YMEP FINAL SUBMISSION FORM

Yukon

	Date submitted:
submit by January 31st to: *(winter placer projects may submit at pre-approved date)*	YMEP- EMR/ YTG Street address: 102-300 Main Street — YMEP@gov.yk .ca Mailing address: Box 2703, K-102 — phone: 867-456-3828 Whitehorse, Yt, Y1A 2C6 — fax: 867-667-3198

CONTACT INFO		***PROJECT INFO***	
Name:	Jacob	YMEP no:	19-085
Address:	11th floor, 1111 Melville St, Vancouver BC, V6E 3V6	Project name:	Monster
		Project type:	Target Evaluation
email	jacobverbaas@gmail.com	Project module:	
Phone:	7786822720		

Is the final report enclosed? ☑ yes ☐ no ☐ hard copy ☐ pdf copy ☐ digital spreadsheet of station location data

Comment:

PROJECT SUMMARY

Total project expenditures: 298,777

Number of new claims since March 31st: 0

Has an option resulted since March 31? ☐ yes ☑ no ☐ in negotiation

Number of calendar field days: 20

Number of person-days of employment: 195 paid ____ days of unpaid work

Total no. of samples: 98 rocks ____ silts ____ soils 28 other

Total length/volume of trenching/ shafting: 0

Total number of line-km of geophysics 6 IP line-km, ~900 gravity stations

Total meters drilled 0 diamond drill 0 RC drill 0 auger/percussion drill

Other products (provide details):

FINANCIAL SUMMARY

This is not an expense claim form. To request reimbursement of expenses, please submit a separate detailed expense claim form.

Total daily field allowance		Total contractor costs	213,868
Total field air transportation costs (helicopter/plane)	85k	Total excavating/ heavy equipment costs	
Total truck/ mileage costs		Total assay/analyses costs	3,656
Total wages paid		Total reclamation costs	
Total light equipment rental costs		Total report writing cost	
Other (please specify)	Please see detailed expense form	Total staking costs	
Other (please specify)			

(see reverse)

Your feedback on any aspect of the program:

YMEP truly helps us put more money towards exploration, it is effective & efficient!

The Department of Energy, Mines and Resources may verify all statements related to and made on this form, in any previously submitted reports, interim claims and in the Summary or Technical Report which accompanies it.

I certify that;

1. I am the person, or the representative of the company or partnership, named in the Application for Funding and in the Contribution Agreement under the Yukon Mining Incentives Program.

2. I am a person who is nineteen years of age or older, and I have complied with all the requirements of the said program.

3. I hereby apply for the final payment of a contribution under the Yukon Mineral Exploration Program (YMEP) and declare the information contained within the Summary or Technical Report and this form to be true and accurate.

Date 2019-OCT-16

Signature of Applicant [signature]

Name (print) Jacob Verbaas

(see reverse)

Costs Monster 1 - 304 Field Program 2019

Contractor	Type	Rate	cost	date
Allin Exploration	Camp, soil sampling		$31,296.92	June - July
Jacob Verbaas	Preparatory and on-site	$500/day, $50/hr	$19,000.00	April - August
Harley Slade	On-site and office geological consultant	$325/day, $30/hr	$9,933.86	July - September
Fireweed helicopters	Helicopter access		$70,403.42	July
Great River air	Fixed wing access		$15,145.20	July
Luke Bickerton	On-site and office geological consultant	$400/day, $35/hr	$9,729.24	July - September
MS Analytical	chemistry	91 samples	$3,656.32	August
Groundtruth exploration	Resistivity, camp cook, expediting, drone survey		$69,786.47	July
Rodrigo Diaz	Remote sensing		$7,500.00	April 1st - May 30th
MWH (Gravity survey)	Gravity surveying		$48,300.00	August 20 -30th
Southern Geoscience	Processing and inversion of geophysical data		$16,212.00	February - Septembe
Groundtruth exploration	Rock Property Analysis		$1,470.00	September 1 - 30th
	Total		**$302,433.43**	

Statement of work.

Go Metals commissioned a remote sensing lineament analysis survey over the entire property and surrounding district. The remote sensing survey included the analyses of new arcticDEM satellite date (contractor Rodrigo Diaz).

Go Metals commissioned a resistivity and drone survey by Groundtruth exploration

Alteration mapping was done by Luke Bickerton and Harley Slade.

Go Metals commissioned a gravity survey by MWH.

J. Verbaas
16-oct-2019

2019 Geological, geophysical and remote sensing work on the Monster Property

This report was prepared as partial fulfillment for YMEP grant 19-085 to Go Cobalt Mining Corp.

Authored by

Jacob Verbaas, BSc, MSc, PhD, GIT
VP Exploration – Go Metals Corp.

1. Summary

The Monster Property is a 64.5 km^2 IOCG-Co property in the Ogilvie Mountains of Yukon Canada. The property has been intermittently explored since the 70's, resulting in numerous surface copper and cobalt showings. Go Metals Corp. initiated its exploration on the claim in 2018.

Go Metals Corp. furthered exploration on the Monster Property in 2019 by performing a gravity survey, a drone photogrammetry survey, an IP/resistivity survey, and a geological alteration mapping survey. The gravity survey was focused on areas highlighted as prospective after exploration in 2018. The survey yielded 900 new data points. Gravity was terrane corrected using a 15 cm digital elevation model acquired with drone photogrammetry. The IP/resistivity survey targeted 2 magnetic anomalies of interest and both are (partly) coincident with IP anomalies. The alteration mapping identified zones of intense chlorite, hematite, specularite and carbonate alteration which are locally associated with mineralization. Approximately ninety rock samples were taken during the mapping which yielded grades of over 22% Cu and 1% Co.

The gravity survey has been processed to high detail and indicates anomalous areas underneath all three areas that were targeted. All IP lines indicate weak to high chargeability anomalies in the subsurface. Two IP anomelies, magnetic anomaies and gravity anomalies are coincident and represent priority targets for a future drilling program.

Contents

Digital Appendix (in .zip archive):

- 2019 Gravity survey, Bouger gravity map, inversions and raw data
- 2019 Resistivity survey, sections, maps, 3d files, and data
- 2019 Rock assay certificates, geophysical rock property data
- Historical gravity survey inversion

2. Introduction

2.1.Purpose

This report was prepared by Go Metals Corp. to be filed as an assessment report to the Yukon Mining Recorder. This report concerns geophysical, geochemical and geological work undertaken from April 2019 through August 2018 is reported.

The purpose of this work was to identify drill-targets for a future drill program.

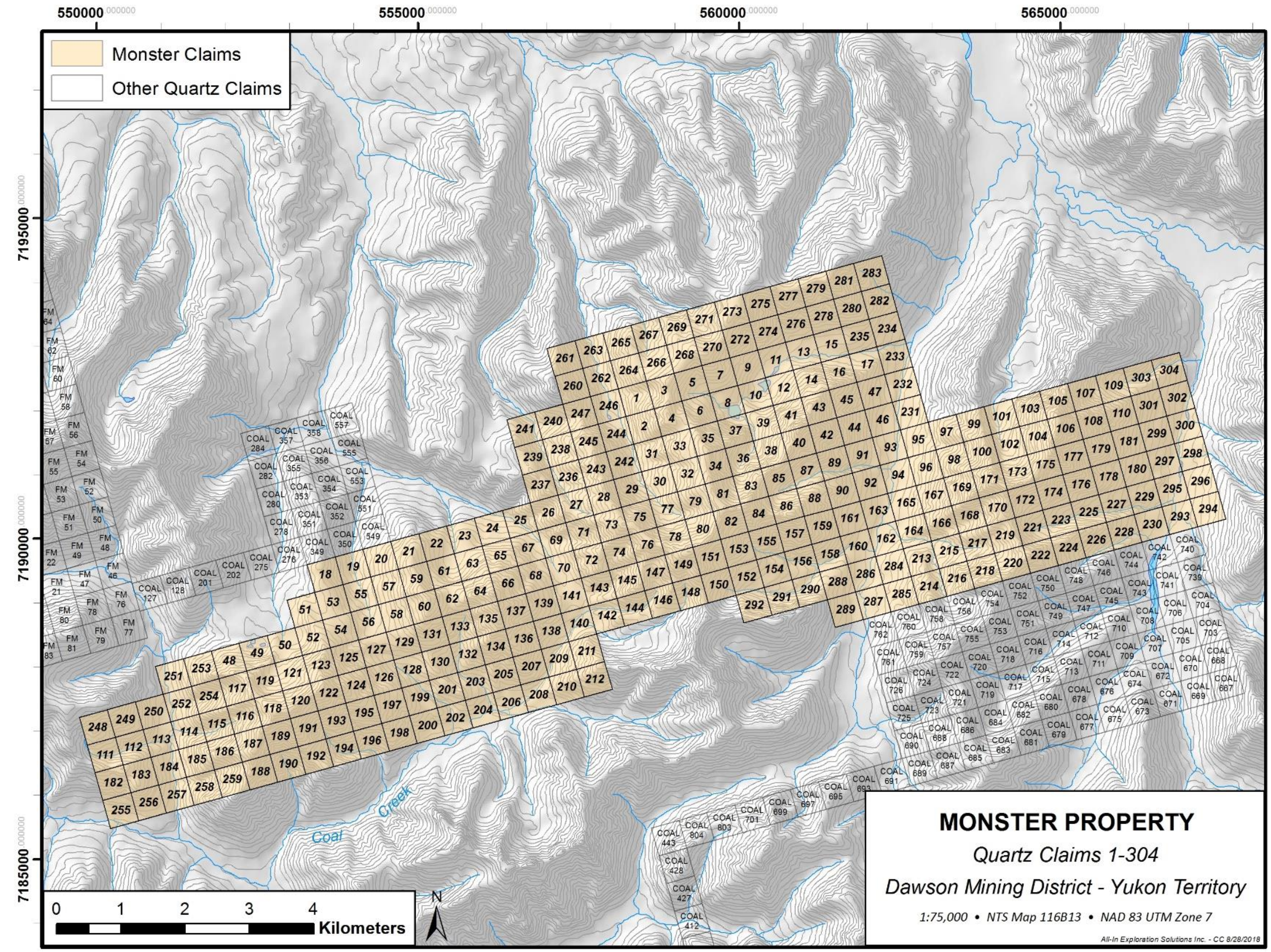

Figure 1. The 304 quartz claims of the Monster Property shaded in brown.

3. Property description and location

The Monster Property is located in central-Yukon, approximately 85 km northeast of Dawson City. The claim block encompasses part of the northern Wernecke Breccia belt, a roughly linear EW trending belt of hematitic Iron Oxide Copper & Gold (IOCG) mineralized breccia zones. The Wernecke Breccia is exposed in a Proterozoic window in the Ogilvie Mountain. The Property consists of 304 contiguous 1500 x 1500 foot claim blocks and has a total surface area of 63.5 km^2 (Figure 1). The center of the Property is located approximately at 64°49'48.59"N, 139°44'59.59"W. The Property consists of the Monster 1 – 304 quartz claims. Go Metals Corp. holds 100% interest in the Property. Claim data including grant numbers are reported in Appendix 6.

The Property encompasses several previous claim blocks that have been intermittently explored since the 70s. Historical work on the claim blocks has resulted in the description of numerous zones of Cu and Co mineralization using soil sampling, surface mapping, and geophysical surveys (Baknes, 1995; Falls and Baknes, 1995; Williams, 1997; Jones, 1999).

The Property is located within Tr'ondëk Hwëch'in First Nation Ttraditional territory. The Tr'ondëk Hwëch'in First Nation encourages early engagement between them and mining companies. This engagement is crucial for the success of mining and exploration projects.

Under the Quartz Mining Act of the Yukon Regulations the Company is required to notify the Chief of the Tr'ondëk Hwëch'in of its activities on the Property. Class I Notification was given in April 2019 and permission to work was granted shortly thereafter.

4. Accessibility, climate, local resources, infrastructure and physiography

4.1. Accessibility and infrastructure

The Monster property is located approximately 85 km north of Dawson City in the Ogilvie Mountains, Yukon Territory, Canada. The nearest road is the Dempster Highway, 75 km west of the Monster property. The nearest fixed wing airstrip is a 600 m long gravel airstrip on the South Tatonduk River about 10 km north of the property (64°55.7' N 139°52.3' W). The nearest helicopter base is in Dawson City. Dawson City is a mining town with hotels, motels, equipment and other services and is reachable by paved highway or aircraft from Whitehorse, Yukon.

4.1. Climate

The climate in the Yukon is typical of northern mountainous terrain. Snow commonly covers the property from late October to May, and the last patches of snow normally melt in late June. The best time for exploration activity is from June to early September. Snow may precipitate at any time of year, but it is unusual for a snowstorm to last more than week in summer. The mean annual precipitation on the Property is 300 – 400 mm. Summer temperatures in the valleys can reach over 20 °C during the daytime. The Yukon is close to the polar circle and the property receives more than 18 hours per day of direct sunlight during the peak of summer. During the winter the temperature can drop below -40 °C.

4.1. Local resources

Most of the workforce can be sourced from Dawson City, Whitehorse, and other towns in Yukon Territory. Dawson City hosts the most proximal helicopter, drilling, soil sampling and other mining services. Whitehorse hosts a larger and more varied workforce and is separated from Dawson City by 532 km of paved highway.

4.1. Physiography

The Ogilvie Mountains were unaffected by continental glaciation during the Pleistocene. Hence, relief on the monster property is over 1 km and elevation ranges from 900 m to over 2000 m. The terrain is steep and rugged, and the mountains are characterized by steep cirques and sharp ridges. Most of the property is above the treeline and covered by grasses, mosses and shrubs. Exposure is excellent on steep mountain ridges and minor on less inclined ridge crests. Valleys and lower parts of steep slopes are commonly scree covered.

5. History

5.1. 1975 – 1976

Work during 1975 and 1976 focused on cobalt and copper on the DAS and Cobalt Cirque mineral claims. These historical claims overlap with the current Monster mineral claim. Union Miniere Exploration and mining Corporation Limited (UMEX) owned and explored the DAS and Cobalt Cirque mineral claims through geological mapping and soil sampling. Over 2 field seasons UMEX analyzed 1059 soil samples for Cu and Co, and a subset of these samples were also analyzed for Zn, and another subset for Ag.

A total of 170 soil samples of claims partly covering the Cobalt Cirque mineral claim were analyzed for Cu, Zn, Co and Ag during a soil sampling survey in 1975. Statistical analyses yielded anomalies of Cu > 190 ppm, possibly anomalous Zn of up to 270 ppm, uniformly low Ag and no anomalous Co (Dyson, 1976a).

A total of 645 soil samples of the DAS mineral claim were analyzed for Cu and Co during a soil sampling survey in 1976. Statistical analyses yielded anomalies of Cu > 480 ppm and possibly anomalous Cu of 290 – 450 ppm, and anomalies of Co > 110 ppm (Dyson, 1976b).

A total of 244 soil samples of the Cobalt Cirque mineral claim were analyzed for Cu and Co during a soil sampling survey in 1976. Statistical analyses incorporated the results of the aforementioned 1975 soil survey results and defined four Cu anomalies of > 200 ppm and spot anomalies of >100 ppm Co (Dyson, 1977).

5.2. 1993 – 1998

Renewed interest in the Wernecke Breccia followed the recognition of IOCG deposits as a separate deposit class and the discovery of the giant Olympic Dam deposit in Australia (Hitzman et al., 1992). The Monster mineral claim was explored by Monster Joint Ventures in 1993. The Cobalt Cirque mineral claim was staked separately and named the ‘Cookie’ mineral claim by Pendisle Resources in 1995. Pendisle Resources changed their name to Blackstone Resources and continued exploration on the Monster and

Cookie Claims in 1996 and 1998. During this period, all of the exploration work was performed by Equity Engineering Ltd. partly in collaboration with Pamicon Developments Ltd. and Etheridge H. Williams.

A total of 872 soil samples and 377 rock samples were collected and analyzed from 1993 to 1998. Addionally geological, magnetic and gamma ray spectrometry maps were produced that helped define anomalous areas of Cu and Co.

Exploration in 1993 on the Monster and Monster west mineral claims, then 2 separate claims, confirmed the soil anomalies previously defined by UMEX, and confirmed the potential for Olympic Dam style mineralization on the Monster property. Several soil samples yielded Cu of > 1000 ppm, combined with anomalous Co, Zn, and Pb mineralization. Au, Ag and U in soil was uniformly low. Float samples yielded up to 1.70 % Cu.

Exploration in 1994 on the Monster claim, which then incorporated both the claims of 1993 and was significantly extended by further staking, focused on both rock and soil samples. Rock samples were both grab and float samples and demonstrated widespread alteration on the Monster claim. Grab samples yielded up to 25.9% Cu and 2.80% Co.

A total of 283 soil samples were collected in 1994 and analyzed for Au, Ag, Co, Cu, Pb, Zn and Ba. Statistical analyses of these soil samples was performed using 593 additional samples of other Wernecke Breccia zones within the Ogilvie Mountains (but not on the Monster mineral claim). In combination with older data, this soil sampling program outlined numerous anomalies of >300 up to >900 ppm Cu locally in combination with >50 up to >100 ppm Co.

A total of 11 stream sediment samples were collected in 1994. However, these samples were too few to allow a statistical treatment and were instead compared to regional background data. Elevated Cu and Co concentrations in stream sediment samples coincided with known mineralization in the catchment of the respective samples.

5.3. 2001 – 2007

In 2001 Monster Copper Resources Inc. acquired 100% interest in the Monster/Cookie property. Monster Copper Resources Inc. invested in a gravity survey over part of the Monster/Cookie property and identified a large anomaly of 3 mgal. Additional gravity surveying was done in 2002. The interpreted anomaly declined slightly in intensity but was still considered prospective. The anomaly was drilled concurrently with further gravity surveying in 2003. An improved set of elevation data was obtained in 2003 which allowed for the reinterpretation of all the gravity data. The previously identified strong gravity anomaly appeared to be mostly an artifact of the low-quality elevation data that was used for the terrane correction prior to 2003. As a result the drill hole that was meant to intersect the supposed gravity anomaly failed to intersect anything of interest.

In 2007 Monster Copper Resources Inc. analyzed 1071 pulps of soil and rock samples collected by Blackstone Resources from 1993 – 1998 for U. The highest U in grab samples was 32 ppm. The highest U in soil samples was 20 ppm.

5.4. Geophysical work

5.4.1. Induced polarization survey

UMEX obtained data from three IP lines on the DAS claim in the seventies. Unfortunately, the data itself is unreported. The anomalies were noted to be locally related to mineralization. However, some anomalies were not related to mineralization (Baknes, 1995).

5.4.2. Radiometric survey

In 1994 a ground radiometric survey was performed over 8 km of grid line in Monster West. Baknes (1995), noted that high K counts locally coincided with areas of known mineralization or elevated Cu in soil. However, some anomalies did not relate to mineralization (Baknes, 1995).

Normalizing K counts to Th counts is commonly used as a correction for the effect of primary lithology. However, on the Monster West claim some false anomalies were noted due to very low Th in local host rock (Baknes, 1995).

In 1996 High-Sense Geophysics Ltd. performed a helicopter borne magnetic (Section 5.4.3) and radiometric survey. EHW subsequently analyzed and interpreted the data (Williams, 1997). The regional survey was flown on a line spacing of 1000 m with a detailed survey flown over a smaller area (The Monster Property) with a spacing of 250 m. The survey was flown without control lines. In addition to that, the effects of instrumental noise and rapid changes in flight path resulted in minor degradation of the data quality (Williams, 1997). Regionally the radiometric data can outline the major lithological units on the basis of the K and U counts. Within the Wernecke Breccia the radiometric data indicate variable potassic alteration. Locally these data coincide with known areas of mineralization. The 1000 m line spacing used in the regional survey was too high to adequately assess potassic alteration within the Wernecke Breccia. However, the detailed survey on the Monster Property was successful in outlining potential areas of high potassic alteration (Williams, 1997).

5.4.3. Magnetic survey

A comprehensive magnetic survey was carried out in 1996 by High-Sense Geophysics. The magnetic data was collected concurrently with radiometric data (Section 5.4.2). The study consisted of a regional aeromagnetic survey and a detailed aeromagnetic survey. Regional aeromagnetic data was obtained using 1000 m line spacing. The results from this survey are useful for defining broad target areas and the regional structural setting (further described in section 6.2.4). The detailed aeromagnetic data was obtained using 250 m line spacing and allowed for the outlining of the general structure of the Monster Property and magnetic anomalies that are related to geology. However, 250 m line spacing is still too large to identify specific drill targets.

Differences in the ratio of magnetite/hematite are commonly the cause of magnetic highs in IOCG deposits. Magnetite is an order of magnitude more magnetic than hematite. The magnetic highs are locally correlated to zones of increased mineralization, notably on the east side of the Monster Property (Williams, 1997), and remain areas of interest.

The former Cookie Claim (currently the eastern part of the Monster Property) contains a distinct magnetic high that is modeled at 200 m below the surface. This magnetic high may have a southern dip and continue westward. Mineral showings on the Cookie Claim are bounded by E-W faults to the north and south and NE-SW structures to the east and west (Williams, 1997).

5.4.4. Gravity survey

Gravity surveys were performed from 2001 – 2003 by Monster Copper Resources. A gravity anomaly defined in 2001 and 2002 was followed up by additional gravity surveying and drilling in 2003. Unfortunately, after applying an improved terrane correction the gravity anomaly was discovered to be an artifact of elevation. The drill hole failed to intersect anything of interest (Setterfield, 2001, 2003; Setterfield and Tykajlo, 2002).

5.5. Go Cobalt, 2018

5.5.1. Remote Spectral Geological Survey

A remote spectral geological (RSG) survey was undertaken in April and May of 2018 to define targets for follow up ground work. The survey included a DEM lineament analyses. The full report is available in Verbaas, 2018.

The RSG survey indicated that general priority areas on the claim were located in the center and east of the Property. The NS trending valleys in these areas were soil sampled in order to test subsurface mineralization. Soil samples in the center valley returned elevated values of copper, cobalt and locally gold. Soil samples in the eastern valley do not indicate substantial subsurface mineralization.

Several new mineralized showings were identified. Most of the new showings, such as the Gremlin and Golem showing occur in pervasively chlorite altered host rock with potassic feldspar veining. Blebs, disseminations and veinlets of chalcopyrite and bornite occur locally within these rocks. One showing, the Griffin Showing is contained in laminated carbonate that is partially replaced by hematite and jasper.

Selected results are indicated in the table below.

Table 1. Select grab samples of new showings.

	New showings		
Zone	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**
Gorgon	0.82%	<0.01%	<5
Gnome & Golem	0.18%	<0.01%	<5
Griffin	0.13%	0.01%	<5
Gremlin	0.76%	<0.01%	<5

The spectral survey appears to have locally indicated copper showings. Only one new showing yielded 0.01% cobalt. The eastern part of the claim (the former Cookie claim) may be mainly prospective for copper.

5.5.2. Soil Sampling Survey

A total of 829 soil samples were collected for assays in two areas. The soil samples were collected using augers. Approximately 150 – 500 grams of soil was collected per sample. The location of the soil samples was recorded by a handheld GPS. Meta data such as depth, ground cover, and sample colour were recorded in the field.

Samples were analyzed by MS analytical in Langley, BC. All samples were analyzed for using ICP-AES and ICP-MS on a 20-gram 150-micron mesh screened sample. Any samples that were above the detection limit for gold were analyzed by fire assay.

Percentile Cu and Co values are reported in table 16.

Table 2. Percentiles of cobalt and copper in soil

Percentile	Cu (ppm)	Co (ppm)
50%	44.4	13.8
80%	101.2	21.8
95%	219.2	38.1
98%	318.6	52.4

Soil sampling indicates significant concentrations of cobalt and copper within the central valley (figure 4-5). Elevated cobalt and copper concentrations may be dextrally offset by a large fault that runs through the valley. One soil sample with 149.5 ppm cobalt, 484.2 ppm Cu, 1.35 ppm Ag and 35 ppb Au likely indicates mineralized bedrock very close to the surface.

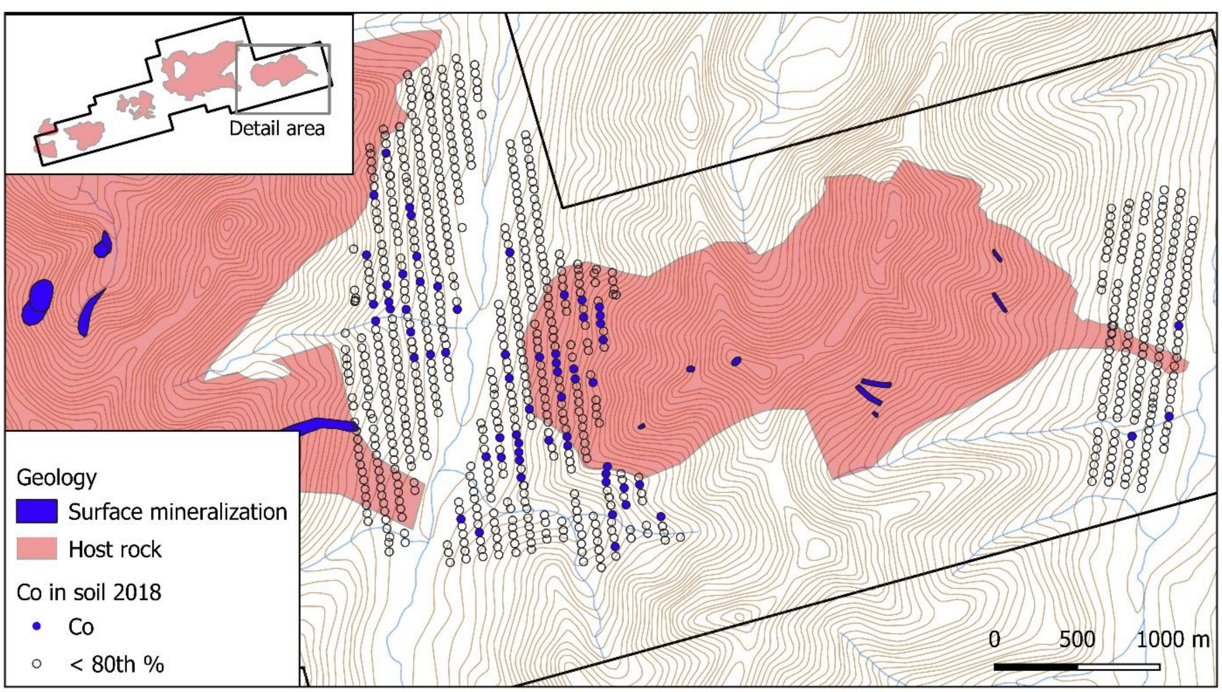

Figure 2. Soil samples with Co > 80th percentile

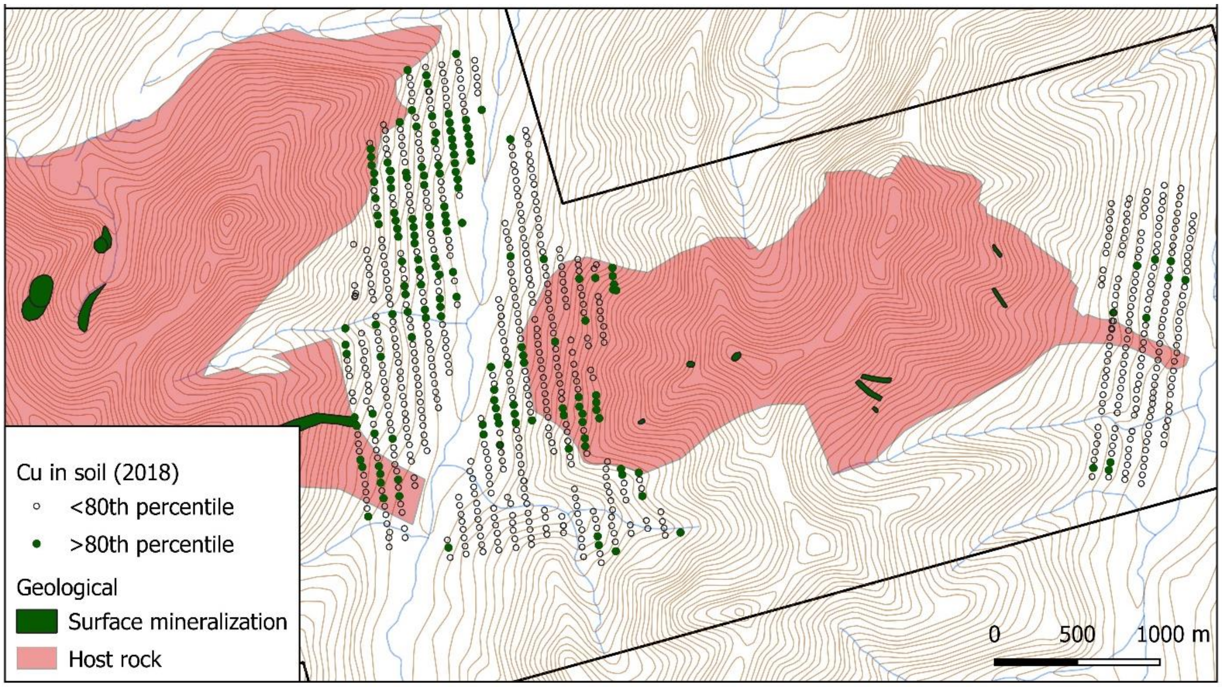

Figure 3. Soil samples with Cu > 80th percentile

5.5.3. Geophysical survey

Radiometric survey

A radiometric survey has outlined km-scale zonation on the claim as well as minor spot anomalies. The cobalt cirque area appears to be potassically altered with both moderately high potassium and thorium counts. On the ridges surrounding cobalt cirque the total count is reduced, thorium is reduced, and uranium increases. On the mountains east and west of the cobalt cirque area the total counts are further reduced and radiometry indicates predominantly uranium and potassium.

Second order spot anomalies are numerous but need to be individually tested. For example, the jasper, east Cu-Co and the South Co showings are centered on a small area of very low total count. Another larger area of low total counts is present near the soil sample highlighted in the previous section.

Magnetic survey

A magnetic survey outlined 3 large km-scale magnetic anomalies and numerous smaller ~100 m scale anomalies. One surficial anomaly consists of hematite-jasper altered carbonate with trace magnetite and chalcopyrite. The CC, East Cu-Co, South Co and SE spur zone are all proximal to shallow magnetic features. Several surficial magnetic anomalies are yet untested.

Inversion

An inversion of the magnetic data as well as post processing of radiometric data was performed by Southern Geoscience. The deliverables are available in digital file 3. The magnitudes of magnetic susceptibilities are similar to those on the Gawler Craton of Australia where oxidized breccia deposits occur. The inversion indicates that magnetic highs surrounding mineralization in the cobalt cirque area. It is yet unclear whether mineralization is associated with increased magnetite or on the margins of increased magnetite.

5.5.4. Prospecting and mapping

Several areas on the claim were investigated by a team of two geologists including the author. The purpose of the investigation was to confirm historical mineralized showings, to ground-truth target areas generated by the spectral survey, and to identify new mineralized showings.

5.5.5. Rock property measurements

Rock properties were measured in Vancouver by Walcott and associates. Density was determined from the weight of the samples in air and in distilled water at room temperature with corrections made for the weight of the suspension wire in water.

Magnetic susceptibility was carried out by making six measurements over the surface of the sample using a KT-9 susceptibility meter with the resultant average deemed the susceptibility of the sample. Here a range was unnecessary to be given as the readings were fairly uniform.

Inductive conductivity measurements were made with a GCM-2 meter manufactured by Geo Instruments of Australia. This handheld was developed and calibrated from a library of multitude mineral specimens and their respective conductivities.

Hand samples were cut to expose a flat surface and the conductivity of these were measured using a flat plate sensor with the caveat that the exposed surface be greater than the plate area.

For the galvanic and induced polarization studies the hand samples were fashioned into rectangular prisms. These were then mounted in molds with sterile resins and allowed to set.

These were then placed in a Buehler vacuum flask and the entrapped air quickly evacuated from their pores by the vacuum pump. The samples were then impregnated with distilled water under 26 " Hg., and allowed to sit for a few minutes before venting to atmospheric pressure. They were then transferred to a soaking tank filled with distilled water for a few days.

The resistivities and chargeabilities were determined by mounting the respective samples between two distilled water filled tanks, passing a low current – 0.5 to 5 microamps – through the outer electrodes using a GDD SCIP tester with a pulse frequency of 0.125 Hz., and reading primary – pulse on – and secondary voltages – pulse off – across the inner electrodes with the same tester using a delay time of 200 milliseconds and sampling 20 windows of 50 millisecond width.

6. Geological setting and mineralization

6.1. Regional geology

The geology of Yukon Territory is split into two different parts by the northwest striking Tintina fault. The Tintina fault is a dextral strike-slip fault with approximately 430 km of displacement. In general the Tintina Fault separates rocks of ancestral North American affinity to the North from allochthonous terranes in the South. The Monster Property lies entirely to the north of the Tintina fault.

The ancestral North American rocks to the north of the Tintina Fault comprise predominantly basinal rocks that were deposited from approximately 1.7 Ga to the middle Phanerozoic. Deposition was punctuated by intervals of orogenesis, erosion, hydrothermal brecciation and magmatism (Thorkelson et al., 2005). The Proterozoic history of Yukon is recorded in several Proterozoic Inliers. The Monster Property occurs in the Ogilvie Inlier, in the central-west of Yukon Territory (**Error! Reference source not found.**) and contains hydrothermal breccias that were emplaced in deformed and metamorphosed basinal Late – Middle Proterozoic rocks.

6.1.1. The Wernecke Supergroup

The Wernecke Supergroup is the host rock to the hydrothermal breccias that host mineralization on the Monster Property. The Wernecke Supergroup consists of over 13 km of fine grained sedimentary carbonate and siliciclastic rock (Delaney, 1981; Thorkelson, 2000) that was deposited between 1.66 Ga and 1.60 Ga (Furlanetto et al., 2013). The entire Wernecke Supergroup was deposited as a passive margin on Laurentia (Furlanetto et al., 2016).

The Wernecke Supergroup is divided into three Groups. From old to young these groups are the Fairchild Lake Group, the Quartet Group and the Gillespie Lake Group. The Fairchild Lake Group consists of mud to siltstone and is locally metamorphosed to greenschist as a result of the Racklan Orogeny. The Quartet Group consists predominantly of well-bedded fine-grained siliciclastic rocks and shale. The Gillespie Lake Group consists predominantly of carbonate rocks, commonly with stromatolites, and fine-grained siliciclastic rocks (Delaney, 1981; Thorkelson, 2000).

The Wernecke Supergroup was deformed and metamorphosed during the ca. 1.6 Ga Racklan Orogeny (Thorkelson et al., 2005; Furlanetto et al., 2013). The Racklan Orogeny caused greenschist metamorphism of the lower part of the Wernecke Supergroup and thrusting and folding. The Racklan Orogeny is interpreted as the result of Australia-Laurentia collision by several researchers (Thorkelson and Laughton, 2016; Verbaas et al., 2018).

6.1.2. The Wernecke Breccia

The Wernecke Breccia comprise a set of hematitic breccia zones in Yukon Territory (Delaney, 1981). The breccias occur in the Wernecke Mountains, the Ogilvie Mountains and the southern Richardson Mountains (Thorkelson et al., 2001). The breccia zones in the Ogilvie Mountains were initially termed the Ogilvie Mountain Breccia (Lane, 1990), but were later considered a continuation of the Wernecke Breccia (Thorkelson et al., 2001). The Wernecke Breccia formed after the Racklan Orogeny (Mercier, 1989; Thorkelson, 2000). One of the breccia zones in the Wernecke Mountains was dated by U-Pb on metasomatic titanite at 1598.8 ± 1 Ma.

Individual Wernecke Breccia zones range from several metres across to 5 kilometres in size (Thorkelson, 2000). The breccia zones are tabular to roughly circular (Thorkelson et al., 2001). The breccia zones crosscut strata of the Wernecke Supergroup and deformational fabrics of the Racklan Orogeny. In the Ogilvie Mountains the Wernecke Breccia occur in a northern breccia belt and a southern breccia belt (Lane, 1990). The breccia belts are roughly aligned with the northern and southern edge of the Proterozoic Ogilvie Inlier and are aligned with younger faults (Lane and Godwin, 1992).

Alteration

The Wernecke Breccia is mainly potassically altered, although a large subset in the Wernecke Mountains are sodically altered (Laughton et al., 2003). Locally, calcic alteration is predominant. Albite, scapolite, calcite, dolomite, orthoclase, ankerite, sericite and barite comprise the main alteration minerals (Hunt et al., 2005). Both alteration types are locally overprinted by chloritic and carbonate alteration in the form of disseminations and veins (Verbaas, 2017). Hitzman (1992) developed a model in which different alteration types were correlated to depth of breccia formation. However, as noted by Thorkelson et al. (2001a), this interpretation was based upon the incorrect premise that the Wernecke Breccia formed prior to deformation of the Wernecke Supergroup, a situation in which stratigraphic position could be equated to crustal depth. Hunt et al. (2005, 2011) related the host rock chemistry to the type of alteration, however, this interpretation is dependent on the presence of (meta-)evaporites in the Wernecke Supergroup for which there is no independent evidence (Verbaas, 2017). Carbon, sulfur, hydrogen, and oxygen isotopes appear to be buffered by the immediate country rock (Hunt et al., 2011). A large variation exists between the alteration at different mineral occurrences, which has been explained as varying halite dissolution, input of different fluids including magmatic and meteoric waters, and depth of formation (Hitzman, 1992; Kendrick et al., 2008; Gillen, 2010; Hunt et al., 2011).

Mineralization

Mineralization of the Wernecke Breccia is associated with hematite and magnetite and includes chalcopyrite, pitchblende, brannerite and cobaltite (Hunt et al., 2005). Elevated concentrations of Au are common in association with Cu but gold is not visible (Hunt et al., 2005). Mineralization of the Wernecke Breccia occurs as sulphide pods, veins, stringers, and disseminations. The most common Cu bearing sulphides are chalcopyrite and bornite, with minor chalcocite and tenorite. Other common Cu bearing minerals in fractures and on weathering surfaces are malachite, azurite, and chrysocolla. Cobalt occurs as cobaltite and erythrite in veins, stringers, blebs and disseminations. Uranium is common in many of the Wernecke Breccia zones and occurs as pitchblende and brannerite, but appears to be completely absent from the Monster Property (Setterfield, 2007).

The exact mineral paragenesis differs per mineral prospect but commonly follows three broad stages. The first stage coeval with early brecciation and characterized by potassic or sodic metasomatism abundant in magnetite ± hematite. The main phase of brecciation is accompanied by magnetite ± hematite ± chalcopyrite-pyrite mineralization, and the last stage may involve the deposition of carbonates ± magnetite, hematite, chalcopyrite and pyrite. Locally barite veins are abundant during the last stage (Hunt et al., 2005).

6.1.3. Post-brecciation

A roughly 150 m.y. hiatus separates the Wernecke Breccia from the subsequently deposited Pr1 basin (Medig, 2014). The Pr1 basin overlies the Wernecke Supergroup and Wernecke Breccia in the Ogilvie Mountains. This basin formed as an intracratonic rift basin and, together with similar basins further south on the Laurentian margin, represents rifting of Australia from Laurentia (Medig, 2014). The basin infill is characterized by immature sediments that were likely sourced from felsic intrusives.

The Pinguicula Group overlies the Wernecke Supergroup and Wernecke Breccia in the Wernecke Mountains. The Pinguicula Group consists of fine grained sediments that were deposited after 1.38 Ga (Medig, 2016).

6.1.4. Clasts within Wernecke Breccia

The Wernecke Breccia are predominantly heterolithic and clasts were derived not only from the immediate host rock, but also from formerly overly lithologies (Laughton et al., 2003; Furlanetto et al., 2013; Nielsen et al., 2013; Verbaas et al., 2018). Clasts within the Wernecke Breccia may include shale, carbonate rock, sandstone, greenschist, amygdaloidal basalts, sediments with soft sediment textures and mafic to intermediate intrusions (Thorkelson et al., 2001; Nielsen et al., 2013; Verbaas et al., 2015). The igneous clasts within Wernecke Breccia were sourced from a formerly overly thrust nappe which may have been the source of metals (Nielsen et al., 2013).

6.1.5. Correlation to IOCG deposits on Australia

The Wernecke Breccia are included in the IOCG deposit class (Hitzman et al., 1992). The Wernecke Breccia are considered a non-magmatic IOCG province (Hunt et al., 2007). The Wernecke Breccia have been correlated to the giant Olympic Dam deposit on the Gawler Craton, Australia (Thorkelson et al. 2001; Verbaas et al., 2018) on the basis of age, lithological similarity, and detrital zircons of sedimentary clasts within the breccia zones.

6.2. Property Geology

6.2.1. Wernecke Supergroup

The Monster Property is centered around several Wernecke Breccia zones that were emplaced within the Wernecke Supergroup (Lane, 1990; Lane and Godwin, 1992). The Wernecke Supergroup here consists of sediments of the Quartet Lake Group and the Gillespie Lake Group (Baknes, 1995; Lane and Godwin, 1992).

The Quartet Group consists of coarse quartzite to conglomerate, black shale, grey to black siltstone and grey mudstone. The conglomerate unit is highly variable and contains well sorted and sub-angular 0.2 – 2.0 cm maroon mudstone, chert, and quartz pebbles. The shale to siltstone is commonly well bedded and cleaved, and interbedded with quartzite (Baknes, 1995).

The Gillespie Lake Group consists of grey to buff weathering silty dolostone, and buff weathering grey to orange silty dolostone to dolostone. The latter is commonly stromatolitic and may contain silica replacements of stromatolites as ragged masses or rhythmic beds. In areas of brecciation and accompanying deformation the bedding is contorted and silica may be replaced by jasperoid (Baknes, 1995).

The Wernecke Breccia crosscut the Wernecke Supergroup shortly after the Racklan Orogeny (Thorkelson, 2000; Furlanetto et al., 2013). The mineralization and alteration on the Monster Property is localized within and adjacent to the Wernecke Breccia. How far the breccias extend in the subsurface is unknown.

6.2.2. Wernecke Breccia

All of the mineralization on the Monster Property occurs within or adjacent to the Wernecke Breccia. The Wernecke Breccia on the Monster Property is close to 1.6 Ga in age (Lane, 1990; Furlanetto et al., 2013). The three main Wernecke Breccia zones on the Monster Property extend for more than 15 km

NE-SW. The zones are elongated in a NE-SW direction and range from tabular to ellipsoidal to roughly circular with many apophyses.

The clasts within the Wernecke Breccia were sourced from the immediate Wernecke Supergroup, but likely also from formerly overlying igneous and sedimentary lithologies. Diorites that were mapped as continuous intrusions (Dyson, 1976; Baknes, 1995) may mostly be transported clasts within the breccia zones (Jones, 1999). The maroon and green mudstone and siltstones noted by Baknes (1995) may be derived from a formerly overlying sedimentary succession (Verbaas et al., 2014) that is linked to a sedimentary source on the Gawler Craton on Australia (Verbaas et al., 2018).

The Wernecke Breccia were separated into homolithic and heterolithic breccias by Lane (1990). Subsequent workers have used this terminology and attempted to map the breccias in detail using this distinction. However, the homolithic and heterolithic breccias may have sharp to gradational contacts, and whether a breccia is considered heterolithic or homolithic depends on the size of the area considered. In their entirety, the breccia zones are heterolithic.

Homolithic breccias are commonly located at the edge of the breccia zones and range from fractured wall-rock to crackle breccia to (less common) matrix supported breccia. The matrix of the homolithic breccias ranges from carbonate to clastic or soft sediment. Homolithic breccias commonly contain a low percentage of specular hematite, with the exception of maroon mudstone breccias which may contain up to 10% specular hematite (Baknes, 1995).

The heterolithic breccias contain a variety of clast types, including siltstone, shale, dolostone, diorite, banded iron formation, chert and quartzite. The matrix of the heterolithic breccias commonly contains quartz ± chlorite ± carbonate ± specular hematite ± sericite. Some heterolithic breccias have a clastic or soft sediment matrix. The breccias are commonly matrix supported with sub-angular fragments ranging from 1 cm to 1 m (Baknes, 1995; Jones, 1999).

6.2.3. Alteration

The alteration within the Wernecke Breccia zones is varied and appears to depend at least in part on the lithology of both the immediate wall-rock and the breccia clasts. Ferroan dolomite is ubiquitous in the breccia zones and may be in part the result of assimilation of Gillespie Lake Group wall-rock. Siderite is another common carbonate mineral and can locally be related to Mn-staining. Siderite is commonly associated with silica alteration in dolomites and spatially associated with clastic rocks of the Quartet Group (Jones, 1999).

Hematite occurs as specular hematite and earthy hematite, and hematite alteration is ubiquitous on the Monster Property. Earthy hematite is most common on the margins of the breccia zones, and specular hematite is more common towards the center and in association with diorite clasts. Many of the breccia clasts are partially or completely replaced by hematite and/or silica. It is possible that several 'maroon mudstones', 'jasperites' and 'banded iron formations' are in fact replaced clasts of sedimentary rock. Dark red hematite-carbonate veins occur in the Cobalt Cirque area (Jones, 1999).

Another common alteration style is layered silica and carbonate. This alteration appears to be localized in dolomitic host rock. The layers of silica and carbonate are ragged and contorted and it is unclear if they are related to the original bedding of the host rock. The rock has a very rough weathered surface. This style of alteration occurs over 200 x 400 m in the Jasper Zone (Jones, 1999).

Magnetite is uncommon but is present in some mineralized zones. Magnetite blebs and massive magnetite occur locally in the eastern part of the Monster Property within altered beds of a dolomite clast (Jones, 1999). A large magnetic high underlies the eastern Monster Property (Willams, 1997).

Chlorite alteration is pervasive in heterolithic breccia. This type of alteration is most commonly associated with diorite clasts and intrusions (Jones, 1999).

Potassic alteration is strongest in the western part of the Monster Property. Potassic alteration occurs as potassic feldspar and sericite alteration in breccia clasts and matrix. This type of alteration is less common in the eastern part of the Monster Property (Jones, 1999).

6.2.4. Structure

Primary bedding on the Monster Property forms a large EW striking anticline. Brecciation appears to be focused in the center of the breccia zone. Numerous steep faults striking roughly NS have been mapped by previous workers. These faults are commonly associated with drag folds in the Wernecke Supergroup strata. Aeromagnetic data implies a set of roughly EW striking faults is also present on the Monster Property. Drag folding associated with faults is common, and it is possible that the large EW anticline that encompasses the Monster Property is a drag fold associated with the Monster fault (Williams, 1997).

Structures that have been mapped on the basis of aeromagnetic data proved to be associated to mineralization during follow up geological mapping (Jones, 1999). The intersection between roughly NS faults and roughly EW striking faults appears to be an important control on mineralization. These structures may have provided bounds and/or pathways for breccia metasomatism and mineralization.

Several valleys on the Monster Property may represent major faults. The geology across the valley is markedly different and the valleys appear to be too linear to be purely erosional features. North trending valleys in the eastern Monster Property likely represent normal faults and linear steeply dipping NW trending valleys are faults of unknown type.

6.2.5. Mineralization

Mineralization on the Monster Mineral claim occurs within and immediately adjacent to the Wernecke Breccia. Mineralization commonly occurs as disseminated chalcopyrite ± cobaltite ± bornite, chalcopyrite-chalcocite-bornite stringers and disseminated cobaltite (Baknes, 1995). The type of alteration appears to depend on the lithology of the breccia clasts within and surrounding the mineralization (Caulfied, 1993; Baknes, 1995; Jones, 1999). For example, stringers of chalcopyrite and quartz occur within siliceous sedimentary clasts, and disseminated chalcopyrite occurs with chlorite within diorite fragments. Mineralization is commonly associated with increased potassic alteration, but also occurs without an apparent increase in alteration.

Numerous mineral occurrences on the property were described in detail during exploration programs from 1993 – 2003 (**Error! Reference source not found.**). These mineralized zones are described in the following section from roughly west to east. Several of these zones were found after contour soil sampling. Approximately 1500 soil samples were taken from 1975 to 1998.

The results of rock samples in the following tables is available in Yukon Assessment Reports (Caulfield, 1993; Baknes, 1995; Falls & Baknes, 1995; Jones, 1999; Setterfield, 2001, 2003; Setterfield & Tykajlo, 2002).

Choc and Zappa Zone

The Choc Zone consists of a discontinuous 8 x 50 m zone of mineralization. The size of the Choc Zone is limited by the extent of exposure. Mineralization occurs as disseminated bornite and chalcopyrite in brown weathering laminated dolostone. The dolostone host is distinctive from the surrounding stromatolitic and locally jasperoidal dolostone (Baknes, 1995).

The Zappa Zone occurs 25 m west of the Choc Zone and consists of a narrow zone of mineralization that is continuous for about 50 meters at a strike of 020°. The 020° structure that hosts the mineralization may be a fault zone. Mineralization consists of disseminated chalcopyrite and bornite along bedding with minor cobaltite in veinlets and fractures. The mineralization is strongest within the structure but persists about 15 m to the east (Jones, 1999).

Table 6.1. Selected results from the Choc and Zappa Zone (Jones, 1999)

Choc and Zappa Zone

Type	Locality	Cu (ppm)	Co (ppm)	Au (ppb)	Other
Grab	Choc	3870	5	<5	
Grab	Choc	2950	3	<5	
Grab	Choc	1780	3	<5	
5 m representative grab	Zappa	7460	300	<5	40 ppm Bi
select	Zappa	4.82%	597	<5	
4 m representative grab	Zappa	780	22	<5	

4900 Zone

The 4900 zone consists of a 70 x 100 m zone of mineralized subcrop and talus. Mineralization occurs as disseminated chalcopyrite in both matrix and clasts of a monolithic maroon mudstone breccia. The matrix of the breccia contains carbonate, specular hematite, and clastic mudstone. Chalcopyrite appears to be associated with increased hematite. Chalcopyrite with minor galena and sphalerite in laminated green mudstone and siltstone occurs in the southern part of the 4900 zone. The 4900 zone is poorly exposed, however soil geochemistry of >400 ppm Cu over a 700 x 100 – 400 area suggests continuous mineralization in the subsurface (Baknes, 1995).

Table 6.2. Selected results from the 4900 Zone (Baknes, 1995a)

4900 zone

Type	Cu (ppm)	Co (ppm)	Au (ppb)	Other
float	7364	28	30	
float	1.70%	24	160	
float	3880	50	<5	0.1% Pb, 0.4% Zn
float	7960	24	<5	1.47% Pb, 1.65% Zn

South Co Zone

The South Co zone is poorly exposed but may exceed 50 by 70 m. The main host rock to mineralization is brecciated to non-brecciated siltstone and silty dolostone with minor jasper beds. These lithologies are silicified and carbonate altered, both pervasively and through stringer stockworks. Cobaltite occurs in disseminated veins and as fracture fillings in association with chalcopyrite. Copper mineralization occurs as blebby chalcopyrite in quartz-carbonate stringers and as disseminations (Baknes, 1995).

Table 6.3. Selected results from the South Co zone (Baknes, 1995a; Setterfield & Tyjkalo, 2002)

South Co Zone				
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
4 m chip	3005	113	3	
5 m chip	4357	461	18	
5 m chip	767	51	3	
Grab	3840	256	<5	
Grab	8110	130	<5	
Grab	3160	1.43%	180	
Grab	1.70%	2.80%	705	

East Cu-Co Zone

The East Cu-Co Zone is located on an east-west trending ridge and is exposed over a 10 x 100 m area. The zone straddles a contact between east-west striking green laminated siltstones that contain either BIF or stratabound replacement features resembling BIF, and pink dolomitic siltstones. Large diorite clasts or intrusions are proximal to the East Cu-Co Zone.

Two styles of mineralization occur within the East Cu-Co Zone. The first style occurs as quartz-dolomite-chalcopyrite stringer stockworks hosted in green and grey siltstones-mudstones. The second style occurs as cobaltite in stringers and haloes that crosscuts dolomitic siltstone with stratabound blebs of chalcopyrite (Baknes, 1995a).

Table 6.4. Selected results from the East Cu-Co Zone (Baknes, 1995a)

East Cu-Co Zone				
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
Grab	153	1.87%	1040	
2 m chip	4940	83	<5	
Grab	124	5360	180	
3.8 m chip	9050	462	215	

CC Zone

The CC Zone occurs on a brecciated contact between diorite and purple mudstone. Two types of mineralization occur in the CC Zone. The first type consists of massive fine grained hematite and possibly tenorite with interstitial malachite. The massive hematite tenorite is botryoidal and occupies voids within a pink breccia consisting of orthoclase-quartz altered mudstone and diorite fragments. Abundant malachite occurs within voids in hematite/tenorite and within fractures. The second type of mineralization is hosted in variable orthoclase-silica-specularite altered purple mudstone near an intrusive lithology (Baknes, 1995b)

Table 6.5. Selected results from the CC Zone (Baknes, 1995a)

		CC Zone		
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
Float	21%	19	465	200 ppm Zn
Float	4680	14	<5	
Float	4980	50	<5	
Float	4530	22	<5	
Grab	28.50%	11	176	
2.3 m chip	2657	27	<5	
4.5 m chip	4324	13	<5	

SE Spur Zone

The Southeast Spur Zone is exposed on a southeast trending ridge. The zone lies on the margin of a diorite clast or intrusion. Lithologies within the Southeast Spur Zone are purple mudstone with green laminated mudstone-siltstone-BIF. Mineralization occurs as a quartz-carbonate-chalcopyrite stockwork, as disseminated chalcopyrite and pyrite blebs with haloes lacking hematite and as disseminated chalcopyrite throughout the purple mudstone (Baknes, 1995a).

Table 6.6. Selected results from the SE Spur Zone (Baknes, 1995a)

		SE Spur Zone		
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
12 m chip	2050	82	<5	
2.8 m chip	3110	116	15	
Grab	3110	23	<5	
Grab	2150	45	<5	

Champagne Zone

The Champagne Zone occurs close to the head of a valley and is exposed over a 20 x 25 m area. Mineralization is associated with the contact between dolomite and shale/wacke and occurs as blebby to fracture controlled sulphides with minor malachite, azurite and erythrite on fractures. The Champagne Zone is open along strike in both directions (Jones, 1999).

Table 6.7. Selected results from the Champagne Zone (Jones, 1999).

	Champagne Zone			
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
5.6 m representative grab	3630	138	10	
3.0 m representative grab	47	2810	50	
7.2 m representative grab	636	546	<5	
float select	7030	1795	75	
2 m grab	3.34%	32	10	9.6 g/t Ag

Champagne North

Similar to the mineralization at the Champagne Zone, mineralization at Champagne North occurs along the contact of dolostone with shale/wacke. Mineralization occurs as chalcopyrite and bornite in brecciated, silica-carbonate altered dolomite and concretionary shale, locally with finely disseminated cobaltite. The Champagne North area contains anomalous Pb-Zn mineralization and strong pyrite alteration (Jones, 1999).

Table 6.8. Selected results from Champagne North (Jones, 1999; Setterfield, 2001)

	Champagne North			
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
4 m grab	1.41%	70	35	560 ppm Pb
float	11.35%	90	90	1415 ppm Pb, 63.4 g/t Ag
select	2570	45	40	1200 ppm Pb, 12.8 g/t Ag
float	2340	47	20	23.4% Zn, 5.7% Pb, 11.8 g/t Ag
grab	340	29	100	

Panther Showing

The Panther Showing is a 1 x 10 m zone of mineralization. The Panther Showing is situated close to a structure defined by aeromagnetics (EHW, 1997). Mineralization occurs as chalcopyrite-bornite in silica-altered dolomite associated with carbonate veining and potassic feldspar alteration (Jones, 1999).

Table 6.9. Selected results from the Panther Showing (Jones, 1999)

	Panther Showing			
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
Select	1.30%	2140	90	
5 m representative grab	5080	1050	65	

Cobalt Cirque

Cobalt Cirque is a steep north facing cirque with several mineralzed areas within it. The first area was termed the Upper Cobalt Cirque Showing in 1998 and occurs on the west slope immediately east of Cobalt Cirque. Two types of mineralization have been described from mapping and prospecting the cirque. The first type is a chalcopyrite-bornite-cobaltite-quartz stockwork in heterolithic and carbonate-rich breccias. Malachite, azurite and erythrite are indicative of mineralized outcrop. The second type is chalcopyrite and minor bornite in a dark green chlorite and hematite altered heterolithic breccia (Caulfield, 1993). The mineralization occurs at the contact of crackle brecciated dolomite and shale and is associated with shearing and diorite intrusions or clasts (Jones, 1999).

Table 6.10. Selected results from Cobalt Cirque (Caulfield, 1993; Baknes, 1995; Jones, 1999)

	Cobalt Cirque			
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
Grab	4.20%	193	205	
Grab	1043	1.34	295	
Grab 4 m	5720	28	5	
5.6 m representative grab	1625	766	<5	
select	1.31%	49	<5	

Mark's Hi-grade Showing

Mark's Hi-grade occurs at the edge of exposure on the southeast wall of Cobalt Cirque. Mineralization is traceable along the edge of the outcrop for about 50 m upslope. Lower grade disseminated mineralization is approximately 30 meters wide. Mineralization consists of chalcopyrite, bornite, pyrite and cobaltite as disseminated blebs and veinlets in pink dolomite and shale (Jones, 1999).

Table 6.11. Selected results from Mark's Hi-grade Showing (Jones, 1999; Setterfield, 2001; Setterfield & Tyjkalo, 2002)

Marks Hi-Grade Showing

Type	Cu (ppm)	Co (ppm)	Au (ppb)	Other
select	44.80%	9820	510	24 g/t Ag
5.0 m representative grab	2170	145	<5	
6.0 m representative grab	4620	341	50	
4.0 m representative grab	3030	367	<5	
3.0 m chip	5150	1265	25	

Goblin Showing

The Goblin Showing was discovered through soil sampling in 1994 and subsequent geological work in 1998. The Goblin Showing is mostly inaccessible due to the relief in the immediate area. Mineralization consists of bornite, chalcopyrite and cobaltite in a carbonate-quartz stockwork (Jones, 1999).

Table 6.12. Selected results from the Goblin Showing (Jones, 1999)

Goblin Showing

Type	Cu (ppm)	Co (ppm)	Au (ppb)	Other
5.0 m representative grab	3870	23	<5	4.4 g/t Ag
5.0 m representative grab	4890	26	<5	5.6 g/t Ag
5.0 m representative grab	2850	32	10	4.0 g/t Ag
5.0 m representative grab	16300	45	80	32.0 g/t Ag
5.0 m representative grab	4220	36	125	5.2 g/t Ag
5.0 m representative grab	5210	46	15	7.0 g/t Ag
5.0 m representative grab	2550	36	35	
grab 1 m	1.40%	391	10	2.0 g/t Ag

Jasper Zone

The Jasper Zone is located at the intersection of a steep reverse fault to the south and northeast trending basement faults to the east and west. There is also a northwest trending fault on the north side of the zone (Willams, 1997). The Jasper Zone is 200 x 400 m and situated adjacent to a magnetic anomaly described by Williams (1997). The Jasper Zone is strongly silica and carbonate altered and derives its name from the jasper replacement of both breccia clasts and individual beds within dolomite. Two significant zones of mineralization about 10 – 15 x 30 – 50 m each occur within the Jasper Zone. Mineralization occurs as disseminated blebs and fracture fillings of chalcopyrite. The best mineralization appears to occur in carbonate altered host rock (Jones, 1999).

Table 6.13. Selected results from the Jasper Showing (Jones, 1999)

Jasper Zone				
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
6.8m chip	4530	15	15	
1.6 m chip	3640	7	<5	
select (5 m)			130	
7.0 m representative grab	4300	45	<5	

O'Hara Showing

The O'Hara Showing occurs at the intersection of two structures detected during the aeromagnetic survey in 1996 (Willams, 1997). The O'Hara Showing is 20 x 25 m zone that contains disseminated cobaltite, bornite and chalcopyrite in altered dolomite with quartz-carbonate veins (Jones, 1999).

Table 6.14. Selected results from the O'Hara Showing

O'Hara Showing				
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
select	1.27%	8640	715	
2.0 m chip	5030	1360	100	

7. Deposit type

The Monster Property hosts IOCG (iron oxide copper & gold) mineralization. IOCG deposits were defined by Hitzman (1992) as a separate deposit class. This deposit class is characterized by abundant hematite and magnetite, low in sulphides and commonly enriched in light rare earth elements (LREE, Hitzman et al., 1992; Groves et al., 2010). Since its definition the IOCG deposit class has become to incorporate a variety of deposits, obscuring the critical features of IOCG 'sensu stricto' deposits (Groves et al., 2010).

IOCG sensu stricto deposits are structurally controlled magmatic – hydrothermal and commonly contain significant volumes of breccia. Mineralization commonly occurs in sulphides that are paragenetically younger than, but closely associated with, low Ti-oxides. Commonly these deposits are temporally, but not necessarily spatially, associated with alkaline to sub-alkaline intrusions (Groves et al., 2010).

The Wernecke Breccia on the property is interpreted as a steep sided breccia pipe that contains igneous and potentially other fall-back clasts (Thorkelson, 2000; Thorkelson et al., 2001; Nielsen et al., 2013; Verbaas et al., 2018)

8. Exploration

Go Metal's 2019 program used a combination of fixed wing (Great River Air) and helicopter access (Fireweed). The main camp was provided by Dan Reynolds and outfitted and staffed by Allin Exploration Solutions and Groundtruth Exploration.

Improvements were made to the company's remote sensing database. A new DEM (Arctic-DEM, freely available) at 2m resolution was used at the start of the season to improve the 2018 structural interpretation. Landsat 8 images were processed in a similar manner to Landsat 5 images of the 2018 remote sensing survey.

Go Metals has reprocessed historical gravity data with a new government DEM in April of 2019, to assess 1) whether the historical gravity data was of high quality and 2) whether reprocessing with a higher resolution DEM would yield better data. Several geological features, independently confirmed by magnetic data, were evident in the reprocessed dataset. Based on these results Go Metals retained MWH Geosurveys to survey 3 areas on the claim with roughly 100 x 100 m station density. Data is delivered in a Digital Appendix.

The company retained Groundtruth Exploration for a drone photogrammetry survey. Deliverables included a 15 cm DEM that was subsequently used for the gravity processing. The DEM and the photogrammetry model will both be used for further structural work. See Map 2 for a map of the data. The size of the dataset (70 gb) precludes digital delivery.

The gravity was post-processed in conjunction with the magnetic data obtained in 2018 and with the IP/resistivity obtained in 2019 by Southern Geoscience. The gravity data indicates large anomalies that partly overlap with magnetic and IP anomalies in the west and east area of the claim, and stand-alone anomalies in the center of the claim. The data is delivered a Digital Appendix.

An IP/resistivity survey was carried out by Groundtruth exploration. Out of 8 planned IP/resistivity lines of 820 m, 7 lines yielded good data and were inverted in 2D and 3D. The lines were spaced 25 – 50 meters apart with an electrode spacing of 5 – 10 m. Data was obtained using an AGI supersting. The raw data and inversions are delivered in appendix xxx

The property was mapped for alteration. The alteration map is present in Map 1. A set of rock samples was sent to the MS Analytical in Langley. The rock samples are all grab samples from across the property. The samples grade up to 22.3% Cu and 1.6% Co. Assay data are reported in Map 1.

A set of 28 rock samples was sent to Groundtruth Exploration to identify specific gravity, magnetic susceptibility and electric properties. The digital data is delived in the Digital Appendix.

9. Discussion

The geophysical rock properties indicate that gravity anomalies will likely be subtle, as the measured specific gravity of rock samples ranges does not exceed 2.9 g/cm^2. The inversion error on 11-m voxels is approximately 0.03 mgal. The modeled average density of 2.67 g/cm^2 is consistent with the expected average density from the rock property measurements. These data imply that the modeling should be able to highlight subtle gravity anomalies.

The IP/resistivity survey highlights IP anomalies on both the western and eastern area. IP anomalies on the claim can be either associated with earthy hematite, pyrite, or with sulphide mineralization. In the western area, the IP anomaly is coincident with a resistivity low, gravity high, and partly with a magnetic anomaly. The area is further characterized by extensive surface mineralization. The coincidence of these anomalies and the mineralization is encouraging, and this area should be drill-tested.

The IP anomaly measured in the eastern area is partly coincident with a magnetic anomaly and connected to a substantial gravity anomaly at depth. The geophysical anomalies are all below surface and there is little surface mineralization around them. However, the intensity of alteration above the magnetic anomalies appears to increase at lower elevations. The high-density rocks surround an area of elevated magnetism. This strongly suggests an alteration type with several percent magnetite in the core of the combined anomalies, surrounded by heavy and possibly mineralized hematite breccia. A diamond drilling program is warranted.

The center area contains a large gravity anomaly underneath a ridge. This gravity anomaly is in the extension of the panther and goblin surface showings and offset by a north trending fault. The area is too rugged for extensive surface mapping or geophysical surveying. This area should be drill tested but is of secondary priority.

10. Conclusions

The combination of geochemical data, surface mineralization and alteration, and geophysical data indicate the potential for mineralization in the subsurface. However, care must be taken in the interpretation of the geophysical data since no geophysical dataset uniquely targets mineralization. The surface mapping and geophysical data collected at the Monster Property are used to make the property drill-ready.

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N
Legend
Rock samples 2019
Cu
0.0 - 0.3%
0.3 - 1.0%
1.0 - 2.5%
2.5 - 5%
5 - 60%
Geology
Mapping
Faults and contacts
Fault, movement unknown
Alteration
Wallrock, unaltered
Carbonate
Chlorite
Hematite (earthy/bladed)
Specular hematite
Clast
Streams
Contours_50k
Go Metals
Monster Property
Nad83/UTM zone 7
rock samples and alteration mapping
0
1
2
3
4 km


550000
552000
554000
556000
558000
560000
562000
564000
566000
568000
7194000
7192000
7190000
7188000
7186000
N
0
1
2
3
4 km
Go Metals
Monster Property
Nad83/UTM zone 7
DEM from drone photogrammetry