2022 Assessment report for SOT and POL claims

THE SANDS OF TIME EXPLORATION PROJECT

GEOCHEMICAL REPORT

Cover image: panoramic view over the SOT claims.

Jack Milton, Ph.D., P.Geo., operator and owner.

31st January 2023

Dates of fieldwork 8th Sep to 11th September 2022

Claims SOT 1 to SOT 191 (YE98224-YE98424), SOT 192 to SOT 195 (YF83126-YF83129), POL 1 to POL 10 (YE98401 to YE98410), POL 11 to POL 88 (YF83130-YF83207).

NTS 115J10 and NTS 115J11.

62.662° to 62.727° N and 138.95° to 139.33° W

Whitehorse Mining District

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EXECUTIVE SUMMARY

Soil samples were taken at the SOT claims in the area 17 km WSW of the Casino deposit, Dawson Range, Yukon, in a drainage that has anomalous Casino Suite age zircons and gold grains potentially associated with concealed and unmapped Casino suite intrusive rocks. Soil samples were analyzed for geochemistry, and a significant copper anomaly was identified, approximately 800 m in strike length and up to 300 m wide, similar to a soil anomaly anticipated in an oxide leach cap above a Casino-like porphyry Cu-Au-Mo deposit.

Follow-up of the copper anomaly with additional soil sampling, mapping, prospecting, and an induced polarization geophysical survey is recommended to better delineate targets for Cu-Au-Mo mineralization related to Casino Suite rocks for follow-up drill testing.

Soil sampling at the POL claims did not produce any significant anomalies, however the southwestern side of the claim block produced a stream sediment gold anomaly and has only a few soil samples in this area. The source of the gold grains and Casino suite zircons in stream sediments remains yet to be discovered, and follow-up work is recommended.

INTRODUCTION

A paucity of outcrop and deep oxidation has challenged the traditional methods of early-stage exploration for porphyry Cu-Au-Mo deposits in the Dawson Range, Yukon: stream sediment sampling, soil sampling and prospecting. A method has been developed within this project from 2020 to 2021 to detect Casino Suite intrusive rocks over large areas of the Dawson Range, at relatively low-cost, by dating zircons contained within stream sediments. The small volume ~78-72 Ma Casino Suite intrusive rocks are intimately associated with porphyry Cu-Au-Mo mineralization across the SW Yukon and these granitoids are difficult to distinguish from the granitoids of the Dawson Range Batholith, particularly given the lack of outcrop providing little control on regional geological maps. Late Cretaceous porphyry mineralization occurs in a belt parallel to the Big Creek fault, from Klaza to Casino. A conspicuous gap is present from Casino 150 km NW to the late Cretaceous Taurus and Bluff deposits in eastern Alaska, and within this gap are large areas of Dawson Range Batholith that have not seen much previous exploration activity, with no known late Cretaceous porphyry deposits.

Dating zircon grains in large numbers has until recently been prohibitively expensive, but with the advent of LA-ICP-MS, the cost of doing systematic large-n sampling has come down substantially to levels where it may be deemed feasible for use in mineral exploration (e.g., Lee et al., 2021). Trace element chemistry is measured during the LA-ICP-MS process in addition to the U-Pb dating at little additional expense. The trace element signatures of zircon have recently been linked to predicting porphyry fertility and provide another layer for exploration targeting (Dilles et al., 2015; Lee et al., 2020). Porphyry indicator minerals have been developed to detect porphyry deposits in nearby surficial sediments such as tills, stream sediments and sands (Averill, 2011; McClenaghan et al., 2020).

The Sands of Time project used stream sediment zircon U-Pb geochronology, zircon trace element geochemistry, porphyry indicator mineralogy of stream sediments, and fine-fraction stream sediment geochemical sampling to explore for porphyry deposits at the headwaters of creeks in the Dawson Range, west of the Casino deposit in 2020 and 2021. In April 2021, the SOT claims were staked on the results of the 2020 Sands of Time YMEP supported project. The follow-up 2021 YMEP supported stream sediment zircon, silt and soil sampling carried out on the SOT claims identified anomalous drainages that were small enough to be targeted with highly focused soil sampling.

The Polaris (POL) claims were staked initially in September 2021 and expanded in April 2022, based on the results of 2020 and 2021 YMEP zircon and bulk sample mineral data – the claims cover a drainage bearing stream sediments with anomalous Casino suite age zircons and gold grains.

This report describes the YMEP supported soil-sampling program carried out in 2022 on both the POL and SOT claims.

LOCATION AND CLAIMS

The Sands of Time (SOT) and Polaris (POL) claims are located within the traditional territories of the Selkirk and Tr'ondëk Hwëch'in First Nations, on crown land. The SOT claims are ~13 km south-west of the Casino deposit, 25 km south of the Coffee deposit and 25 km southeast of the Boulevard project. The POL claims are not contiguous with the SOT claims and are located approximately 5 km west of the SOT claims. This project was conducted on the SOT claims under the authority of Class 1 exploration notification Q2022_0210, and on the POL claims under the authority of Class 1 exploration notification Q2022_0211.

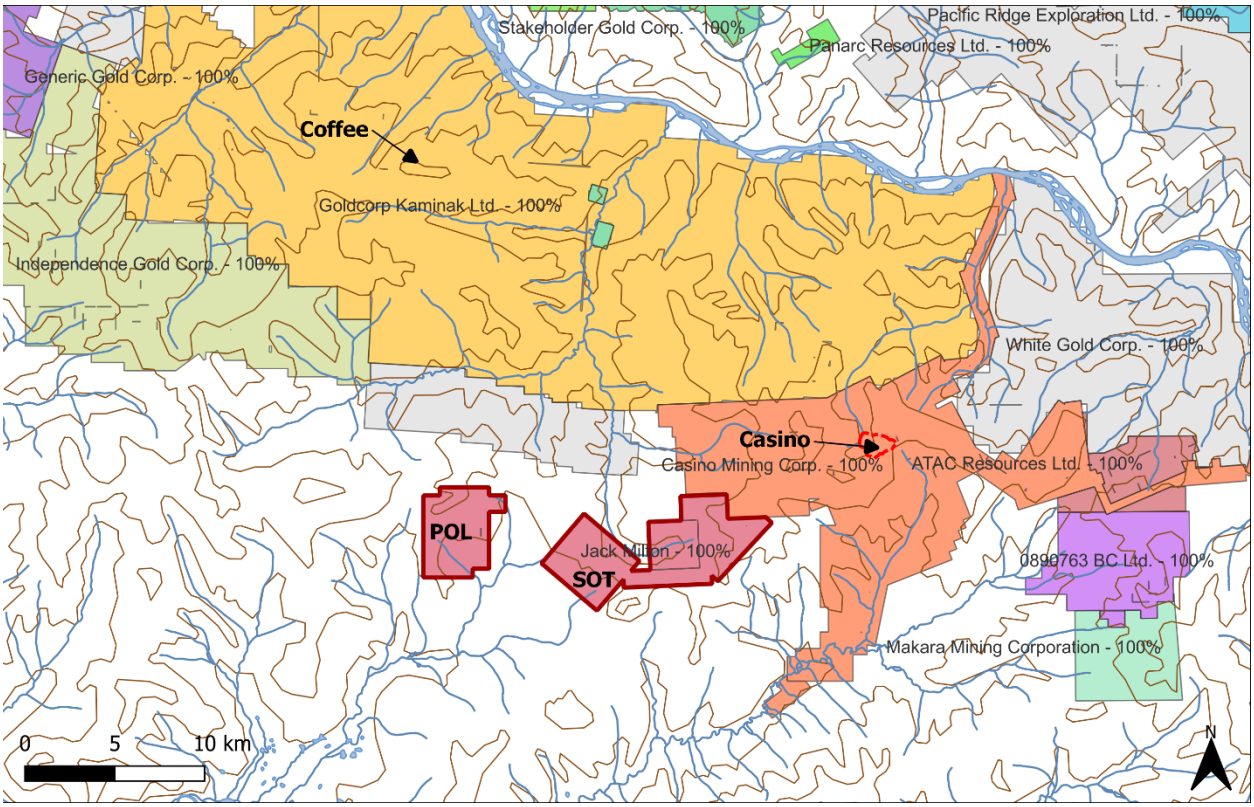

Figure 1 Location map for the POL and SOT claims relative to the Casino Cu-Au-Mo porphyry deposit and the Coffee Au deposit, south of the Yukon River, Dawson Range, Yukon.

A full listing of claims, grant numbers, renewal information and statement of expenditures is listed in Digital Appendix 4.

ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

The Sands of Time project is located approximately 305 km NW of Whitehorse, and 150 km due south of Dawson City, within the Whitehorse mining district of Yukon, Canada. No year-round roads connect to the project area. Access is best achieved by helicopter from Dawson City or Whitehorse. Access could be possible by barge from the Yukon River, and then by 4x4 vehicle along exploration roads to the Casino property and

adjoining Canadian Creek property. An old exploration trail crosses the project area, and an old airstrip, named Polaris, is located on the POL claims but is overgrown. There are airstrips nearby at Casino and Boulevard.

The project area covers part of the Dawson Range from elevations between 550 and 1,500 metres. The Dawson Range is characterized by rounded rolling hills with sparse cover of scrubby vegetation in the alpine and more thickly vegetated and forested, moderately to steeply incised valleys. The Yukon River is 25 km to the north of the project where it flows to the west. The cold, long and dark winters of the Yukon make the most comfortable and practical season for exploration run from approximately June through to September.

HISTORY

The project and surrounding area have a few scattered minfile locations based on the location of the DOYLE, CC, PRINCESS, DUCHESS, and GEP claims that were staked and explored around 1969-1975 immediately after the discovery of porphyry mineralization at Casino in 1969. Historic work includes geological outcrop and float mapping, stream sediment silt geochemistry, soil sampling for Cu-Mo, IP surveying and very limited reconnaissance drilling. A total of 4 vertical holes for a combined length of 600 m were drilled on the former CC claims, on the western side of the SOT claims, and one 150 m hole was drilled just to the south of the project area on the DOYLE claims.

In 2011 Ryan Gold Corp. ran a ridge line of soils on the BAILEYS claims on the north side of the project area. In 2012, Canadian Dehua International Mines Group Inc. flew a magnetic-radiometric survey over an area including the SOT and POL claims on the former QUO and GROUT claims.

No significant mineralization has been located to date.

YMEP supported programs in 2020, and 2021 have identified anomalous drainages on the SOT and POL claims that contain gold grains, and anomalous grains of Casino-suite age zircons.

GEOLOGICAL SETTING

The project area is mostly underlain by Devonian-Permian metamorphic rocks of the Yukon-Tanana terrane; and intrusive and volcanic rocks, mostly of Cretaceous-Palaeogene ages (Fig. 2).

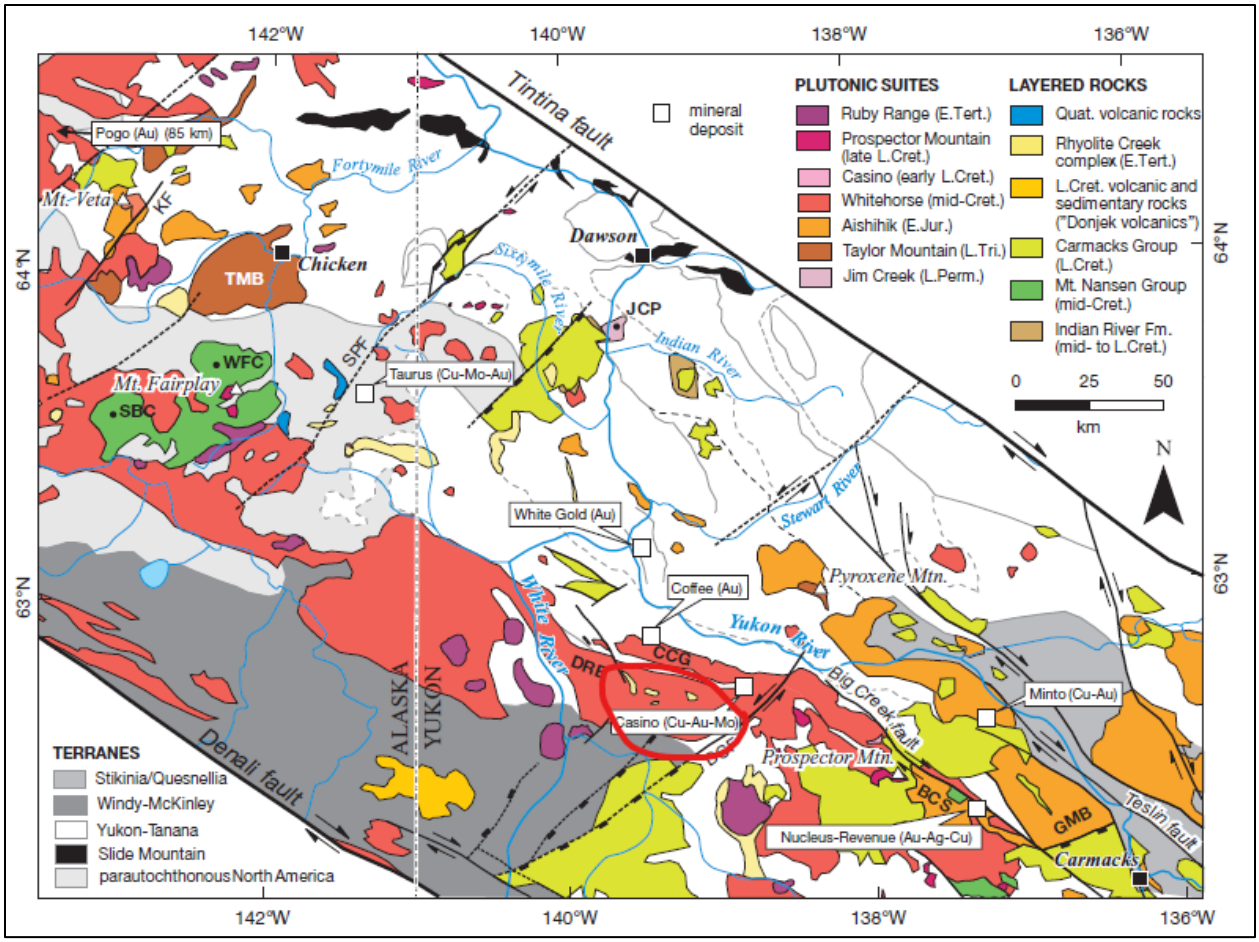

Figure 2 Regional Geology of project area, approximately outlined in red (from Allan et al., 2013).

The plutonic rocks of interest to this project include the Casino (early L. Cret.); Prospector Mountain (late L. Cret.); Whitehorse (mid-Cret.); Ruby Range (Palaeogene); Aishihik (E. Jur.); and Pyroxene Mountain (L.Tri) suites (Allan et al., 2013; Fig. 3). The volcanic rocks of interest include the Rhyolite Creek complex (Palaeogene); Carmacks Group (L. Cret); and Mt. Nansen Group (mid-Cret.) (Allan et al., 2013; Fig. 3). The ages of these intrusive suites are summarized in Figure 4 and a comprehensive update and review of Jurassic magmatism is given by Sack et al. (2020). The key ages relevant to this project are the Casino Suite (~72-79 Ma) (Allan et al., 2013), Prospector Mountain Suite and Carmacks Group (70-68 Ma) (Joyce et al., 2015; Yukon Geological Survey, 2020), Rhyolite Creek Assemblage (~64-54 Ma) (Yukon Geological Survey, 2020). The mid-Cretaceous Whitehorse Suite in this area occurs as: the Dawson Range Batholith (~107-100 Ma, Figure 2), which can show local evidence of deformation; and the undeformed, smoky-quartz bearing Coffee Creek granite (~100-99 Ma) (Godwin, 1975; Ryan et al., 2013; Allan et al., 2013).

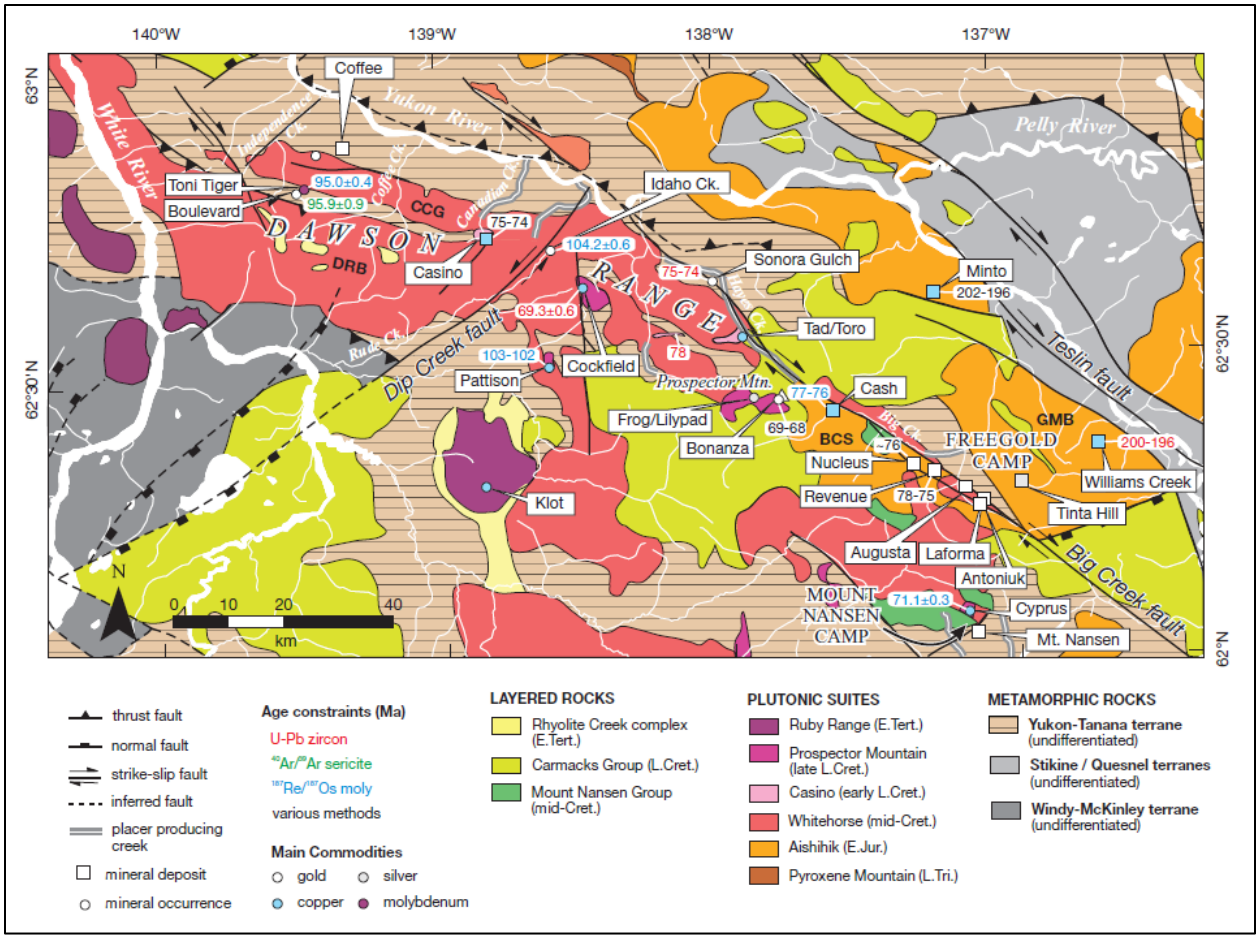

Figure 3 Volcanic and plutonic rocks of interest within the Dawson Range, significant mineral deposits and ages of mineralization (from Allan et al., 2013).

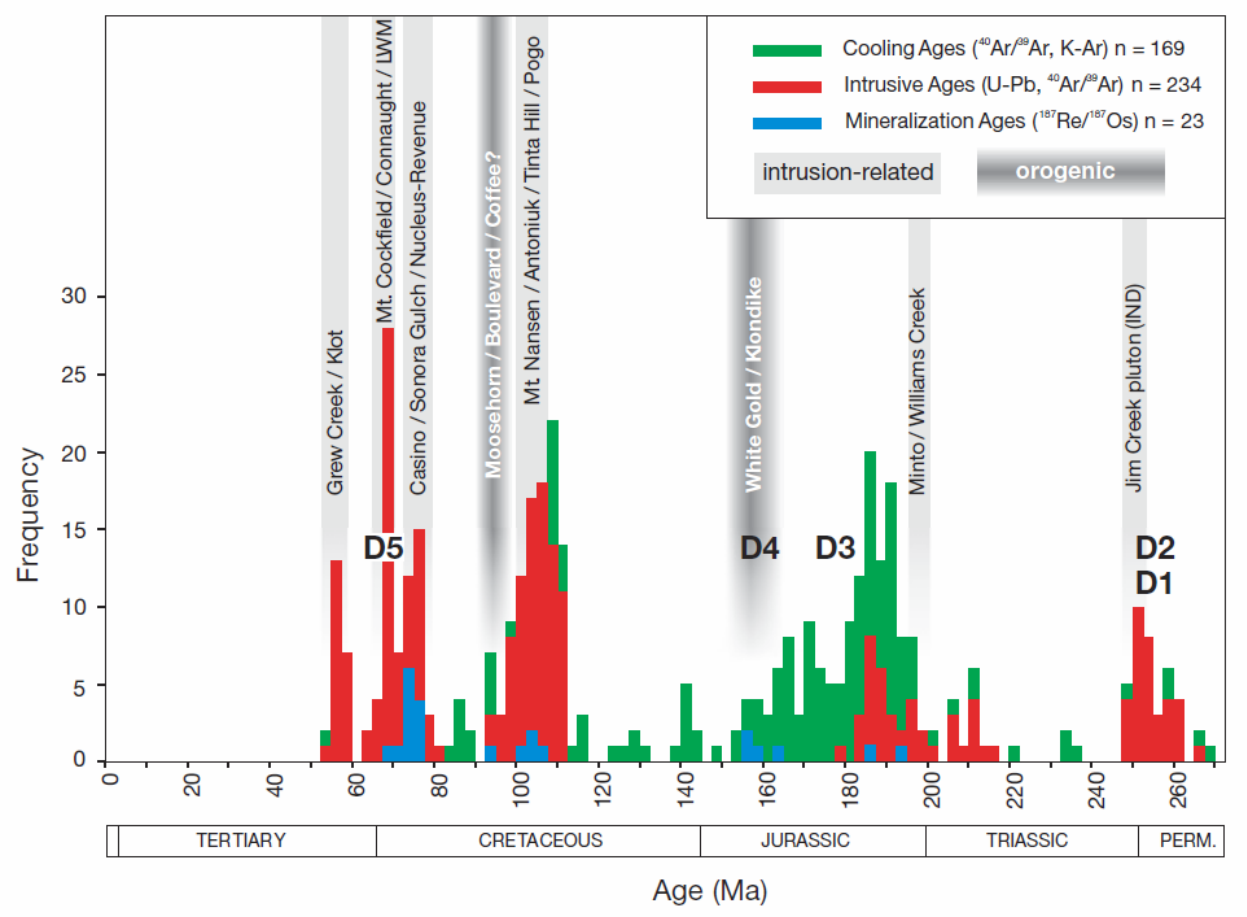

Figure 4 Age summary of intrusive events, mineralization, deformation and cooling ages of the Yukon-Tanana terrane from Allan et al. (2013).

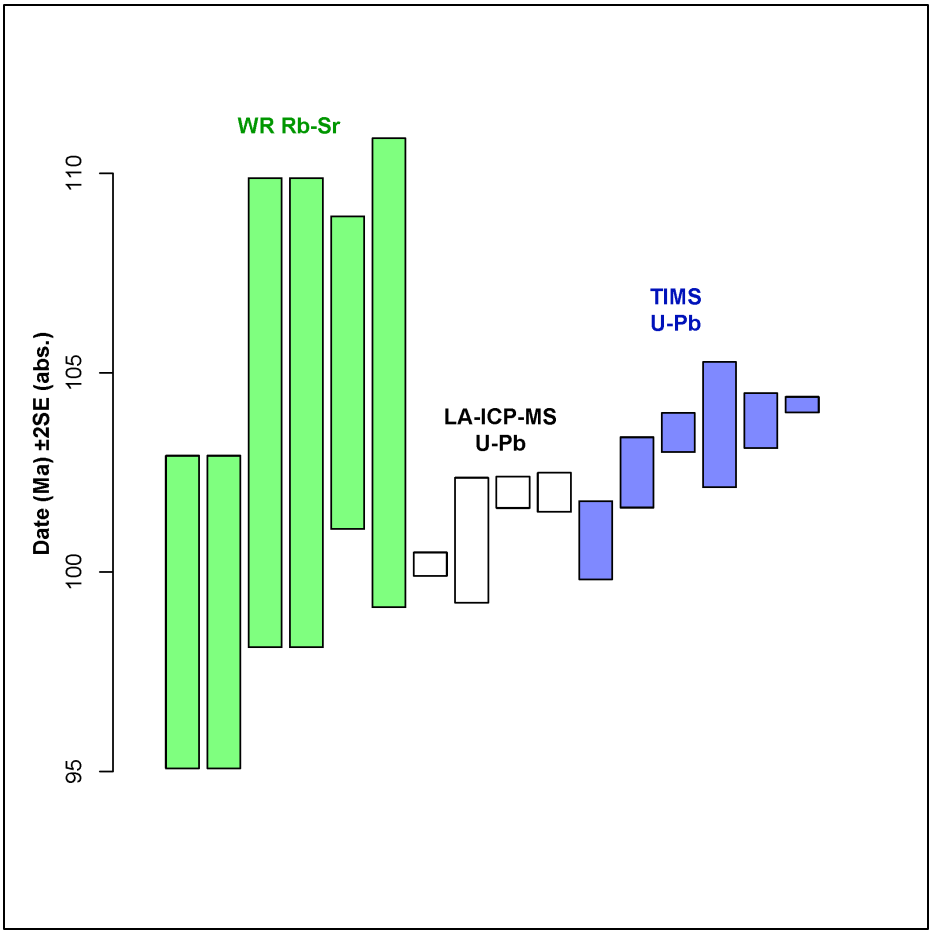

Figure 5 U-Pb zircon dates and whole rock Rb-Sr dates for the Dawson Range Batholith (data from Yukon Geological Survey, 2020).

DEPOSIT TYPES

The claims are being targeted for early-Late Cretaceous porphyry Cu-Au-Mo-Ag mineralization associated with the ~78-72 Ma Casino Suite intrusive rocks such as that found nearby at the Casino deposit (Casselman and Brown, 2017).

The area is also prospective for gold mineralization similar to that found at the nearby Coffee deposit.

SAMPLING AND EQUIPMENT

Hand augers were used to collect soil samples. The C horizon was targeted, but where soil profiles were not well developed, or cryoturbated, a mixed B/C sample was taken. Care was taken to avoid the organic layer, the White River ash, or wind-blown glacial loess where present. Sampling depths were from approximately 30 cm to 100 cm, typically 40 cm to 60 cm. Soil samples of ~0.5 kg were collected and placed into Kraft paper soil bags, labelled with a station number and sealed with flagging tape. Silt samples were taken by hand

scooping from the finest sediment available in natural areas of slack water and sediment-traps within active creeks and placed in Kraft paper bags sealed with flagging tape. Sample locations were recorded using a hand-held GPS (Garmin GPSMAP 64s). Notes, and back-up sample locations were taken with either an iPad using the FieldMove app and an external Bluetooth GPS (Garmin GLO) or written down in a field notebook.

Sampling was carried out by Jack Milton and three other samplers in September 2022. Access was had by fixed wing flight from Whitehorse to Casino, and then by Bell 407 from Casino to a small fly-camps established near to the sampling grids, then on foot each day to the sampling sites.

Each soil sampling site was numbered using a simple scheme with a single number from 001 to 999 prefixed by an 'S'. Silt samples were numbered "SiltX" where "X" was the sample number.

All soil and silt sample locations are shown on Figures 6, 7 and 8 and can be found merged with the assay data in digital appendix 1.

EXPLORATION METHODS

Soil and Silt Geochemistry

Soil and silt samples were flown to Whitehorse and submitted to Bureau Veritas preparation laboratory. Samples were dried at 60°C and sieved to -80 mesh (SS-80). Samples were digested in 1:1:1 aqua regia and analyzed by ultratrace ICP-MS (BV package AQ201).

RESULTS

Silt Geochemistry POL claims

A total of 8 silt samples were taken on the POL claims (Fig. 6). One silt contained 15.3 ppb gold on the southwestern side of the POL claims, where soil sampling density is low, and warrants follow up. All other elements were considered low, including copper. Full results listed in digital appendices 1 and 2.

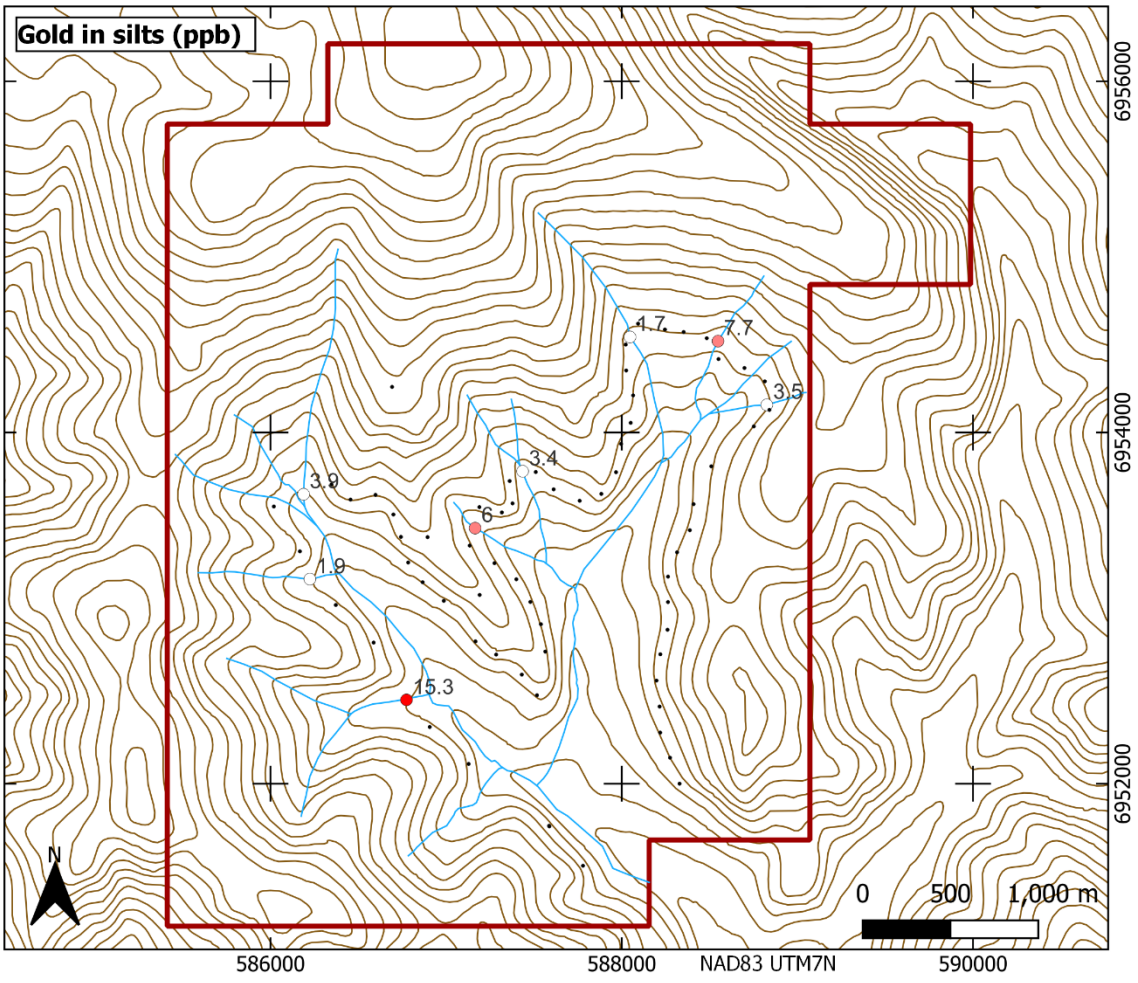

Figure 6 Fine fraction (-80 mesh) stream sediment aqua regia ICP-MS gold results (ppb). Soils are black dots.

Soil sampling POL claims

A total of 66 soil samples were taken along contour lines on the POL claims (Fig. 7). The lines were located above the elevation of the mapped influence of fluvial surficial materials (Lipovsky and Bond, 2012) such that the soil parental material reflects either colluvial veneer with some downhill mechanical dispersion or bedrock. Most of the claims were covered with a station spacing of ~150 m along lines, but on the southwesternmost line, the samples were only taken on NE facing colluvial slopes that flank the main valley and spacing was increased to between 300 m and 600 m due to logistical constraints, remaining somewhat undersampled. To partially compensate for the increased soil spacing, additional silt samples were taken from the NE flowing creeks that join the main creek. Copper or molybdenum in soil were not deemed anomalous for any samples. Gold in soil was not deemed anomalous, with the highest value in a single soil of 10.3 ppb Au. Full results listed in digital appendices 1 and 2.

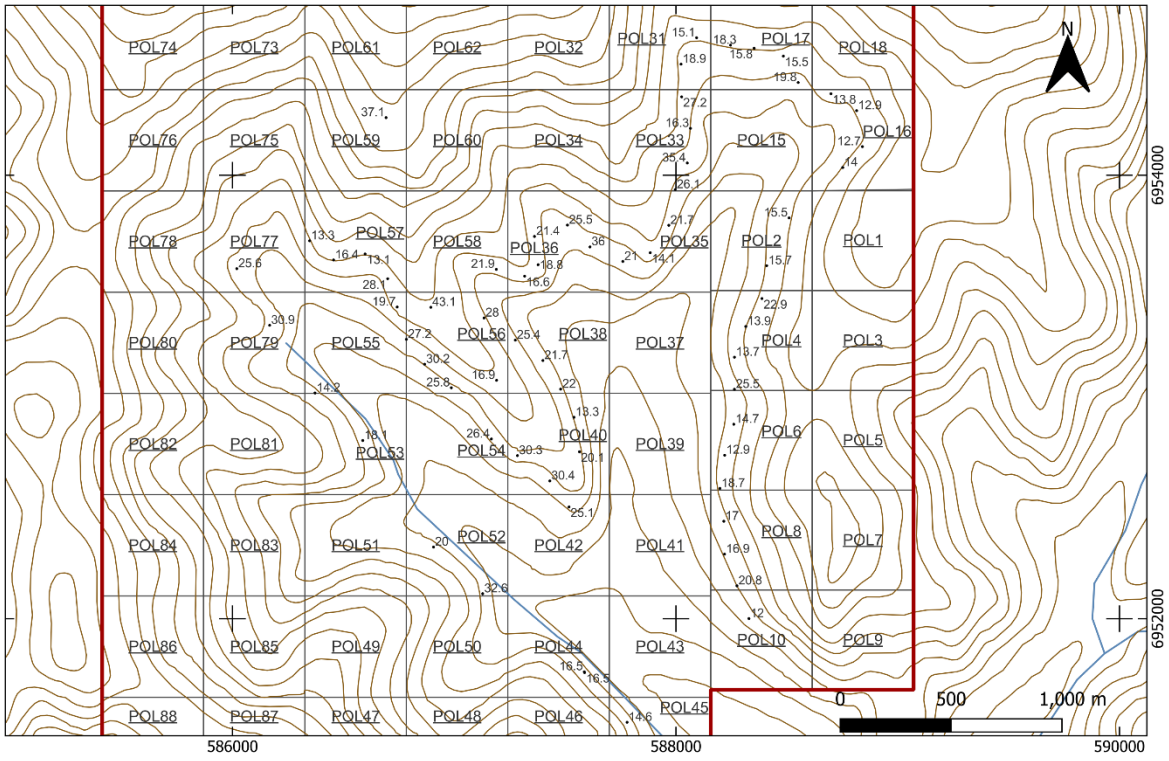

Figure 7 Copper in soil results (ppm aqua regia ICP-MS) – black dots indicate soil samples, labeled with the ppm Cu in soil value. POL claims labeled with claim name and number. Topography shown by contours. Coordinate reference system NAD83 UTM Zone 7N.

Soil sampling SOT claims

A total of 82 soil samples were taken on a 100 m x 100 m square grid (Fig. 8), centered over a 237.8 ppm Cu and 11 ppm Mo soil anomaly from a single 2021 reconnaissance sample taken at the head of a drainage with

anomalous Casino suite age zircons and gold grains in stream sediments. Soils ranged from well developed, with distinct brown B horizons to thin and rocky with poorly developed soil profiles. At least one site could not be sampled due to frozen soil at surface.

A significant Cu-Mo anomaly has been outlined throughout the centre of the grid, trending ESE-WNW, with a strike extent of approximately 800 metres and a width up to ~300 metres (Figure 8). The anomaly occurs along a ridge, where soils are well developed and generally free from significant influence from colluvium or wind-blown loess. Within this area, copper is approximately 80 ppm to 325 ppm, significantly higher than the local background of 10 ppm to 35 ppm Cu. Molybdenum anomalism is spatially coincident with copper, and ranges from ~4 ppm to 57.2 ppm Mo within the anomaly, compared to a typical background of less than 2 ppm Mo. The Cu-Mo anomaly is broadly coincident with anomalous K, Bi and Fe.

On the northeast corner of the grid, a thin soil containing much grey silty loess was developed on top of pebble to cobble size rocky colluvium that may represent a buried talus slope. Samples taken in this material are likely strongly diluted by loess and do not represent the underlying bedrock if the soils are developed on top of a talus field. Deeper soil pits or hand trenches are recommended to determine the nature of this cover. This area appears higher in Ca, S, Sr, Sb and poor in Th and Ti and lacks any Cu, Mo, or Au anomalies – this is interpreted to reflect the influence of a different bedrock unit, perhaps the mafic-ultramafic amphibolites to the north, as downhill dispersion in colluvium. This colluvial cover may be masking the underlying bedrock signature and may be limiting the apparent extent of the main copper anomaly on this area of SE facing slopes.

Full results listed in digital appendices 1 and 2.

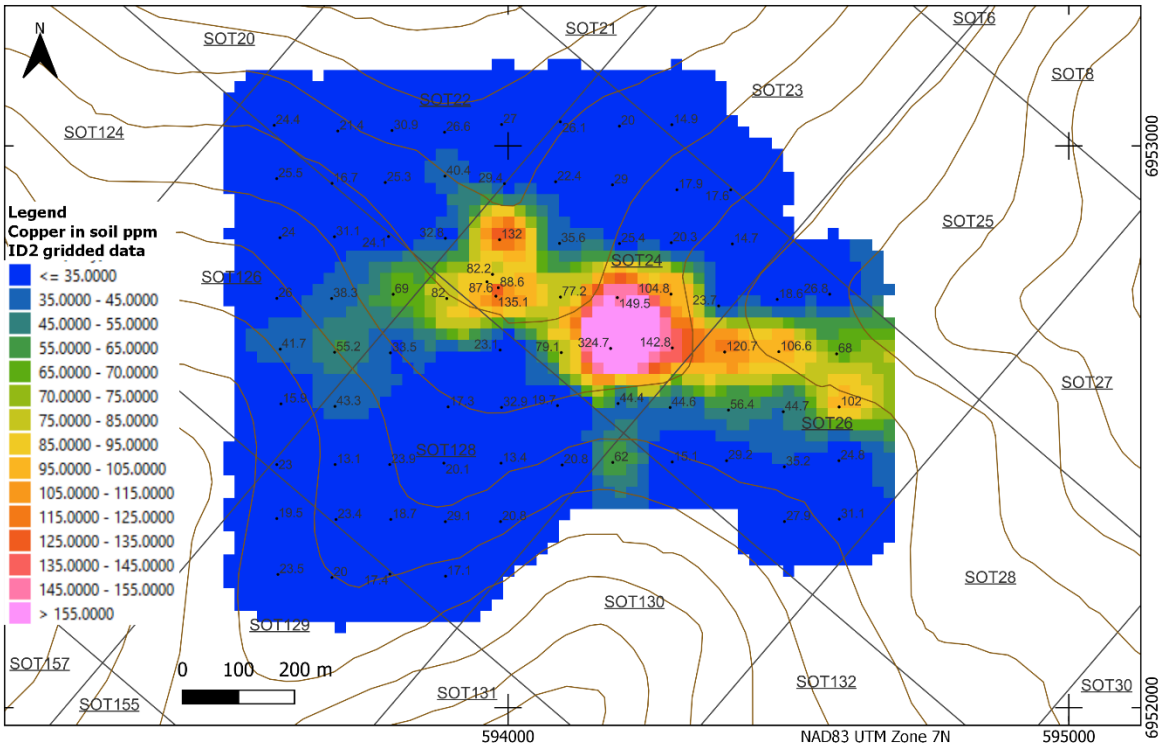

Figure 8 Copper in soil results (ppm aqua regia ICP-MS) – black dots indicate soil samples, labeled with the ppm Cu in soil value. Coloured layer is the inverse distance squared gridded interpolation of 2022 soil data. SOT Claims labeled with claim name and number. Topography shown by contours.

Historic drill core

While soil sampling, the location of some historic drill core in moderate to poor condition was noted, added to a compilation table below with the locations of core found in 2021. These likely correlate to the CC drillholes drilled by Amoco Petroleum in 1976. No further investigation was made of this core.

Location (NAD83 UTM Zone 7N)	Notes
[593,936-6,952,984]	Found on ground in 2021. Handheld GPS.
[594,200-6,952,697]	Spotted in 2021 and approximately located by GPS from the helicopter.
[593,760-6,952,851]	Found on ground in 2022. Handheld GPS.

EXPLORATION SIGNIFICANCE AND INTERPRETATIONS

SOT claims

Work from the 2021 program identified 1 Prospector Mtn Suite age zircon, and 1 Casino Suite zircon, 9 grains of scheelite, and 26 gold grains (20 if recalculated to 10 kg sample) in a drainage on the SOT claims. The

presence of Casino Suite and Prospector Mtn age zircons in this sample and lack of glacial sediments in the area strongly suggests that there is an unmapped bedrock source of Casino Suite and Prospector Mtn age zircon-bearing rocks in the drainage. The high Eu/Eu_N* values of 0.41 in Prospector Mtn age zircons, and 0.31 in Casino Suite zircons suggests that both intrusive suites are fertile with respect to porphyry mineralization. The high soil sample of 237.8 ppm Cu and 11 ppm Mo taken in 2021 at the head of this drainage was followed up with a 100 m x 100 m soil grid. A significant soil anomaly, 800 m in strike length and up to 300 m wide of over 100 ppm Cu with peak values of 325 ppm Cu was identified within this drainage. The northeastern part of the soil anomaly may be masked by transported cover, showing the potential for an even larger anomaly. In a region with extensive and deep oxidation, even moderate strength copper anomalies are significant, as deposits may have a leached oxide cap at surface, especially where they occur under more subtle topography or transported cover. The Casino deposit produces a strong Cu in soil anomaly due to the topographic position centered around the high point of Patton Hill that exposes the guts of the porphyry system – the enriched supergene zone is known to exposed at surface here, providing a source for a strong copper soil anomaly. In the absence of exposing an enriched supergene zone, a more moderate copper anomaly is anticipated, and the magnitude of the copper anomaly on the SOT claims is similar to that seen at the Casino deposit over areas of oxide leach cap where even bedrock averages ~300 ppm Cu. Therefore, the anomalism identified on the SOT claims has good potential for Casino style Cu-Mo-Au mineralization below a leached oxide cap.

In 2021 sample 21JM008B yielded 1 Casino Suite age zircon and 3 Prospector Mtn age zircon, 7 gold grains (9 on a recalculated basis), and Eu/Eu_N* values averaging 0.51 in the Prospector Mtn suite zircons and 0.43 in the Casino Suite zircon. This sample neighbours the drainage on the SOT claims with the large soil anomaly, gold grains and Casino suite zircons, so the source region of fertile Prospector Mtn/Casino Suite zircons may overlap both drainages.

The intimate time and spatial association of Casino Suite age rocks with Cu-Au-Mo mineralization across the Yukon makes these drainages prime targets for follow-up work. The small volume Casino Suite intrusive rocks are almost always associated with at least some degree of mineralization all across the Yukon, e.g., Casino, Cash, Tad/Toro, Nucleus-Revenue, Klaza. Therefore, the discovery of Casino Suite age zircons in samples within this project is very significant and could lead to the discovery of Casino Suite intrusions in the area that may host associated Cu-Au-Mo mineralization. The increasing recognition of Prospector Mtn age mineralization in the Klaza district is also encouraging.

POL claims

Most of the contour soil sampling on the POL claims did not produce any anomalies, however one silt sample on the southwestern side of the claim block was anomalous for gold and this area has only had a few soil samples taken at a very wide spacing. The source of the Casino Suite and Prospector Mtn age zircons and gold grains in stream sediments has not been identified, and remains to be located. The southwestern side of the claim block shows potential for hosting a late Cretaceous intrusion with associated Cu-Au-Mo mineralization.

CONCLUSIONS

- A significant Cu-Mo-(Bi-Fe-K) soil anomaly 800 m in strike and up to 300 m wide has been identified on the SOT claims at the head of a drainage bearing stream sediments with anomalous Casino-suite age zircons and gold grains. These anomalies may represent unmapped occurrences of Casino Suite porphyry intrusions that may host associated Cu-Au-Mo mineralization.
- The source of Casino suite zircons and gold grains on the POL claims has not yet been identified. A gold anomaly in a silt sample and lack of soil sampling in the southwestern portion of the claim block shows good potential for locating the source of the anomalous grains.

RECOMMENDATIONS

Recommended work for the SOT claims includes prospecting and hand-trenching within the Cu-Mo soil anomaly combined with several lines of deep-penetrating induced polarization surveying over the anomaly. The remainder of the drainages with anomalous age zircons should be soil-sampled on a 100 m x 100 m grid and prospected up-creek in order to trace the zircons back to a bedrock source searching for porphyritic rocks, intrusion or explosion breccias, veining, alteration and mineralization.

The POL claims should have further contour soils sampling at 150 m station spacing around undersampled areas in addition to ridge and spur soil sampling across the whole property. The whole claim block should be prospected to try and detect the source of the anomalous age zircons and any associated porphyry Cu-Au-Mo mineralization.

2022 EXPENDITURE STATEMENT

Item	Cost	Number	Amount
Flights to Casino	$ 2,394.00	1	$ 2,394.00
Soil sampler wages	$ 565.00	12	$ 6,780.00
preparation Aurora Geo			$ 2,700.00
Food			$ 550.00
Soil assays	$ 28.35	155	$ 4,394.25
Helicopter (Bell 407)	$ 2,795.00	2.4	$ 6,708.00
Fly camp costs	$ 250.00	4	$ 1,000.00
consumable field supplies			$ 500.00
Senior Geo	$ 875.00	6	$ 5,250.00
Report			$ 3,550.00
TOTAL			$33,826.25
Costs filed for SOT (50%)			$16,913.13
Costs filed for POL (50%)			$16,913.13

169 claim-years filed for the SOT claims and 169 claim-years filed for the POL claims.

Two days were spent on each claim block, therefore costs have been split 50:50 between SOT and POL.

The above expenditures relate to the value of the work filed for assessment credit not including other expenses that are eligible for YMEP reimbursement but not assessment (e.g. staking).

[Signed by Jack Milton, P.Geo. (BC), 31st January 2023.]

REFERENCES

Allan et al., 2013, Magmatic and Metallogenic Framework of West Central Yukon and Eastern Alaska, Society of Economic Geologists Spec Pub. 17

Anders, E. and Grevesse, N., 1989. Abundances of the elements: Meteoritic and solar. Geochimica et Cosmochimica acta, 53(1), pp.197-214.

Averill, S.A. 2011. Viable indicator minerals in surficial sediments for two major base metal deposit types: Ni-Cu-PGE and porphyry Cu. Geochemistry: Exploration, Environment, Analysis, Vol. 11 2011, pp. 279–291.

Bostock, H.S., 1959. Yukon Territory; in Tungsten Deposits of Canada, H.W. Little; Geological Survey of Canada, Economic Geology Series No. 17, p. 14-37.

Bouzari, F. and Hart, C.J.R., 2019, Assessing British Columbia porphyry fertility using zircons; *in* Geoscience BC Summary of Activities 2018: Minerals and Mining, Geoscience BC, Report 2019-1, p. 45–54.

Bouzari, F., Hart, C.J.R. and Bissig, T., 2020, Assessing British Columbia Porphyry Fertility in British Columbia Batholiths using Zircons. Geoscience BC Report 2020-08, MDRU Publication 450, 24p.

Casselman, S.C. and Brown, H., 2017. Casino porphyry copper-gold-molybdenum deposit, central Yukon (Yukon MINFILE 115J 028). *In:* Yukon Exploration and Geology Overview 2016, K.E. MacFarlane (ed.), Yukon Geological Survey, p. 61-74, plus digital appendices.

Day, S.J.A., Wodicka, N., and McMartin, I., 2013. Preliminary geochemical, mineralogical and indicator mineral data for stream silts, heavy mineral concentrates and waters, Lorillard River area, Nunavut (parts of NTS 56 -A, -B, and -G); Geological Survey of Canada, Open File 7428.

Dilles JH, Kent AJR, Wooden JL et al. 2015. Zircon compositional evidence for sulfur-degassing from ore-forming arc magmas. Econ Geol 110:241–251.

Ferry, J.M. and Watson, E.B., 2007. New thermodynamic models and revised calibrations for the Ti-in-zircon and Zr-in-rutile thermometers. Contributions to Mineralogy and Petrology, 154(4), pp.429-437.

Friske, P.W.B. and Hornbrook, E.H.W., 1991. Canada's National Geochemical Reconnaissance programme; Institution of Mining and Metallurgy, Transactions, Section B: Applied Earth Sciences, v. 100, p. B47–B56.

Godwin, C.I. 1975. Geology of the Casino Porphyry Copper-Molybdenum deposit, Dawson Range, Y.T. Ph.D. Thesis, UBC, Department of Geological Sciences.

Lee, R.G., Byrne, K., D'Angelo, M., Hart, C.J., Hollings, P., Gleeson, S.A. and Alfaro, M., 2020. Using zircon trace element composition to assess porphyry copper potential of the Guichon Creek batholith and Highland Valley Copper deposit, south-central British Columbia. Mineralium Deposita, pp.1-24.

Lee, R.G., Plouffe, A., Ferbey, T., Hart, C.J., Hollings, P. and Gleeson, S.A., 2021. Recognizing porphyry copper potential from till zircon composition: a case study from the highland valley porphyry district, south-central British Columbia. Economic Geology. Online First.

Lipovsky, P.S. and Bond, J.D., 2012. Surficial geology of Doyle Creek (115J/11), Yukon (1:50 000 scale). Yukon Geological Survey, Energy, Mines and Resources, Government of Yukon, Open File 2012-3.

Loader MA, Wilkinson JJ, and Armstrong RN, 2017. The effect of titanite crystallisation on Eu and Ce anomalies in zircon and its implications for the assessment of porphyry Cu deposit fertility. Earth Planet Sci Lett 472:107–119.

Mazdab FK, and Wooden JL, 2006. Trace element analysis in zircon by ion microprobe (SHRIMP-RG): technique and applications. Geochim. Cosmochim. Acta Suppl 70:405.

McClenaghan, M.B., McCurdy, M.W., Beckett-Brown, C.E., and Casselman, S.C., 2020. Indicator-mineral signatures of the Casino porphyry Cu-Au-Mo deposit, Yukon; Geological Survey of Canada, Open File 8711, 1 .zip file. https://doi.org/10.4095/322191

Ryan, J.J., Zagorevski, A., Williams, S.P., Roots, C., Ciolkiewicz, W., Hayward, N. and Chapman, J.B., 2013. Geology, Stevenson Ridge (northeast part), Yukon; Geological Survey of Canada, Canadian Geoscience Map 116 (2nd edition, preliminary), scale 1:100 000. Doi:10.4095/292407

Sack, P.J., Colpron, M., Crowley, J.L., Ryan, J.J., Allan, M.M., Beranek, L.P. and Joyce, N.L., 2020. Atlas of Late Triassic to Jurassic plutons in the Intermontane terranes of Yukon. Yukon Geological Survey, Open File 2020-1, 365 p.

Selby, D., Nesbitt, B. E., Creaser, R. A., Reynolds, P. H., Muehlenbachs, K., 2001a, Evidence for a nonmagmatic component in potassic hydrothermal fluids of porphyry Cu Au Mo systems, Yukon, Canada: Geochimica et Cosmochimica Acta, v. 65, p. 571 587.

Selby, D., and Creaser, R. A., 2001b, Late and mid Cretaceous mineralization in the Northern Canadian Cordillera: Constraints from Re Os molybdenite dates: Economic Geology, v. 96, p. 1461 1467.

Wanless, R K; Stevens, R D; Lachance, G R; Delabio, R N. Age determinations and geological studies, K-ar Isotopic ages, Report 13; Geological Survey of Canada, Paper no. 77-2, 1978, 60 pages.

Yukon Geological Survey, 2020. Yukon Geochronology – A database of Yukon isotopic age determinations. Yukon Geological Survey, http://data.geology.gov.yk.ca/Compilation/22 [accessed January 24th, 2021]

Zhong S, Seltmann R, Qu H, and Song Y, 2019. Characterization of the zircon Ce anomaly for estimation of oxidation state of magmas: a revised Ce/Ce* method. Mineral Petrol 113:755–763.

STATEMENT OF QUALIFICATIONS

- I am a Professional Geologist registered with Engineers and Geoscientists of BC.
- I graduated with a Ph.D. in Geological Sciences from the University of British Columbia in 2015.
- I graduated with an M.Sc. in Mining Geology from the Camborne School of Mines, University of Exeter, 2009.
- I graduated with a first-class honours B.Sc. in Applied Geology from the Camborne School of Mines, University of Exeter, 2008.
- I have worked in mineral exploration continuously since graduation on projects in Yukon, N.W.T. and B.C.

Jack Milton
Squamish, BC.

DIGITAL APPENDICES

Appendix 1: Sample locations merged with assays for soils and silts.

Appendix 2: Fine fraction stream sediment and soil aqua regia ICP-MS data.

Appendix 3: High resolution figures from this report.

Appendix 4: Claim listings and statement of expenditures