting Ltd. (Stantec) was commissioned by Build Nova Scotia (BNS) in 2023 to carry out a Phase II Environmental Site Assessment (ESA) on the Former Lochaber Mine Site property located in Halifax Regional Municipality, Nova Scotia, herein referred to as the Site (refer to Figure A-1, Appendix A). The Phase II ESA was conducted to support BNS's mandate to assess, remediate, redevelop, and manage properties owned by the Province of Nova Scotia. The findings of the ESA completed in 2023 are presented in the Phase II ESA (Stantec 2023c).

Additional work was completed in 2024 to delineate soil and sediment impacts as outlined in the Proposal for Former Lochaber Mines Human Health and Ecological Risk Assessment (Stantec 2024a). The updated information has been included in this Updated Phase II ESA.

1.1 Objective

The objective of the Updated Phase II ESA was to identify actual or potential environmental contamination or concerns associated with the former mine operations and delineate environmental contamination. The sampling program was developed based on the findings and proposed steps presented in the Phase I ESA (Stantec 2023b) and the findings in the Phase II ESA (Stantec 2023c), prior to Stantec's mobilization to the Site.

1.2 Scope of Work

The scope of this ESA, as outlined in the Phase I ESA and Proposed Field Program Memo Workplan dated August 30, 2023 (Stantec 2023a) and Proposal for Former Lochaber Mines Human Health and Ecological Risk Assessment (Stantec 2024a), consisted of the following:

- Preparation of a site-specific Health and Safety Plan (HSP) and daily fit-for-duty forms prior to leaving for and while at the Site.
- Mobilization of a Stantec representative to the Site to complete the work objectives.
- Collection of surface and subsurface soil samples (where possible) from areas of potential environmental concern (APEC), as identified in the Phase I ESA (Stantec 2023b) and outlined in the Phase I ESA and Proposed Field Program Memo (Stantec 2023a). The exact number of soil samples collected were determined in the field based on visual observations (i.e., areal extent of spills, observed staining, etc.).
- Collection of co-located surface water and sediment samples from the Mines Branch River.
- Collection of delineation soil and sediment samples to delineate metals impacts.



- Submission of soil and sediment samples for laboratory analysis of total metals.
- Submission of surface water samples for analysis of total metals and general chemistry.
- Visual identification of tailings and in-field determination of tailing boundaries. Evaluation and interpretation of data.

Preparation of this report presenting the observations and measurements made during the assessment and providing conclusions and recommendations (if applicable). The Phase II ESA was conducted in general accordance with the Canadian Standards Association (CSA) Z769-01 for Phase II Environmental Site Assessments (CSA Group 2018) and the Nova Scotia Environment and Climate Change (NSECC) Phase 2 Environmental Site Assessment Protocol (PRO-400).

1.3 Deviations

There were no deviations from the CSA Z769-01 standard during the undertaking of the Phase II ESA field assessment or reporting. For this project there was one deviation from the Phase 2 Environmental Site Assessment Protocol Pro-400, i.e, groundwater was not collected as further discussed in Section 4.1.5.



2 Site Description

2.1 Subject Property and Surrounding Land Use

The Site is located in a rural forested area near Lochaber Mines, in the Halifax Regional Municipality south of the Liscomb Game Sanctuary. The Site is located 2 kilometres (km) east of Highway 374 along an unnamed gravel road which is located approximately 4 km north of the township of Lochaber Mines on Highway 374 in Nova Scotia. The Site location is shown on Figure A-1, Appendix A.

The Site consists of one Property Identification No. (PID) 40751497. PID 40751497 contains an area of 63.9 hectares and is owned by the Nova Scotia Department of Natural Resources and Renewables (NSDNRR). The former mine site makes up an area of approximately 6.1 hectares (Build Nova Scotia 2023). Mine related features (i.e., waste rock piles, abandoned mine opening [AMOs], trenches and exploration pits) from historical mining operations are present on the Site. There are no apparent building or operations present on the Site.

The Site is accessible by a gravel road from Highway 374. The final kilometre of the gravel road turns into an unmaintained access trail. Site details are provided on Figure A-2, Appendix A.

Adjacent land uses include mainly crown land to the north, south, east and west. The Liscomb Game Sanctuary is located on land adjacent to the north and east of the Site. Current land use of adjoining properties is summarized in Table 1.

Table 1 Adjoining Properties – Current Land Use

| Direction | Current Land Use | Current Occupant |
|-----------|---|------------------|
| North | Liscomb Game Sanctuary - Undeveloped, forested. | None |
| South | Undeveloped, forested (to the southeast approximately 250 m from the Site there is land identified as NS Land Pending Protection) | None |
| East | Liscomb Game Sanctuary - Undeveloped, forested | None |
| West | Undeveloped, forested | None |

2.1.1 Site Services

The Site is not currently serviced, being in a rural portion of the province. Based on a review of the Nova Scotia Well Logs Database, there are no potable water wells on the Site, or within 5 km of the Site (Nova Scotia Environment 2023).



2.1.2 Topography and Regional Drainage

Based on available topographic maps and site observations, topography of the Site is complex. There is a local high in the southwestern portion of the site and an apparent topographical divide roughly dividing the Site. On the western 1/3rd of the site, regional undisturbed surface drainage (anticipated shallow groundwater flow direction) is directed towards a wetland in the northwestern corner of the Site which eventually flows into Fifteen Mile Stream to the west. On the eastern 2/3rd of the Site, flow is to the east towards Mines Branch River. In a small portion of the southern section of the site, flow is directed to a wetland along the southern property boundary and towards White Lake to the south.

The surfaces at the Site consist of a combination of open wetland, forested wetland, waste rock piles, and woodland. Stormwater is anticipated to drain by infiltration and/or overland flow. Mines Branch River crosses the east end of the Site from the northwest to southeast. There are various pools and streams on the Site. Notably, several of the AMOs are flooded.

2.1.3 Surficial and Bedrock Geology

Based on available surficial geology mapping, the native surficial soils of the Site consist of stony till plain, which is comprised of a stony, sandy matrix that is derived from local bedrock sources (Stea 1992). Surficial geology in this area is characterized by its flat to rolling appearance and surface boulders. Underlying depth ranges between 2 and 20 metres below ground surface (mbgs) (MacEachern 1983).

Based on available bedrock geology mapping, bedrock in the area of the Site consists of slate, minor sandstone and schist of the Halifax Formation (Keppie 2000). The bedrock and groundwater at the Site are identified to be in a medium to high risk area for arsenic in bedrock well water (Nova Scotia Department of Natural Resources 2016).



3 Background

Several historical records referencing the Site and former operations were identified in the Phase I ESA (Stantec 2023b). The records provide insight into the nature of the historical mining operations and exploration activities that were undertaken at the Site.

The historical records indicate that operations for the Lochaber gold mines started as early as 1883 (Nova Scotia 2015). In 1887, several leads had been opened up by the Lochaber Gold Mining Company and in 1888 preparations were made for opening the main lead and a road was constructed to the mine from the end of the East River of Sheet Harbour Road (E.R Faribault 1926). A stamp mill was reportedly operational at the Site by 1889 (E.R Faribault 1926) and the approximate location is shown on the Site in the 1897 Geological Survey of Canada Map (Geological Survey of Canada 1897). The 1897 map also indicates that the Lochaber Mines were considered abandoned by 1897. A potential stamp mill foundation was identified on the Site southeast of the known AMOs during the Phase I ESA site visit and preliminary soil sampling (Stantec 2023b). Four shafts including one advanced to a depth of 62 feet (19 m) were reported to be present on the Site (M. G. Goudge 1934). The Lochaber Mines reportedly produced 4.5 tonnes of ore and 2.3 ounces of gold during its operational phase (Nova Scotia 2015).

Prospecting activities were conducted on the Site in the 1980s by GeoTech Surveys Limited on behalf of Seabright Resources Inc. to determine the potential for gold (GeoTech Surveys Limited 1984). Activities included the advancement of test pits. The report concluded that from the information review the prospects in the Site area should consider further exploration. In 2019, additional prospecting surveying activities were completed at the Site. The 2019 prospecting included surficial sampling activities but no intrusive exploration.

Additional information from the historical records is provided in the Phase I ESA (Stantec 2023b).

3.1 Previous Environmental Reports

The following environmental reports were completed for this Site:

- Phase I Environmental Site Assessment, Former Lochaber Mines, Lochaber Mines, N.S. Prepared by Stantec Consulting Ltd for Build Nova Scotia. Dated November 3, 2023 (Stantec 2023b)
- Memo: Habitat Evaluation, Former Lochaber Mines Site, Lochaber Mines, N.S. Prepared by Stantec Consulting Ltd. for Build Nova Scotia. Dated August 29, 2024 (Stantec 2024b)



3.2 Areas of Environmental Concern

The Phase I ESA (Stantec 2023b) identified APECs related to historical mining operations at the Site. A summary of each APEC and rationale is provided in Table 2.

Table 2 Potential Sources of Environmental Impacts

| Area of Potential Environmental Concern (APEC) | Location | Potential Concern | Source |
|--|----------------------|--|-------------|
| APEC 1 | Former Mine Workings | APEC 1 contains the former mine workings shafts on the Site and is adjacent to the south of the old road/trail that runs through the Site. Waste rock potentially arsenic containing and having acid generating potential. | Phase I ESA |
| APEC 2 | Tailings Area | APEC 2 contains the tailings area on the Site, which is located approximately 30 meters (m) south of the old road/trail that runs through the Site and approximately 30 m west of the Mines Branch River. Potential elevated arsenic and mercury levels in tailings. | Phase I ESA |
| APEC 3 | Mines Branch River | APEC 3 includes the Mines Branch River, that runs northwest to southeast through the eastern part of the Site. It is likely that surface water resources were manipulated on the Site and used for the operation of the stamp mill and sluice. Potential elevated arsenic and mercury levels in tailings may be encountered in sediment and surface water downgradient of the mining activities. | Phase I ESA |

As noted on Figure A-2 there was a “pit” located to the north of the access road at the western edge of the Site. During the field visits, this feature was assessed and deemed not an APEC. In the area of the “pit”, there were a series of shallow depressions consistent with prospecting and not mining activities.



4 Regulatory Framework

4.1 Nova Scotia Environmental Quality Standards (EQS)

Nova Scotia Environment and Climate Change (NSECC) released its *Contaminated Sites Regulations* on July 6, 2013 which provide the requirements for notification of contaminated sites, as well as the basis for determining the appropriate numerical remediation levels, or ongoing site exposure management measures, applicable to a contaminated site (NSECC 2013). The overall regulatory goals for remediation are to manage contamination to reduce related risks to acceptable levels for humans and the environment (i.e., ecology). These goals may be met by a variety of means acceptable to NSECC, from cleanup at the conservative generic (Tier 1) level, to cleanup based on site-specific conditions (Tier 2), to long-term exposure management of site contamination through engineered, physical or administrative controls.

The Tier 1 Environmental Quality Standards (EQS) are substance generic environmental quality standards that may be used for remediation levels. These standards represent a standardized level of risk for contributing pathways, based on land use and other factors. Use of the Tier 1 EQS for remediation is a conservative and typical application of cleanup standards. The Tier 1 EQS incorporate human health and ecological effects where applicable.

The Tier 1 EQS were revised in September 2021 and again in October 2022.

4.1.1 Soil

Analytical results for soil were compared to the applicable Tier 1 EQS for agricultural land use, with non-potable groundwater use and coarse-grained soil. The management of the forestry resources and previous discussions with NSECC have indicated that agricultural land use is the appropriate criteria in the present case.

4.1.2 Sediment

Analytical results for sediment were compared to the applicable Tier 1 EQS for freshwater.

4.1.3 Surface Water

Analytical results for surface water were compared to the applicable Tier 1 EQS for freshwater.



4.1.4 Groundwater

Prior to the completion of the Phase II ESA field program, it was decided that groundwater at the Site would not be assessed as part of the program, with the understanding that the soil, sediment and surface water analytical results would be used to guide future groundwater assessment, if required. Several reasons that factored into this decision are discussed below:

From the previous reports and historical documents, it is known that the Lochaber Gold Mines were a relatively small operation with a short lifespan (1883 to 1889). The relatively small footprint of the mine and associated small volume of processed ore (4.5 tonnes) and gold yield (2.3 ounces) (Nova Scotia 2015) are quite insignificant compared to the other historical gold mines in Nova Scotia that produced high volumes of ore and gold. Lochaber Mines is ranked 58th on a list of the 64 gold mining districts that were identified in Nova Scotia (Nova Scotia 2015). The ranking is from largest volume of crushed ore to smallest. Due to the presence of the mining operations at Lochaber Mines, it is possible that contamination may impact the surface soil at the Site, however it is unlikely to significantly impact the groundwater.

Based on a review of the provincial mapping, the Site is located in an area deemed to have medium to high risk of arsenic in bedrock and groundwater (Nova Scotia Department of Natural Resources 2016), which means that naturally occurring arsenic concentrations in groundwater would be likely to be reported as Tier 1 EQS exceedances. Notably there are areas in the same watershed as the Site, that have reported >20 µg/L of arsenic in groundwater (Nova Scotia 2018). For comparison, the Tier 1 EQS for arsenic in groundwater is 10 µg/L (using potable agricultural land use criteria). Differentiation between naturally occurring arsenic and anthropogenically influenced arsenic concentrations would be difficult. In addition, there are no recorded groundwater wells within 5 km of the Site and therefore no human receptors to be directly impacted by groundwater on the Site.

Using the Provincial Landscape Viewer, the provincial map shows that the former mine area and APECs are located in a wetland (Nova Scotia 2023). Stantec conducted a habitat assessment in May 2024 that confirmed the presence of forested wetlands (Balsam fir/Cinnamon fern – three-seeded sedge/Sphagnum vegetation type (WC6) and Red maple/Cinnamon fern/Sphagnum vegetation type (WD2)) coniferous and mixed wood treed swamp) in the APECs (Stantec 2024b). Installation of groundwater monitoring wells would likely require the submission of an application for a permit and approval through NSDNRR for wetland alteration, because well installation would disturb the soil profile in the wetland. Permitting applications would cause significant delay in the project as well as require the vegetation clearing into the areas where monitoring wells would be installed.

Based on information from NSDNRR, it was identified that species at risk (SAR), including sensitive lichens, may be present near the Site. Stantec conducted a habitat assessment and a desktop review of publicly available information for the Site to identify SAR and/or species of conservation concern (SOCC). The desktop review identified 9 SAR records including the chimney swift (*Chaetura pelagica*), common nighthawk (*Chordeiles minor*), olive-sided flycatcher (*Contopus cooperi*), rusty blackbird (*Euphagus carolinus*), barn swallow (*Hirundo rustica*), mainland moose (*Alces alces americana*), boreal felt lichen (*Erioderma pedicellatum*), blue felt lichen (*Pectenia plumbea*), and frosted glass whiskers (*Sclerophora*



peronella (Atlantic pop.)), and 10 SOCC records, including Atlantic salmon NS southern upland population (*Salmo salar* pop.6) common goldeneye (*Bucephala clangula*), canada jay (*Perisoreus canadensis*), boreal chickadee (*Poecile hudsonicus*), greater yellowlegs (*Tringa melanoleuca*), southern twayblade (*Neottia bifolia*), blistered tarpaper lichen (*Collema nigrescens*), white-rimmed shingle lichen (*Fuscopannaria leucosticta*), Corrugated Shingles Lichen (*Fuscopannaria ahlneri*) and blue-gray moss shingle lichen (*Moelleropsis nebulosa*), within 5 km of the Site (Stantec 2024b). During the habitat assessment, an olive-sided flycatcher, a SAR, was recorded singing just north of the Site and pine siskin, a SOCC, was heard flying over the Site (Stantec 2024b). Fish were also observed feeding in Mines Branch River which flows through the Site. Although the fish were not visible, the feeding behavior was typical of brook trout (*Salvelinus fontinalis*) which is a SOCC in Nova Scotia. Based on the habitat assessment and desktop review findings, additional assessments would likely be required at the Site to confirm critical habitat for SAR and SOCC should disturbance of the Site be required.

Based on the analytical results for the Updated Phase II ESA field program, there was no evidence of gross contamination in soil, sediment and surface water and the groundwater pathway was deemed insignificant (see Section 7.4, below). No further assessment was completed or recommended for groundwater at the Site.

4.2 Summary of Regulatory Framework

A summary of applicable standards and guidelines considered in this assessment are provided in Table 3.

Table 3 Summary of Regulatory Framework

| Media | Metals |
|---------------|--|
| Soil | Tier 1 EQS for Soil at a Non-Potable Site (coarse-grained soil, agricultural land use) |
| Sediment | Tier 1 EQS for Sediment (freshwater) |
| Surface Water | Tier 1 EQS for Surface Water (freshwater) |



5 Methodology

Stantec created a Field Program Workplan (Stantec 2023a) that was based on the findings of the Phase I ESA site reconnaissance and preliminary analytical results.

5.1 Phase II ESA Field Program

Preliminary soil samples were collected on July 18, 2023, the Phase II ESA field program was completed on September 6 and 7, 2023, and delineation soil and sediment samples were collected on May 31, 2024. The APECs that were assessed during the Phase II ESA field program included:

- APEC 1: Former Mine Workings
- APEC 2: Tailings Area
- APEC 3: Mines Branch River

Additionally, background conditions in soil, sediment and surface water were evaluated in undisturbed areas of the Site. The scope of work for the Field Program Workplan by APEC is presented in Table 4.

Table 4 Scope of Work for Each APEC

| Location | Scope of Work |
|-------------------------------|--|
| APEC 1 - Former Mine Workings | <ul style="list-style-type: none"> • Collect 15 soil samples plus 1 blind field duplicate (BFD) for analysis of metals in soil. |
| APEC 2 - Tailings Area | <ul style="list-style-type: none"> • Collect 8 soil samples plus 1 BFD for analysis of metals. • Collect 2 delineation soil samples plus 1 BFD for analysis of metals. |
| APEC 3 - Mines Branch River | <ul style="list-style-type: none"> • Collect 1 soil sample for analysis of metals in soil. • Collect 3 sediment samples plus 1 BFD for analysis for metals. • Collect 3 surface water samples plus 1 BFD for analysis of metals and general chemistry. • Collect 2 delineation sediment samples plus 1 BFD for analysis of metals. |
| Background | <ul style="list-style-type: none"> • Identify and collect background samples in locations that are upgradient or upstream of the historical mine workings in undisturbed locations. • Collect 1 soil sample for analysis of metals in soil (it should be noted that the background soil location was slightly outside of the Lochaber property boundary, because of a lack of GPS reception allowing accurate location). • Collect 1 sediment sample for analysis for metals. • Collect 1 surface water sample for analysis of metals and general chemistry. |

5.1.1 Pre-Assessment Site Activities

Prior to the Phase II ESA field program and delineation field program, Stantec submitted a request for utility locates from InfoExcavation (InfoEx) for the subsurface investigation (i.e., soil sampling). The request did not identify utilities on the Site. Note InfoEx is limited to the utility companies that subscribe to their services. Due to the location and nature of the Site, locations of services and utilities were not identified by a private utility locator.



Stantec completed an internal risk assessment to assess the likelihood and impact for a utility strike. Based on the knowledge of the Site and the observations from the Site reconnaissance, it was determined that the probability of a utility strike was low and the field team was advised to proceed with caution.

5.1.2 Field Investigation

5.1.2.1 Soil Sampling

Soil sample locations were selected with the following rationale:

- Locations were chosen to delineate metal contaminants detected in the preliminary and Phase II ESA analytical results.
- Locations were chosen to confirm the presence/absence of contaminants in soil at identified APECs.

Surface and subsurface soil samples were collected manually from test pits using a Dutch auger or shovel to collect soil from 0 to 0.6 mbgs. The test pits were advanced to depths generally ranging from 0.2 mbgs to 0.45 mbgs, at which point refusal of the hand-held shovel or auger was encountered. Representative soil samples were collected from the various stratigraphic layers encountered in the test pits. One soil sample was collected from each test pit apart from LOC23-SA-16, where two soil samples (i.e., A and B) were collected based on an observed soil horizon change. The soil samples were examined in the field for evidence of impacts (visual evidence of tailings).

One soil probe (LOC23-SA-19) was completed near the AMOs. The probe confirmed that there was insufficient soil to sample in the proposed area. Due to the proximity to AMOs, a soil sample could not be collected near the soil probe location. The soil probe location is shown on Figure A-3, Appendix A.

Soil samples were collected by gloved hand from the Dutch auger and placed into laboratory supplied sample containers for laboratory analyses. A new pair of disposable nitrile gloves were worn for each sample to reduce the potential for cross contamination. Samples were collected in laboratory supplied bottles and maintained in iced coolers and/or refrigerators until delivery at Bureau Veritas Laboratories (BV Labs). The Dutch auger was decontaminated between samples by removing debris and rinsing with distilled water.

Stantec personnel maintained detailed logs and photographic records of the subsurface conditions encountered, and obtained representative soil samples. The soil conditions are provided in the Soil Stratigraphy Logs, Appendix B, and photographs from select sample locations in Appendix C.



5.1.2.2 Sediment Sampling

Sediment sample locations were selected with the following rationale:

- Confirm the presence/absence of contaminants in sediment at APEC 3.

Sediment samples were collected based on the locations proposed by the Phase I ESA (Stantec, 2023b). This assessment proposed three locations downstream (i.e., near stream, mid stream and far stream) of the former mine workings (APEC 1) and tailings area (APEC 2) and one location upstream of the Site (background conditions).

Sediment samples were collected at depths ranging from 0.25 to 1.0 m below the surface of the water, with a shovel (restricted to shallow locations only) and the petite ponar. The sediment samples were examined in the field for visual evidence of impacts (i.e., tailings), placed in new laboratory-supplied glass jars, placed on ice, and submitted to BV Labs. The sediment samples were submitted for laboratory analysis of total metals.

All samples were collected following strict Stantec sampling procedures. Samples were uniquely labelled, and control was maintained through use of chain of custody forms. All samples were collected in laboratory supplied containers and preserved in insulated coolers. Appropriate sampling quality assurance and quality control (QA/QC) procedures were adhered to at all times.

5.1.2.3 Surface Water Samples

Surface water sample locations were selected with the following rationale:

- Confirm the presence/absence of contaminants in surface water at APEC 3.

Surface water samples were collected based on the locations proposed by the Phase I ESA (Stantec 2023b). This assessment proposed three locations downstream (i.e., near stream, mid stream and far stream) of the former mine workings (APEC 1) and tailings area (APEC 2) and one location upstream of the Site (background conditions).

Surface water samples were collected as grab samples from the middle of the water column at depths ranging from 0.20 to 0.25 m below the surface of the water. The surface water samples were examined in the field for evidence of visual impacts, placed in new laboratory-supplied glass jars, placed on ice, and submitted to BV Labs. The surface water samples were submitted for laboratory analysis of general chemistry and total metals.

It should be noted that Stantec observed several flooded AMOs at the time of the sampling program. Field sampling methodology was conducted in accordance with the Abandoned Mine Openings Hazards and Remediation Handbook (Nova Scotia ND) and Stantec's Safe Work Practice, and due to the hazard and high risk potential that the AMOs pose, Stantec was unable to approach or sample the surface water contained in the AMOs.



5.1.3 Quality Assurance and Quality Control

All samples were labelled to indicate location name, date, analysis required, and site name. The chain of custody (COC) was filled out prior to the laboratory submission and included the sample identification, date, analysis required, site name, turnaround time, number of sample containers, contact information and the time the samples were relinquished to the laboratory. All samples were submitted with the appropriate COC form to the laboratory within the recommended hold time. The samples were collected in pre-labeled laboratory supplied bottles/jars and maintained in iced coolers at less than 10 degrees Celsius (°C) until delivery to the laboratory.

5.2 Laboratory Program

Soil, sediment, and surface water samples were submitted to BV Labs in Bedford, Nova Scotia, for analysis. BV Labs is accredited by the Standards Council of Canada (SCC) according to the International Standards Organization (ISO) Standard 17025:2005. BV Labs has QA/QC protocols for instrument calibration, laboratory duplicates, matrix spikes, method blanks, process recovery, and surrogate spikes. The laboratory also follows standard operating procedures (SOPs) including hold time limitations, sample preparation and preservation, and data production and reporting. Methods used to analyze the samples are included in the Laboratory Certificates of Analysis (COA), presented in Appendix E. A summary of the laboratory analyses completed as part of the current investigation (including laboratory duplicate [LD] and blind field duplicate [BFD] samples) is presented in Table 5.

Table 5 Summary of Laboratory Analysis

| Media | Parameter | # of Samples |
|---------------|------------------------------|--|
| Soil | Metals | 27 + 3 Blind Field Duplicate (BFD) + 2 Lab Duplicate (LD) + 1 Background |
| Sediment | Metals | 5 + 2 BFD + 1 Background + 1 LD |
| Surface Water | Metals and General Chemistry | 3 + 1 BFD + 1 Background |

Notes:

The methodologies utilized by BV Labs in analysis of the soil and sediment samples are presented on the analytical report in Appendix E.

BFD = Field duplicate QA/QC sample

LD = Laboratory initiated duplicate QA/QC sample



6 Results

6.1 Field Observations

Generally, the Site was readily accessible via an unnamed gravel road off of HWY 374. The field team was able to drive the unnamed gravel road to the point of the 'T' intersection, where the road transitions into an access trail, after which point they walked to access the Site. Vegetation on and around the Site was heavy during the field program with areas of damaged trees from previous storms. The previously identified mine related features (i.e., waste rock piles, AMOs, trenches and exploration pits) were visually confirmed. Very small amounts of debris related to mining operations were identified. Stantec identified a foundation likely to be associated with the former stamp mill during the Phase I ESA site visit and preliminary sample collection (Stantec 2023b). The locations of observed historical mine workings and an identified stamp mill foundation, are shown on Figure A- 2, Appendix A. Photographs taken of Site conditions during the Phase II ESA field program are provided in Appendix C.

Descriptions of the APECs are provided below.

6.1.1 APEC 1

APEC 1 contains the former mine workings shafts on the Site and is adjacent to the south of the access trail (former road) that runs through the Site. At the time of the field assessment, Stantec personnel observed several trenches, mine shafts (dry and flooded), waste rock piles, and the foundation of the former stamp mill in this area. Warning signage from the "Department of Natural Resources" was identified around some of the AMOs. A few pieces of debris, consisting of metal objects, related to historical mining operations were found along the trail. APEC 1 was notably overgrown, with heavy vegetation and organic debris on the ground. Photographs taken of the site conditions at the time of the field assessment are provided in Appendix C.

6.1.2 APEC 2

APEC 2 contains the tailings area on the Site, which is located approximately 30 m south of the access trail that runs through the Site and approximately 30 m west of the Mines Branch River. At the time of the field assessment, Stantec personnel observed a relatively flat surface in the area of reported mine tailings¹, which is characteristic of historical (gold) mine tailings in Nova Scotia. A couple of large waste rock piles were noted in the northern area of this APEC. A mix of shrubs and mature trees were observed throughout this area. There were no observations of stressed or impacted vegetation in APEC 2. Photographs taken of the Site conditions at the time of the field assessment are provided in Appendix C. During the sampling program there was very little evidence of "classic" mine tailings at this Site. Other assessments of mine tailings have described tailings areas of sand-like grey / brown deposits near the former stamp mills and water courses. While there was fine sand material encountered at this Site, it was thin (less than 50 cm) and discontinuous in nature and lacked the layered grey look commonly associated with historical tailings.

¹ The mine tailings area was previously identified and visually delineated by the Nova Scotia Department of Natural Resources.



6.1.3 APEC 3

APEC 3 includes the Mines Branch River, that runs northwest to southeast through the eastern part of the Site. At the time of the field assessment, Stantec personnel observed the Mines Branch River to be in a relatively natural state with no evidence of active man-made infrastructure in the 350 m that was assessed. Where the access road meets the river there was timber suggesting there may have been a historical structure in this area (a ford to cross the stream, small dam, exact use unknown). There were no observations of vegetation in the river or riparian zone that appeared to be stressed or impacted. Photographs taken of the Site conditions at the time of the field assessment are provided in Appendix C.

6.2 Subsurface Conditions

6.2.1 Stratigraphy

6.2.1.1 Soil

The soil type encountered in soil samples generally consisted of either grey-brown silty sand with gravel or white sandy gravel. Samples were collected to a maximum depth of approximately 0.6 mbgs. Soil conditions, including observations of suspected tailings encountered in the test pits, were logged by Stantec field personnel at the time of sampling and are presented in Table B-1, Appendix B. Select photographs of the soil conditions are provided in Appendix C.

6.2.1.2 Sediment

The sediment type encountered in sediment samples generally consisted of either organic material or grey-brown silty sand with gravel or white sandy gravel. As the stream bottom was very rocky and contained many boulders, sediment was collected where substrate permitted. Sediment conditions, including observations of suspected tailings encountered were logged by Stantec field personnel at the time of sampling and are presented in Table B-2, Appendix B. Select photographs of the sediment conditions are provided in Appendix C.

6.2.2 Surface Water Observations

The surface water samples were all collected from the Mines Branch River that runs through the east side of the Site. Water was flowing at sample locations LOC23-SW-04 (upstream) and LO23-SW-02 (furthest downstream) and noted as very low flow or stagnant at the other sample locations (LOC23-SW-01 and LOC23-SW-03). A small beaver dam was noted downstream of sample location LOC23-SW-01. A light brown color was observed in all of the surface water samples. Negligible amounts of silt and suspended solids were observed, and no odours were detected.

6.2.3 Free Phase Petroleum Hydrocarbons

Free liquid phase petroleum hydrocarbons (i.e., free product) were not observed on soil in the test pits. Petroleum hydrocarbon odour/sheening were also not observed in soil, sediment, or surface water samples collected during the field program.



6.3 Analytical Results

6.3.1 Soil

Twenty-five soil samples (LOC23-SA-01 through LOC23-SA-18, and LOC23-SA-20 through LOC23-SA-25) were manually collected from test pits around the APECs to confirm the presence/absence of chemicals of potential concern (COPCs) identified in the Phase I ESA (Stantec, 2023b).

Two delineation soil samples (LOC24-SA-01 and LOC24-SA-02) were manually collected from test pits around the area of identified exceedances to delineate metal impacts to NSECC Tier 1 EQS. Sample locations are shown on Figure A-3, Appendix A.

Soil descriptions and observations made during the test pitting program are summarized in Table B-1, Appendix B. Total test pit depths were 0.6 mbgs. Soil samples were collected and submitted to the laboratory for metals analysis. The soil analytical results are tabulated in Table D-1, Appendix D. Copies of the laboratory COAs are attached in Appendix E.

6.3.1.1 Soil Analytical Results

A summary of the analytical results for soil is presented in Table 6.

Table 6 Summary of NSECC Tier 1 EQS Soil Exceedances

| Parameter | Number of Samples Exceeding Criteria | Maximum Concentration (mg/kg) |
|-----------|--------------------------------------|-------------------------------|
| Aluminum | 6* of 27 samples | 29,000 |
| Arsenic | 8* of 27 samples | 54 |
| Cobalt | 4 of 27 samples | 240 |
| Iron | 19* of 27 samples | 65,000 |
| Lead | 3 of 27 samples | 190 |
| Manganese | 14* of 27 samples | 3,400 |
| Selenium | 6* of 27 samples | 4.0 |
| Vanadium | 7* of 27 samples | 41 |

Notes:

Number of samples does not include BFDs or LDs.

* Exceeding concentrations were identified in the background soil sample (LOC23-SA25).

Sample exceedance locations are shown on Figure A-3, Appendix A.



6.3.2 Sediment

Four sediment samples (LOC23-SD-01 through LOC23-SD-04) were collected from the Mines Branch River to confirm the presence/absence of COPCs identified in the Phase I ESA (Stantec, 2023b) and delineate potential historical tailings. Samples were collected upstream and downstream (near stream, mid stream and far stream) of the Site and the historical mine workings and tailings area.

Two delineation sediment samples (LOC24-SD-01 and LOC24-SD-02) were collected to delineate metal impacts to Tier 1 EQS. Sample locations are shown on Figure A-5, Appendix A.

Sample descriptions and observations made during the sampling program are summarized in Table B-2, Appendix B. Sediment samples were collected and submitted to the laboratory for metals analysis. The sediment analytical results are tabulated in Table D-2, Appendix D. Copies of the laboratory COAs are attached in Appendix E.

A summary of the analytical results for sediment is presented in Table 7

Table 7 Summary of NSECC Tier 1 EQS Sediment Exceedances

| Parameter | Number of Samples Exceeding Criteria | Maximum Concentration (mg/kg) |
|-----------|--------------------------------------|-------------------------------|
| Arsenic | 1 of 6 samples | 170 |
| Mercury | 1 of 6 samples | 0.81 |
| Iron | 1 of 6 samples | 110,000 |
| Manganese | 1 of 6 samples | 6,900 |

Sample exceedance locations are shown on Figure A-5, Appendix A.

6.3.3 Surface Water

Four surface water samples (LOC23-SW-01 through LOC23-SW-04) were collected from the Mines Branch River to confirm the presence/absence of COPCs identified in the Phase I ESA (Stantec, 2023b) and delineate potential historical tailings. Samples were collected upstream and downstream (near stream, mid stream and far stream) of the Site and the historical mine workings and tailings area. Sample locations are shown on Figure A-5, Appendix A.

Sample descriptions and observations made during the sampling program are summarized in Table B-3, Appendix B. Surface water samples were collected and submitted to the laboratory for general chemistry and metals analysis. The surface water analytical results are tabulated in Table D-3, Appendix D. Copies of the laboratory COAs are attached in Appendix E.

A summary of the analytical results for surface water is presented in Table 8.



Table 8 Summary of NSECC Tier 1 EQS Surface Water Exceedances

| Parameter | Number of Samples Exceeding Criteria | Maximum Concentration/Minimum pH |
|-----------|--------------------------------------|----------------------------------|
| pH | 4* of 4 samples | 4.57 |
| Aluminum | 4* of 4 samples | 400 ug/L |
| Copper | 1 of 4 samples | 3.5 ug/L |
| Iron | 4* of 4 samples | 1,000 ug/L |

Notes:

Number of samples does not include BFDs.

* Exceeding concentrations were identified in the background soil sample (LOC23-SW-04).

Sample exceedance locations are shown on Figure A-5, Appendix A.

6.4 Quality Assurance and Quality Control

All samples were labelled to indicate location name, date, analysis required, and site name. The COC was filled out prior to the laboratory submission and included the sample identification, date, analysis required, site name, turnaround time, number of sample containers, contact information and the time the samples were relinquished to the laboratory. All samples were submitted with the appropriate COC form to the laboratory within the recommended hold time and within the appropriate sample temperature range of below 10°C.

To evaluate the representativeness of the samples to the medium sampled, field duplicate samples were collected and analyzed. A field duplicate sample is a second sample collected from the same location as the original sample and stored in a separate sample container. The field duplicates were assessed by calculating relative percent difference (RPD). RPD is the difference between two sample results divided by their mean and expressed as a percentage. The RPD of the duplicate from the original is calculated, using the following formula:

$$\text{Relative Percent (\%) Difference} = 100 \times [(A - B) / ((A + B) / 2)]$$

Where: A = Original concentration

B = Duplicate concentration

Recommendations provided in the Canadian Council of Ministers of the Environment (CCME) Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment; Volume 1 (CCME 2016) were applied to the results of the RPD calculations for assessing the QA/QC data. These criteria indicate that field duplicate pairs should have an RPD of 40% or less for parameters in surface water samples and 60% or less for parameters in soil or sediment. An RPD was not calculated when one or more of the concentrations for a given parameter were less than five times the reportable detection limit (RDL).



6.4.1 QA/QC Results

Where BFDs were collected, Stantec calculated RPDs between the parameter concentrations in the parent samples and the respective field duplicates. A summary of the RPD analysis is provided in Table 9. Calculated RPDs for soil, sediment and surface water are provided in Table D-1, D-2, and D-3, respectively, in Appendix D.

Table 9 Summary of RPD Analysis Results

| Media | Sample ID | Parent Sample ID | Analysis | Range of RPDs (%) ¹ | Number of Analytes within Acceptable Range | Acceptable Duplicate Correlation ? |
|---------------|--------------|------------------|-------------------|--------------------------------|--|------------------------------------|
| Soil | DUP-SA-01 | LOC23-SA-10 | Metals | 0 to 28.6 | 18 of 18 | Yes |
| | DUP-SA-02 | LOC23-SA-22 | Metals | 0 to 48.9 | 15 of 15 | Yes |
| | LOC24-SA-100 | LOC24-SA-02 | Metals | 46.5 to 113.7 | 4 of 7 | No |
| Sediment | DUP-SD-01 | LOC23-SD-03 | Metals | 0 to 44.4 | 7 of 7 | Yes |
| | LOC24-SD-100 | LOC24-SD-01 | Metals | 0 to 57.9 | 19 of 19 | Yes |
| Surface Water | DUP-SW-01 | LOC23-SW-04 | General Chemistry | 0 to 45.2 | 6 of 7 | No |
| | | | Metals | 0 to 11.6 | 13 of 13 | Yes |

Note:

¹When calculated, acceptable range: ≤ 60% for soil and sediment, and ≤ 40% for surface water.

In general, the field duplicate results agree closely with their corresponding parent samples and confirm the representativeness of the sampling procedures. Iron, manganese and nickel exceeded the 60% RPD guidelines in soil sample LOC24-SA-01/LOC24-SA-100 with RPDs of 113.7%, 106.3 %, and 105.4%, respectively. The field notes commented that the soil composition was not uniform, and it is likely that that may have impacted the homogeneity of the sample and BFD. Although there was a NSECC Tier 1 EQS exceedance of iron reported in the parent sample and not the BFD, the elevated RPD does not likely affect the interpretations of the data. The exceeding concentration of iron was consistent with concentrations reported in other soil samples at the Site.

The anion sum exceeded the 40% RPD guideline in surface water sample LOC23-SW-04/ DUP-SW-01 with an RPD of 44.4%. As there are no applied guidelines for anion sum in surface water it is not likely that the elevated RPDs affects the interpretation of the data.



Dissolved chloride exceeded the 40% RPD guideline in surface water sample LOC23-SW-04/ DUP-SW-01 with an RPD of 45.2%. As the concentrations reported for the parent and BFD are significantly below the NSECC Tier 1 EQS criteria, it is not likely that the elevated RPDs affects the interpretation of the data.

BV Labs provided QA/QC comments in the COAs (Appendix E) related to the laboratory analysis and deviations in analytical methods. Some common issues were:

- RCap balance acceptable. Anion/cation agreement within 0.2 meq/L.
- NOX<NO2: Both values fall within the method uncertainty for duplicates and are likely equivalent.

These are common issues and a normal part of laboratory analysis procedures. The laboratory followed prescribed protocols for dealing with each of these issues. Based on the details in Appendix E, material impact to data quality is not expected. These results do not indicate quality issues which would affect Stantec's reliance upon the analytical data.



7 Discussion

7.1 Soil

7.1.1 Background Levels

One background soil sample (i.e., LOC23-SA-25) was collected from an undisturbed area of the adjacent property to the Site during the Phase II ESA field program. The background soil sample reported concentrations of aluminum, arsenic, iron, manganese, selenium and vanadium in exceedance of the Tier 1 EQS. These parameters were also reported as exceedances for other samples. Table 10 summarizes the background concentrations compared to the Tier 1 EQS and the reported exceeding concentrations ranges in soil at the Site.

Table 10 Summary of Background Conditions Compared to NSECC Tier 1 EQS

| Parameter | Number of Samples Exceeding Criteria | Tier 1 EQS (mg/kg) | Background Soil Concentration | Exceeding Concentration Ranges |
|-----------|--------------------------------------|--------------------|-------------------------------|--------------------------------|
| Aluminum | 6 of 27 samples | 15,400 | 29,000 | 19,000 to 29,000 |
| Arsenic | 8 of 27 samples | 17 | 22 | 18 to 54 |
| Cobalt | 4 of 27 samples | 20 | 5.5 | 25 to 240 |
| Iron | 19 of 27 samples | 11,000 | 43,000 | 12,000 to 65,000 |
| Lead | 3 of 27 samples | 70 | 22 | 110 to 190 |
| Manganese | 14 of 27 samples | 360 | 710 | 380 to 3,400 |
| Selenium | 6 of 27 samples | 1 | 2.7 | 1.3 to 4 |
| Vanadium | 7 of 27 samples | 18 | 22 | 19 to 41 |

Note:

Shaded - Exceeding concentrations were identified in the background soil sample (LOC23-SA-25).

Based on a review of the analytical results for the Site, exceedances of aluminum, arsenic, iron, manganese, selenium and vanadium represent potential background levels for the site area soil (i.e., exceedances likely related to naturally occurring conditions such as bedrock and surficial geology).

7.1.2 Delineation

7.1.2.1 Arsenic

Arsenic concentrations above the Tier 1 EQS were reported in 8 of the 24 samples collected during the Phase II ESA. Elevated arsenic concentrations in soil are likely related to background conditions (i.e., bedrock geology) which is supported by mapping (Nova Scotia Department of Natural Resources 2016). However, it is likely that some of the exceedances identified in soil at the Site are attributed to historical mining-related arsenic contamination.



Based on the analytical results, horizontal delineation to Tier 1 EQS has been achieved along the northern, southern, eastern, and western side area of the soil sampling area by soil samples LOC23-SA-01, LOC23-SA-04, LOC23-SA-05, LOC23-SA-07, LOC23-SA-08, LOC23-SA-11, LOC23-SA-15, LOC23-SA-16, LOC23-SA-17, LOC23-SA-20, LOC23-SA-21, LOC23-SA-22, LOC23-SA-23, LOC23-SA-24, LOC24-SA-01, and LOC24-SA-02. Vertical delineation is assumed based on test pit refusal depths.

Partial delineation is achieved to the east by soil samples LOC23-SA-08, LOC24-SA-01 and LOC24-SA-01. As LOC23-SA-09 was collected alongside the Mines Branch River, no further soil samples can be collected east of the sample location to fully delineate horizontal impacts in soil. The Tier 1 EQS for arsenic in soil and sediment is 17 mg/kg. There were detectable concentrations of arsenic in the upstream and downstream near point and downstream midpoint sediment samples and one exceedance of arsenic in the downstream far point sample (LOC24-SD-01). There were no detectable arsenic concentrations in surface water collected at the Site.

Of the 8 soil samples with arsenic exceedances, 5 soil samples contain concentrations of arsenic above the background concentration (i.e., 22 mg/kg [LOC23-SA25]). The extent of the arsenic impacts above background concentrations is generally located around the area of reported mine tailings, south of the historical mine workings. The extent of arsenic impacts is delineated by arsenic concentrations below or the same as the background concentrations to the north, northeast, south and west. The inferred extent of arsenic in soil above background conditions likely related to historical mining activities is shown on Figure A-4, Appendix A. The approximate area of arsenic impacts in soil is 3,000 m².

7.1.2.2 Cobalt

Cobalt concentrations were reported at levels exceeding the Tier 1 EQS in four samples (LOC23-SA-02, LOC23-SA-09, LOC23-SA-13, and LOC23-SA-14). Cobalt contamination exceeding Tier 1 EQS is delineated by soil samples:

- to the north by LOC23-SA-17 (approximately 25 m)
- to the south, by LOC23-SA-11 and LOC23-SA-12 (approximately 25 m and 45 m, respectively)
- to the southeast by LOC24-SA-01 (approximately 15 m)
- to the west by LOC23-SA-20 (approximately 55 m).

Partial delineation is achieved to the east by soil samples LOC23-SA-08, LOC23-SA-10 and LOC23-SA-15 and to the southeast by LOC24-SA-01. As LOC23-SA-09 was collected alongside the Mines Branch River, no further soil samples can be collected east of the sample location to fully delineate horizontal impacts in soil. There is no sediment Tier 1 EQS for cobalt for comparison, but there were detectable cobalt concentrations identified in the analyzed sediment samples. Notably two of the five sediment samples downgradient from LOC23-SA-09 in Mines Branch River contained slightly higher concentrations than the background sediment sample collected upstream of the Site, and one of the five sediment samples (LOC24-SD-01) contained concentrations of cobalt 150x above background. Similarly, cobalt was detected in surface water in concentrations below the Tier 1 EQS. Concentrations in three of the three surface water samples downgradient of LOC23-SA-09 contained slightly higher concentrations than the background surface water sample collected upstream of the Site.



The inferred extent of cobalt impacts in soil is shown on Figure A-4, Appendix A. The approximate area of cobalt impacts in soil is 2,290 m².

7.1.2.3 Lead

Lead concentrations were reported at levels exceeding the Tier 1 EQS in three samples (LOC23-SA-13, LOC23-SA-14, and LOC23-SA-17). Lead contamination exceeding NSECC Tier 1 EQS is delineated by soil samples:

- to the north by LOC23-SA-16 and LOC23-SA-18 (approximately 20 m and 25 m, respectively)
- to the east by LOC23-SA-08, LOC23-SA-10 and LOC23-SA-15 (approximately 45 m, 40 m and 30 m, respectively)
- to the south by LOC23-SA-11 and LOC23-SA-12 (approximately 25 m and 45 m, respectively)
- to the west by LOC23-SA-05 and LOC23-SA-20 (approximately 40 m and 55 m, respectively)

The inferred extent of lead in soil is shown on Figure A-4, Appendix A. The approximate area of lead impacts in soil is 1,260 m².

7.2 Sediment

7.2.1 Background Levels

One background sediment sample (i.e., LOC23-SD-04) was collected from a location upstream of the Site in the Mines Branch River during the Phase II ESA field program. Metals concentrations in the background sediment sample were all reported below Tier 1 EQS.

7.2.2 Delineation

7.2.2.1 Arsenic, Iron and Manganese

Concentrations of arsenic, iron and manganese were identified above the Tier 1 EQS in one sediment sample (LOC24-SD-01) located downstream, in the 'far stream' location. Concentrations in sample LOC24-SD-01 were 74x, 29x, and 92x the background concentration for arsenic, iron and manganese, respectively.

As concentrations of arsenic, iron and manganese were below the Tier 1 EQS or not detected in the near stream and mid stream samples closer to the Site, it is possible that these exceedances may be attributed to natural conditions, or other activities that were completed downstream of the Site.



It would be expected that if contamination of the sediment was attributed to the former mine operations that higher concentrations of arsenic, iron and manganese would be identified in the near and mid-stream samples as heavy metals tend to settle out of the water column faster (i.e., a dispersion tail would be evident in the analytical data); however, the highest concentration of arsenic, iron and manganese was identified at the far stream sample near the lake inflow and it is possible that this may be attributed to natural deposition in the lake.

As the concentrations of arsenic, iron and manganese are not likely related to the operation of the former mines, no further assessment is required to delineate impacts in sediment. However, NSDNRR should be informed of the exceedances of Tier 1 EQS.

7.2.3 Mercury

Concentrations of mercury above the Tier 1 EQS were identified in two sediment samples (LOC23-SD-02 and LOC24-SD-02) located downstream, in the 'mid stream' locations. The sediment impacts were delineated by samples LOC23-SD-01 (mid stream sample) and LOC24-SD-01 (far stream sample). The approximate length of stream with impacted sediments based on the location of the two delineation samples is 30 to 65 m.

As concentrations of mercury were below the referenced criteria or not detected in the near stream and mid stream sample closer to the Site (LOC23-SD-03 and LOC23-SD-01, respectively), it is possible that it may be attributed to natural conditions or other activities that were completed downstream of the Site. It would be expected that if contamination of the sediment was attributed to the former mine operations that higher concentrations of mercury would be identified in the near stream sample as heavy metals tend to settle out of the water column faster; however, the highest concentration of mercury was identified at the far-stream sample and it is likely that this may be attributed to another source between the former mines and the LOC24-SD-02 sample location.

As the concentration of mercury is not likely related to the operation of the former mines, no further assessment is required to delineate impacts in sediment. However, NSDNRR should be informed of the exceedances of Tier 1 EQS.

7.3 Surface Water

Concentrations of aluminum, iron, and copper above the referenced criteria were identified in surface water samples collected at APEC 3 as well as the upstream background sample. pH values for APEC 3 and the background surface water samples were reported below the referenced criteria range (i.e., 6.5 to 9.0) and ranged from 4.57 to 4.77. Background water conditions in Nova Scotia are often acidic (i.e., low pH levels) and contain elevated concentrations of certain metals, such as aluminum, copper, iron and manganese. This is consistent with what has been observed at the Site and therefore these elevated concentrations are likely influenced by background conditions.

As the concentration of metals are likely influenced by background conditions and not related to the operation of the former mines no further assessment is required to delineate impacts in surface water.



7.4 Groundwater

Based on the analytical results for the Phase II ESA field program, there was no evidence of gross contamination in soil, sediment and surface water at the Site. Although concentrations of arsenic in soil samples collected during the Phase II ESA are reported above the NSECC Tier I EQS these values are generally far below the average and maximum arsenic level in tailings reported for other gold mining districts in Nova Scotia (Nova Scotia 2015). Average concentrations for tailings at other historic gold sites in the province range from 55² mg/kg to 85,295 mg/kg and maximum concentration range from 189 mg/kg to 312,300 mg/kg (Nova Scotia 2015). The average arsenic concentration for the soil samples collected at the Site is 15 mg/kg, which is above the NSECC Tier I EQS value of 10 mg/kg. The maximum arsenic concentration at the Site was 54 mg/kg, which was collected from the center of historic mine tailings. The background soil sample collected at the Site reported an arsenic concentration of 22 mg/kg, which indicates that soil conditions outside of the historic gold mining area have higher concentrations of arsenic in the soil, likely attributed to geological conditions (i.e., arsenic containing bedrock). As gross contamination of soil has not been identified at the Site, there is low likelihood that impacts in soil extend to groundwater. Similarly, based on the local topography and visual observations the groundwater flow direction is anticipated to be east towards the Mines Branch River. It is anticipated that if there was groundwater contamination from the historic gold mines that this may be evident in the downgradient receiving water body (i.e., the Mines Branch River). Based on the analytical results, there were no exceedance of arsenic in the surface water samples that demonstrate impact from groundwater.

² The relatively low average arsenic concentrations at this site are attributed to reprocessing of the tailings in a cyanide plant (Nova Scotia 2015). The next lowest average arsenic concentration is 2,111 mg/kg.



8 Conclusions

Based on the information gathered and on observations made during the Updated Phase II ESA field program, Stantec provides the following conclusions related to potential environmental contamination associated with historical gold mining operations at the Site:

- Exceedances of aluminum, arsenic, cobalt, iron, lead, manganese, selenium and vanadium were identified in several soil samples collected at the Site. These exceedances are attributed to a combination of both background metals conditions and influence from the historical mine workings with exception of lead and cobalt which only appear near the historical mine workings. Hence the former historical mine operations have resulted in a localized contaminated soil plume.
- Exceedances of arsenic, iron and manganese were identified in one sediment sample in the downstream 'far-stream' sample. As exceedances of arsenic, iron and manganese were not identified in the near stream or mid-stream samples, these concentrations are attributed to natural conditions.
- Two exceedances of mercury were identified in sediment in the 'mid-stream' samples. As the concentration of mercury is likely attributed to natural conditions or other activities that were completed downstream of the Site, no further assessment is required to delineate impacts in sediment. The sediment impacts were delineated by mid stream far-stream samples.
- Exceedances of pH, aluminum, iron and copper were identified in surface water samples as well as the background surface water sample. Background water conditions in Nova Scotia are often acidic (i.e., low pH levels) and contain elevated concentrations of certain metals, such as aluminum, copper, iron and manganese.



9 Recommendations

Based on the analytical results of the Updated Phase II ESA Stantec recommends that a remedial options analysis be prepared for the Site to identify appropriate and effective options to address the soil contamination present at the Site.



10 Closure

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (e.g., utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.



**Updated Phase II Environmental Site Assessment, Former Lochaber Mine Site, Lochaber Mines, Nova Scotia
Section 10 Closure**
November 26, 2024

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.

This report was prepared by Cally Baxter, B.Sc., EPT., and reviewed by Don Carey, M.Sc., P.Eng., and Patrick Turner, B.Sc., P.Eng.

\\Ca0213-ppfss01\work_group\1214\active\121418211\05_report_deliv\deliverable\Phase II ESA\rpt_121418211_lochaber_updated_phase_II_20241126.docx



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**Updated Phase II Environmental Site Assessment, Former Lochaber Mine Site, Lochaber Mines, Nova Scotia
Section 11 References**

November 26, 2024

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Stea, R. R., Conley, H., and Brown, Y. (compiler). 1992. Surficial Geology of the Province of Nova Scotia, Nova Scotia Department of Natural Resources, Minerals and Energy Branch. Map 92-3.



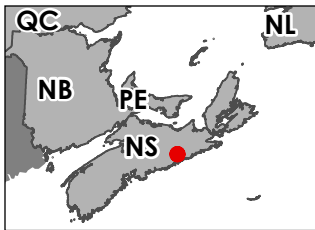
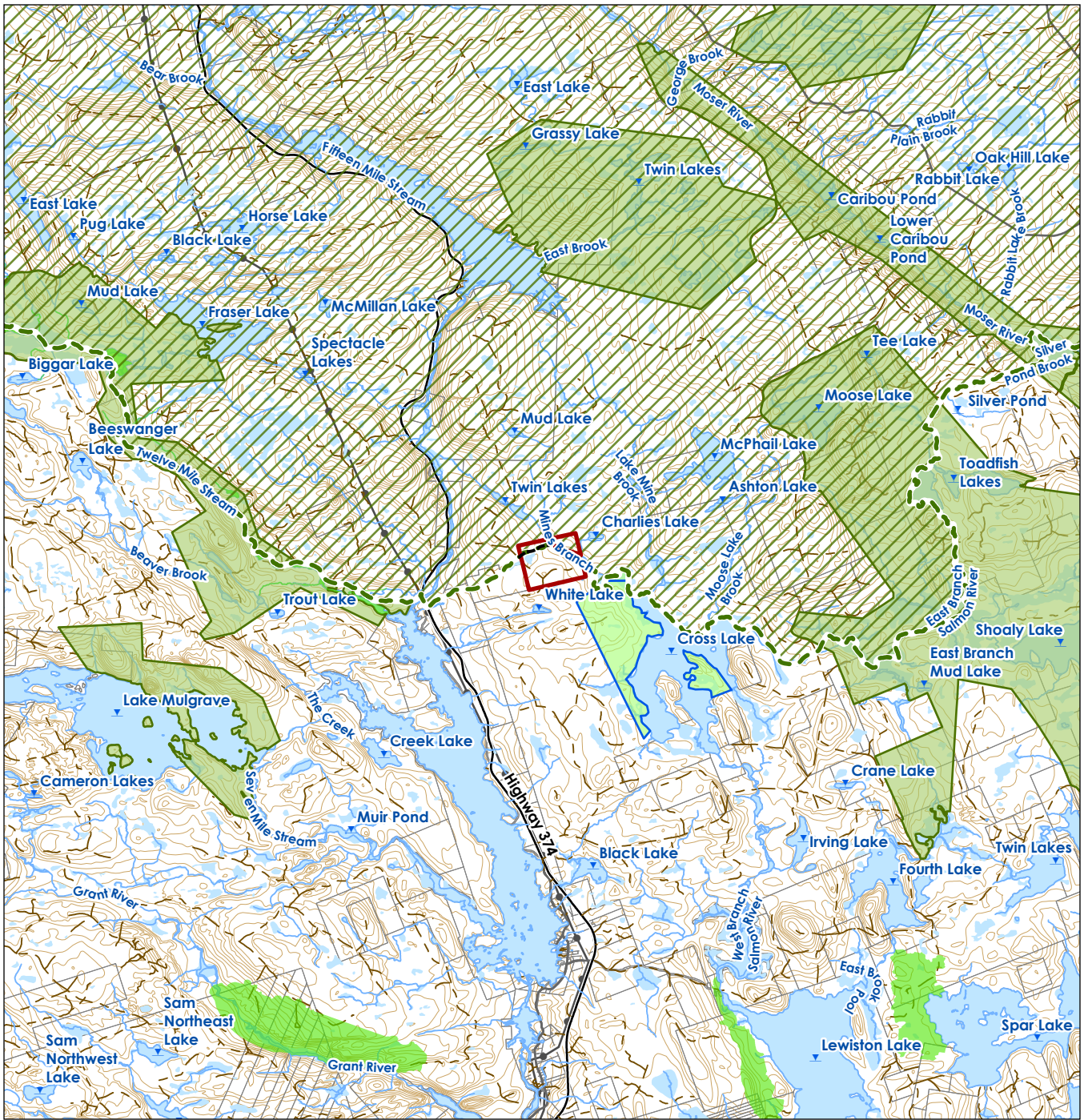
Appendices



Appendix A Figures

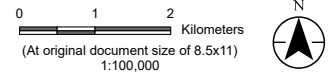


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- Highway
- Road
- - - Resource Road
- NS Power Lines
- Contours (5m)
- Watercourses
- Lochaber Property
- NS Properties

- Liscomb Game Sanctuary
- NSECC Protected Areas System
- NS Lands Pending Protection
- NS Significant Habitat
- Waterbodies



Project Location
Lochaber Mines, Nova Scotia
Atlantic Canada

Prepared by SC on 2023-10-12
QR by NW on 2023-10-17
IR by PT on 2023-11-15

Client/Project
Former Lochaber Mines Updated
Phase I/II Environmental Site
Assessment

12148211_002

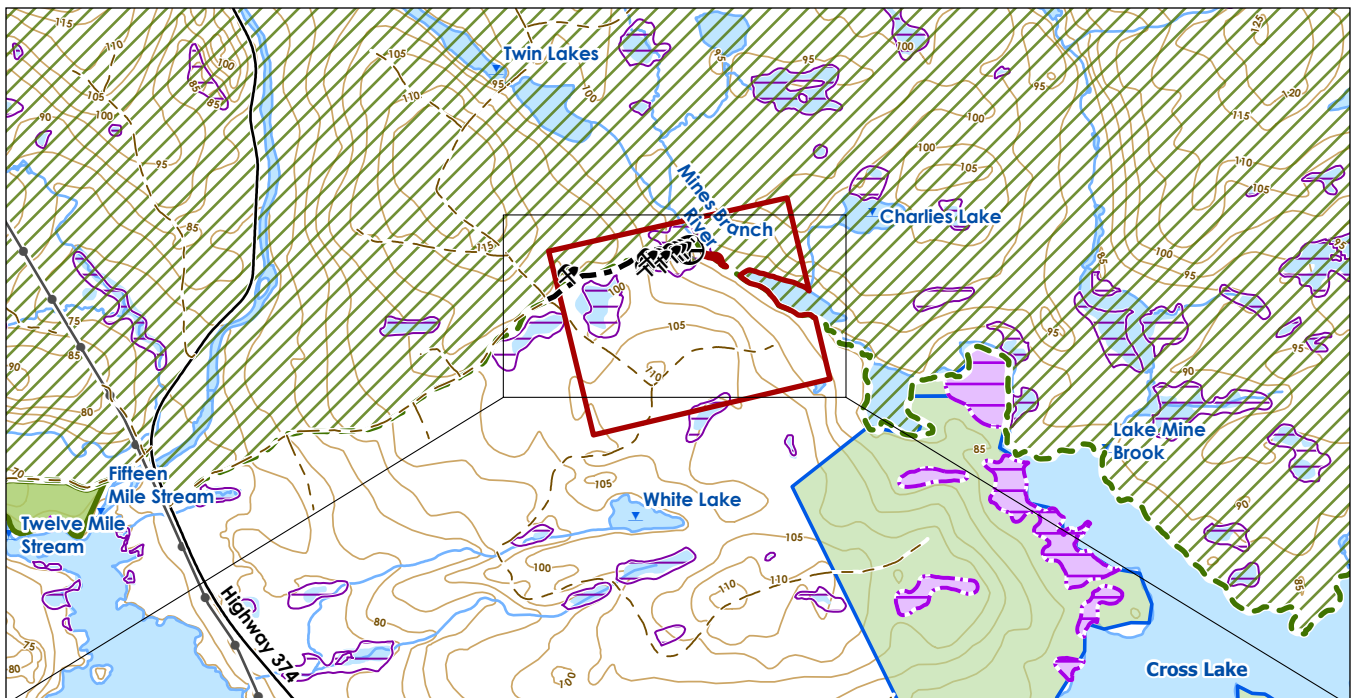
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A-1

Title
**Site Location Former Lochaber
Gold Mines**

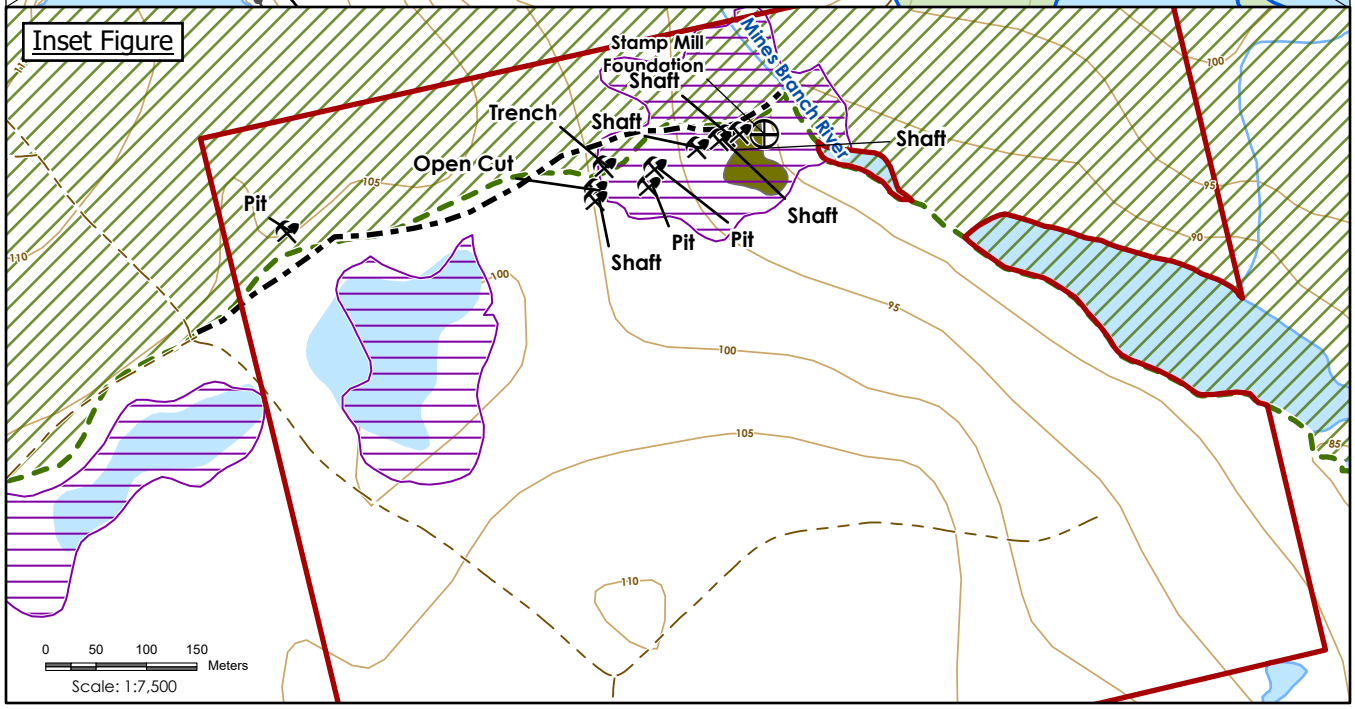
Notes
1. Coordinate System: NAD 1983 CSRS UTM Zone 20N
2. Data Sources: GeoNova, Nova Scotia Government
3. Background: GeoNova

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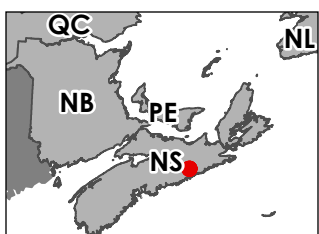
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Inset Figure



0 50 100 150 Meters
Scale: 1:7,500



Notes
 1. Coordinate System: NAD 1983 CSRS UTM Zone 20N
 2. Data Sources: GeoNova, Nova Scotia Government
 3. Background: GeoNova

- Mine Feature
- Highway
- Road
- Resource Road
- Power Lines
- Contours (5m)
- Mine Access Trail
- Watercourses
- Lochaber Property
- Potential Mine Tailings
- Liscomb Game Sanctuary
- NSECC
- Protected Areas System
- NS Lands
- Pending Protection
- Wetlands Special Significance
- NS Wetlands
- Waterbodies

0 250 500 750 Metres
 (At original document size of 8.5x11)
 1:30,000



Project Location
 Lochaber Mines, Nova Scotia
 Atlantic Canada

Prepared by
 SC on 2023-10-12
 QR by NW on 2023-10-17
 IR by PT on 2023-11-15

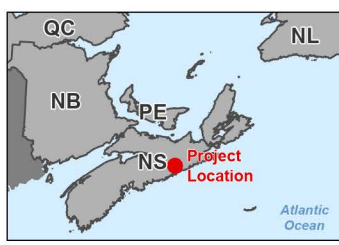
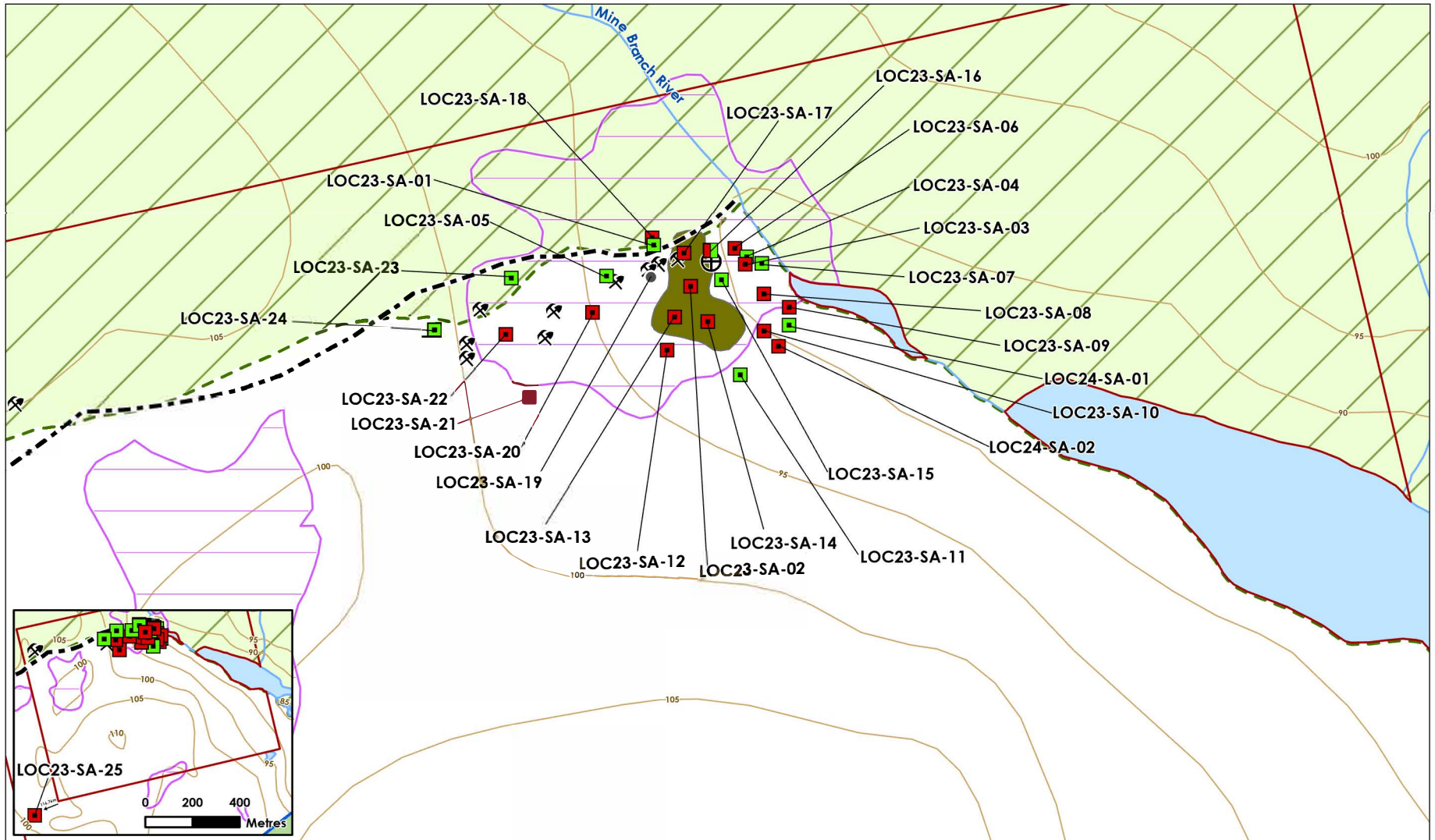
Client/Project
 Former Lochaber Mines Updated
 Phase/II Environmental Site
 Assessment

Figure No.
 A-2

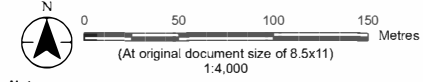
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 Gold Mines**

121418211_003

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- Soil Sample - Test Pit Representing two sample depths
- Soil Sample (Below Guideline Criteria)
- Soil Sample (Exceeds Guideline Criteria)
- Probe Location
- ⊕ Stamp Mill Foundation
- ⚡ Mine Features
- Mine Access Trail
- Potential Mine Tailings
- Lochaber Property
- Contour (5m)
- Liscomb Game Sanctuary
- Watercourse
- Waterbody
- Wetland (NSECC)



- Notes**
1. Coordinate System: NAD 1983 CSRS UTM Zone 20N
 2. Data Sources: GeoNova, Nova Scotia Government
 3. Background: Soil, sediment and surface water analytical results were compared against the applicable NSECC Tier 1 Environmental Quality Standard.

Project Location
 Lochaber Mines, NS
 Atlantic Canada

Prepared by SC on 2024-07-26
 QR by DC on 2024-08-19
 IR by DC on 2024-08-19

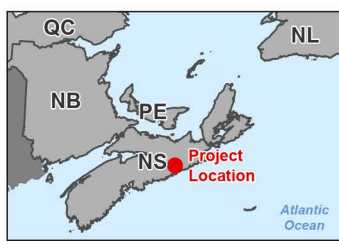
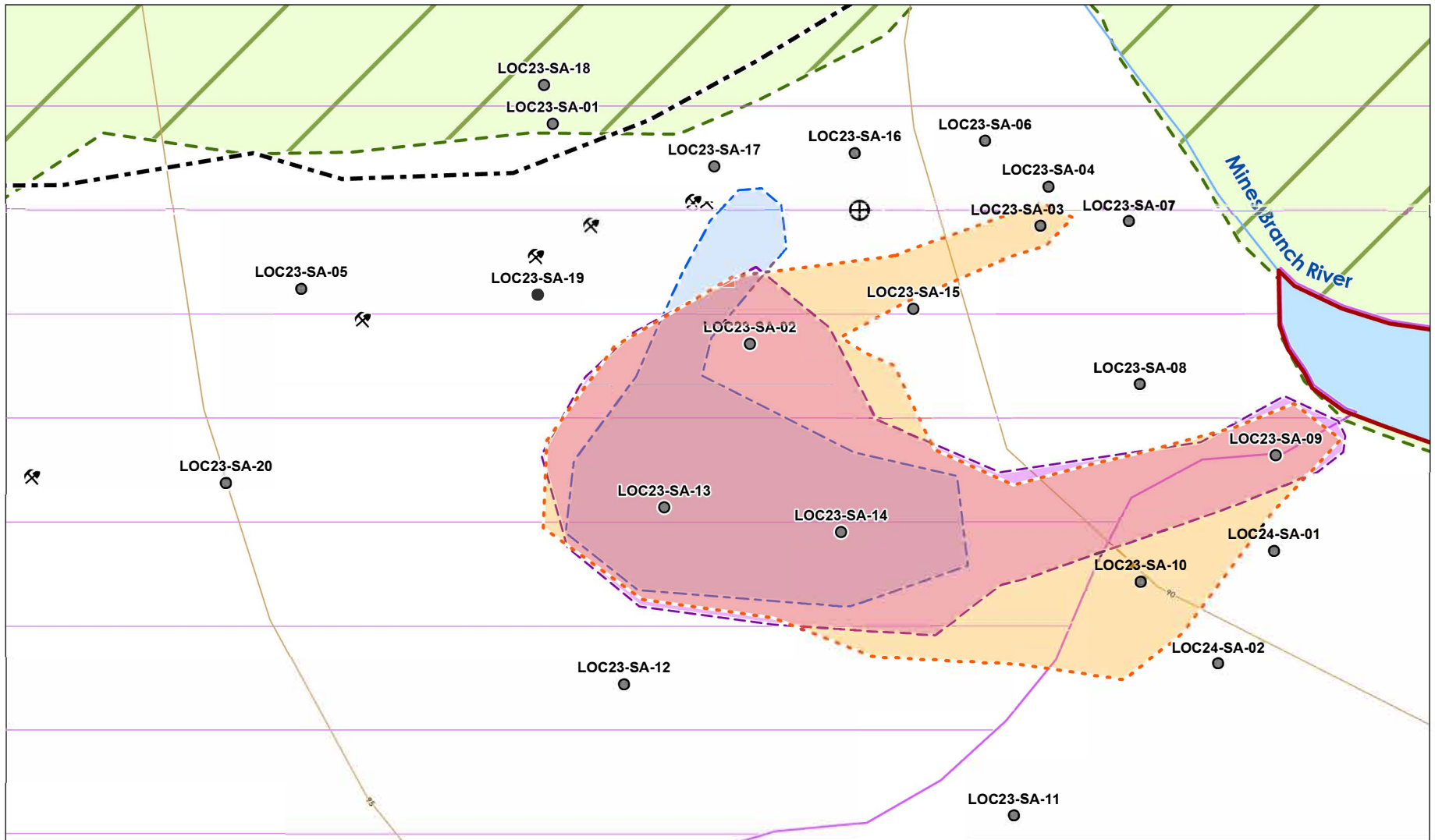
Client/Project
 Former Lochaber Mines Phase III
 Environmental Site Assessment

121418211_003

Figure No.
A-3
 Title
**Summary of Soil Sampling Locations
 and Analytical Results**

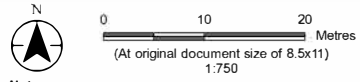


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- Soil Sample Location
- Probe Location
- ⊕ Stamp Mill Foundation
- ⚡ Mine Features
- Mine Access Trail
- Arsenic
- Cobalt
- Lead
- Lochaber Property
- Contour (5m)
- Liscomb Game Sanctuary
- Watercourse
- Waterbody
- Wetland (NSECC)

Inferred Area of Exceeding Background Concentrations



- Notes**
1. Coordinate System: NAD 1983 CSRS UTM Zone 20N
 2. Data Sources: GeoNova, Nova Scotia Government
 3. Background: Soil, sediment and surface water analytical results were compared against the applicable NSECC Tier 1 Environmental Quality Standard.

Project Location
 Lochaber Mines, NS
 Atlantic Canada

Prepared by SC on 2024-07-30
 QR by DC on 2024-08-19
 IR by DC on 2024-08-19

Client/Project
 Former Lochaber Mines Phase III
 Environmental Site Assessment

121418211_004

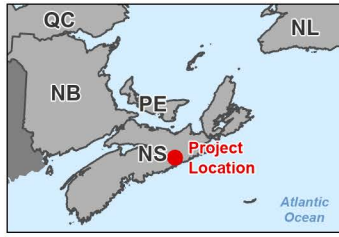
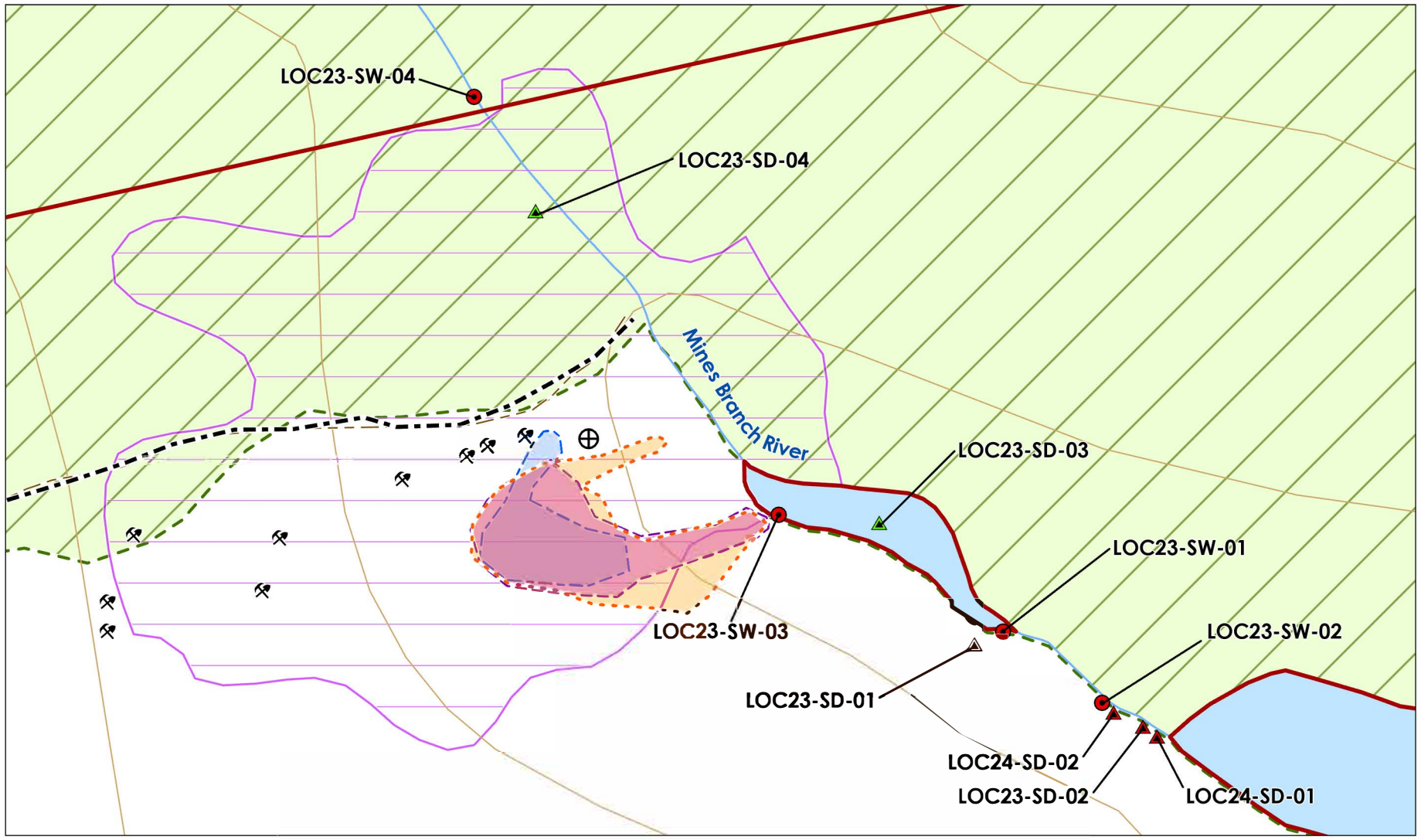
Figure No.
A-4

Title
Summary of Arsenic, Cobalt and Lead Impact Extents in Soil



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- | | | |
|---|--|------------------------|
| Sediment Criteria (Exceeds Guideline Criteria) | Mine Features | Lochaber Property |
| Sediment Sample (Below Guideline Criteria) | Mine Access Trail | Contour (5m) |
| Surface Water Sample (Exceeds Guideline Criteria) | Inferred Area of Exceeding Background Concentrations | Liscomb Game Sanctuary |
| Stamp Mill Foundation | Arsenic | Watercourse |
| | Cobalt | Waterbody |
| | Lead | Wetland (NSECC) |



Notes

1. Coordinate System: NAD 1983 CSRS UTM Zone 20N
2. Data Sources: GeoNova, Nova Scotia Government
3. Background: Soil, sediment and surface water analytical results were compared against the applicable NSECC Tier 1 Environmental Quality Standard.

Project Location
 Lochaber Mines, NS
 Atlantic Canada

Prepared by SC on 2024-08-07
 QR by DC on 2024-08-19
 IR by DC on 2024-08-19

Client/Project
 Former Lochaber Mines Phase III
 Environmental Site Assessment

121418211_005

Figure No.
A-5

Title
**Summary of Sediment and Surface
 Water Sampling Locations and
 Analytical Results**



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Appendix B Stratigraphy Records

Table B-1 Soil Stratigraphy

| Sample ID | Depth (mbgs) | Description | Associated APEC |
|--------------|--------------|---|-----------------|
| LOC23-SA-01 | 0 – 0.15 | Light brown sandy soil with gravel overlain by 3 cm of organic material. Refusal on cobble. | APEC 1 |
| LOC23-SA-02 | 0 – 0.2 | Light brown silty sand with gravel. Refusal on cobble. | APEC 2 |
| LOC23-SA-03 | 0 – 0.2 | Light brown sandy silt overlain by 5 cm of organic material. | APEC 1 |
| LOC23-SA-04 | 0 – 0.1 | Grey sandy silt with small pebbles. | APEC 2 |
| LOC23-SA-05 | 0 – 0.15 | Grey-brown silty sand (uniform), no apparent small pebbles. | APEC 1 |
| LOC23-SA-06 | 0 – 0.15 | Grey-brown silty sand. Collected on top of waste rock pile. | APEC 1 |
| LOC23-SA-07 | 0.25 – 0.60 | Uniform brown silty sand. Potential tailings. | APEC 2 |
| LOC23-SA-08 | 0.05 – 0.3 | Grey silty sand, overlaying grey gravel. | APEC 2 |
| LOC23-SA-09 | 0 – 0.2 | Uniform brown silty sand overlain by 5 cm of organic material. Potential tailings. | APEC 3 |
| LOC23-SA-10 | 0 – 0.45 | Red brown till with clay, overlain by approximately 8 cm of organic material. No suspected tailings. | APEC 2 |
| LOC23-SA-11 | 0 – 0.45 | Red brown till with clay overlain by ~8 cm of organic material. | APEC 2 |
| LOC23-SA-12 | 0 – 0.45 | Grey-brown silty sand. Not uniform but suspected as tailings due to proximity to mine workings. | APEC 2 |
| LOC23-SA-13 | 0 – 0.45 | Grey-brown silty sand, uniform appearance. Suspected tailings due to proximity to mine workings. | APEC 2 |
| LOC23-SA-14 | 0 – 0.2 | Grey-brown silty sand, uniform appearance. Suspected tailings due to proximity to mine workings. | APEC 2 |
| LOC23-SA-15 | 0 – 0.2 | White uniform sandy gravel, overlain by 2.5 cm of Black soil and 8 cm of organic material. | APEC 2 |
| LOC23-SA-16A | 0 – 0.2 | Red brown till. | APEC 1 |
| LOC23-SA-16B | 0 – 0.2 | White-blonde uniform sand | APEC 1 |
| LOC23-SA-17 | 0.05 – 0.15 | Grey-brown silty sand and white uniform sandy gravel, overlain by approximately 5 cm of organic material. | APEC 1 |
| LOC23-SA-18 | 0.05 – 0.3 | Light brown silty sand overlaying white sandy gravel. | APEC 1 |
| LOC23-SA-19 | - | Sample not collected due to AMO location. | APEC 1 |
| LOC23-SA-20 | 0.05 – 0.3 | Grey-brown uniform silty sand, overlain by approximately 5 cm of organic material. | APEC 1 |
| LOC23-SA-21 | 0.15 – 0.3 | Red brown silty sand/till | APEC 1 |
| LOC23-SA-22 | 0 – 0.2 | Brown-grey silty sand. | APEC 1 |
| LOC23-SA-23 | 0 – 0.25 | Grey silty sand with some pebbles and gravel, overlain by organics. | APEC 1 |
| LOC23-SA-24 | 0.15 – 0.3 | White uniform sandy gravel, overlain by approximate 15 cm of organic material. | APEC 1 |
| LOC23-SA-25 | 0.15 – 0.3 | Red brown silty sand with clay. | Background |
| LOC24-SA-01 | 0.07 – 0.15 | Grey silty sand with brownish red mottling. | APEC 2 |
| LOC24-SA-02 | 0.2 – 0.3 | Grey silty sand with gravel. | APEC 2 |

Table B-2 Sediment Sample Descriptions

| Sample ID | Description | Location |
|------------------|---|---|
| LOC23-SD-01 | Dark brown sediment mixed with organics. | APEC 3 – Downstream of Site (mid stream) |
| LOC23-SD-02 | Grey-brown silty sludge. | APEC 3 – Downstream of Site (mid stream) |
| LOC23-SD-03 | Light grey with silty sand and some pebbles | APEC 3 – Downstream of Site (near stream) |
| LOC23-SD-04 | Grey-brown sandy sediment mixed with organics. No odours. | Background – Upstream of Site |
| LOC24-SD-01 | Dark brownish black sediment mixed with organics. | APEC 3 – Downstream of Site (far stream) |
| LOC24-SD-02 | Grey-brown silty sludge. | APEC 3 – Downstream of Site (mid stream) |

Table B-3 Surface Water Sample Descriptions


| Sample ID | Description | Location |
|------------------|---|---|
| LOC23-SW-01 | Moderate flowing water. Water noted as light brown with little to no silt and no odour. | APEC 3 – Downstream of Site (mid stream) |
| LOC23-SW-02 | Fast flowing water. Water noted as light brown with little to no silt and no odour. | APEC 3 – Downstream of Site (far stream) |
| LOC23-SW-03 | Very low flowing water. Water noted as light brown with little to no silt and no odour. | APEC 3 – Downstream of Site (near stream) |
| LOC23-SW-04 | Moderate flowing water. Water noted as light brown with little to no silt and no odour. | Background – Upstream of Site |

Appendix C Photographs



| | | | |
|-------------------|-----------------------------------|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |

| | |
|---|---|
| <p>Photograph ID: 1</p> <p>Photo Location: Former Lochaber Mines</p> <p>Direction: W</p> <p>Survey Date: 7/21/2023</p> <p>Comments: View of the unnamed gravel road used to access the Site.</p> |  |
|---|---|

| | |
|--|--|
| <p>Photograph ID: 2</p> <p>Photo Location: Former Lochaber Mines</p> <p>Direction: E</p> <p>Survey Date: 7/21/2023</p> <p>Comments: View of the entrance to the trail that starts at the 'T' intersection of the unnamed gravel road.</p> |  |
|--|--|

| | | | |
|--|--|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 3 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: E | | | |
| Survey Date: 7/21/2023 | | | |
| Comments: View of overgrown vegetation on the trail to access the Site. | | | |
| Photograph ID: 4 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: S | | | |
| Survey Date: 7/21/2023 | | | |
| Comments: View of a danger sign observed near the abandoned mine openings. | | | |



| | | | |
|-------------------|----------------------------|-----------------------|--|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |



| |
|--|
| Photograph ID: 5 |
| Photo Location: Former Lochaber Mines |
| Direction: N |
| Survey Date: 7/21/2023 |
| Comments: View of a game sanctuary sign observed on the trail near the Liscombe Game sanctuary boundary. |



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|--|
| Photograph ID: 6 |
| Photo Location: Former Lochaber Mines |
| Direction: N |
| Survey Date: 7/21/2023 |
| Comments: View of the potential stamp mill foundation observed east of APEC 2. |






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|---|--|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 7 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: SE | | | |
| Survey Date: 7/21/2023 | | | |
| Comments: View of an abandoned mine opening observed from a distance. | | | |
| Photograph ID: 8 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 7/21/2023 | | | |
| Comments: View of soil sample LOC23-SA-02 profile. | | | |



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| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 9 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 7/21/2023 | | | |
| Comments: View of soil sample LOC23-SA-05 profile. | | | |
| Photograph ID: 10 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 9/6/2023 | | | |
| Comments: View of soil sample LOC23-SA-09 profile. | | | |



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| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |



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|--|---|
| Photograph ID: 11 |  |
| Photo Location: Former Lochaber Mines | |
| Direction: S | |
| Survey Date: 9/6/2023 | |
| Comments: View of area surrounding soil sample location LOC23-SA-13. | |

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|---|--|
| Photograph ID: 12 |  |
| Photo Location: Former Lochaber Mines | |
| Direction: NW | |
| Survey Date: 9/6/2023 | |
| Comments: View of area surrounding soil sample location LOC23-SA-14 and the relatively flat topography characteristic of historical tailings. | |

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|--|--|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 13 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 9/6/2023 | | | |
| Comments: View of soil sample LOC23-SA-17 profile. | | | |
| Photograph ID: 14 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N | | | |
| Survey Date: 9/6/2023 | | | |
| Comments: View of area surrounding soil sample location LOC23-SA-20. | | | |

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|--|--|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 15 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 9/6/2023 | | | |
| Comments: View of soil sample LOC23-SA-24 profile. | | | |
| Photograph ID: 16 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 9/7/2023 | | | |
| Comments: View of soil sample LOC23-SA-25 profile. | | | |

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| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 17 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 5/31/2024 | | | |
| Comments: View of soil sample LOC-SA24-01. | | | |
| Photograph ID: 18 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 5/31/2024 | | | |
| Comments: View of soil sample LOC-SA24-02 profile. | | | |



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|--|--|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 19 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 9/7/2023 | | | |
| Comments: View of sediment sample LOC23-SD-01 profile. | | | |
| Photograph ID: 20 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: NW | | | |
| Survey Date: 9/7/2023 | | | |
| Comments: View of surface water sample location LOC23-SW-01 on the Mines Branch River. | | | |


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|-------------------|-----------------------------------|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |

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|---|---|
| Photograph ID: 21 |  |
| Photo Location: Former Lochaber Mines | |
| Direction: SE | |
| Survey Date: 9/7/2023 | |
| Comments: View of sediment sample location LOC23-SD-02 on the Mines Branch River. | |

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| Photograph ID: 22 |  |
| Photo Location: Former Lochaber Mines | |
| Direction: N/A | |
| Survey Date: 5/31/2024 | |
| Comments: View of sediment sample LOC-SD24-01. The downstream lake is visible in the background. | |

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|--|--|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 23 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N | | | |
| Survey Date: 9/7/2023 | | | |
| Comments: View of surface water sample location LOC23-SW-02 on the Mines Branch River. | | | |
| Photograph ID: 24 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N/A | | | |
| Survey Date: 9/7/2023 | | | |
| Comments: View of sediment sample LOC23-SD-03 profile. | | | |

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|--|--|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 25 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: SE | | | |
| Survey Date: 9/7/2023 | | | |
| Comments: View of surface water sample location LOC23-SW-03 on the Mines Branch River. | | | |
| Photograph ID: 26 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N | | | |
| Survey Date: 9/7/2023 | | | |
| Comments: View of sediment sample location LOC23-SW-04 on the Mines Branch River. | | | |

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|--|---|-----------------------|---|
| Client: | Build Nova Scotia | Project: | Updated Phase II Environmental Site Assessment |
| Site Name: | Former Lochaber Mines Site | Site Location: | Lochaber Mines, NS |
| Photograph ID: 27 |  | | |
| Photo Location: Former Lochaber Mines | | | |
| Direction: N | | | |
| Survey Date: 9/7/2023 | | | |
| Comments: View of surface water sample location LOC23-SW-04 on the Mines Branch River. | | | |

Appendix D Soil, Sediment, and Surface Water Analytical Summary Tables



Table D-1: Summary of Soil Analytical Results
Former Lochaber Mines, Lochaber Mines, NS
Stantec Consulting Ltd.
Project Number: 121418211

| Sample ID | | LOC23-SA01 | LOC23-SA02 | LOC23-SA03 | LOC23-SA04 | LOC23-SA05 | LOC23-SA-06 | LOC23-SA-07 | LOC23-SA-08 | LOC23-SA-09 | LOC23-SA-09 Lab-Dup | LOC23-SA-10 | DUP-SA-01 | |
|--------------------------|-----------------------------------|--------------|------------|--------------|--------------|------------|-------------|--------------|-------------|--------------|------------------------|--------------|-----------------|--------------|
| APEC | NSE Tier 1 EQS¹ | APEC 1 | APEC 2 | APEC 1 | APEC 1 | APEC 1 | APEC 1 | APEC 1 | APEC 2 | APEC 3 | Lab Duplicate | APEC 2 | Field Duplicate | |
| Bureau Veritas ID | | WMP728 | WMP729 | WMP730 | WMP731 | WMP732 | WYM565 | WYM566 | WYM567 | WYM997 | WYM997 | WYM568 | WYM591 | |
| Sampling Date | | 7/21/2023 | 7/21/2023 | 7/21/2023 | 7/21/2023 | 7/21/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | |
| COC Number | | 48157 | 48157 | 48157 | 48157 | 48157 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | |
| Metals | | UNITS | | | | | | | | | | | | |
| Aluminum (Al) | mg/kg | 15,400 | 5600 | 14000 | 20000 | 6700 | 7000 | 9500 | 9400 | 11000 | 5000 | 4700 | 23000 | 19000 |
| Antimony (Sb) | mg/kg | 7.5 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Arsenic (As) | mg/kg | 17 | 4.6 | 48 | 54 | 3.5 | <2.0 | 13 | 4.1 | 3.8 | 23 | 21 | 32 | 34 |
| Barium (Ba) | mg/kg | 400 | 5.1 | 17 | 45 | 18 | 9.8 | 21 | 20 | 43 | 180 | 160 | 26 | 24 |
| Beryllium (Be) | mg/kg | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Bismuth (Bi) | mg/kg | nv | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Boron (B) | mg/kg | 120 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 |
| Cadmium (Cd) | mg/kg | 1.4 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 |
| Chromium (Cr) | mg/kg | 64 | 4.9 | 17 | 22 | 4.2 | 11 | 12 | 13 | 17 | 5.9 | 5.5 | 30 | 26 |
| Cobalt (Co) | mg/kg | 20 | <1.0 | 25 | 19 | <1.0 | 3.4 | 6.3 | 4.7 | 10 | 120 | 110 | 11 | 12 |
| Copper (Cu) | mg/kg | 63 | <2.0 | 49 | 50 | 2.6 | <2.0 | 15 | 2.1 | 3.5 | 7.7 | 6.9 | 8.8 | 8.3 |
| Iron (Fe) | mg/kg | 11,000 | 5800 | 24000 | 30000 | 1900 | 10000 | 14000 | 9700 | 18000 | 13000 | 12000 | 65000 | 60000 |
| Lead (Pb) | mg/kg | 70 | 9.0 | 66 | 58 | 11 | 8.5 | 35 | 16 | 11 | 20 | 19 | 15 | 15 |
| Lithium (Li) | mg/kg | nv | 2.1 | 21 | 25 | 4.5 | 9.9 | 19 | 15 | 20 | 6.7 | 6.7 | 23 | 19 |
| Manganese (Mn) | mg/kg | 360 | 73 | 1100 | 870 | 63 | 150 | 410 | 150 | 520 | 800 | 760 | 3000 | 3400 |
| Mercury (Hg) | mg/kg | 6.6 | <0.10 | 1.1 | 0.42 | <0.10 | <0.10 | 1.2 | 0.10 | <0.10 | <0.10 | <0.10 | 0.18 | 0.14 |
| Molybdenum (Mo) | mg/kg | 4 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Nickel (Ni) | mg/kg | 45 | <2.0 | 27 | 35 | <2.0 | 10 | 20 | 12 | 28 | 14 | 13 | 6.2 | 5.7 |
| Rubidium (Rb) | mg/kg | nv | 2.1 | 4.4 | 9.1 | 5.3 | 8.3 | 5.2 | 5.0 | 5.3 | 3.5 | 3.6 | 12 | 9.0 |
| Selenium (Se) | mg/kg | 1 | <0.50 | 0.52 | 0.79 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.0 | 1.8 |
| Silver (Ag) | mg/kg | 20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Strontium (Sr) | mg/kg | 9,400 | <5.0 | 7.9 | 12 | <5.0 | 5.7 | 8.6 | 15 | 13 | 7.0 | 6.9 | <5.0 | <5.0 |
| Thallium (Tl) | mg/kg | 1 | <0.10 | <0.10 | 0.12 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.61 | 0.62 | 0.12 | 0.11 |
| Tin (Sn) | mg/kg | 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Uranium (U) | mg/kg | 23 | 0.31 | 1.7 | 1.4 | 0.40 | 0.44 | 0.84 | 0.45 | 0.50 | 0.44 | 0.43 | 0.73 | 0.60 |
| Vanadium (V) | mg/kg | 18 | 14 | 13 | 18 | 4.6 | 7.5 | 8.7 | 8.9 | 10 | 7.3 | 6.4 | 31 | 28 |
| Zinc (Zn) | mg/kg | 200 | 6.4 | 49 | 75 | 5.6 | 23 | 42 | 22 | 46 | 36 | 33 | 25 | 24 |

Notes:

1) Nova Scotia Tier I Environmental Quality Standards (EQS) for Soil - Agricultural land use, potable groundwater condition (mg/kg). October 2022

Bold & Shaded = value exceeds the NSE Tier 1 EQS

Bold & Underlined = RPD is greater than or equal to 60%

nv = no value

NC = Not calculated

RPD = Relative Percent Difference

Table D-1: Summary of Soil Analytical Results
Former Lochaber Mines, Lochaber Mines, NS
Stantec Consulting Ltd.
Project Number: 121418211

| Sample ID | | | LOC23-SA-11 | LOC23-SA-12 | LOC23-SA-13 | LOC23-SA-14 | LOC23-SA-15 | LOC23-SA-16 A | LOC23-SA-16B | LOC23-SA-17 | LOC23-SA-17 Lab-Dup | LOC23-SA-18 | LOC23-SA-19 | |
|-------------------|-----------------------------|--------------|-------------|--------------|--------------|--------------|--------------|---------------|--------------|-------------|---------------------|--------------|--------------|---|
| APEC | NSE Tier 1 EQS ¹ | RPD Check % | APEC 2 | APEC 2 | APEC 2 | APEC 2 | APEC 2 | APEC 1 | APEC 1 | APEC 1 | Lab Duplicate | APEC 1 | APEC 1 | |
| Bureau Veritas ID | | | WYM569 | WYM570 | WYM571 | WYM572 | WYM573 | WYM574 | WYM595 | WYM575 | WYM575 | WYM576 | no | |
| Sampling Date | | | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | soil | |
| COC Number | | | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | recovered | |
| Metals | | UNITS | | | | | | | | | | | | |
| Aluminum (Al) | mg/kg | 15,400 | 19.0 | 14000 | 8400 | 23000 | 21000 | 3200 | 27000 | 8000 | 9000 | 8900 | 5600 | - |
| Antimony (Sb) | mg/kg | 7.5 | NC | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | - |
| Arsenic (As) | mg/kg | 17 | 6.1 | 15 | 5.0 | 18 | 54 | <2.0 | 9.4 | <2.0 | 19 | 19 | 13 | - |
| Barium (Ba) | mg/kg | 400 | 8.0 | 13 | 15 | 120 | 190 | 5.5 | 20 | 9.3 | 8.9 | 8.4 | 7.5 | - |
| Beryllium (Be) | mg/kg | 5 | NC | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | - |
| Bismuth (Bi) | mg/kg | nv | NC | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | - |
| Boron (B) | mg/kg | 120 | NC | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | - |
| Cadmium (Cd) | mg/kg | 1.4 | NC | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | - |
| Chromium (Cr) | mg/kg | 64 | 14.3 | 17 | 13 | 36 | 36 | 2.8 | 25 | 4.5 | 13 | 13 | 6.3 | - |
| Cobalt (Co) | mg/kg | 20 | 8.7 | 1.6 | 3.3 | 59 | 240 | <1.0 | 4.9 | 1.0 | 5.6 | 5.4 | 4.9 | - |
| Copper (Cu) | mg/kg | 63 | 5.8 | 5.3 | 2.3 | 12 | 12 | <2.0 | 15 | 2.5 | 23 | 22 | 3.1 | - |
| Iron (Fe) | mg/kg | 11,000 | 8.0 | 32000 | 16000 | 18000 | 56000 | 2500 | 24000 | 4600 | 20000 | 19000 | 14000 | - |
| Lead (Pb) | mg/kg | 70 | 0.0 | 16 | 13 | 110 | 130 | 5.7 | 22 | 3.6 | 190 | 170 | 15 | - |
| Lithium (Li) | mg/kg | nv | 19.0 | 9.9 | 12 | 36 | 18 | <2.0 | 18 | 7.7 | 14 | 14 | 4.1 | - |
| Manganese (Mn) | mg/kg | 360 | 12.5 | 300 | 380 | 420 | 1200 | 30 | 300 | 57 | 610 | 610 | 480 | - |
| Mercury (Hg) | mg/kg | 6.6 | 25.0 | 0.11 | <0.10 | 0.29 | 0.29 | <0.10 | 0.39 | <0.10 | 0.19 | 0.17 | 0.11 | - |
| Molybdenum (Mo) | mg/kg | 4 | NC | <2.0 | <2.0 | 2.2 | 2.8 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | - |
| Nickel (Ni) | mg/kg | 45 | 8.4 | 6.8 | 11 | 16 | 14 | <2.0 | 11 | <2.0 | 16 | 15 | 4.2 | - |
| Rubidium (Rb) | mg/kg | nv | 28.6 | 6.3 | 5.0 | 21 | 12 | <2.0 | 7.4 | 3.1 | 3.5 | 3.2 | 6.4 | - |
| Selenium (Se) | mg/kg | 1 | 10.5 | 0.85 | <0.50 | 2.6 | 4.0 | <0.50 | 1.8 | <0.50 | <0.50 | <0.50 | <0.50 | - |
| Silver (Ag) | mg/kg | 20 | NC | <0.50 | <0.50 | 0.54 | 0.62 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | - |
| Strontium (Sr) | mg/kg | 9,400 | NC | <5.0 | <5.0 | 7.1 | 5.5 | <5.0 | 5.5 | <5.0 | 5.9 | 5.4 | <5.0 | - |
| Thallium (Tl) | mg/kg | 1 | 8.7 | <0.10 | <0.10 | 0.35 | 0.43 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | - |
| Tin (Sn) | mg/kg | 5 | NC | <1.0 | <1.0 | 1.3 | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | - |
| Uranium (U) | mg/kg | 23 | 19.5 | 0.45 | 0.46 | 2.5 | 2.5 | 0.18 | 0.94 | 0.23 | 0.65 | 0.61 | 0.36 | - |
| Vanadium (V) | mg/kg | 18 | 10.2 | 27 | 10 | 27 | 41 | 11 | 19 | 9.4 | 10 | 9.5 | 13 | - |
| Zinc (Zn) | mg/kg | 200 | 4.1 | 19 | 27 | 47 | 35 | <5.0 | 32 | 8.2 | 35 | 35 | 11 | - |

Notes:

1) Nova Scotia Tier I Environmental Quality Standards (EQS) for Soil - Agricultural land use, potable groundwater condition (mg/kg). October 2022

Bold & Shaded = value exceeds the NSE Tier 1 EQS

Bold & Underlined = RPD is greater than or equal to 60%

nv = no value

NC = Not calculated

RPD = Relative Percent Difference

Table D-1: Summary of Soil Analytical Results
Former Lochaber Mines, Lochaber Mines, NS
Stantec Consulting Ltd.
Project Number: 121418211

| Sample ID | NSE Tier 1 EQS ¹ | LOC23-SA-20 | LOC23-SA-21 | LOC23-SA-22 | DUP-SA-02 | RPD Check % | LOC23-SA-23 | LOC23-SA-24 | LOC23-SA-25 | LOC24-SA-01 | LOC24-SA-02 | LOC24-SA-100 | RPD Check % | |
|-------------------|-----------------------------|-------------|--------------|--------------|-----------------|----------------|-------------|-------------|-------------|--------------|-------------|-----------------|----------------|---------------------|
| APEC | | APEC 1 | APEC 1 | APEC 1 | Field Duplicate | | APEC 1 | APEC 1 | Background | APEC 2 | APEC 2 | Field Duplicate | | |
| Bureau Veritas ID | | WYM577 | WYM578 | WYM579 | WYM592 | | WYM580 | WYM581 | WYM582 | ZJH626 | ZJH627 | ZJH628 | | |
| Sampling Date | | 9/6/2023 | 9/6/2023 | 9/6/2023 | 9/6/2023 | | 9/6/2023 | 9/6/2023 | 9/6/2023 | 5/31/2024 | 5/31/2024 | 5/31/2024 | | |
| COC Number | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C4H0077V1 | C4H0077V1 | C4H0077V1 | | | |
| Metals | | UNITS | | | | | | | | | | | | |
| Aluminum (Al) | mg/kg | 15,400 | 13000 | 15000 | 6400 | 7000 | 9.0 | 4500 | 1500 | 29000 | 2300 | 6800 | 3200 | <u>72.0</u> |
| Antimony (Sb) | mg/kg | 7.5 | <2.0 | <2.0 | <2.0 | <2.0 | NC | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Arsenic (As) | mg/kg | 17 | 14 | 9.1 | 2.9 | 2.8 | 3.5 | <2.0 | <2.0 | 22 | <2.0 | 6.2 | 2.5 | <u>85.1</u> |
| Barium (Ba) | mg/kg | 400 | 23 | 11 | 24 | 24 | 0.0 | 12 | 9.8 | 18 | 21 | 18 | 16 | 11.8 |
| Beryllium (Be) | mg/kg | 5 | <1.0 | <1.0 | <1.0 | <1.0 | NC | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | NC |
| Bismuth (Bi) | mg/kg | nv | <2.0 | <2.0 | <2.0 | <2.0 | NC | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Boron (B) | mg/kg | 120 | <50 | <50 | <50 | <50 | NC | <50 | <50 | <50 | <50 | <50 | <50 | NC |
| Cadmium (Cd) | mg/kg | 1.4 | <0.30 | <0.30 | <0.30 | <0.30 | NC | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | NC |
| Chromium (Cr) | mg/kg | 64 | 16 | 20 | 9.2 | 9.6 | 4.3 | 5.5 | <2.0 | 29 | 3.1 | 7.1 | 3.4 | <u>70.5</u> |
| Cobalt (Co) | mg/kg | 20 | 7.7 | 2.2 | 1.4 | 1.4 | 0.0 | <1.0 | <1.0 | 5.5 | <1.0 | 1.7 | <1.0 | NC |
| Copper (Cu) | mg/kg | 63 | 6.9 | 9.7 | <2.0 | <2.0 | NC | <2.0 | <2.0 | 24 | 2.8 | 3.2 | <2.0 | NC |
| Iron (Fe) | mg/kg | 11,000 | 20000 | 34000 | 13000 | 14000 | 7.4 | 1600 | 1100 | 43000 | 1700 | 12000 | 3300 | <u>113.7</u> |
| Lead (Pb) | mg/kg | 70 | 31 | 16 | 14 | 8.5 | 48.9 | 10 | 2.3 | 22 | 7.5 | 9.8 | 6.1 | 46.5 |
| Lithium (Li) | mg/kg | nv | 22 | 11 | 5.2 | 5.9 | 12.6 | 3.8 | <2.0 | 28 | <2.0 | 4.5 | <2.0 | NC |
| Manganese (Mn) | mg/kg | 360 | 390 | 200 | 120 | 130 | 8.0 | 47 | 5.4 | 710 | 30 | 170 | 52 | <u>106.3</u> |
| Mercury (Hg) | mg/kg | 6.6 | <0.10 | 0.16 | <0.10 | <0.10 | NC | <0.10 | <0.10 | 0.19 | <0.10 | <0.10 | <0.10 | NC |
| Molybdenum (Mo) | mg/kg | 4 | 3.9 | <2.0 | <2.0 | <2.0 | NC | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Nickel (Ni) | mg/kg | 45 | 13 | 7.1 | 6.1 | 5.8 | 5.0 | 2.3 | <2.0 | 13 | <2.0 | 7.1 | 2.2 | <u>105.4</u> |
| Rubidium (Rb) | mg/kg | nv | 7.9 | 5.6 | 6.0 | 6.5 | 8.0 | 3.3 | 2.6 | 7.7 | 3.2 | 5.5 | 3 | 58.8 |
| Selenium (Se) | mg/kg | 1 | 0.68 | 1.3 | <0.50 | <0.50 | NC | <0.50 | <0.50 | 2.7 | <0.50 | <0.50 | <0.50 | NC |
| Silver (Ag) | mg/kg | 20 | <0.50 | <0.50 | <0.50 | <0.50 | NC | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | NC |
| Strontium (Sr) | mg/kg | 9,400 | <5.0 | <5.0 | 6.0 | 5.6 | 6.9 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | NC |
| Thallium (Tl) | mg/kg | 1 | <0.10 | <0.10 | <0.10 | <0.10 | NC | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | NC |
| Tin (Sn) | mg/kg | 5 | <1.0 | <1.0 | <1.0 | <1.0 | NC | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | NC |
| Uranium (U) | mg/kg | 23 | 0.87 | 0.68 | 0.29 | 0.30 | 3.4 | 0.39 | <0.10 | 0.88 | 0.15 | 0.25 | 0.14 | 56.4 |
| Vanadium (V) | mg/kg | 18 | 17 | 23 | 13 | 13 | 0.0 | 5.2 | 8.3 | 22 | 7.4 | 14 | 7.7 | 58.1 |
| Zinc (Zn) | mg/kg | 200 | 31 | 20 | 9.6 | 9.9 | 3.1 | <5.0 | <5.0 | 42 | <5.0 | 13 | <5.0 | NC |

Notes:

1) Nova Scotia Tier I Environmental Quality Standards (EQS) for Soil - Agricultural land use, potable groundwater condition (mg/kg). October 2022

Bold & Shaded = value exceeds the NSE Tier 1 EQS

Bold & Underlined = RPD is greater than or equal to 60%

nv = no value

NC = Not calculated

RPD = Relative Percent Difference

Table D-2: Summary of Sediment Analytical Results
Former Lochaber Mines, Lochaber Mines, NS
Stantec Consulting Ltd.
Project Number: 121418211

| Sample ID | NSECC Tier 1 EQS ¹ | LOC23-SD-01 | LOC23-SD-02 | LOC23-SD-03 | DUP-SD-01 | RPD Check (%) | LOC23-SD-04 | LOC24-SD-01 | LOC24-SD-01 Lab-Dup | LOC24-SD- 100 | RPD Check (%) | LOC24-SD-02 | | |
|-------------------|-------------------------------------|------------------------|------------------------|--------------------------|-----------------|---------------------|-------------|--------------------------|-------------------------|------------------|------------------|-----------------|-------------|------------------------|
| APEC | | APEC 3 | APEC 3 | APEC 3 | APEC 3 | | APEC 3 | APEC 3 | APEC 3 | Lab Duplicate | | Field Duplicate | APEC 3 | |
| Description | | Downstream Midpoint | Downstream Midpoint | Downstream Near Point | Field Duplicate | | | Background (Upstream) | Downstream Far Point | - | | - | | Downstream Midpoint |
| Bureau Veritas ID | | WYM583 | WYM584 | WYM585 | WYM593 | | | WYM586 | ZJH629 | ZJH629 | | ZJH631 | | ZJH630 |
| Sampling Date | | 9/7/2023 | 9/7/2023 | 9/7/2023 | 9/7/2023 | | | 9/7/2023 | 5/31/2024 | 5/31/2024 | | 5/31/2024 | | 5/31/2024 |
| COC Number | | C3R8276 | C3R8276 | C3R8276 | C3R8276 | | | C3R8276 | C4H0077V1 | C4H0077V1 | | C4H0077V1 | | C4H0077V1 |
| Metals | UNITS | | | | | | | | | | | | | |
| Aluminum (Al) | mg/kg | <i>nv</i> | 6000 | 5500 | 2800 | 2700 | 3.6 | 3000 | 6900 | 7300 | 5600 | 26.4 | 3500 | |
| Antimony (Sb) | mg/kg | 25 | <2.0 | <2.0 | <2.0 | <2.0 | NC | <2.0 | <2.0 | <2.0 | <2.0 | NC | <2.0 | |
| Arsenic (As) | mg/kg | 17 | 2.4 | 14 | <2.0 | <2.0 | NC | 2.3 | 170 | 170 | 120 | 34.5 | 9.9 | |
| Barium (Ba) | mg/kg | <i>nv</i> | 32 | 22 | 12 | 12 | 0 | 19 | 52 | 56 | 47 | 17.5 | 28 | |
| Beryllium (Be) | mg/kg | <i>nv</i> | <1.0 | <1.0 | <1.0 | <1.0 | NC | <1.0 | <1.0 | <1.0 | <1.0 | NC | <1.0 | |
| Bismuth (Bi) | mg/kg | <i>nv</i> | <2.0 | <2.0 | <2.0 | <2.0 | NC | <2.0 | <2.0 | <2.0 | <2.0 | NC | <2.0 | |
| Boron (B) | mg/kg | <i>nv</i> | <50 | <50 | <50 | <50 | NC | <50 | <50 | <50 | <50 | NC | <50 | |
| Cadmium (Cd) | mg/kg | 3.5 | <0.30 | <0.30 | <0.30 | <0.30 | NC | <0.30 | <0.30 | <0.30 | <0.30 | NC | <0.30 | |
| Chromium (Cr) | mg/kg | 90 | <2.0 | 5.9 | <2.0 | <2.0 | NC | 3.6 | 9.7 | 10 | 7.2 | 32.6 | 3.4 | |
| Cobalt (Co) | mg/kg | <i>nv</i> | 2.6 | 3.6 | <1.0 | <1.0 | NC | 1.5 | 140 | 150 | 110 | 30.8 | 2.1 | |
| Copper (Cu) | mg/kg | 197 | 6.0 | 5.5 | 3.3 | 2.1 | 44.4 | 2.6 | 5.5 | 6.1 | 5.1 | 17.9 | 3.4 | |
| Iron (Fe) | mg/kg | 43,766 | 870 | 9200 | 440 | 470 | 6.6 | 3800 | 110000 | 110000 | 68000 | 47.2 | 3400 | |
| Lead (Pb) | mg/kg | 91.3 | 11 | 17 | 3.3 | 3.1 | 6.2 | 14 | 72 | 73 | 63 | 14.7 | 11 | |
| Lithium (Li) | mg/kg | <i>nv</i> | <2.0 | 3.5 | <2.0 | <2.0 | NC | 4.7 | 5 | 4.8 | 2.9 | 49.4 | 3.2 | |
| Manganese (Mn) | mg/kg | 1,100 | 34 | 220 | 13 | 15 | 14.3 | 72 | 6600 | 6900 | 3800 | 57.9 | 150 | |
| Mercury (Hg) | mg/kg | 0.486 | 0.23 | 0.81 | <0.10 | <0.10 | NC | <0.10 | 0.25 | 0.27 | 0.21 | 25.0 | 0.54 | |
| Molybdenum (Mo) | mg/kg | <i>nv</i> | <2.0 | <2.0 | <2.0 | <2.0 | NC | <2.0 | <2.0 | <2.0 | <2.0 | NC | <2.0 | |
| Nickel (Ni) | mg/kg | 75 | 5.6 | 3.8 | <2.0 | <2.0 | NC | 3.1 | 6.5 | 6.6 | 5 | 27.6 | 4.2 | |
| Rubidium (Rb) | mg/kg | <i>nv</i> | <2.0 | 4.5 | <2.0 | <2.0 | NC | 2.8 | 3.6 | 4.2 | 3 | 33.3 | 3.6 | |
| Selenium (Se) | mg/kg | 2 | 1.4 | 0.70 | <0.50 | <0.50 | NC | <0.50 | 2 | 2 | 1.5 | 28.6 | 0.57 | |
| Silver (Ag) | mg/kg | 0.5 | <0.50 | <0.50 | <0.50 | <0.50 | NC | <0.50 | <0.50 | <0.50 | <0.50 | NC | <0.50 | |
| Strontium (Sr) | mg/kg | <i>nv</i> | 13 | 6.9 | <5.0 | <5.0 | NC | 5.3 | 11 | 12 | 8.9 | 29.7 | 16 | |
| Thallium (Tl) | mg/kg | <i>nv</i> | <0.10 | <0.10 | <0.10 | <0.10 | NC | <0.10 | 0.13 | 0.15 | 0.15 | 0.0 | <0.10 | |
| Tin (Sn) | mg/kg | <i>nv</i> | <1.0 | <1.0 | <1.0 | <1.0 | NC | <1.0 | <1.0 | 1.1 | <1.0 | NC | <1.0 | |
| Uranium (U) | mg/kg | <i>nv</i> | 0.77 | 0.74 | 0.29 | 0.24 | 18.9 | 0.19 | 0.58 | 0.6 | 0.55 | 8.7 | 0.55 | |
| Vanadium (V) | mg/kg | <i>nv</i> | 2.5 | 7.9 | <2.0 | <2.0 | NC | 4.6 | 33 | 34 | 24 | 34.5 | 3.9 | |
| Zinc (Zn) | mg/kg | 315 | <5.0 | 8.9 | <5.0 | <5.0 | NC | 50 | 14 | 14 | 13 | 7.4 | 12 | |

Notes:

1) Nova Scotia Tier I Environmental Quality Standards (EQS) for Freshwater Sediment (mg/kg), October 10, 2022.

Bold & Shaded = value exceeds the NSE Tier 1 EQS

Bold & Underlined = RPD is greater than or equal to 60%

nv = no value

NC = Not calculated

RPD = Relative Percent Difference

Table D-3: Summary of Surface Water Analytical Results

Former Lochaber Mines, Lochaber Mines, NS

Stantec Consulting Ltd.

Project Number: 121418211

| Sample ID | NSECC Tier 1 EQS ¹ | LOC23-SW-01 | LOC23-SW-02 | LOC23-SW-03 | LOC23-SW-04 | DUP-SW-01 | RPD Check % |
|-------------------|-------------------------------------|------------------------|-------------------------|-----------------------|--------------------------|-----------------|----------------|
| APEC | | APEC 3 | APEC 3 | APEC 3 | APEC 3 | APEC 3 | |
| Description | | Downstream Midpoint | Downstream Far Point | Downstream Nearest | Background (Upstream) | Field Duplicate | |
| Bureau Veritas ID | | WYM587 | WYM588 | WYM589 | WYM590 | WYM594 | |
| Sampling Date | | 9/7/2023 | 9/7/2023 | 9/7/2023 | 9/7/2023 | 9/7/2023 | |
| COC Number | | C3R8276 | C3R8276 | C3R8276 | C3R8276 | C3R8276 | |

| Calculated Parameters | Units | | | | | | | |
|-------------------------------------|-------|-----------|--------|--------|-------|--------|--------|-------------|
| Anion Sum | me/L | <i>nv</i> | 0.0700 | 0.0800 | 0.120 | 0.110 | 0.0700 | 44.4 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <i>nv</i> | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | NC |
| Calculated TDS | mg/L | <i>nv</i> | 11 | 12 | 13 | 12 | 11 | 8.7 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <i>nv</i> | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | NC |
| Cation Sum | me/L | <i>nv</i> | 0.250 | 0.260 | 0.240 | 0.240 | 0.230 | 4.3 |
| Hardness (CaCO3) | mg/L | <i>nv</i> | 4.3 | 4.1 | 4.2 | 4.0 | 4.0 | 0.0 |
| Ion Balance (% Difference) | % | <i>nv</i> | 56.3 | 52.9 | 33.3 | 37.1 | 53.3 | 35.8 |
| Langelier Index (@ 20C) | N/A | <i>nv</i> | NC | NC | NC | NC | NC | NC |
| Langelier Index (@ 4C) | N/A | <i>nv</i> | NC | NC | NC | NC | NC | NC |
| Nitrate (N) | mg/L | <i>nv</i> | <0.050 | <0.050 | 0.10 | <0.050 | <0.050 | NC |
| Saturation pH (@ 20C) | N/A | <i>nv</i> | NC | NC | NC | NC | NC | NC |
| Saturation pH (@ 4C) | N/A | <i>nv</i> | NC | NC | NC | NC | NC | NC |

| Inorganics | | | | | | | | |
|-----------------------------------|-------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total Alkalinity (Total as CaCO3) | mg/L | <i>nv</i> | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Dissolved Chloride (Cl-) | mg/L | 120 | 2.4 | 2.8 | 3.9 | 3.8 | 2.4 | 45.2 |
| Colour | TCU | <i>nv</i> | 340 | 310 | 340 | 360 | 370 | 2.7 |
| Nitrate + Nitrite (N) | mg/L | <i>nv</i> | <0.050 | <0.050 | 0.10 | <0.050 | <0.050 | NC |
| Nitrite (N) | ug/L | 0.06 | <0.010 | 0.011 | <0.010 | <0.010 | <0.010 | NC |
| Nitrogen (Ammonia Nitrogen) | ug/L | 13 | <0.050 | 0.21 | <0.050 | <0.050 | <0.050 | NC |
| Total Organic Carbon (C) | mg/L | <i>nv</i> | 27 | 25 | 28 | 29 | 29 | 0.0 |
| Orthophosphate (P) | mg/L | <i>nv</i> | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | NC |
| pH | pH | 6.5 to 9 | 4.77 | 4.67 | 4.91 | 4.57 | 4.77 | 4.3 |
| Reactive Silica (SiO2) | mg/L | <i>nv</i> | 3.3 | 3.4 | 3.7 | 3.6 | 3.3 | 8.7 |
| Dissolved Sulphate (SO4) | mg/L | 128 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Turbidity | NTU | <i>nv</i> | 0.40 | 0.51 | 0.50 | 0.42 | 0.30 | 33.3 |
| Conductivity | uS/cm | <i>nv</i> | 29 | 33 | 30 | 29 | 29 | 0.0 |

| Metals | | | | | | | | |
|-----------------------|------|-----------|-------------|-------------|-------------|-------------|-------------|------|
| Total Aluminum (Al) | ug/L | 5 | 400 | 370 | 390 | 380 | 390 | 2.6 |
| Total Antimony (Sb) | ug/L | 9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | NC |
| Total Arsenic (As) | ug/L | 5.0 | <1.0 | <1.0 | <1.0 | 1.0 | <1.0 | NC |
| Total Barium (Ba) | ug/L | 1,000 | 4.5 | 4.5 | 4.7 | 4.1 | 4.1 | 0.0 |
| Total Beryllium (Be) | ug/L | 0.15 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | NC |
| Total Bismuth (Bi) | ug/L | <i>nv</i> | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Total Boron (B) | ug/L | 1,500 | <50 | <50 | <50 | <50 | <50 | NC |
| Total Cadmium (Cd) | ug/L | 0.09 | 0.020 | 0.019 | 0.018 | 0.019 | 0.019 | 0.0 |
| Total Calcium (Ca) | ug/L | <i>nv</i> | 1100 | 1000 | 1100 | 980 | 990 | 1.0 |
| Total Chromium (Cr) | ug/L | 8.9 | 2.6 | <1.0 | <1.0 | <1.0 | <1.0 | NC |
| Total Cobalt (Co) | ug/L | 1 | 0.59 | 0.78 | 0.65 | 0.52 | 0.50 | 3.9 |
| Total Copper (Cu) | ug/L | 2.0 | 3.5 | <0.50 | 1.6 | <0.50 | <0.50 | NC |
| Total Iron (Fe) | ug/L | 300 | 1000 | 1000 | 1000 | 1000 | 1000 | 0.0 |
| Total Lead (Pb) | ug/L | 1 | 0.77 | 0.73 | 0.94 | 0.74 | 0.72 | 2.7 |
| Total Magnesium (Mg) | ug/L | <i>nv</i> | 380 | 370 | 380 | 370 | 360 | 2.7 |
| Total Manganese (Mn) | ug/L | 430 | 52 | 84 | 55 | 41 | 42 | 2.4 |
| Total Mercury (Hg) | ug/L | 0.026 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | NC |
| Total Molybdenum (Mo) | ug/L | 73 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Total Nickel (Ni) | ug/L | 25 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Total Phosphorus (P) | ug/L | <i>nv</i> | <100 | <100 | <100 | <100 | <100 | NC |
| Total Potassium (K) | ug/L | <i>nv</i> | 380 | 340 | 380 | 360 | 380 | 5.4 |
| Total Selenium (Se) | ug/L | 1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | NC |
| Total Silver (Ag) | ug/L | 0.25 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | NC |
| Total Sodium (Na) | ug/L | <i>nv</i> | 2200 | 2200 | 2200 | 2100 | 2100 | 0.0 |
| Total Strontium (Sr) | ug/L | 21,000 | 8.5 | 8.6 | 9.1 | 7.7 | 8.2 | 6.3 |
| Total Thallium (Tl) | ug/L | 0.8 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | NC |
| Total Tin (Sn) | ug/L | <i>nv</i> | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Total Titanium (Ti) | ug/L | <i>nv</i> | 6.7 | 6.3 | 6.1 | 5.7 | 6.4 | 11.6 |
| Total Uranium (U) | ug/L | 15 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | NC |
| Total Vanadium (V) | ug/L | 120 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | NC |
| Total Zinc (Zn) | ug/L | 7 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | NC |

Notes:

1) Nova Scotia Tier I Environmental Quality Standards (EQS) for Surface Water (freshwater) and Groundwater Discharging to Surface Water, September 30, 2021.

Bold & Shaded

Bold & Underlined = RPD is greater than or equal to 40%

nv = no value

NC = Not calculated

RPD = Relative Percent Difference

Appendix E Laboratory Certificates of Analysis





Your Project #: 121417847
 Site Location: LOCHABER, NS
 Your C.O.C. #: 48157

Attention: Patrick Turner

Stantec Consulting Ltd
 40 Highfield Park Drive
 Suite 102
 Dartmouth, NS
 CANADA B3A 0A3

Report Date: 2023/08/09
 Report #: R7756664
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3M2445

Received: 2023/07/24, 16:23

Sample Matrix: Soil
 # Samples Received: 5

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|--------------------------------|-----------------|-----------------------|----------------------|--------------------------|--------------------------|
| Metals Solids Acid Extr. ICPMS | 5 | 2023/08/08 | 2023/08/09 | ATL SOP 00058 | EPA 6020B R2 m |

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested. This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: 121417847
Site Location: LOCHABER, NS
Your C.O.C. #: 48157

Attention: Patrick Turner

Stantec Consulting Ltd
40 Highfield Park Drive
Suite 102
Dartmouth, NS
CANADA B3A 0A3

Report Date: 2023/08/09
Report #: R7756664
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3M2445

Received: 2023/07/24, 16:23

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:

Marie Muise, Key Account Specialist
Email: Marie.MUISE@bureauveritas.com
Phone# (902)420-0203 Ext:253

=====

This report has been generated and distributed using a secure automated process.

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C3M2445
Report Date: 2023/08/09

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER, NS
Sampler Initials: CB

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| Bureau Veritas ID | | WMP728 | WMP729 | WMP730 | WMP731 | WMP732 | | | |
|--|-------|---------------------|---------------------|---------------------|---------------------|---------------------|------|-----|----------|
| Sampling Date | | 2023/07/21 11:00 | 2023/07/21 13:15 | 2023/07/21 13:45 | 2023/07/21 13:55 | 2023/07/21 14:15 | | | |
| COC Number | | 48157 | 48157 | 48157 | 48157 | 48157 | | | |
| | UNITS | LOC23-SA01 | LOC23-SA02 | LOC23-SA03 | LOC23-SA04 | LOC23-SA05 | RDL | MDL | QC Batch |
| Metals | | | | | | | | | |
| Acid Extractable Aluminum (Al) | mg/kg | 5600 | 14000 | 20000 | 6700 | 7000 | 10 | N/A | 8838406 |
| Acid Extractable Antimony (Sb) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8838406 |
| Acid Extractable Arsenic (As) | mg/kg | 4.6 | 48 | 54 | 3.5 | <2.0 | 2.0 | N/A | 8838406 |
| Acid Extractable Barium (Ba) | mg/kg | 5.1 | 17 | 45 | 18 | 9.8 | 5.0 | N/A | 8838406 |
| Acid Extractable Beryllium (Be) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8838406 |
| Acid Extractable Bismuth (Bi) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8838406 |
| Acid Extractable Boron (B) | mg/kg | <50 | <50 | <50 | <50 | <50 | 50 | N/A | 8838406 |
| Acid Extractable Cadmium (Cd) | mg/kg | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | 0.30 | N/A | 8838406 |
| Acid Extractable Chromium (Cr) | mg/kg | 4.9 | 17 | 22 | 4.2 | 11 | 2.0 | N/A | 8838406 |
| Acid Extractable Cobalt (Co) | mg/kg | <1.0 | 25 | 19 | <1.0 | 3.4 | 1.0 | N/A | 8838406 |
| Acid Extractable Copper (Cu) | mg/kg | <2.0 | 49 | 50 | 2.6 | <2.0 | 2.0 | N/A | 8838406 |
| Acid Extractable Iron (Fe) | mg/kg | 5800 | 24000 | 30000 | 1900 | 10000 | 50 | N/A | 8838406 |
| Acid Extractable Lead (Pb) | mg/kg | 9.0 | 66 | 58 | 11 | 8.5 | 0.50 | N/A | 8838406 |
| Acid Extractable Lithium (Li) | mg/kg | 2.1 | 21 | 25 | 4.5 | 9.9 | 2.0 | N/A | 8838406 |
| Acid Extractable Manganese (Mn) | mg/kg | 73 | 1100 | 870 | 63 | 150 | 2.0 | N/A | 8838406 |
| Acid Extractable Mercury (Hg) | mg/kg | <0.10 | 1.1 | 0.42 | <0.10 | <0.10 | 0.10 | N/A | 8838406 |
| Acid Extractable Molybdenum (Mo) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8838406 |
| Acid Extractable Nickel (Ni) | mg/kg | <2.0 | 27 | 35 | <2.0 | 10 | 2.0 | N/A | 8838406 |
| Acid Extractable Rubidium (Rb) | mg/kg | 2.1 | 4.4 | 9.1 | 5.3 | 8.3 | 2.0 | N/A | 8838406 |
| Acid Extractable Selenium (Se) | mg/kg | <0.50 | 0.52 | 0.79 | <0.50 | <0.50 | 0.50 | N/A | 8838406 |
| Acid Extractable Silver (Ag) | mg/kg | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | N/A | 8838406 |
| Acid Extractable Strontium (Sr) | mg/kg | <5.0 | 7.9 | 12 | <5.0 | 5.7 | 5.0 | N/A | 8838406 |
| Acid Extractable Thallium (Tl) | mg/kg | <0.10 | <0.10 | 0.12 | <0.10 | <0.10 | 0.10 | N/A | 8838406 |
| Acid Extractable Tin (Sn) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8838406 |
| Acid Extractable Uranium (U) | mg/kg | 0.31 | 1.7 | 1.4 | 0.40 | 0.44 | 0.10 | N/A | 8838406 |
| Acid Extractable Vanadium (V) | mg/kg | 14 | 13 | 18 | 4.6 | 7.5 | 2.0 | N/A | 8838406 |
| Acid Extractable Zinc (Zn) | mg/kg | 6.4 | 49 | 75 | 5.6 | 23 | 5.0 | N/A | 8838406 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | | | |



BUREAU
VERITAS

Bureau Veritas Job #: C3M2445
Report Date: 2023/08/09

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER, NS
Sampler Initials: CB

TEST SUMMARY

Bureau Veritas ID: WMP728
Sample ID: LOC23-SA01
Matrix: Soil

Collected: 2023/07/21
Shipped:
Received: 2023/07/24

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8838406 | 2023/08/08 | 2023/08/09 | Jacob Henley |

Bureau Veritas ID: WMP729
Sample ID: LOC23-SA02
Matrix: Soil

Collected: 2023/07/21
Shipped:
Received: 2023/07/24

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8838406 | 2023/08/08 | 2023/08/09 | Jacob Henley |

Bureau Veritas ID: WMP730
Sample ID: LOC23-SA03
Matrix: Soil

Collected: 2023/07/21
Shipped:
Received: 2023/07/24

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8838406 | 2023/08/08 | 2023/08/09 | Jacob Henley |

Bureau Veritas ID: WMP731
Sample ID: LOC23-SA04
Matrix: Soil

Collected: 2023/07/21
Shipped:
Received: 2023/07/24

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8838406 | 2023/08/08 | 2023/08/09 | Jacob Henley |

Bureau Veritas ID: WMP732
Sample ID: LOC23-SA05
Matrix: Soil

Collected: 2023/07/21
Shipped:
Received: 2023/07/24

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8838406 | 2023/08/08 | 2023/08/09 | Jacob Henley |



BUREAU
VERITAS

Bureau Veritas Job #: C3M2445
Report Date: 2023/08/09

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER, NS
Sampler Initials: CB

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

| | |
|-----------|-------|
| Package 1 | 9.0°C |
|-----------|-------|

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C3M2445

Report Date: 2023/08/09

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd

Client Project #: 121417847

Site Location: LOCHABER, NS

Sampler Initials: CB

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | |
|----------|----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits |
| 8838406 | Acid Extractable Aluminum (Al) | 2023/08/09 | | | | | <10 | mg/kg | 7.3 | 35 |
| 8838406 | Acid Extractable Antimony (Sb) | 2023/08/09 | 98 | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Arsenic (As) | 2023/08/09 | 101 | 75 - 125 | 103 | 75 - 125 | <2.0 | mg/kg | 2.0 | 35 |
| 8838406 | Acid Extractable Barium (Ba) | 2023/08/09 | NC | 75 - 125 | 98 | 75 - 125 | <5.0 | mg/kg | 1.6 | 35 |
| 8838406 | Acid Extractable Beryllium (Be) | 2023/08/09 | 98 | 75 - 125 | 99 | 75 - 125 | <1.0 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Bismuth (Bi) | 2023/08/09 | 97 | 75 - 125 | 99 | 75 - 125 | <2.0 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Boron (B) | 2023/08/09 | 87 | 75 - 125 | 100 | 75 - 125 | <50 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Cadmium (Cd) | 2023/08/09 | 98 | 75 - 125 | 100 | 75 - 125 | <0.30 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Chromium (Cr) | 2023/08/09 | 100 | 75 - 125 | 101 | 75 - 125 | <2.0 | mg/kg | 4.8 | 35 |
| 8838406 | Acid Extractable Cobalt (Co) | 2023/08/09 | 101 | 75 - 125 | 101 | 75 - 125 | <1.0 | mg/kg | 2.8 | 35 |
| 8838406 | Acid Extractable Copper (Cu) | 2023/08/09 | 99 | 75 - 125 | 100 | 75 - 125 | <2.0 | mg/kg | 6.8 | 35 |
| 8838406 | Acid Extractable Iron (Fe) | 2023/08/09 | | | | | <50 | mg/kg | 4.6 | 35 |
| 8838406 | Acid Extractable Lead (Pb) | 2023/08/09 | 100 | 75 - 125 | 98 | 75 - 125 | <0.50 | mg/kg | 5.8 | 35 |
| 8838406 | Acid Extractable Lithium (Li) | 2023/08/09 | 99 | 75 - 125 | 99 | 75 - 125 | <2.0 | mg/kg | 3.2 | 35 |
| 8838406 | Acid Extractable Manganese (Mn) | 2023/08/09 | NC | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | 0.55 | 35 |
| 8838406 | Acid Extractable Mercury (Hg) | 2023/08/09 | 91 | 75 - 125 | 95 | 75 - 125 | <0.10 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Molybdenum (Mo) | 2023/08/09 | 100 | 75 - 125 | 105 | 75 - 125 | <2.0 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Nickel (Ni) | 2023/08/09 | 101 | 75 - 125 | 103 | 75 - 125 | <2.0 | mg/kg | 5.7 | 35 |
| 8838406 | Acid Extractable Rubidium (Rb) | 2023/08/09 | 96 | 75 - 125 | 96 | 75 - 125 | <2.0 | mg/kg | 1.6 | 35 |
| 8838406 | Acid Extractable Selenium (Se) | 2023/08/09 | 102 | 75 - 125 | 104 | 75 - 125 | <0.50 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Silver (Ag) | 2023/08/09 | 98 | 75 - 125 | 99 | 75 - 125 | <0.50 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Strontium (Sr) | 2023/08/09 | 101 | 75 - 125 | 100 | 75 - 125 | <5.0 | mg/kg | 3.7 | 35 |
| 8838406 | Acid Extractable Thallium (Tl) | 2023/08/09 | 98 | 75 - 125 | 98 | 75 - 125 | <0.10 | mg/kg | 4.5 | 35 |
| 8838406 | Acid Extractable Tin (Sn) | 2023/08/09 | 100 | 75 - 125 | 99 | 75 - 125 | <1.0 | mg/kg | NC | 35 |
| 8838406 | Acid Extractable Uranium (U) | 2023/08/09 | 99 | 75 - 125 | 98 | 75 - 125 | <0.10 | mg/kg | 8.6 | 35 |
| 8838406 | Acid Extractable Vanadium (V) | 2023/08/09 | 104 | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | 6.8 | 35 |



BUREAU
VERITAS

Bureau Veritas Job #: C3M2445

Report Date: 2023/08/09

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd

Client Project #: 121417847

Site Location: LOCHABER, NS

Sampler Initials: CB

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | |
|----------|----------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits |
| 8838406 | Acid Extractable Zinc (Zn) | 2023/08/09 | 100 | 75 - 125 | 100 | 75 - 125 | <5.0 | mg/kg | 0.79 | 35 |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

Bureau Veritas Job #: C3M2445
Report Date: 2023/08/09

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER, NS
Sampler Initials: CB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.



Your Project #: 121417847
 Site Location: LOCHABER MINES
 Your C.O.C. #: n/a

Attention: Cally Baxter

Stantec Consulting Ltd
 40 Highfield Park Drive
 Suite 102
 Dartmouth, NS
 CANADA B3A 0A3

Report Date: 2023/09/22
 Report #: R7826613
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3R8276

Received: 2023/09/08, 10:47

Sample Matrix: Soil
 # Samples Received: 27

| Analyses | Quantity | Date | Date | Laboratory Method | Analytical Method |
|--------------------------------|----------|------------|------------|-------------------|-------------------|
| | | Extracted | Analyzed | | |
| Metals Solids Acid Extr. ICPMS | 26 | 2023/09/21 | 2023/09/21 | ATL SOP 00058 | EPA 6020B R2 m |
| Metals Solids Acid Extr. ICPMS | 1 | 2023/09/21 | 2023/09/22 | ATL SOP 00058 | EPA 6020B R2 m |

Sample Matrix: Water
 # Samples Received: 5

| Analyses | Quantity | Date | Date | Laboratory Method | Analytical Method |
|--------------------------------------|----------|------------|------------|-------------------|---------------------|
| | | Extracted | Analyzed | | |
| Carbonate, Bicarbonate and Hydroxide | 4 | N/A | 2023/09/20 | N/A | SM 24 4500-CO2 D |
| Carbonate, Bicarbonate and Hydroxide | 1 | N/A | 2023/09/21 | N/A | SM 24 4500-CO2 D |
| Alkalinity | 4 | N/A | 2023/09/19 | ATL SOP 00142 | SM 24 2320 B |
| Alkalinity | 1 | N/A | 2023/09/20 | ATL SOP 00142 | SM 24 2320 B |
| Chloride | 4 | N/A | 2023/09/19 | ATL SOP 00014 | SM 24 4500-Cl- E m |
| Chloride | 1 | N/A | 2023/09/20 | ATL SOP 00014 | SM 24 4500-Cl- E m |
| Colour | 4 | N/A | 2023/09/20 | ATL SOP 00020 | SM 24 2120C m |
| Colour | 1 | N/A | 2023/09/21 | ATL SOP 00020 | SM 24 2120C m |
| Conductance - water | 4 | N/A | 2023/09/19 | ATL SOP 00004 | SM 24 2510B m |
| Conductance - water | 1 | N/A | 2023/09/20 | ATL SOP 00004 | SM 24 2510B m |
| Hardness (calculated as CaCO3) | 2 | N/A | 2023/09/14 | ATL SOP 00048 | Auto Calc |
| Hardness (calculated as CaCO3) | 3 | N/A | 2023/09/15 | ATL SOP 00048 | Auto Calc |
| Mercury - Total (CVAA,LL) | 5 | 2023/09/19 | 2023/09/20 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS | 5 | 2023/09/13 | 2023/09/14 | ATL SOP 00058 | EPA 6020B R2 m |
| Ion Balance (% Difference) | 4 | N/A | 2023/09/20 | N/A | Auto Calc. |
| Ion Balance (% Difference) | 1 | N/A | 2023/09/21 | N/A | Auto Calc. |
| Anion and Cation Sum | 4 | N/A | 2023/09/20 | N/A | Auto Calc. |
| Anion and Cation Sum | 1 | N/A | 2023/09/21 | N/A | Auto Calc. |
| Nitrogen Ammonia - water | 5 | N/A | 2023/09/18 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 4 | N/A | 2023/09/20 | ATL SOP 00016 | USGS I-2547-11m |
| Nitrogen - Nitrate + Nitrite | 1 | N/A | 2023/09/21 | ATL SOP 00016 | USGS I-2547-11m |
| Nitrogen - Nitrite | 4 | N/A | 2023/09/19 | ATL SOP 00017 | SM 24 4500-NO2- B m |
| Nitrogen - Nitrite | 1 | N/A | 2023/09/20 | ATL SOP 00017 | SM 24 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 4 | N/A | 2023/09/20 | ATL SOP 00018 | ASTM D3867-16 |
| Nitrogen - Nitrate (as N) | 1 | N/A | 2023/09/21 | ATL SOP 00018 | ASTM D3867-16 |



Your Project #: 121417847
 Site Location: LOCHABER MINES
 Your C.O.C. #: n/a

Attention: Cally Baxter

Stantec Consulting Ltd
 40 Highfield Park Drive
 Suite 102
 Dartmouth, NS
 CANADA B3A 0A3

Report Date: 2023/09/22
 Report #: R7826613
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3R8276

Received: 2023/09/08, 10:47

Sample Matrix: Water
 # Samples Received: 5

| Analyses | Quantity | Date | Date | Laboratory Method | Analytical Method |
|-------------------------------------|----------|-----------|------------|-------------------|-------------------|
| | | Extracted | Analyzed | | |
| pH (1) | 4 | N/A | 2023/09/19 | ATL SOP 00003 | SM 24 4500-H+ B m |
| pH (1) | 1 | N/A | 2023/09/20 | ATL SOP 00003 | SM 24 4500-H+ B m |
| Phosphorus - ortho | 4 | N/A | 2023/09/20 | ATL SOP 00021 | SM 24 4500-P E m |
| Phosphorus - ortho | 1 | N/A | 2023/09/21 | ATL SOP 00021 | SM 24 4500-P E m |
| Sat. pH and Langelier Index (@ 20C) | 4 | N/A | 2023/09/20 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 20C) | 1 | N/A | 2023/09/21 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 4 | N/A | 2023/09/20 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 1 | N/A | 2023/09/21 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 4 | N/A | 2023/09/19 | ATL SOP 00022 | EPA 366.0 m |
| Reactive Silica | 1 | N/A | 2023/09/20 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 4 | N/A | 2023/09/19 | ATL SOP 00023 | ASTM D516-16 m |
| Sulphate | 1 | N/A | 2023/09/20 | ATL SOP 00023 | ASTM D516-16 m |
| Total Dissolved Solids (TDS calc) | 4 | N/A | 2023/09/20 | N/A | Auto Calc. |
| Total Dissolved Solids (TDS calc) | 1 | N/A | 2023/09/21 | N/A | Auto Calc. |
| Organic carbon - Total (TOC) (2) | 1 | N/A | 2023/09/15 | ATL SOP 00203 | SM 24 5310B m |
| Organic carbon - Total (TOC) (2) | 1 | N/A | 2023/09/16 | ATL SOP 00203 | SM 24 5310B m |
| Organic carbon - Total (TOC) (2) | 3 | N/A | 2023/09/18 | ATL SOP 00203 | SM 24 5310B m |
| Turbidity | 4 | N/A | 2023/09/19 | ATL SOP 00011 | EPA 180.1 R2 m |
| Turbidity | 1 | N/A | 2023/09/20 | ATL SOP 00011 | EPA 180.1 R2 m |

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report.



Your Project #: 121417847
Site Location: LOCHABER MINES
Your C.O.C. #: n/a

Attention: Cally Baxter

Stantec Consulting Ltd
40 Highfield Park Drive
Suite 102
Dartmouth, NS
CANADA B3A 0A3

Report Date: 2023/09/22
Report #: R7826613
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3R8276

Received: 2023/09/08, 10:47

Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) The APHA Standard Method requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.

(2) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:

Marie Muise, Key Account Specialist
Email: Marie.MUISE@bureauveritas.com
Phone# (902)420-0203 Ext:253

=====
This report has been generated and distributed using a secure automated process.

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)

| | | | | | | | | | |
|-------------------|--------------|---------------------|-----------------|---------------------|-----------------|---------------------|------------|------------|-----------------|
| Bureau Veritas ID | | WYM587 | | WYM588 | | WYM589 | | | |
| Sampling Date | | 2023/09/07 09:55 | | 2023/09/07 10:25 | | 2023/09/07 10:55 | | | |
| COC Number | | n/a | | n/a | | n/a | | | |
| | UNITS | LOC23-SW-01 | QC Batch | LOC23-SW-02 | QC Batch | LOC23-SW-03 | RDL | MDL | QC Batch |

Calculated Parameters

| | | | | | | | | | |
|-------------------------------------|------|--------|---------|--------|---------|-------|-------|------|---------|
| Anion Sum | me/L | 0.0700 | 8910134 | 0.0800 | 8910134 | 0.120 | N/A | N/A | 8910134 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 8910132 | <1.0 | 8910132 | <1.0 | 1.0 | 0.20 | 8910132 |
| Calculated TDS | mg/L | 11 | 8910139 | 12 | 8910139 | 13 | 1.0 | 0.20 | 8910139 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 8910132 | <1.0 | 8910132 | <1.0 | 1.0 | 0.20 | 8910132 |
| Cation Sum | me/L | 0.250 | 8910134 | 0.260 | 8910134 | 0.240 | N/A | N/A | 8910134 |
| Hardness (CaCO3) | mg/L | 4.3 | 8910068 | 4.1 | 8910068 | 4.2 | 1.0 | 1.0 | 8910068 |
| Ion Balance (% Difference) | % | 56.3 | 8910133 | 52.9 | 8910133 | 33.3 | N/A | N/A | 8910133 |
| Langelier Index (@ 20C) | N/A | NC | 8910137 | NC | 8910137 | NC | N/A | N/A | 8910137 |
| Langelier Index (@ 4C) | N/A | NC | 8910138 | NC | 8910138 | NC | N/A | N/A | 8910138 |
| Nitrate (N) | mg/L | <0.050 | 8910070 | <0.050 | 8910070 | 0.10 | 0.050 | N/A | 8910070 |
| Saturation pH (@ 20C) | N/A | NC | 8910137 | NC | 8910137 | NC | N/A | N/A | 8910137 |
| Saturation pH (@ 4C) | N/A | NC | 8910138 | NC | 8910138 | NC | N/A | N/A | 8910138 |

Inorganics

| | | | | | | | | | |
|-----------------------------------|-------|--------|---------|--------|---------|--------|-------|------|---------|
| Total Alkalinity (Total as CaCO3) | mg/L | <2.0 | 8925483 | <2.0 | 8928281 | <2.0 | 2.0 | N/A | 8925497 |
| Dissolved Chloride (Cl-) | mg/L | 2.4 | 8925344 | 2.8 | 8928245 | 3.9 | 1.0 | N/A | 8925374 |
| Colour | TCU | 340 | 8925364 | 310 | 8928256 | 340 | 50 | N/A | 8925381 |
| Nitrate + Nitrite (N) | mg/L | <0.050 | 8925369 | <0.050 | 8928262 | 0.10 | 0.050 | N/A | 8925388 |
| Nitrite (N) | mg/L | <0.010 | 8925371 | 0.011 | 8928265 | <0.010 | 0.010 | N/A | 8925390 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 8922867 | 0.21 | 8922864 | <0.050 | 0.050 | N/A | 8922871 |
| Total Organic Carbon (C) | mg/L | 27 | 8920020 | 25 | 8920085 | 28 | 0.50 | N/A | 8922961 |
| Orthophosphate (P) | mg/L | <0.010 | 8925367 | <0.010 | 8928257 | <0.010 | 0.010 | N/A | 8925385 |
| pH | pH | 4.77 | 8925487 | 4.67 | 8928275 | 4.91 | N/A | N/A | 8925491 |
| Reactive Silica (SiO2) | mg/L | 3.3 | 8925363 | 3.4 | 8928254 | 3.7 | 0.50 | N/A | 8925379 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | 8925362 | <2.0 | 8928251 | <2.0 | 2.0 | N/A | 8925377 |
| Turbidity | NTU | 0.40 | 8925570 | 0.51 | 8928446 | 0.50 | 0.10 | 0.10 | 8925570 |
| Conductivity | uS/cm | 29 | 8925489 | 33 | 8928279 | 30 | 1.0 | N/A | 8925496 |

Metals

| | | | | | | | | | |
|----------------------|------|-------|---------|-------|---------|-------|------|-----|---------|
| Total Aluminum (Al) | ug/L | 400 | 8912827 | 370 | 8912827 | 390 | 5.0 | N/A | 8912827 |
| Total Antimony (Sb) | ug/L | <1.0 | 8912827 | <1.0 | 8912827 | <1.0 | 1.0 | N/A | 8912827 |
| Total Arsenic (As) | ug/L | <1.0 | 8912827 | <1.0 | 8912827 | <1.0 | 1.0 | N/A | 8912827 |
| Total Barium (Ba) | ug/L | 4.5 | 8912827 | 4.5 | 8912827 | 4.7 | 1.0 | N/A | 8912827 |
| Total Beryllium (Be) | ug/L | <0.10 | 8912827 | <0.10 | 8912827 | <0.10 | 0.10 | N/A | 8912827 |
| Total Bismuth (Bi) | ug/L | <2.0 | 8912827 | <2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Boron (B) | ug/L | <50 | 8912827 | <50 | 8912827 | <50 | 50 | N/A | 8912827 |

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)

| Bureau Veritas ID | | WYM587 | | WYM588 | | WYM589 | | | |
|--|-------|---------------------|----------|---------------------|----------|---------------------|-------|-----|----------|
| Sampling Date | | 2023/09/07 09:55 | | 2023/09/07 10:25 | | 2023/09/07 10:55 | | | |
| COC Number | | n/a | | n/a | | n/a | | | |
| | UNITS | LOC23-SW-01 | QC Batch | LOC23-SW-02 | QC Batch | LOC23-SW-03 | RDL | MDL | QC Batch |
| Total Cadmium (Cd) | ug/L | 0.020 | 8912827 | 0.019 | 8912827 | 0.018 | 0.010 | N/A | 8912827 |
| Total Calcium (Ca) | ug/L | 1100 | 8912827 | 1000 | 8912827 | 1100 | 100 | N/A | 8912827 |
| Total Chromium (Cr) | ug/L | 2.6 | 8912827 | <1.0 | 8912827 | <1.0 | 1.0 | N/A | 8912827 |
| Total Cobalt (Co) | ug/L | 0.59 | 8912827 | 0.78 | 8912827 | 0.65 | 0.40 | N/A | 8912827 |
| Total Copper (Cu) | ug/L | 3.5 | 8912827 | <0.50 | 8912827 | 1.6 | 0.50 | N/A | 8912827 |
| Total Iron (Fe) | ug/L | 1000 | 8912827 | 1000 | 8912827 | 1000 | 50 | N/A | 8912827 |
| Total Lead (Pb) | ug/L | 0.77 | 8912827 | 0.73 | 8912827 | 0.94 | 0.50 | N/A | 8912827 |
| Total Magnesium (Mg) | ug/L | 380 | 8912827 | 370 | 8912827 | 380 | 100 | N/A | 8912827 |
| Total Manganese (Mn) | ug/L | 52 | 8912827 | 84 | 8912827 | 55 | 2.0 | N/A | 8912827 |
| Total Molybdenum (Mo) | ug/L | <2.0 | 8912827 | <2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Nickel (Ni) | ug/L | <2.0 | 8912827 | <2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Phosphorus (P) | ug/L | <100 | 8912827 | <100 | 8912827 | <100 | 100 | N/A | 8912827 |
| Total Potassium (K) | ug/L | 380 | 8912827 | 340 | 8912827 | 380 | 100 | N/A | 8912827 |
| Total Selenium (Se) | ug/L | <0.50 | 8912827 | <0.50 | 8912827 | <0.50 | 0.50 | N/A | 8912827 |
| Total Silver (Ag) | ug/L | <0.10 | 8912827 | <0.10 | 8912827 | <0.10 | 0.10 | N/A | 8912827 |
| Total Sodium (Na) | ug/L | 2200 | 8912827 | 2200 | 8912827 | 2200 | 100 | N/A | 8912827 |
| Total Strontium (Sr) | ug/L | 8.5 | 8912827 | 8.6 | 8912827 | 9.1 | 2.0 | N/A | 8912827 |
| Total Thallium (Tl) | ug/L | <0.10 | 8912827 | <0.10 | 8912827 | <0.10 | 0.10 | N/A | 8912827 |
| Total Tin (Sn) | ug/L | <2.0 | 8912827 | <2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Titanium (Ti) | ug/L | 6.7 | 8912827 | 6.3 | 8912827 | 6.1 | 2.0 | N/A | 8912827 |
| Total Uranium (U) | ug/L | <0.10 | 8912827 | <0.10 | 8912827 | <0.10 | 0.10 | N/A | 8912827 |
| Total Vanadium (V) | ug/L | <2.0 | 8912827 | <2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Zinc (Zn) | ug/L | <5.0 | 8912827 | <5.0 | 8912827 | <5.0 | 5.0 | N/A | 8912827 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | | | |



ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)

| | | | | | | | | |
|--|--------------|---------------------|------------|-----------------|------------------|------------|------------|-----------------|
| Bureau Veritas ID | | WYM590 | | | WYM594 | | | |
| Sampling Date | | 2023/09/07 11:20 | | | 2023/09/07 | | | |
| COC Number | | n/a | | | n/a | | | |
| | UNITS | LOC23-SW-04 | RDL | QC Batch | DUP-SW-01 | RDL | MDL | QC Batch |
| Calculated Parameters | | | | | | | | |
| Anion Sum | me/L | 0.110 | N/A | 8910134 | 0.0700 | N/A | N/A | 8910134 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 1.0 | 8910132 | <1.0 | 1.0 | 0.20 | 8910132 |
| Calculated TDS | mg/L | 12 | 1.0 | 8910139 | 11 | 1.0 | 0.20 | 8910139 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 1.0 | 8910132 | <1.0 | 1.0 | 0.20 | 8910132 |
| Cation Sum | me/L | 0.240 | N/A | 8910134 | 0.230 | N/A | N/A | 8910134 |
| Hardness (CaCO3) | mg/L | 4.0 | 1.0 | 8910068 | 4.0 | 1.0 | 1.0 | 8910068 |
| Ion Balance (% Difference) | % | 37.1 | N/A | 8910133 | 53.3 | N/A | N/A | 8910133 |
| Langelier Index (@ 20C) | N/A | NC | N/A | 8910137 | NC | N/A | N/A | 8910137 |
| Langelier Index (@ 4C) | N/A | NC | N/A | 8910138 | NC | N/A | N/A | 8910138 |
| Nitrate (N) | mg/L | <0.050 | 0.050 | 8910070 | <0.050 | 0.050 | N/A | 8910070 |
| Saturation pH (@ 20C) | N/A | NC | N/A | 8910137 | NC | N/A | N/A | 8910137 |
| Saturation pH (@ 4C) | N/A | NC | N/A | 8910138 | NC | N/A | N/A | 8910138 |
| Inorganics | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | <2.0 | 2.0 | 8925483 | <2.0 | 2.0 | N/A | 8925483 |
| Dissolved Chloride (Cl-) | mg/L | 3.8 | 1.0 | 8925374 | 2.4 | 1.0 | N/A | 8925344 |
| Colour | TCU | 360 | 50 | 8925381 | 370 | 5.0 | N/A | 8925364 |
| Nitrate + Nitrite (N) | mg/L | <0.050 | 0.050 | 8925388 | <0.050 | 0.050 | N/A | 8925369 |
| Nitrite (N) | mg/L | <0.010 | 0.010 | 8925390 | <0.010 | 0.010 | N/A | 8925371 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | 8922867 | <0.050 | 0.050 | N/A | 8922869 |
| Total Organic Carbon (C) | mg/L | 29 | 0.50 | 8924034 | 29 | 0.50 | N/A | 8922961 |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | 8925385 | <0.010 | 0.010 | N/A | 8925367 |
| pH | pH | 4.57 | N/A | 8925487 | 4.77 | N/A | N/A | 8925487 |
| Reactive Silica (SiO2) | mg/L | 3.6 | 0.50 | 8925379 | 3.3 | 0.50 | N/A | 8925363 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | 2.0 | 8925377 | <2.0 | 2.0 | N/A | 8925362 |
| Turbidity | NTU | 0.42 | 0.10 | 8925570 | 0.30 | 0.10 | 0.10 | 8925570 |
| Conductivity | uS/cm | 29 | 1.0 | 8925489 | 29 | 1.0 | N/A | 8925489 |
| Metals | | | | | | | | |
| Total Aluminum (Al) | ug/L | 380 | 5.0 | 8912827 | 390 | 5.0 | N/A | 8912827 |
| Total Antimony (Sb) | ug/L | <1.0 | 1.0 | 8912827 | <1.0 | 1.0 | N/A | 8912827 |
| Total Arsenic (As) | ug/L | 1.0 | 1.0 | 8912827 | <1.0 | 1.0 | N/A | 8912827 |
| Total Barium (Ba) | ug/L | 4.1 | 1.0 | 8912827 | 4.1 | 1.0 | N/A | 8912827 |
| Total Beryllium (Be) | ug/L | <0.10 | 0.10 | 8912827 | <0.10 | 0.10 | N/A | 8912827 |
| Total Bismuth (Bi) | ug/L | <2.0 | 2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Boron (B) | ug/L | <50 | 50 | 8912827 | <50 | 50 | N/A | 8912827 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | | |



ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)

| | | | | | | | | |
|--|--------------|---------------------|------------|-----------------|------------------|------------|------------|-----------------|
| Bureau Veritas ID | | WYM590 | | | WYM594 | | | |
| Sampling Date | | 2023/09/07 11:20 | | | 2023/09/07 | | | |
| COC Number | | n/a | | | n/a | | | |
| | UNITS | LOC23-SW-04 | RDL | QC Batch | DUP-SW-01 | RDL | MDL | QC Batch |
| Total Cadmium (Cd) | ug/L | 0.019 | 0.010 | 8912827 | 0.019 | 0.010 | N/A | 8912827 |
| Total Calcium (Ca) | ug/L | 980 | 100 | 8912827 | 990 | 100 | N/A | 8912827 |
| Total Chromium (Cr) | ug/L | <1.0 | 1.0 | 8912827 | <1.0 | 1.0 | N/A | 8912827 |
| Total Cobalt (Co) | ug/L | 0.52 | 0.40 | 8912827 | 0.50 | 0.40 | N/A | 8912827 |
| Total Copper (Cu) | ug/L | <0.50 | 0.50 | 8912827 | <0.50 | 0.50 | N/A | 8912827 |
| Total Iron (Fe) | ug/L | 1000 | 50 | 8912827 | 1000 | 50 | N/A | 8912827 |
| Total Lead (Pb) | ug/L | 0.74 | 0.50 | 8912827 | 0.72 | 0.50 | N/A | 8912827 |
| Total Magnesium (Mg) | ug/L | 370 | 100 | 8912827 | 360 | 100 | N/A | 8912827 |
| Total Manganese (Mn) | ug/L | 41 | 2.0 | 8912827 | 42 | 2.0 | N/A | 8912827 |
| Total Molybdenum (Mo) | ug/L | <2.0 | 2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Nickel (Ni) | ug/L | <2.0 | 2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Phosphorus (P) | ug/L | <100 | 100 | 8912827 | <100 | 100 | N/A | 8912827 |
| Total Potassium (K) | ug/L | 360 | 100 | 8912827 | 380 | 100 | N/A | 8912827 |
| Total Selenium (Se) | ug/L | <0.50 | 0.50 | 8912827 | <0.50 | 0.50 | N/A | 8912827 |
| Total Silver (Ag) | ug/L | <0.10 | 0.10 | 8912827 | <0.10 | 0.10 | N/A | 8912827 |
| Total Sodium (Na) | ug/L | 2100 | 100 | 8912827 | 2100 | 100 | N/A | 8912827 |
| Total Strontium (Sr) | ug/L | 7.7 | 2.0 | 8912827 | 8.2 | 2.0 | N/A | 8912827 |
| Total Thallium (Tl) | ug/L | <0.10 | 0.10 | 8912827 | <0.10 | 0.10 | N/A | 8912827 |
| Total Tin (Sn) | ug/L | <2.0 | 2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Titanium (Ti) | ug/L | 5.7 | 2.0 | 8912827 | 6.4 | 2.0 | N/A | 8912827 |
| Total Uranium (U) | ug/L | <0.10 | 0.10 | 8912827 | <0.10 | 0.10 | N/A | 8912827 |
| Total Vanadium (V) | ug/L | <2.0 | 2.0 | 8912827 | <2.0 | 2.0 | N/A | 8912827 |
| Total Zinc (Zn) | ug/L | <5.0 | 5.0 | 8912827 | <5.0 | 5.0 | N/A | 8912827 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | | |



ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| | | | | | | | | | |
|-------------------|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|------------|-----------------|
| Bureau Veritas ID | | WYM565 | WYM566 | WYM567 | WYM568 | WYM569 | | | |
| Sampling Date | | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | | | |
| COC Number | | n/a | n/a | n/a | n/a | n/a | | | |
| | UNITS | LOC23-SA-06 | LOC23-SA-07 | LOC23-SA-08 | LOC23-SA-10 | LOC23-SA-11 | RDL | MDL | QC Batch |

| Metals | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|------|-----|---------|
| Acid Extractable Aluminum (Al) | mg/kg | 9500 | 9400 | 11000 | 23000 | 14000 | 10 | N/A | 8931163 |
| Acid Extractable Antimony (Sb) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Arsenic (As) | mg/kg | 13 | 4.1 | 3.8 | 32 | 15 | 2.0 | N/A | 8931163 |
| Acid Extractable Barium (Ba) | mg/kg | 21 | 20 | 43 | 26 | 13 | 5.0 | N/A | 8931163 |
| Acid Extractable Beryllium (Be) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931163 |
| Acid Extractable Bismuth (Bi) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Boron (B) | mg/kg | <50 | <50 | <50 | <50 | <50 | 50 | N/A | 8931163 |
| Acid Extractable Cadmium (Cd) | mg/kg | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | 0.30 | N/A | 8931163 |
| Acid Extractable Chromium (Cr) | mg/kg | 12 | 13 | 17 | 30 | 17 | 2.0 | N/A | 8931163 |
| Acid Extractable Cobalt (Co) | mg/kg | 6.3 | 4.7 | 10 | 11 | 1.6 | 1.0 | N/A | 8931163 |
| Acid Extractable Copper (Cu) | mg/kg | 15 | 2.1 | 3.5 | 8.8 | 5.3 | 2.0 | N/A | 8931163 |
| Acid Extractable Iron (Fe) | mg/kg | 14000 | 9700 | 18000 | 65000 | 32000 | 50 | N/A | 8931163 |
| Acid Extractable Lead (Pb) | mg/kg | 35 | 16 | 11 | 15 | 16 | 0.50 | N/A | 8931163 |
| Acid Extractable Lithium (Li) | mg/kg | 19 | 15 | 20 | 23 | 9.9 | 2.0 | N/A | 8931163 |
| Acid Extractable Manganese (Mn) | mg/kg | 410 | 150 | 520 | 3000 | 300 | 2.0 | N/A | 8931163 |
| Acid Extractable Mercury (Hg) | mg/kg | 1.2 | 0.10 | <0.10 | 0.18 | 0.11 | 0.10 | N/A | 8931163 |
| Acid Extractable Molybdenum (Mo) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Nickel (Ni) | mg/kg | 20 | 12 | 28 | 6.2 | 6.8 | 2.0 | N/A | 8931163 |
| Acid Extractable Rubidium (Rb) | mg/kg | 5.2 | 5.0 | 5.3 | 12 | 6.3 | 2.0 | N/A | 8931163 |
| Acid Extractable Selenium (Se) | mg/kg | <0.50 | <0.50 | <0.50 | 2.0 | 0.85 | 0.50 | N/A | 8931163 |
| Acid Extractable Silver (Ag) | mg/kg | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | N/A | 8931163 |
| Acid Extractable Strontium (Sr) | mg/kg | 8.6 | 15 | 13 | <5.0 | <5.0 | 5.0 | N/A | 8931163 |
| Acid Extractable Thallium (Tl) | mg/kg | <0.10 | <0.10 | <0.10 | 0.12 | <0.10 | 0.10 | N/A | 8931163 |
| Acid Extractable Tin (Sn) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931163 |
| Acid Extractable Uranium (U) | mg/kg | 0.84 | 0.45 | 0.50 | 0.73 | 0.45 | 0.10 | N/A | 8931163 |
| Acid Extractable Vanadium (V) | mg/kg | 8.7 | 8.9 | 10 | 31 | 27 | 2.0 | N/A | 8931163 |
| Acid Extractable Zinc (Zn) | mg/kg | 42 | 22 | 46 | 25 | 19 | 5.0 | N/A | 8931163 |

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 N/A = Not Applicable



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| | | | | | | | | | |
|-------------------|--------------|---------------------|---------------------|---------------------|---------------------|----------------------|------------|------------|-----------------|
| Bureau Veritas ID | | WYM570 | WYM571 | WYM572 | WYM573 | WYM574 | | | |
| Sampling Date | | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | | | |
| COC Number | | n/a | n/a | n/a | n/a | n/a | | | |
| | UNITS | LOC23-SA-12 | LOC23-SA-13 | LOC23-SA-14 | LOC23-SA-15 | LOC23-SA-16 A | RDL | MDL | QC Batch |

| Metals | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|------|-----|---------|
| Acid Extractable Aluminum (Al) | mg/kg | 8400 | 23000 | 21000 | 3200 | 27000 | 10 | N/A | 8931163 |
| Acid Extractable Antimony (Sb) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Arsenic (As) | mg/kg | 5.0 | 18 | 54 | <2.0 | 9.4 | 2.0 | N/A | 8931163 |
| Acid Extractable Barium (Ba) | mg/kg | 15 | 120 | 190 | 5.5 | 20 | 5.0 | N/A | 8931163 |
| Acid Extractable Beryllium (Be) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931163 |
| Acid Extractable Bismuth (Bi) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Boron (B) | mg/kg | <50 | <50 | <50 | <50 | <50 | 50 | N/A | 8931163 |
| Acid Extractable Cadmium (Cd) | mg/kg | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | 0.30 | N/A | 8931163 |
| Acid Extractable Chromium (Cr) | mg/kg | 13 | 36 | 36 | 2.8 | 25 | 2.0 | N/A | 8931163 |
| Acid Extractable Cobalt (Co) | mg/kg | 3.3 | 59 | 240 | <1.0 | 4.9 | 1.0 | N/A | 8931163 |
| Acid Extractable Copper (Cu) | mg/kg | 2.3 | 12 | 12 | <2.0 | 15 | 2.0 | N/A | 8931163 |
| Acid Extractable Iron (Fe) | mg/kg | 16000 | 18000 | 56000 | 2500 | 24000 | 50 | N/A | 8931163 |
| Acid Extractable Lead (Pb) | mg/kg | 13 | 110 | 130 | 5.7 | 22 | 0.50 | N/A | 8931163 |
| Acid Extractable Lithium (Li) | mg/kg | 12 | 36 | 18 | <2.0 | 18 | 2.0 | N/A | 8931163 |
| Acid Extractable Manganese (Mn) | mg/kg | 380 | 420 | 1200 | 30 | 300 | 2.0 | N/A | 8931163 |
| Acid Extractable Mercury (Hg) | mg/kg | <0.10 | 0.29 | 0.29 | <0.10 | 0.39 | 0.10 | N/A | 8931163 |
| Acid Extractable Molybdenum (Mo) | mg/kg | <2.0 | 2.2 | 2.8 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Nickel (Ni) | mg/kg | 11 | 16 | 14 | <2.0 | 11 | 2.0 | N/A | 8931163 |
| Acid Extractable Rubidium (Rb) | mg/kg | 5.0 | 21 | 12 | <2.0 | 7.4 | 2.0 | N/A | 8931163 |
| Acid Extractable Selenium (Se) | mg/kg | <0.50 | 2.6 | 4.0 | <0.50 | 1.8 | 0.50 | N/A | 8931163 |
| Acid Extractable Silver (Ag) | mg/kg | <0.50 | 0.54 | 0.62 | <0.50 | <0.50 | 0.50 | N/A | 8931163 |
| Acid Extractable Strontium (Sr) | mg/kg | <5.0 | 7.1 | 5.5 | <5.0 | 5.5 | 5.0 | N/A | 8931163 |
| Acid Extractable Thallium (Tl) | mg/kg | <0.10 | 0.35 | 0.43 | <0.10 | <0.10 | 0.10 | N/A | 8931163 |
| Acid Extractable Tin (Sn) | mg/kg | <1.0 | 1.3 | 1.1 | <1.0 | <1.0 | 1.0 | N/A | 8931163 |
| Acid Extractable Uranium (U) | mg/kg | 0.46 | 2.5 | 2.5 | 0.18 | 0.94 | 0.10 | N/A | 8931163 |
| Acid Extractable Vanadium (V) | mg/kg | 10 | 27 | 41 | 11 | 19 | 2.0 | N/A | 8931163 |
| Acid Extractable Zinc (Zn) | mg/kg | 27 | 47 | 35 | <5.0 | 32 | 5.0 | N/A | 8931163 |

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 N/A = Not Applicable



ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| Bureau Veritas ID | | WYM575 | WYM575 | WYM576 | WYM577 | WYM578 | | | |
|--|-------|---------------------|------------------------|---------------------|---------------------|---------------------|------|-----|----------|
| Sampling Date | | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | | | |
| COC Number | | n/a | n/a | n/a | n/a | n/a | | | |
| | UNITS | LOC23-SA-17 | LOC23-SA-17 Lab-Dup | LOC23-SA-18 | LOC23-SA-20 | LOC23-SA-21 | RDL | MDL | QC Batch |
| Metals | | | | | | | | | |
| Acid Extractable Aluminum (Al) | mg/kg | 9000 | 8900 | 5600 | 13000 | 15000 | 10 | N/A | 8931163 |
| Acid Extractable Antimony (Sb) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Arsenic (As) | mg/kg | 19 | 19 | 13 | 14 | 9.1 | 2.0 | N/A | 8931163 |
| Acid Extractable Barium (Ba) | mg/kg | 8.9 | 8.4 | 7.5 | 23 | 11 | 5.0 | N/A | 8931163 |
| Acid Extractable Beryllium (Be) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931163 |
| Acid Extractable Bismuth (Bi) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Boron (B) | mg/kg | <50 | <50 | <50 | <50 | <50 | 50 | N/A | 8931163 |
| Acid Extractable Cadmium (Cd) | mg/kg | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | 0.30 | N/A | 8931163 |
| Acid Extractable Chromium (Cr) | mg/kg | 13 | 13 | 6.3 | 16 | 20 | 2.0 | N/A | 8931163 |
| Acid Extractable Cobalt (Co) | mg/kg | 5.6 | 5.4 | 4.9 | 7.7 | 2.2 | 1.0 | N/A | 8931163 |
| Acid Extractable Copper (Cu) | mg/kg | 23 | 22 | 3.1 | 6.9 | 9.7 | 2.0 | N/A | 8931163 |
| Acid Extractable Iron (Fe) | mg/kg | 20000 | 19000 | 14000 | 20000 | 34000 | 50 | N/A | 8931163 |
| Acid Extractable Lead (Pb) | mg/kg | 190 | 170 | 15 | 31 | 16 | 0.50 | N/A | 8931163 |
| Acid Extractable Lithium (Li) | mg/kg | 14 | 14 | 4.1 | 22 | 11 | 2.0 | N/A | 8931163 |
| Acid Extractable Manganese (Mn) | mg/kg | 610 | 610 | 480 | 390 | 200 | 2.0 | N/A | 8931163 |
| Acid Extractable Mercury (Hg) | mg/kg | 0.19 | 0.17 | 0.11 | <0.10 | 0.16 | 0.10 | N/A | 8931163 |
| Acid Extractable Molybdenum (Mo) | mg/kg | <2.0 | <2.0 | <2.0 | 3.9 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Nickel (Ni) | mg/kg | 16 | 15 | 4.2 | 13 | 7.1 | 2.0 | N/A | 8931163 |
| Acid Extractable Rubidium (Rb) | mg/kg | 3.5 | 3.2 | 6.4 | 7.9 | 5.6 | 2.0 | N/A | 8931163 |
| Acid Extractable Selenium (Se) | mg/kg | <0.50 | <0.50 | <0.50 | 0.68 | 1.3 | 0.50 | N/A | 8931163 |
| Acid Extractable Silver (Ag) | mg/kg | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | N/A | 8931163 |
| Acid Extractable Strontium (Sr) | mg/kg | 5.9 | 5.4 | <5.0 | <5.0 | <5.0 | 5.0 | N/A | 8931163 |
| Acid Extractable Thallium (Tl) | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | N/A | 8931163 |
| Acid Extractable Tin (Sn) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931163 |
| Acid Extractable Uranium (U) | mg/kg | 0.65 | 0.61 | 0.36 | 0.87 | 0.68 | 0.10 | N/A | 8931163 |
| Acid Extractable Vanadium (V) | mg/kg | 10 | 9.5 | 13 | 17 | 23 | 2.0 | N/A | 8931163 |
| Acid Extractable Zinc (Zn) | mg/kg | 35 | 35 | 11 | 31 | 20 | 5.0 | N/A | 8931163 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | | | |



ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| | | | | | | | | | |
|-------------------|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|------------|-----------------|
| Bureau Veritas ID | | WYM579 | WYM580 | WYM581 | WYM582 | WYM583 | | | |
| Sampling Date | | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/07 10:10 | | | |
| COC Number | | n/a | n/a | n/a | n/a | n/a | | | |
| | UNITS | LOC23-SA-22 | LOC23-SA-23 | LOC23-SA-24 | LOC23-SA-25 | LOC23-SD-01 | RDL | MDL | QC Batch |

| Metals | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|------|-----|---------|
| Acid Extractable Aluminum (Al) | mg/kg | 6400 | 4500 | 1500 | 29000 | 6000 | 10 | N/A | 8931163 |
| Acid Extractable Antimony (Sb) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Arsenic (As) | mg/kg | 2.9 | <2.0 | <2.0 | 22 | 2.4 | 2.0 | N/A | 8931163 |
| Acid Extractable Barium (Ba) | mg/kg | 24 | 12 | 9.8 | 18 | 32 | 5.0 | N/A | 8931163 |
| Acid Extractable Beryllium (Be) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931163 |
| Acid Extractable Bismuth (Bi) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Boron (B) | mg/kg | <50 | <50 | <50 | <50 | <50 | 50 | N/A | 8931163 |
| Acid Extractable Cadmium (Cd) | mg/kg | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | 0.30 | N/A | 8931163 |
| Acid Extractable Chromium (Cr) | mg/kg | 9.2 | 5.5 | <2.0 | 29 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Cobalt (Co) | mg/kg | 1.4 | <1.0 | <1.0 | 5.5 | 2.6 | 1.0 | N/A | 8931163 |
| Acid Extractable Copper (Cu) | mg/kg | <2.0 | <2.0 | <2.0 | 24 | 6.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Iron (Fe) | mg/kg | 13000 | 1600 | 1100 | 43000 | 870 | 50 | N/A | 8931163 |
| Acid Extractable Lead (Pb) | mg/kg | 14 | 10 | 2.3 | 22 | 11 | 0.50 | N/A | 8931163 |
| Acid Extractable Lithium (Li) | mg/kg | 5.2 | 3.8 | <2.0 | 28 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Manganese (Mn) | mg/kg | 120 | 47 | 5.4 | 710 | 34 | 2.0 | N/A | 8931163 |
| Acid Extractable Mercury (Hg) | mg/kg | <0.10 | <0.10 | <0.10 | 0.19 | 0.23 | 0.10 | N/A | 8931163 |
| Acid Extractable Molybdenum (Mo) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Nickel (Ni) | mg/kg | 6.1 | 2.3 | <2.0 | 13 | 5.6 | 2.0 | N/A | 8931163 |
| Acid Extractable Rubidium (Rb) | mg/kg | 6.0 | 3.3 | 2.6 | 7.7 | <2.0 | 2.0 | N/A | 8931163 |
| Acid Extractable Selenium (Se) | mg/kg | <0.50 | <0.50 | <0.50 | 2.7 | 1.4 | 0.50 | N/A | 8931163 |
| Acid Extractable Silver (Ag) | mg/kg | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | N/A | 8931163 |
| Acid Extractable Strontium (Sr) | mg/kg | 6.0 | <5.0 | <5.0 | <5.0 | 13 | 5.0 | N/A | 8931163 |
| Acid Extractable Thallium (Tl) | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | N/A | 8931163 |
| Acid Extractable Tin (Sn) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931163 |
| Acid Extractable Uranium (U) | mg/kg | 0.29 | 0.39 | <0.10 | 0.88 | 0.77 | 0.10 | N/A | 8931163 |
| Acid Extractable Vanadium (V) | mg/kg | 13 | 5.2 | 8.3 | 22 | 2.5 | 2.0 | N/A | 8931163 |
| Acid Extractable Zinc (Zn) | mg/kg | 9.6 | <5.0 | <5.0 | 42 | <5.0 | 5.0 | N/A | 8931163 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| | | | | | | | | | | |
|-------------------|--------------|---------------------|-----------------|---------------------|---------------------|------------------|------------------|------------|------------|-----------------|
| Bureau Veritas ID | | WYM584 | | WYM585 | WYM586 | WYM591 | WYM592 | | | |
| Sampling Date | | 2023/09/07 10:30 | | 2023/09/07 10:48 | 2023/09/07 11:20 | 2023/09/06 | 2023/09/06 | | | |
| COC Number | | n/a | | n/a | n/a | n/a | n/a | | | |
| | UNITS | LOC23-SD-02 | QC Batch | LOC23-SD-03 | LOC23-SD-04 | DUP-SA-01 | DUP-SA-02 | RDL | MDL | QC Batch |

Metals

| | | | | | | | | | | |
|----------------------------------|-------|-------|---------|-------|-------|-------|-------|------|-----|---------|
| Acid Extractable Aluminum (Al) | mg/kg | 5500 | 8931163 | 2800 | 3000 | 19000 | 7000 | 10 | N/A | 8931225 |
| Acid Extractable Antimony (Sb) | mg/kg | <2.0 | 8931163 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931225 |
| Acid Extractable Arsenic (As) | mg/kg | 14 | 8931163 | <2.0 | 2.3 | 34 | 2.8 | 2.0 | N/A | 8931225 |
| Acid Extractable Barium (Ba) | mg/kg | 22 | 8931163 | 12 | 19 | 24 | 24 | 5.0 | N/A | 8931225 |
| Acid Extractable Beryllium (Be) | mg/kg | <1.0 | 8931163 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931225 |
| Acid Extractable Bismuth (Bi) | mg/kg | <2.0 | 8931163 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931225 |
| Acid Extractable Boron (B) | mg/kg | <50 | 8931163 | <50 | <50 | <50 | <50 | 50 | N/A | 8931225 |
| Acid Extractable Cadmium (Cd) | mg/kg | <0.30 | 8931163 | <0.30 | <0.30 | <0.30 | <0.30 | 0.30 | N/A | 8931225 |
| Acid Extractable Chromium (Cr) | mg/kg | 5.9 | 8931163 | <2.0 | 3.6 | 26 | 9.6 | 2.0 | N/A | 8931225 |
| Acid Extractable Cobalt (Co) | mg/kg | 3.6 | 8931163 | <1.0 | 1.5 | 12 | 1.4 | 1.0 | N/A | 8931225 |
| Acid Extractable Copper (Cu) | mg/kg | 5.5 | 8931163 | 3.3 | 2.6 | 8.3 | <2.0 | 2.0 | N/A | 8931225 |
| Acid Extractable Iron (Fe) | mg/kg | 9200 | 8931163 | 440 | 3800 | 60000 | 14000 | 50 | N/A | 8931225 |
| Acid Extractable Lead (Pb) | mg/kg | 17 | 8931163 | 3.3 | 14 | 15 | 8.5 | 0.50 | N/A | 8931225 |
| Acid Extractable Lithium (Li) | mg/kg | 3.5 | 8931163 | <2.0 | 4.7 | 19 | 5.9 | 2.0 | N/A | 8931225 |
| Acid Extractable Manganese (Mn) | mg/kg | 220 | 8931163 | 13 | 72 | 3400 | 130 | 2.0 | N/A | 8931225 |
| Acid Extractable Mercury (Hg) | mg/kg | 0.81 | 8931163 | <0.10 | <0.10 | 0.14 | <0.10 | 0.10 | N/A | 8931225 |
| Acid Extractable Molybdenum (Mo) | mg/kg | <2.0 | 8931163 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931225 |
| Acid Extractable Nickel (Ni) | mg/kg | 3.8 | 8931163 | <2.0 | 3.1 | 5.7 | 5.8 | 2.0 | N/A | 8931225 |
| Acid Extractable Rubidium (Rb) | mg/kg | 4.5 | 8931163 | <2.0 | 2.8 | 9.0 | 6.5 | 2.0 | N/A | 8931225 |
| Acid Extractable Selenium (Se) | mg/kg | 0.70 | 8931163 | <0.50 | <0.50 | 1.8 | <0.50 | 0.50 | N/A | 8931225 |
| Acid Extractable Silver (Ag) | mg/kg | <0.50 | 8931163 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | N/A | 8931225 |
| Acid Extractable Strontium (Sr) | mg/kg | 6.9 | 8931163 | <5.0 | 5.3 | <5.0 | 5.6 | 5.0 | N/A | 8931225 |
| Acid Extractable Thallium (Tl) | mg/kg | <0.10 | 8931163 | <0.10 | <0.10 | 0.11 | <0.10 | 0.10 | N/A | 8931225 |
| Acid Extractable Tin (Sn) | mg/kg | <1.0 | 8931163 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931225 |
| Acid Extractable Uranium (U) | mg/kg | 0.74 | 8931163 | 0.29 | 0.19 | 0.60 | 0.30 | 0.10 | N/A | 8931225 |
| Acid Extractable Vanadium (V) | mg/kg | 7.9 | 8931163 | <2.0 | 4.6 | 28 | 13 | 2.0 | N/A | 8931225 |
| Acid Extractable Zinc (Zn) | mg/kg | 8.9 | 8931163 | <5.0 | 50 | 24 | 9.9 | 5.0 | N/A | 8931225 |

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| Bureau Veritas ID | | WYM593 | WYM595 | WYM997 | WYM997 | | | |
|--|--------------|------------------|---------------------|---------------------|--------------------------------|------------|------------|-----------------|
| Sampling Date | | 2023/09/07 | 2023/09/06 12:00 | 2023/09/06 12:00 | 2023/09/06 12:00 | | | |
| COC Number | | n/a | n/a | n/a | n/a | | | |
| | UNITS | DUP-SD-01 | LOC23-SA-16B | LOC23-SA-09 | LOC23-SA-09 Lab-Dup | RDL | MDL | QC Batch |
| Metals | | | | | | | | |
| Acid Extractable Aluminum (Al) | mg/kg | 2700 | 8000 | 5000 | 4700 | 10 | N/A | 8931225 |
| Acid Extractable Antimony (Sb) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931225 |
| Acid Extractable Arsenic (As) | mg/kg | <2.0 | <2.0 | 23 | 21 | 2.0 | N/A | 8931225 |
| Acid Extractable Barium (Ba) | mg/kg | 12 | 9.3 | 180 | 160 | 5.0 | N/A | 8931225 |
| Acid Extractable Beryllium (Be) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931225 |
| Acid Extractable Bismuth (Bi) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931225 |
| Acid Extractable Boron (B) | mg/kg | <50 | <50 | <50 | <50 | 50 | N/A | 8931225 |
| Acid Extractable Cadmium (Cd) | mg/kg | <0.30 | <0.30 | <0.30 | <0.30 | 0.30 | N/A | 8931225 |
| Acid Extractable Chromium (Cr) | mg/kg | <2.0 | 4.5 | 5.9 | 5.5 | 2.0 | N/A | 8931225 |
| Acid Extractable Cobalt (Co) | mg/kg | <1.0 | 1.0 | 120 | 110 | 1.0 | N/A | 8931225 |
| Acid Extractable Copper (Cu) | mg/kg | 2.1 | 2.5 | 7.7 | 6.9 | 2.0 | N/A | 8931225 |
| Acid Extractable Iron (Fe) | mg/kg | 470 | 4600 | 13000 | 12000 | 50 | N/A | 8931225 |
| Acid Extractable Lead (Pb) | mg/kg | 3.1 | 3.6 | 20 | 19 | 0.50 | N/A | 8931225 |
| Acid Extractable Lithium (Li) | mg/kg | <2.0 | 7.7 | 6.7 | 6.7 | 2.0 | N/A | 8931225 |
| Acid Extractable Manganese (Mn) | mg/kg | 15 | 57 | 800 | 760 | 2.0 | N/A | 8931225 |
| Acid Extractable Mercury (Hg) | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | N/A | 8931225 |
| Acid Extractable Molybdenum (Mo) | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 8931225 |
| Acid Extractable Nickel (Ni) | mg/kg | <2.0 | <2.0 | 14 | 13 | 2.0 | N/A | 8931225 |
| Acid Extractable Rubidium (Rb) | mg/kg | <2.0 | 3.1 | 3.5 | 3.6 | 2.0 | N/A | 8931225 |
| Acid Extractable Selenium (Se) | mg/kg | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | N/A | 8931225 |
| Acid Extractable Silver (Ag) | mg/kg | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | N/A | 8931225 |
| Acid Extractable Strontium (Sr) | mg/kg | <5.0 | <5.0 | 7.0 | 6.9 | 5.0 | N/A | 8931225 |
| Acid Extractable Thallium (Tl) | mg/kg | <0.10 | <0.10 | 0.61 | 0.62 | 0.10 | N/A | 8931225 |
| Acid Extractable Tin (Sn) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 8931225 |
| Acid Extractable Uranium (U) | mg/kg | 0.24 | 0.23 | 0.44 | 0.43 | 0.10 | N/A | 8931225 |
| Acid Extractable Vanadium (V) | mg/kg | <2.0 | 9.4 | 7.3 | 6.4 | 2.0 | N/A | 8931225 |
| Acid Extractable Zinc (Zn) | mg/kg | <5.0 | 8.2 | 36 | 33 | 5.0 | N/A | 8931225 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | | |



MERCURY BY COLD VAPOUR AA (WATER)

| | | | | | | | | | |
|-------------------|--------------|---------------------|---------------------|---------------------|---------------------|------------------|------------|------------|-----------------|
| Bureau Veritas ID | | WYM587 | WYM588 | WYM589 | WYM590 | WYM594 | | | |
| Sampling Date | | 2023/09/07 09:55 | 2023/09/07 10:25 | 2023/09/07 10:55 | 2023/09/07 11:20 | 2023/09/07 | | | |
| COC Number | | n/a | n/a | n/a | n/a | n/a | | | |
| | UNITS | LOC23-SW-01 | LOC23-SW-02 | LOC23-SW-03 | LOC23-SW-04 | DUP-SW-01 | RDL | MDL | QC Batch |

| | | | | | | | | | |
|--------------------|------|--------|--------|--------|--------|--------|-------|-----|---------|
| Metals | | | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | N/A | 8925506 |

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 N/A = Not Applicable



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

TEST SUMMARY

Bureau Veritas ID: WYM565
Sample ID: LOC23-SA-06
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM566
Sample ID: LOC23-SA-07
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM567
Sample ID: LOC23-SA-08
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM568
Sample ID: LOC23-SA-10
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM569
Sample ID: LOC23-SA-11
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM570
Sample ID: LOC23-SA-12
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM571
Sample ID: LOC23-SA-13
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

TEST SUMMARY

Bureau Veritas ID: WYM572
Sample ID: LOC23-SA-14
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM573
Sample ID: LOC23-SA-15
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM574
Sample ID: LOC23-SA-16 A
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM575
Sample ID: LOC23-SA-17
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM575 Dup
Sample ID: LOC23-SA-17
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM576
Sample ID: LOC23-SA-18
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM577
Sample ID: LOC23-SA-20
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

TEST SUMMARY

Bureau Veritas ID: WYM578
Sample ID: LOC23-SA-21
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM579
Sample ID: LOC23-SA-22
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM580
Sample ID: LOC23-SA-23
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM581
Sample ID: LOC23-SA-24
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/22 | Muskan Thakur |

Bureau Veritas ID: WYM582
Sample ID: LOC23-SA-25
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM583
Sample ID: LOC23-SD-01
Matrix: Soil

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |

Bureau Veritas ID: WYM584
Sample ID: LOC23-SD-02
Matrix: Soil

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931163 | 2023/09/21 | 2023/09/21 | Muskan Thakur |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

TEST SUMMARY

Bureau Veritas ID: WYM585
Sample ID: LOC23-SD-03
Matrix: Soil

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931225 | 2023/09/21 | 2023/09/21 | Mike Leblanc |

Bureau Veritas ID: WYM586
Sample ID: LOC23-SD-04
Matrix: Soil

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931225 | 2023/09/21 | 2023/09/21 | Mike Leblanc |

Bureau Veritas ID: WYM587
Sample ID: LOC23-SW-01
Matrix: Water

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|------------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 8910132 | N/A | 2023/09/20 | Automated Statchk |
| Alkalinity | AT | 8925483 | N/A | 2023/09/19 | Lewis Jarvie |
| Chloride | KONE | 8925344 | N/A | 2023/09/19 | Kevin MacDonald |
| Colour | KONE | 8925364 | N/A | 2023/09/20 | Hope Gorveatte |
| Conductance - water | AT | 8925489 | N/A | 2023/09/19 | Lewis Jarvie |
| Hardness (calculated as CaCO3) | | 8910068 | N/A | 2023/09/15 | Automated Statchk |
| Mercury - Total (CVAA,LL) | CV/AA | 8925506 | 2023/09/19 | 2023/09/20 | Seyeong Kim |
| Metals Water Total MS | CICP/MS | 8912827 | 2023/09/13 | 2023/09/14 | Muskan Thakur |
| Ion Balance (% Difference) | CALC | 8910133 | N/A | 2023/09/20 | Automated Statchk |
| Anion and Cation Sum | CALC | 8910134 | N/A | 2023/09/20 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 8922867 | N/A | 2023/09/18 | Hope Gorveatte |
| Nitrogen - Nitrate + Nitrite | KONE | 8925369 | N/A | 2023/09/20 | Mary Clancey |
| Nitrogen - Nitrite | KONE | 8925371 | N/A | 2023/09/19 | Kevin MacDonald |
| Nitrogen - Nitrate (as N) | CALC | 8910070 | N/A | 2023/09/20 | Automated Statchk |
| pH | AT | 8925487 | N/A | 2023/09/19 | Lewis Jarvie |
| Phosphorus - ortho | KONE | 8925367 | N/A | 2023/09/20 | Hope Gorveatte |
| Sat. pH and Langelier Index (@ 20C) | CALC | 8910137 | N/A | 2023/09/20 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 8910138 | N/A | 2023/09/20 | Automated Statchk |
| Reactive Silica | KONE | 8925363 | N/A | 2023/09/19 | Kevin MacDonald |
| Sulphate | KONE | 8925362 | N/A | 2023/09/19 | Kevin MacDonald |
| Total Dissolved Solids (TDS calc) | CALC | 8910139 | N/A | 2023/09/20 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 8920020 | N/A | 2023/09/16 | Adam MacCormack |
| Turbidity | TURB | 8925570 | N/A | 2023/09/19 | Lewis Jarvie |

Bureau Veritas ID: WYM588
Sample ID: LOC23-SW-02
Matrix: Water

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 8910132 | N/A | 2023/09/21 | Automated Statchk |
| Alkalinity | AT | 8928281 | N/A | 2023/09/20 | Lewis Jarvie |
| Chloride | KONE | 8928245 | N/A | 2023/09/20 | Mary Clancey |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

TEST SUMMARY

Bureau Veritas ID: WYM588
Sample ID: LOC23-SW-02
Matrix: Water

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-------------------------------------|-----------------|---------|------------|---------------|-------------------|
| Colour | KONE | 8928256 | N/A | 2023/09/21 | Hope Gorveatte |
| Conductance - water | AT | 8928279 | N/A | 2023/09/20 | Lewis Jarvie |
| Hardness (calculated as CaCO3) | | 8910068 | N/A | 2023/09/15 | Automated Statchk |
| Mercury - Total (CVAA,LL) | CV/AA | 8925506 | 2023/09/19 | 2023/09/20 | Seyeong Kim |
| Metals Water Total MS | CICP/MS | 8912827 | 2023/09/13 | 2023/09/14 | Muskan Thakur |
| Ion Balance (% Difference) | CALC | 8910133 | N/A | 2023/09/21 | Automated Statchk |
| Anion and Cation Sum | CALC | 8910134 | N/A | 2023/09/21 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 8922864 | N/A | 2023/09/18 | Hope Gorveatte |
| Nitrogen - Nitrate + Nitrite | KONE | 8928262 | N/A | 2023/09/21 | Mary Clancey |
| Nitrogen - Nitrite | KONE | 8928265 | N/A | 2023/09/20 | Mary Clancey |
| Nitrogen - Nitrate (as N) | CALC | 8910070 | N/A | 2023/09/21 | Automated Statchk |
| pH | AT | 8928275 | N/A | 2023/09/20 | Lewis Jarvie |
| Phosphorus - ortho | KONE | 8928257 | N/A | 2023/09/21 | Hope Gorveatte |
| Sat. pH and Langelier Index (@ 20C) | CALC | 8910137 | N/A | 2023/09/21 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 8910138 | N/A | 2023/09/21 | Automated Statchk |
| Reactive Silica | KONE | 8928254 | N/A | 2023/09/20 | Mary Clancey |
| Sulphate | KONE | 8928251 | N/A | 2023/09/20 | Mary Clancey |
| Total Dissolved Solids (TDS calc) | CALC | 8910139 | N/A | 2023/09/21 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 8920085 | N/A | 2023/09/15 | Chintan Prajapati |
| Turbidity | TURB | 8928446 | N/A | 2023/09/20 | Lewis Jarvie |

Bureau Veritas ID: WYM589
Sample ID: LOC23-SW-03
Matrix: Water

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|------------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 8910132 | N/A | 2023/09/20 | Automated Statchk |
| Alkalinity | AT | 8925497 | N/A | 2023/09/19 | Lewis Jarvie |
| Chloride | KONE | 8925374 | N/A | 2023/09/19 | Kevin MacDonald |
| Colour | KONE | 8925381 | N/A | 2023/09/20 | Hope Gorveatte |
| Conductance - water | AT | 8925496 | N/A | 2023/09/19 | Lewis Jarvie |
| Hardness (calculated as CaCO3) | | 8910068 | N/A | 2023/09/14 | Automated Statchk |
| Mercury - Total (CVAA,LL) | CV/AA | 8925506 | 2023/09/19 | 2023/09/20 | Seyeong Kim |
| Metals Water Total MS | CICP/MS | 8912827 | 2023/09/13 | 2023/09/14 | Muskan Thakur |
| Ion Balance (% Difference) | CALC | 8910133 | N/A | 2023/09/20 | Automated Statchk |
| Anion and Cation Sum | CALC | 8910134 | N/A | 2023/09/20 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 8922871 | N/A | 2023/09/18 | Hope Gorveatte |
| Nitrogen - Nitrate + Nitrite | KONE | 8925388 | N/A | 2023/09/20 | Mary Clancey |
| Nitrogen - Nitrite | KONE | 8925390 | N/A | 2023/09/19 | Kevin MacDonald |
| Nitrogen - Nitrate (as N) | CALC | 8910070 | N/A | 2023/09/20 | Automated Statchk |
| pH | AT | 8925491 | N/A | 2023/09/19 | Lewis Jarvie |
| Phosphorus - ortho | KONE | 8925385 | N/A | 2023/09/20 | Hope Gorveatte |
| Sat. pH and Langelier Index (@ 20C) | CALC | 8910137 | N/A | 2023/09/20 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 8910138 | N/A | 2023/09/20 | Automated Statchk |
| Reactive Silica | KONE | 8925379 | N/A | 2023/09/19 | Kevin MacDonald |
| Sulphate | KONE | 8925377 | N/A | 2023/09/19 | Kevin MacDonald |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

TEST SUMMARY

Bureau Veritas ID: WYM589
Sample ID: LOC23-SW-03
Matrix: Water

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-----------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Total Dissolved Solids (TDS calc) | CALC | 8910139 | N/A | 2023/09/20 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 8922961 | N/A | 2023/09/18 | Chintan Prajapati |
| Turbidity | TURB | 8925570 | N/A | 2023/09/19 | Lewis Jarvie |

Bureau Veritas ID: WYM590
Sample ID: LOC23-SW-04
Matrix: Water

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|------------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 8910132 | N/A | 2023/09/20 | Automated Statchk |
| Alkalinity | AT | 8925483 | N/A | 2023/09/19 | Lewis Jarvie |
| Chloride | KONE | 8925374 | N/A | 2023/09/19 | Kevin MacDonald |
| Colour | KONE | 8925381 | N/A | 2023/09/20 | Hope Gorveatte |
| Conductance - water | AT | 8925489 | N/A | 2023/09/19 | Lewis Jarvie |
| Hardness (calculated as CaCO3) | | 8910068 | N/A | 2023/09/14 | Automated Statchk |
| Mercury - Total (CVAA,LL) | CV/AA | 8925506 | 2023/09/19 | 2023/09/20 | Seyeong Kim |
| Metals Water Total MS | CICP/MS | 8912827 | 2023/09/13 | 2023/09/14 | Muskan Thakur |
| Ion Balance (% Difference) | CALC | 8910133 | N/A | 2023/09/20 | Automated Statchk |
| Anion and Cation Sum | CALC | 8910134 | N/A | 2023/09/20 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 8922867 | N/A | 2023/09/18 | Hope Gorveatte |
| Nitrogen - Nitrate + Nitrite | KONE | 8925388 | N/A | 2023/09/20 | Mary Clancey |
| Nitrogen - Nitrite | KONE | 8925390 | N/A | 2023/09/19 | Kevin MacDonald |
| Nitrogen - Nitrate (as N) | CALC | 8910070 | N/A | 2023/09/20 | Automated Statchk |
| pH | AT | 8925487 | N/A | 2023/09/19 | Lewis Jarvie |
| Phosphorus - ortho | KONE | 8925385 | N/A | 2023/09/20 | Hope Gorveatte |
| Sat. pH and Langelier Index (@ 20C) | CALC | 8910137 | N/A | 2023/09/20 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 8910138 | N/A | 2023/09/20 | Automated Statchk |
| Reactive Silica | KONE | 8925379 | N/A | 2023/09/19 | Kevin MacDonald |
| Sulphate | KONE | 8925377 | N/A | 2023/09/19 | Kevin MacDonald |
| Total Dissolved Solids (TDS calc) | CALC | 8910139 | N/A | 2023/09/20 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 8924034 | N/A | 2023/09/18 | Chintan Prajapati |
| Turbidity | TURB | 8925570 | N/A | 2023/09/19 | Lewis Jarvie |

Bureau Veritas ID: WYM591
Sample ID: DUP-SA-01
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931225 | 2023/09/21 | 2023/09/21 | Mike Leblanc |

Bureau Veritas ID: WYM592
Sample ID: DUP-SA-02
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931225 | 2023/09/21 | 2023/09/21 | Mike Leblanc |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

TEST SUMMARY

Bureau Veritas ID: WYM593
Sample ID: DUP-SD-01
Matrix: Soil

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931225 | 2023/09/21 | 2023/09/21 | Mike Leblanc |

Bureau Veritas ID: WYM594
Sample ID: DUP-SW-01
Matrix: Water

Collected: 2023/09/07
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|------------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 8910132 | N/A | 2023/09/20 | Automated Statchk |
| Alkalinity | AT | 8925483 | N/A | 2023/09/19 | Lewis Jarvie |
| Chloride | KONE | 8925344 | N/A | 2023/09/19 | Kevin MacDonald |
| Colour | KONE | 8925364 | N/A | 2023/09/20 | Hope Gorveatte |
| Conductance - water | AT | 8925489 | N/A | 2023/09/19 | Lewis Jarvie |
| Hardness (calculated as CaCO3) | | 8910068 | N/A | 2023/09/15 | Automated Statchk |
| Mercury - Total (CVAA,LL) | CV/AA | 8925506 | 2023/09/19 | 2023/09/20 | Seyeong Kim |
| Metals Water Total MS | CICP/MS | 8912827 | 2023/09/13 | 2023/09/14 | Muskan Thakur |
| Ion Balance (% Difference) | CALC | 8910133 | N/A | 2023/09/20 | Automated Statchk |
| Anion and Cation Sum | CALC | 8910134 | N/A | 2023/09/20 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 8922869 | N/A | 2023/09/18 | Hope Gorveatte |
| Nitrogen - Nitrate + Nitrite | KONE | 8925369 | N/A | 2023/09/20 | Mary Clancey |
| Nitrogen - Nitrite | KONE | 8925371 | N/A | 2023/09/19 | Kevin MacDonald |
| Nitrogen - Nitrate (as N) | CALC | 8910070 | N/A | 2023/09/20 | Automated Statchk |
| pH | AT | 8925487 | N/A | 2023/09/19 | Lewis Jarvie |
| Phosphorus - ortho | KONE | 8925367 | N/A | 2023/09/20 | Hope Gorveatte |
| Sat. pH and Langelier Index (@ 20C) | CALC | 8910137 | N/A | 2023/09/20 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 8910138 | N/A | 2023/09/20 | Automated Statchk |
| Reactive Silica | KONE | 8925363 | N/A | 2023/09/19 | Kevin MacDonald |
| Sulphate | KONE | 8925362 | N/A | 2023/09/19 | Kevin MacDonald |
| Total Dissolved Solids (TDS calc) | CALC | 8910139 | N/A | 2023/09/20 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 8922961 | N/A | 2023/09/18 | Chintan Prajapati |
| Turbidity | TURB | 8925570 | N/A | 2023/09/19 | Lewis Jarvie |

Bureau Veritas ID: WYM595
Sample ID: LOC23-SA-16B
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931225 | 2023/09/21 | 2023/09/21 | Mike Leblanc |

Bureau Veritas ID: WYM997
Sample ID: LOC23-SA-09
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931225 | 2023/09/21 | 2023/09/21 | Mike Leblanc |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

TEST SUMMARY

Bureau Veritas ID: WYM997 Dup
Sample ID: LOC23-SA-09
Matrix: Soil

Collected: 2023/09/06
Shipped:
Received: 2023/09/08

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|--------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 8931225 | 2023/09/21 | 2023/09/21 | Mike Leblanc |



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

| | |
|-----------|-------|
| Package 1 | 7.0°C |
|-----------|-------|

Sample WYM587 [LOC23-SW-01] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample WYM588 [LOC23-SW-02] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L. NOX < NO2 : Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample WYM589 [LOC23-SW-03] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample WYM590 [LOC23-SW-04] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample WYM594 [DUP-SW-01] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276

Report Date: 2023/09/22

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd

Client Project #: 121417847

Site Location: LOCHABER MINES

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|--------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 8912827 | Total Aluminum (Al) | 2023/09/13 | NC | 80 - 120 | 99 | 80 - 120 | <5.0 | ug/L | 2.1 | 20 | | |
| 8912827 | Total Antimony (Sb) | 2023/09/13 | 109 | 80 - 120 | 102 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 8912827 | Total Arsenic (As) | 2023/09/13 | 101 | 80 - 120 | 96 | 80 - 120 | <1.0 | ug/L | 2.8 | 20 | | |
| 8912827 | Total Barium (Ba) | 2023/09/13 | 103 | 80 - 120 | 102 | 80 - 120 | <1.0 | ug/L | 15 | 20 | | |
| 8912827 | Total Beryllium (Be) | 2023/09/13 | 101 | 80 - 120 | 101 | 80 - 120 | <0.10 | ug/L | 2.4 | 20 | | |
| 8912827 | Total Bismuth (Bi) | 2023/09/13 | 100 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 8912827 | Total Boron (B) | 2023/09/13 | 102 | 80 - 120 | 108 | 80 - 120 | <50 | ug/L | NC | 20 | | |
| 8912827 | Total Cadmium (Cd) | 2023/09/13 | 103 | 80 - 120 | 102 | 80 - 120 | <0.010 | ug/L | 1.7 | 20 | | |
| 8912827 | Total Calcium (Ca) | 2023/09/13 | 103 | 80 - 120 | 100 | 80 - 120 | <100 | ug/L | 2.2 | 20 | | |
| 8912827 | Total Chromium (Cr) | 2023/09/13 | 105 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 8912827 | Total Cobalt (Co) | 2023/09/13 | 105 | 80 - 120 | 97 | 80 - 120 | <0.40 | ug/L | NC | 20 | | |
| 8912827 | Total Copper (Cu) | 2023/09/13 | 105 | 80 - 120 | 98 | 80 - 120 | <0.50 | ug/L | 1.8 | 20 | | |
| 8912827 | Total Iron (Fe) | 2023/09/13 | 105 | 80 - 120 | 101 | 80 - 120 | <50 | ug/L | 0.58 | 20 | | |
| 8912827 | Total Lead (Pb) | 2023/09/13 | 102 | 80 - 120 | 99 | 80 - 120 | <0.50 | ug/L | 4.0 | 20 | | |
| 8912827 | Total Magnesium (Mg) | 2023/09/13 | 108 | 80 - 120 | 96 | 80 - 120 | <100 | ug/L | 1.1 | 20 | | |
| 8912827 | Total Manganese (Mn) | 2023/09/13 | 107 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | 1.3 | 20 | | |
| 8912827 | Total Molybdenum (Mo) | 2023/09/13 | 107 | 80 - 120 | 107 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 8912827 | Total Nickel (Ni) | 2023/09/13 | 105 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 8912827 | Total Phosphorus (P) | 2023/09/13 | 106 | 80 - 120 | 101 | 80 - 120 | <100 | ug/L | NC | 20 | | |
| 8912827 | Total Potassium (K) | 2023/09/13 | 106 | 80 - 120 | 98 | 80 - 120 | <100 | ug/L | 8.5 | 20 | | |
| 8912827 | Total Selenium (Se) | 2023/09/13 | 105 | 80 - 120 | 104 | 80 - 120 | <0.50 | ug/L | NC | 20 | | |
| 8912827 | Total Silver (Ag) | 2023/09/13 | 103 | 80 - 120 | 102 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 8912827 | Total Sodium (Na) | 2023/09/13 | 107 | 80 - 120 | 98 | 80 - 120 | <100 | ug/L | 1.7 | 20 | | |
| 8912827 | Total Strontium (Sr) | 2023/09/13 | 104 | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | 7.7 | 20 | | |
| 8912827 | Total Thallium (Tl) | 2023/09/13 | 102 | 80 - 120 | 101 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 8912827 | Total Tin (Sn) | 2023/09/13 | 104 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 8912827 | Total Titanium (Ti) | 2023/09/13 | 109 | 80 - 120 | 95 | 80 - 120 | <2.0 | ug/L | 14 | 20 | | |
| 8912827 | Total Uranium (U) | 2023/09/13 | 108 | 80 - 120 | 105 | 80 - 120 | <0.10 | ug/L | 1.3 | 20 | | |
| 8912827 | Total Vanadium (V) | 2023/09/13 | 107 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 8912827 | Total Zinc (Zn) | 2023/09/13 | 98 | 80 - 120 | 100 | 80 - 120 | <5.0 | ug/L | 1.6 | 20 | | |
| 8920020 | Total Organic Carbon (C) | 2023/09/16 | 100 | 85 - 115 | 98 | 80 - 120 | <0.50 | mg/L | NC | 15 | | |
| 8920085 | Total Organic Carbon (C) | 2023/09/15 | 99 | 85 - 115 | 103 | 80 - 120 | <0.50 | mg/L | NC | 15 | | |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276

Report Date: 2023/09/22

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd

Client Project #: 121417847

Site Location: LOCHABER MINES

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 8922864 | Nitrogen (Ammonia Nitrogen) | 2023/09/18 | 98 | 80 - 120 | 109 | 80 - 120 | <0.050 | mg/L | NC | 20 | | |
| 8922867 | Nitrogen (Ammonia Nitrogen) | 2023/09/18 | NC | 80 - 120 | 95 | 80 - 120 | <0.050 | mg/L | 2.2 | 20 | | |
| 8922869 | Nitrogen (Ammonia Nitrogen) | 2023/09/18 | 97 | 80 - 120 | 95 | 80 - 120 | <0.050 | mg/L | NC | 20 | | |
| 8922871 | Nitrogen (Ammonia Nitrogen) | 2023/09/18 | 98 | 80 - 120 | 93 | 80 - 120 | <0.050 | mg/L | NC | 20 | | |
| 8922961 | Total Organic Carbon (C) | 2023/09/18 | 101 | 85 - 115 | 100 | 80 - 120 | <0.50 | mg/L | 1.3 | 15 | | |
| 8924034 | Total Organic Carbon (C) | 2023/09/18 | 98 | 85 - 115 | 97 | 80 - 120 | <0.50 | mg/L | 1.2 | 15 | | |
| 8925344 | Dissolved Chloride (Cl-) | 2023/09/19 | NC | 80 - 120 | 93 | 80 - 120 | <1.0 | mg/L | 0.011 | 20 | | |
| 8925362 | Dissolved Sulphate (SO4) | 2023/09/19 | NC | 80 - 120 | 98 | 80 - 120 | <2.0 | mg/L | 1.2 | 20 | | |
| 8925363 | Reactive Silica (SiO2) | 2023/09/19 | 92 | 80 - 120 | 94 | 80 - 120 | <0.50 | mg/L | 2.2 | 20 | | |
| 8925364 | Colour | 2023/09/20 | | | 105 | 80 - 120 | <5.0 | TCU | 2.9 | 20 | | |
| 8925367 | Orthophosphate (P) | 2023/09/20 | 86 | 80 - 120 | 105 | 80 - 120 | <0.010 | mg/L | 4.4 | 20 | | |
| 8925369 | Nitrate + Nitrite (N) | 2023/09/20 | 100 | 80 - 120 | 101 | 80 - 120 | <0.050 | mg/L | 6.0 | 20 | | |
| 8925371 | Nitrite (N) | 2023/09/19 | 80 (1) | 80 - 120 | 108 | 80 - 120 | <0.010 | mg/L | NC | 20 | | |
| 8925374 | Dissolved Chloride (Cl-) | 2023/09/19 | 95 | 80 - 120 | 98 | 80 - 120 | <1.0 | mg/L | NC | 20 | | |
| 8925377 | Dissolved Sulphate (SO4) | 2023/09/19 | 96 | 80 - 120 | 99 | 80 - 120 | <2.0 | mg/L | NC | 20 | | |
| 8925379 | Reactive Silica (SiO2) | 2023/09/19 | 89 | 80 - 120 | 93 | 80 - 120 | <0.50 | mg/L | NC | 20 | | |
| 8925381 | Colour | 2023/09/20 | | | 96 | 80 - 120 | <5.0 | TCU | NC | 20 | | |
| 8925385 | Orthophosphate (P) | 2023/09/20 | 95 | 80 - 120 | 97 | 80 - 120 | <0.010 | mg/L | NC | 20 | | |
| 8925388 | Nitrate + Nitrite (N) | 2023/09/20 | 95 | 80 - 120 | 96 | 80 - 120 | <0.050 | mg/L | NC | 20 | | |
| 8925390 | Nitrite (N) | 2023/09/19 | 103 | 80 - 120 | 108 | 80 - 120 | <0.010 | mg/L | NC | 20 | | |
| 8925483 | Total Alkalinity (Total as CaCO3) | 2023/09/19 | | | 93 | 80 - 120 | <2.0 | mg/L | 0.48 | 20 | | |
| 8925487 | pH | 2023/09/19 | | | 100 | 97 - 103 | | | 0.17 | N/A | | |
| 8925489 | Conductivity | 2023/09/19 | | | 97 | 80 - 120 | <1.0 | uS/cm | 0.20 | 10 | | |
| 8925491 | pH | 2023/09/19 | | | 100 | 97 - 103 | | | 0.30 | N/A | | |
| 8925496 | Conductivity | 2023/09/19 | | | 96 | 80 - 120 | <1.0 | uS/cm | 0.68 | 10 | | |
| 8925497 | Total Alkalinity (Total as CaCO3) | 2023/09/19 | | | 93 | 80 - 120 | <2.0 | mg/L | 4.3 | 20 | | |
| 8925506 | Total Mercury (Hg) | 2023/09/20 | 103 | 80 - 120 | 97 | 80 - 120 | <0.013 | ug/L | NC | 20 | | |
| 8925570 | Turbidity | 2023/09/19 | | | 100 | 80 - 120 | <0.10 | NTU | 0.23 | 20 | 96 | 80 - 120 |
| 8928245 | Dissolved Chloride (Cl-) | 2023/09/20 | 90 | 80 - 120 | 93 | 80 - 120 | <1.0 | mg/L | 1.1 | 20 | | |
| 8928251 | Dissolved Sulphate (SO4) | 2023/09/20 | 95 | 80 - 120 | 97 | 80 - 120 | <2.0 | mg/L | NC | 20 | | |
| 8928254 | Reactive Silica (SiO2) | 2023/09/20 | NC | 80 - 120 | 93 | 80 - 120 | <0.50 | mg/L | 0.47 | 20 | | |
| 8928256 | Colour | 2023/09/21 | | | 103 | 80 - 120 | <5.0 | TCU | 2.6 | 20 | | |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276

Report Date: 2023/09/22

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd

Client Project #: 121417847

Site Location: LOCHABER MINES

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 8928257 | Orthophosphate (P) | 2023/09/21 | 87 | 80 - 120 | 97 | 80 - 120 | <0.010 | mg/L | NC | 20 | | |
| 8928262 | Nitrate + Nitrite (N) | 2023/09/21 | 100 | 80 - 120 | 97 | 80 - 120 | <0.050 | mg/L | NC | 20 | | |
| 8928265 | Nitrite (N) | 2023/09/20 | 66 (1) | 80 - 120 | 107 | 80 - 120 | <0.010 | mg/L | NC | 20 | | |
| 8928275 | pH | 2023/09/20 | | | 100 | 97 - 103 | | | 1.8 | N/A | | |
| 8928279 | Conductivity | 2023/09/20 | | | 99 | 80 - 120 | <1.0 | uS/cm | 0.39 | 10 | | |
| 8928281 | Total Alkalinity (Total as CaCO3) | 2023/09/20 | | | 97 | 80 - 120 | <2.0 | mg/L | NC | 20 | | |
| 8928446 | Turbidity | 2023/09/20 | | | 100 | 80 - 120 | <0.10 | NTU | 0.25 | 20 | 93 | 80 - 120 |
| 8931163 | Acid Extractable Aluminum (Al) | 2023/09/21 | | | | | <10 | mg/kg | 0.81 | 35 | | |
| 8931163 | Acid Extractable Antimony (Sb) | 2023/09/21 | 106 | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Arsenic (As) | 2023/09/21 | 106 | 75 - 125 | 99 | 75 - 125 | <2.0 | mg/kg | 1.0 | 35 | | |
| 8931163 | Acid Extractable Barium (Ba) | 2023/09/21 | 101 | 75 - 125 | 98 | 75 - 125 | <5.0 | mg/kg | 5.7 | 35 | | |
| 8931163 | Acid Extractable Beryllium (Be) | 2023/09/21 | 100 | 75 - 125 | 94 | 75 - 125 | <1.0 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Bismuth (Bi) | 2023/09/21 | 106 | 75 - 125 | 97 | 75 - 125 | <2.0 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Boron (B) | 2023/09/21 | 85 | 75 - 125 | 94 | 75 - 125 | <50 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Cadmium (Cd) | 2023/09/21 | 105 | 75 - 125 | 96 | 75 - 125 | <0.30 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Chromium (Cr) | 2023/09/21 | 107 | 75 - 125 | 99 | 75 - 125 | <2.0 | mg/kg | 1.5 | 35 | | |
| 8931163 | Acid Extractable Cobalt (Co) | 2023/09/21 | 106 | 75 - 125 | 100 | 75 - 125 | <1.0 | mg/kg | 3.5 | 35 | | |
| 8931163 | Acid Extractable Copper (Cu) | 2023/09/21 | 108 | 75 - 125 | 99 | 75 - 125 | <2.0 | mg/kg | 5.3 | 35 | | |
| 8931163 | Acid Extractable Iron (Fe) | 2023/09/21 | | | | | <50 | mg/kg | 1.4 | 35 | | |
| 8931163 | Acid Extractable Lead (Pb) | 2023/09/21 | NC | 75 - 125 | 97 | 75 - 125 | <0.50 | mg/kg | 9.8 | 35 | | |
| 8931163 | Acid Extractable Lithium (Li) | 2023/09/21 | 99 | 75 - 125 | 95 | 75 - 125 | <2.0 | mg/kg | 0.12 | 35 | | |
| 8931163 | Acid Extractable Manganese (Mn) | 2023/09/21 | NC | 75 - 125 | 101 | 75 - 125 | <2.0 | mg/kg | 0.93 | 35 | | |
| 8931163 | Acid Extractable Mercury (Hg) | 2023/09/21 | 100 | 75 - 125 | 99 | 75 - 125 | <0.10 | mg/kg | 12 | 35 | | |
| 8931163 | Acid Extractable Molybdenum (Mo) | 2023/09/21 | 107 | 75 - 125 | 100 | 75 - 125 | <2.0 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Nickel (Ni) | 2023/09/21 | 109 | 75 - 125 | 100 | 75 - 125 | <2.0 | mg/kg | 2.9 | 35 | | |
| 8931163 | Acid Extractable Rubidium (Rb) | 2023/09/21 | 101 | 75 - 125 | 95 | 75 - 125 | <2.0 | mg/kg | 11 | 35 | | |
| 8931163 | Acid Extractable Selenium (Se) | 2023/09/21 | 102 | 75 - 125 | 98 | 75 - 125 | <0.50 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Silver (Ag) | 2023/09/21 | 105 | 75 - 125 | 99 | 75 - 125 | <0.50 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Strontium (Sr) | 2023/09/21 | 105 | 75 - 125 | 97 | 75 - 125 | <5.0 | mg/kg | 8.9 | 35 | | |
| 8931163 | Acid Extractable Thallium (Tl) | 2023/09/21 | 104 | 75 - 125 | 98 | 75 - 125 | <0.10 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Tin (Sn) | 2023/09/21 | 104 | 75 - 125 | 95 | 75 - 125 | <1.0 | mg/kg | NC | 35 | | |
| 8931163 | Acid Extractable Uranium (U) | 2023/09/21 | 104 | 75 - 125 | 97 | 75 - 125 | <0.10 | mg/kg | 7.0 | 35 | | |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276

Report Date: 2023/09/22

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd

Client Project #: 121417847

Site Location: LOCHABER MINES

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 8931163 | Acid Extractable Vanadium (V) | 2023/09/21 | 109 | 75 - 125 | 100 | 75 - 125 | <2.0 | mg/kg | 5.1 | 35 | | |
| 8931163 | Acid Extractable Zinc (Zn) | 2023/09/21 | 109 | 75 - 125 | 99 | 75 - 125 | <5.0 | mg/kg | 1.3 | 35 | | |
| 8931225 | Acid Extractable Aluminum (Al) | 2023/09/21 | | | | | <10 | mg/kg | 6.0 | 35 | | |
| 8931225 | Acid Extractable Antimony (Sb) | 2023/09/21 | 99 | 75 - 125 | 99 | 75 - 125 | <2.0 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Arsenic (As) | 2023/09/21 | 112 | 75 - 125 | 101 | 75 - 125 | <2.0 | mg/kg | 12 | 35 | | |
| 8931225 | Acid Extractable Barium (Ba) | 2023/09/21 | NC | 75 - 125 | 102 | 75 - 125 | <5.0 | mg/kg | 11 | 35 | | |
| 8931225 | Acid Extractable Beryllium (Be) | 2023/09/21 | 100 | 75 - 125 | 97 | 75 - 125 | <1.0 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Bismuth (Bi) | 2023/09/21 | 101 | 75 - 125 | 96 | 75 - 125 | <2.0 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Boron (B) | 2023/09/21 | 95 | 75 - 125 | 93 | 75 - 125 | <50 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Cadmium (Cd) | 2023/09/21 | 99 | 75 - 125 | 98 | 75 - 125 | <0.30 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Chromium (Cr) | 2023/09/21 | 105 | 75 - 125 | 100 | 75 - 125 | <2.0 | mg/kg | 7.3 | 35 | | |
| 8931225 | Acid Extractable Cobalt (Co) | 2023/09/21 | NC | 75 - 125 | 100 | 75 - 125 | <1.0 | mg/kg | 15 | 35 | | |
| 8931225 | Acid Extractable Copper (Cu) | 2023/09/21 | 100 | 75 - 125 | 98 | 75 - 125 | <2.0 | mg/kg | 12 | 35 | | |
| 8931225 | Acid Extractable Iron (Fe) | 2023/09/21 | | | | | <50 | mg/kg | 5.9 | 35 | | |
| 8931225 | Acid Extractable Lead (Pb) | 2023/09/21 | 98 | 75 - 125 | 97 | 75 - 125 | <0.50 | mg/kg | 9.3 | 35 | | |
| 8931225 | Acid Extractable Lithium (Li) | 2023/09/21 | 105 | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | 0.16 | 35 | | |
| 8931225 | Acid Extractable Manganese (Mn) | 2023/09/21 | NC | 75 - 125 | 101 | 75 - 125 | <2.0 | mg/kg | 5.1 | 35 | | |
| 8931225 | Acid Extractable Mercury (Hg) | 2023/09/21 | 97 | 75 - 125 | 104 | 75 - 125 | <0.10 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Molybdenum (Mo) | 2023/09/21 | 105 | 75 - 125 | 103 | 75 - 125 | <2.0 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Nickel (Ni) | 2023/09/21 | 105 | 75 - 125 | 101 | 75 - 125 | <2.0 | mg/kg | 6.0 | 35 | | |
| 8931225 | Acid Extractable Rubidium (Rb) | 2023/09/21 | 99 | 75 - 125 | 97 | 75 - 125 | <2.0 | mg/kg | 2.5 | 35 | | |
| 8931225 | Acid Extractable Selenium (Se) | 2023/09/21 | 97 | 75 - 125 | 101 | 75 - 125 | <0.50 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Silver (Ag) | 2023/09/21 | 102 | 75 - 125 | 100 | 75 - 125 | <0.50 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Strontium (Sr) | 2023/09/21 | 107 | 75 - 125 | 96 | 75 - 125 | <5.0 | mg/kg | 0.88 | 35 | | |
| 8931225 | Acid Extractable Thallium (Tl) | 2023/09/21 | 101 | 75 - 125 | 99 | 75 - 125 | <0.10 | mg/kg | 1.0 | 35 | | |
| 8931225 | Acid Extractable Tin (Sn) | 2023/09/21 | 105 | 75 - 125 | 99 | 75 - 125 | <1.0 | mg/kg | NC | 35 | | |
| 8931225 | Acid Extractable Uranium (U) | 2023/09/21 | 103 | 75 - 125 | 96 | 75 - 125 | <0.10 | mg/kg | 3.5 | 35 | | |
| 8931225 | Acid Extractable Vanadium (V) | 2023/09/21 | 104 | 75 - 125 | 104 | 75 - 125 | <2.0 | mg/kg | 13 | 35 | | |



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276

Report Date: 2023/09/22

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd

Client Project #: 121417847

Site Location: LOCHABER MINES

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|----------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 8931225 | Acid Extractable Zinc (Zn) | 2023/09/21 | 99 | 75 - 125 | 97 | 75 - 125 | <5.0 | mg/kg | 9.0 | 35 | | |

N/A = Not Applicable

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Poor spike recovery due to probable sample matrix interference.



BUREAU
VERITAS

Bureau Veritas Job #: C3R8276
Report Date: 2023/09/22

Stantec Consulting Ltd
Client Project #: 121417847
Site Location: LOCHABER MINES

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Mike MacGillivray, Scientific Specialist (Inorganics)



Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.



Your Project #: 121418211
 Site Location: LOCHAKER MINES
 Your C.O.C. #: N/A

Attention: Cally Baxter

Stantec Consulting Ltd
 40 Highfield Park Drive
 Suite 102
 Dartmouth, NS
 CANADA B3A 0A3

Report Date: 2024/08/20
 Report #: R8284230
 Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C4H0077

Received: 2024/06/06, 11:52

Sample Matrix: Soil
 # Samples Received: 3

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|--------------------------------|----------|----------------|---------------|-------------------|-------------------|
| Metals Solids Acid Extr. ICPMS | 3 | 2024/06/10 | 2024/06/10 | ATL SOP 00058 | EPA 6020B R2 m |

Sample Matrix: Sediment
 # Samples Received: 3

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|--------------------------------|----------|----------------|---------------|-------------------|-------------------|
| Metals Solids Acid Extr. ICPMS | 2 | 2024/06/10 | 2024/06/10 | ATL SOP 00058 | EPA 6020B R2 m |
| Metals Solids Acid Extr. ICPMS | 1 | 2024/06/07 | 2024/06/10 | ATL SOP 00058 | EPA 6020B R2 m |

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: 121418211
Site Location: LOCHAKER MINES
Your C.O.C. #: N/A

Attention: Cally Baxter

Stantec Consulting Ltd
40 Highfield Park Drive
Suite 102
Dartmouth, NS
CANADA B3A 0A3

Report Date: 2024/08/20
Report #: R8284230
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C4H0077
Received: 2024/06/06, 11:52

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Marie Muise, Key Account Specialist
Email: Marie.MUISE@bureauveritas.com
Phone# (902)420-0203 Ext:253

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C4H0077
Report Date: 2024/08/20

Stantec Consulting Ltd
Client Project #: 121418211
Site Location: LOCHAKER MINES
Sampler Initials: MR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| Bureau Veritas ID | | ZJH626 | ZJH627 | ZJH628 | | | |
|--|-------|---------------------|---------------------|---------------------|------|-----|----------|
| Sampling Date | | 2024/05/31 12:00 | 2024/05/31 12:00 | 2024/05/31 12:00 | | | |
| | UNITS | LOC24-SA-01 | LOC24-SA-02 | LOC24-SA-100 | RDL | MDL | QC Batch |
| Metals | | | | | | | |
| Acid Extractable Aluminum (Al) | mg/kg | 2300 | 6800 | 3200 | 10 | N/A | 9444119 |
| Acid Extractable Antimony (Sb) | mg/kg | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Arsenic (As) | mg/kg | <2.0 | 6.2 | 2.5 | 2.0 | N/A | 9444119 |
| Acid Extractable Barium (Ba) | mg/kg | 21 | 18 | 16 | 5.0 | N/A | 9444119 |
| Acid Extractable Beryllium (Be) | mg/kg | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 9444119 |
| Acid Extractable Bismuth (Bi) | mg/kg | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Boron (B) | mg/kg | <50 | <50 | <50 | 50 | N/A | 9444119 |
| Acid Extractable Cadmium (Cd) | mg/kg | <0.30 | <0.30 | <0.30 | 0.30 | N/A | 9444119 |
| Acid Extractable Chromium (Cr) | mg/kg | 3.1 | 7.1 | 3.4 | 2.0 | N/A | 9444119 |
| Acid Extractable Cobalt (Co) | mg/kg | <1.0 | 1.7 | <1.0 | 1.0 | N/A | 9444119 |
| Acid Extractable Copper (Cu) | mg/kg | 2.8 | 3.2 | <2.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Iron (Fe) | mg/kg | 1700 | 12000 | 3300 | 50 | N/A | 9444119 |
| Acid Extractable Lead (Pb) | mg/kg | 7.5 | 9.8 | 6.1 | 0.50 | N/A | 9444119 |
| Acid Extractable Lithium (Li) | mg/kg | <2.0 | 4.5 | <2.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Manganese (Mn) | mg/kg | 30 | 170 | 52 | 2.0 | N/A | 9444119 |
| Acid Extractable Mercury (Hg) | mg/kg | <0.10 | <0.10 | <0.10 | 0.10 | N/A | 9444119 |
| Acid Extractable Molybdenum (Mo) | mg/kg | <2.0 | <2.0 | <2.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Nickel (Ni) | mg/kg | <2.0 | 7.1 | 2.2 | 2.0 | N/A | 9444119 |
| Acid Extractable Rubidium (Rb) | mg/kg | 3.2 | 5.5 | 3.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Selenium (Se) | mg/kg | <0.50 | <0.50 | <0.50 | 0.50 | N/A | 9444119 |
| Acid Extractable Silver (Ag) | mg/kg | <0.50 | <0.50 | <0.50 | 0.50 | N/A | 9444119 |
| Acid Extractable Strontium (Sr) | mg/kg | <5.0 | <5.0 | <5.0 | 5.0 | N/A | 9444119 |
| Acid Extractable Thallium (Tl) | mg/kg | <0.10 | <0.10 | <0.10 | 0.10 | N/A | 9444119 |
| Acid Extractable Tin (Sn) | mg/kg | <1.0 | <1.0 | <1.0 | 1.0 | N/A | 9444119 |
| Acid Extractable Uranium (U) | mg/kg | 0.15 | 0.25 | 0.14 | 0.10 | N/A | 9444119 |
| Acid Extractable Vanadium (V) | mg/kg | 7.4 | 14 | 7.7 | 2.0 | N/A | 9444119 |
| Acid Extractable Zinc (Zn) | mg/kg | <5.0 | 13 | <5.0 | 5.0 | N/A | 9444119 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | |



BUREAU
VERITAS

Bureau Veritas Job #: C4H0077
Report Date: 2024/08/20

Stantec Consulting Ltd
Client Project #: 121418211
Site Location: LOCHAKER MINES
Sampler Initials: MR

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

| Bureau Veritas ID | | ZJH629 | ZJH629 | | | ZJH630 | ZJH631 | | | |
|--|-------|---------------------|------------------------|------|----------|---------------------|---------------------|------|-----|----------|
| Sampling Date | | 2024/05/31 12:00 | 2024/05/31 12:00 | | | 2024/05/31 12:00 | 2024/05/31 12:00 | | | |
| | UNITS | LOC24-SD-01 | LOC24-SD-01 Lab-Dup | RDL | QC Batch | LOC24-SD-02 | LOC24-SD-100 | RDL | MDL | QC Batch |
| Metals | | | | | | | | | | |
| Acid Extractable Aluminum (Al) | mg/kg | 6900 | 7300 | 10 | 9440632 | 3500 | 5600 | 10 | N/A | 9444119 |
| Acid Extractable Antimony (Sb) | mg/kg | <2.0 | <2.0 | 2.0 | 9440632 | <2.0 | <2.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Arsenic (As) | mg/kg | 170 | 170 | 2.0 | 9440632 | 9.9 | 120 | 2.0 | N/A | 9444119 |
| Acid Extractable Barium (Ba) | mg/kg | 52 | 56 | 5.0 | 9440632 | 28 | 47 | 5.0 | N/A | 9444119 |
| Acid Extractable Beryllium (Be) | mg/kg | <1.0 | <1.0 | 1.0 | 9440632 | <1.0 | <1.0 | 1.0 | N/A | 9444119 |
| Acid Extractable Bismuth (Bi) | mg/kg | <2.0 | <2.0 | 2.0 | 9440632 | <2.0 | <2.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Boron (B) | mg/kg | <50 | <50 | 50 | 9440632 | <50 | <50 | 50 | N/A | 9444119 |
| Acid Extractable Cadmium (Cd) | mg/kg | <0.30 | <0.30 | 0.30 | 9440632 | <0.30 | <0.30 | 0.30 | N/A | 9444119 |
| Acid Extractable Chromium (Cr) | mg/kg | 9.7 | 10 | 2.0 | 9440632 | 3.4 | 7.2 | 2.0 | N/A | 9444119 |
| Acid Extractable Cobalt (Co) | mg/kg | 140 | 150 | 1.0 | 9440632 | 2.1 | 110 | 1.0 | N/A | 9444119 |
| Acid Extractable Copper (Cu) | mg/kg | 5.5 | 6.1 | 2.0 | 9440632 | 3.4 | 5.1 | 2.0 | N/A | 9444119 |
| Acid Extractable Iron (Fe) | mg/kg | 110000 | 110000 | 500 | 9440632 | 3400 | 68000 | 50 | N/A | 9444119 |
| Acid Extractable Lead (Pb) | mg/kg | 72 | 73 | 0.50 | 9440632 | 11 | 63 | 0.50 | N/A | 9444119 |
| Acid Extractable Lithium (Li) | mg/kg | 5.0 | 4.8 | 2.0 | 9440632 | 3.2 | 2.9 | 2.0 | N/A | 9444119 |
| Acid Extractable Manganese (Mn) | mg/kg | 6600 | 6900 | 2.0 | 9440632 | 150 | 3800 | 2.0 | N/A | 9444119 |
| Acid Extractable Mercury (Hg) | mg/kg | 0.25 | 0.27 | 0.10 | 9440632 | 0.54 | 0.21 | 0.10 | N/A | 9444119 |
| Acid Extractable Molybdenum (Mo) | mg/kg | <2.0 | <2.0 | 2.0 | 9440632 | <2.0 | <2.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Nickel (Ni) | mg/kg | 6.5 | 6.6 | 2.0 | 9440632 | 4.2 | 5.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Rubidium (Rb) | mg/kg | 3.6 | 4.2 | 2.0 | 9440632 | 3.6 | 3.0 | 2.0 | N/A | 9444119 |
| Acid Extractable Selenium (Se) | mg/kg | 2.0 | 2.0 | 0.50 | 9440632 | 0.57 | 1.5 | 0.50 | N/A | 9444119 |
| Acid Extractable Silver (Ag) | mg/kg | <0.50 | <0.50 | 0.50 | 9440632 | <0.50 | <0.50 | 0.50 | N/A | 9444119 |
| Acid Extractable Strontium (Sr) | mg/kg | 11 | 12 | 5.0 | 9440632 | 16 | 8.9 | 5.0 | N/A | 9444119 |
| Acid Extractable Thallium (Tl) | mg/kg | 0.13 | 0.15 | 0.10 | 9440632 | <0.10 | 0.15 | 0.10 | N/A | 9444119 |
| Acid Extractable Tin (Sn) | mg/kg | <1.0 | 1.1 | 1.0 | 9440632 | <1.0 | <1.0 | 1.0 | N/A | 9444119 |
| Acid Extractable Uranium (U) | mg/kg | 0.58 | 0.60 | 0.10 | 9440632 | 0.55 | 0.55 | 0.10 | N/A | 9444119 |
| Acid Extractable Vanadium (V) | mg/kg | 33 | 34 | 2.0 | 9440632 | 3.9 | 24 | 2.0 | N/A | 9444119 |
| Acid Extractable Zinc (Zn) | mg/kg | 14 | 14 | 5.0 | 9440632 | 12 | 13 | 5.0 | N/A | 9444119 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | | | | |



BUREAU
VERITAS

Bureau Veritas Job #: C4H0077
Report Date: 2024/08/20

Stantec Consulting Ltd
Client Project #: 121418211
Site Location: LOCHAKER MINES
Sampler Initials: MR

TEST SUMMARY

Bureau Veritas ID: ZJH626
Sample ID: LOC24-SA-01
Matrix: Soil

Collected: 2024/05/31
Shipped:
Received: 2024/06/06

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 9444119 | 2024/06/10 | 2024/06/10 | Muskan Thakur |

Bureau Veritas ID: ZJH627
Sample ID: LOC24-SA-02
Matrix: Soil

Collected: 2024/05/31
Shipped:
Received: 2024/06/06

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 9444119 | 2024/06/10 | 2024/06/10 | Muskan Thakur |

Bureau Veritas ID: ZJH628
Sample ID: LOC24-SA-100
Matrix: Soil

Collected: 2024/05/31
Shipped:
Received: 2024/06/06

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 9444119 | 2024/06/10 | 2024/06/10 | Muskan Thakur |

Bureau Veritas ID: ZJH629
Sample ID: LOC24-SD-01
Matrix: Sediment

Collected: 2024/05/31
Shipped:
Received: 2024/06/06

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 9440632 | 2024/06/07 | 2024/06/10 | Muskan Thakur |

Bureau Veritas ID: ZJH629 Dup
Sample ID: LOC24-SD-01
Matrix: Sediment

Collected: 2024/05/31
Shipped:
Received: 2024/06/06

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 9440632 | 2024/06/07 | 2024/06/10 | Muskan Thakur |

Bureau Veritas ID: ZJH630
Sample ID: LOC24-SD-02
Matrix: Sediment

Collected: 2024/05/31
Shipped:
Received: 2024/06/06

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 9444119 | 2024/06/10 | 2024/06/10 | Muskan Thakur |

Bureau Veritas ID: ZJH631
Sample ID: LOC24-SD-100
Matrix: Sediment

Collected: 2024/05/31
Shipped:
Received: 2024/06/06

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------|-----------------|---------|------------|---------------|---------------|
| Metals Solids Acid Extr. ICPMS | ICP/MS | 9444119 | 2024/06/10 | 2024/06/10 | Muskan Thakur |



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

| | |
|-----------|-------|
| Package 1 | 4.3°C |
|-----------|-------|

Revised Report: Change samples IDs as requested by Cally Baxter8/20/24 MMC.

LOC-SA24-01 to LOC24-SA-01
LOC-SA24-02 to LOC24-SA-02
LOC-SA24-100 to LOC24-SA-100

LOC-SD24-01 to LOC24-SD-01
LOC-SD24-02 to LOC24-SD-02
LOC-SD24-100 to LOC24-SD-100

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C4H0077

Report Date: 2024/08/20

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd

Client Project #: 121418211

Site Location: LOCHAKER MINES

Sampler Initials: MR

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | |
|----------|----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits |
| 9440632 | Acid Extractable Aluminum (Al) | 2024/06/10 | | | | | <10 | mg/kg | 6.6 | 35 |
| 9440632 | Acid Extractable Antimony (Sb) | 2024/06/10 | 103 | 75 - 125 | 103 | 75 - 125 | <2.0 | mg/kg | NC | 35 |
| 9440632 | Acid Extractable Arsenic (As) | 2024/06/10 | NC | 75 - 125 | 101 | 75 - 125 | <2.0 | mg/kg | 1.3 | 35 |
| 9440632 | Acid Extractable Barium (Ba) | 2024/06/10 | NC | 75 - 125 | 97 | 75 - 125 | <5.0 | mg/kg | 8.8 | 35 |
| 9440632 | Acid Extractable Beryllium (Be) | 2024/06/10 | 106 | 75 - 125 | 98 | 75 - 125 | <1.0 | mg/kg | NC | 35 |
| 9440632 | Acid Extractable Bismuth (Bi) | 2024/06/10 | 106 | 75 - 125 | 98 | 75 - 125 | <2.0 | mg/kg | NC | 35 |
| 9440632 | Acid Extractable Boron (B) | 2024/06/10 | 88 | 75 - 125 | 96 | 75 - 125 | <50 | mg/kg | NC | 35 |
| 9440632 | Acid Extractable Cadmium (Cd) | 2024/06/10 | 105 | 75 - 125 | 97 | 75 - 125 | <0.30 | mg/kg | NC | 35 |
| 9440632 | Acid Extractable Chromium (Cr) | 2024/06/10 | 114 | 75 - 125 | 103 | 75 - 125 | <2.0 | mg/kg | 3.3 | 35 |
| 9440632 | Acid Extractable Cobalt (Co) | 2024/06/10 | NC | 75 - 125 | 99 | 75 - 125 | <1.0 | mg/kg | 10 | 35 |
| 9440632 | Acid Extractable Copper (Cu) | 2024/06/10 | 109 | 75 - 125 | 98 | 75 - 125 | <2.0 | mg/kg | 10 | 35 |
| 9440632 | Acid Extractable Iron (Fe) | 2024/06/10 | | | | | <50 | mg/kg | 2.2 | 35 |
| 9440632 | Acid Extractable Lead (Pb) | 2024/06/10 | NC | 75 - 125 | 95 | 75 - 125 | <0.50 | mg/kg | 1.9 | 35 |
| 9440632 | Acid Extractable Lithium (Li) | 2024/06/10 | 105 | 75 - 125 | 99 | 75 - 125 | <2.0 | mg/kg | 3.4 | 35 |
| 9440632 | Acid Extractable Manganese (Mn) | 2024/06/10 | NC | 75 - 125 | 98 | 75 - 125 | <2.0 | mg/kg | 5.1 | 35 |
| 9440632 | Acid Extractable Mercury (Hg) | 2024/06/10 | 104 | 75 - 125 | 107 | 75 - 125 | <0.10 | mg/kg | 5.8 | 35 |
| 9440632 | Acid Extractable Molybdenum (Mo) | 2024/06/10 | 111 | 75 - 125 | 98 | 75 - 125 | <2.0 | mg/kg | NC | 35 |
| 9440632 | Acid Extractable Nickel (Ni) | 2024/06/10 | 111 | 75 - 125 | 101 | 75 - 125 | <2.0 | mg/kg | 1.9 | 35 |
| 9440632 | Acid Extractable Rubidium (Rb) | 2024/06/10 | 105 | 75 - 125 | 96 | 75 - 125 | <2.0 | mg/kg | 15 | 35 |
| 9440632 | Acid Extractable Selenium (Se) | 2024/06/10 | 106 | 75 - 125 | 103 | 75 - 125 | <0.50 | mg/kg | 1.9 | 35 |
| 9440632 | Acid Extractable Silver (Ag) | 2024/06/10 | 110 | 75 - 125 | 101 | 75 - 125 | <0.50 | mg/kg | NC | 35 |
| 9440632 | Acid Extractable Strontium (Sr) | 2024/06/10 | 106 | 75 - 125 | 98 | 75 - 125 | <5.0 | mg/kg | 5.9 | 35 |
| 9440632 | Acid Extractable Thallium (Tl) | 2024/06/10 | 107 | 75 - 125 | 98 | 75 - 125 | <0.10 | mg/kg | 12 | 35 |
| 9440632 | Acid Extractable Tin (Sn) | 2024/06/10 | 109 | 75 - 125 | 101 | 75 - 125 | <1.0 | mg/kg | 9.5 | 35 |
| 9440632 | Acid Extractable Uranium (U) | 2024/06/10 | 97 | 75 - 125 | 87 | 75 - 125 | <0.10 | mg/kg | 3.2 | 35 |
| 9440632 | Acid Extractable Vanadium (V) | 2024/06/10 | 111 | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | 1.9 | 35 |
| 9440632 | Acid Extractable Zinc (Zn) | 2024/06/10 | 112 | 75 - 125 | 98 | 75 - 125 | <5.0 | mg/kg | 3.9 | 35 |
| 9444119 | Acid Extractable Aluminum (Al) | 2024/06/10 | | | | | <10 | mg/kg | 3.9 | 35 |
| 9444119 | Acid Extractable Antimony (Sb) | 2024/06/10 | 97 | 75 - 125 | 105 | 75 - 125 | <2.0 | mg/kg | NC | 35 |
| 9444119 | Acid Extractable Arsenic (As) | 2024/06/10 | 103 | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | 3.8 | 35 |
| 9444119 | Acid Extractable Barium (Ba) | 2024/06/10 | NC | 75 - 125 | 98 | 75 - 125 | <5.0 | mg/kg | 3.6 | 35 |
| 9444119 | Acid Extractable Beryllium (Be) | 2024/06/10 | 107 | 75 - 125 | 101 | 75 - 125 | <1.0 | mg/kg | 6.1 | 35 |



BUREAU
VERITAS

Bureau Veritas Job #: C4H0077

Report Date: 2024/08/20

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd

Client Project #: 121418211

Site Location: LOCHAKER MINES

Sampler Initials: MR

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | |
|----------|----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits |
| 9444119 | Acid Extractable Bismuth (Bi) | 2024/06/10 | 106 | 75 - 125 | 99 | 75 - 125 | <2.0 | mg/kg | NC | 35 |
| 9444119 | Acid Extractable Boron (B) | 2024/06/10 | 87 | 75 - 125 | 102 | 75 - 125 | <50 | mg/kg | NC | 35 |
| 9444119 | Acid Extractable Cadmium (Cd) | 2024/06/10 | 103 | 75 - 125 | 100 | 75 - 125 | <0.30 | mg/kg | 1.8 | 35 |
| 9444119 | Acid Extractable Chromium (Cr) | 2024/06/10 | 105 | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | 5.0 | 35 |
| 9444119 | Acid Extractable Cobalt (Co) | 2024/06/10 | 104 | 75 - 125 | 100 | 75 - 125 | <1.0 | mg/kg | 1.1 | 35 |
| 9444119 | Acid Extractable Copper (Cu) | 2024/06/10 | 101 | 75 - 125 | 99 | 75 - 125 | <2.0 | mg/kg | 3.4 | 35 |
| 9444119 | Acid Extractable Iron (Fe) | 2024/06/10 | | | | | <50 | mg/kg | 5.1 | 35 |
| 9444119 | Acid Extractable Lead (Pb) | 2024/06/10 | NC | 75 - 125 | 99 | 75 - 125 | <0.50 | mg/kg | 4.0 | 35 |
| 9444119 | Acid Extractable Lithium (Li) | 2024/06/10 | 110 | 75 - 125 | 100 | 75 - 125 | <2.0 | mg/kg | 6.3 | 35 |
| 9444119 | Acid Extractable Manganese (Mn) | 2024/06/10 | NC | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | 2.4 | 35 |
| 9444119 | Acid Extractable Mercury (Hg) | 2024/06/10 | 103 | 75 - 125 | 101 | 75 - 125 | <0.10 | mg/kg | 1.9 | 35 |
| 9444119 | Acid Extractable Molybdenum (Mo) | 2024/06/10 | 102 | 75 - 125 | 105 | 75 - 125 | <2.0 | mg/kg | 4.5 | 35 |
| 9444119 | Acid Extractable Nickel (Ni) | 2024/06/10 | 106 | 75 - 125 | 103 | 75 - 125 | <2.0 | mg/kg | 4.5 | 35 |
| 9444119 | Acid Extractable Rubidium (Rb) | 2024/06/10 | 97 | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | 5.7 | 35 |
| 9444119 | Acid Extractable Selenium (Se) | 2024/06/10 | 105 | 75 - 125 | 102 | 75 - 125 | <0.50 | mg/kg | 2.3 | 35 |
| 9444119 | Acid Extractable Silver (Ag) | 2024/06/10 | 105 | 75 - 125 | 101 | 75 - 125 | <0.50 | mg/kg | 2.5 | 35 |
| 9444119 | Acid Extractable Strontium (Sr) | 2024/06/10 | NC | 75 - 125 | 100 | 75 - 125 | <5.0 | mg/kg | 3.6 | 35 |
| 9444119 | Acid Extractable Thallium (Tl) | 2024/06/10 | 106 | 75 - 125 | 102 | 75 - 125 | <0.10 | mg/kg | 9.1 | 35 |
| 9444119 | Acid Extractable Tin (Sn) | 2024/06/10 | 103 | 75 - 125 | 101 | 75 - 125 | <1.0 | mg/kg | NC | 35 |
| 9444119 | Acid Extractable Uranium (U) | 2024/06/10 | 110 | 75 - 125 | 100 | 75 - 125 | <0.10 | mg/kg | 5.0 | 35 |
| 9444119 | Acid Extractable Vanadium (V) | 2024/06/10 | 106 | 75 - 125 | 102 | 75 - 125 | <2.0 | mg/kg | 5.4 | 35 |
| 9444119 | Acid Extractable Zinc (Zn) | 2024/06/10 | NC | 75 - 125 | 103 | 75 - 125 | <5.0 | mg/kg | 5.4 | 35 |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

Bureau Veritas Job #: C4H0077
Report Date: 2024/08/20

Stantec Consulting Ltd
Client Project #: 121418211
Site Location: LOCHAKER MINES
Sampler Initials: MR

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.