YMEP TARGET EVALUATION 23-057

TAD/TORO PROPERTY
ASSESSMENT REPORT
on
DRILLCORE RE-ASSAY and SOIL GEOCHEMISTRY

January 2024

Work Applied to:

YC41133 - 144 (Nit 1 to 12); YC40974 - 977 (Tad 5 to 8); YC40978 (Tad 17); YC40506 - 554 (Tad 19 to 67); YC54331 - 364 (Tad 68 - 101); YC65809 - 866 (Tad 102 - 159); YC90197 - 227 (Tad 160 - 190); YC90260 (Tad 191); YC90309 - 324 (Tad 206 - 221); YC90228 - 259 (Tad 222 - 253); YC90261 - 308 (Tad 254 - 301); YC90325 - 348 (Tad 302 - 325); YD20041 - 110 (Toro 1 - 70)

Whitehorse Mining District
NTS Mapsheets 115I/12, 115J/09, 115J/08, 115I/05
62°33'N Latitude and 137°57'W Longitude

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1 – INTRODUCTION

1.1 Authorization and Purpose

This report was prepared for Triumph Gold Corp. ("Triumph Gold") by Jesse R. Halle (the "Author") of Halle Geological Services Ltd. ("Halle Geological') to document the 2023 exploration activities and results on mineral claims held by Triumph Gold at its Tad/Toro Property ("the Property"). The mineral deposits of interest at the Property are related to copper-gold porphyry and related epithermal mineralization within mid and late Cretaceous intrusive rocks.

Triumph Gold is a public company, incorporated in Vancouver, British Columbia, trading on the TSX Venture Exchange (TIG: TSX-V). Triumph Gold has a 100% ownership in the Property located in the Whitehorse Mining District.

The 2023 field program was conducted under the supervision of Halle Geological and Marty Henning, Principal Geologist at Triumph Gold. Field activities at the Property involved soil geochemistry, targeted outcrop surveying and sampling, and examination, sampling, and submission of select historic drill core for inaugural gold and multi-element geochemistry. All fieldwork was conducted by employees or contractors of Triumph Gold under the management of Halle Geological.

This report is prepared to satisfy assessment work credit obligations and to partially fulfil the requirements of Triumph Gold's agreement with the Energy, Mines and Resources Branch of the Yukon Government for partial funding through the Yukon Mineral Exploration Program ("YMEP") Target Evaluation Module (YMEP number 23-057). Triumph Gold would like to thank the Energy, Mines and Resources Branch of the Yukon Government for this support, and acknowledge YMEP as a valuable tool for exploration and discovery.

1.2 Sources of Information

Exploration data used in this report was made available to the author with permission of Triumph Gold. The Author spent 19 days during the 2023 exploration season under contract to Triumph Gold, providing ample opportunity to observe active data collection and field methods.

Claim information was supplied by the Yukon Mining Recorders Office in Whitehorse, Yukon. The report also draws on general geologic information available in the public domain.

1.3 Units and Currency

Unless otherwise stated, all units used in this report are metric. The coordinate system is used in this report is Universal Transverse Mercator ("UTM") Zone 8N, and the datum used is North American Datum 1983 ("NAD83"). North arrows on plan maps depict true north ("TN"). Gold and silver concentrations are reported in grams per tonne ("g/t") and the concentration of other elements of interest are reported in parts per million ("ppm"). All currency values in the report are expressed in Canadian dollars ("CAD") as of 2023.

2 – RELIANCE ON OTHER EXPERTS

When appropriate, the Author has relied upon information previously reported in historical reports, including text excerpts and direct reproduction of figure information to illustrate discussions in the text.

For the purpose of this report, the Author has relied on an ownership and claim information from the Yukon Mining Recorder. The author also relies on topographic maps published by the Government of Canada and geological maps produced by the Yukon Geological Survey.

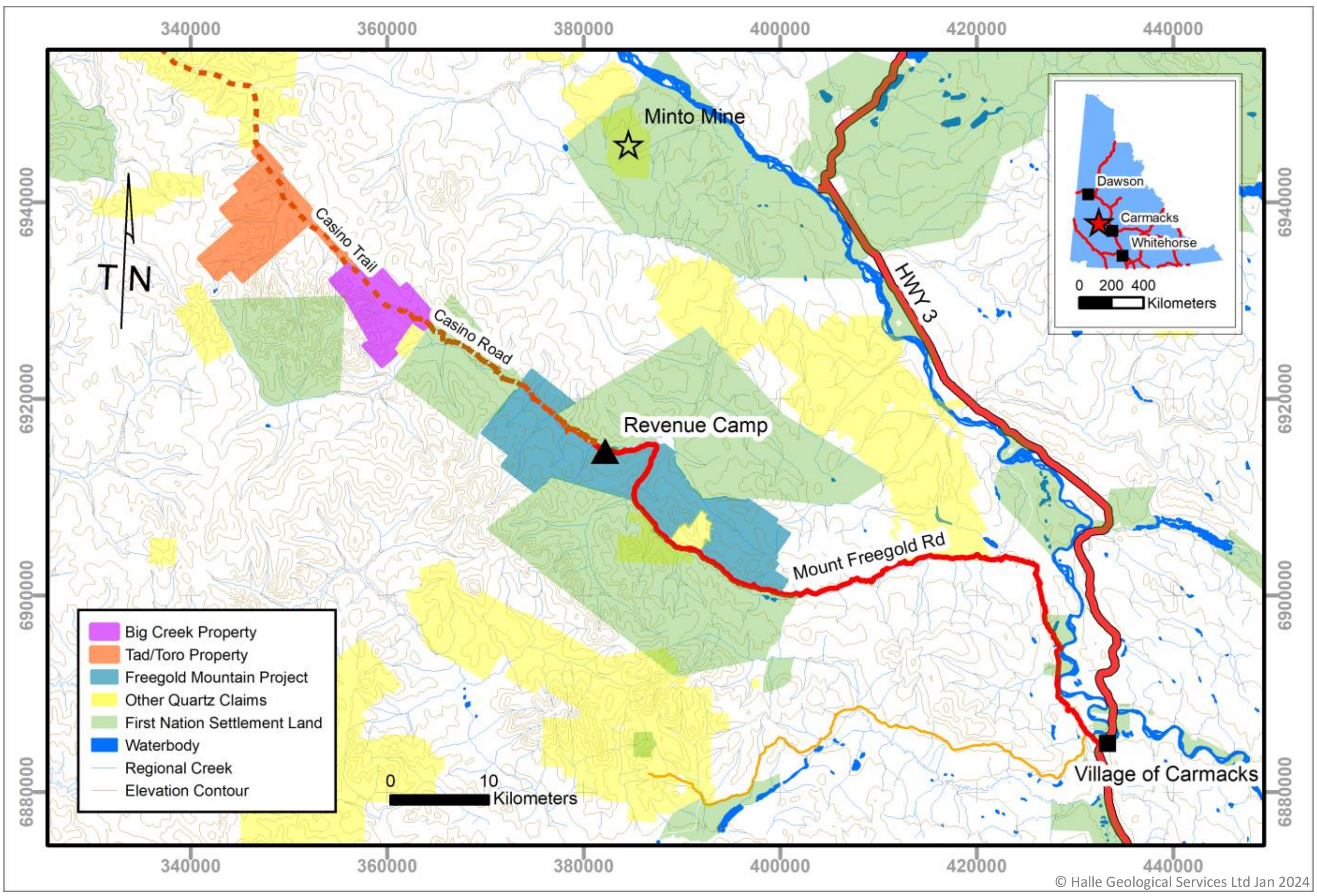
3 – PROPERTY LOCATION AND DESCRIPTION

3.1 Location

The Property is located approximately 250 kilometres northwest of the city of Whitehorse and 100 kilometres northwest of the Village of Carmacks in the Yukon, Canada (Figure 3.1.1). Carmacks is situated on the Klondike Highway (Yukon Highway 3), a paved all-weather highway connecting Whitehorse to Dawson City. The Property was accessed by helicopter from Triumph Gold's Revenue Camp, located at kilometre 82 on the unpaved Mount Freegold Road out of Carmacks. The Casino Road and Casino Trail are currently winter roads but funding for the Northern Gateway Project may soon turn these to all season roads.

The Property cover parts of National Topographic Survey ("NTS") map sheets 115I/12, 115J/09, 115J/08, and 115I/05, and is centered approximately at UTM 348300mE, 6938900mN (62°33'N latitude and 137°57'W longitude).

Figure 3.1.1: Location Map of the Tad/Toro Property (1:750,000 scale)



3.2 Description of Mineral Tenure

The Property consists of 380 contiguous quartz claims (Table 3.2.1) within the Whitehorse Mining District. The claims are held under the Yukon Territory Quartz Mining Act and Quartz Mining Land Use Regulation and are administered by the Yukon Government through the mining recorder's office. The location of each claim is shown in Figure 3.2.1.

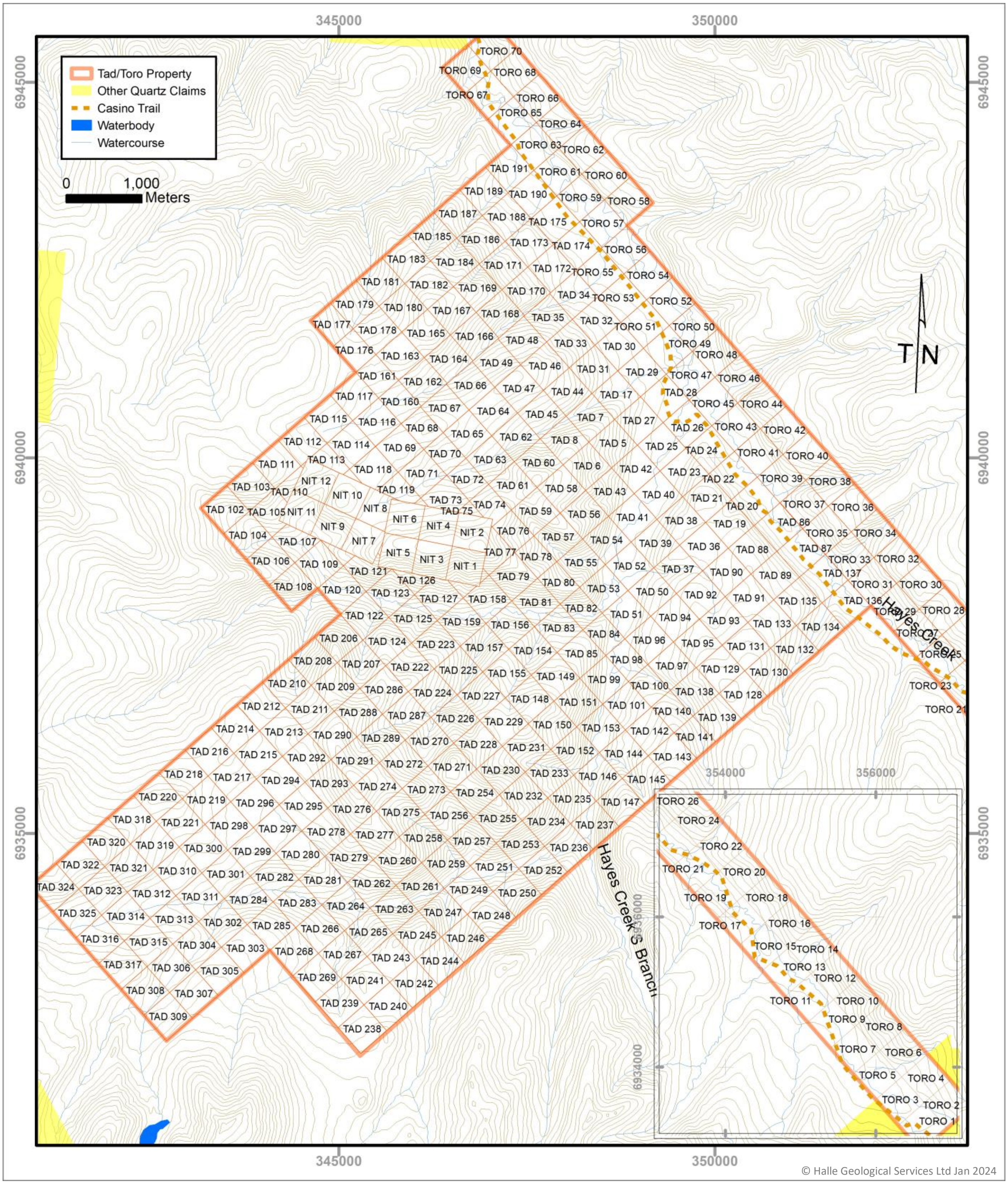
The lands of the Property are Yukon Territorial lands under which mining claims are physically-staked by erecting two legal posts at each end of the location line (defined as a straight line opened or indicated throughout between No. 1 and No. 2 location posts of a mineral claim and joining them). An application to record the claim with the Mining Recorder of the mining district within which the claim is situated is submitted within 30 days from the date of staking. The application date is the recording date of the claim and the claim is in good standing for one year after the date it is recorded. During this one-year period, the claim holder is required to do $100.00 of representation or assessment work on the claim. The fees for claim filing are $5.00 per claim per year. Claim holders can apply for up to five years of work at once if the claim is in its lapsing year or up to four years if the claim is not scheduled to lapse in the year of application. Payment in lieu of representation work can also be made.

The annual fees and work commitments due on all claims comprising the property are in compliance and all of the claims are in good standing. None of the claims of the property have been surveyed.

Table 3.2.1: Status of mineral claims in the Tad/Toro Property (January, 2024)

Grant Number	Claim Name	No. of claims	NTS	Anniversary Date	Owner and Work Done By
YC41133 - 144	Nit 1 to 12	12	115I12	2024-02-15	Triumph Gold Corp. - 100%
YC40974 - 977	Tad 5 to 8	4	115I12	2024-02-15	Triumph Gold Corp. - 100%
YC40978	Tad 17	1	115I12	2024-02-15	Triumph Gold Corp. - 100%
YC26506 - 554	Tad 19 - 67	49	115I12	2024-02-15	Triumph Gold Corp. - 100%
YC54331 - 364	Tad 68 - 101	34	115I12	2024-02-15	Triumph Gold Corp. - 100%
YC65809 - 866	Tad 102 - 159	58	115J09	2024-02-15	Triumph Gold Corp. - 100%
YC90197 - 227	Tad 160 - 190	31	115J09	2024-02-15	Triumph Gold Corp. - 100%
YC90260	Tad 191	1	115I12	2024-02-15	Triumph Gold Corp. - 100%
YC90309 - 324	Tad 206 - 221	16	115J09	2024-02-15	Triumph Gold Corp. - 100%
YC90228 - 259	Tad 222 - 253	32	115I12	2024-02-15	Triumph Gold Corp. - 100%
YC90261 - 308	Tad 254 - 301	48	115I12	2024-02-15	Triumph Gold Corp. - 100%
YC90325 - 348	Tad 302 - 325	24	115J09	2024-02-15	Triumph Gold Corp. - 100%
YD20041 - 110	Toro 1 - 70	70	115I12	2024-02-15	Triumph Gold Corp. - 100%

Figure 3.2.1: Claim map, Tad/Toro Property (1:75,000 scale)



3.3 Royalties

There is an underlying 3% net smelter return royalty ("NSR") on 88 of the Tad/Toro claims of the Property held by Harris/Davidson and an underlying 1% NSR on the 12 Nit claims held by ATAC Resources. Triumph Gold may purchase the first 1% of the underlying 3% NSR, from Harris/Davidson, on the Tad/Toro portion for $500,000 and an additional 1% of the 3% NSR for $1,000,000.

3.4 Environmental Liabilities

Environmental liabilities have not yet been formally evaluated for the Property. However, preliminary inspection indicates that they are low. Local flora and fauna are typical of this region of the Yukon throughout the property area. Moose, lynx, brown and black bear are observed most commonly along major drainages. Caribou have not been recorded on the Property.

The Property is not located in a protected area. Periodically, placer miners and/or trappers may access the area in tracked vehicles via the Mount Freegold Road and Casino Trail. During low water in Big Creek, four-wheel-drive vehicles can travel as far as the Big Creek-Hayes Creek pass, approximately 110 road-kilometres from Carmacks.

As an addendum to the Class 1 Notification, Heritage Yukon advised on the location of several known archaeological sites within the Property, such as KdVf-2, KdVf-3, KdVf-5, KdVf-6, KdVf-8, KdVf-9, KdVf-10, KdVf-11, KdVf-12, and KdVf-14. The sites were identified during a heritage review of the historic Casino Trail by Casino Mining Company (Mooney, et al., 2012).

Though most sites describe lithic scatter and/or burned bones indicative of prehistoric camp sites, site KdVf-3 was notable as a turn-of-the-century trapline cabin, and KdVf-12 which had "chalcedony shatter suggesting cultural affiliation with the Northwest Microblade Tradition" (Mooney and Dale, 2014).

Typically, avoidance of these sites is recommended and if avoidance is not possible, data recovery work is recommended to include infill shovel testing to better determine artifact densities, followed by a series of 1 by 1 metre unit block excavations in relationship to the size and distribution of the site.

3.5 Permits

Exploration activity in Yukon requires a mining land use operating permit. A Class 1 Notification allows activities considered low-impact, typically early-stage exploration. Class 2 and higher permits allow mineral exploration activities subject to approval under the Yukon Environmental and Socio-economic Assessment Act ("YESAA"), a single assessment process that applies throughout Yukon to all projects and all levels of government. The 2023 exploration and reclamation work at the Property proceeded under a Class 1 Notification.

3.6 First Nations Communities

The Selkirk First Nation has settlement land which bounds the northwest portion of the Property. In 1997, the Selkirk First Nation signed final claim settlement agreements with the Government of Canada and the Government of the Yukon.

3.7 Site Access Risk Factors

The Property is most easily accessed by helicopter from either Minto Landing or Revenue Camp, but a fixed-wing airstrip on the Property was utilized for a diamond-drilling program in 2011. Due to reliance on air-support for typical operations, access to the site is subject to favourable weather conditions.

Ground-support via the Mount Freegold Road can be reduced by heavy rains in the spring and summer that can slow travel and can raise creek water levels making creek crossings difficult. During the winter months, there may be limited or no access to the Freegold Mountain Project by truck due to unplowed roads. More rarely, high winds can topple trees across roads making them impassable until road clearing can be performed.

4 – ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

4.1 Accessibility

The Property is accessible year-round by helicopter or fixed-wing aircraft, provisional on weather and airstrip preparation. An approximately 450 metre gravel airstrip is located approximately 1.5 kilometres upstream from the historical Tad/Toro exploration camp at UTM 6940400mN 349500mE. Summer access may also be afforded with properly-permitted tracked vehicles travelling along the Mount Freegold Road to Casino Road and Trail system. Winter access can be had via snowmobile.

4.2 Climate

The Property lies within the Dawson Range mountains in southwestern Yukon and has a northern interior climate. Winters are long and have typically low precipitation, with temperatures often reaching -30° centigrade. Summertime is relatively dry with the exception of common afternoon thunderstorms. The exploration season typically spans June to September.

Vegetation consists of alpine grass and moss, willow and black spruce at relatively high elevations. Valleys in the area are vegetated with white spruce, balsam poplar, and white birch. Alder and willow form dense cover over disturbed areas. Large areas were burned in the summer of 1996 and forests are regenerating well.

4.3 Local Resources

The nearest town to the Property area is Carmacks, with a population nearing 500 permanent residents. In addition to accommodation, groceries, fuel, and potable water, both skilled and unskilled labour can be found there. Whitehorse, with a population of over 25,000 people acts, as the primary supply centre for exploration activities.

4.4 Infrastructure

Minimal infrastructure currently exists in the immediate vicinity of the Property. The closest electrical grid, natural gas pipeline, and communication networks are at the Minto Mine, some 35 kilometres to the east.

Local rough roads connect the camp and airstrip, as well as some historic mineral showings, trenches, and drill sites.

4.5 Physiography

The Property lies in an area of moderately steep hills and broad valleys (Figure 4.5.1). Elevations range from 700 metres to 1480 metres above sea level. Hayes Creek is the main perennial stream draining the area. Water in these creeks is available year-round.

Permafrost is discontinuous and can typically occur near surface on north-facing slopes and underneath the upper one metre of soil cover on south-facing slopes.

Figure 4.5.1: Physiography of the Tad/Toro Property

5 – EXPLORATION HISTORY

Old placer workings, including the remnants of several pits and cabins reportedly dating back to 1898, are evident on the Property. George Wilson placer mined on a small creek (Wham Creek) in the southern property area from the 1980s, with some placer mining on Waugh Creek. There is no record of how much gold has been produced.

Hard rock exploration in the Dawson Range dates back to the 1930s, when gold bearing quartz veins and skarn mineralization was discovered at Mount Freegold. In the early 1960s the area became the focus of a porphyry copper-molybdenum-gold rush following the discovery of the Casino Deposit, located 53 kilometres northeast of the Property.

From 1969 through 1971, a joint venture group with International Mine Services discovered lead and zinc mineralization along Hayes creek and staked 267 TAD claims. They later established a grid on the property and conducted soil sampling, magnetic and induced polarization geophysical surveys, trenching and diamond drilling. They drilled 18 holes for a total of 2708 metres (Waugh, 1971). Core recovery was generally poor in the intensely altered and oxidized granitic rock. Not all the core was sampled, however narrow intervals of anomalous gold were returned. The best result was from hole T-2 that returned 4.11 g/t gold and 50.06 g/t silver over 1.06 metres.

In 1980 and 1981, mapping and soil sampling on Nit claims by Nat JV (Armco Ml EL and Chevron Canada Ltd.) outlined an arsenic geochemical anomaly underlain by Cretaceous granite, schists and gneiss cut by quartz-feldspar porphyry dykes (Archer, 1982). Around 1981 seven bulldozer trenches (CP Zone trenches) were excavated on the Nit claims by a joint venture between three junior companies revealing only trace chalcopyrite (Eaton, 1986).

In 1985, mapping, gridded soil sampling and rock chip sampling on the Nit claims (ITN claims) by Chevron Canada Ltd. outlined three areas of anomalous gold-silver-lead-arsenic (Eaton, 1986). The next year, bulldozer trenching by Silverquest Resources Ltd. (under option) returned assays up to 106.6g/t silver and 0.55g/t gold over 30 metres from the eastern portion of Trench BW-2 (Carne, 1986).

In 1986 and 1987, Noranda Exploration Company conducted a soil-sampling program on the property and re-sampled selected portions of the drill core from the 1969 program. The soil survey identified a large gold-in-soil anomaly and the re-sampling of the core returned an intersection of 1.03 g/t gold over 8.2 metres. In 1987, Noranda followed-up on the previous program by expanding the soil sample survey, trenching, and drilling 372 metres in four holes. The soil geochemical survey expanded the gold-in-soil anomaly. No further work was performed and the claims were allowed to lapse.

In 1994, the Geological Survey Canada flew a high-level multi-parameter airborne geophysical survey (magnetic, VLF electromagnetic and radiometric) with 0.5-kilometre line spacing over the Hayes Creek area. The survey outlined an ‘L-shaped’ 2 x 1 kilometre magnetic high in the Main Zone area and a 1-kilometre diameter circular magnetic high anomaly in the Moly Zone (see Davidson, 2000). A large Thorium/Potassium (“Th/K”) ratio low was identified over the Tad Porphyry. The signature was considered similar to, although larger and slightly less intense than, the Casino copper-molybdenum-gold deposit 50 kilometres to the northwest (Hart, 1997).

Bill Harris, Graham Davidson, and D. Waugh re-staked the property as the Tad and Toro claims and in 1996 optioned it to International Kodiak Resources Inc. International Kodiak contracted Nicholson & Associates Natural Resources Development Ltd. to re-establish a grid on the property and perform geological mapping, soil sampling and magnetic and VLF-EM surveys later that year (Davidson, 1997). The soil-sampling program re-produced the gold-in-soil anomaly with coincident arsenic, silver, and zinc.

In 2005, Scott Casselman and Aurora Geosciences visited the property and prepared a qualifying report. In 2007, Northern Freegold Resources Ltd performed significant rehabilitation of 1969-70 and 1987 drillcore along with limited splitting and sampling of select unsplit sections from the 1969-70 drillcore. An unsplit core interval from T-12 returned 1.13 g/t gold and 8.7 g/t silver over 7.9 metres, including 5.07 g/t gold and 29.5 g/t silver over 0.9 metres (Pautler, 2007). That same year, minor rock and reconnaissance soil geochemistry on the NIT claims was performed by Northern Freegold Resources Ltd.

In 2009, a 93 square kilometre helicopter-borne magnetic and radiometric geophysical survey over the Property was undertaken by Precision GeoSurveys Inc on behalf of Northern Freegold Resources Ltd, and the data was interpreted by Costantini (2009).

In 2010, Jean Pautler and JP Exploration Services Inc prepared a Technical Report. That same year Dawson Gold Corp. optioned the Property from Northern Freegold Resources and drilled eight holes totaling 1516 metres, using targets identified by gold-in-soil anomalies, geophysical anomalies and known mineralization. The first five holes of the drill program were designed to test the ground on which previous work has outlined several discreet, strong, gold-in-soil geochemical anomalies. Holes TT-103 and TT-104 encountered polymictic hydrothermal breccia hosting pyrite, arsenopyrite, sphalerite, and galena.

In August and September 2011, Quantec Geosciences completed a 35 line-kilometre Titan-24 DC-IP Survey on a large portion of the property centered on the Nit and Main Zones. Twenty-four anomalies were identified.

In 2017, a small program of geological traverses was conducted on the Property in order to examine and verify described geology, identify areas with mineralization and identify future exploration opportunities. In addition, specific intervals of drillcore were targeted for review and opportunities for reclamation were recorded. The observed geology was consistent with findings reported in Allan et al. (2013). Samples mainly consisted of bedrock or subcrop with quartz veins or pyrolusite coatings.

In early September of 2019, a small program of soil sampling was completed, which targeted an area immediately west of the Nit Zone. Some 307 soil samples were collected with a soil auger preferentially sampling the B-horizon. Soil samples were analyzed using multi-element mass spectrometry ("MS") and super-trace inductively coupled plasma ("ICP") for estimation of gold. The results confirmed anomalous copper and molybdenum in the Tad Porphyry, and confirmed the mid-Cretaceous granitic host to be anomalous in elements with an epithermal signature.

In July of 2021, a LiDAR survey was flown over the entire Property by McElhanney Limited's geomatics branch. The survey collected both exacting topological information and high-resolution ortho-corrected aerial photographs.

Until the 2023 program, no further work had been done on the Property.

6 – GEOLOGICAL SETTING AND MINERALIZATION

6.1 Regional Geology and Structure

The Omineca Belt is a Jurassic through Cretaceous volcanic arc terrane which extends from Alaska through the Yukon and British Columbia to Washington State. The belt is composed of the Slide Mountain, Cassiar, and Yukon-Tanana Terranes. These terranes are three magmatic island arcs that formed at a convergent boundary near the ancient continental margin. The Yukon-Tanana Terrane is thought to have accreted to the North American craton during the Late Triassic to Early Jurassic periods.

The Yukon-Tanana Terrane is comprised by the Nasina Assemblage, Mississippian-aged metasedimentary and metavolcanic rocks subdivided into the Snowcap Suite (Finlayson Suite), metaplutonic rocks of the Simpson River Suite, Jurassic batholithic intrusions (e.g., the Long Lake Suite), and Middle Cretaceous intrusions (e.g., the Whitehorse Suite). Intrusive rocks often dominate the terrane.

The youngest rocks in the region are volcanic rocks and associated shallow intrusions of the Late Cretaceous Casino, Prospector Mountain, and Carmacks Group Suites. The Casino Suite is oldest of these and is represented by high-level plugs, dikes, and breccias emplaced along the length of the Dawson Range Batholith. Prospector Mountain and Casino Suite rocks are coeval. Prospector Mountain suite rocks are found over a broad area of the Dawson Range and are represented by small intrusive bodies (e.g., Prospector Mountain stock). The Carmacks Group are the youngest rocks in the region and comprise a compositionally diverse range of volcanic rocks that overlie older lithologies.

The main structural features in the region are steeply-dipping northwest-trending dextral fault zones, parallel to the regional Tintina and Denali faults. The major structural feature in the region is the Big Creek Fault.

6.2 Property Geology and Structure

The geologic understanding has evolved with the regional mapping efforts of Tempelman-Kluit (1984), and his contemporary, Payne (1987), through Johnston (1995). Many of Johnstons lithologic contacts and interpretation are reproduced on the publically-available data compiled by Gordey and Makepeace (2003). A Property-wide heli-borne mag and radiometric geophysical survey flown in 2009 refined the major lithologic contacts over the Property area (Costantini, 2009). This interpretation has been merged with the regional geology in Figure 6.2.2.

The oldest rocks of the Yukon-Tanana Terrane within the Property are sedimentary- and intrusive-derived schists and gneisses of various mafic, intermediate, and felsic protoliths. The belt is generally oriented northwest.

The main intrusive rock of the Property area is a hornblende-bearing granodioritic body (mKgW) stretching northwest from the centre of the property with smaller more-felsic intrusions of quartz monzonite (mKqW) at its margins. These latter intrusions are felsic segregations of the former and have been likened to the 'Coffee Creek' granite by many authors. These units also analogous to the 'Revenue Granodiorite' of the Revenue Deposit.

The mid-Cretaceous units above are cross-cut by small plugs and dikes of late-Cretaceous age. The 'Tad Porphyry' (LKfP) occupying much of the central portion of the Property is a granitic feldspar porphyry belonging to the Prospector Mountain Suite. Two sub-units of the Tad Porphyry have been previously identified by geological mapping include quartz monzonite porphyry and biotite granite porphyry. Typically, fresh specimens of quartz monzonite are pale gray with abundant muscovite (Figure 6.2.1).

Figure 6.2.1: Tad Porphyry at its southernmost margin

A small portion of the Property in the east is capped by volcanic rocks belonging to the upper Cretaceous Carmacks Group. Large areas of basaltic flows exist on the north side of Hayes Creek and in the upper reaches of the South Branch of Hayes Creek. These rocks weather brown to reddish-brown and vary from olivine- to feldspathic-rich.

Figure 6.2.2: Property-scale Geology and Structure, Tad/Toro Property (1:100,000 scale)

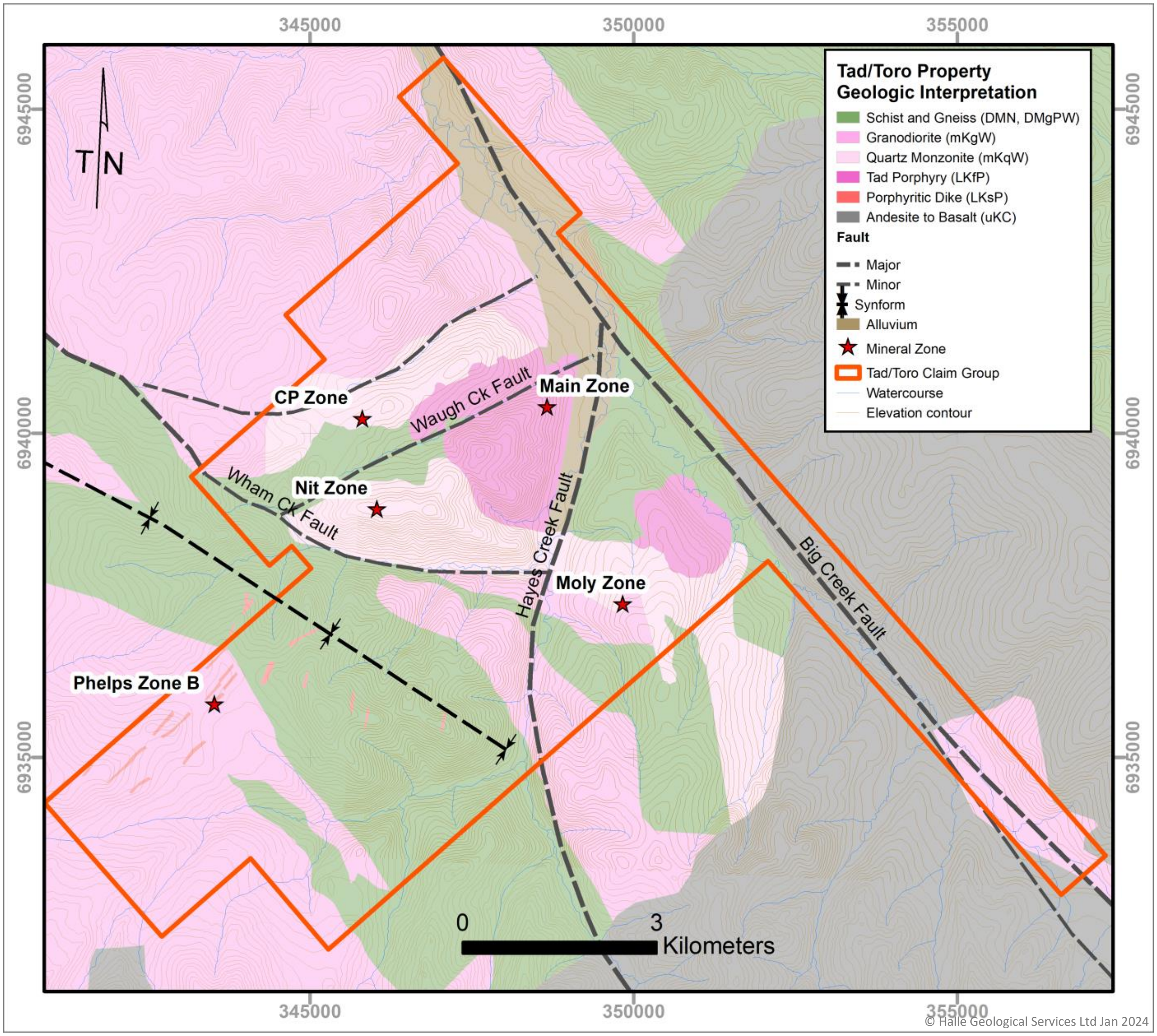


Table 6.2.1 describes the geologic units observed within the Property area and relates them to the lithologic coding found on Yukon Government geologic maps.

Table 6.2.1: Geologic Units of the Tad/Toro Property

Geologic Unit (code)	Geologic Period	Corresponding Age (Ma)	Description	Examples
Nasina Assemblage (DMN; DMgPW)	Devonian to Mississippian	370-345	intermediate to mafic metasedimentary and metavolcanic rocks including schist, phyllite, and gneiss	outcroppings on the Mount Freegold Road near the confluence of Seymour and Big Creeks
Whitehorse Suite (mKgW; mKqW)	early to mid Cretaceous	105-112	quartz-feldspar or feldspar-hornblende porphyry; leucogranite, aplite; K-megacrystic biotite quartz monzonite; biotite-hornblende granodiorite to quartz monzonite	Dawson Range Batholith, Coffee Creek Granite, Revenue Granite
Prospector Mountain Suite (LKfP; LKsP)	late Cretaceous	70	biotite-pyroxene monzodiorite to monzogabbro; hornblende-biotite quartz syenite to quartz monzonite; quartz-feldspar porphyry dikes	Prospector Mountain intrusive stock, Tad Porphyry, QFP dikes
Carmacks Group (uKC)	upper Cretaceous	69-70	rhyodacite; augite-olivine basalt and breccia, hornblende-feldspar porphyry andesite and dacite flows, vesicular augite-phyric andesite and trachyte	

The belt of the Yukon-Tanana Terrane in the property area is paralleled by the Big Creek fault. The fault is moderately-to steeply-dipping and dominantly dextral. The Big Creek fault is thought to have undergone multiple reactivations resulting in the many intrusive suites in the area.

Linking these main structures are secondary structures that trend northwest to north. The fault occupying Hayes Creek valley is thought to have created low-pressure zones resulting in a greater number of late-Cretaceous intrusions. Faults interpreted in early assessment reports include the Wham and the Waugh Ck Faults. Johnston (1995) interpreted a northwest-striking synform (and local antiforms) dominating the Nasina schists in the southwest region of the Property area.

Most of the higher parts of the property are unglaciated during the last few glacial events resulting in the preservation of a surface cap of weathered material formed during the extended period of tropical weathering. Oxidation extends to depths of 20 metres to 200 metres below the present ground surface depending on local structural and lithological controls. Very little natural outcropping exists in the Property area.

6.3 Mineralization

The main mineralized Zone at the Property (the "Main Zone") is deeply-weathered and is typically buff or deep red in colour with manganese oxide staining. A supergene copper enrichment can be found below this in many of the drillholes. In cases where sulphides have been preserved, up to 3 to 5% disseminated pyrite can be seen.

Davidson (2000) reported that the sulphide minerals are oxidized to a depth of 80 metres and that the gold-bearing oxide zone lies in brecciated and intensely altered quartz monzonite porphyry. Below this is a hypogene zone that contains up to 10% disseminated pyrite in porphyritic granite with lesser alteration. Narrow quartz-sulphide veins in brecciated and structurally disturbed rocks along shear zones are also seen to contain sphalerite, galena and arsenopyrite.

Porphyry copper and molybdenum-style mineralization has also been observed on the Property. The initial exploration of the Property was for porphyry deposits and in 1969, International Mine Services had drill intercepts containing up to 0.6% copper and 0.01% molybdenum in potassic-altered porphyritic monzonite at the Moly Zone.

In 1969 and 1970, International Mine Services drilled 18 holes on the Property, focusing on the Main Zone, for a total of 2,708 metres. The results of the program include a 1.06 metre intercept of 4.11 g/t gold and 50.06 g/t silver as well as 1.38 metres of 2.06 g/t gold and 21.26 g/t silver in hole T-2, though they did not analyze all the drillcore form the program. The first intercept is described as strongly brecciated, intensely altered feldspar-quartz porphyry. It is hematite stained with up to 10% pyrite, 5% sphalerite and 1 to 2% galena. The second intercept is described a fault zone with 5% pyrite and 2% sphalerite. These observations support the association of gold with pyrite.

In 1986, limited trenching at the Nit Zone exhibited a host rock of intensely clay-altered granite with heavily oxidized quartz veining and faulting. Values from these trenches include 0.46 g/t gold and 26.1 g/t silver over 37.8 metres in Trench F within soil anomaly “B”, and 0.55 g/t gold and 106.6 g/t silver over 30 metres in Trench BW-2 within soil anomaly “C”.

In 1987, Noranda Exploration Company drilled four holes (at the Main Zone) for a total of 372 metres and re-sampled drill core from 11 of the holes drilled in 1969. Hole T-87-2 intercepted 1.5 metres of 0.78 g/t gold and 4.30 g/t silver. This interval is described as a sheared interval in quartz monzonite porphyry with some carbonate veining and traces of molybdenum along fractures. Noranda also re-sampled the International Mine Services core resulting in 8.23 metres of 1.03 g/t gold and 12.4 g/t silver from hole T-2, and 5.79 metres of 1.25 g/t gold and 7.50 g/t silver in hole T-12, and 1.83 metres of 2.09 g/t Au and 14.1 g/t silver in hole T-14.

In 2007, Northern Freegold Resources Ltd. resampled an unsplit interval of T-12 resulting in 1.13 g/t gold and 8.7g/t silver over 7.9 metres (including 5.07 g/t gold and 29.5 g/t silver over 0.9 metres). There is strong indication that the remaining unsplit core from the 1969-70 drill program should be split and sampled.

In 2009, a 93 square-kilometre helicopter-borne magnetic and radiometric geophysical survey over the Property was undertaken by Precision GeoSurveys Inc. interpreted by Paolo Costantini, a consulting geophysicist from Zurich, Switzerland. Five porphyry-type and five vein-type target zones were identified. Additional prospective targets occurred within the Tad Porphyry and four other porphyry targets were identified on the Property, some of which correspond to showings, soil anomalies and favourable intrusions (e.g., 2 kilometres southeast of the Main Zone and Phelps Zone). The Nit Zone was identified as a priority exploration target for vein system alteration and permissive zones associated with porphyry dykes and/or quartz monzonite units.

7 – DEPOSIT TYPES

7.1 Porphyry and Epithermal Related Mineralization

Porphyry and epithermal systems in the Dawson Range belt extend from the Casino deposit to the Mt. Nansen camp. The belt has been long recognized for the potential to host large porphyry copper-molybdenum-gold deposits. The Casino porphyry deposit is located 50 kilometres northwest of the Property and contains a proven and probable mineral milling reserve of 1.22 billion tonnes grading 0.19% copper (“Cu”), 0.22 g/t gold (“Au”), 0.021% molybdenum (“Mo”), and 1.7 g/t silver (“Ag”) not including a proven and probable heap leach reserve (Roth et al., 2022). Another porphyry-related deposit is the Revenue Deposit which has a current combined open pit and underground inferred resource of 27.5 million tonnes grading 0.77g/t Au, 0.12% Cu, and 0.009% Mo (Sim and Davis, 2020). Yet another porphyry-style deposit is Sonora Gulch, a gold-silver-copper-zinc ± molybdenum prospect in which Late Cretaceous feldspar porphyry dikes and quartz porphyry stocks are observed with hypogene pyrite-pyrrhotite-chalcopyrite assemblages.

Other historic porphyry-related prospects in the Dawson Range include the Mt. Cockfield Cu-Mo prospect hosted in Late Cretaceous quartz monzonite, the Cash Cu-Mo porphyry, the Antoniuk Au porphyry-breccia system, and the Cyprus Cu-Mo porphyry.

In addition to copper porphyry deposits, intrusive-hosted gold mineralization is also prominent in Dawson Range rocks. In the Mount Freegold area, 40 kilometres southeast of the Property, is Triumph Gold’s Nucleus Au-Ag-Cu deposit. It consists of polyphase quartz-chalcopyrite-pyrite-arsenopyrite veins, infill breccia and semi- to massive-sulfide lenses consistent with multiple phases of skarn and epithermal gold mineralization It has a current indicated resource of 31 million tonnes containing 0.65 g/t Au, 0.7 g/t Ag, and 0.07% Cu and an inferred resource of 9.4 million tonnes containing 0.56 g/t Au, 0.72g/t Au, and 0.04% Cu, each resource using a 0.30 g/t gold equivalent (“AuEq”) cut-off grade (Sim and Davis, 2020).

Newmont Corporation’s Coffee Project is roughly 50 kilometres northwest of the Property and has measured and indicated resources of 46.3 million tonnes of 1.46 g/t Au equalling 2.17 million ounces of gold (Newmont Mineral Resources Report, 2019).

Southwest along the Big Creek structure, another intrusive-hosted gold deposit is the Laforma gold deposit belonging to FM Resources Corp. In 1999 FM Resources reported a drill-indicated resource (not 43-101-compliant) for the deposit of 602,000t, grading 4.31g/t gold (Yukon Minfile, 2002). There are a number of other mineralization types in the Mount Freegold area including the Antoniuk intrusive breccia gold occurrence and Tinta Hill polymetallic epithermal vein deposit.

The reserve information listed above is not necessarily indicative of the mineralization on the Property that is the subject of this report.

8 – 2023 MINERAL EXPLORATION

A program of surface mineral exploration was conducted on the Property by Triumph Gold Corp and/or it's contractors in August of 2023. Helicopter assisted soil sampling on the Property at two main locations took place from August 8th to 11th, 2023. Contemporaneous work included helicopter-assisted examination and resampling of historical drill core, reconnaissance outcrop visits, and minor reclamation from August 5th to 14th. The following sections offer a summary of each program along with relevant results for each.

8.1 Tad/Toro Property Soil Sampling, North Grid

In August of 2023, a program of soil sampling targeting two areas was completed. The first grid was positioned on a broad ridge at the site of the CP Zone discovered and trenched by 1981, but with rock samples only reported to contain trace copper. The area of the CP Zone had previously been covered with only a broadly-spaced (~200m) soil sampling program by Eaton (1985). Immediately south of the CP Zone, the 2010 soil sampling program at 50m spacing uncovered a distinct multi-element Ag-As-Pb-Zn anomaly, open to the north and west (Figure 8.1.1), where the current program tested.

The North Grid consisted of eight, east-directed lines. The northernmost four lines were each 950 metres long and the remaining lines were 250 metres long, giving a total of 4.8 line-kilometres of soil grid. Soil stations were positioned 50 m apart. A total of 105 soil samples were collected, as all stations were successfully sampled, and both the B and C horizon from a single station was sampled.

Soil samples were collected with soil augers preferentially sampling the Ah or B horizon. Soil samples were analyzed using multi-element MS and super-trace ICP for estimation of Au. For full details on these methods, see Chapter 10. Soil sample descriptions can be found in Appendix A.

Figure 8.1.2 presents a summary of the resultant geochemical anomalies. Graduated symbols are used to plot the standard deviations of geochemical results for the elements gold ("Au"), silver ("Ag"), arsenic ("As"), copper ("Cu"), lead ("Pb") and zinc ("Zn").

Twelve of the 185 soil samples assayed over 5 g/t Ag, including TTL4-0350 that assayed 23.1 g/t Ag, 991 ppm Zn and 208 ppm Pb, and TTL7-0250 with 0.12 g/t Au, 8.94 g/t Ag, 31.3 ppm Sb, 3010 ppm Zn and 383 ppm Pb. The results extend anomalous Ag-As-Pb-Zn mineralization in the soils of the CP Zone, and suggest a west-northwest linear zone of mineralization in excess of 650 metres. The geochemistry profile is typical of Main Zone mineralization 3 kilometres to the east, and Nit Zone mineralization, 1.5 kilometres to the south.

Figure 8.1.1: Soil Sample Stations, Tad/Toro Property, North Grid (1:12,500 scale)

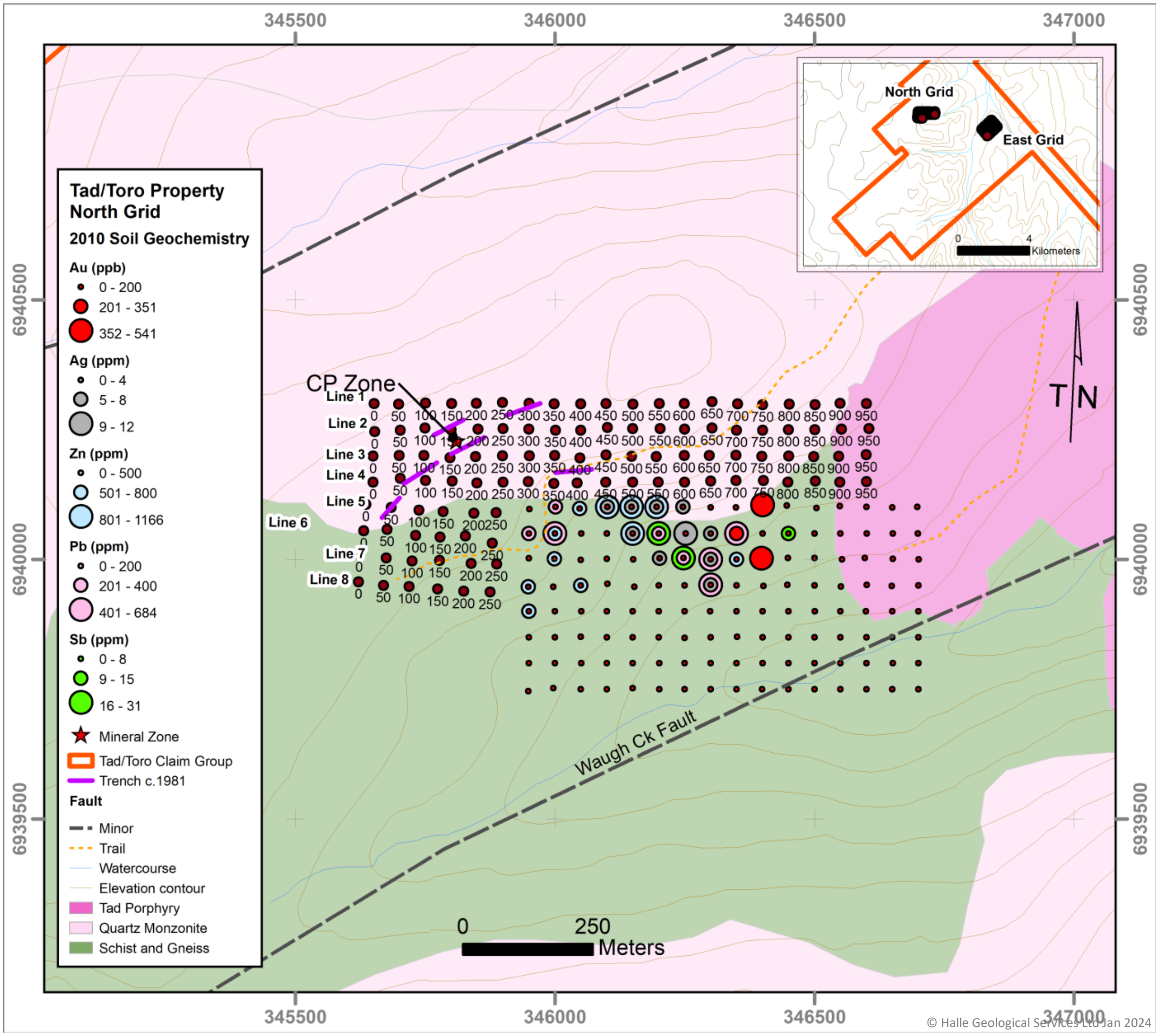
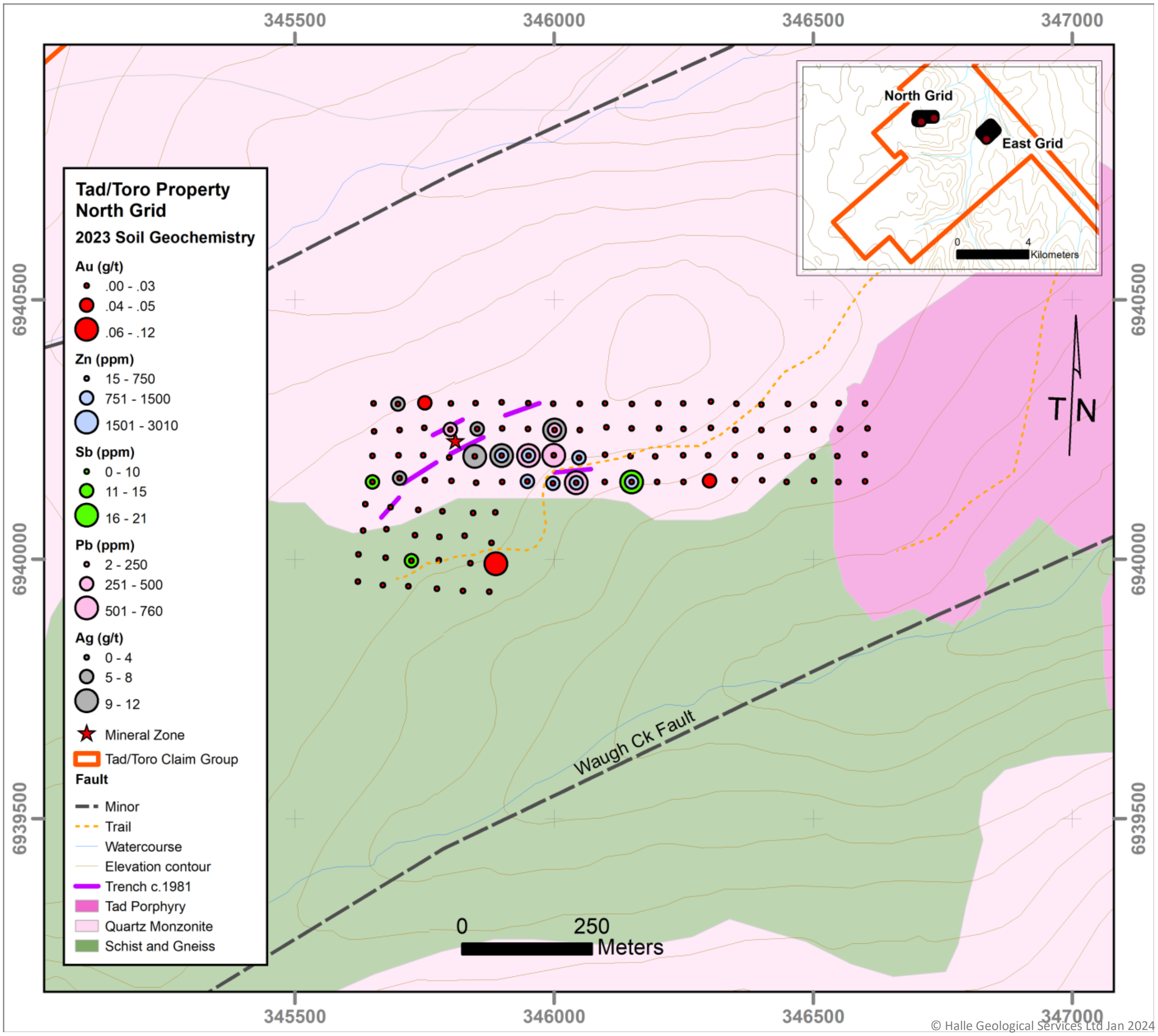


Figure 8.1.2: Soil Sample Results, Tad/Toro Property, North Grid (1:12,500 scale)



8.2 Tad/Toro Property Soil Sampling, East Grid

The second soil grid completed on the Property was positioned approximately 1 kilometre south east of the Main Zone on the trail to the Moly Zone (Figure 8.2.1). The area of the East Grid had never been previously covered by soil sampling, but was chosen due to its location between the known Tad Porphyry stock and a body with similar geophysical characteristics, as interpreted by Costantini (2009).

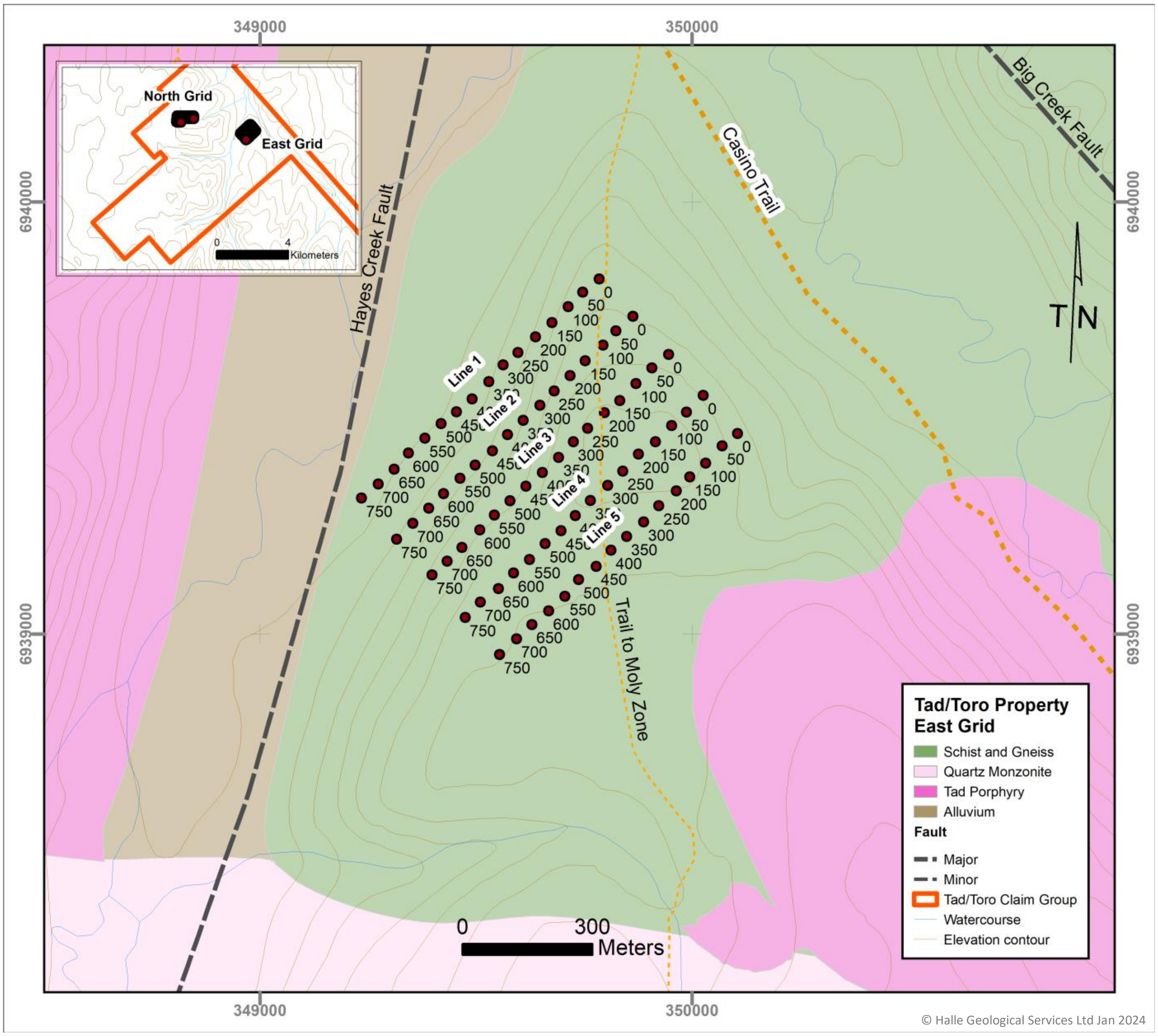
The East Grid consisted of five, southwest-directed lines, each 750 metres long, giving a total of 3.75 line-kilometres of soil grid. Soil stations were positioned 50 metres apart. A total of 80 soil samples were collected, as all stations were successfully sampled.

Soil samples were collected with soil augers preferentially sampling the Ah or B horizon. Soil samples were analyzed using multi-element MS and super-trace ICP for estimation of Au. For full details on these methods, see Chapter 10. Soil sample descriptions can be found in Appendix A.

Figure 8.2.2 presents a summary of the resultant geochemical anomalies where symbols for each are graduated when above two standard deviations of their respective population mean.

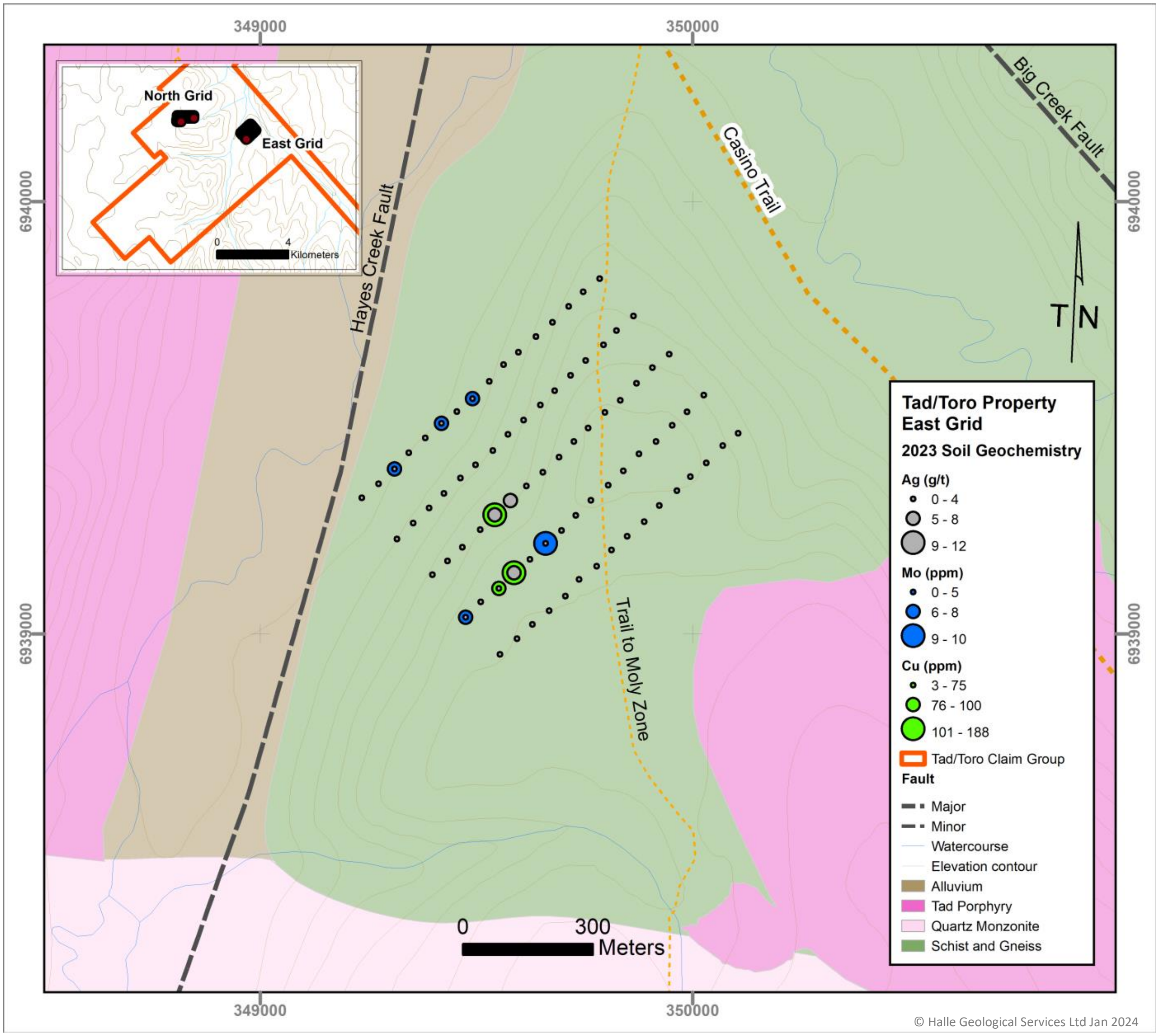
Fifteen of the 80 soil samples assayed over 1 g/t Ag, including TTEL4-0600 that assayed 6.2 g/t Ag and TTEL3-0550 with 6.7 g/t Ag. Other highlights show TTEL3-0550 returning 107 ppm Cu and TTEL4-0600 returning 188 ppm Cu. The anomaly relative to the entire Property soil program shows weak molybdenum and copper anomalies.

Figure 8.2.1: Soil Sample Stations, Tad/Toro Property, East Grid (1:15,000 scale)



The new surface geochemical anomaly at the East Grid shares a geochemical signature with a Cu-Mo porphyry system.

Figure 8.2.2: Soil Sample Results, Tad/Toro Property, East Grid (1:15,00 scale)



8.3 Rock Sampling

On at least four days between August 9th and August 13th, various portions of the Property were prospected and 22 grab samples were taken. Quartz-feldspar-porphyry ("QFP") intrusive and a documented copper showing were prospected at the Phelps Zone B showing, the southern extent of the Tad Porphyry was verified, mineralization at the Nit Zone and Main Zone trenches was characterized, and subcrop from the CP Zone and Tad East Grid was sampled (Figure 8.3.1). Sample highlights are provided in Table 8.3, and all sample locations and descriptions are given in Appendix B.

Figure 8.3.1: Rock Samples from the Tad/Toro Property, East Grid (1:60,00 scale)

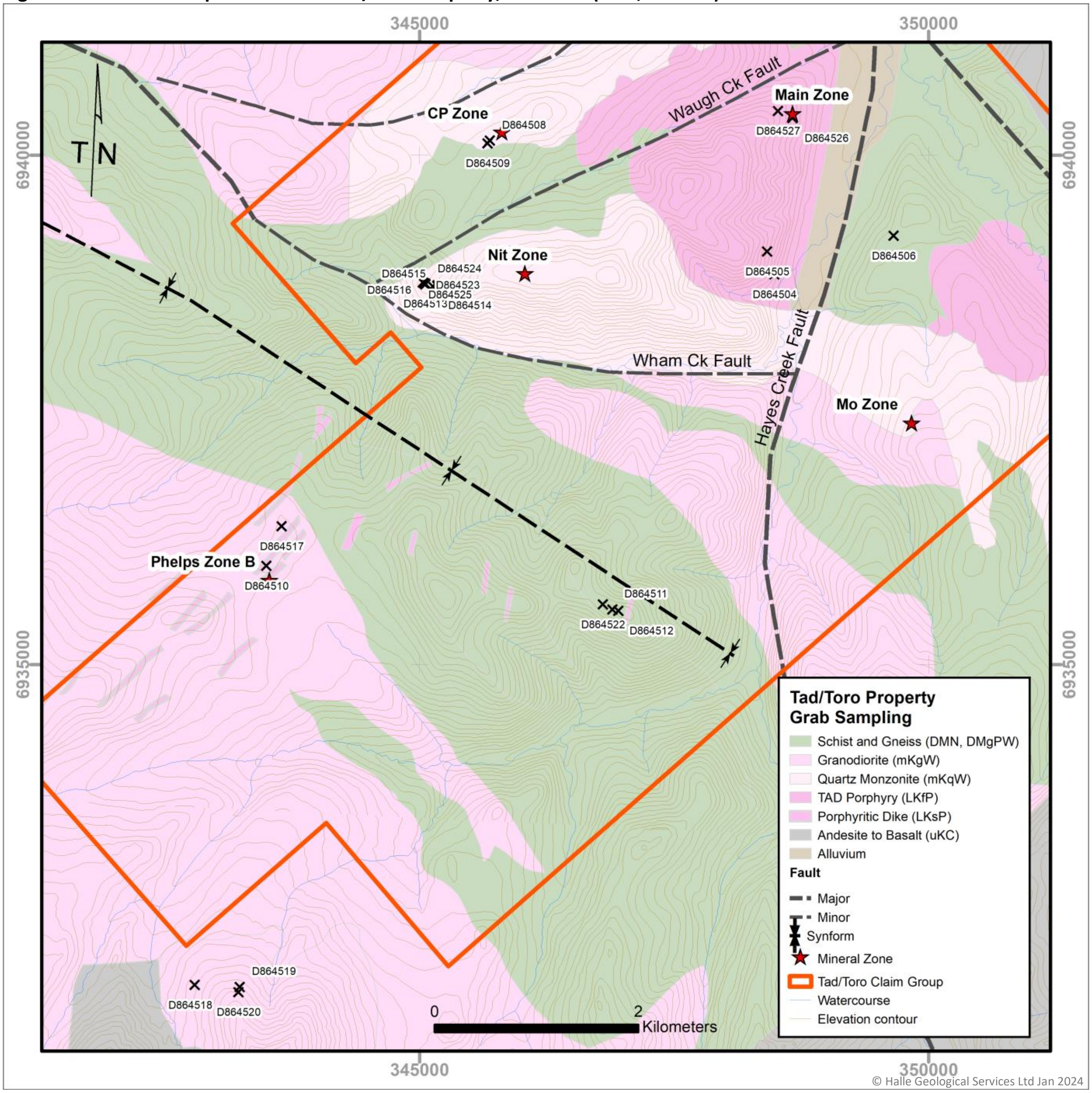


Table 8.3: Geochemical Highlights of Rock Sampling at the Tad/Toro Property

Sample	Type	Au (g/t)	Ag (g/t)	As (ppm)	Bi (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Sb (ppm)	Te (ppm)	Zn (ppm)
D864506	Subcrop	0.005	0.55	20.5	0.07	2.9	0.21	45.6	4.88	0.025	220
D864508	Subcrop	0.0025	2.49	8.8	16.5	2.1	0.08	25.1	1.44	0.025	13
D864509	Subcrop	0.006	3.09	171	0.46	9.5	0.18	**638**	7.42	0.025	**910**
D864515	Outcrop Grab	0.359	1.82	**1525**	1.06	8.1	4.02	60.5	54.1	0.08	103
D864520	Talus Grab	**3.12**	**21.7**	75.7	**74.7**	**109.5**	13.15	122	12.3	**23.6**	97
D864523	Outcrop Grab	0.276	4.19	831	0.92	29.9	0.87	37.4	16.3	0.025	57
D864525	Outcrop Grab	**0.778**	**36.8**	**3910**	0.76	**105**	**16.75**	**1280**	**217**	0.12	**2170**
D864526	Outcrop Grab	0.009	1.89	45.7	0.65	10.3	2.22	**556**	3.26	0.06	**1755**

8.4 Historic Drill Core Examination and Sampling

The sparse, intermittent, and often gold-and-silver-only assay data from 1969 and 1970 International Mine Services ("IMS") drilling on the Property has often been the focus of resampling programs. In 1986, Noranda resampled select intervals of previously-unsampled IMS drill core revealing additional intervals of multi-gram gold and silver along with highly-anomalous base metal values in the Main Zone and southward along Hayes Creek. Drilling in 1987 entailed sampling entire lengths of drill core yet most often only gold and silver values were reported.

The qualifying report from Casselman (2006) recommended systematic sampling of the remaining unsampled drill core and drill core that was sampled but not analyzed for gold. Pautler (2007) reported a previously-unsampled drill interval from T70-12 returned 1.13 g/t Au and 8.7 g/t Ag over 7.9 metres also calling for the remaining unsampled core from the 1969-70 drill program be split and sampled and including the Moly Zone. That year, a large portion of historical drill core was salvaged, labeled, and placed in core racks.

Diamond Drilling completed for Dawson Gold Corp in 2010 included gold and multi-element assaying of entire drill core lengths. One assay certificate provided in the appendix of a report by McLaughlin (2010) was from a resampling effort of T70-12, but drill core intervals were not provided in the report. The work from 2023 successfully recorded the missing intervals of the assay certificates that were still present in the drill core boxes, and was able to reasonably correlate the 2010 assays with drill core intervals.

Dawson Gold Corp also completed inaugural drilling in the Nit Zone drilling a metal-rich broad zone of polymictic hydrothermal breccia cut by mineralized QFP dikes. In 2023, the entirety of one of these drill holes, TT-104, was flown back to Triumph Gold's drill core storage yard at the road-accessible Freegold Mountain Project for future study and easier accessibility. The hole was also quick-logged, photographed, surveyed for magnetic susceptibility, and sampled for hyperspectral analysis. Magnetic susceptibility and hyperspectral results are available in Appendix C.

Three drill holes were selected for drill core re-assay in 2023: T69-02 from the Main Zone, T87-01 collared at south end of the Main Zone, and T70-13 from the Moly Zone. Drill holes from the Main Zone were selected for sampling based on relative spacing from each other, and representation in the drill core archive. A drill hole from the Moly Zone was targeted based on anomalous molybdenum historically reported. Drill hole specifics are given in Table 8.4.1.

Table 8.4.1: Resampled Drill Holes of the Tad/Toro Property

DH_ID	Zone	UTM_E	UTM_N	Azimuth	Plunge	EOH_m	Notes
T69-02	Main	348801	6940314	360	-90	177.7	Only 13 assays known (Hart, 1986)
T87-01	Main	348835	6939833	270	-45	91.4	Complete sampling but Au and Ag only
T70-13	Moly	349915	6937201	60	-63	262.1	11 assays known, Mo reported (Waugh, 1970)

Some 51 new Au and multi-element assays resulted from the resampling of T87-01, 52 new assays resulted from T69-02, and 16 new assays resulted from T70-13. The entirety of drill hole T69-02 intersected a variably-faulted Tad Porphyry and the oxide-hypogene transition was confirmed at approximately 62 metres downhole. Drill hole T87-1 also intersected the Tad Porphyry along its entirety but showed a variably oxidized profile.

Drill hole T70-13 was in relatively poor condition but two approximately 12 metre intervals with legible blocks showed weakly mineralized quartz-feldspar porphyry dikes and molybdenum-bearing quartz veins cutting tectonized granodiorite (Figure 8.4.1). The results of hyperspectral analysis of 45 samples of drill core from T69-2, T70-13, T87-1, and TT-104 are the subject of a separate report (Barresi, 2023), given in Appendix D.

Figure 8.4.1: Previously-unsampled molybdenum in quartz from the Moly Zone

8.5 Minor Reclamation

While organizing and re-assaying historical drill core at the Tad/Toro camp Triumph Gold had the opportunity to perform some minor reclamation activities. On August 11th, twelve empty fuel barrels, previously stored at the exploration camp, were slung to the Freegold Mountain Project where they were transported to Whitehorse by Small's Expediting and General Services Ltd. and properly disposed.

8.6 Data Processing

Assay data returned from ALS Laboratories was compiled and processed using standard arithmetic functions and graphing capabilities of Microsoft Excel spreadsheet software. ESRI ArcGIS was used to map sample sites in plan view and perform thematic mapping.

9 – SAMPLING METHOD AND APPROACH

9.1 Background

The surface sampling program was designed by Marty Henning, P.Geo, and supervised by Jesse R. Halle, P.Geo and Emily M. Halle, PMP during the exploration program. A description of the sampling method and approach for the 2023 soil sampling program at the Tad/Toro Property follows. The soil sampling program was executed by a field crew of three experienced field geologists under employment or contract to Triumph Gold.

The historical core re-sample program was designed and executed by Jesse R. Halle, P.Geo with assistance from Emily M. Halle, PMP.

9.2 Soil Sampling Method

A hand-held GPS unit was used to locate sampling stations. A 1.2 metre-long, hand-operated soil auger and/or shovel was used to sample an approximately 15-centimetre section of Ah or B horizon material. Notes were taken describing the sampling depth, soil colour, and the grain-sizes present in the sampled material and the sample was placed in a labelled kraft soil sample bag. Later, all soil sample bag quantities and locations were verified by Emily Halle and were organized into larger labeled poly bags and rice bags before being secured in sealed apple bins to await shipment.

9.3 Drill Core Re-Sampling Method

The historical drill core examined and resampled was in variable but generally good condition at the historic Tad/Toro exploration camp. In most cases the drill core resided in racks, and had been previously relabeled with the drill hole name and box number. Drill holes were laid out in entirety to verify sample intervals and depths. In many cases, original drill run footage blocks could be read and historical sample splits were locally present. Prior to re-sampling, drill core was photographed with the drill hole name and footages clearly marked.

Inaugural magnetic susceptibility measurements were taken every 1.5 metres using a handheld KT-10 susceptibility meter, and a representative sample was selected every 10 metres for hyperspectral analysis. All remaining drill core from each drill hole was sampled due to a combination of quantity of core remaining (previously-sampled BQ-sized core), locally weathered/rubbly condition, and minor biological contamination (tree needles, seeds, fungus, and rodent droppings). Drill core was sampled by as close to original sample intervals as possible (typically every 1.5 or 3 metres), however, a certain amount of contamination should be expected due to the age of the drill core and quality of storage boxes.

Drill core was placed into labeled poly bags with unique sample tag numbers by Emily Halle and/or Jesse Halle. Bags were sealed and combined into larger, labeled rice bags before shipment back to Revenue Camp via helicopter.

Grab samples collected in the field by geologists were placed directly in polybags, marked with the corresponding UTM coordinates, and sealed with flagging tape. Back at Revenue Camp, grab samples were verified, numbered by a unique ALS sample tag, photographed, organized into rice bags, and secured in sealed apple bins by Emily Halle to await shipment to ALS.

10 – SAMPLE PREPARATION, ANAYSES, AND SECURITY

10.1 Overview

The regular insertion of sample standards and blanks was undertaken for drill core and grab samples, but as a result of the absence of soil sample standards, a similar QA/QC program could not be invoked for the soil sample program. The internal QA/QC from the assay lab is presented here as evidence of the reliability of the results for soils. A discussion on drill core and soil sample preparation, analytical procedures, applicable QA/QC, and security measures is presented in their respective sections below.

10.2 Drill Core and Grab Sample Preparation and Analysis

At the ALS Laboratory preparation facility in Whitehorse, drill core and grab samples were weighed, dried and crushed to 70% passing 2 millimeters, then riffle-split to obtain a 250-gram sub-sample which was pulverized to greater than 85% passing 75 microns (PREP-31). Upon sample pulp arrival in North Vancouver, a 0.25-gram sample from each pulp was analyzed for multi-element geochemistry using 4-acid (near-total) digestion and induced coupled plasma atomic emission spectroscopy (ICP-AES) giving 33 elements (ME-ICP61). A 30-gram sample from each pulp was analyzed for Au using fire assay and atomic absorption spectroscopy (Au-AA24).

10.3 Soil Sample Preparation and Analysis

No further preparation of soil samples in the field is required after sampling before shipment to the laboratory.

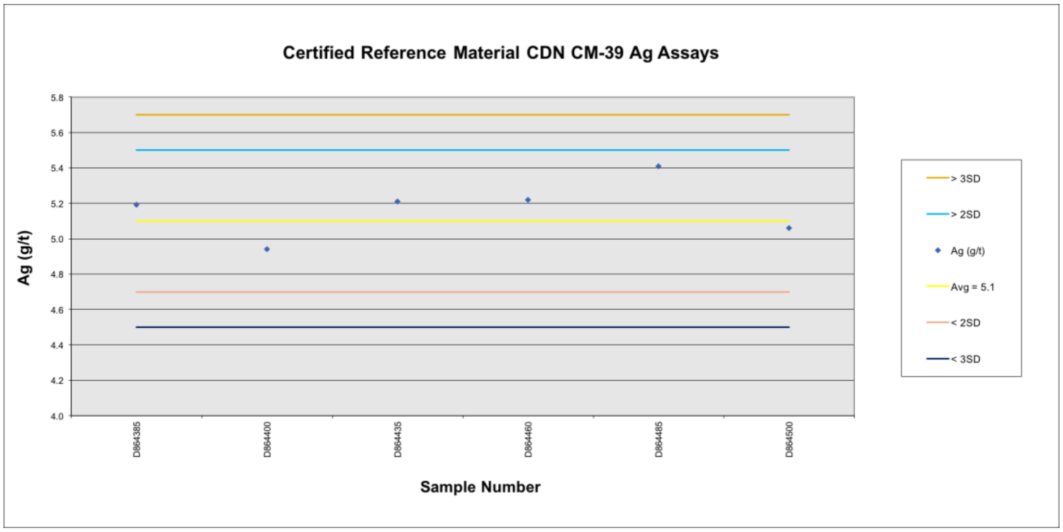
At the ALS Laboratory, soil samples were weighed, dried and sieved using a 180-micron sieve, with both fractions retained (PREP-31). A 0.5-gram sample from the finer fraction was analyzed for multi-element geochemistry using aqua regia (partial) digestion and induced coupled plasma and mass spectroscopy giving 53 elements including Re and Te (ME-ICP41L). Au is semi-quantitative using this method due to the small sample weight.

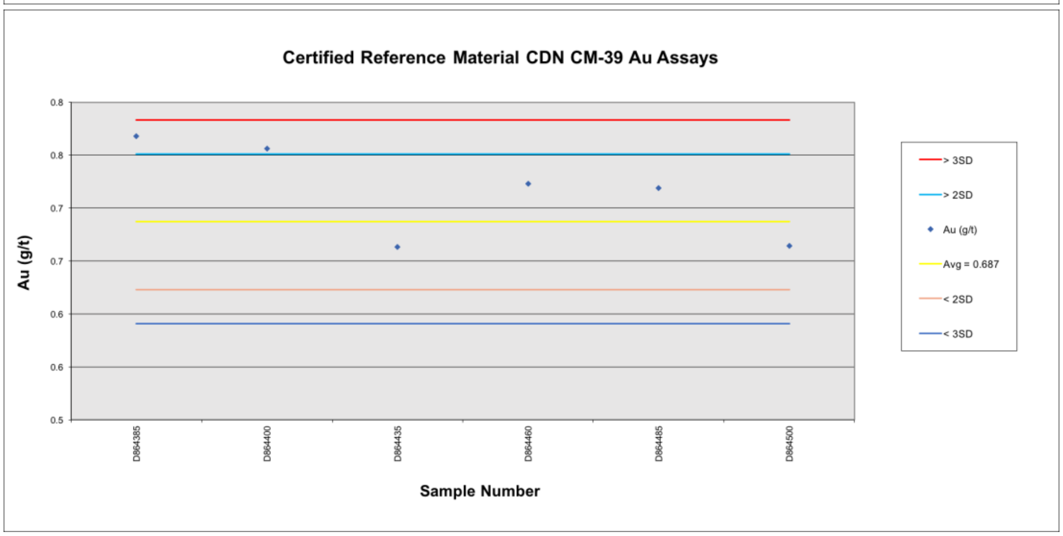
10.4 Triumph Gold Drill Core QA/QC Program

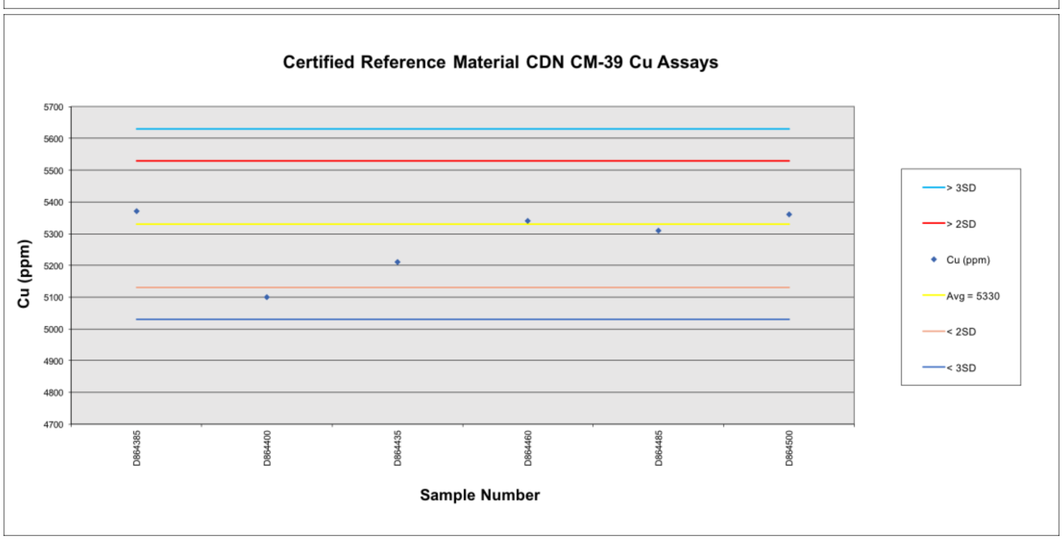
A QA/QC Program monitors data accuracy, precision, and any potential sample contamination. Accuracy is monitored by the insertion of certified standards. Precision of the sampling and analytical process is monitored by testing duplicate samples. Contamination is monitored by inserting field blanks in the sample stream, and assessing the results according to an established warning limit.

Primary components of the laboratory QA/QC program include insertion of a reference ("standard") or blank sample with a frequency of approximately 1 in 15 samples in order to monitor analytical accuracy and to check possible contamination. The commercially-prepared standards inserted by Triumph Gold into the sample stream included the insertion of five certified reference material CDN CM-39. Partial results are plotted in Figure 10.4.1 as a testament to the accuracy of the drill core assays.

Figure 10.4.1: Results from TIG-inserted certified reference material







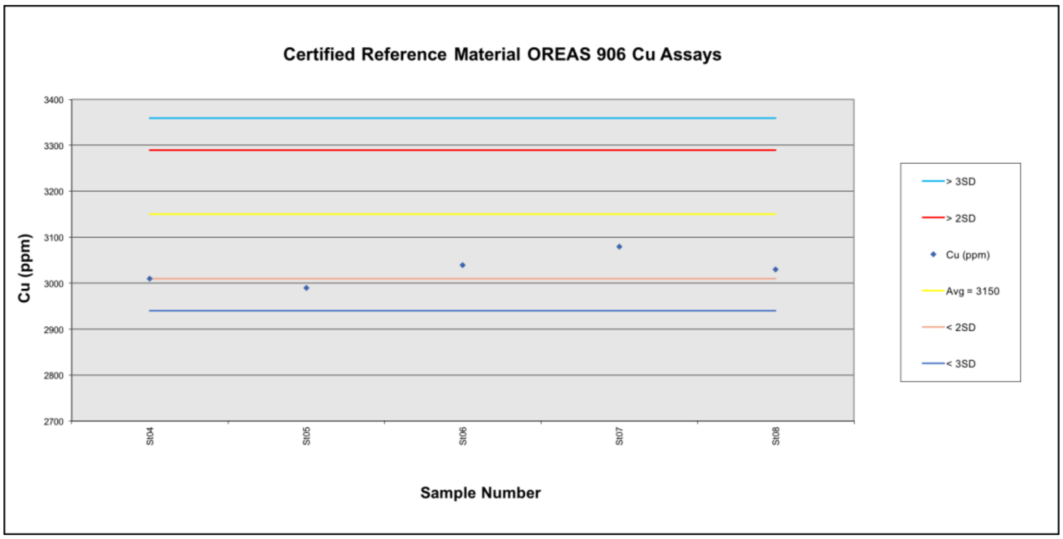
Most silver, gold, and copper assays were on or within two standard deviations ("SD") of the accepted value, with the exception of two gold assays (in excess of two standard deviations) and one copper assay (below two standard deviations), indicating good assay accuracy. Several additional checks were performed by ALS resulting in good to excellent assay accuracy as described in the following section.

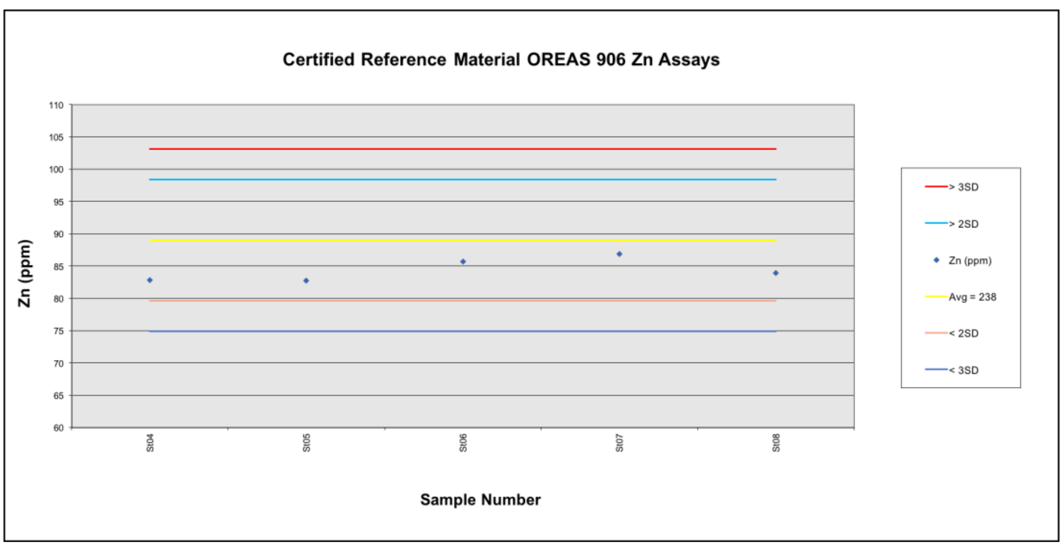
10.5 ALS Laboratories QA/QC Program

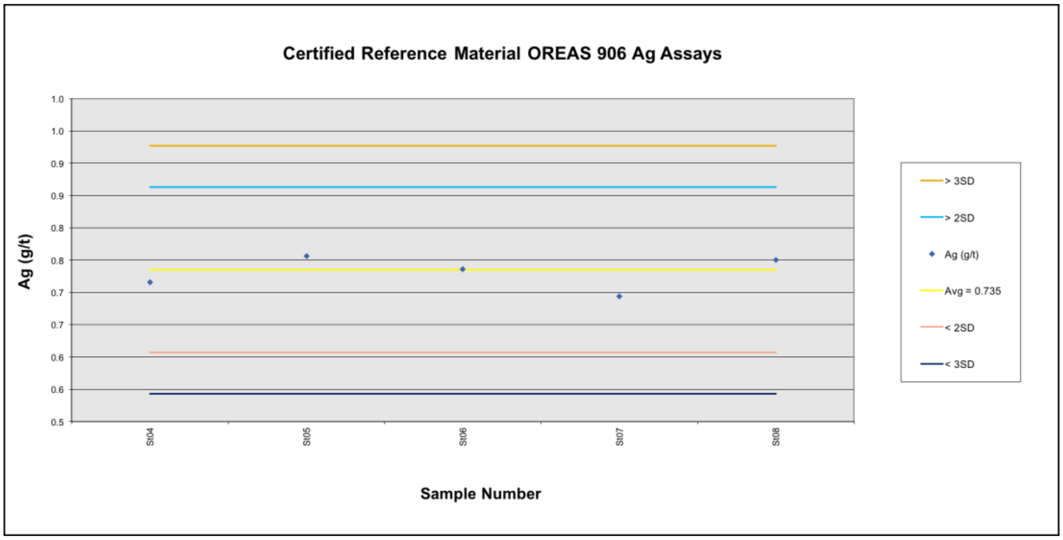
Standard Sample Performance, Soil Samples:

At least four commercially prepared standards were inserted by ALS Laboratories into the sample stream as checks for the accuracy and precision of their multi-element results for the soil program. The commercially-prepared standards included the insertion of five OREAS 906 certified reference standards. Results are plotted for a select number of key elements in Figure 10.5.1 as a testament to the accuracy of the soil assays.

Figure 10.5.1: Results from ALS certified reference material







All silver, zinc, and copper assays were on or within two standard deviations of the accepted value, with the exception of one copper assay, indicating good to excellent assay accuracy.

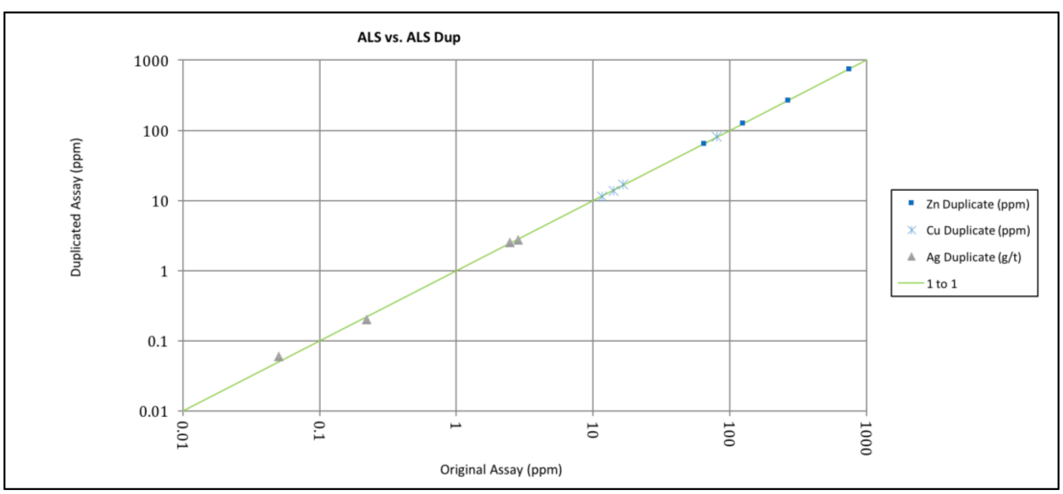
Blank Sample Performance: Drill Core

In the course of assaying drill core, ALS Laboratories tested five of their own blanks for Au, and seven blanks for both Cu and Zn content. Resultant concentrations were at or below the detection limit for all Au and Zn blanks, and all but one Cu sample was at or below the detection limit, indicating very good performance from the blanks and little to no downstream contamination.

Duplicate Sample Performance, Drill Core:

Nine drill core samples were re-assayed during the course of ALS's internal QA/QC. Three of the nine drill core samples were re-run for silver concentrations, and four drill core samples were re-run for Cu and Zn. The results are plotted in the Figure 10.5.2 below. All laboratory-initiated duplicates show excellent repeatability and all are well within a 10% acceptable margin of error, with the exception of one silver value at the limit of detection of 0.01 g/t.

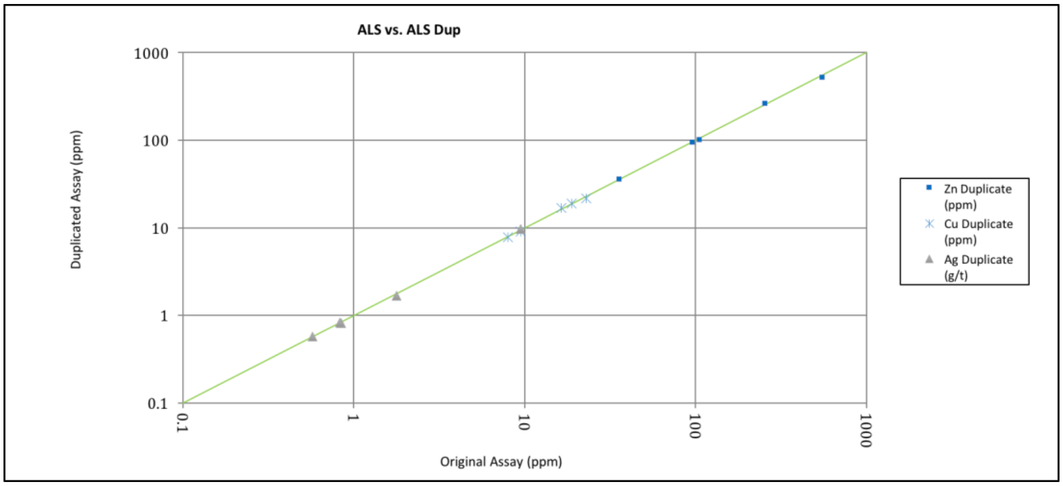
Figure 10.5.2: Silver, Copper and Zinc results from ALS Drill Core duplicate assays



Duplicate Sample Performance, Soil Samples:

Five soil samples were re-assayed during the course of the ALS internal QA/QC program, all five re-run for silver, copper and zinc concentrations. The results are plotted in the Figure 10.5.3 below. All laboratory-initiated duplicates show excellent repeatability and all are well within a 10% acceptable margin of error,

Figure 10.5.3: Silver, Copper and Zinc results from ALS Soil duplicate assays



In summary, the assays returned from ALS are accepted and reliable to guide exploration.

10.6 Sample Security

There is an established and firm chain of custody procedure for program sampling, storage, and shipping. All samples were verified, labeled and secured in apple bins prior to being regularly trucked to the ALS Mineral Services laboratory in Whitehorse, Yukon by Small's Expediting and General Services Ltd.

11 – CONCLUSIONS AND RECOMMENDATIONS

The Property is situated in the Dawson Range Gold Belt, a district with proven high-grade gold and base-metal mineralization. Past-producing hard-rock mines such as Laforma and Tinta, and those reported to soon to come on-line such as the Coffee and Casino Projects, are testament to the potential of the immediate area. Recent high-grade copper and gold discoveries at the Revenue and Nucleus deposits attest to the discoveries that can still be made in the area.

The largest obstacle to exploration in the area is access. Though 4x4 vehicles have successfully made the journey to within 20 kilometres of the Property, the upper reaches of Big Creek and Hayes Creek are muskeg that prevents 4x4 access. If completed, the upgrade of the Casino Trail to an all-season road, as announced by the federal and territorial governments, will facilitate new discoveries on the Property an in the surrounding areas.

The follow-up work recommended by Halle (2019), now completed by Triumph Gold, included:

1. Desktop compilation of historical data – now largely complete and has added new geochemistry results to the database
2. Production of a new geology map – now largely complete with the incorporation of Costantini interpretation
3. 3D modelling of drill holes – new drill hole assay, lithology, and collar compilation now makes this possible (in digital space) for the first time
4. Reclamation of the exploration camp, including the removal of empty fuel drums – removal of empty fuel drums now largely completed

Additional work was recommended by Halle (2019) including rehabilitation of historic exploration camp buildings. Still useful skiffs of plywood and lumber near the helicopter pad at the exploration camp could be used for such an endeavor.

The results of 2023 till geochemistry at the Property are encouraging. Multiple, clustered, highly-anomalous and poly-metallic soils have been revealed at the undrilled CP Zone. The geochemical signature is similar to that found at the Main Zone, and more importantly, the Nit Zone, whose drill holes have the longest and highest-grade intercepts on the Property. The soil anomaly at the CP Zone now exceeds 750 metres in a northwest direction and is an obvious target for follow up geochemistry. The CP Zone was not delineated in a 500-meter-spaced IP program over a large area of the Property in 2011, but closer-spaced infill IP may help to identify the underlying cause of the anomaly.

Large regions of the Property, let alone the Tad Porphyry, remain under-explored for a porphyry copper or epithermal-style deposit. Additional work is warranted west and south of the CP Zone including soil sampling and IP surveying over the hydrothermal polymictic breccia discovered in 2010 at the NIT Zone.

With only 4594 metres of shallow drilling on the Property, additional drilling would likely lead to additional discoveries. Drill planning should target both epithermal mineralization at the CP and Nit Zones, and untested zones Cu-Mo porphyry-style mineralization at the Moly Zone and East Grid.

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13 – DATE AND SIGNATURE PAGE

I, Jesse R. Halle (P.Geo) of Halifax, Nova Scotia do hereby certify that:

1. I am a part owner and Senior Geoscientist with Halle Geological Services Ltd., having an address at Unit 3 – 1345 Dresden Row, Halifax, NS, CANADA B3J 2J9.
2. I am a graduate of the University of Toronto with an Honors B.Sc. (Env. Sci.) in 1996, and of Lakehead University with an Honors B.Sc. (Geology) in 2002.
3. I am a member, in good standing, of Geoscientists Nova Scotia (301), the Professional Engineers and Geoscientists of Newfoundland (10743), Engineers and Geoscientists of British Columbia (157202).
4. I have worked in my chosen field in Nova Scotia, Newfoundland and Labrador, Québec, Ontario, Manitoba, British Columbia, Northwest Territories, Yukon, and Alaska as a geologist or geoscientist from 1996 to the present, and have been extensively involved in mineral exploration, resource definition, and technical reporting.
5. I accepted the position of VP Exploration with Triumph Gold Corp in January of 2020, and have occupied the posting since that time.
6. I supervised all aspects of the 2023 field program at the Tad/Toro Property and am responsible for the content of all sections of this report.
7. I am not aware of any material fact or material change, the omission of which would make this report misleading.

Dated at Halifax, Nova Scotia, this 31st Day of January, 2024.

Jesse R. Halle, P. Geo

VP Exploration
Triumph Gold Corp
Vancouver, BC

APPENDIX A – Soil Sample Locations and Descriptions

Sample_ID	UTM_E	UTM_N	Horizon	Depth_Fr (cm)	Depth_To (cm)	Colour	Desc
TTEL1-0000	349785	6939821	AH	15	20	Black-brown	25% organics
TTEL1-0050	349747	6939791	B	20	30	L.brown	mature spruce forest with moss/lab-tea groundcover
TTEL1-0100	349713	6939757	B	10	25	Med-brown	Silty-sand with few pebbles
TTEL1-0150	349676	6939720	B	20	45	brown	mature spruce forest with moss/lab-tea groundcover
TTEL1-0200	349638	6939688	AH	25		Black-brown	30% organics
TTEL1-0250	349597	6939651	Ah	15	35	black	edge of spruce forest, moss hummocks with young spruce trees
TTEL1-0300	349563	6939622	AH	25		Black-brown	30% organics
TTEL1-0350	349530	6939584	Ah	40	50	black	moss/grass hummocks with minor spruce/deciduous tree density
TTEL1-0400	349491	6939544	AH	30	40	Black-brown	30% organics
TTEL1-0450	349455	6939514	B	20	30	brown	moss/grass hummocks with minor spruce/deciduous tree density; taken on edge of hummock; permafrost at 30+cm
TTEL1-0500	349420	6939487	AH	40	50	Black-brown	30% organics
TTEL1-0550	349382	6939453	B	40	45	brown	moss hummocks with moderatley dense spruce trees; permafrost at 45+cm
TTEL1-0600	349344	6939418	AH	20	25	Black-brown	35-40% organics
TTEL1-0650	349311	6939381	B	20	35	brown	moss hummocks with moderatley dense spruce trees; permafrost at 35+cm
TTEL1-0700	349274	6939347	AH	20	30	Black-brown	30% organics
TTEL1-0750	349235	6939315	B	40	50	Dark brown	Silty-clay with few pebbles, permafrost below
TTEL2-0000	349863	6939735	Ah	20	30	black	semi-open moss covered hummocks with sparse young spruce trees; false C-horizon at 30-40cm, permafrost at 40cm
TTEL2-0050	349824	6939701	Ah	25	35	black	moss/grass hummocks in dense spruce forest; permafrost at 35cm
TTEL2-0100	349794	6939668	B	20	35	brown	silt-sand-rock; cold and moist; dense spruce forest with mossy hummocks
TTEL2-0150	349753	6939632	Ah	25	35	black	dense spruce forest with mossy hummocks; Ah 25-35, B35-38, 38+ permafrost
TTEL2-0200	349718	6939598	B	30	45	L.brown	Ah 20-25, Ae 25-30, B 30+; silt dominant; spruce forest on moss/berry covered ground/slope
TTEL2-0250	349681	6939562	B	10	25	brown	spruce/moss covered mature forest on slope
TTEL2-0300	349648	6939529	B	30	40	brown	spruce/moss covered mature forest on slope
TTEL2-0350	349609	6939494	Ah	30	45	black	semi-opening in mature spruce forest with moss/lab-tea covered hummocks; permafrost at 45cm
TTEL2-0400	349573	6939461	Ah	15	35	black	moderatley dense spruuce forest with mossy hummocks; permafrost at 35cm
TTEL2-0450	349538	6939424	Ah	15	20	black	low density spruce forest with grassy hummocks; below Ah is a silt-clay gray-black/olive false C-horizon
TTEL2-0500	349498	6939391	Ah	25	40	balck	moss/lab-tea covered hummocks and sparse spruce trees; permafrost at 40cm.
TTEL2-0550	349463	6939360	B	35	40	brown	grass/moss/lab-tea covered hummocks between moderatley dense spruce treed forest; permafrost at 40cm
TTEL2-0600	349425	6939325	Ah	25	35	black	grass/moss/lab-tea covered hummocks between moderatley dense spruce treed forest; Ah 25-35, B/C 35-40, permafrost at 40cm
TTEL2-0650	349391	6939291	B	20	25	brown	grass/moss/lab-tea covered hummocks between moderate-strongly dense spruce forest, more sun exposure; well developed horizons Ah 15-20, B 20-25, C 25-35, permafrost 35+

Sample_ID	UTM_E	UTM_N	Horizon	Depth_Fr (cm)	Depth_To (cm)	Colour	Desc
TTEL2-0700	349354	6939256	B	20	25	brown	grass/moss/lab-tea covered hummocks between moderate-strongly dense spruce forest, more sun exposure; well developed horizons Ah 10-15, B 15-35
TTEL2-0750	349316	6939219	AH	30	40	Black-brown	30% organics
TTEL3-0000	349946	6939647	B	25	40	Med-brown	Silty-sand with pebbles
TTEL3-0050	349907	6939615	AH	10	20	Dark brown-black	35% organics
TTEL3-0100	349870	6939579	AH	40	50	Black-brown	Below alluviated soil (grey-brown clay), strange one.. No B obseved
TTEL3-0150	349833	6939540	B	25	35	Med-brown	Sandy-silt with minor pebbles
TTEL3-0200	349797	6939512	B	20	30	Med-brown	Silty-clay with minor sand and pebbles
TTEL3-0250	349759	6939476	B	20	30	Med-brown	Silty-clay with minor sand and pebbles
TTEL3-0300	349725	6939445	B	25	35	Med-brown	Sandy-silt with minor pebbles
TTEL3-0350	349691	6939409	B	25	35	Med-brown	Sandy-silt with minor pebbles
TTEL3-0400	349654	6939374	B	5	25	Light-med brown	Sandy-silt with minor pebbles
TTEL3-0450	349615	6939342	B/C	25	30	Med-brown	Minor darker brown C mixed in. Sandy-silt with minor pebbles
TTEL3-0500	349579	6939308	AH	5	25	Black-brown	25% organics
TTEL3-0550	349542	6939275	AH	15	25	Black-brown	25-30% organics
TTEL3-0600	349509	6939241	B	20	20	Med-brown	Sandy-silt with pebbles
TTEL3-0650	349467	6939200	B	25	40	Med-brown	Silty-sand with pebbles
TTEL3-0700	349433	6939168	AH	25	30	Black-brown	25% organics
TTEL3-0750	349398	6939137	AH	5	20	Black-brown	25-30% organics
TTEL4-0000	350026	6939552	B	25	40	Med-brown	Silty-sand with pebbles
TTEL4-0050	349987	6939513	B	20	40	brown	mature spruce forest, moss ground cover; up to boulder size rocks in hole
TTEL4-0100	349953	6939482	B	20	30	brown	middling size spruce forest on weak slope, with moss ground cover; standing water in hole on top of permafrost
TTEL4-0150	349915	6939445	B	10	40	L.Brown	clay-silt>>rock B horizon; may be akin to a C-horizon similat to TTN grid? mature spruce forest with flat moss covered forest floor;
TTEL4-0200	349876	6939416	B	20	40	L.Brown	clay-silt>>rock B horizon; may be akin to a C-horizon similat to TTN grid? mature spruce forest with flat moss covered forest floor;
TTEL4-0250	349840	6939377	B	15	35	L.Brown	clay-silt>>rock B horizon; may be akin to a C-horizon similat to TTN grid? mature spruce forest with flat moss covered forest floor;
TTEL4-0300	349805	6939344	B	18	25	L.Brown	clay-silt>>rock B horizon; may be akin to a C-horizon similat to TTN grid? mature spruce forest with flat moss covered forest floor;
TTEL4-0350	349765	6939309	B	5	20	L.Brown	sub-angular to sub-rounded rocky B, may be akin to a C-horizon similat to TTN grid? mature spruce forest with flat moss covered forest floor;
TTEL4-0400	349730	6939274	Ah	10	15	black	level dry mossy spruce forest
TTEL4-0450	349697	6939239	Ah	10	35	black	spruce trees in between moss/grass hummocks; rounded rocks in Ah and lower B-C horizon
TTEL4-0500	349660	6939209	Ah	15	25	black	spruce trees in between moss/grass hummocks; rounded rocks in lower B-C horizon
TTEL4-0550	349624	6939172	Ah	20	35	black	mossy hummocks with spruce>deciduous trees and buck-brush

Sample_ID	UTM_E	UTM_N	Horizon	Depth_ Fr (cm)	Depth_ To (cm)	Colour	Desc
TTEL4-0600	349587	6939141	Ah	20	35	black	mossy hummocks with spruce trees and buck-brush
TTEL4-0650	349552	6939105	B	5	15	brown	sant-silt>>rocky B; leaf litter cover in tight deciduous trees; disturbed ground/organics, slide?
TTEL4-0700	349510	6939074	Ah	20	30	black	spruce>deciduous forest on grass/moss hummocky ground; permafrost at 40cm
TTEL4-0750	349475	6939038	Ah	20	40	black	spruce>deciduous forest on grass/moss hummocky ground
TTEL5-0000	350105	6939464	AH	20	30	Black-brown	25% organics
TTEL5-0050	350070	6939435	B	10	25	Med-brown	Sandy-silt with pebbles
TTEL5-0100	350032	6939395	AH	20	25	Black-brown	25-30% organics
TTEL5-0150	349995	6939364	B	25	40	Med-brown	Clay-silt, few sand granules and pebbles
TTEL5-0200	349963	6939331	AH	10	15	Black	30% organics
TTEL5-0250	349923	6939297	B	25	40	Med-brown	Silty-sand, few pebbles, poorly developed AH
TTEL5-0300	349888	6939259	B	10	20	Med-brown	Clay-silt with lesser sand and pebbles
TTEL5-0350	349848	6939225	B	15	25	Med-brown	Sandy-silt with few pebbles
TTEL5-0400	349813	6939194	B	10	15	Med-brown	Sandy-silt with few pebbles
TTEL5-0450	349778	6939157	B	10	15	Med-brown	Silty-sand with few pebbles
TTEL5-0500	349738	6939126	AH	5	10	Dark brown-black	25-30% organics
TTEL5-0550	349706	6939087	AH	5	10	Dark brown-black	25-30% organics
TTEL5-0600	349668	6939054	AH	5	-8	Dark brown-black	25-30% organics
TTEL5-0650	349630	6939022	B	15	25	Med-brown	Sand with minor silt and pebbles
TTEL5-0700	349594	6938989	B	15	25	Med-brown	Sandy with gravelly-pebbles
TTEL5-0750	349555	6938952	B	25	35	Med-brown	Silty-sand, few pebbles, below ash
TTL1-0000	345652	6940300	AH	40	40	Black-brown	25% organics, med-dark brown B below.
TTL1-0050	345699	6940299	B/AH (C?)	35	40	Med-dark brown-grey	Clay-silt B (C?) with 10% black-brown AH
TTL1-0100	345751	6940301	B	30	30	Med-brown	Clay-silt with pebbly-sandy (20%)
TTL1-0150	345801	6940300	B	20	20	Med-brown	Silty with minor dark-brown AH
TTL1-0200	345849	6940301	B	15	20	Med-brown	Silty to minor sandy
TTL1-0250	345899	6940302	B	15	20	Med-brown	Silty to minor sandy
TTL1-0300	345951	6940301	B	20	20	Med-brown	Silty-sand
TTL1-0350	345999	6940299	B	20	20	Med-brown	Silty-sand
TTL1-0400	346050	6940300	B	10	15	Med-brown	Silty-sand
TTL1-0450	346099	6940300	B	10	15	Med-brown	Silty-sand
TTL1-0500	346150	6940299	B	10	15	Med-brown	Silty-sand
TTL1-0550	346201	6940300	B	5	25	Med-brown	Silty-sand
TTL1-0600	346250	6940300	B	5	25	Med-brown	Silty-sand
TTL1-0650	346303	6940304	B	5	25	Med-brown	Silty-sand
TTL1-0700	346352	6940300	B	5	25	Med-brown	Silty-sand
TTL1-0750	346400	6940298	B	5	25	Med-brown	Light-med brown

Sample_ID	UTM_E	UTM_N	Horizon	Depth_Fr (cm)	Depth_To (cm)	Colour	Desc
TTL1-0800	346451	6940299	B	5	10	Med-dark brown	Clay-silt
TTL1-0850	346501	6940298	B	5	10	Med-brown	Sandy-silt, few pebbles
TTL1-0900	346549	6940301	B	5	20	Med-brown	Sandy-silt, few pebbles
TTL1-0950	346600	6940300	B	5	20	Med-brown	Sandy-silt, few pebbles
TTL2-0000	345653	6940246	B	10	20	L.brown/orange	truly a C-horizon; brush+/-mature spruce trees
TTL2-0050	345702	6940249	Ah	20	30	black	moss/brush/spruce on olive C/Ae(?)
TTL2-0100	345750	6940253	B	5	20	L.brown/orange	truly a C-horizon; silt-sand-rock; spruce treed
TTL2-0150	345800	6940250	B	10	30	L.brown/orange	truly a C-horizon; under weak moss with LF, Ae then orangish B/C
TTL2-0200	345852	6940251	B	5	30	L.brown/orange	truly a C-horizon; under weak moss with LF, Ae then orangish B/C
TTL2-0250	345900	6940252	B	5	25	L.brown/orange	truly a C-horizon; under weak moss with LF, Ae then orangish B/C
TTL2-0300	345950	6940251	B	5	25	L.brown/orange	truly a C-horizon; under weak moss with LF, Ae then orangish B/C
TTL2-0350	346001	6940249	B	5	25	L.brown/orange	truly a C-horizon; under weak moss with LF, Ae then orangish B/C
TTL2-0400	346050	6940249	B	3	15	L.brown/orange	truly a C-horizon; under weak moss with LF, Ae then orangish B/C
TTL2-0450	346101	6940254	B	3	30	L.brown/orange	truly a C-horizon; under weak moss with LF, Ae then orangish B/C; blue/white flagged sfor previous sample
TTL2-0500	346150	6940252	B	3	20	L.brown/orange	truly a C-horizon; under weak moss with LF, Ae then orangish B/C; blue/white flagged sfor previous sample
TTL2-0550	346203	6940252	B	10	20	M.brown	mature spruce forest with moss ground cover; on margins of deciduous tree line
TTL2-0600	346250	6940251	B	5	15	L.brown/orange	truly a C-horizon; tightly packed deciduous trees, leaf litter ground cover
TTL2-0650	346303	6940253	B	5	15	L.brown/orange	truly a C-horizon; tightly packed deciduous trees, leaf litter ground cover
TTL2-0700	346350	6940249	B	5	15	L.brown/orange	truly a C-horizon; tightly packed deciduous trees, leaf litter ground cover
TTL2-0750	346400	6940249	B	8	15	L.brown/orange	truly a C-horizon; deciduous trees, leaf litter, blowdown, on top of even rockier C
TTL2-0800	346450	6940250	Ah	5	45	black	deciduous trees, mossy hummocks
TTL2-0850	346501	6940250	B	5	10	L.brown/orange	truly a C-Horizon; deciduous trees, weak grass>>brush covered hummocks
TTL2-0900	346552	6940251	B	5	15	M.Brown	end of grassy hummocks on border of dense deciduous trees; clay-silt-rock
TTL2-0950	346605	6940252	B	5	15	L.brown/orange	truly a C-Horizon; tight deciduous trees, leaf litter
TTL3-0000	345650	6940199	B	10	20	Med-brown	Clay-silt with sand
TTL3-0050	345700	6940200	B	5	25	Med-brown	Silty-sand with few pebbles
TTL3-0100	345748	6940200	B	5	25	Light-med brown	Silty-sand with few pebbles
TTL3-0150	345798	6940196	B	10	30	Med-brown	Silty-sand with few pebbles, AH at top of sample with 1cm ash layer
TTL3-0200	345847	6940198	B	5	20	Med-brown	Silty-sand with few pebbles
TTL3-0250	345899	6940199	B	10	30	Med-brown	Silty-sand with minor clay
TTL3-0300	345951	6940200	B	2	15	Med-brown	Silty-sand with minor clay

Sample_ID	UTM_E	UTM_N	Horizon	Depth_Fr (cm)	Depth_To (cm)	Colour	Desc
TTL3-0350	346000	6940200	B	10	30	Med-brown	Silty-sand with minor clay
TTL3-0400	346048	6940196	B	5	20	Med-brown	Silty-sand with minor clay
TTL3-0450	346099	6940201	B	5	20	Med-brown	Silty-sand with minor clay. 3m from road cut
TTL3-0500	346148	6940199	B	10	25	Med-brown	Sandy-silt with minor clay. 10m from road cut
TTL3-0550	346195	6940198	B	25	30	Med-brown	Sandy-silt with minor clay
TTL3-0600	346250	6940200	B	5	25	Light-med brown	Clay-silt with minor granules (10%)
TTL3-0650	346298	6940200	B	5	25	Med-brown	Clay-silt with minor granules (10%)
TTL3-0700	346349	6940201	B	5	25	Med-brown	Clay-silt with minor granules (10%)
TTL3-0750	346399	6940199	B	10	25	Med-brown	Clay-silt with minor granules (15%)
TTL3-0800	346451	6940199	B	5	25	Med-brown	Sandy-silt with 30% pebbles
TTL3-0850	346499	6940198	B	5	40	Light-med brown	Sandy-silt
TTL3-0900	346547	6940199	B	15	25	Light-med brown	Silty-sand
TTL3-0950	346600	6940202	AH	20	20	Dark brown-black	10-20% organics
TTL4-0000	345650	6940149	B	10	30	Med-brown	Sandy-silt with few pebbles
TTL4-0050	345702	6940156	B	10	20	Med-brown	Sandy-silt with few pebbles
TTL4-0100	345751	6940152	B	10	20	Med-brown	Sandy-silt with few pebbles
TTL4-0150	345802	6940151	B	10	20	L.brown/orange	truly a C-horizon; brush/moss/spruce on flat area.
TTL4-0200	345850	6940147	B	15	25	L.brown/orange	truly a C-horizon; brush/moss on weak hummocks with large spruce
TTL4-0250	345900	6940149	B	10	20	L.brown/orange	truly a C-horizon; brush/moss hummocky
TTL4-0300	345949	6940150	Ah	20	40	black	moss/buck-brush/spruce covered hummocks on gray-olive rocky c-horizon; No B
TTL4-0350	345998	6940146	Ah	15	20	black	moss/buck-brush covered hummocks on gray-olive rocky c-horizon; No B
TTL4-0400	346043	6940147	B/C	5	8	brown/gray	hummocky grass gnolls next to trench
TTL4-0450	346098	6940149	B/C	5	10	brown	truly a mixed B-C horizon; deciduous/spruce forest
TTL4-0500	346150	6940149	B/C	5	10	brown	truly a mixed B-C horizon; deciduous/spruce forest
TTL4-0550	346199	6940149	B	5	10	brown	true B; young deciduous and spruce with moss/berry/leaf cover; 0-5cm Ah, 5-10cm B, 10+ L.brown/orange C-horizon.
TTL4-0600	346250	6940149	B	5	20	L.brown/orange	truly a C-horizon; young deciduous and taller burn, brush/berry/leaf cover; clay-silt
TTL4-0650	346300	6940151	B	8	20	brown	true B; young deciduous and spruce with moss/berry/leaf cover; 0-8cm Ah, 8-20cm B, 20+ L.brown/orange C-horizon.
TTL4-0700	346349	6940152	B	8	20	L.brown/orange	truly a C-horizon; deciduous and taller burn, brush/berry/leaf cover; clay-silt
TTL4-0750	346402	6940152	B	50	65	L.brown/orange	tight deciduous trees amongst moss/brush hummocky soft ground
TTL4-0800	346449	6940149	B	5	8	L.brown/orange	truly a C-Horizon; deciduous > spruce with hummocky mossy openings
TTL4-0850	346502	6940151	B	8	20	L.brown/orange	truly a C-Horizon; tight deciduous trees, leaf litter; edge of deciduous trees opens up
TTL4-0900	346549	6940149	B	8	20	L.brown/orange	truly a C-Horizon; tight deciduous trees, leaf litter
TTL4-0950	346600	6940150	B	8	20	L.brown/orange	truly a C-Horizon; tight deciduous trees, leaf litter

Sample_ID	UTM_E	UTM_N	Horizon	Depth_Fr (cm)	Depth_To (cm)	Colour	Desc
TTL5-0000A	345636	6940106	B	8	20	Orange	truly a C-horizon; sand-silt-rock; moss-buckbrush with sparse mature spruce trees
TTL5-0000B	345636	6940106	B	2	8	brown	true B-horizon; soil-silt; moss-buckbrush with sparse mature spruce trees
TTL5-0050	345685	6940100	B	10	20	Orange	truly a C-horizon; moss-buckbrush covered hummocks; sand-rock-silt
TTL5-0100	345738	6940095	B	6	20	Orange	truly a C-horizon; moss and buckbrush, sparse amture spruce; sand-silt-rock
TTL5-0150	345785	6940092	B	15	30	brown	moss and buckbrush, sparse amture spruce; silt-soil>>rock.
TTL5-0200	345844	6940089	B	15	35	Orange	truly a C-horizon; moss and buckbrush, sparse amture spruce; silt-sand-rock
TTL5-0250	345887	6940090	B	10	20	Orange	truly a C-horizon; moss and buckbrush, sparse amture spruce; silt-sand-rock
TTL6-0000	345632	6940055	B	10	25	Light brown	Silty-sand with granules and pebbles
TTL6-0050	345677	6940058	B	15	25	Med-brown to red-brown	Silt-sand with few pebbles
TTL6-0100	345732	6940046	AH	5	20	Black-brown	25% organics
TTL6-0150	345779	6940043	B	15	30	Light brown	Sandy-silt with few pebbles
TTL6-0200	345828	6940045	AH	2	10	Black-brown	35% organics
TTL6-0250	345880	6940031	AH	5	20	Black-brown	25% organics
TTL7-0000	345623	6940009	B	8	30	Orange	truly a C-horizon; sand-silt-rock; buckbrush/moss cover
TTL7-0050	345675	6940003	B	8	20	Orange	truly a C-horizon; sand-silt-rock; buckbrush/moss cover
TTL7-0100	345725	6939997	Ah	20	50	black	mossy hummocks with spruce and deciduous trees.
TTL7-0150	345778	6939998	B	6	20	brown	grassy hummocks above road cut; spruce and deciduous treeed; rocky but true B-horizon
TTL7-0200	345839	6939992	B	40	50	brown	silt-clay rich true B below thick Ah; mossy hummocks with deciduous and spruce trees
TTL7-0250	345888	6939991	B	10	25	brown/gray	moss buckbrush cover with deciduous>spruce trees.
TTL8-0000	345622	6939957	B	5	20	Med-brown	Sandy-silt with few pebbles
TTL8-0050	345670	6939950	B	10	20	Med-brown	Sandy-silt with few pebbles
TTL8-0100	345719	6939948	AH	0	5	Black-brown	40-50% organics
TTL8-0150	345774	6939943	AH	5	20	Black-brown	25% organics
TTL8-0200	345824	6939939	AH	5	20	Black-brown	25% organics
TTL8-0250	345875	6939937	AH	5	20	Black-brown	25% organics

APPENDIX B – Grab Sample Locations and Descriptions

Sample ID	UTM_E	UTM_N	Description
D864504	348488	6938830	Tad Toro porphyry stock, nvs, mafic marginal phase
D864505	348416	6939052	Tad Toro porphyry stock, nvs
D864506	349659	6939208	Soil Regolith Grab
D864508	345695	6940142	Trench grabs (QV float) L4W
D864509	345671	6940116	Trench grabs (GD float) L4W
D864510	343501	6935967	Laminated to flow banded QFP sub volcanic intrusion, trace sulphides
D864511	346898	6935539	Wide QFP dike with utr sulphides, white, sugary texture, YTT host
D864512	346957	6935526	Narrow amph to amph skarn, to 10pct sulphides
D864513	345060	6938737	Aplite to QFP with dk chl? veinlets, possible scorodite?
D864514	345181	6938723	Brecciated ser-alt'd WRN, trace sulphides, scorodite stained
D864515	345179	6938715	Silicified brecciated WRN, oxidized former sulphide veinlets, scorodite stained
D864516	345036	6938748	GRDR, pervasive mica(?) alt'n of fine-grained white matrix supporting fe-carb alt'd fldp and glassy qtz eyes; moderatley oxidized and limonite stained on cleavages; sampled across 1m
D864517	343650	6936355	QFP - fg qtz-felds. Weak silica and sericaite alt. Wk-Tr chl and ep and tr py ffl and fg diss. Striking 020NNE.
D864518	342795	6931851	Qtz vn associted with apalite dyke with hem staining after py. Hosted within mg Granite - qtz-felds-hb possible K-spar staining or wk hem dusting.
D864519	343238	6931833	MT Skarn mineralization at the contact b/t granite and Carmacks Volc's. Rock fragments 10-20cm
D864520	343225	6931782	Fe-oxid Skarn/vein breccia mineralization specularite + Mt + hem FFL vein hosted within carmacks volcanics.
D864522	346804	6935589	Qtz vn or Qtz band within YTT sugary texture with fine fractures of fe-oxid or sulfide? (aspy/py).
D864523	345044	6938742	QFP fg qtz felds. Weak clay-fe-carb sericite alt with local qtz ffl strong Fe-oxide likely after py?
D864524	345061	6938731	QFP fg qtz felds. Weak clay-fe-carb sericite alt with fine qtz ffl and strong Fe-oxide after py.
D864525	345135	6938711	Black oxide shear zone possibly strongly weathered sulphide or Fe-oxide water transported? local botryoidal gothite texture.).5m wide striking into the rd cut bank trending NE.
D864526	348666	6940364	Felisic Intrusion/Intrusive Bx or/Bleached Crystaline Volcanic Flow. Moderate-Strong clay alteration of groundmass Fe-carb/sericite alt. Possibly high level alteration cap. Fg cubic py.
D864527	348523	6940433	Same host as above. Mod-Str clay Fr-carb Tr Ep alt. Fg sooty sulfides possible Aspy/py? Old Tr near T-8

APPENDIX C – Drill Core Samples, Hyperspectrometry Locations, and Susceptibility Results

Sample_ID	DH_ID	Zone	Core Size	From (ft)	To (ft)	From (m)	To (m)	TERRA SPEC	MAG SUS	NOTES
D864374	T87-1	Main	NQ	48	54	14.6	16.5		0.051	Possible Contamination
D864375	T87-1	Main	NQ	54	59	16.5	18		0.118	
D864376	T87-1	Main	NQ	59	64	18	19.5	TS-01	0.127	
D864377	T87-1	Main	NQ	64	69	19.5	21		0.081	
D864378	T87-1	Main	NQ	69	74	21	22.5		0.104	
D864379	T87-1	Main	NQ	74	79	22.5	24		0.072	
D864380	T87-1	Main	NQ	79	84	24	25.5		0.185	
D864381	T87-1	Main	NQ	84	89	25.5	27		0.191	
D864382	T87-1	Main	NQ	89	94	27	28.5		0.101	
D864383	T87-1	Main	NQ	94	98	28.5	30	TS-02	0.079	
D864384	T87-1	Main	NQ	98	103	30	31.5		0.123	
D864386	T87-1	Main	NQ	103	108	31.5	33		0.218	
D864387	T87-1	Main	NQ	108	113	33	34.5		0.101	
D864388	T87-1	Main	NQ	113	118	34.5	36		0.161	
D864389	T87-1	Main	NQ	118	123	36	37.5		0.149	
D864390	T87-1	Main	NQ	123	128	37.5	39	TS-03	0.181	
D864391	T87-1	Main	NQ	128	133	39	40.5		0.141	
D864392	T87-1	Main	NQ	133	138	40.5	42		0.17	
D864393	T87-1	Main	NQ	138	143	42	43.5		0.256	
D864394	T87-1	Main	NQ	143	148	43.5	45		gouge - N/R	
D864395	T87-1	Main	NQ	148	153	45	46.5		0.09	
D864396	T87-1	Main	NQ	153	157	46.5	48		0.16	
D864397	T87-1	Main	NQ	157	162	48	49.5	TS-04	0.242	
D864398	T87-1	Main	NQ	162	167	49.5	51		0.038	
D864399	T87-1	Main	NQ	167	172	51	52.5		0.025	
D864401	T87-1	Main	NQ	172	177	52.5	54		0.189	
D864402	T87-1	Main	NQ	177	182	54	55.5		0.032	
D864403	T87-1	Main	NQ	182	187	55.5	57		0.029	
D864404	T87-1	Main	NQ	187	192	57	58.5		0.105	
D864405	T87-1	Main	NQ	192	197	58.5	60	TS-05	0.095	
D864406	T87-1	Main	NQ	197	203	60	62		0.084	
D864407	T87-1	Main	NQ	203	207	62	63.1		gouge - N/R	
D864408	T87-1	Main	NQ	207	212	63.1	64.5		0.026	
D864409	T87-1	Main	NQ	212	217	64.5	66		0.101	
D864410	T87-1	Main	NQ	217	221	66	67.5		0.188	
D864411	T87-1	Main	NQ	221	226	67.5	69		0.257	
D864412	T87-1	Main	NQ	226	231	69	70.5	TS-06	0.085	
D864413	T87-1	Main	NQ	231	236	70.5	72		0.049	
D864414	T87-1	Main	NQ	236	241	72	73.5		0.711	
D864415	T87-1	Main	NQ	241	246	73.5	75		0.094	
D864416	T87-1	Main	NQ	246	251	75	76.5		0.541	
D864417	T87-1	Main	NQ	251	256	76.5	78		0.193	
D864418	T87-1	Main	NQ	256	261	78	79.5		0.143	
D864419	T87-1	Main	NQ	261	266	79.5	81	TS-07	0.034	
D864421	T87-1	Main	NQ	266	271	81	82.5		0.118	
D864422	T87-1	Main	NQ	271	276	82.5	84		0.049	
D864423	T87-1	Main	NQ	276	281	84	85.5		0.145	
D864424	T87-1	Main	NQ	281	285	85.5	87		0.098	
D864425	T87-1	Main	NQ	285	290	87	88.5		0.226	
D864426	T87-1	Main	NQ	290	295	88.5	90	TS-08	0.236	
D864427	T87-1	Main	NQ	295	**300**	90	91.4		0.541	EOH
D864428	T69-2	Main	NQ	30	40	9.14	12.19		gouge - N/R	gougy
D864429	T69-2	Main	NQ	40	50	12.19	15.24		gouge - N/R	gougy; core loss
D864430	T69-2	Main	NQ	50	60	15.24	18.29	TS-09	gouge - N/R	gougy

Sample_ID	DH_ID	Zone	Core Size	From (ft)	To (ft)	From (m)	To (m)	TERRA SPEC	MAG SUS	NOTES
D864431	T69-2	Main	NQ	60	70	18.29	21.33		gouge - N/R	
D864432	T69-2	Main	NQ	70	85	21.33	25.91		gouge - N/R	core loss
D864433	T69-2	Main	NQ	85	100	25.91	30.48		gouge - N/R	core loss
D864434	T69-2	Main	NQ	100	111	30.48	33.83		gouge - N/R	
D864436	T69-2	Main	NQ	111	123	33.83	37.49	TS-10	gouge - N/R	
D864437	T69-2	Main	NQ	123	134	37.49	40.84		gouge - N/R	
D864438	T69-2	Main	NQ	134	145	40.84	44.19		0.009	
D864439	T69-2	Main	NQ	145	156	44.19	47.55	TS-11	gouge - N/R	
D864440	T69-2	Main	NQ	156	167	47.55	50.90		gouge - N/R	gougy
D864441	T69-2	Main	NQ	167	174	50.90	53.03		0.009	red oxide ~170ft
D864442	T69-2	Main	NQ	174	181	53.03	55.17	TS-12	0.016	red ox. + trace sulphide
D864443	T69-2	Main	NQ	181	191	55.17	58.21		0.083	
D864444	T69-2	Main	NQ	191	201	58.21	61.26		0.046	Decreased gouge/oxide
D864445	T69-2	Main	NQ	201	220	61.26	67.05		0.106	core loss?
D864446	T69-2	Main	NQ	220	238	67.05	72.54		0.123	gougy; core loss
D864447	T69-2	Main	NQ	238	249	72.54	75.89	TS-13	0.041	
D864448	T69-2	Main	NQ	249	260	75.89	79.24		0.03	260-320 missing
D864449	T69-2	Main	NQ	310	320	94.48	97.53	TS-14	0.057	
D864450	T69-2	Main	NQ	320	330	97.53	100.58		0.085	SX gouge
D864451	T69-2	Main	NQ	330	340	100.58	103.63		0.128	Wk ox; Sx gouge
D864452	T69-2	Main	NQ	340	350	103.63	106.67	TS-15	0.159	
D864454	T69-2	Main	NQ	350	360	106.67	109.72		0.382	
D864455	T69-2	Main	NQ	360	371	109.72	113.08		0.216	
D864456	T69-2	Main	NQ - Whole	371	377	113.08	114.90	TS-16	0.189	Uncut core; 5ft samples
D864457	T69-2	Main	NQ - Whole	377	383	114.90	116.73		0.159	
D864458	T69-2	Main	NQ - Whole	383	389	116.73	118.56		0.125	
D864459	T69-2	Main	NQ - Whole	389	394	118.56	120.09		0.112	
D864461	T69-2	Main	NQ - Whole	394	399	120.09	121.61		0.135	
D864462	T69-2	Main	NQ - Whole	399	404	121.61	123.13		0.288	
D864463	T69-2	Main	NQ - Whole	404	409	123.13	124.66	TS-17	0.847	
D864464	T69-2	Main	NQ - Whole	409	414	124.66	126.18		0.328	
D864465	T69-2	Main	NQ - Whole	414	419	126.18	127.70		0.418	
D864466	T69-2	Main	NQ - Whole	419	424	127.70	129.23		0.168	
D864467	T69-2	Main	NQ - Whole	424	429	129.23	130.75		1.09	
D864468	T69-2	Main	NQ - Whole	429	434	130.75	132.28		1.77	
D864469	T69-2	Main	NQ - Whole	434	439	132.28	133.80		0.9	
D864470	T69-2	Main	BQ - Whole	439	444	133.80	135.32		0.8	NQ->BQ @ 442'
D864471	T69-2	Main	BQ - Whole	444	454	135.32	138.37	TS-18	2.01	
D864472	T69-2	Main	BQ - Whole	454	464	138.37	141.42		0.49	SX gouge
D864473	T69-2	Main	BQ - Whole	464	474	141.42	144.47		0.08	
D864474	T69-2	Main	BQ - Whole	474	484	144.47	147.52		0.06	
D864475	T69-2	Main	BQ - Whole	484	494	147.52	150.56	TS-19	0.07	
D864476	T69-2	Main	BQ - Whole	494	504	150.56	153.61		0.13	
D864477	T69-2	Main	BQ - Whole	504	514	153.61	156.66		0.14	
D864478	T69-2	Main	BQ - Whole	514	524	156.66	159.71		0.07	
D864479	T69-2	Main	BQ - Whole	524	534	159.71	162.76	TS-20	0.12	
D864480	T69-2	Main	BQ - Whole	530	540	161.54	164.58		0.13	
D864481	T69-2	Main	BQ - Whole	540	550	164.58	167.63		0.1	
D864482	T69-2	Main	BQ - Whole	550	560	167.63	170.68	TS-21	0.1	
D864483	T69-2	Main	BQ - Whole	560	571	170.68	174.03		0.1	
D864484	T69-2	Main	BQ - Whole	571	583	174.03	177.69		0.09	

Sample_ID	DH_ID	Zone	Core Size	From (ft)	To (ft)	From (m)	To (m)	TERRA SPEC	MAG SUS	NOTES
D864486	T70-13	Moly	NQ - Whole	818	823	249.31	250.84	TS-22	0.121	phyllic (ser, clay +/- trace Sx); Mo associated with mm scale, crosscutting QV; local breccia
D864487	T70-13	Moly	NQ - Whole	823	828	250.84	252.36		0.282	
D864488	T70-13	Moly	NQ - Whole	828	833	252.36	253.89		0.151	
D864489	T70-13	Moly	NQ - Whole	833	838	253.89	255.41		0.098	
D864490	T70-13	Moly	NQ - Whole	838	843	255.41	256.93	TS-23	0.169	YGS Mo date sample
D864491	T70-13	Moly	NQ - Whole	843	848	256.93	258.46		0.192	
D864492	T70-13	Moly	NQ - Whole	848	853	258.46	259.98		0.124	
D864493	T70-13	Moly	NQ - Whole	853	858	259.98	261.51		0.133	STOP
D864494	T70-13	Moly	NQ - Whole	315	320	96.01	97.53	TS-24	0.122	QFP (strained
D864495	T70-13	Moly	NQ - Whole	320	325	97.53	99.06		0.073	QFP with mm-scale Qz, Mo +/-cpy veinlets
D864496	T70-13	Moly	NQ - Whole	325	330	99.06	100.58		0.147	QFO/GRDR contact at 329'
D864497	T70-13	Moly	NQ - Whole	330	335	100.58	102.10		0.087	
D864498	T70-13	Moly	NQ - Whole	335	340	102.10	103.63		0.072	
D864499	T70-13	Moly	NQ - Whole	340	345	103.63	105.15		0.067	
D864501	T70-13	Moly	NQ - Whole	345	350	105.15	106.67	TS-25	0.062	
D864502	T70-13	Moly	NQ - Whole	350	355	106.67	108.20		0.294	actually ends ~353'?

Appendix D – Barresi Geoscience Ltd. Hyperspectrometry Report

Hyperspectral Survey and Alteration Study of Historical Drill Core From the Tad/Toro Property, Yukon Territory

Tad/Toro Property – Photo Source: Triumphgoldcorp.com

Report by Tony Barresi, Ph.D., P.Geo.
For Triumph Gold Corp.
October 2023

Contents

Introduction

Barresi Geoscience was contracted by Triumph Gold Corp. to provide hyperspectral analyses and interpretations of drill core samples from the Tad/Toro mineral exploration property, located in southern Yukon Territory within the Dawson Range. Objectives of the study were to:

1. Using hyperspectral technology, Identify and classify the main clay and white-mica group minerals that are present in Tad/Toro drill core.
2. Interpret alteration facies based on hyperspectral and other available data.
3. Comment on the viability of using hyperspectral studies for ore-vectoring within the Tad/Toro mineral system.

A total of forty-six rocks samples were collected from historical drill core, encompassing four drill holes: TT87-1, TT-T2, TT104, and TT-T70-13. The samples were delivered to Barresi Geoscience by courier. A single hyperspectral analysis was collected from each of the forty-six samples, always from the surface that best represented alteration mineralogy; in total forty-six hyperspectral reading were taken (Table 1).

Summary and Conclusions

Forty-five hyperspectral readings were taken from core samples representing four historical drill holes on the Tad/Toro property in the Yukon Territory. The samples define two main alteration facies, argillic, and phyllic. Three drill holes, TT87-1, TT-T2 and TT-T70-13 are dominated by kaolinite and are interpreted to be mainly argillic altered with minor domains showing evidence of patchy sparse phyllic alteration. Drill hole TT104 has argillic alteration near the top and is dominated by phyllic alteration below 24m. The samples generally define a broad and zoned alteration system such as is commonly related to porphyry copper-gold deposits. Given the well-defined character of the white mica/clay alteration assemblages noted in this study, the Tad/Toro property is considered to be highly amenable to ore-vectoring utilizing hyperspectral technology. Collection of surface samples, as well as further testing of historical drill core may help to place the alteration into geographical and geological contexts, that may highlight zoning patterns. Within the argillic domain, the Kx, scaler may help to identify fluid conduits and/or proximity to heat sources; within the phyllic alteration domains the WMCX scaler may serve as a similar vectoring tool. On a broader scale, it seems likely that the AlOH scaler may be useful in identifying Na-Al rich micas, which also tend to be related to higher temperature alteration domains.

Hyperspectral Survey

Hyperspectral Geology

Hyperspectral Geology is a light based, non-destructive technique that collects quantitative data within the Visual/Near-Infrared (VNIR) and Short-Wave Infrared (SWIR) portions of the electromagnetic spectrum (Figure 1). In the same way that the human eyes can detect shades of a colour based on subtle shifts in wavelengths within the visible potion of the spectrum, spectrometers can measure subtle changes in the reflected/absorbed energy within the VNIR and SWIR portions of the spectrum.

Different elemental bonds are related to specific absorption features. Cation-hydroxide, carbonate, and ammonia bonds, as well as water, are prominent between the 1300-2500 nanometer (nm) portions of the spectra. Combinations of these bonds have been linked to specific minerals through the development of reference libraries.

The elemental bonds that are responsive within the VNIR and SWIR portion of the spectra are well-suited to inform exploration for base and precious metals, as well as industrial minerals. Many deposit styles are associated with or comprise fine-grained phyllosilicates, clays, and carbonate minerals that are difficult to confidently identify visually. Hyperspectral identification of these minerals can allow for correct assignment of alteration facies and eliminate the problem of the use of non-specific field terms such as sericite and clay which are vague and inconsistently applied.

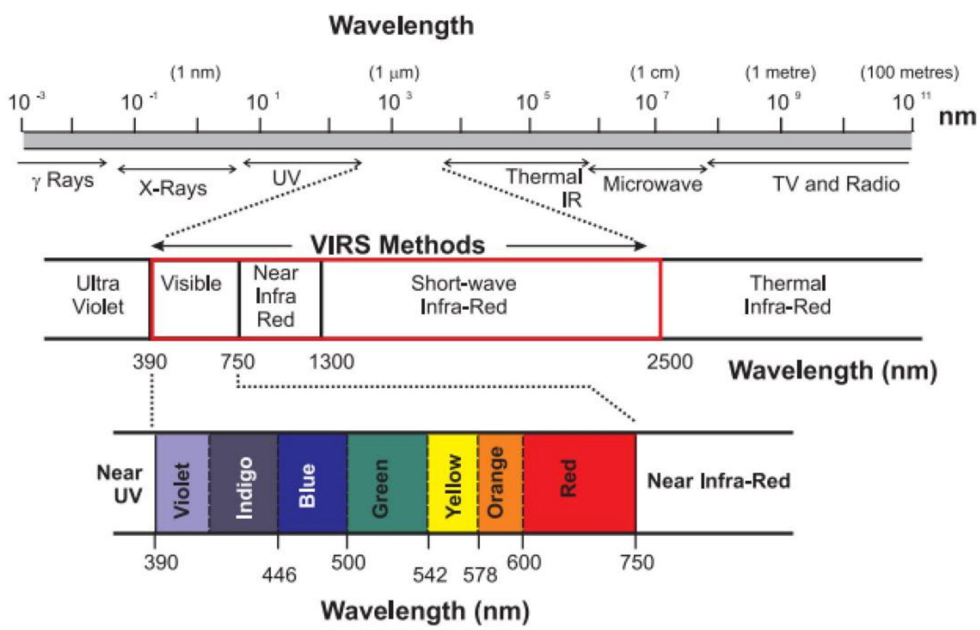

Figure 1 Electromagnetic spectrum

Spectral geology can not produce quantitative measures of alteration mineral intensity; a rock completely altered to kaolinite and a rock with trace kaolinite will both result in a kaolinite spectral signature. Thus, larger project-specific databases are ideal as they can provide indications of where minerals are present or absent, and how their compositions change. Proportions of minerals identified in a sample spectrum represent spectral abundance, e.g., the amount of reflection/absorption in the spectra that accounts for a specific mineral relative to another. Spectral abundance can not necessarily be equated to the relative abundance of the minerals in question. For instance, because the technique is light-based, light-coloured minerals are preferentially detected over dark and will account for high spectral abundances even if they are volumetrically insignificant compared to dark coloured minerals.

Sampling and Analytical Technique

Forty-six drill core samples were collected for hyperspectral analyses (Table 1) and a single hyperspectral reading was taken from each sample (Table 1, Figure 2). Readings were collected with a TerraSpec 3 hyperspectral analyzer. The TerraSpec 3 probe was placed directly on the core samples to collect spectra. The TerraSpec 3 probe collects spectra from a roughly 1 cm diameter field of view and has a spectral resolution between 3 and 6 nm between electromagnetic wavelengths of 350 and 2500 nm. The instrument underwent calibration procedures at least every fifteen minutes during its operation using a white reference material (Spectralon). Once spectra were collected, they were processed by the software program The Spectral Geologist (TSG) and The Spectral Analysist (TSA) was used to determine spectral abundances of the detectable minerals (Table 1, Figure 2).

In addition to identifying mineral spectral abundances, TSG was used to calculate several unitless spectral scalers (Table 1) including:

1. The White Mica Crystallinity Index (WMCX), which is the ratio of the depth of a water-related absorption feature near 1900 nm, and a prominent AlOH-bond-related absorption feature centred at 2200 nm. The index broadly defines relative crystallinity between samples. The higher the number the better the crystallinity of the white mica. Generally, the better the crystallinity of the white mica, the higher the temperature of crystallization.
2. The location of the 2200 nm absorption feature in white mica. This absorption feature shifts between approximately 2195 and 2230 nm based on the relative Al, Na and K concentrations of the mica. In porphyry-related alteration systems more intensely altered phyllic and argillic domains tend to have white mica with lower wavelength absorption features (high Al and Na), and within the potassic core of the same systems late pH-neutral fluids often result in overprinting white mica alteration with high 2200 nm absorption features (high K)
3. The Kaolinite Crystallinity Index (Kx), which is based on the measurement of the spectrum slope between 2160 and 2177 nm. That location on the spectral slope brackets a minor absorption feature that is unique to kaolinite on the broader slope of a more prominent absorption feature common to all white mica at approximately 2200 nm. The result is considered to represent increasingly well crystalline kaolinite as numbers decrease below 1, and numbers >1.0 are considered poorly crystalline. Poorly crystalline kaolinite can be a result of alteration from very low temperature hydrothermal/geothermal fluids but can also form from surface weathering of well crystalline kaolinite or other white micas, whereas well crystalline kaolinite results from higher temperature hydrothermal processes.

4. White Mica/Chlorite+Carbonate: The ratio of the depth of the 2200 nm AlOH and 2300 nm, MgOH-Ca absorption features. The ratio can help to determine relative abundances of the two groups of minerals.
5. Fe2+ Slope: The spectrum slope between 1300 and 1800 nm can help to define Fe bearing species such as Fe-chlorite, biotite, and Fe-carbonates.

Hyperspectral Results

The quality of the data collected from the Tad/Toro property samples with the use of the TerrSpec 3 were very high (Figure 2). The minerals identified through SWIR hyperspectral analyses include (in order of decreasing abundance): muscovite, kaolinite (including the species nacrite), muscoviticillite, paragoniticillite, montmorillonite, phengite, gypsum and jarosite. The minerals identified through VNIR hyperspectral analyses include (in order of decreasing abundance): goethite and hematite. No carbonate, minerals, chlorite or epidote were identified in this study, though they are described in drill logs from the Tad/Toro property. This is likely a result of sampling bias for light coloured minerals.

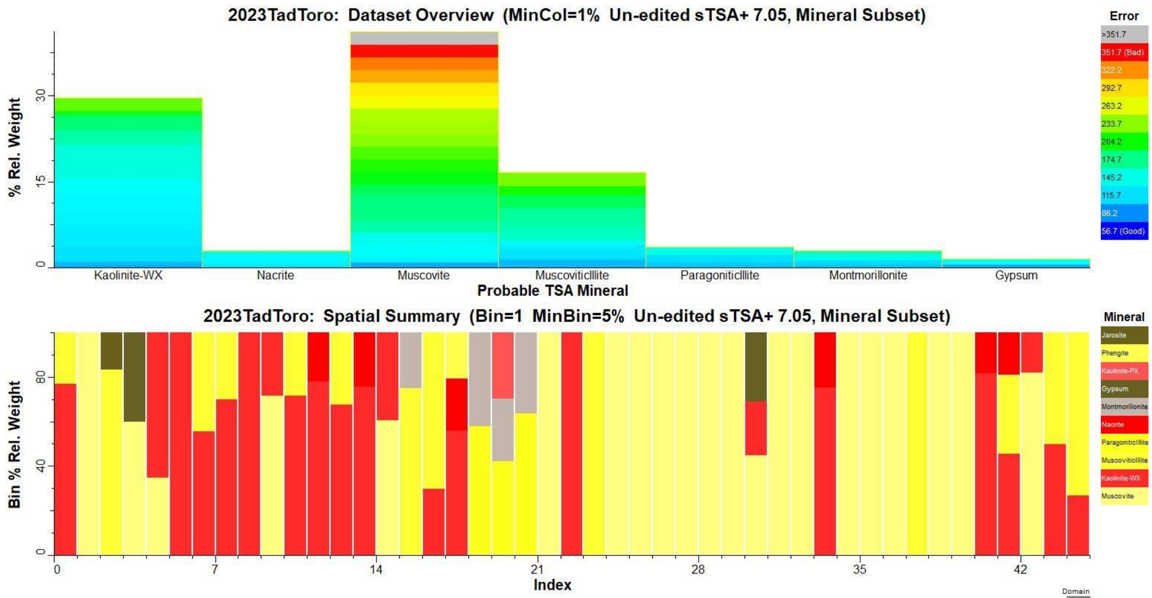

Figure 2 TSA output, showing interpreted minerals for each sample (bottom), and the general quality of data for each mineral pick (top)

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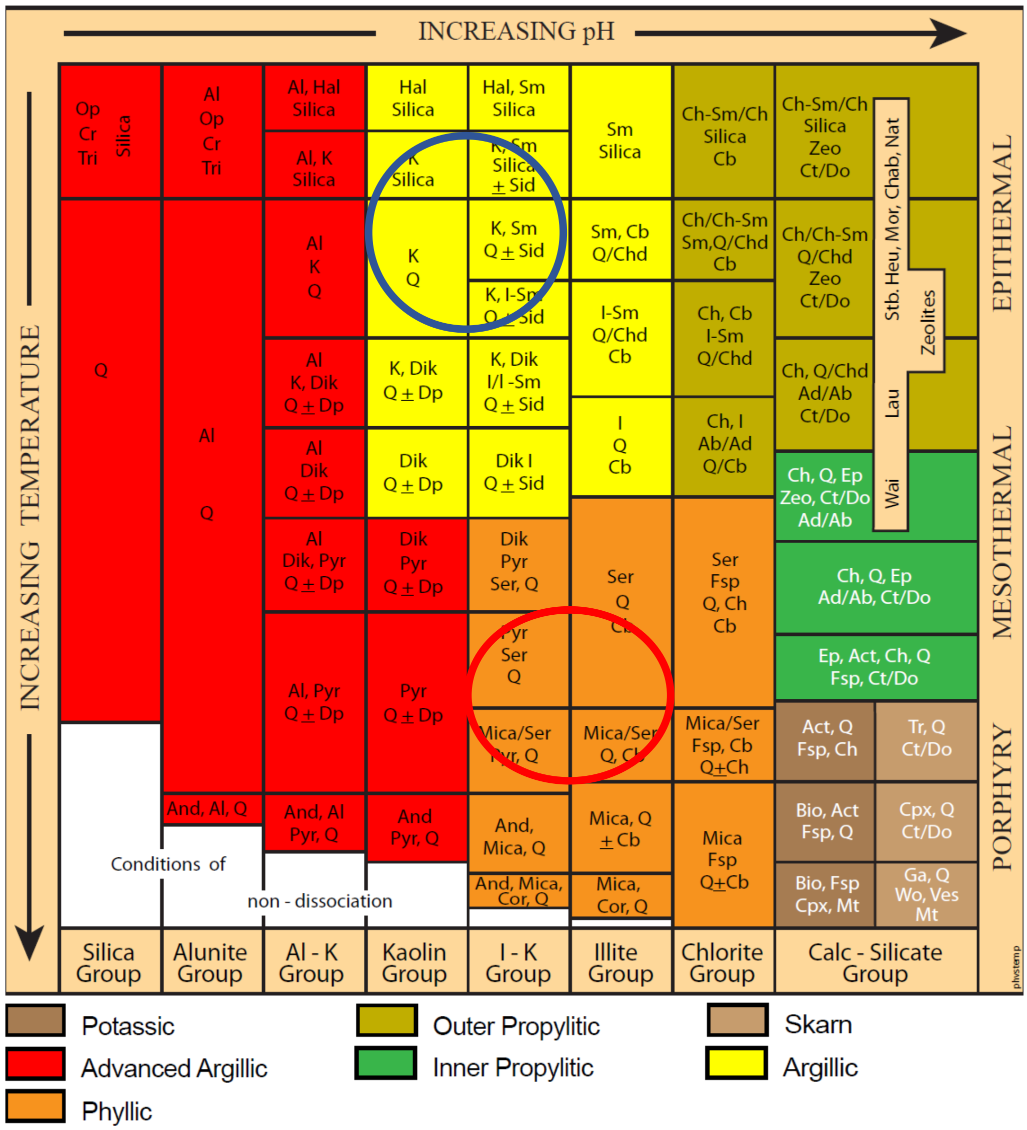
Table 1 - Tad/Toro Hyperspectral Results

Sample ID	Hole ID	From (M)	To (M)	1'st Abundance	%	2'nd Abundance	%	3'rd Abundance	%	1'st Abundance	AlOH	WMCX	Kx	WM/Chl	Fe2+slope	Kaolinite-PX	Kaolinite-WX	Nacrite	Muscovite	Phengite	MuscoviticIllite	ParagoniticIllite	Montmorillonite	Gypsum	Jarosite
				SWIR						VNIR	Scalers					SWIR Spectral Abundance (%)									
TS-01	TT 87-1	18.00	19.50	Kaolinite-WX	77	MuscoviticIllite	23		0		2207	1.35	1.003		0.91		77				24				
TS-02	TT 87-1	28.50	30.00	Kaolinite-WX	78	Nacrite	22		0		2207	1.00	1.004	1.40	0.98		78	22							
TS-03	TT 87-1	37.50	39.00	Kaolinite-WX	100		0		0		2207	1.28	0.982		0.93		1								
TS-04	TT 87-1	48.00	49.50	Kaolinite-WX	75.3	Nacrite	24.7		0		2207	0.86	1.015	1.32	0.97		75	25							
TS-05	TT 87-1	58.50	60.00	Kaolinite-WX	81.6	Nacrite	18.4		0		2207	1.27	1.005	1.42	0.90		82	18							
TS-06	TT 87-1	69.00	70.50	Kaolinite-WX	45.5	MuscoviticIllite	35.4	Nacrite	19.1		2207	0.83	1.068		0.88		46	20			35				
TS-07	TT 87-1	79.50	81.00	Muscovite	81.9	Kaolinite-WX	18.1		0		2207	1.48	1.075	1.49	0.93		19		82						
TS-08	TT 87-1	88.50	90.00	MuscoviticIllite	50.1	Kaolinite-WX	49.9		0		2207	0.93	1.052		0.89		50				6				
					0		0		0																
TS-09	TT T2	15.24	18.29	MuscoviticIllite	73.2	Kaolinite-WX	26.8		0		2206	1.00	1.119		1.00		27				73				
TS-10	TT T2	33.83	37.49	Muscovite	100		0		0		2205	1.34	1.154		1.00				1						
TS-11	TT T2	44.19	47.55	MuscoviticIllite	83.2	Jarosite	16.8		0		2201	1.05	1.134		1.00						83				17
TS-12	TT T2	53.03	55.17	Muscovite	59.9	Gypsum	40.1		0		2205	0.46	1.053	1.19	1.01				60					4	
TS-13	TT T2	72.54	75.89	Kaolinite-WX	65.4	Muscovite	34.6		0		2207	1.13	1.017	1.31	1.00		65		35						
TS-14	TT T2	94.48	97.53	Kaolinite-WX	100		0		0		2207	1.41	0.99	1.30	0.89		1								
TS-15	TT T2	103.63	106.67	Kaolinite-WX	55.6	MuscoviticIllite	44.4		0		2207	1.12	1.05	1.37	0.99		56				44				
TS-16	TT T2	113.08	114.90	Kaolinite-WX	69.8	MuscoviticIllite	30.2		0		2207	1.17	1.018	1.43	0.85		70				3				
TS-17	TT T2	123.13	124.66	Kaolinite-WX	100		0		0		2207	1.75	0.972		0.74		1								
TS-18	TT T2	135.32	138.37	Muscovite	71.4	Kaolinite-WX	28.6		0		2207	0.99	1.043		0.99		29		71						
TS-19	TT T2	147.52	150.56	Kaolinite-WX	71.4	MuscoviticIllite	28.6		0		2207	1.30	1.019	1.31	0.91		71				29				
TS-20	TT T2	159.71	162.76	Kaolinite-WX	67.6	MuscoviticIllite	32.4		0		2207	1.18	1.035	1.48	0.80		68				32				
TS-21	TT T2	167.63	170.68	Kaolinite-WX	75.5	Nacrite	24.5		0		2207	1.30	1.008		0.93		75	25							
					0		0		0				0.99												
TS-24	TT T70-13	96.01	97.53	MuscoviticIllite	70.3	Kaolinite-WX	29.7		0	Hematite	2208	1.35	1.038	1.34	1.00		30				7				
TS-25	TT T70-13	105.15	106.67	Kaolinite-WX	55.7	Nacrite	23.6	Phengite	20.6	Goethite	2207	1.29	1.042	1.55	1.01		56	24		3					
TS-22	TT T70-13	249.31	250.84	Muscovite	60.4	Kaolinite-WX	39.6		0		2207	0.99	1.052		0.94		40		6						
TS-23	TT T70-13	255.41	256.93	MuscoviticIllite	74.9	Montmorillonite	25.1		0		2207	1.02	1.096	1.40	0.91						75		25		
					0		0		0																
TS-26	TT104		6.00	ParagoniticIllite	57.7	Montmorillonite	42.3		0	Goethite	2197	0.76	1.069	1.17	1.00							58	42		
TS-27	TT104		16.00	ParagoniticIllite	42.1	Kaolinite-PX	29.7	Montmorillonite	28.3	Goethite	2206	0.73	1.074		1.00	30						43	28		
TS-28	TT104		24.00	ParagoniticIllite	63.4	Montmorillonite	36.6		0	Aspectral	2197	0.82	1.135		0.79							63	37		
TS-29	TT104		36.00	Muscovite	100		0		0		2210	1.16	1.034	1.13	1.00				1						
TS-30	TT104		46.00	MuscoviticIllite	100		0		0	Aspectral	2204	1.44	1.121		1.00						1				
TS-31	TT104		57.00	Muscovite	100		0		0		2203	1.19	1.054	1.15	1.01				1						
TS-32	TT104		69.00	Muscovite	100		0		0	Aspectral	2201	1.22	1.068	1.18	1.01				1						
TS-33	TT104		78.00	Muscovite	100		0		0		2207	1.28	1.038	1.09	0.98				1						
TS-34	TT104		87.00	Muscovite	100		0		0		2202	1.41	1.056	1.16	0.95				1						
TS-35	TT104		97.00	Muscovite	100		0		0		2207		1.12	1.49	0.99				1						
TS-36	TT104		107.00	Muscovite	100		0		0		2205	0.66	1.049		1.01				1						
TS-37	TT104		117.00	Muscovite	44.7	Gypsum	31.1	Kaolinite-WX	24.2	Aspectral	2207	0.76	1.032		0.99		24		45					32	
TS-38	TT104		127.00	Muscovite	100		0		0		2200	0.90	1.076	1.23	0.95				1						
TS-39	TT104		137.00	Muscovite	100		0		0		2204	0.93	1.108		1.01				1						
TS-40	TT104		147.00	Muscovite	100		0		0		2205	0.93	1.111		1.01				1						
TS-41	TT104		157.00	Muscovite	100		0		0		2201	0.85	1.093	1.25	0.91				1						
TS-42	TT104		167.00	Muscovite	100		0		0		2204	0.81	1.083	1.26	1.01				1						
TS-43	TT104		177.00	MuscoviticIllite	100		0		0		2202	1.35	1.088		1.00						1				
TS-44	TT104		187.00	Muscovite	100		0		0		2206	1.26	1.129		0.94				1						
TS-45	TT104		197.00	Muscovite	100		0		0		2208	1.10	1.088		1.00				1						

Alteration Assemblages:

Argillic: Twenty-seven samples comprise argillic facies alteration with spectrally dominant kaolinite, and lesser muscoviticillite and paragoniticillite. In almost all instances kaolinite is interpreted to be well crystalline and the Kx scaler for most kaolinite is <1.1, and < 1.0 for kaolinite where other minerals are absent. When kaolinite is present along with other white mica the Kx scaler is affected by interference at the 2200 absorption feature, which is why well crystalline kaolinite may register with numbers >1.0. In some instances, TSA has interpreted a specific species of kaolinite, namely nacrite, which is a high-temperature version of kaolinite produced exclusively in hydrothermal alteration systems. Argillic alteration dominates drill holes TT87-1, TT-T2 and TT-T70-13, as well as the top approximately 30m of TT104. Argillic alteration in the first three aforementioned drill holes all have the same mineralogical character with dominant kaolinite mixed with muscoviticillite, however, argillic alteration in drill hole TT104 comprises paragoniticillite with lesser montmorillonite and kaolinite. Kaolinite produces significant interference in the portions of the spectra that are measured to produce the AlOH and WMCX scalers so there are only two samples where these scalers adequately characterize white mica in argillic altered rocks; both are from the top of drill hole TT104. In these samples the AlOH scaler value is low, at 2197 nm, indicating a higher temperature alteration system, however, the WMCX is also low 0.76 – 0.82, likely as a result of retrograde degradation to the crystallinity. The argillic mineral assemblage at Tad/Toro is consistent with Corbett and Leach's (1998) Kaolinite and Illite-Kaolinite groups, resulting from relatively low temperature and low pH hydrothermal fluids (Figure 3).

Phyllic: Twenty-one samples comprise phyllic facies alteration with spectrally dominant muscovite, and in some samples retrograde or overprinting kaolinite. In drill holes TT87-1, TT-T2 and TT-T70-13 samples classified in the phyllic facies are subordinate to argillic altered samples. They have a random scattered occurrence rather than clustering, and all but one sample is also associated with kaolinite indicating that there is sparse patchy phyllic alteration across the domains tested by these holes, with a partial argillic overprint. Drill hole TT104 is dominated by phyllic alteration from approximately 36 m to at least the deepest sample at 197 m. Because these samples are mostly not mixed with kaolinite, the WMCX and AlOH scalers are considered to have relevant values. AlOH values range from 2204 – 2210 nm, with mean and median values of 2204. WMCX values range from 0.66 to 1.44, with a mean value of 1.4 and median value of 1.1. Samples between 107m and 167m depth in drill hole TT104 have WMCX values that average 0.83, and they are bracketed by samples with better crystalline with an average value of 1.3. The zone of lower crystallinity does not correspond to any notable features described in the drill logs or geochemical features in the assay results. The phyllic mineral assemblage at Tad/Toro is consistent with Corbett and Leach's (1998) Illite-Kaolinite and/or Illite Group(s), resulting from relatively high temperature and moderately low pH hydrothermal fluids (Figure 3).



Abbreviations: Ab - albite; Act - actinolite; Ad - adularia; Al - alunite; And - andalusite; Bio - biotite; Cb - carbonate; (Ca, Mg, Mn, Fe); Ch - chlorite; Chab - chabazite; Chd - chalcedony; Ch-Sm - chlorite-smectite; Cor - corundum; Cpz - clinopyroxene; Cr - cristobalite; Ct - calcite; Do - dolomite; Dik - dickite; Dp - diaspore; Ep - epidote; Fsp - feldspar; Ga - garnet; Hal - halloysite; Heu - heulandite; I - illite; I-Sm - illite-smectite; K – kaolinite; Lau - laumontite; Mt - magnetite; Mor - mordenite; Nat - natrolite; Op - opaline silica; Pyr - pyrophyllite; Q - quartz; Ser - sericite; Sid - siderite; Sm - smectite; Stb - stibnite; Tr - tremolite; Tri - tridymite; Ves - vesuvianite; Wai - wairakite; Wo - wollastonite; Zeo - zeolite.

Figure 3 Common alteration hydrothermal systems (Corbett and Leach, 1998). Ellipses represent Tad/Toro Property alteration assemblages. Blue Argillic; Red=Phyllic.

Hyperspectral Interpretation by Drill Hole

Drill holes TT87-1, TT-T2 and TT-T70-13 are dominated by kaolinite and are interpreted to be mainly argillic altered with minor domains showing evidence of patchy sparse phyllic alteration. Drill hole TT104 has argillic alteration near the top and is dominated by phyllic alteration below approximately 30m.

TT87-1 (n=8): Of the four drill holes tested this hole has the most consistent argillic alteration, with only one samples, at 81m depth, classified as phyllic. Four of the eight samples are 100% kaolinite, and four samples include identification of the kaolinite species nacrite. Samples from the bottom of the hole have mixed compositions with kaolinite as well as muscoviticillite or muscovite. Kaolinite in this hole is interpreted to be well crystalline and the Kx scaler averages 1.0015 in samples with 100% kaolinite.

TT-T2 (n=13): The top four samples in this drill hole, to a depth of 55.16, are dominated by muscoviticillite or muscovite, with only minor kaolinite. Jarosite and gypsum as also present. Below 55.16 well crystalline kaolinite is dominant and mixed with lesser amounts of muscoviticillite or muscovite. A sample from approximately 35m depth contains pure muscovite with an AlOH absorption feature at 2205 nm, and a relatively high WMCX value of 1.34. Three samples lower in the hole with pure kaolinite have low Kx values averaging 0.99.

TT-T70-13 (n=4): There are only four samples from this drill hole. They test two discrete depths with two samples each (96.01m – 1-6.67m and 249.31m – 256.93m). Three of the four samples fall in the argillic facies classification and one in the phyllic, but generally all the samples comprise a combination of muscovite or muscoviticillite with kaolinite. The deepest sample is the only one that does not contain kaolinite and it is a combination of muscoviticillite and montmorillonite. Sample TS-25 is the only sample in the full suite in which TSA identified phengite, but the spectral proportion is low (20%), and the interpretation is suspect.

TT104 (n=20): This drill hole has two distinct sections: the top three samples, at 6, 16 and 24m depth, are all dominantly paragoniticillite mixed with montmorillonite (the middle sample also has kaolinite); these samples also have goethite, which was identified in the VNIR spectrum. The bottom section from 36m – 197m is mainly unmixed muscovite, with two samples of muscoviticillite, and one sample that is muscovite mixed with gypsum and kaolinite (at 117m). The top section represents an argillic alteration facies with dominant paragoniticillite and subordinate kaolinite, which is distinct from the kaolinite dominant argillic facies represented in the other three drill holes. In the context of a broader alteration system with multiple white-mica compositions, paragonitic compositions (Na-Al rich), can be a sign of a more vigorous/higher temperature portion of a hydrothermal system compared to muscovitic or phengitic compositions. The lower portion of the drill hole represents a phyllic alteration facies dominated by muscovite. The muscovite has a, normally, 2202 to 2204 nm absorption feature with a few outliers that raise the mean and median AlOH scaler to 2204. Crystallinity is quite high at the top and bottom of the section with WMCX scaler values > 1.0, but samples between 107m and 167m have lower crystallinity (< 1.0, averaging 0.83). For the most part geochemical and lithological variation in TT104 do not correspond to changes in alteration, indicating that the hole has been affected by a broader alteration system, such as would be found within a porphyry-related hydrothermal system. However, the area encompassed by the top three samples, which represent a distinct alteration facies relative to the rest of the hole, encompass a geochemical domain with anomalously high Mo concentrations.

Summary and Conclusions

Forty-five hyperspectral readings were taken from core samples representing four historical drill holes on the Tad/Toro property in the Yukon Territory. The samples define two main alteration facies, argillic, and phyllic. Three drill holes, TT87-1, TT-T2 and TT-T70-13 are dominated by kaolinite and are interpreted to be mainly argillic altered with minor domains showing evidence of patchy sparse phyllic alteration. Drill hole TT104 has argillic alteration near the top and is dominated by phyllic alteration below 24m. The samples generally define a broad and zoned alteration system such as is commonly related to porphyry copper-gold deposits. Given the well-defined character of the white mica/clay alteration assemblages noted in this study, the Tad/Toro property is considered to be highly amenable to ore-vectoring utilizing hyperspectral technology. Collection of surface samples, as well as further testing of historical drill core may help to place the alteration into geographical and geological contexts, that may highlight zoning patterns. Within the argillic domain, the Kx, scaler may help to identify fluid conduits and/or proximity to heat sources; within the phyllic alteration domains the WMCX scaler may serve as a similar vectoring tool. On a broader scale, it seems likely that the AlOH scaler may be useful in identifying Na-Al rich micas, which also tend to be related to higher temperature alteration domains.