

**2018 TECHNICAL SUMMARY REPORT ON THE  
ROGERS CREEK PROPERTY**

**SOUTHWESTERN BRITISH COLUMBIA  
LILLOOET MINING DISTRICT  
LATITUDE 50°03'45" N - LONGITUDE 122°23'40" W  
NTS 092J PEMBERTON**



**Prepared by:  
Brian P. Fowler, P.Geol.  
Effective Date: November 21<sup>st</sup>, 2018**

# TABLE OF CONTENTS

	<b>Page</b>
<b>1 SUMMARY.....</b>	<b>7</b>
<b>2 INTRODUCTION.....</b>	<b>15</b>
2.1 GENERAL.....	15
2.2 SOURCES OF INFORMATION.....	15
2.3 UNITS AND CURRENCY.....	16
<b>3 RELIANCE ON OTHER EXPERTS.....</b>	<b>16</b>
<b>4 PROPERTY DESCRIPTION AND LOCATION.....</b>	<b>17</b>
4.1 PROPERTY LOCATION.....	17
4.2 TENURE.....	17
4.3 ROGERS CREEK OPTION AGREEMENT.....	21
4.4 ROYALTIES.....	22
4.5 PERMITS.....	23
4.6 COMMUNITY.....	23
<b>5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY.....</b>	<b>24</b>
5.1 ACCESSIBILITY.....	24
5.2 LOCAL RESOURCES AND INFRASTRUCTURE.....	24
5.3 CLIMATE.....	25
5.4 PHYSIOGRAPHY.....	25
<b>6 HISTORY.....</b>	<b>25</b>
6.1 WORK HISTORY PRIOR TO WALLBRIDGE/MIOCENE.....	25
6.2 WALLBRIDGE/MIOCENE/CARUBE WORK HISTORY.....	26
<b>7 GEOLOGICAL SETTING AND MINERALIZATION.....</b>	<b>28</b>
7.1 REGIONAL GEOLOGIC SETTING.....	29
7.2 PROPERTY GEOLOGY.....	31
7.3 MINERALIZATION.....	34
7.3.1 TARGET AREAS I AND II.....	34
7.3.2 TARGET AREA III.....	37
7.3.3 TARGET AREA IV.....	37
<b>8 DEPOSIT TYPES.....</b>	<b>37</b>

<b>9</b>	<b>EXPLORATION .....</b>	<b>42</b>
9.1	INTRODUCTION .....	42
9.2	WORK PERFORMED .....	43
9.2.1	WALLBRIDGE EXPLORATION WORK (2007-2009) .....	45
9.2.2	MIOCENE EXPLORATION WORK (2010 – 2012).....	47
9.2.3	CARUBE EXPLORATION WORK (2013 – 2017).....	48
9.3	RESULTS .....	50
9.3.1	INDUCED POLARIZATION (IP) SURVEY .....	50
9.3.2	ALTERATION MAPPING AND LOGGING .....	52
9.3.3	ANALYSIS OF STORED SOIL SAMPLES .....	52
9.3.4	RE-ANALYSIS OF PULP SAMPLES.....	54
9.3.5	INTEGRATION & MODELING OF ALL PROPERTY DATA.....	54
9.3.6	GEOCHEMICAL COMPILATION, REVIEW, INTERPRETATION .....	59
9.3.7	INFILL SOIL SAMPLING AND PROSPECTING .....	59
9.3.8	TARGETS I & II.....	59
9.3.9	TARGET III.....	64
9.3.10	TARGET IV.....	64
<b>10</b>	<b>DRILLING.....</b>	<b>64</b>
10.1	INTRODUCTION .....	64
10.2	LOGISTICS .....	65
10.3	RESULTS .....	65
10.3.1	2009 DRILLING.....	66
10.3.2	2010 DRILLING.....	67
10.3.3	2011 DRILLING.....	68
10.4	SUMMARY TABLE OF DRILLING RESULTS.....	75
<b>11</b>	<b>SAMPLE PREPARATION, ANALYSES AND SECURITY .....</b>	<b>76</b>
11.1	SAMPLING METHOD .....	76
11.2	SAMPLE ANALYSIS .....	77
11.3	QUALITY ASSURANCE AND QUALITY CONTROL PROGRAM.....	79
<b>12</b>	<b>DATA VERIFICATION.....</b>	<b>81</b>
<b>13</b>	<b>MINERAL PROCESSING AND METALLURGICAL TESTING .....</b>	<b>81</b>
<b>14</b>	<b>MINERAL RESOURCE ESTIMATES .....</b>	<b>81</b>
<b>15</b>	<b>MINERAL RESERVE ESTIMATES.....</b>	<b>82</b>
<b>16</b>	<b>ADJACENT PROPERTIES.....</b>	<b>82</b>

<b>17</b>	<b>OTHER RELEVANT DATA AND INFORMATION.....</b>	<b>82</b>
<b>18</b>	<b>INTERPRETATION AND CONCLUSIONS.....</b>	<b>82</b>
<b>19</b>	<b>RECOMMENDATIONS .....</b>	<b>86</b>
<b>20</b>	<b>REFERENCES .....</b>	<b>90</b>
<b>21</b>	<b>CERTIFICATE .....</b>	<b>93</b>

## LIST OF FIGURES

Figure 1: Location of the Rogers Creek Property in British Columbia .....	17
Figure 2: Rogers Creek Property Mineral Claims Map .....	18
Figure 3: Geological Subdivisions of the Cordilleran Belt in British Columbia .....	28
Figure 4: Rogers Creek Project and Morphological Belts (Monger and Journeay, 1994).....	29
Figure 5: Tertiary to Recent Features Formed During Cascade Magmatic Arc Development. (Monger & Journeay, 1994).....	31
Figure 6: Rogers Creek Property Geology.....	32
Figure 7: Exploration Targets and Mineralization.....	35
Figure 8: Tectonic settings of porphyry deposits (Sinclair, 2007).....	39
Figure 9: Schematic Section Through a Porphyry System and Associated Mineralization (Sinclair, 2007).....	39
Figure 10: Mineral Deposits of the Cascade Magmatic Arc.....	41
Figure 11: Total Field Magnetics and Target Areas .....	46
Figure 12: Detailed Magnetics Target Areas I and II .....	47
Figure 13: 2016 2D IP Survey Station Locations .....	51
Figure 14: Target Area I Exploration Results Compilation Map.....	51
Figure 15: Overview Location Map of Assayed Soil Samples .....	53
Figure 16: Overview of Rogers Creek Property Showing Data in 3D Model .....	55
Figure 17: Rogers Creek Target 1 Merged IP Isosurfaces Showing 30mV/V Chargeability (Green) and 30 milliSI Resistivity (Red) .....	56
Figure 18: Rogers Creek Main Block Showing Magnetic Inversion Block Model with Drillholes.....	57
Figure 19: Rogers Creek South - Target IV Showing Modeled Magnetics Isosurfaces .....	58
Figure 20: Overview of Rogers Creek Property Showing 2016 Soil Sample Locations .....	60
Figure 21: Compilation of Exploration Results Target Areas I, II and III.....	61
Figure 22: Plan View of Drill Holes Target 1 .....	66
Figure 23: Stockwork Mineralization at the End of Drill Hole MRC-006 .....	69
Figure 24: Geological Longitudinal Section D-D' .....	71
Figure 25: Geological Cross Section J-J .....	72
Figure 26: Geophysical Interpretation Longitudinal Section D-D' .....	73
Figure 27: Geophysical Interpretation Cross Section J-J' .....	74

Figure 28: Example of photographed core from MRC-007 (boxes 40 to 41).....77  
 Figure 29: Rogers Creek Property - Location of Proposed Work Program.....88

**LIST OF TABLES**

Table 1: Rogers Creek Claim Status as of December 31, 2016.....19  
 Table 2: Rogers Creek Property Option Terms (for 80% Interest).....22  
 Table 3: Rogers Creek Technical Work Index.....26  
 Table 4: Mineral Deposits Associated with the Cascade Magmatic Arc.....41  
 Table 5: Rogers Creek Technical Work Index Summary and Report Filings .....43  
 Table 6: Rogers Creek Drill Programs.....64  
 Table 7: Rogers Creek Drill Hole Summary Table.....65  
 Table 8: Drill Hole Assays Summary .....75  
 Table 9: Rogers Creek Property Proposed 2019 Work Program and Budget.....89

# 1 SUMMARY

## **Introduction**

The Rogers Creek Property (the Project or the Property) covers 212.34 km<sup>2</sup> in the Coastal Mountain Belt of British Columbia about 90 km northeast of Vancouver, B.C. The Property consists of 47 mineral claims and is being explored by Carube Copper Corp. (CUC:TSX.V) (“Carube”) for porphyry-style copper-gold mineralization. On May 24, 2018, Carube announced it had signed an Option Agreement with Tocvan Ventures Corp. (Tocvan), a private company based in Calgary, Alberta, that provides Tocvan the right to earn 80% of the Rogers Creek Property, as part of Tocvan’s Going-Public Transaction (Transaction) for listing on the Canadian Securities Exchange (CSE). This Technical Report was prepared for Tocvan to summarize exploration work completed to date and support technical disclosure in public documents. This Technical Report has been prepared in compliance with the requirements of National Instrument 43-101 and Form 43-101F1.

## **Property Description and Location**

The Property straddles the Lower Lillooet River valley, approximately 90 km northeast of Vancouver and 26 km south of Pemberton, British Columbia.

The Property consists of 47 contiguous mineral claims covering 212.34 km<sup>2</sup>. Carube owns a 100% interest in the Property, subject to a 2.5% Net Smelter Return (NSR) Royalty (Poirier Royalty) to Mr. Gary Poirier (Vendor), of which 1.25% can be bought back for \$1.25 M at the time of a production decision. Sufficient assessment work has been filed to keep key parts of the Property in good stead until the end of 2019 and 2021.

## **Terms of the Earn-In Option Agreement**

By the terms of the Rogers Creek Property Option Agreement dated May 18<sup>th</sup>, 2018, and subsequently amended on September 10<sup>th</sup>, 2018, Tocvan has the right to earn an 80% interest of the Property by spending \$1.9 million on exploration and issuing Carube \$25,000 in cash and 1.3 million shares over the initial 4 year earn in period. After successful completion of the earn-in period, an 80% -20% Joint Venture will be formed where Carube will retain 20% equity in the Property, subject to meeting future pro-rata expenditure commitments. Carube will also receive

advance royalty payments of \$50,000 per year after Tocvan has earned its 80% interest. An additional 3.0% NSR (Carube Royalty) is payable to Carube upon Tocvan's completion of the Option Terms. In the event that Commercial Production is achieved on the Property, Tocvan will assume rights to the Poirier Royalty terms and have the right to purchase the Carube Royalty for \$1,000,000 per 1.0% NSR, or \$2,000,000 for 2.0% of the 3.0% NSR Carube Royalty.

The Approval Date will be when the CSE has approved the Transaction. If the Transaction is not completed by December 23<sup>rd</sup>, 2018, the earn-in agreement is void and the Rogers Creek Project reverts 100% to Carube.

### **Access**

Access to the Property can be gained from Pemberton via BC Provincial Highway 99 N by way of the Samahquam Forest Service Road and various logging roads and ATV trails in the Rogers Creek Valley, where the current focus of exploration work is located.

The topography is very rugged with elevations ranging from 200 to 2,500m. Slopes can be very steep (more than 45°) restricting access to some parts of the property. Access to higher elevations on the property is by helicopter based out of Whistler or Pemberton. Temperatures in the Lillooet River valley average of 2°C in the winter and 26°C in the summer. Most rainfall occurs between October and March. The exploration season usually starts in April or May and ceases by the end of October to mid-November.

### **Geological Setting**

The Rogers Creek Property is centred on the Miocene-aged (16.7±2.7 Ma) Rogers Creek Intrusive Complex, which intrudes older metamorphosed Jurassic and Cretaceous rocks typical of the Coastal Belt into overlying and coeval Miocene Crevasse Crag volcanic flows and pyroclastic rocks. The Rogers Creek Intrusive Complex and the coeval Crevasse Crag volcanic rocks are phases of recent volcanic and plutonic activity of the Cascade Magmatic Arc.



## **Deposit Types**

The Rogers Creek Property is being explored for porphyry-style copper, gold, and molybdenum mineralization associated with intrusive activity that is part of the post-accretionary Tertiary age Cascade Magmatic Arc.

A number of very large porphyry deposits occur within the Cascade Magmatic Arc in neighbouring southeast Alaska and Washington State. The Glacier Peak porphyry in Washington State has an estimated “mineral inventory” of 1,000 Mt grading 0.5% Cu with no stated cut-off grade. When the entire “mineralized envelope” is estimated the “mineral inventory” increases to 1,700 Mt grading 0.334% Cu and 0.015% MoS<sub>2</sub> with no stated cut-off grade (Lasmanis, 1995).

The Margaret Deposit (also in Washington) was estimated to contain 200 Mt (unclassified), to a depth of 244 m grading 0.434% Cu, 0.0175% MoS<sub>2</sub>, 0.27 g/t Au, and 1.92 g/t Ag or 680 Mt to a depth of 305 m, grading 0.6% Cu equivalent (based on 1979 metal prices).

It should be noted that these are Historical Resources that pre-date the standards and guidelines defined in NI 43-101. These are not to be relied upon but demonstrate the potential of this deposit type.

## **Mineralization**

Porphyry related alteration and mineralization has been identified in 4 areas on the Rogers Creek Property. The most extensive zone of alteration/mineralization has been identified in Target Areas I and II within a 6 km x 2 km zone which exhibits widespread propylitic (pyrite-carbonate-chlorite-epidote) alteration. Several stages and styles of mineralization typical of porphyry systems are present within this zone and have been observed both in surface outcrop and in drill core.

The mineralization observed in Target Areas I and II includes:

- Wide spaced quartz-pyrite-chalcopyrite ± bornite bearing B and D-veins observed at surface in the north-eastern part of Target Area I.

- Quartz-pyrite-chalcopyrite bearing A and B-veins observed in the southern part of Area 1, near the collar of WRC-001.
- Disseminated quartz-pyrite-chalcopyrite and quartz-pyrite-chalcopyrite veins and veinlets associated with zones of pervasive chlorite-sericite mineralization in the north western part of Target Area I.
- Mineralization, hosted by silica-chlorite-sericite altered hornblende diorite, consisting of up to several percent disseminated chalcopyrite and lesser pyrite with rare chalcopyrite and pyrite veins up to 1 cm wide, associated with a 340° trending structural zone in the southwestern part of Target Area II.

The mineralization in all cases appears to be primarily controlled by northwest (320°-340°) trending structures, particularly near their intersection with 020° structures. Further work is needed to better understand the detailed structural controls on mineralization.

The mineralization in Target I is cut by a large post mineral breccia pipe which overprints the earlier mineralization described above.

Late stage gold and silver-rich poly-metallic (quartz-sulphide; pyrite, chalcopyrite, galena, sphalerite and tetrahedrite) and sulphide-sulphate vein assemblages that are present within the breccia pipe.

### **Exploration**

Exploration work carried out on the Rogers Creek Property by Carube, its predecessor company Miocene Metals Ltd. (Miocene), and Miocene's parent company Wallbridge Mining Company Limited (Wallbridge), has included:

- 1,786 km of helicopter-borne magnetic gradiometry and VLF-EM.
- 280 km of helicopter-borne radiometrics.
- levelling, merging and inversions of 47 kilometres of Induced Polarization (I.P.) geophysics.
- 3D modelling of geophysical and property data by Mira Geosciences with proprietary Geoscience Analyst 3D software.

- Prospecting, mapping and sampling, including the collection of 1,061 surface rock samples, 3,328 soil samples, and 318 stream sediment samples.
- Soil sample geochemical vectoring study.
- 5,209 metres of diamond drilling in 10 drill holes, including the analysis of 1,951 drill core samples.
- 5,200 m of drill core magnetic susceptibility readings totalling 1,164 readings.
- 329 resistivity/chargeability readings taken over 7 drill holes totalling ~4,055m.
- Limited surface and drill hole (4 holes) alteration mapping and logging.

Work to date has identified 4 target areas within the Miocene age Rogers Creek Pluton, based on geophysics, geochemistry, and the presence of alteration and/or mineralization. Most of the work to date has focused on Target Areas I and II, which are centred by 2 magnetic lows within a circular magnetic feature located over the north-western part of the intrusion.

Structurally controlled zones of mineralizing retrograde sericite-chlorite after potassic alteration have been identified in several widespread areas. A-, B-, D-, veins have been verified throughout Target Areas I and II. Multiple, large mono to polymict breccia pipes (syn- to post mineral) have been mapped with crosscutting late base metal veins. Porphyritic dykes have been mapped in structurally controlled fault zones adjacent to fragmental breccia flows.

### **Drilling**

To date a total of 10 holes have been drilled on the Property by Wallbridge and Miocene for a total of 5,209 m. The most interesting mineralization was observed in drill hole MRC-007 (the last hole in the 2011 program), which intersected 380 ppm Cu over 150.9 m from 345.60 to 496.50 m, including:

- 0.071% Cu over 3.0 m from 200.4 to 203.7 m.
- 0.089% Cu over 8.0 m from 222.0 to 230.0 m.
- 0.05% Cu over 16.7 m from 363.0 to 379.7 m.
- 0.172% Cu over 12.3 m from 422.2 to 434.2 m.

- 0.067% Cu over 6.0 m from 447.0 to 453.0 m.

### **Interpretations and Conclusions**

Work to date has advanced the Property from a small showing discovered on a logging road in 2007 to an advanced exploration stage property with evidence for a large mineralized system. This has validated the initial working hypothesis that there is considerable potential to discover significant mineralization within the Miocene age intrusions of the Cascade Magmatic Arc in southwestern BC, which have seen very little modern exploration.

Geophysics, drilling, mapping, core logging and sampling as well as sample core induced polarization (SCIP) and magnetic susceptibility data (taken during 2013) indicate a strong association of pervasively and strongly mineralized rocks in the vicinity of high order structures trending north to north-west at Target Area I. Carube geologists believe that fault zones identified along roads act as cross links between the higher order faults and thus provided a much larger surface to impregnate the surrounding rock. While these fault zones are poorly exposed, the visible sparse outcrop is extremely leached and fractured at surface with limonitic gossans. The range of anomalous soil samples in this area as well as numerous low-resistivity and high chargeability I.P. features further suggests that the granodiorite host is intensely altered and impregnated with sulphides at depth. Identification of lower or equal order structures associated with the faults identified is essential in defining high grade zones of this mineralized system for drill testing.

The brief review and alteration study of drill core, outcrop and hand specimens during 2013, 2015, and 2016 along with associated thin section work and 3-dimensional integration of all property data has improved the understanding of the geology and alteration patterns within the Rogers Creek mineralized system. The darker phase of the granodiorite is interpreted to be biotite +/- hornblende granodiorite that has been potassic altered in a prograde alteration event and subsequently retrograde altered to a sericite-chlorite-sulphide-magnetite assemblage during the mineralizing event. Most of these altered zones appear to be proximal to large scale arc-parallel and transpression faults within the valley that would have significantly focused fluid flow. It is believed that these zones are gradational into deeper “high-grade” potassic

cores possibly defined by the 2009 and 2015 I.P. surveys and subsequent integration, inversion and modelling.

Work to date has been focused in Target Area I. The last hole drilled in Target Area I, MRC-007, was drilled at the north end and away from a subsequently defined broad, open I.P. chargeability anomaly to the north and east and into a coincidental gold-copper soil anomaly. This drill hole intersected 158 metres averaging 380 ppm Cu, including **12.3 metres of 0.172% Cu**, suggesting that the core of the mineralized system may remain open to the north, possibly eastward of drill hole MRC-007, and beyond the limits of current geophysical and soil geochemical survey coverage.

Mineralization in drill hole MRC-007 is consistent with that from the periphery of a porphyry mineralized system. Interpretation is further complicated by the presence of a large post-mineral breccia pipe. Mineralized clasts noted within this pipe indicate it has passed through porphyry-style mineralization at depth. Further work is required to fully define the extent and geometry of what appears to be a very large mineralized system that remains open to the north, in attempt to define the location of the potassic core of the system which would be expected to produce higher grade intercepts.

Work in Target Area II has identified copper-gold mineralization associated with a chlorite-sericite altered biotite granodiorite. The large magnetic low at the centre of Target Area II remains unexplained.

Little work has been carried out in Target Areas III and IV. Both of these areas are currently ranked to be of lower priority to Target Areas I and II. Sufficient assessment work has been filed to keep Target III until December 31, 2021 and Target 4 until December 31, 2019. Because these areas are contiguous with Targets 1 and 2, any work completed on these targets can be applied to retain Targets 3 and 4 for future exploration.

## **Recommendations**

On September 28th, 2018, Tocvan applied for a new 5 year Multi Year Area Based (MYAB) exploration permit for the Rogers Creek Property with the British Columbia Ministry of Energy Mines and Petroleum Resources (MEMPR), providing for a 2-Phase, \$500,000 exploration program recommended and detailed below. This permit application is under review and has not been granted by MEMPR as of the Effective Date of this Technical Report (November 21, 2018).

### **Phase I - \$200,000 Program**

Objectives of Phase I exploration include obtaining a new 5 year MYAB Mineral Exploration Permit for the Rogers Creek Property and further definition of the size, northern limits, internal geometry and metal zonation of the Target I IP anomaly in preparation for a Phase II drill program.

The proposed Phase I work program includes geological mapping and road-cut sampling along new logging roads near Target Areas I, II and III, 3 - 3-kilometer Induced Polarization (DCIP) and soil sampling lines (200-300 soil samples in total) at Target I, 200 metres, 400 metres and 600 metres north of 2015 IP line L11100N to further define the northern limits of the mineralizing system. Results should be integrated with the new constrained 3D model to refine drill targeting for the Phase 2 follow-up drilling program.

### **Phase II - \$300,000 Drill Program**

Between 1,000 and 1,200 meters of drilling is recommended in 2-3 diamond drill holes, with at least 1 hole targeting the northern IP chargeability anomaly from the drill hole MRC-007 platform. The exact locations of the other 2 drill holes would be determined from Phase I exploration results and modelling.

Drill testing of coincident geological and geophysical targets at Target I should be prioritized, particularly at depth on the western margin of the breccia-pipe. This is where potassic and sericite-chlorite altered-biotite/hornblende diorite, exhibiting high density hydro fractures and

veins has been intersected by previous drilling. Work in Area II has identified copper-gold mineralization associated with a chlorite-sericite altered biotite granodiorite. The large, linear magnetic low at the centre of Area II remains unexplained and could be a potential drill target.

## **2 INTRODUCTION**

### **2.1 GENERAL**

The Rogers Creek Property covers 212.34 km<sup>2</sup> in the Coastal Mountain Belt of British Columbia, about 90 km northeast of Vancouver.

The Property consists of 47 mineral claims and is being explored by Carube Copper Corp. (Carube) for porphyry-style copper-gold mineralization. A number of recently discovered copper and gold showings occur on the Property within the Miocene (16.7+/-2.7 Ma) (Armstrong, unpublished) Rogers Creek Intrusive Complex, which has intruded through metamorphosed Jurassic and Cretaceous rocks typical of the Coastal Belt, into overlying and coeval Miocene volcanic flows and pyroclastic rocks.

This Technical Report was prepared for Tocvan Ventures Corp. (Tocvan), of Calgary, Alberta, a Reporting Issuer that wishes to utilize the Rogers Creek Property as a listing requirement in the Company's Going-Public Transaction with the Canadian Securities Exchange (CSE). This required Technical Report summarizes work completed on the Property to date, facilitates technical disclosure in public documents and has been prepared in compliance with the requirements of National Instrument 43-101 and Form 43-101F1.

### **2.2 SOURCES OF INFORMATION**

The majority of the background information in this Technical Report was extracted from NI 43-101 Technical Reports by Scott Wilson RPA, (McDonough, 2011) and P.C. Wood (2013), filed Carube assessment reports by Shannon Baird (2015, 2016) and from other information provided by Carube.

Material discussed in this Technical Report includes data collected by Wallbridge, Miocene and Carube personnel, and contractors under the direct supervision of these companies. Some information presented has been compiled from external sources such as government publications, academic papers, and other assessment work reports. The documentation reviewed, and other sources of information, are listed in Section 20 (References) at the end of this Technical Report.

In June, 2018 the author was asked to prepare this Technical Report by TocVan. On July 27, 2018, a 1-day site visit to the Rogers Creek Property was carried out by the author in the company of Carube's Exploration Manager Shannon Baird and Tocvan President and CEO Derek Wood.

Discussions were held with the following Carube personnel:

- Jeff Ackert, P.Geo., VP Business Development – Carube Copper Corp.
- Shannon Baird, P.Geo., Exploration Manager – Carube Copper Corp.

### **2.3 UNITS AND CURRENCY**

Metric units are used throughout this report. Assay and analytical results for trace elements and precious metals such as gold ("Au") and silver ("Ag") are quoted in grams per metric tonne (g/t), parts per million (ppm), or parts per billion (ppb). 1 g/t is the equivalent of 1 ppm and 1000 ppb. Analyses for major elements and base metals such copper ("Cu") and sulphur ("S") are reported in weight percent (%). 10,000 ppm or g/t is the equivalent to 1 %.

Unless otherwise specified, all dollar amounts are expressed in Canadian funds.

Unless otherwise specified, all coordinates are presented in UTM NAD83 within zone 10.

## **3 RELIANCE ON OTHER EXPERTS**

Third party contractors performed geophysical surveys and analytical work for Miocene and Carube on the Rogers Creek Property. Based on a review of the third party data, the author has no reason to believe that significant errors in the data exist.



## 4 PROPERTY DESCRIPTION AND LOCATION

### 4.1 PROPERTY LOCATION

The Property straddles the Lower Lillooet River valley, approximately 90 km northeast of Vancouver and 26 km south of Pemberton, British Columbia (Figure 1). The approximate geographic centre of the Property is at 122° 23' W, 50° 2' N. The Property is covered by 1:50,000 NTS map sheets 92 G/15 and 16 and 92 J/01 and 02.

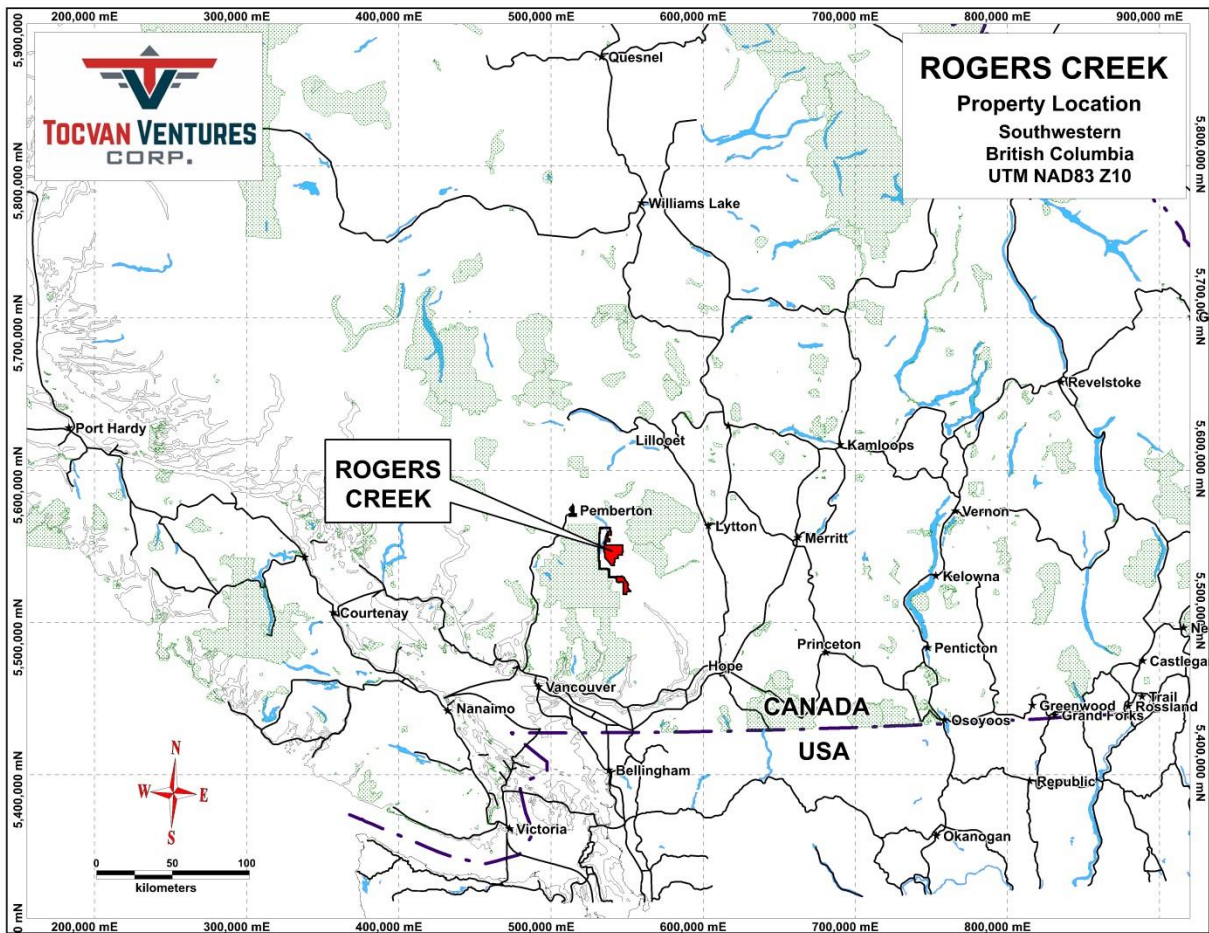


Figure 1: Location of the Rogers Creek Property in British Columbia

### 4.2 TENURE

The Property consists of 47 contiguous mineral claims covering 212.34 km<sup>2</sup> (Figure 2). All claims lay within the South-West Mining Division of British Columbia. Table 2 summarizes the claim status as of December 31<sup>st</sup>, 2016. A mineral claim holder is required to perform

assessment work and document this work to maintain the title as outlined in the regulations of the British Columbia Ministry of Energy and Mines. The amount of work required is \$5.00 per hectare for the first two years, \$10.00 per hectare for the third and fourth years, \$15.00 per hectare for the fifth and sixth, and \$20.00 per hectare thereafter. Alternatively, the claim holder may pay twice the equivalent amount to the British Columbia Government as “Cash in Lieu” to maintain title to the claims. Sufficient assessment work has been filed to keep the key parts of the Property in good stead until 2019 and 2021. (Figure 2, Table 1)

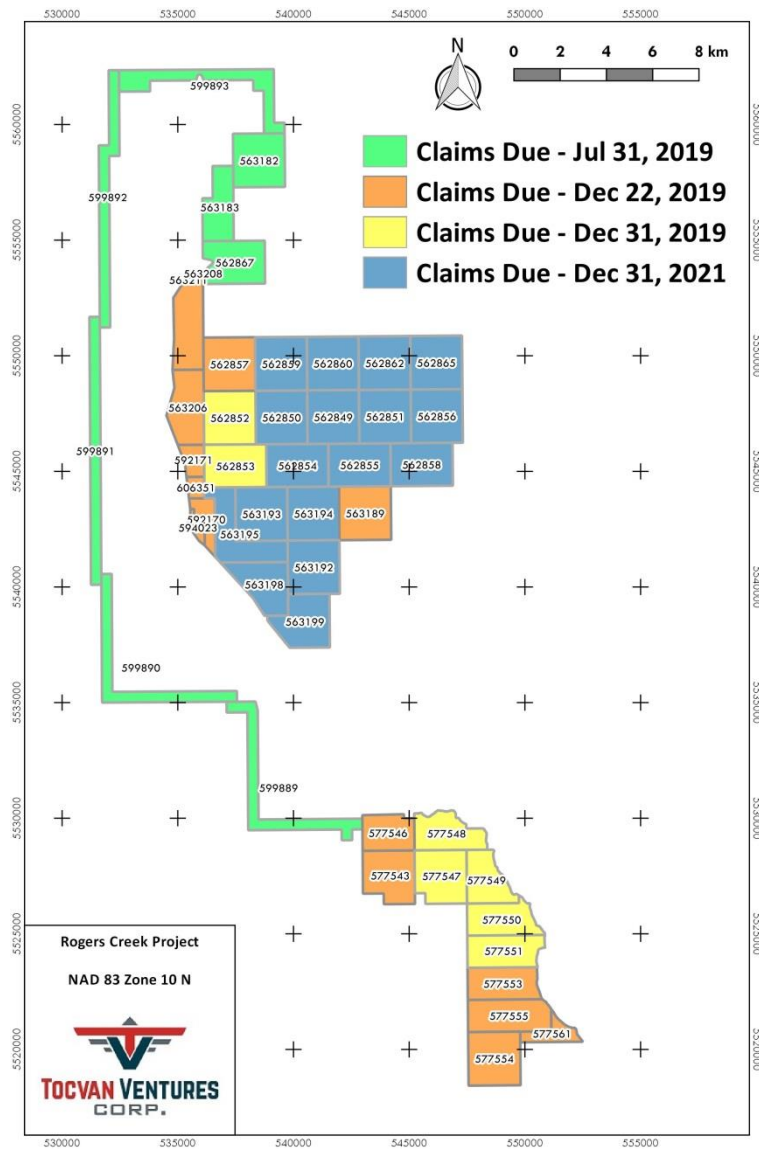


Figure 2: Rogers Creek Property Mineral Claims Map

Table 1: Rogers Creek Claim Status as of December 31, 2016

<b>Rogers Creek Property, British Columbia</b>								
<b>Schedule of Mineral Claims</b>								
	<b>Tenure Number</b>		<b>Map Area (NTS)</b>	<b>Area (hectares)</b>		<b>Holder</b>	<b>Recorded Date</b>	<b>Work Due Date</b>
1	562849		092J	518.39		Carube	11-Jul-2007	31-Dec-2021
2	562850		092J	518.41		Carube	11-Jul-2007	31-Dec-2021
3	562851		092J	518.37		Carube	11-Jul-2007	31-Dec-2021
4	562852		092J	518.41		Carube	11-Jul-2007	31-Dec-2019
5	562853		092J	497.86		Carube	11-Jul-2007	22-Dec-2019
6	562854		092J	497.86		Carube	11-Jul-2007	31-Dec-2021
7	562855		092J	497.84		Carube	11-Jul-2007	31-Dec-2021
8	562856		092J	518.36		Carube	11-Jul-2007	31-Dec-2021
9	562857		092J	518.17		Carube	11-Jul-2007	22-Dec-2019
10	562858		092J	497.83		Carube	11-Jul-2007	31-Dec-2021
11	562859		092J	518.16		Carube	11-Jul-2007	31-Dec-2021
12	562860		092J	518.14		Carube	11-Jul-2007	31-Dec-2021
13	562862		092J	518.11		Carube	11-Jul-2007	31-Dec-2021
14	562865		092J	518.11		Carube	11-Jul-2007	31-Dec-2021
15	562867		092J	497.03		Carube	11-Jul-2007	31-Jul-2019
16	563182		092J	517.28		Carube	19-Jul-2007	31-Jul-2019
17	563183		092J	372.60		Carube	19-Jul-2007	31-Jul-2019
18	563189		092J	518.77		Carube	19-Jul-2007	22-Dec-2019
19	563192		092J	519.00		Carube	19-Jul-2007	31-Dec-2021
20	563193		092J	518.80		Carube	19-Jul-2007	31-Dec-2021
21	563194		092J	518.79		Carube	19-Jul-2007	31-Dec-2021
22	563195		092J	518.88		Carube	19-Jul-2007	31-Dec-2021
23	563198		092J	519.07		Carube	19-Jul-2007	31-Dec-2021
24	563199		092G	519.22		Carube	19-Jul-2007	31-Dec-2021
25	563206		092J	497.65		Carube	19-Jul-2007	22-Dec-2019
26	563208		092J	518.02		Carube	19-Jul-2007	22-Dec-2019
27	563211		092J	20.71		Carube	19-Jul-2007	22-Dec-2019
28	577543		092G	478.66		Carube	29-Feb-2008	22-Dec-2019

<b>Rogers Creek Property, British Columbia</b>								
<b>Schedule of Mineral Claims</b>								
	<b>Tenure Number</b>		<b>Map Area (NTS)</b>	<b>Area (hectares)</b>		<b>Holder</b>	<b>Recorded Date</b>	<b>Work Due Date</b>
29	577546		092G	395.28		Carube	29-Feb-2008	22-Dec-2019
30	577547		092G	499.47		Carube	29-Feb-2008	31-Dec-2019
31	577548		092G	478.51		Carube	29-Feb-2008	31-Dec-2019
32	577549		092G	416.25		Carube	29-Feb-2008	31-Dec-2019
33	577550		092G	478.84		Carube	29-Feb-2008	31-Dec-2019
34	577551		092G	478.96		Carube	29-Feb-2008	31-Dec-2019
35	577553		092G	458.26		Carube	29-Feb-2008	22-Dec-2019
36	577554		092G	521.06		Carube	29-Feb-2008	22-Dec-2019
37	577555		092G	500.05		Carube	29-Feb-2008	22-Dec-2019
38	577561		092G	208.38		Carube	29-Feb-2008	22-Dec-2019
39	592170		092J	186.78		Carube	29-Sep-2008	22-Dec-2019
40	592171		092J	145.21		Carube	29-Sep-2008	22-Dec-2019
41	594023		092J	103.77		Carube	08-Nov-2008	22-Dec-2019
42	599889		092G	519.93		Carube	23-Feb-2009	31-Jul-2019
43	599890		092G	498.63		Carube	23-Feb-2009	31-Jul-2019
44	599891		092J	518.55		Carube	23-Feb-2009	31-Jul-2019
45	599892		092J	517.49		Carube	23-Feb-2009	31-Jul-2019
46	599893		092J	516.97		Carube	23-Feb-2009	31-Jul-2019
47	606351		092J	82.99		Carube	19-Jun-2009	22-Dec-2019
<b>Total</b>				<b>21,233.88</b>	<b>ha</b>			

Thirty nine of the 47 mineral claims were originally staked by the Vendor, who optioned them to Wallbridge in early 2008. The remaining claims were staked by Wallbridge. Under terms of an agreement dated February 27, 2008, as amended December 12, 2008, Wallbridge had the option of acquiring a 100% interest in the Vendor's claims, subject to a 2.5% NSR retained by the Vendor, through a series of firm and optional payments totalling C\$400,000 and firm and optional work commitments totalling C\$1.25 M, which commitments were all met.

By way of a Plan of Arrangement, Wallbridge created Miocene in 2010 as a spin-out company in order to finance exploration and development of a portfolio of projects in southwest British Columbia (the Properties), including the Rogers Creek Property. Miocene purchased 100% of Wallbridge's interest in all of the Properties in exchange for payment of 20,000,000 common shares of Miocene, subject to the terms of an option and joint venture agreement with Wallbridge dated May 1, 2010. In that agreement, Wallbridge was granted the right to earn a carried interest in the Properties by expending C\$500,000 on or before December 31, 2010; this carried interest being subject to a Buy-Back Option held by Miocene. On August 31, 2010, Wallbridge, having previously given notice that \$500,000 in qualifying expenditures had been made in the Properties, exercised its option to become the owner of an 11.63% carried interest in the Properties. Miocene exercised its buy-back provision in August 2011 and bought back the 11.63% interest in the BC properties for \$600,000. As a result Miocene retained a 100% interest in the Property, subject to the 2.5% NSR royalty to the Vendor, of which 1.25% could be bought back for \$1.25 M at the time of a production decision.

On July 7, 2015, Miocene amalgamated by way of a reverse takeover (RTO) business combination with Carube Resources Inc. and the resulting Company became Carube Copper Corp. (CUC:TSX.V). Carube now owns a 100% interest in the Property, subject to the Vendor 2.5% NSR. The Rogers Creek, Mackenzie and Salal Projects were acquired with the reverse takeover of Miocene. As at February 28, 2018 property costs total \$3,303,943. A total value of \$3,300,719 was allocated to the value of these acquired properties in the RTO. During the six month period ended February 28, 2018, Carube incurred geology costs of \$10,048 and geochemical costs of \$2,010 for the Rogers Creek and Mackenzie Projects.

#### **4.3 ROGERS CREEK OPTION AGREEMENT**

On May 24, 2018, Carube announced it had signed an Option Agreement (the Agreement), subsequently amended on September 10<sup>th</sup>, 2018, with Tocvan Ventures Corp. (Tocvan) of Calgary, Alberta, that provides Tocvan the right to earn 80% of the Rogers Creek Property, as part of Tocvan's going-public Transaction on the Canadian Securities Exchange (CSE). By the terms of the Agreement, Tocvan has the right to earn an 80% interest of the Project by spending

\$1.9M on exploration and issuing Carube \$25,000 in cash and 1.3M shares over the initial 4 year earn in period. After successful completion of the earn-in period, an 80% - 20% Joint Venture will be formed whereby Carube will retain both a 20% equity, subject to meeting future pro-rata expenditure commitments, and a 3% NSR on the Property. Carube will also receive advance royalty payments of \$50,000 per year after Tocvan has earned its 80% interest.

In consideration of the grant of the Option, Tocvan will pay Carube \$25,000 within 5 days of the Approval Date and issue to Carube 500,000 common shares in the capital of Tocvan on the Approval Date, which Common Shares will be subject to such hold periods that are prescribed by the securities laws of the Province of Alberta and the CSE's rules and policies. The Rogers Creek Property option terms are further detailed below in Table 2.

Table 2: Rogers Creek Property Option Terms (for 80% Interest)

<b>Date</b>	<b>Exploration Expenditures</b>	<b>Tocvan Share Issuance</b>	<b>Cash</b>
Signing		500,000	\$25,000
1 <sup>st</sup> Anniversary	\$200,000	200,000	
2 <sup>nd</sup> Anniversary	\$300,000	200,000	
3 <sup>rd</sup> Anniversary	\$400,000	200,000	
4 <sup>th</sup> Anniversary	<u>\$1,000,000</u>	<u>200,000</u>	
<b>Total</b>	<b>\$1,900,000</b>	<b>1,300,000</b>	<b>\$25,000</b>

The Approval Date will be when the CSE has approved this agreement as part of Tocvan's Going Public Transaction. If the Transaction is not completed by December 23, 2018, the earn-in agreement is void and the Rogers Creek Copper Project reverts 100% to Carube.

#### **4.4 ROYALTIES**

The Rogers Creek Property is subject to 2 separate underlying Royalty Agreements. A 2.5% NSR (Poirier Royalty) is payable to the original Vendor (Mr. Gary Poirier), of which 1.25% may be purchased by Carube for \$1.25 M at the time of a production decision. By the terms of the subsequent Rogers Creek Property Option Agreement, a second 3.0% NSR (Carube Royalty) is payable to Carube upon Tocvan's completion of the Option Terms. In the event that Commercial Production is achieved on the Property, Tocvan will assume rights to the

Poirier Royalty terms and have the right to purchase the Carube Royalty for \$1,000,000 per 1.0% NSR, or \$2,000,000 for 2.0% of the 3.0% NSR Carube Royalty.

#### **4.5 PERMITS**

The British Columbia Ministry of Energy Mines and Petroleum Resources (“MEMPR”) requires a permit for any underground exploration, or surface exploration that requires reclamation. Historically, exploration permits require a Notice of Work (“NoW”) each year, and the reclamation work (with associated reclamation bonds) can be accumulated at the discretion of the operator, until they decide to discontinue work. At that time the operator completes any unfinished reclamation work to the satisfaction of the Mines Inspector, closes the Exploration Site for further exploration, and applies to MEMPR to be reimbursed for the bond. In this regard, the Rogers Creek Property has a Mine Site designation of #1610454 and a recently expired Mineral Exploration Permit (since the 2008 field program) numbered MX-7-188. An environmental reclamation bond of C\$2,500 is held in trust. Recent changes by MEMPR allow (and encourage) Multi Year Area Based (“MYAB”) exploration notices. On May 22<sup>nd</sup>, 2009, Wallbridge submitted a NoW and was awarded Mineral Exploration Permit MX-7-188 for exploration work on the Property. This Permit was subsequently amended on August 12<sup>th</sup>, 2011, extended for a period of 2 years in 2016 and expired on October 1<sup>st</sup>, 2018. On September 28<sup>th</sup>, 2018, Tocvan applied for a new 5 year MYAB exploration permit for the Rogers Creek Property providing for the recommended exploration program detailed in Section 19 of this Technical Report. This permit application is under review and has not been granted by MEMPR as of the Effective Date of this Technical Report (November 21, 2018).

#### **4.6 COMMUNITY**

The Rogers Creek Property is situated in the traditional lands of the Samahquam First Nation in the watersheds of the Lower Lillooet, Pitt, and Stave Rivers. Carube and its predecessor Companies have a long standing and what appears to be amicable working relationship with the Samahquam First Nation. Company representatives routinely meet with local community members and the St’at’imc Chiefs Council (SCC) to provide exploration progress reports, discuss and engage in employment and commercial agreements, opportunities and issues raised at the SCC and community level and future planning.

## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **5.1 ACCESSIBILITY**

Access to the Property can be gained from BC Provincial Highway 99 N by way of the Samahquam Forest Service Road and various logging roads and ATV trails. From Pemberton, travel approximately 28 km east on Hwy 99 N toward Lillooet. After crossing the Birkenhead River turn right (south) onto the Samahquam Forest Service Road; the northern edge of the Property is at km 15. Turning left at km 42, the Rogers Creek Forest Service Road provides access to subsidiary logging roads and ATV trails in the Rogers Creek Valley, where the current focus of exploration work is located.

The Samahquam Forest Service Road is a maintained gravel road, drivable by car, which provides access to several communities of the Samahquam First Nation within the Lillooet River Valley. The Rogers Creek Forest Service Road requires the clearance of at least a half-ton pickup truck. Access to higher elevations on the property is by helicopter based out of Whistler or Pemberton.

### **5.2 LOCAL RESOURCES AND INFRASTRUCTURE**

The Village of Pemberton has a population of approximately 2,300; it has train and bus stations, a small airport, a small health unit, an elementary school, Post Office and several lodges and motels. It primarily provides services for recreation and heavy industry. Agriculture and forestry play a minor role in the overall industrial output of the Village.

A high tension power line extends through the western side of the Rogers Creek Property following the Lower Lillooet River with a recently built substation located at the entrance to the Rogers Creek Property.

Land uses on the Rogers Creek Property include recreational activities (hunting, fishing and hiking), mineral exploration and forestry. The Property occurs within the traditional territory of the Samahquam First Nation, who have logging operations in and around the Property.



### **5.3 CLIMATE**

Temperatures in the Lillooet River valley average of 2°C in the winter and 26°C in the summer although temperatures are much colder on surrounding mountain peaks, which reach elevations of close to 2,380m; most rainfall occurs between October and March. Higher elevations in the Coast Mountains get heavy snowfall in the winter, which makes exploration difficult to impossible throughout the winter. The exploration season usually starts in April or May and ceases by the end of October to mid-November.

### **5.4 PHYSIOGRAPHY**

Regional topography is very rugged with elevations ranging from 200 up to 2,500m. Mountain slopes can be very steep (more than 45°) restricting access to some parts of the Property. Geological structures seem to have a major influence on topography as they form valleys within the homogenous igneous rocks found on the Property. In areas with mafic meta-sedimentary lithologies, slopes are generally not as steep as in the Intrusive Complex. Valleys are filled with talus and fluvial sediments derived from erosion of adjacent ridges. Slopes are often covered by talus and vegetation. At lower elevations, vegetation consists of cedar and fir trees and undergrowth typical of the temperate rainforest in southwest BC. Stunted spruce and pine can be found at higher elevations.

## **6 HISTORY**

### **6.1 WORK HISTORY PRIOR TO WALLBRIDGE/MIOCENE**

The Lower Lillooet River provided the first route into the interior of BC during the gold rush of the mid-19<sup>th</sup> century. Presumably prospectors at that time would have panned many areas along the Lillooet River itself, as well as its tributaries, such as Rogers Creek.

Very little modern exploration work has ever been conducted on the Property. Limited work was carried out by Placer Development, and Noranda Exploration on two small claim groups covering parts of the property in the mid-1980s. In Assessment Report Number 12,079 (Boyce, working for Placer Development Ltd., in 1984) minor geochemical work was described including collection of 16 stream sediment samples, 25 soil samples and 10 rock

outcrop samples. Several “modest” Au, Ag, As and Pb anomalies were identified, which, given the small area covered, is of only general relevance to the objectives of the current exploration program.

In Assessment Report 14,119 Wilson (Noranda Exploration Ltd., 1986) describes the collection of 123 soil samples which defined an open-ended silver, zinc and lead anomaly and erratically distributed gold anomalies potentially indicating the presence of gold and base metal veining associated with a porphyry environment.

## **6.2 WALLBRIDGE/MIOCENE/CARUBE WORK HISTORY**

In 2007 Mr. Gary Poirier located a copper showing while excavating a logging road on the north side of the Rogers Creek Valley. He staked an initial claim group covering the showing and surrounding area. Wallbridge carried out an initial site visit in the fall of 2007 and subsequently acquired the property. Work carried out by Wallbridge and subsequently Miocene is tabulated in Table 3 below, and is described in more detail in Section 9, Exploration.

Table 3: Rogers Creek Technical Work Index

<b><u>Year</u></b>	<b><u>Work Carried Out</u></b>	<b><u>Description</u></b>
2007	Soil-Rock Sampling	Phase 1 - Initial recon visit - sampling and assaying of discovery site (12 soils, 13 rocks)
2007	Soil-Rock Sampling	Phase 2 - Followup sampling/mapping over the Mag high and low (346 soils, 76 rocks)
2008	Airborne Geophysics	Phase 3 - 1506 L-km helicopter-borne magnetic gradiometry and VLF-EM survey by CMG Ltd.
2008	Soil-Rock-Silt-HMC Sampling	Collection and Analysis of 307 soils, 670 rocks, 150 stream sediments, and 73 heavy mineral concentrates
2008	Line Cutting	A 41 km long grid was cut in preparation for an induced polarization survey
2009	Soil-Rock-Silt Sampling	Collection and Analysis of 216 soils, 119 rocks, 14 stream sediments
2009	Induced-Polarization Survey	IP-Survey over Target Areas I and II at resolutions of 25m and 50m over 41 L-km by Abitibi Geophysics

<u>Year</u>	<u>Work Carried Out</u>	<u>Description</u>
2009	Magnetic Susceptibility	Collection of magnetic susceptibility data for surface rocks and drill core
2009	Magnetic Inversion	Inversion of airborne magnetic data obtained by CMG Ltd. in 2008 by Mira Geosciences Ltd.
2009	Diamond Drilling	Drilling of 2,122.75 meters to follow up on IP survey and surface sampling results
2010	Prospecting with Soil-Rock-Silt Sampling & Assaying	Collection and Analysis of 1124 soils, 58 surface rocks, 43 stream sediments, structural mapping & prospecting
2010	Diamond Drilling	Drilling of 1,024.39 meters (2 holes) targeting a deep IP anomaly and an open-ended gold in soil anomaly
2010	Airborne Geophysics	A 280 L-km helicopter-borne magnetic gradiometry and VLF-EM & radiometric survey by CMG Ltd. over Target IV
2011	Prospecting with Soil-Rock-Silt Sampling & Assaying	Collection and Analysis of 580 soils, 65 rock channel samples, 47 surface rocks, 38 stream sediments, structural mapping & prospecting
2011	Diamond Drilling & Core Assaying	Drilling of 2,062 meters (3+2 holes, Targets II & I, respectively) targeting a disseminated copper mineralization & IP anomalies (702 Samples)
2012	Prospecting with Soil-Rock-Silt Sampling (Unassayed)	Collection and Analysis of 532 soils, 13 surface rocks, and 239 core samples. All 2012 samples are in storage in Pemberton awaiting analysis.
2013	Physical Property Measurements and Review of Drill Core	Magnetic susceptibility measurements, and chargeability and resistivity measurements were collected from drill core, and a review of the geological logging was carried out with particular emphasis on structure and alteration
2015	Alteration and Geological Mapping & Core Review	Caracle Creek International Consultants reviewed selected drill holes and field outcrops with Carube Copper Corp staff
2015	Induced-Polarization Survey	6 L-km ground IP-Survey by SJ Geophysics on Target Area I at 25m resolution over 2 lines located north of the IP-Survey performed in 2009 by Abitibi Geophysics.
2015	Assaying of Soils Taken in 2012	169 Soil samples collected in 2012 from Target Areas I and IV were submitted for analysis with ALS Chemex.
2016	Mira Geosciences Data Compilation and Modelling	Compilation, merging, inversion, and modelling of all available data on the property with final integration in to Geoscience Analyst for viewing.

<u>Year</u>	<u>Work Carried Out</u>	<u>Description</u>
2016	Geochemical Interpretation and Vectoring	Compilation and interpretation of all surface geochemical data for "porphyry cap indicators" by Rampton Resource Group to assist with vectoring towards hidden/buried porphyry deposits
2016	Recon & Soil Sampling	Reconnaissance along newly built logging roads and collection of 42 Soil samples (including 2 QA/QC) submitted for analysis.

## 7 GEOLOGICAL SETTING AND MINERALIZATION

The Canadian Cordillera is comprised of 5 morpho-geological belts that record Mesozoic accretion of the allochthonous Insular and Intermontane superterrane to North America. From west to east these are the Insular, Coastal, Intermontane, Omineca, and Foreland belts. The Property is located within the Coastal Mountain Belt of British Columbia (Figure 3). The Coast Belt includes the Coast and Cascade Mountains and extends from south of the British Columbia – Washington State border, some 1,500 km northward up to the southern border of the Yukon Territory and beyond. The Coastal Mountain Belt is made up mostly of 185 to 50 million year old granitic rocks, plus scattered remnants of older, deformed sedimentary and volcanic rock into which the granitic bodies have intruded. The last 40 million years, however, have been shaped by magmatism related to development of the Cascade Magmatic Arc (Figure 4), formed by subduction of the Juan de Fuca Plate beneath the North American Plate (Monger and Journeay 1994).

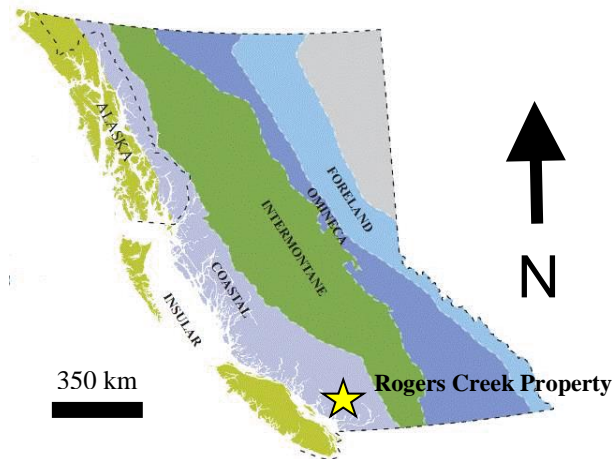


Figure 3: Geological Subdivisions of the Cordilleran Belt in British Columbia

## 7.1 REGIONAL GEOLOGIC SETTING

The Coast Belt in southern BC is divided into south-western and south-eastern parts (Figure 4) based on the distribution of plutonic rocks, terranes and structures (Crickmay, 1930)

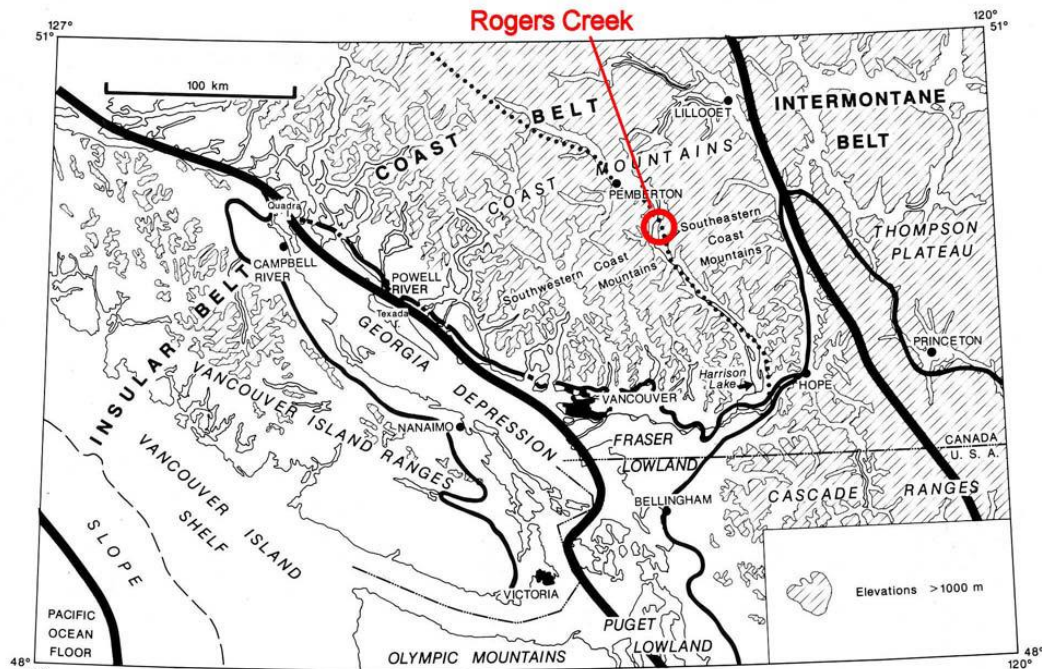


Figure 4: Rogers Creek Project and Morphological Belts (Monger and Journeay, 1994)

The south-western Coast Mountains feature mainly Middle Jurassic to mid-Cretaceous plutons (ca. 165–91 Ma) which intrude supracrustal sequences of the Middle Triassic to Middle Jurassic Wrangellia and Harrison Lake terranes and the overlapping Jurassic-Cretaceous volcanic and sedimentary rocks. The western boundary is the western limit of Middle Jurassic intrusions that possibly were localized along pre- and syn-plutonic faults. The eastern boundary is delineated by the high-grade, internal, metamorphic thrust nappes of the Coast Belt Thrust System that are derived in large part from basinal strata (Bridge River terrane) characteristic of the south-eastern Coast Mountains. Rocks (Harrison terrane and Gambier Group) characteristic of the eastern part of south-western Coast Mountains are also internally imbricated along west-directed thrust faults of the external part of the Coast Thrust Belt System, below nappes featuring high-grade metamorphism to the east. Thus, the south-western Coast Mountains occupy a plutonic-dominated crustal block that acted as a foreland

buttress during early Late Cretaceous (91–97 Ma) west-directed thrusting centred in the south-eastern Coast Mountains (Crickmay, 1930 and Monger and Journeay 1994).

The south-eastern Coast Mountains feature mid-Cretaceous through early Tertiary (103–47 Ma) plutonic rocks, emplaced within (mainly) Bridge River, Cadwallader and Methow Terranes. This part of the Coast Mountains was the site of the most intense deformation and highest grade metamorphism in Late Cretaceous-early Tertiary time. All three terranes in the south-eastern Coast Mountains appear to be founded on oceanic crust.

During the last 40 million years the Coast Range has been affected by magmatism related to development of the Cascade Magmatic Arc, formed by subduction of the Juan de Fuca Plate beneath the North American Plate (Monger and Journeay, 1994).

Post-accretionary plutonism in southwest British Columbia can be divided into an early and a late phase, with the late phase being the current focus of economic interest. During Late Cretaceous through Middle Eocene, there was extensive plutonism related to subduction of the Farallon Plate beneath North America. Plutons were emplaced along active, crustal-scale, strike-slip structures along the length of the northwest Cordillera, dominantly along the eastern margin of the Coastal Belt overprinting the Intermontane Superterrane. Examples include the Mission Ridge Plutonic Suite.

Late Eocene through Pliocene (and present) plutonism of the Cascade Magmatic Arc is related to subduction of broken remnants of the Farallon Plate, including the Juan de Fuca Plate, beneath North America. Cascade plutons were emplaced along the older, crustal scale, Eocene structures and in particular the intersection of these with much younger arrays of steep northeast trending cross-structures (Figure 5).

The Cascade Magmatic Arc, which includes Cu-Mo mineralized Miocene-age, calc-alkalic intrusions, is best understood from its exposure in the Cascade Mountains of Washington where it intrudes volcanic and sedimentary rocks and is easier to identify than where it

intrudes similar older (Cretaceous) crystalline rocks in the Coast Mountains of British Columbia.

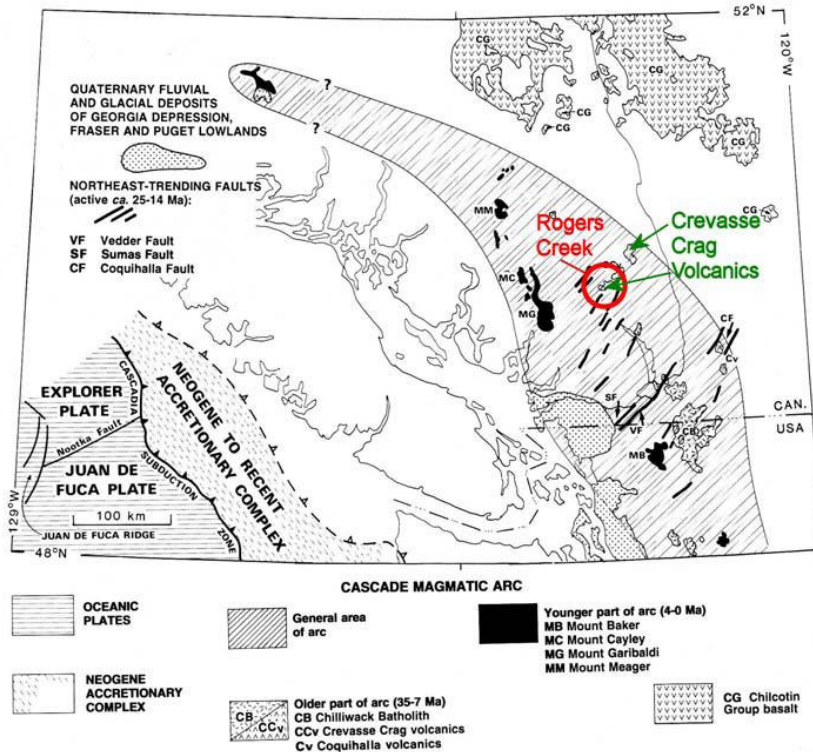


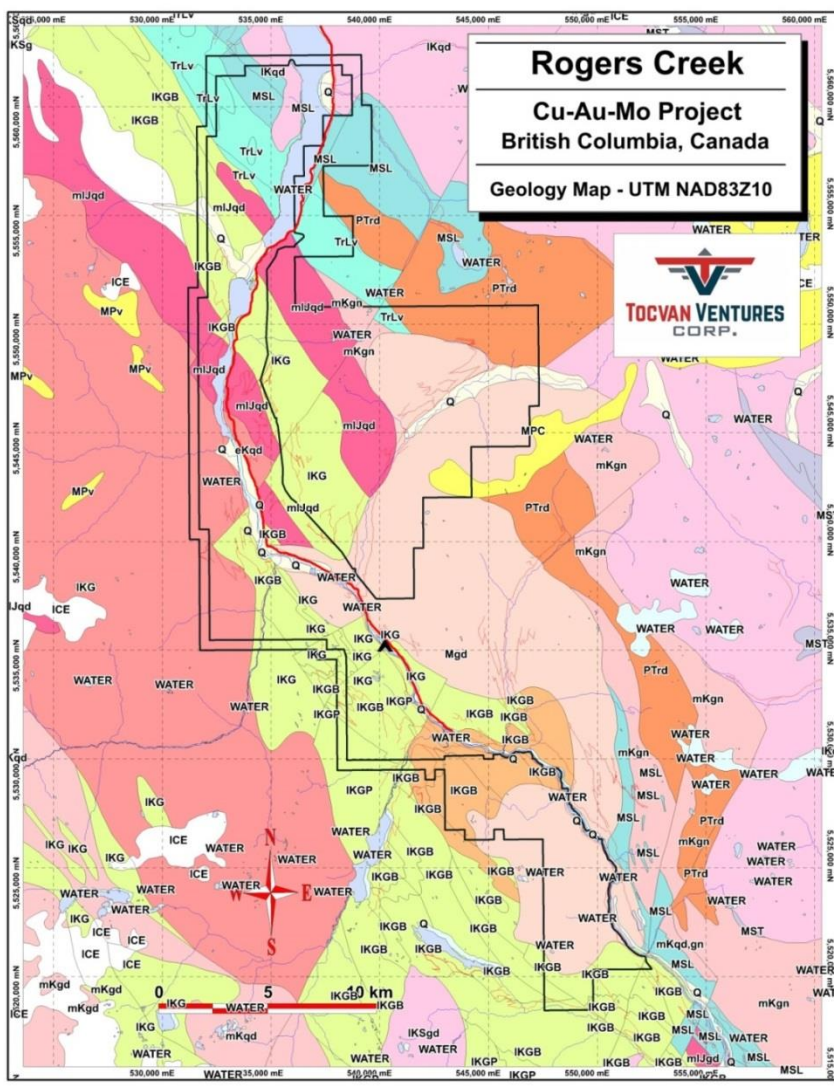
Figure 5: Tertiary to Recent Features Formed During Cascade Magmatic Arc Development. (Monger & Journeay, 1994).

## 7.2 PROPERTY GEOLOGY

The Rogers Creek Property is centred on the Miocene-aged ( $16.7 \pm 2.7$  Ma; (Armstrong unpublished)) Rogers Creek Intrusive Complex, (Figure 6) which intrudes through the older metamorphosed Jurassic and Cretaceous rocks typical of the Coastal Belt into overlying and coeval Miocene Crevasse Crag volcanic flows and pyroclastic rocks (Journeay and Monger 1997). The Rogers Creek Intrusive Complex and the coeval Crevasse Crag volcanic rocks are phases of recent volcanic and plutonic activity of the Cascade Magmatic Arc.

The Rogers Creek Intrusive Complex and the coeval Crevasse Crag volcanic rocks are phases of recent volcanic and plutonic activity of the Cascade Magmatic Arc. Reconnaissance and detailed mapping suggests the Rogers Creek Pluton to be more complex than the single, homogenous granodiorite body overlain by a narrow sliver of coeval pyroclastic rock as





Unit	Rock class	Rock type	Tectonic Environment	Comments
eK	plutonic	quartz-diorite, diorite	arc-related plutons	Spatially associated with Upper Jurassic-Lower Cretaceous arc volcanics of the Gambier Group; interpreted as sub-volcanic roots to a west-facing arc; linked to subduction of Farallon Plate along the outboard margin of Wrangellia
ICE		icefield/glacier		
IKG	volcanic / sedimentary	crystal tuff, volcanoclastic sandstone, phyllite, lapilli tuff, flow-banded rhyolite, quartz and feldspar-phyric rhyolite, andesite, volcanic breccia	continental arc volcanics and clastics	Valanginian-Hauterivian arc-related volcanics; comprises both lower sub-alkaline and upper calc-alkaline suites; part of a west(?) facing arc sequence formed in an extensional or transtensional setting; host to important base-metal deposits
IKS	plutonic	hornblende- and biotite-hornblende quartz-diorite	arc-related plutons	Post-kinematic plutons; locally contain magmatic epidote; part of a NW-trending, eastward-younging continental arc; related to subduction of the Farallon Plate; deeper level equivalents include foliated metaplutonic suites of the Cascade Metamorphic Cor
M	plutonic	hornblende-biotite granodiorite	arc-related plutons	RODGER'S CREEK PLUTON: calc-alkaline plutons; part of a NW-trending, eastward-younging post-accretionary arc; related to subduction of Farallon Plate; emplacement locally controlled by NE-trending Miocene faults; source to calc-alkaline arc volcanics of the Pemberton Belt
MCC	metamorphic	pelitic schist, amphibolite, quartzite, phyllite, minor chert, limestone and ultramafic rock	metamorphosed accretionary wedge	Poly-metamorphic core of Coast Belt Thrust System; derived from oceanic rocks of Bridge River Complex and overlying Cayoosh Assemblage; tectonically buried and metamorphosed in early Late Cretaceous (105-90 Ma) and Late Cretaceous (90-84 Ma) time
mK	metamorphic	biotite-hornblende granodiorite gneiss, biotite-hornblende-quartz diorite gneiss	arc-related plutons	Deformed and metamorphosed pre- and syn-orogenic I-type plutons of the southeastern Coast Belt, intruded during thrust imbrication and eastward underplating of paleocontinental margin; high-pressure phases record 35-40 km of crustal thickening
mJ	plutonic	biotite-hornblende quartz-diorite	arc-related plutons	Terrane-stitching calc-alkaline/alkaline I-type plutons; intruded across boundaries of previously amalgamated terranes of the Coast and Intermontane belts; exhumed roots to coeval arc volcanics of the Harrison Lake and Bowen Island groups
MPV	volcanic	basaltic andesite, andesite, dacite flows, volcanic breccia, tuff, plagioclase-phyric flows	continental arc volcanics	CREVASSE CRAG COMPLEX: non-marine calc-alkaline continental arc volcanics; part of Pemberton Volcanic Belt; related to eastward subduction of the Farallon Plate; ascent of magmas and eruption of volcanic centers controlled by NE-trending, Miocene faults
MSL	metamorphic	mafic-intermediate-felsic meta-volcanic schist and gneiss, pelite, conglomerate	metamorphosed island arc assemblage	Thrust nappes in imbricate zone of Coast Belt Thrust System; protolith wholly or in part derived from Peninsula and Billhook Creek formations; metamorphosed in early Late Cretaceous (84-105 Ma).
MST	metamorphic	pelite, garnet-biotite, staurolite, kyanite and sillimanite schist, amphibolite, meta-pillow basalt, siliceous schist, phyllite, meta-sandstone	metamorphosed accretionary wedge	Poly-metamorphic core of Coast Belt Thrust System; derived from oceanic rocks of Bridge River Complex and overlying Cayoosh Assemblage; tectonically buried and metamorphosed in early Late Cretaceous (105-90 Ma) and Late Cretaceous (90-84 Ma) time
PTR	plutonic / metamorphic	diorite, amphibolite	island arc	Undivided Permian-Triassic plutons and metamorphosed equivalents; spatially associated with (possibly basement to) Late Triassic plutons and volcanics of the Mount Lytton Complex-Nicola arc, and Late Triassic volcanics of the Lillooet Lake Assemblage
Q	sedimentary	sand, silt, gravel, till	glacial/fluvial/lacustrine	Undivided surficial deposits including glacial drift, alluvium, glaciofluvial-lacustrine sediments, till, colluvium, landslide deposits
TrL	volcanic	basalt-andesite flows, breccia, tuff, carbonate	island arc	Island arc tholeiites; green to purple, commonly amygdaloidal, pillowed and massive volcanic flows, flow breccia and tuff; may include lenses of Carboniferous limestone; stratigraphically overlain by Late Triassic clastics; basement to Harrison Lake arc

Figure 6: Rogers Creek Property Geology



illustrated on most BC Geological Survey (BSGS) maps. Although the pluton is dominantly granodiorite, there is variation between biotite and more hornblende-rich phases. Traverses along the western slope of the Rogers Creek valley near the western contact of the pluton mapped a porphyritic andesitic contact phase, and discrete feldspar-, biotite-, or hornblende-phyric syenitic bodies. Syenite, diorite, porphyritic granodiorite, and monzonite phases have also been mapped.

The central portion of the Rogers Creek Pluton is overlain, at the current erosional level, by a slightly younger, flat-lying suite of potentially coeval flows and pyroclastics. Little mapping has been carried out on the volcanics and field relationships are poorly known. The Miocene age volcanic rocks include sub-aerial basalt and andesite, with andesitic flows overlying volcanic breccia at its base. Samples of volcanic breccia float demonstrate that Rogers Creek granodiorite intruded these breccias consistent with the Rogers Creek Pluton intruding its overlying volcanic equivalent. The northern and western contact of the Rogers Creek Pluton with Jurassic and Cretaceous metavolcanic, metasedimentary, and intrusive rocks is complex and poorly characterized due to relatively little mapping.

In the northern lobe of the Rogers Creek Pluton, a 1.6 km diameter polymictic breccia pipe, is exposed in outcrop and has been intersected by drilling. It is also delineated by a strong magnetic low in the airborne data. Two pipes may be indicated, but this is uncertain. The northeasterly pipe consists of *in situ* brecciated Rogers Creek granodiorite, whereas the western one consists of mostly clast-supported mono-to polymictic breccia locally cut by quartz-sulphide and quartz-malachite veins and containing rare fragments with Cu-staining. The unit is also cut by a late set of mafic dikes. The breccia matrix usually is chloritic but shows in some places weak to moderate clay, hematite, tourmaline, and sericite alteration. Propylitic to phyllic alteration extends up to 100 m beyond the margins of the breccia pipe and may contain up to several percent of pyrite  $\pm$  chalcopyrite mineralization.

Initial mapping and interpretation suggests that a younger mineralizing hornblende-diorite phase had intruded the Rogers Creek pluton and generally coincided with large geochemical halos and metal showings. However, subsequent work including site visits and consultation

with BCGS personnel followed by reanalysis of the core, thin sections, and geochemistry, indicates the darker rock previously identified as a distinct hornblende-diorite phase is merely a darker slightly more hornblende rich variety of the main intrusive affected by a mineralizing associated with the retrograde chlorite-sericite alteration of the mostly biotite +/- hornblende granodiorite that was previously altered in a pro-grade event introducing excess biotite. These alteration zones, which are associated with the copper-gold mineralization on the Property seem to be mainly focused around the major arc-parallel structural corridors with trans-tensional splays.

### **7.3 MINERALIZATION**

Porphyry related alteration and mineralization has been identified in four areas on the Rogers Creek Property. (Figure 7)

#### **7.3.1 TARGET AREAS I AND II**

The most extensive zone of alteration/mineralization potentially associated with a large hydrothermal system on the Property has been identified in Target Areas I and II within a 6 x 2 km zone which exhibits widespread propylitic (pyrite-carbonate-chlorite-epidote) alteration. Several stages and styles of mineralization typical of porphyry systems are present within this zone and have been observed both in surface outcrop and in drill core.

The mineralization in Target Area I is cut by a large post mineral breccia pipe which overprints earlier mineralization which at surface consists of A, B and D veins associated with weak potassic alteration. Late stage gold and silver-rich poly-metallic (quartz-sulphide; pyrite, chalcopyrite, galena, sphalerite and tetrahedrite) and sulphide-sulphate vein assemblages that are present within the breccia pipe.

The breccia pipe is largely clast-supported with a marginal phase of in-situ brecciated Rogers Creek granodiorite that is transitional into a hydrothermally altered clast- and locally matrix-supported breccia dominated by feldspar-phyric rock clasts and rock flour matrix with rare malachite-stained (i.e. Cu mineralized) rock clasts. Alteration within the breccias is zoned from weak to moderately developed chlorite-pyrite +/- carbonate assemblages in contact breccias

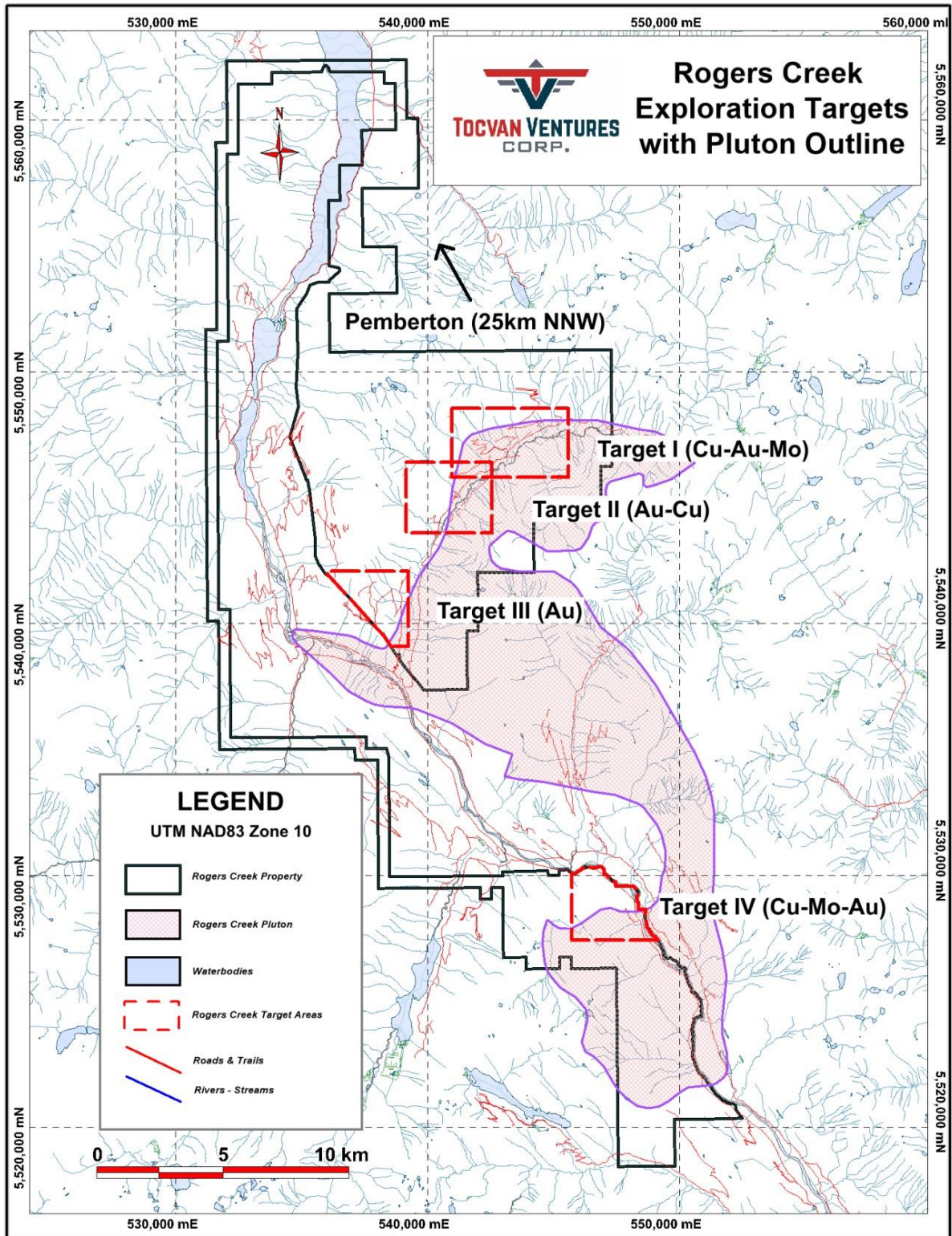


Figure 7: Exploration Targets and Mineralization

inward to strong pervasive clay-carbonate +/- silica alteration toward the pipe interior. Zones of intense argillic (clay) alteration are centred on vertical faults.

Earlier stage mineralization observed outside the breccia pipe consists of

- Wide spaced quartz-pyrite-chalcopyrite +/- bornite bearing B and D-veins observed at surface in the northeastern part of Target Area I.
- Quartz-pyrite-chalcopyrite bearing A and B-veins observed in the southern part of Area 1, near the collar of WRC-001; Mineralization intersected in drill holes WRC-001 and 002 consists of fracture-controlled quartz-pyrite ± anhydrite ± calcite assemblages with accessory to major amounts of chalcopyrite and MoS<sub>2</sub>. Phyllic alteration halos are typical and where vein densities are high (WRC-002), particularly in the vicinity of 020°, 340° faults, the host rock has pervasive phyllic alteration and can be enriched in gold and copper. Molybdenite mineralization occurs on the fringe of the phyllic alteration zone (WRC-001) and typically is associated with quartz-anhydrite rather than quartz-pyrite assemblages.
- Disseminated quartz-pyrite-chalcopyrite and quartz-pyrite-chalcopyrite veins and veinlets associated with zones of pervasive chlorite-sericite mineralization in the northwestern part of Target Area I, near the collar of MRC-006, and MRC-007 MRC-006 and MRC-007 both intersected elevated copper and gold values along substantial core lengths (up to 150 m) within sparsely disseminated, porphyry-style pyrite-chalcopyrite mineralization and alteration (propylitic and chlorite/sericite). As with WRC-001 and WRC-002, alteration assemblages and the intensity of Cu-Au mineralization are consistent with intersections in the outer pyritic halo of a buried porphyry system.
- Mineralization hosted by silica-chlorite-sericite altered hornblende diorite consists of up to several percent disseminated chalcopyrite and lesser pyrite with rare chalcopyrite and pyrite veins up to 1 cm wide, associated with a 340° trending structural zone in the southwestern part of Target Area II.

The mineralization in all cases appears to be primarily controlled by northwest (320-340°) trending structures, particularly near their intersection with 020° structures. Further work is needed to better understand the detailed structural controls on mineralization.

### 7.3.2 TARGET AREA III

Only limited work has been carried out on Target III located approximately 4 km to the southwest of Target II. Target III is defined by stream sediment samples containing highly anomalous values in gold and silver, quartz-pyrite stockworks exposed along road cuts, and talus boulders of a highly clay-altered sericite/tourmaline-altered breccia. Anomalous silt samples in streams draining Target III contain up to 2.3 grams per tonne gold and 436 ppb silver versus background values of 2.5 ppb gold and 20 ppb silver. Limited rock sampling returned values up to 0.445 g/t gold and 436 ppm copper in grab samples.

### 7.3.3 TARGET AREA IV

Target IV is located about 18 km south of the original discovery area in Target I and consists of surface showings of copper-molybdenum mineralization found during prospecting along new logging roads, as well as soil geochemical anomalies defined by limited follow-up work. Molybdenite +/- chalcopyrite are observed on fractures and joint planes with values up to 0.34% Cu, 3.84 g/t Au, 75 g/t Ag, and 241 ppm Mo in grab samples.

## 8 DEPOSIT TYPES

Exploration in southwestern British Columbia has traditionally focused on mesothermal gold, polymetallic vein, and skarn type deposit models and has given little consideration to systematic regional evaluation of Tertiary intrusions for potential large scale porphyry or epithermal deposits.

The Rogers Creek Property is being explored for porphyry-style copper, gold, and molybdenum mineralization associated with intrusive activity that is part of the post-accretionary Tertiary age Cascade Magmatic Arc.

A number of very large porphyry deposits occur within the Cascade Magmatic Arc in neighbouring southeast Alaska and Washington and in similar age magmatic belts around the world.

McMillan et al. (1995) classified porphyry deposits in the Canadian Cordillera as pre-accretion or post-accretion. Pre-accretion deposits are Late Triassic through Middle Jurassic deposits formed within island arc rocks of the allochthonous Insular and Intermontane superterranes. Post-accretion deposits are Late Cretaceous through Miocene and are formed within the subsequent continental arc during the period of intracontinental dextral transpression. Lasmanis (1995) described another category of younger post-accretion porphyry deposits occurring within the Oligocene through Miocene Cascade Magmatic Arc.

The importance of the Cascade Magmatic Arc to gold mineralization within the 130 km long belt in the Harrison Lake-Chilliwack area was documented by Ray (1991). Nockelberg et al. (2005) referred to the Cascade-related porphyry and epithermal deposits in southwestern British Columbia as the Owl Creek Metallogenic Belt.

The Rogers Creek Property is being explored for porphyry style Cu-Au-Mo mineralization associated with Miocene aged intrusive rocks within the Cascade Magmatic Arc. Sinclair (2007) provides a thorough review of geological settings within which economic porphyry-class deposits, or deposits associated with porphyry-class deposits, may be expected to occur and these are summarized in Figures 8 and 9.



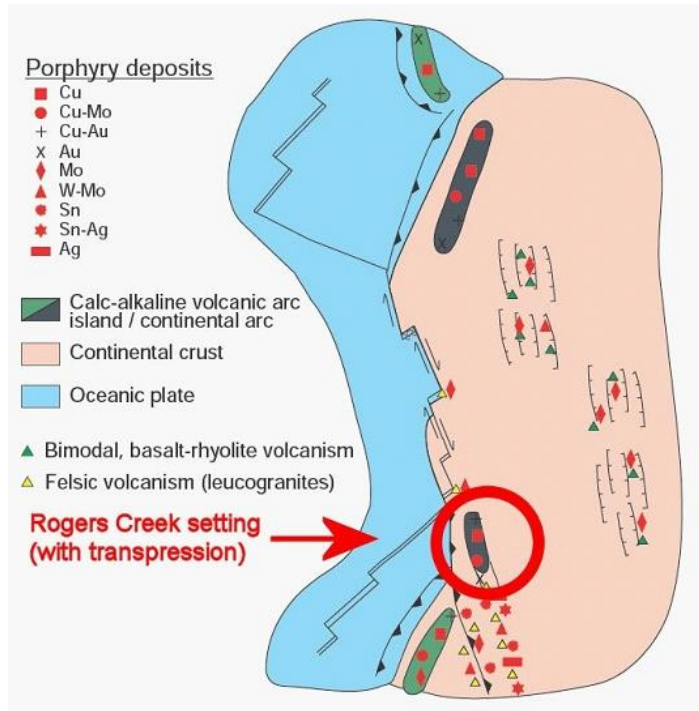


Figure 8: Tectonic settings of porphyry deposits (Sinclair, 2007).

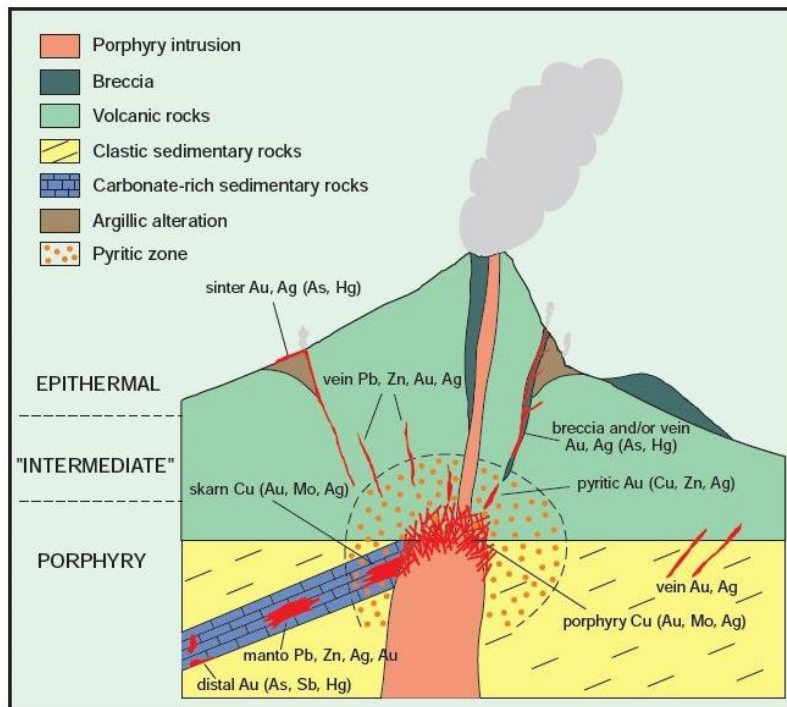


Figure 9: Schematic Section Through a Porphyry System and Associated Mineralization (Sinclair, 2007)

The geology and tectonic setting of the Rogers Creek Property bears a compelling similarity to the continental arc environment presented by Sinclair (2007) for giant porphyry style and associated deposits. Exploration requires identifying alteration and mineralization zonation patterns and syn-magmatic structures that may have controlled emplacement of the intrusive bodies and focussed migration of mineralizing fluids. Porphyry deposits are large low grade deposits characterised by disseminated sulphides within pervasively altered host rock making them an excellent target for IP geophysical surveys.

Several examples of Cascade Magmatic Arc deposits are listed in Table 4 and shown on Figure 7. It should be noted for the most part these are historical resources and pre-date the standards and guidelines defined in NI 43-101. These are not to be relied upon but demonstrate the potential of this deposit type.

The Miocene-age, Quartz Hill porphyry molybdenum deposit in southeastern Alaska panhandle was estimated in 1983 and is quoted in Wolfe (1995). The resource was estimated with a cutoff grade of 0.08% Mo. The Glacier Peak porphyry is also Miocene in age and has an estimated “mineral inventory” of 1,000 Mt grading 0.5% Cu with no stated cut-off grade. When the entire “mineralized envelope” is estimated the “mineral inventory” increases to 1,700 Mt grading 0.334% Cu and 0.015% MoS<sub>2</sub> with no stated cut-off grade (Lasmanis, 1995). The Margaret Deposit in Washington was estimated to contain 200 Mt (unclassified), to a depth of 244 m grading 0.434% Cu, 0.0175% MoS<sub>2</sub>, 0.27 g/t Au, and 1.92 g/t Ag or 680 Mt to a depth of 305 m, grading 0.6% Cu equivalent (based on 1979 metal prices).



Table 4: Mineral Deposits Associated with the Cascade Magmatic Arc  
(To Accompany Figure 10 Below)

Map #	Name	Resource	Age	Type	Reference
1	Quartz Hill	probable: 210 million tonnes @ 0.22 % MoS2 possible: 1.1 billion tonnes @ 0.12 % MoS2	Miocene	Porphyry	Wolfe, 1995
2	Harmony	measured and indicated: 64 million tonnes @ 1.35 g/t gold (0.6 g/t gold cut-off)	Miocene	Epithermal	BC Minfile; Christie, 1988
3	Poison Mountain	Copper Creek: 280 million tonnes @ 0.261 % copper, 0.007 % Mo, 0.142 g/t gold, 0.514 g/t gold Fenton Creek: 18.3 million tonnes @ 0.31 % copper, 0.128 g/t gold	Paleocene	Epithermal	BC Minfile; Schiarizza et al., 1997
4	Salal Creek	Poor access, no estimate, widespread Mo over 5-6 kilometer area	Miocene	Porphyry	BC Minfile; Nockleberg et al., 2005
5	Owl Creek	unsubstantiated: 10-20 million tonnes @ 0.3-0.4 % copper, 0.03 % MoS2	Tertiary	Porphyry	BC Minfile; Nockleberg et al., 2005
6	Okeover	86.8 million tonnes @ 0.31 % copper, 0.008 % molybdenum (cut-off 0.2 % copper)	Tertiary	Porphyry	BC Minfile; Carter, 2006
7	Gem	15.9 million tonnes @ 0.125 % MoS2 (0.10 % MoS2 cut-off)	Oligocene	Porphyry	BC Minfile; Shearer, 2006
8	Doctors Point	113,600 tonnes @ 2.16 g/t gold	Oligocene	Epithermal	BC Minfile; Ray, 1991
9	Harrison Gold	Indicated: 1.845 million tonnes @ 2.79 g/t gold Inferred: 600,000 tonnes @ 2.8 g/t gold	Oligocene	Epithermal	BC Minfile; Ray, 1991
10	Catface	Indicated: 56.9 million tonnes @ 0.4 % copper Inferred: 262.4 million tonnes @ 0.36 % copper (plus ~0.014 % MoS2)	Eocene	Porphyry	BC Minfile; Simpson and Chapman, 2009
11	Giant Copper	45.373 million tonnes @ 0.47 % copper, 0.38 g/t gold, 11.19 g/t silver	Oligocene	Porphyry	BC Minfile; Robertson, 2006
12	Glacier Peak	1.7 billion tonnes @ 0.334 % copper, <0.015 % MoS2, +tungsten	Miocene	Porphyry	Lasmanis, 1995; Hollister, 1979
13	Sunrise	64.5 million tonnes @ 0.219 % copper and 0.071 % MoS2	Oligocene	Porphyry	Lasmanis, 1995; Hollister, 1979
14	North Fork	78 million tonnes @ 0.41 % copper, 0.013 % MoS2, 0.1 g/t gold, 1.4 g/t silver	Oligocene	Porphyry	Lasmanis, 1995; Hollister, 1979
15	Middle Fork	100 million tonnes @ 0.4 % copper, 0.2 % MoS2	Miocene	Porphyry	Lasmanis, 1995; Hollister, 1979
16	Margaret	to 244 meters depth: 523 million tonnes @ 0.434 % copper, 0.0175 % MoS2, 0.24 g/t gold, 1.92 g/t silver to 305 meters depth: 680 million tonnes @ 0.6 % copper equivalent	Miocene	Porphyry	Lasmanis, 1995; Hollister, 1979

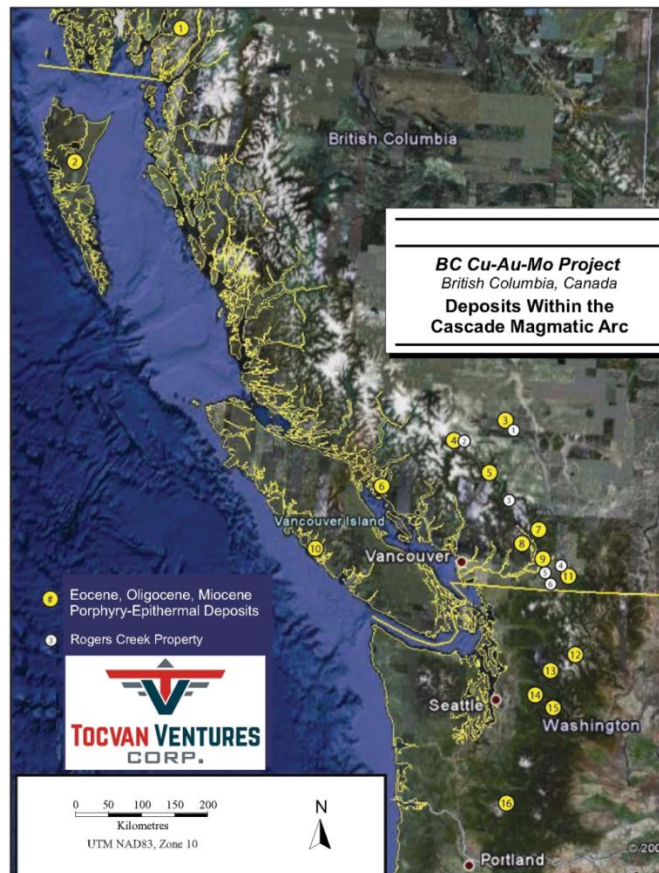


Figure 10: Mineral Deposits of the Cascade Magmatic Arc

## 9 EXPLORATION

### 9.1 INTRODUCTION

Exploration work carried out on the Rogers Creek Property by Carube, its predecessor public company Miocene and Miocene's parent company Wallbridge has included;

- 1,786 km of helicopter-borne magnetic gradiometry and VLF-EM.
- 280 km of helicopter-borne radiometrics.
- levelling, merging and inversions of 47 kilometres of IP.
- 3D modelling of geophysical and property data by Mira Geosciences Ltd. with proprietary Geoscience Analyst 3D software.
- Prospecting, mapping and sampling, including the collection of 1,061 surface rock samples, 3,328 soil samples, and 318 stream sediment samples.
- Soil sample geochemical vectoring study.
- 5, 209 metres of diamond drilling including the analysis of 1,951 drill core samples.
- 5,200 m of drill core magnetic susceptibility readings totalling 1,164 readings.
- 329 resistivity/chargeability readings taken over 7 drill holes totalling ~4,055m.
- Limited surface and drill hole (4 holes) alteration mapping and logging.

Work to date has identified 4 Target Areas within the Miocene age Rogers Creek Pluton, based on geophysics, geochemistry, and the presence of alteration and/or mineralization. Most of the work to date has focused on Target Areas I and II, which are centred by two magnetic lows within a circular magnetic feature located over the northwestern part of the intrusion.

Structurally controlled zones of mineralizing retrograde sericite-chlorite after potassic alteration have been identified in several widespread areas. A-, B-, D-, veins have been verified throughout Targets I and II. Multiple, large mono- to polymict breccia pipes (syn- to post mineral) have been mapped with crosscutting late base metal veins. Porphyritic dykes have been mapped in structurally controlled fault zones adjacent to fragmental breccias flows.

## 9.2 WORK PERFORMED

A summary of all exploration work conducted on the property together with the associated report filings is tabulated below in Table 5.

Table 5: Rogers Creek Technical Work Index Summary and Report Filings

<u>Year</u>	<u>Work Carried Out</u>	<u>Description</u>	<u>Report</u>
<b>Wallbridge Work</b>			
2007	Soil-Rock Sampling	Phase 1 - Initial recon visit - sampling and assaying of discovery site (12 soils, 13 rocks)	Smyth, C.P., 2008. 2008 Report on the Rogers Creek Property, Southwestern British Columbia
2007	Soil-Rock Sampling	Phase 2 – Follow up sampling/mapping over the Mag high and low (346 soils, 76 rocks)	Smyth, C.P., 2008. 2008 Report on the Rogers Creek Property, Southwestern British Columbia
2008	Airborne Geophysics	Phase 3 - 1506 L-km helicopter-borne magnetic gradiometry and VLF-EM survey by CMG Ltd.	CMG Airborne, 2008. Report on a Helicopter-Borne Magnetic Gradiometer & VLF-EM Survey, Rogers Creek Property, Project 2008-004
2008	Soil-Rock-Silt-HMC Sampling	Collection and Analysis of 307 soils, 670 rocks, 150 stream sediments, and 73 heavy mineral concentrates	Jago, B.C., 2009. 2009 Technical Report on the Rogers Creek Property, British Columbia
2008	Line Cutting	A 41 km long grid was cut in preparation for an induced polarization survey	Jago, B.C., 2009. 2009 Technical Report on the Rogers Creek Property, British Columbia
2009	Soil-Rock-Silt Sampling	Collection and Analysis of 216 soils, 119 rocks, 14 stream sediments	Jago, B.C., 2009. 2009 Technical Report on the Rogers Creek Property, British Columbia
2009	Induced-Polarization Survey	IP-Survey over Target Areas I and II at resolutions of 25m and 50m over 41 L-km by Abitibi Geophysics	Berube, P., 2009. Resistivity-IP Survey - Abitibi Logistics and Interpretation Report for Wallbridge Mining Company Ltd, Rogers Creek Property, British Columbia
2009	Magnetic Susceptibility	Collection of magnetic susceptibility data for surface rocks and drill core	Jago, B.C., 2009. 2009 Technical Report on the Rogers Creek Property, British Columbia
2009	Magnetic Inversion	Inversion of airborne magnetic data obtained by CMG Ltd. in 2008 by Mira Geosciences	Phillips, N., 2009. Unconstrained Magnetic Modelling, Rogers Creek Property, British Columbia, Mira Geoscience Project No. 3343
2009	Diamond Drilling	Drilling of 2,122.75 meters to follow up on IP survey and surface sampling results	Jago, B.C., 2009. 2009 Technical Report on the Rogers Creek Property, British Columbia
<b>Miocene Work</b>			
2010	Prospecting with Soil-Rock-Silt Sampling &	Collection and Analysis of 1124 soils, 58 surface rocks, 43 stream sediments, structural mapping &	Garcia, J.S., 2012. Report on the 2010 Geochem Survey and Mapping Activities for Rogers

<u>Year</u>	<u>Work Carried Out</u>	<u>Description</u>	<u>Report</u>
	Assaying	prospecting	Creek Project, Southwestern British Columbia
2010	Diamond Drilling	Drilling of 1,024.39 meters (2 holes) targeting a deep IP anomaly and an open-ended gold in soil anomaly	Garcia, J.S., 2011. 2010 Report on the Drilling Activities for Rogers Creek Project, Southwestern British Columbia
2010	Airborne Geophysics	A 280 L-km helicopter-borne magnetic gradiometry and VLF-EM & radiometric survey by CMG Ltd. over Target IV	CMG Airborne, 2010. Report on a Helicopter-Borne Magnetic Gradiometer & VLF-EM and Radiometric Survey, Rogers Creek Property South, Project 2010-001
2011	Prospecting with Soil-Rock-Silt Sampling & Assaying	Collection and Analysis of 580 soils, 65 rock channel samples, 47 surface rocks, 38 stream sediments, structural mapping & prospecting	Garcia, J.S., 2012. Report on the 2011-2012 Geochem Survey and Mapping and 2011 Diamond Drilling Activities for Rogers Creek Project, Southwestern British Columbia
2011	Diamond Drilling & Core Assaying	Drilling of 2,062 meters (3+2 holes, Targets II & I, respectively) targeting a disseminated copper mineralization & IP anomalies (702 Samples)	Garcia, J.S., 2012. Report on the 2011-2012 Geochem Survey and Mapping and 2011 Diamond Drilling Activities for Rogers Creek Project, Southwestern British Columbia
2012	Prospecting with Soil-Rock-Silt Sampling (Unassayed)	Collection and Analysis of 532 soils, 13 surface rocks, and 239 core samples. All 2012 samples are in storage in Pemberton awaiting assaying.	Garcia, J.S., 2012. Report on the 2011-2012 Geochem Survey and Mapping and 2011 Diamond Drilling Activities for Rogers Creek Project, Southwestern British Columbia
<b>Carube Work</b>			
2013	Physical Property Measurements and Review of Drill Core	Magnetic susceptibility measurements, and chargeability and resistivity measurements were collected from drill core, and a review of the geological logging was carried out with particular emphasis on structure and alteration	Baird, S.J., 2014. Assessment Report on the 2013 Rogers Creek Exploration Activities
2015	Alteration and Geological Mapping & Core Review	Caracle Creek International Consultants reviewed selected drill holes and field outcrops with Carube Copper Corp staff	Wetherup, Stephen. Caracle Creek Internal memos dated Sept 7 and Nov 30, 2015
2015	Induced-Polarization Survey	6 L-km ground IP-Survey by SJ Geophysics on Target Area I at 25m resolution over 2 lines located north of the IP-Survey performed in 2009 by Abitibi Geophysics.	Dodd, K., Chen, B., 2015. Logistics Report Prepared for Carube Copper Corp. Volterra-2DIP on the Rogers Creek Project

<u>Year</u>	<u>Work Carried Out</u>	<u>Description</u>	<u>Report</u>
2015	Assaying of Soils Taken in 2012	169 Soil samples collected in 2012 from Target Areas I and IV were submitted for analysis with ALS Chemex.	Baird, S.J., 2014. Assessment Report on the 2013 Rogers Creek Exploration Activities
2016	Geochemical Interpretation and Vectoring	Compilation and interpretation of all surface geochemical data for "porphyry cap indicators" by Rampton Resource Group to assist with vectoring towards hidden/buried porphyry deposits	Rampton, V. (2016) Internal Corporate Report on Review of Soil Geochemistry at Target 1, Rogers Creek Property, British Columbia
2016	Mira Geosciences Data Compilation and Modelling	Compilation, merging, inversion, and modelling of all available data on the property with final integration in to Geoscience Analyst for viewing.	Baird, S.J., (2017). Assessment Report on the 2016 Rogers Creek Exploration Activities
2016	Recon & Soil Sampling	Reconnaissance along newly built logging roads and collection of 42 Soil samples (including 2 QA/QC) submitted for analysis.	Baird, S.J. (2017) Assessment Report on the 2016 Rogers Creek Exploration Activities

### 9.2.1 WALLBRIDGE EXPLORATION WORK (2007-2009)

Initial work on the property consisted of mapping and rock and soil sampling over the site of the original logging road discovery showing and the adjacent magnetic low seen on the regional magnetic maps. Grab samples of outcrop were collect along logging roads and B horizon soils were collected from upslope of the roads to avoid contamination.

After securing an option agreement on the Rogers Creek property in 2008, the company conducted a major field program which included 1,506 line-km airborne magnetic gradiometer and VLF-EM survey, flown over the northern two-thirds of the property by CMG Ltd. (CMG), of Rockwood, Ontario.

Results of the airborne survey (Figure 11) provided definition of the magnetic feature evident on the regional magnetic maps and defined a circular 6 x 2 km ovoid magnetic feature “Caldera Structure” covering Target Areas I and II (Figure 12), which is centred on two ~1.6 km diameter magnetic lows, and which is the locus of the original discovery showing and anomalous silt, soil and rock samples.



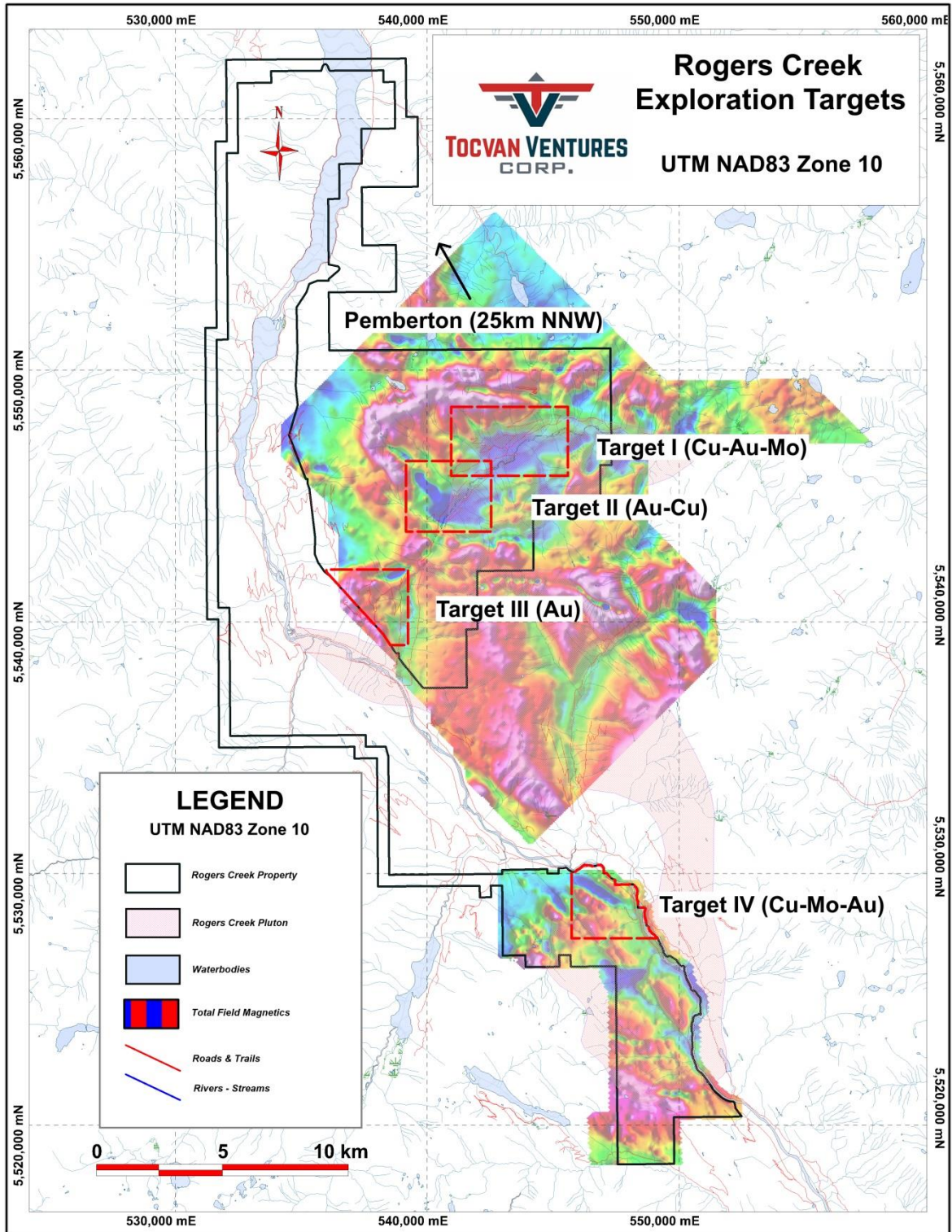


Figure 11: Total Field Magnetics and Target Areas

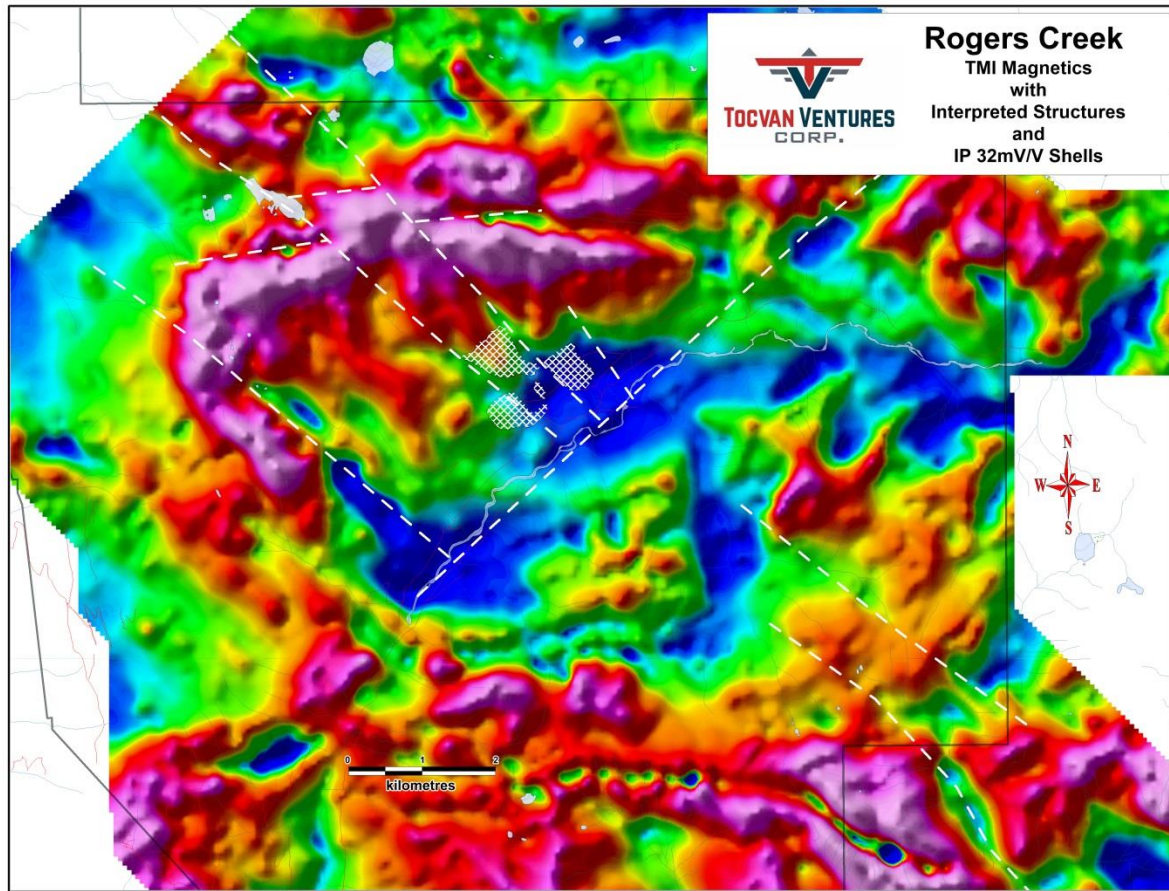


Figure 12: Detailed Magnetics Target Areas I and II

A 41line-km IP survey was completed over Targets I and II during the summer of 2009 by ABITIBI Geophysics Ltd. of Val D'Or, Quebec. The data defined a number of chargeability and resistivity features and helped to focus an initial 3 hole drill program (Holes WRC-001-003) on the western margin of Target I that was completed in the fall of 2009. Results of the drilling are discussed in Section 10, Drilling.

#### 9.2.2 Miocene Exploration Work (2010 – 2012)

The 2010 summer exploration program consisted of surface mapping and prospecting conducted along roads, streams, grid lines and slopes in selected areas. Collection and analysis of 1,217 soil, 43 stream sediment and 58 surface rock samples was completed.

The field areas were readily accessible using ATVs and 4-wheel drive trucks along a well-developed logging road network. A crew of 5 to 8 persons utilized a temporary three trailer camp with two semi-permanent wooden structures established on a private lot off-property in the Lillooet River valley near the Skookumchuck hot springs.

Results of the 2011-2012 exploration activities carried out included target testing in 2011 of previously identified mineralized areas with 3 drill holes drilled in Target Area II and another 2 drill holes in Target Area I for a total of 5 holes aggregating 2062.0 meters. (See Section 10, Drilling).

Prospecting with mapping and sampling were also carried out in 2011 and 2012, targeting previously defined target areas as follows. From June to November 2011, prospecting, geologic mapping and sampling generated 65 rock channel samples, 47 rock grab samples, 38 silt samples, and 580 soil samples. From May to June 2012 and Aug 2012 prospecting, geologic mapping and sampling generated 532 soil, 13 rock, and 239 core samples. All samples are stored in Pemberton. A total of 169 soil samples were subsequently prioritized in 2015 from Target areas 1 and 4 and submitted for 48-element ICP-MS and PGM-ICP23 analysis to ALS Laboratories of North Vancouver, British Columbia.

### 9.2.3 CARUBE EXPLORATION WORK (2013 – 2017)

Work conducted during 2013 consisted of a general review of all available drill core and included collection of magnetic susceptibility readings and chargeability/resistivity readings from the core. A GDD SCIP portable drill core sample survey meter was used to collect chargeability and resistivity readings on all existing Rogers Creek drill core at an average interval of 10-12 m. Magnetic susceptibility measurements were taken using a GDD handheld KT-9 magnetic susceptibility meter. A minimum of 4-5 readings were taken per box of core and then averaged internally within the instrument.

During September 2015, SJ Geophysics Ltd. of Surrey, British Columbia was contracted by Carube to acquire 6 line-km of Volterra-2DIP data on the Target Area I of the Rogers Creek Property targeting a deep seated copper-gold porphyry system.



During August and September 2015, Stephen Wetherup (Principle Geoscientist) of Caracle Creek International Consultants was contracted by Carube to conduct a 3-day study on the Rogers Creek Property focusing on alteration in order to vector towards and target a deep seated copper-gold porphyry system. The core review study was conducted over 2-days in August, 2015 and the outcrop review was performed in September, 2015.

Of the 532 soil, 13 rock, and 239 core samples collected during 2012 and put into storage, 169 soils were prioritized in 2015 from Target Areas I and IV and submitted for 48-element ICP-MS and PGM-ICP23 analysis to ALS Laboratories of North Vancouver, British Columbia. Additionally 19 pulps were selected from previously assayed samples with ALS Laboratories for reanalysis at AGAT Laboratories as a check and balance between labs.

Between January and April 2016, Mira Geosciences Ltd. (Mira) of Vancouver, British Columbia was contracted by Carube to level and merge the new 6 line-km of Volterra-2DIP data surveyed in 2015 with the existing 41 line-km IP survey completed in 2009. Following successful merging, Mira was contracted to compile, clean up, and integrate all existing property data and merge it in to a single, usable 3-dimensional format that can be imported and manipulated within their Geoscience Analyst 3D software with capability of being exported to other GIS and 3D formats.

During May and June 2016, several corporate consultants were brought in by Carube to conduct a core and property review. Concurrently, data review and reconnaissance prospecting was conducted along any new and existing logging roads.

Following the review and interpretation of all geochemical surface data by consultant Vern Rampton from Rampton Resource Group between June and August 2016, prospecting along gaps in soil data and open anomalies took place in conjunction with collection and analysis of 42 soil samples (including QA/QC) in September and October 2016, respectively. The soil samples were submitted for 48-element ICP-MS and PGM-ICP23 analysis to ALS

Laboratories of North Vancouver, British Columbia. No significant rock samples were encountered worthy of analysis.

November and December 2016 Project work consisted of data review, report writing, digitizing, interpretation of 3D model working towards creating the budget and program planning for the 2017 exploration season.

### **9.3 RESULTS**

Work to date has identified 4 target areas within the Miocene age Rogers Creek pluton, based on geophysics, geochemistry, and the presence of alteration and/or mineralization. Most of the work to date has focused on Target Areas I and II, which are centred by two magnetic lows within a circular magnetic feature located over the northwestern part of the intrusion.

#### **9.3.1 INDUCED POLARIZATION (IP) SURVEY**

Between September 1<sup>st</sup> and 11<sup>th</sup>, 2015, SJ Geophysics Ltd. of Surrey, British Columbia was contracted by Carube to acquire 6 line-km over 2- 3 km lines (L10900N and L11100N) of Volterra-2DIP data on the Target I area of the Rogers Creek Property targeting a deep seated copper-gold porphyry system. The new lines were intended to expand on the uphill “open-ended” IP anomaly from the 2009 survey above Line L10700N as well as cover a promising anomalous geochemical zone. (Figure 13)

The survey revealed a new, large “open ended” chargeable body of 30 to >40ms and corresponding low resistivity in the center of the survey lines that comes near surface. It also shows that the 2009 IP bodies did extend uphill. This data has been combined with the 2009 raw survey data, levelled, and then modelled as a single unit. (Figure 14)

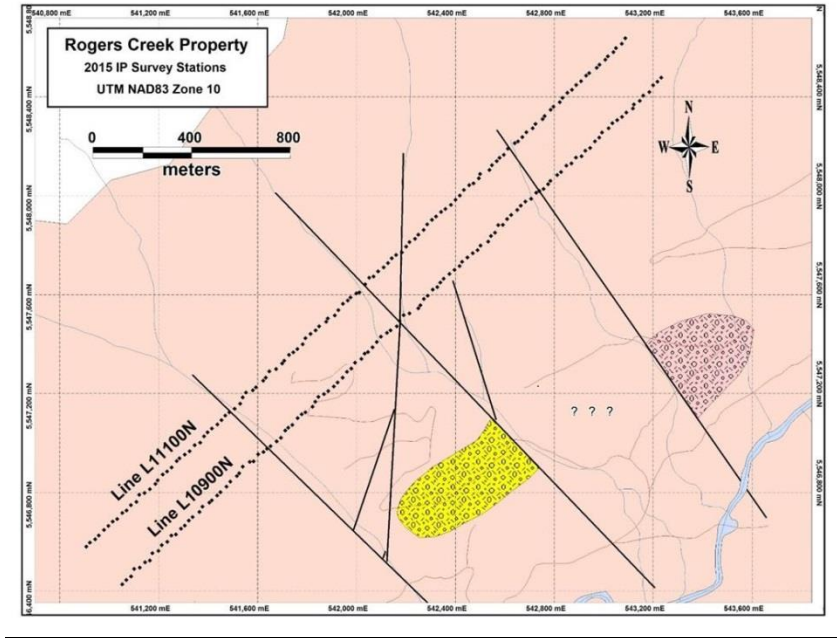


Figure 13: 2016 2D IP Survey Station Locations

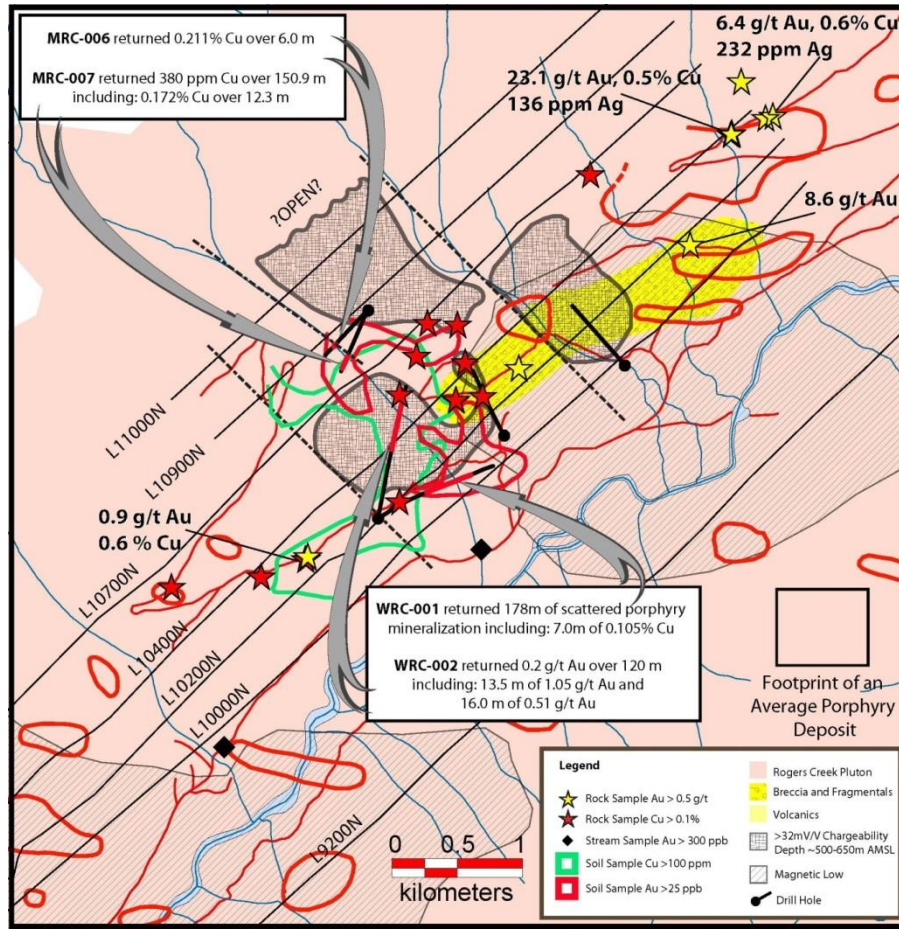


Figure 14: Target Area I Exploration Results Compilation Map

### 9.3.2 ALTERATION MAPPING AND LOGGING

During August 27<sup>th</sup> and 28<sup>th</sup> and September 13<sup>th</sup>, 2015, Stephen Wetherup (Principle Geoscientist) of Caracle Creek International Consultants was contracted by Carube to conduct a 3-day study on the Rogers Creek property focusing on alteration in order to vector towards and target a deep seated copper-gold porphyry system. The core review study was conducted over 2-days in August, 2015 and the outcrop review was performed in September, 2015.

The alteration study confirmed previous interpretations of an early potassic event being overprinted by a retrograde mineralizing chlorite-sericite event. It has also revealed several new insights into possible origins, relative heat and timing of the “breccias” and other features as well as several new observations such as a possible “pebble dyke” system within drill hole WRC-003.

### 9.3.3 ANALYSIS OF STORED SOIL SAMPLES

Of the 532 soil, 13 rock, and 239 core samples collected during 2012 and put into storage, 169 soils were prioritized in 2015 from Target Areas I and IV and submitted for 48-element ICP-MS and PGM-ICP23 analysis to ALS Laboratories of North Vancouver, British Columbia. Additionally 19 pulps were selected from previously assayed samples with ALS Laboratories for reanalysis at AGAT Laboratories as a check and balance between labs.

Since many samples were prioritized based on the fact that they either infilled between anomalous zones or expanded upon them, it was not surprising that a significant number showed anomalous values in either base metal or pathfinder elements. More significantly, it validated our theories and models while simultaneously expanding the known anomalous zones but most still left the open-ended anomalies open for further exploration. Figure 15 illustrates Rogers Creek Property silt, soil and rock samples that have been analyzed to date.



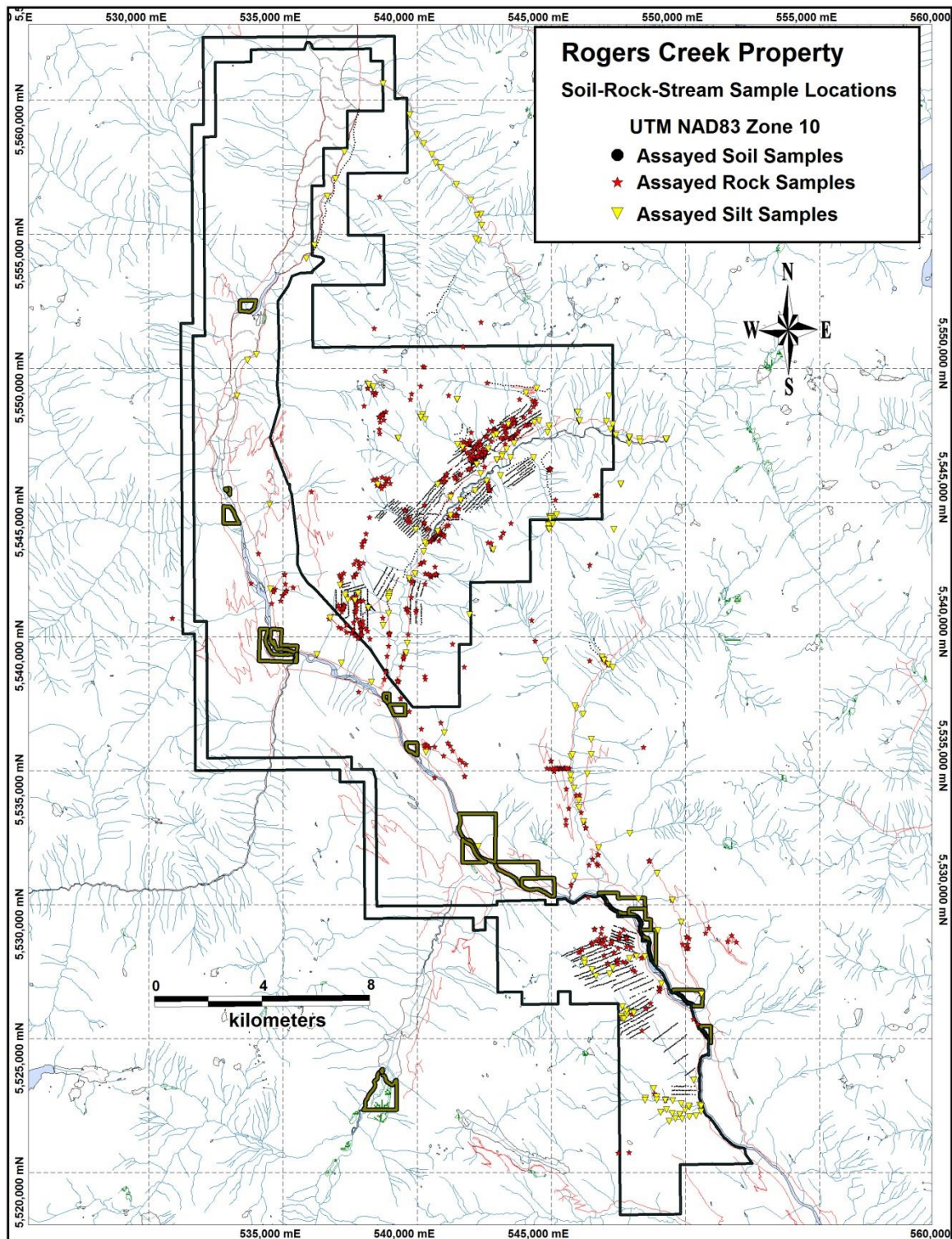


Figure 15: Overview Location Map of Assayed Soil Samples

#### 9.3.4 RE-ANALYSIS OF PULP SAMPLES

During the 2015 exploration season, a small scale analytical technique study was initiated whereby sample pulps from 19 previously assayed Rogers Creek soil samples were submitted to a new laboratory to undergo different analysis methods, in an attempt to compare and contrast methods and labs and as an internal check. To the author's knowledge this data is not available, has not been compiled nor has any comparison been attempted to date.

#### 9.3.5 INTEGRATION & MODELING OF ALL PROPERTY DATA

Early in 2016, the 2009 and 2015, IP survey data targeting a deep seated copper-gold porphyry system at Target Area I were levelled, merged, and inverted by Mira. Following the successful merging of IP survey data, Mira was contracted to compile, clean up, and integrate all existing Property data and merge it in to a single, usable 3-dimensional format that can be imported and manipulated within their proprietary Geoscience Analyst 3D software and exported to other GIS and 3D formats.

The IP survey data merging and re-evaluation revealed a new, large "open ended" chargeable body of 30 to >40ms and corresponding low resistivity in the centre of the survey lines and crossing several survey lines that comes near surface. The airborne magnetic and radiometric data was also modeled and input in to the model. In addition, all surface sample data, downhole geochemical, geological, and geophysical data, and geographical data were also incorporated for easy comparison.

Screenshots of the 3D model exported from Mira Geosciences Geoscience Analyst Model Viewer, including moderate chargeability (30 mV/V) and low to moderate resistivity (30 milli SI) isosurfaces, airborne magnetics modelled isosurfaces, and all surface rock/soil/stream samples on a 20m DEM and draped air photos can be found in Figures 16, 17, 18 and 19. Geoscience Analyst only provides snapshots of the viewer screen, and therefore, only figures embedded into this document can be included. No report was compiled by Mira and there is no accompanying document to attach as an Appendix.

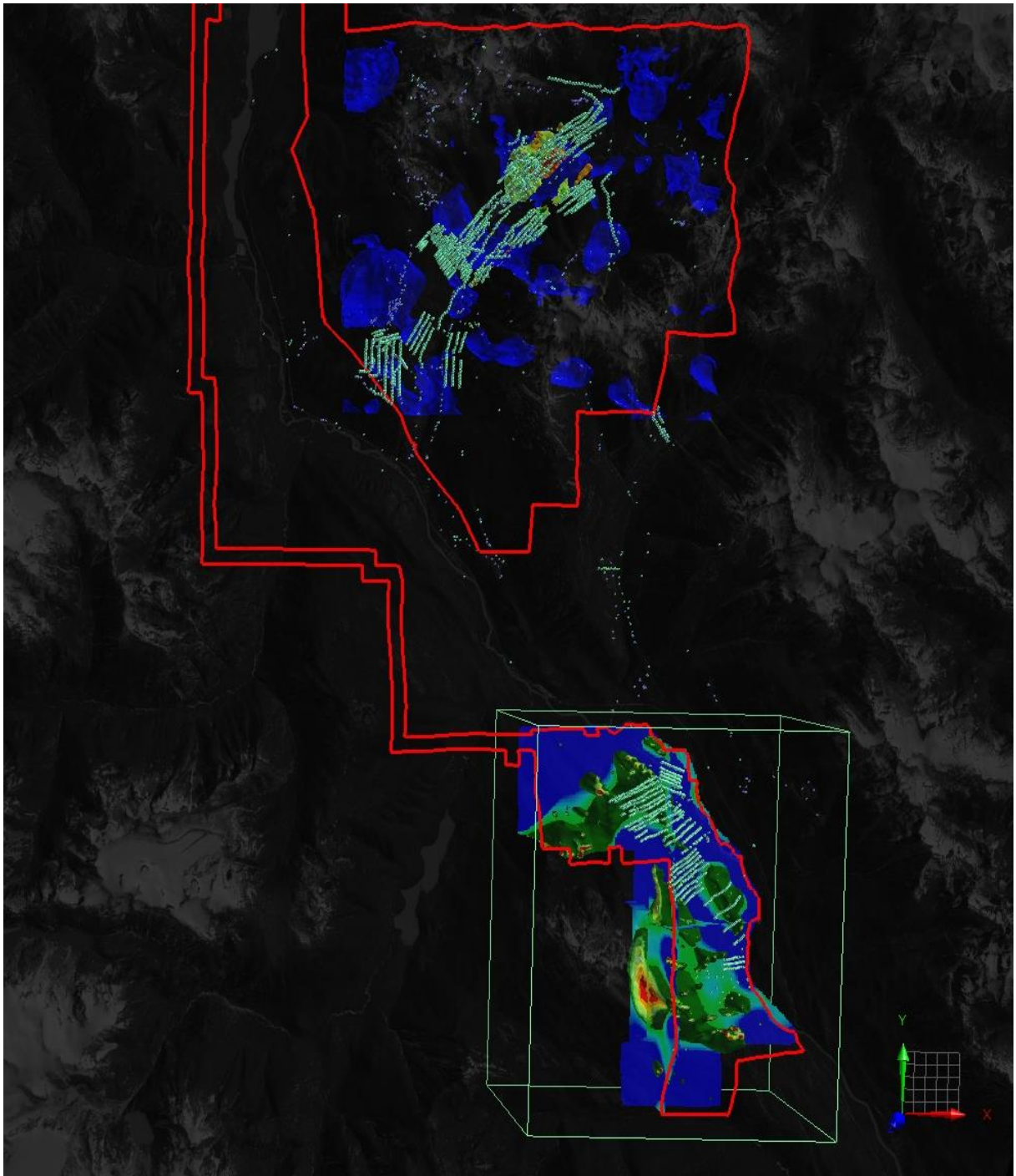


Figure 16: Overview of Rogers Creek Property Showing Data in 3D Model



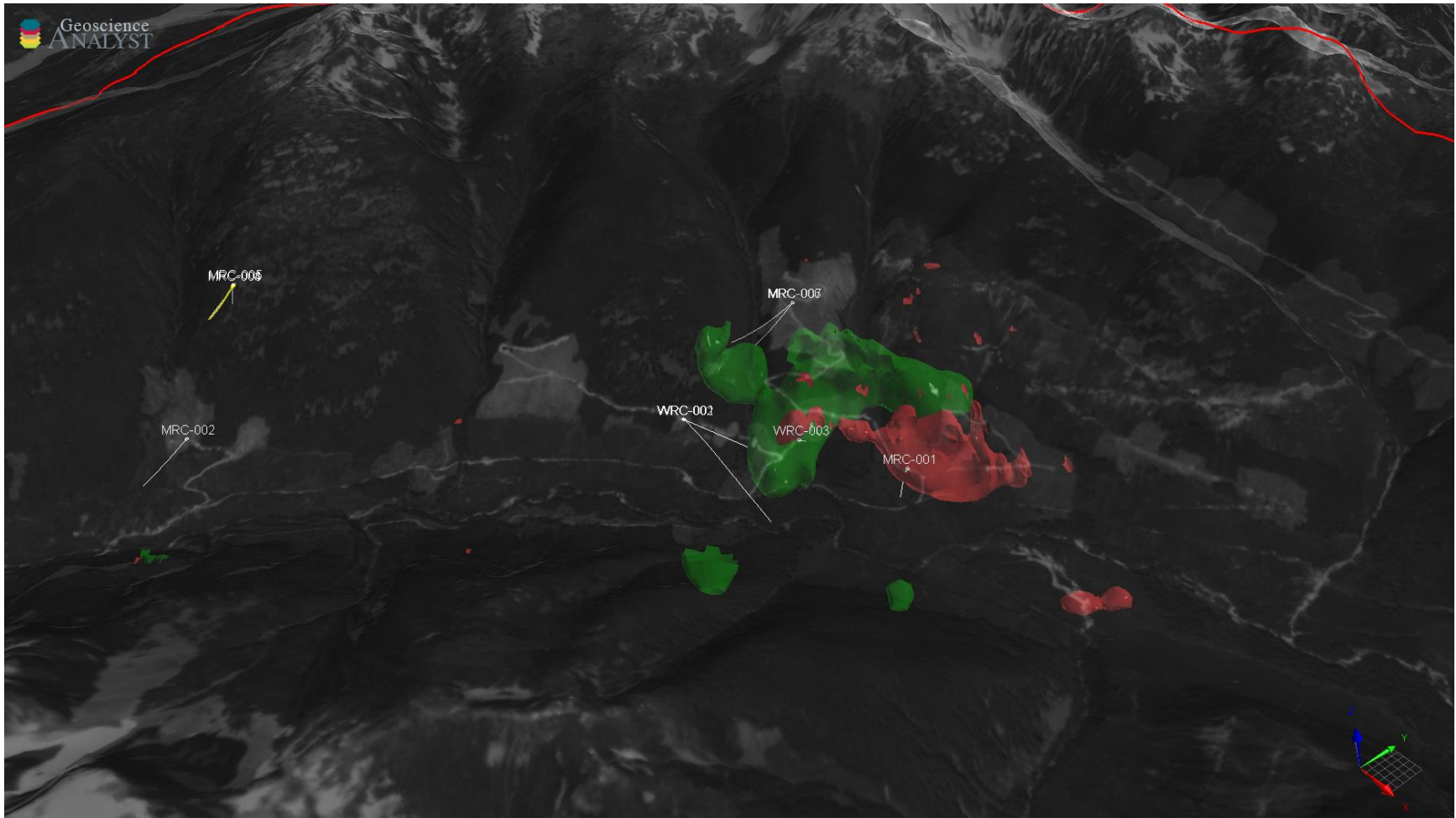


Figure 17: Rogers Creek Target 1 Merged IP Isosurfaces Showing 30mV/V Chargeability (Green) and 30 milliSI Resistivity (Red)



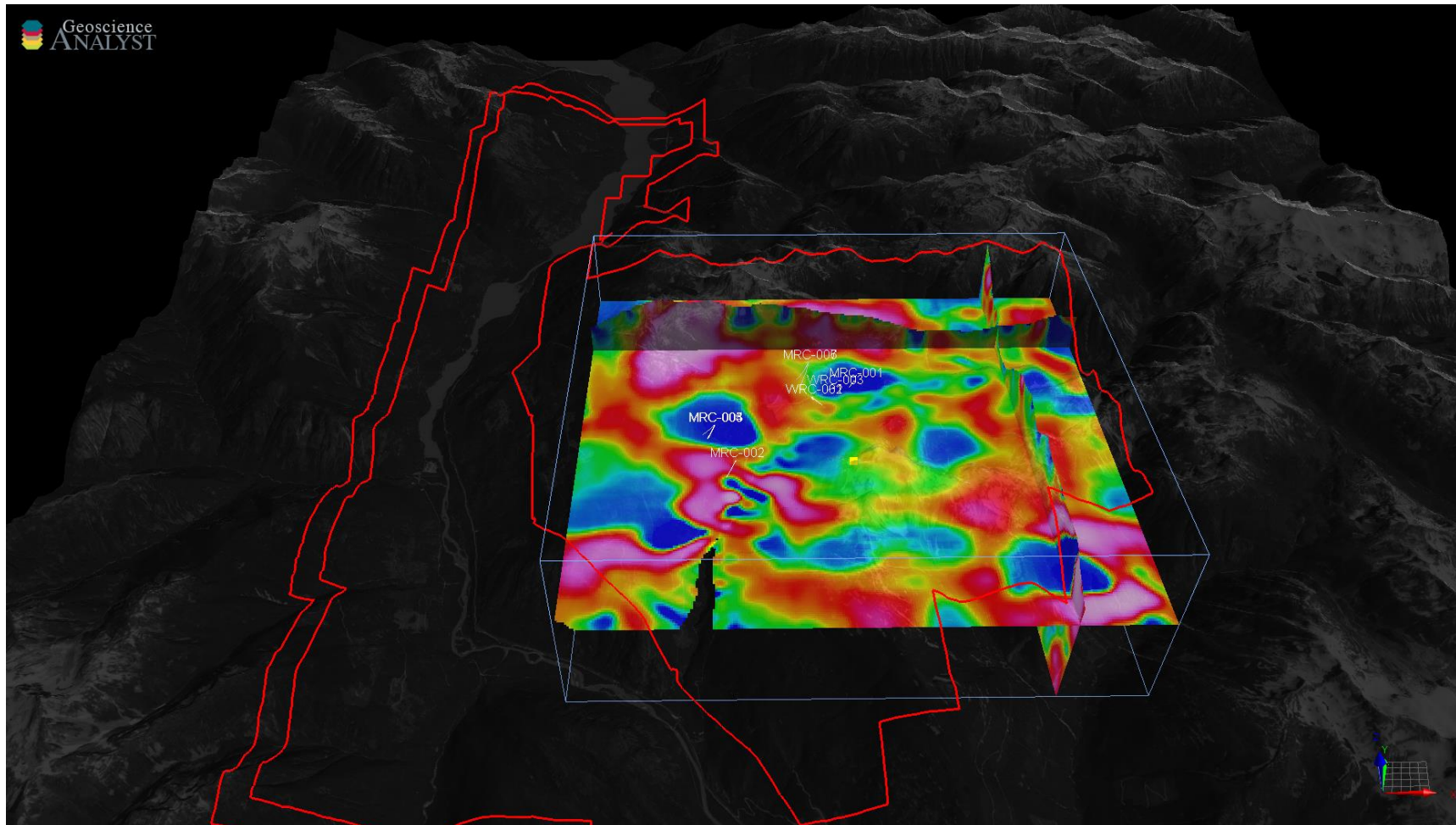


Figure 18: Rogers Creek Main Block Showing Magnetic Inversion Block Model with Drillholes

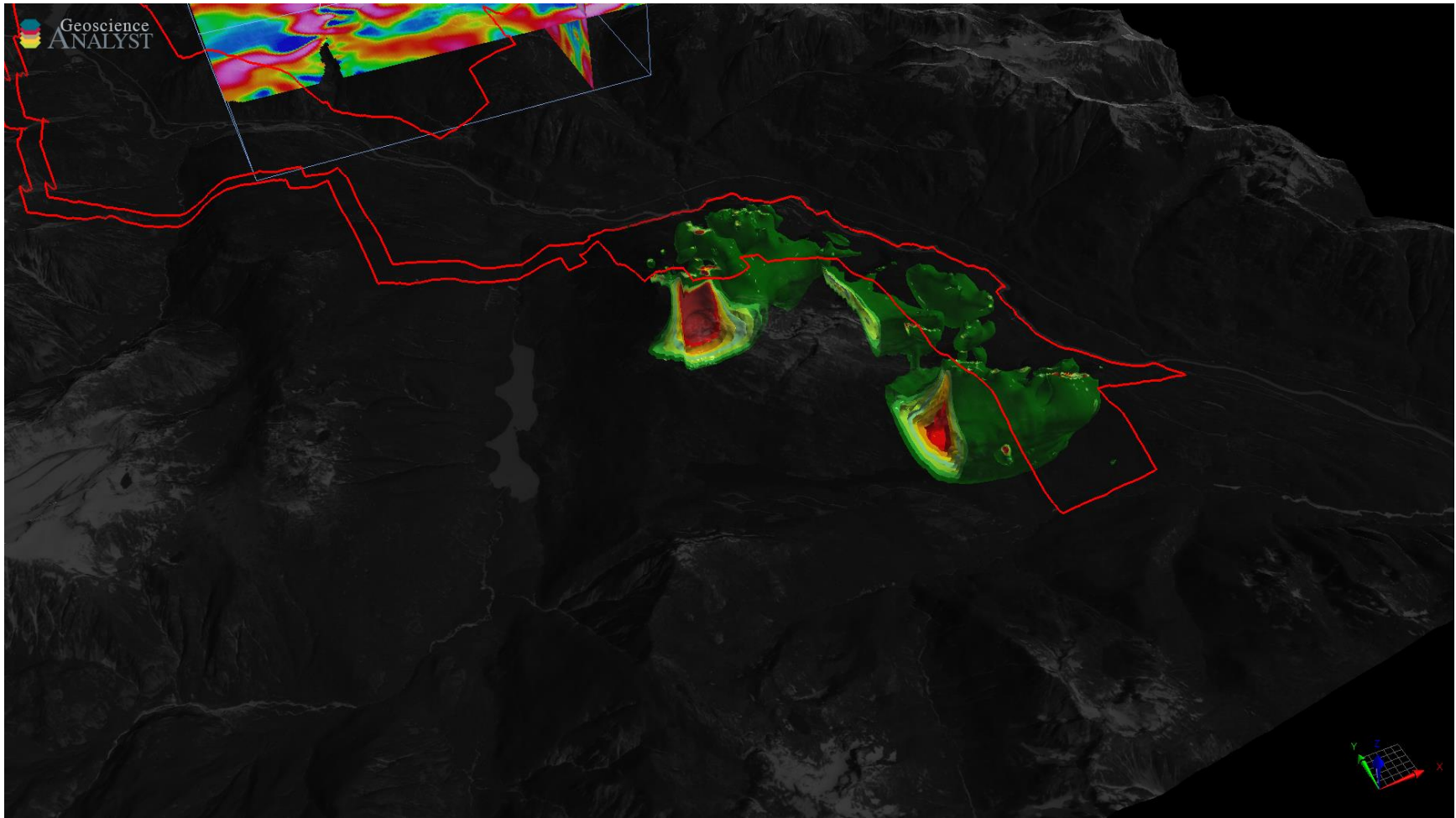


Figure 19: Rogers Creek South - Target IV Showing Modeled Magnetics Isosurfaces

### 9.3.6 GEOCHEMICAL COMPILATION, REVIEW, INTERPRETATION

Between June and August 2016, Dr. Vern Rampton from Rampton Resource Group (Consultant) was contracted by Carube to conduct a detailed review and interpretation of all geochemical surface data on the Rogers Creek Property focusing on Porphyry and Porphyry Cap Pathfinders (PCP), in order to vector towards and target a near surface to deep seated copper-gold porphyry system.

The study confirmed previous interpretations of an extensive and multiphase hydrothermal porphyry event. It has also revealed several new insights towards vectoring and where to focus future exploration, especially within Target Areas I and IV.

### 9.3.7 INFILL SOIL SAMPLING AND PROSPECTING

Following the review and interpretation of all geochemical surface data by consultant Dr. Vern Rampton, prospecting along gaps in soil data and open anomalies took place in conjunction with collection and analysis of 42 soil samples (including QA/QC) in September and October 2016. The soil samples were submitted for 48-element ICP-MS and PGM-ICP23 analysis to ALS Laboratories of North Vancouver, British Columbia. No significant rock samples were encountered worth analyzing. Sample locations are illustrated in Figure 20.

### 9.3.8 TARGETS I & II

Exploration work to date in Areas I and II has identified a 6 by 2 km area of widespread propylitic alteration, anomalous copper-gold geochemistry, and scattered copper-gold mineralization (Figure 21).

The magnetic low defining Target I was shown by field work to largely coincide with a recessively weathering, 1.6 km diameter magnetic low centred immediately to the north of Rogers Creek at the intersection of a number of regional and local fault sets. Based on outcrop exposures along logging road networks, the magnetic low was shown to be occupied by a polymictic breccia pipe similar to other porphyry deposits world-wide. The breccia pipe is largely clast-supported with a marginal phase of in-situ brecciated Rogers Creek granodiorite that is transitional into a hydrothermally altered clast- and locally matrix-supported breccia



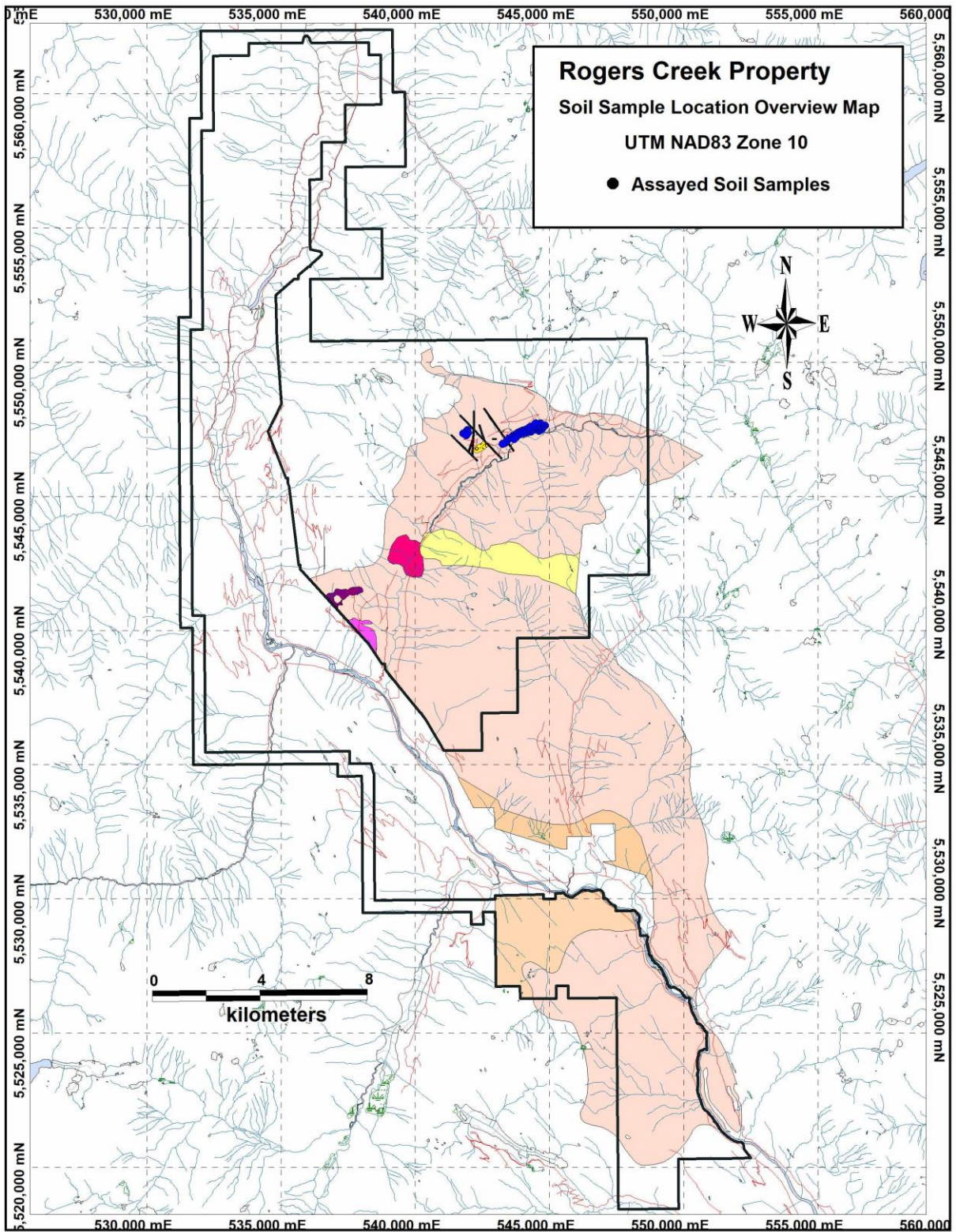


Figure 20: Overview of Rogers Creek Property Showing 2016 Soil Sample Locations

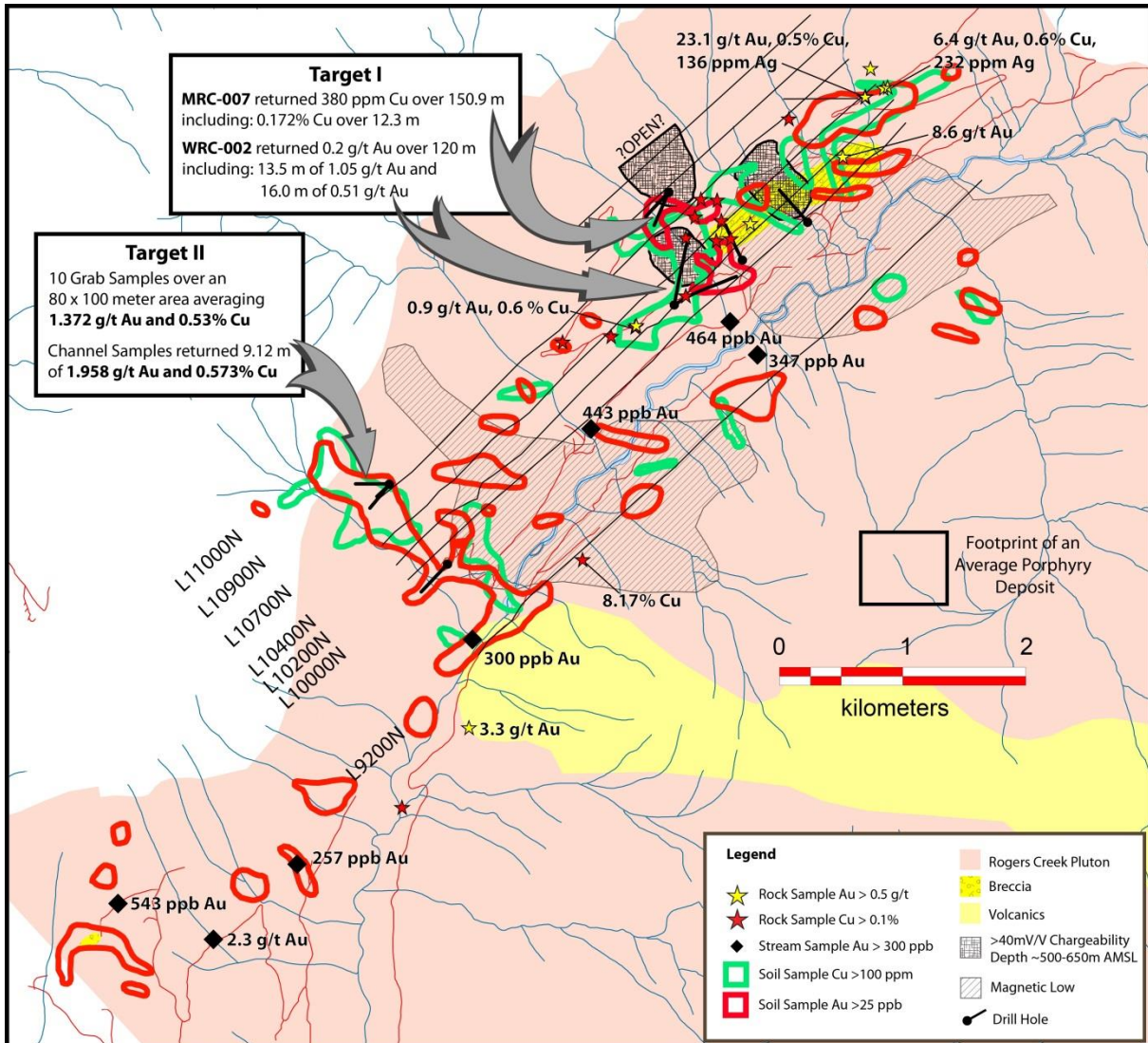


Figure 21: Compilation of Exploration Results Target Areas I, II and III

Streams draining Targets I and II (Figure 21) returned silt samples containing up to 464 ppb gold, 835 ppb silver and 73 ppm copper versus background values of approximately 2.5 ppb gold, 20 ppb silver and 15 ppm copper. Quartz-sulphide veins on the periphery and cutting Target I breccia returned gold and silver values up to 23.1 grams per tonne gold, 232 grams per tonne silver, 0.69% copper and 81.4 ppm molybdenum. The strong stream and rock geochemistry is reflected in the broad distribution of gold (>25 ppb Au) and copper (>100 ppm Cu) soil anomalies within the 6 x 2 km area encompassing Targets I and II and to a lesser extent Target III, which has a dominant gold signature.



The magnetic low defining Target I was shown by field work to largely coincide with a recessively weathering, 1.6 km diameter magnetic low centred immediately to the north of Rogers Creek at the intersection of a number of regional and local fault sets. Based on outcrop exposures along logging road networks, the magnetic low was shown to be occupied by a polymictic breccia pipe similar to other porphyry deposits world-wide. The breccia pipe is largely clast-supported with a marginal phase of in-situ brecciated Rogers Creek granodiorite that is transitional into a hydrothermally altered clast- and locally matrix-supported breccia dominated by feldspar-phyric rock clasts and rock flour matrix with rare malachite-stained (i.e. Cu mineralized) rock clasts. Zones of intense argillic (clay) alteration are centred on vertical faults.

Propylitic (pyrite, carbonate and epidote) alteration extends up to 1,000 m beyond the margins of the magnetic low and breccia pipe and may contain up to several percent pyrite  $\pm$  chalcopyrite mineralization. Intense phyllic (quartz, sericite, pyrite) alteration is confined to the extent of the magnetic low and overprints an earlier phase of potassic (K-feldspar, biotite) alteration, which has largely only been seen in drill core but is exposed along Copper Road within a Cu-mineralized fluid exsolution pipe.

Structurally controlled zones of mineralizing retrograde sericite-chlorite after potassic alteration have been identified in several widespread areas. A-, B-, D-, veins have been verified throughout Targets I and II. Multiple, large mono- to polymict breccia pipes (syn- to post mineral) have been mapped with crosscutting late base metal veins. Porphyritic dykes have been mapped in structurally controlled fault zones adjacent to fragmental breccias flows. Coeval andesitic volcanic and volcanoclastic rocks have been discovered at high elevations, most likely emplaced during intrusion of the main stage Rogers Creek pluton or a slightly later cupola phase.

Mapping and prospecting within Target II revealed that it is cored by a second magnetic low (~1.5 km diameter) and located about 2 km to the south-west of Target I. Outcrop is very scarce within the margins of the magnetic low with only a few scattered hornblende granodiorite outcrops exposed north of Rogers Creek.

Soil sampling has defined multiple gold- and copper-in-soil geochemical anomalies (> 25 ppb Au, >100 ppm Cu, respectively) particularly along the western (values up to 0.242 g/t Au) and northern margins (values up to 0.542 g/t Au) of the magnetic low, which also is flanked on the northern margin by several chalcopyrite occurrences. Soil sampling in 2011 delineated an open-ended, NNW-trending soil anomaly over a 200 x 1,200 metre area, defined by gold-in-soil values of between 25 and 542 ppb gold and copper-in-soil values between 100 and 1,115 ppm copper

Mapping, prospecting and surface sampling within this soil geochemical anomaly located gold/copper mineralization within an 80 x 100 metre area. The mineralization, hosted by silica-sericite-chlorite altered biotite +/- hornblende granodiorite, consisted of up to several percent disseminated chalcopyrite and lesser pyrite with rare chalcopyrite and pyrite veins up to 1 cm wide. An initial 10 grab samples, excluding one cross-cut by a pyrite-chalcopyrite vein which returned 3.72% Cu, 15.75 g/t Au and 91.9 g/t Ag, averaged **1.372 g/t Au, 0.53% Cu and 11.97 g/t Ag**. Highlight samples included:

Sample K881055: 3.72% Cu, 15.75 g/t Au and 91.9 g/t Ag

Sample K881054: 0.72% Cu, 4.91 g/t Au and 25.8 g/t Ag

Sample K881053: 0.79% Cu, 2.19 g/t Au and 21.6 g/t Ag

Sample K880323: 0.82% Cu, 0.836 g/t Au and 8.95 g/t Ag

Channel sampling of the surface mineralization returned 9.12 m of 1.958 g/t gold (“Au”), 0.573% copper (“Cu”) and 13.7 g/t silver (“Ag”) confirming the results of the grab samples.

Shallow drilling (MRC-003, 004 and 005), totalling 933.4 m, beneath the surface mineralization intersected only weakly anomalous gold and copper values but did demonstrate that the altered and mineralized host rock of the surface showing and related structures continued to the north beneath the northern extent of the copper and gold soil geochemical anomaly.

Occurrences of copper and gold mineralization have been also been found along a logging

road between Targets I and II, where chalcopyrite and bornite mineralization is exposed in narrow "A" and "D" vein assemblages, along fault planes, within chloritic hydro-fractures and a fluid exsolution pipe. Selective grab samples returned up to 6,850 ppm copper with weakly to moderately anomalous gold and silver values.

### 9.3.9 TARGET III

At Target III, a 200 m diameter zone of hematite and clay/sericite/tourmaline-altered breccia was located in an area of anomalous Au-in-silt values (up to 2.3 g/t Au) and zones of intense silica and potassic alteration. Stream sediment samples with anomalous gold (Figure 10) were recovered from streams that drain roughly east-west and north-northeast trending structures. These host zones of intense quartz-sericite-pyrite alteration up to 5 m wide that have returned up to 0.82 g/t Au. This target has not been drilled to date.

### 9.3.10 TARGET IV

Target 4 is located about 18 km south of the original discovery area in Target 1 and consists of surface showings of copper-molybdenum mineralization found during prospecting along new logging roads, as well as soil geochemical anomalies defined by limited follow-up work. Molybdenite +/- chalcopyrite are observed on fractures and joint planes with values up to 0.34% Cu, 3.84 g/t Au, 75 g/t Ag, and 241 ppm Mo in grab samples.

## 10 DRILLING

### 10.1 INTRODUCTION

There is no record of any historic drilling on the Rogers Creek Property in the assessment records. To date a total of 10 holes have been drilled on the property by Wallbridge and Miocene for a total of 5,209 m. The drilling is summarized in Table 6 below.

Table 6: Rogers Creek Drill Programs

Year	Company	No. of Holes	Total Meterage (Metres)
2009	Wallbridge	3	2,122.8
2010	Miocene	2	1,024.3
2011	Miocene	5	2,062.0
<b>Total</b>		<b>10</b>	<b>5,209.1</b>



## 10.2 LOGISTICS

Locations and depths of the holes drilled are tabulated in Table 7.

Table 7: Rogers Creek Drill Hole Summary Table

<b>DDH_ID</b>	<b>Easting (m) UTMNAD83</b>	<b>Northing (m) UTMNAD83</b>	<b>Elevation (m)</b>	<b>Total Depth (m)</b>	<b>Start Date</b>	<b>Finish Date</b>
WRC-001	541,922.0	5,546,242.0	785.0	849.8	08-Oct-09	24-Oct-09
WRC-002	541,917.0	5,546,239.0	785.0	851.0	25-Oct-09	10-Nov-09
WRC-003	542,469.0	5,546,621.0	758.0	422.0	12-Nov-09	22-Nov-09
MRC-001	543,011.0	5,546,922.0	721.0	582.3	14-Jul-10	23-Jul-10
MRC-002	540,053.0	5,544,116.0	717.0	442.1	25-Jul-10	30-Jul-10
MRC-003	539,574.0	5,544,765.0	1,212.0	344.4	4-Oct-11	14-Oct-11
MRC-004	539,574.0	5,544,764.0	1,212.0	196.6	15-Oct-11	19-Oct-11
MRC-005	539,561.0	5,544,773.0	1,212.0	393.3	23-Oct-11	8-Nov-11
MRC-006	541,868.0	5,547,161.0	1,117.0	515.0	20-Oct-11	30-Oct-11
MRC-007	541,870.0	5,547,162.0	1,117.0	612.7	1-Nov-11	16-Nov-11
<b>Total Meterage</b>				<b>5,209.1</b>		

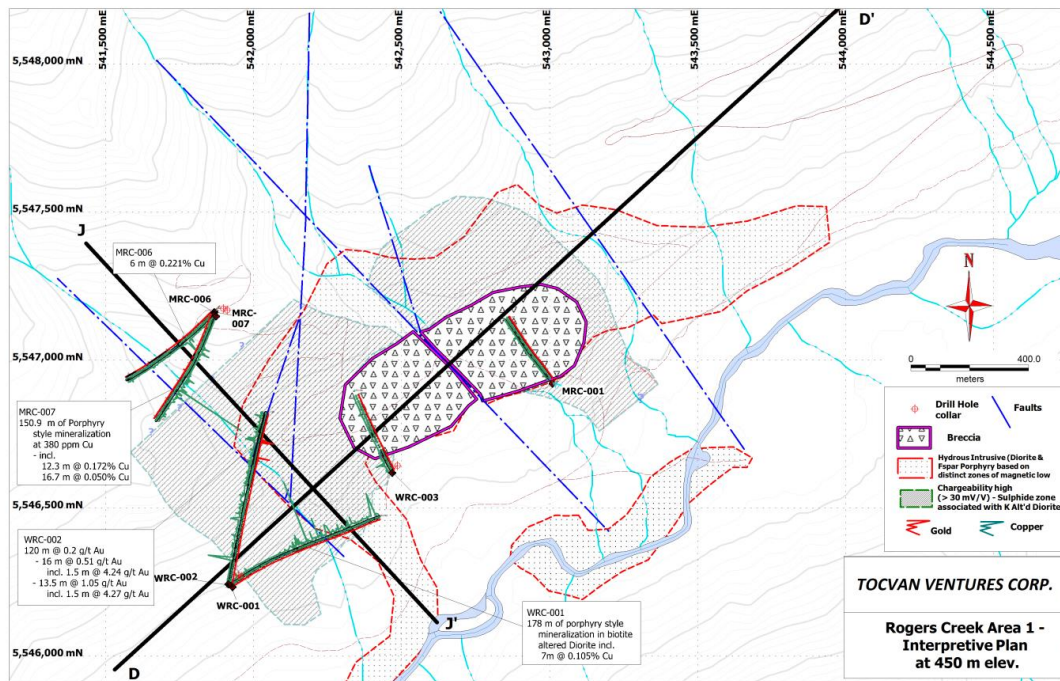
The drilling was carried out by FORACO from Kamloops, BC in 2009 and Blackhawk Drilling Ltd from Smithers, BC in 2010 and 2011. Wireline diamond drill rigs were used. Core size was NQ and NTK. Lizzie Bay Logging of Pemberton, BC supported the drill-pad preparation and winter-service on the Rogers Creek Forest Service Road by providing an excavator and a grader including operators. Drill core was transported from the drill-site to the Miocene's core shack located at km 7.2 on the Rogers Creek Forest Service Road where it is photographed and then geotechnical and geological logging was carried out. Drill core was then cut in half by diamond saw, sampled (half of split core), and stored. Upon completion of each hole, core samples were transported to ALS Chemex in Vancouver by Miocene personnel for assaying.

## 10.3 RESULTS

Results of individual holes are discussed below. A summary table of assay results is presented in Section 10.4.

### 10.3.1 2009 DRILLING

In 2009, Wallbridge drilled 3 NQ holes (WRC-001 to -003) for a total of 2,122.75 m on Target I at Rogers Creek, targeting IP responses and mineralization observed in surface outcrop on the western edge of the breccia pipe (Figure 29)



The first drill hole, WRC-001, was drilled to test copper anomalies identified in soil samples from 2008 as well as a zone of potassic alteration with associated copper mineralization found in bedrock mapping in 2009 and a strong chargeability anomaly at depth identified by Abitibi's DCIP-Survey. The drill hole intersected a fault at 430 m down-hole depth. Mineralization was encountered from 390 m to 430 m and was characterized by disseminated pyrite and minor chalcopyrite. With increasing depth, alteration selvages around quartz-sulphide veins become wider and more intense. The alteration assemblages were characterized by carbonate, chlorite, and minor amounts of sericite. Mineralization between 408 m and 415 m returned assay values of 0.105% Cu. Between 422 m and 424 m, the rock graded 0.107% Cu and 131 ppm Mo. Other anomalous zones were intersected between 461.69 m and 462.55 m (0.202% Cu) and 505.76 m and 508 m (191 ppm Mo).

Drill hole WRC-002 targeted the same structure as WRC-001 as well as a different portion of the buried IP-response. The weakly mineralized structure identified at approximately 400 m depth in WRC-001 was intersected at approximately 600 m depth at a low angle. It contained an interval of 120 m of 0.2 g/t Au between 598.0 m and 718.0 m down-hole depth. Values within this zone include 0.53 g/t Au over 16 m from 613 m to 629 m, including 4.24 g/t Au over 1.5 m from 627.5 m to 629 m, and 1.53 g/t Au, 0.130% Cu, and 11.2 g/t Ag over 7.5 m from 704.5 m to 712 m, including 4.37 g/t Au, 0.130% Cu, and 20.0 g/t Ag over 1.5 m from 710.5 m to 712 m. Veins show increasingly intense alteration ranging from propylitic alteration near surface to intense phyllic alteration, which appears to be associated with dense sets of quartz-sulphide veins just below the intersection with the fault tested by WRC-001. The mineralization occurs in widely spaced quartz-sulphide ± anhydrite veins which carry copper ± molybdenum.

Drill hole WRC-003 was drilled to establish a spatial and temporal relationship between the granodiorite host rock, breccia formation, and vein-related mineralization observed in outcrop. The hole was expected to collar in Target I propylitic-altered breccia but instead intersected strongly phyllic-altered granodiorite. The breccia often contains barren pyrite mineralization and, along the margins of the breccia pipe, late quartz-sulphide veins that carry significant amounts of silver and lead at surface. In general, mineralization is restricted to anomalous copper and gold values over a core length of 90 m, but largely outside the contact between the Rogers Creek granodiorite and Target I breccia pipe. Maximum values include 0.16% Cu over a 1.5 m (53.0 m to 54.50 m downhole depth) and 0.202 g/t Au over 1.5 m (30.5 m to 32.0 m downhole depth).

### 10.3.2 2010 DRILLING

Miocene drilled 2 holes in 2010 for a total of 1,024 m. Hole MRC-001 was drilled in Target I area and was designed to test the breccia body along strike and was collared approximately 600m to the northeast of WRC-003. This hole cored argillic altered breccia which is postulated to be phreatomagmatic in origin. Sporadically distributed “D” veins provided

minor, narrow, mineralized intersections with elevated copper and silver concentrations further down hole.

The objective of MRC-002 was to drill test the southern end of the Cu-Au soil geochemical anomaly as it was defined in 2010. Subsequently, Miocene continued prospecting and soil sampling upslope to the north and, in doing so, extended the soil anomaly and discovered the Cu-Au showing which was drilled (MRC-003, -004 and -005) in 2011. Unfortunately, MRC-002 was terminated early due to a fire-related ban on drilling that year. The hole intersected 35 m of granodiorite followed by quartz diorite to the end of the hole at 442 m. The quartz diorite is intruded by granodiorite, feldspar porphyry and mafic dikes Mineralization consists of late stage stockworks with associated quartz-epidote veins that contain variable amounts (0.5 to 1.0%) of pyrite, chalcopyrite, and molybdenite and sulphides are also disseminated throughout the host rock. Alteration grades down hole from phyllic to propylitic suggesting that the hole is on the edge of the porphyry system.

### 10.3.3 2011 DRILLING

Five holes totaling 2,062 metres were drilled in 2011. Shallow drilling at Target II with holes MRC-003, 004 and 005 (totalling 933.4 m) was designed to test for continuity to depth below the surface mineralization that is exposed at surface (330° trending body of hornblende-diorite 80m by ~100 m wide) mineralized with disseminated and veinlet chalcopyrite across 13m width and averaging 0.49% Cu and 1.42 g/t Au; These holes intersected only weakly anomalous gold and copper values but demonstrate that altered and mineralized host rock of the surface showing and related structures continues to the north beneath the northern extent of the copper and gold soil geochemical anomaly.

At Target I, drill holes MRC-006 and MRC-007 were drilled to test IP anomalies in the area north of the mineralization encountered in drill holes WRC-001 (scattered copper mineralization over 178.45 m, including 0.105% copper over 7.0 m) and WRC-002 (0.2 g/t Au over 120 m including 1.05 g/t Au over 13.5 m and 0.51 g/t Au over 16.0 m) drilled by Wallbridge in 2009. The mineralization in these holes is interpreted as being part of an outer pyritic shell that typically occurs on the margins of a buried porphyry system.

Both MRC-006 and MRC-007 intersected elevated copper and gold concentrations within sparsely disseminated pyrite-chalcopyrite mineralization and porphyry-style alteration (propylitic and chloritic/argillic) assemblages along substantial core lengths (up to 150 m). As in holes WRC-001 and WRC-002, alteration assemblages and the intensity of Cu-Au mineralization are consistent with intersections in the outer pyritic halo of a buried porphyry system. Interestingly, it was noted that the intensity of the mineralized stockwork and alteration in MRC-006 appeared to be increasing in the last two core boxes of the drill hole (Figure 30 below).



Figure 23: Stockwork Mineralization at the End of Drill Hole MRC-006

The most significant mineralization was observed in Hole MRC-007 (the last hole in the 2011 program), which intersected 380 ppm Cu over 150.9 m from 345.60 to 496.50 m, including:

- 0.071% Cu over 3.0 m from 200.4 to 203.7 m
- 0.089% Cu over 8.0 m from 222.0 to 230.0 m

- 0.05% Cu over 16.7 m from 363.0 to 379.7 m
- 0.172% Cu over 12.3 m from 422.2 to 434.2 m
- 0.067% Cu over 6.0 m from 447.0 to 453.0 m

As in hole MRC-006, the abundance of mineralized fractures with altered selvages appeared to be increasing from 432 m to the end of the hole. It is recommended that additional exploration and drilling be conducted in the Target I Area to the north and east of the breccia. This should include extending current IP survey with additional lines to the north of the current survey area.

A composite schematic longitudinal section and a cross section through the drill holes of interest are shown in Figures 24, 25, 26 and 27 below. Section locations are shown on Figure 22. A summary of the assay results is included in Table 8 (Section 10.4)



### Rogers Creek Schematic Section D-D'

Facing NW (305°) with interpreted geology

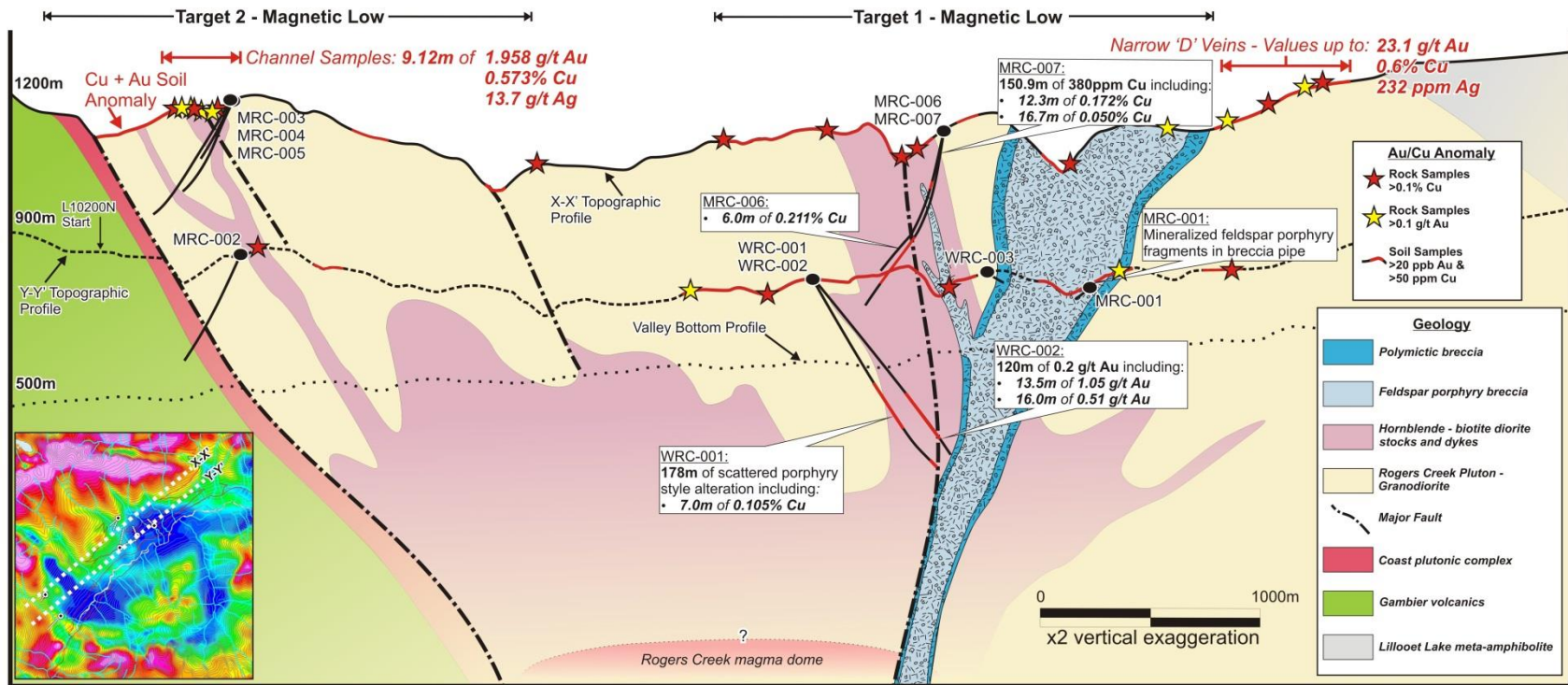


Figure 24: Geological Longitudinal Section D-D'



# Rogers Creek Schematic Section J-J'

Facing NE (035°) with interpreted geology

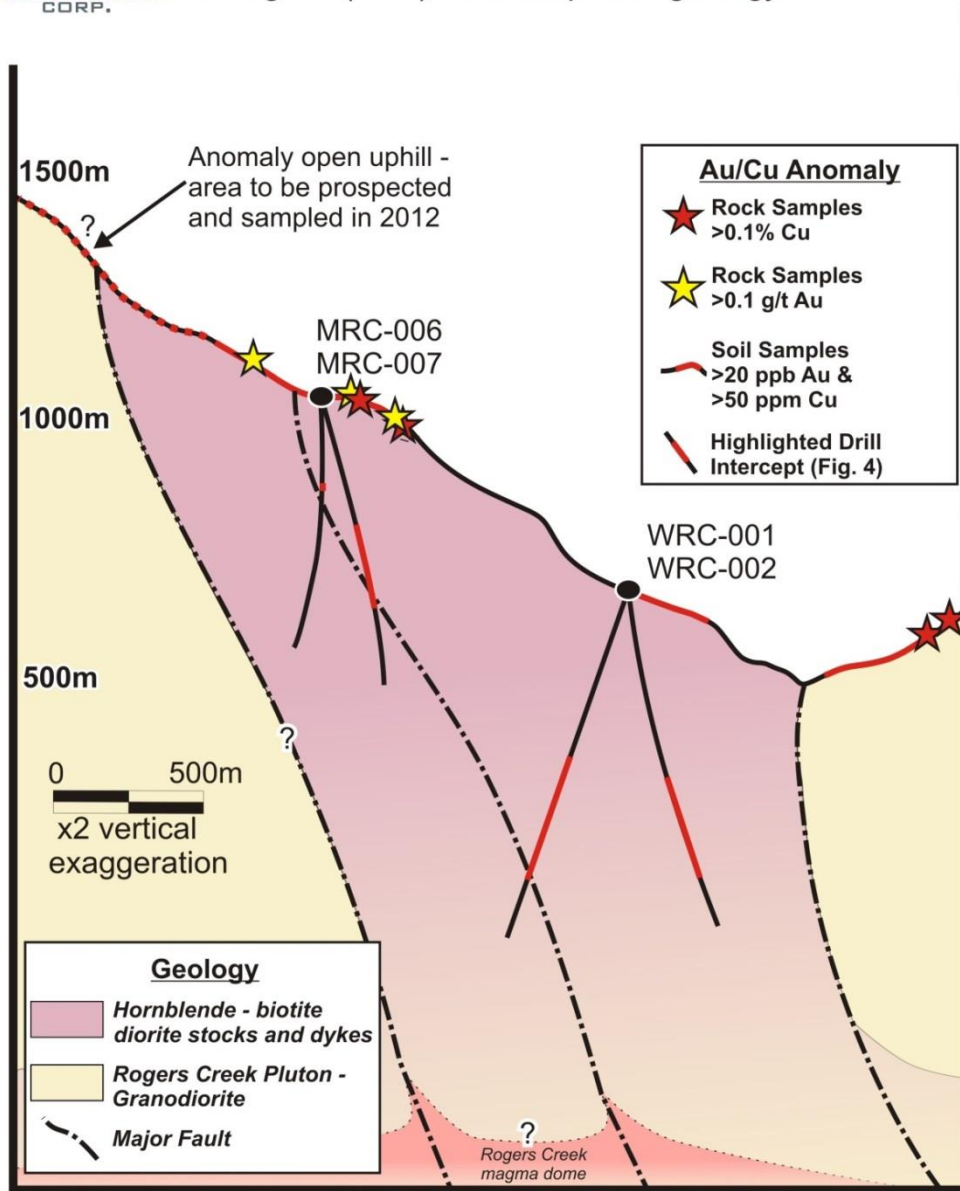


Figure 25: Geological Cross Section J-J'



### Rogers Creek Schematic Section D-D'

Facing NW (305°) with interpreted alteration

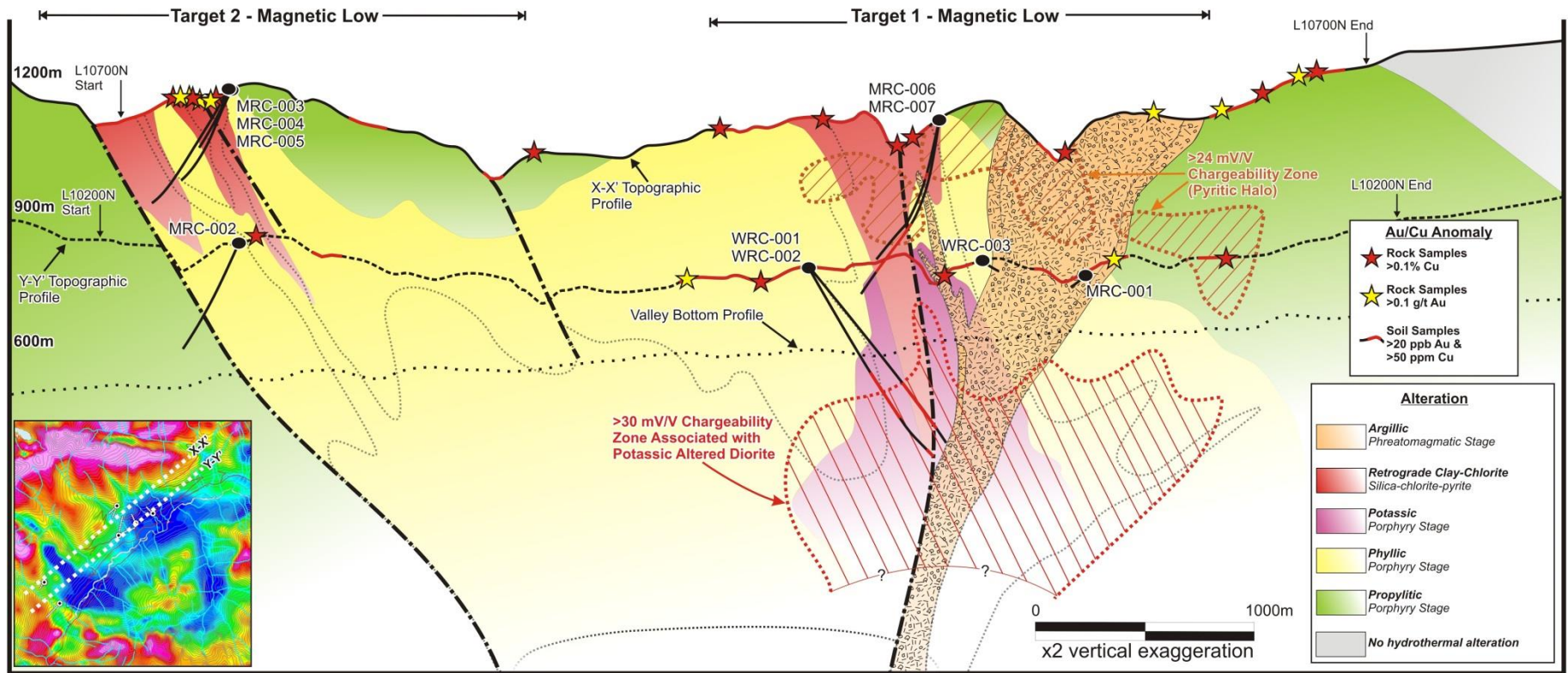


Figure 26: Geophysical Interpretation Longitudinal Section D-D'



## Rogers Creek Schematic Section J-J'

*Facing NE (035°) with interpreted alteration*

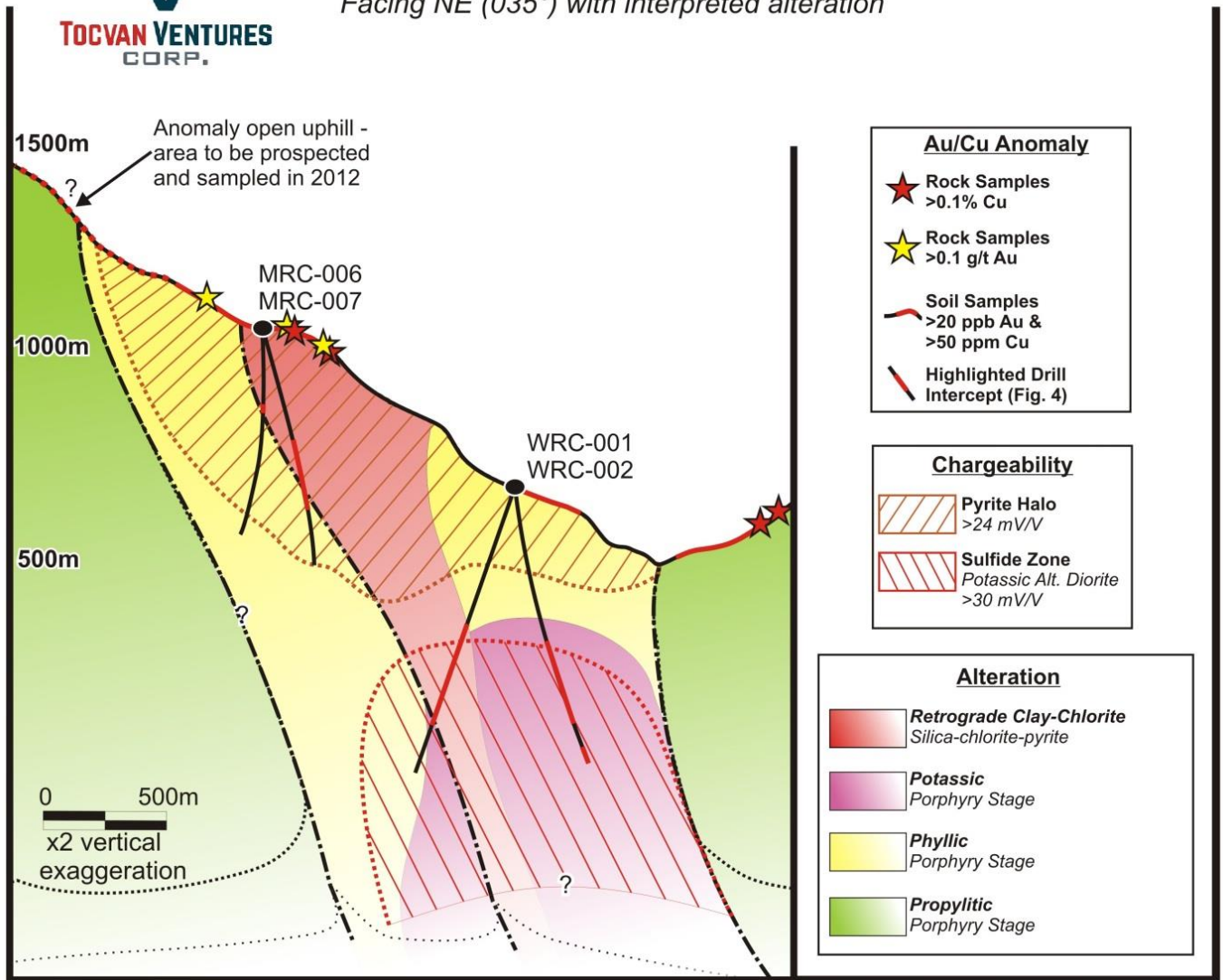


Figure 27: Geophysical Interpretation Cross Section J-J'

## 10.4 SUMMARY TABLE OF DRILLING RESULTS

Table 8: Drill Hole Assays Summary

ROGERS CREEK DRILL HOLE ASSAYS SUMMARY							
Hole ID	From	To	Metres	Copper (%)	Gold (g/t)	Molybdenum (ppm)	Silver (g/t)
<b>WRC-001</b>	408.00	415.00	7.00	0.105	0.011	95	1.4
	422.00	424.00	2.00	0.107	0.011	131.00	1.2
	461.69	462.55	0.86	0.202	0.042	10	3.8
<b>WRC-002</b>	598.00	718.00	120.00	0.027	0.204	13.37	2.14
incl.	613.00	629.00	16.00	0.021	0.528	15.25	1.38
	627.50	629.00	1.50	0.028	4.240	3.08	3.28
	704.50	712.00	7.50	0.130	1.535	96.54	11.23
<b>WRC-003</b>	11.00	90.50	79.50	0.023	0.009	5.05	1.32
incl.	30.50	32.00	1.50	0.014	0.202	15.55	0.73
	53.00	54.50	1.50	0.158	0.012	20.2	1.94
	104.00	105.50	1.50	0.021	0.136	7.49	2.73
<b>MRC-001</b>	415.00	417.00	2.00	0.016	0.061	5.97	125
	420.78	421.78	1.00	0.079	0.050	4.6	52.6
<b>MRC-002</b>	152.50	156.50	4.00	0.010	0.071	1.19	0.32
<b>MRC-003</b>	61.00	73.50	12.50	0.041	0.030	58.27	0.6
incl.	61.00	69.10	8.10	0.054	0.034	88.84	0.8
incl.	68.20	69.10	0.90	0.347	0.011	791	5.65
<b>MRC-004</b>	60.00	73.50	13.50	0.030	0.051	1.37	0.3
<b>MRC-005</b>	291.80	300.50	8.70	0.052	0.074	17.93	0.67
<b>MRC-006</b>	175.50	233.50	58.00	0.034	0.023	5.3	4.3
incl.	189.00	216.00	27.00	0.062	0.008	7.9	2.1
incl.	192.00	201.00	9.00	0.155	0.016	1.6	5
<b>MRC-007</b>	200.40	203.70	3.30	0.071	0.022	4.36	4.27
	222.00	230.00	8.00	0.089	0.010	2.04	1.49
<b>MRC-007</b>	<b>345.60</b>	<b>496.50</b>	<b>150.90</b>	<b>0.038</b>	<b>0.009</b>	<b>2.73</b>	<b>0.93</b>
incl.	363.00	379.70	16.70	0.045	0.008	2.17	0.75
	422.20	434.30	12.10	0.172	0.017	5.61	2.82
	447.00	453.00	6.00	0.067	0.010	3.4	1.84

## 11 SAMPLE PREPARATION, ANALYSES AND SECURITY

### 11.1 SAMPLING METHOD

All gossanous and sulphide-bearing rocks were sampled for analysis. Veins and stringers with and without pyrite or Cu-mineralization were sampled for geochemical analysis and mineralogical characterization of vein and alteration-halo mineralogy to develop exploration vectors. Soil samples have been acquired every 50 m along slopes where possible.

Stream sediment and heavy mineral concentrate samples were taken initially as a reconnaissance exploration tool to determine which streams required follow-up sampling and prospecting. Reconnaissance samples generally were taken 25-50 m up-stream from the confluence of 1<sup>st</sup> and 2<sup>nd</sup> order streams whereas follow-up samples were taken at intervals of 50-200 m up-stream depending on suitable sample location sites. For stream sediments that had been washed at the sample site, 2 kg of a minimum screen (-20 mesh) fraction was submitted for analysis. Samples were dried in the laboratory at ~80°C, dry sieved at -80 and -150 mesh prior to analysis.

Samples and representatives (rocks only) were numbered and bagged in the field, sample locations were recorded using a Garmin GPSMAP 60Cx GPS, and a flag, with the sample number written on the flag that was left at the sample site.

Drill core sampling was based on visual estimates of sulphide content and sample lengths typically ranged from 0.5 to 1.0 m in well mineralized material. Shoulder samples and weakly mineralized material were sampled at up to 1.5 m intervals. Samples did not cross geological contacts. Core sample intervals were clearly marked on the core and 2 tags were placed at the end of each sample run (the third tag remained in the sample book with a record of hole number and sample interval). One tag was placed in the sample bag with the drill core sample and the other tag stayed with the remaining core after splitting. At this stage the core was then



photographed in batches of 3 NQ boxes at a time for the complete drill hole (see Figure 35 below).



Figure 28: Example of photographed core from MRC-007 (boxes 40 to 41)

Drill core samples delineated by the logging geologist were cut in half longitudinally along the core axis using a gas-powered diamond saw. One half of the sample was returned to the core box for reference. The reference core was then cross stacked at the camp site. The core shack and storage area is considered to be secure as no road access was available while the camp was unattended and the entrance to the access road is gated.

## 11.2 SAMPLE ANALYSIS

All samples were sealed (stapled) in individual, labelled plastic bags with a unique sample tag. If a thin section was requested, a portion of the sample was retained for that purpose. A barren, granitic field blank was submitted with at least every twentieth sample, or as the last

samples submitted in a batch of field samples. The sample book used to track the samples has 4 partitions with the sample number on each tag. One tag stays with the geological reference, 1 with the laboratory sample, 1 with the thin section, and the remaining part of the tag book is stored at the Carube office in Pemberton, BC.

Sample chain of custody was maintained by Miocene from the sample collection point until delivery to a representative from the analytical laboratory. Samples were packed into large rice sacks and tightly sealed using nylon tie wraps. The sacks were stored at the secured Miocene core shack until transported directly to the ALS Chemex Ltd. (ALS) laboratory by a company employee. ALS is an ISO 9001:2000 and 17025 certified service provider located in Vancouver, British Columbia. At ALS, samples were checked against requisition documents prior to being dried, weighed, crushed, and split into 200 g fractions using a Jones riffler and milled to 90%-95% passing 200 mesh.

Samples were analyzed for gold by standard lead collection fire assay fusion (FA) followed by a combination of inductively coupled plasma mass spectrometry (ICP-MS) and atomic emission spectrometry (ICP-AES). Samples were also analyzed for 47 base metals and trace elements using a 4 acid (HNO<sub>3</sub>-HClO<sub>4</sub>-HF and HCl) near total digestion and a combination of ICP-MS and ICP-AES. ICP over-limits are re-analyzed using sodium peroxide fusion acid dissolution followed by ICP-AES. On request, samples were analyzed for major element oxides and rare earth elements using lithium metaborate fusion followed by ICP-AES. ALS has a rigorous internal security and client confidentiality policy. Details are available through their website: [www.alsglobal.com](http://www.alsglobal.com).

Assay results are downloaded from the ALS website by the Miocene Database Manager and emailed to the project geologist. In 2011, ALS was not able to cope with standard assay results turnaround times required by Miocene (2-3 weeks) and after a lab inspection Miocene engaged SGS Mineral (SGS) ([www.sgs.com](http://www.sgs.com)) facilities in North Vancouver. SGS analyzed drill core samples from 5 holes at Rogers Creek (MRC-003 to MRC- 007, inclusive).

At SGS drill core samples were dried, crushed to 75% passing 2 mm, after which a 250 gram split was taken and pulverized to 85% passing 75 microns. A 20-gram pulp from each sample was then analyzed for 49 elements using SGS's ICM40B method, which utilizes Inductively-Coupled Plasma Mass Spectrometry (ICP-MS) and Inductively-Coupled Plasma Optical Emission Spectrometry (ICP-OES) and a near-total, 4 acid digestion. A 30 gram pulp split was assayed for gold by standard lead collection/fire assay fusion (FAA313). The dore bead was acid digested and analyzed for gold content using Atomic Absorption Spectrometry (AAS). Over-limit values for Ag and Cu were reconciled using SGS methods AAS42E and ICP90Q, respectively.

### **11.3 QUALITY ASSURANCE AND QUALITY CONTROL PROGRAM**

Quality Control measures are required to ensure the reliability and trustworthiness of exploration data. This includes written field procedures and independent verifications of aspects such as drilling, surveying, sampling, assaying, data management and database integrity.

Appropriate implementation and documentation of Quality Control measures and regular analysis of Quality Control data are required to ensure accuracy and precision of analytical and project data, and forms the basis for the quality assurance program implemented during exploration.

In order to standardize field procedures all Miocene geologists were provided with a field hand book. For field specimens, blank samples were included with approximately every 19 rock samples sent to ALS. The blank was obtained from an un-mineralized, homogenous granodiorite located close to the field camp at Rogers Creek. At the beginning of the field survey, more than 12 blanks were submitted, with the first batch of rock samples to ensure the statistical validity of the geochemical analysis of the blank. Stream samples and heavy mineral concentrate samples were submitted using field blanks as the last sample in each submission.



Miocene also implemented a rigorous QA/QC program for diamond drill core samples consisting of the insertion of blanks, certified reference standards, and sample (quarter-core) duplicates.

Duplicates, field blanks (a local unmineralized granodiorite of known composition), and 1 of 3 commercial certified reference material (CRM) to samples (low, medium and high grade) were inserted into the core samples at a rate of one in every 20 samples. Miocene utilized 2 groups of certified reference materials which were purchased from CDN Resource Laboratories Ltd., B.C., Canada ([www.cdnlabs.com](http://www.cdnlabs.com)):

- the first group is comprised of CDN-BLK-8 , CDN-CM-11A and -12
- the second group is comprised of CDN-BLK-9 and CDN-CM-13,-15 & -16.

Miocene also used SUD-STD, an internal Company standard from Sudbury which has been homogenized and prepared by a reputable Sudbury laboratory. The standard's performance has been within tolerable ranges; however, SUD-STD has not been certified. This certification process was ongoing as the standard has been sent to both SGS and ALS. Miocene intended to send the SUD-STD to other labs for a more rigorous round robin review, however results for this study were not available for review. During the course of the drill programs, Miocene closely monitored assay results for quality control samples and notified the laboratories of any quality control failures.

The QA/QC data was subject to statistical analysis upon receipt of results. All analyzed elements were checked to ensure that the measured results were within a 2 sigma margin of error of the reported values for the standard. If there was a discrepancy between the measured and reported values, then the laboratory was contacted. The results from the quality control analyses were stored in the field sample database.

Based on the author's examination of the sampling and assay methods, and the QA/QC protocols implemented by Miocene the author is of the opinion that the data collected by Miocene is of high quality and adequate for this stage of exploration on the property.

## **12 DATA VERIFICATION**

The author was provided a comprehensive historical digital geological database from Carube for the purpose of reviewing the Project and preparing this Technical Report. The Rogers Creek digital database included numerous Technical and Assessment Reports, maps, figures, assay data, assay certificates and location data detailing the historic work conducted on the Property by Carube, predecessor companies and geological consultants. The geochemical data was verified by spot comparisons of original analytical certificate image files and digital database files. Analytical data Quality Assurance and Quality Control was indicated by the favourable reproducibility obtained in company and laboratory inserted standards, blanks and duplicates (repeats). There is a good correlation between the field duplicates collected for quality control.

There does not appear to have been any tampering with or contamination of the samples during collection, shipping, analytical preparation or analysis. Quality control procedures are outlined under Section 11.0, (Quality Assurance and Quality Control Program). The author is satisfied that the Rogers Creek Property geological, sampling and assay data has been diligently and properly collected and recorded in an industry acceptable manner, and has no reason to doubt the accuracy and reliability of the geological database, sample collection techniques, analysis and Quality Control results. In the author's opinion, the data provided in this Technical Report is adequately reliable for its purposes.

## **13 MINERAL PROCESSING AND METALLURGICAL TESTING**

No metallurgical testing has been carried out on material collected on the Rogers Creek Property.

## **14 MINERAL RESOURCE ESTIMATES**

No mineral resource estimates have been prepared for mineralization on the Rogers Creek Property.

## **15 MINERAL RESERVE ESTIMATES**

No mineral reserve estimates have been prepared for mineralization on the Rogers Creek Property.

## **16 ADJACENT PROPERTIES**

There are no significant, active claims adjacent to the Rogers Creek Property. Dorsey Resource Consulting Inc. holds the Inferno, Inferno South and Red Mountain claims at the southwest corner of the Property, near Target IV. These properties are currently dormant.

## **17 OTHER RELEVANT DATA AND INFORMATION**

As mentioned in Report Section 4.6 Community, the Rogers Creek Property is situated in Samahquam First Nations' Traditional Territory. Carube has a well-documented, active engagement with the Samahquam First Nations communities and enjoys an excellent relationship with them. The Samahquam have been very supportive of Carube's exploration efforts at the Rogers Creek Property.

Carube has fostered good working relationships with the Samahquam and has worked toward strengthening ties with administrative councils as well as the local community. Senior Management has fostered open communication as to Carube's operations and corporate presentations on Carube's activities have been well received. Carube has also instituted a policy of purchasing services and employing residents of local communities to the greatest degree possible. Carube has continued Miocene's tradition of sponsoring Samahquam Days celebration by sponsoring and participating in this event.

## **18 INTERPRETATION AND CONCLUSIONS**

Exploration in southwestern British Columbia over the last hundred years has largely focused on mesothermal gold, polymetallic vein, and skarn type deposit models. The documented work history around these intrusions is usually restricted to limited programs following up, re-visiting, re-sampling, and, in some cases, upgrading known occurrences that were already identified by previous workers. Additionally, there is little record of any significant,

systematic, regional evaluation of these Tertiary intrusions for their large scale porphyry or epithermal potential.

The Rogers Creek Property is being explored for porphyry-style Cu-Au-Mo mineralization associated with intrusions within the post-accretionary Tertiary-age Cascade Magmatic Arc. This represents a significantly younger environment than typical porphyry exploration targets in British Columbia. However, there are a number of very large porphyry deposits which occur in this belt in neighbouring southeast Alaska and Washington State and similar age magmatic belts worldwide that contain very large (>1 billion tonnes) copper and molybdenum deposits. Historical porphyry exploration in British Columbia has focused on older rocks of the Intermontane Belt rather than the metamorphosed and structurally imbricated, dominantly Triassic to Cretaceous age, Coast Belt. Past exploration models suggest that the Coast Belt is at too deep an erosional level to be prospective for porphyry-style mineralization. Instead, previous work in the area has targeted volcanogenic massive sulphide-style or epithermal-style gold mineralization. Work carried out in the 1990s has recognized very young Miocene intrusions within the Coast Belt rocks, forming part of the Cascade Magmatic Arc. This geological setting for porphyry-style mineralization, coupled with the discovery of Cu, Au, and Mo mineralization within these intrusions, provides a compelling geological model for exploration.

Since Mr. Gary Poirier's initial discovery at Rogers Creek, Miocene and subsequently Carube have been able to acquire and maintain, respectively, a dominant land position which covers almost the entire extent of this Miocene magmatic complex.

To date airborne geophysical surveys, regional stream sediment sampling, soil sampling, mapping and prospecting have been completed and were successful in narrowing attention to 3 priority exploration targets (Targets I, II, and III) within the Rogers Creek Valley where drilling has confirmed the presence of porphyry style alteration and mineralization.

Prospecting and mapping along roads on the south-west part of the property have identified an additional mineralized target. (Target IV)

At Target I, Carube has defined a 2.2 km diameter polymict breccia pipe that is well exposed in outcrop and also delineated by a strong magnetic low in the airborne data. In places this pipe shows intense argillic alteration and is surrounded and cross-cut by poly-metallic Au, Cu, Ag and Pb veins.

Drilling and sampling indicate a strong association of pervasively and strongly mineralized rocks in the vicinity of high order structures trending north to north-west at Target I. Carube believes that fault-zones identified along roads act as cross links between the higher order faults and thus provided a much larger surface to impregnate the surrounding rock. While these fault zones are poorly exposed, the sparse outcrop seen is extremely leached and fractured at surface as well as having developed limonitic gossans. The range of anomalous soil samples in this area as well as numerous low-resistivity and high chargeability features further suggests that the granodiorite host is intensely altered and impregnated with sulphides at depth. Identification of lower or equal order structures associated with the faults identified is essential in defining high grade portions of this mineralized system for drill testing.

At Target II, southwest of Target I, quartz-malachite veining has been identified within another strong magnetic low that is surrounded in part by elevated gold values in soil samples. The trend of the samples indicates a north-west striking fault zone that dips to the south-west. Surrounding outcrops of chlorite-sericite altered granodiorite are cut by poorly-defined zones of copper-mineralized chloritic stringers, similar to those found on the northwestern margin of the breccia pipe at Target I. The magnetic low in this area may be related to an unroofed breccia pipe or alteration system, similar to that exposed at Target I.

At Target III, a 200 m diameter zone of hematite and clay/sericite/tourmaline-altered breccia has been identified in an area of anomalous Au-in-silt values and multi-generational silicification and potassic alteration events observed both within fault zones and within pervasively-altered host granodiorite. Silicification may represent a cap overlying a mineralized porphyry or epithermal system at depth. Arsenic-in-soil values may give an indication for the gold potential of the area; other pathfinder elements such as bismuth as well as field observations indicate the existence of an east-west trending structure, that is

responsible for the gold anomalies found in stream and rock samples from the area. Several small to moderate sized magnetic lows were indicated by the 3D magnetic inversion that seem to follow structural trends and thus may highlight zones of more intense alteration.

The review of drill core and hand specimens during 2013 along with associated thin section work has improved the understanding of the geology and alteration patterns within this large mineralized system. The darker phase of the granodiorite previously identified as hornblende diorite, rather than being a distinct intrusive phase is now interpreted to be biotite +/- hornblende granodiorite that has been potassically altered in a prograde event and subsequently retrograde altered to a sericite-chlorite-sulphide-magnetite assemblage during the mineralizing event. Most of these altered zones can be seen to be proximal to large scale arc-parallel and transpression faults within the valley that would have significantly focussed fluid flow. It is believed that these zones are gradational into lower “high-grade” potassic cores beneath.

Work to date has advanced the property from a small showing discovered on a logging road in 2007 to an advanced exploration stage property, with evidence for a large mineralized system. This has validated the initial working hypothesis that there is considerable potential to discover significant mineralization within the Miocene age intrusions of the Cascade Magmatic Arc in southwestern BC, which have seen very little modern exploration.

Merging and modeling of the 2009 and 2015 IP surveys with all other existing data into a 3D model has served to further strengthen the model of a buried porphyry at Rogers Creek. The initial review showed a large, open-ended, high chargeability and low resistivity anomaly present between two of the mineralizing arc-parallel structures within Target I which roughly correlate with drill holes WRC-001, WRC-002, MRC-006, and MRC-007 apparently just “skimming” the edge of the anomaly. Where the drill holes came closest and touched the edge of the anomaly appears to be where the highest copper-gold values occur along with intensified chlorite-sericite alteration zones possibly overprinting potassic prograde alteration. Target I remains the most promising and highest priority area, however, Target IV also shows significant potential, especially at the intersection of two major structures forming a large

magnetic low and geochemical anomaly. A more detailed manipulation and study of the new model is required to qualify the next exploration approach.

Work to date has been focused in Target Area I. The last hole drilled in Target Area I, MRC-007, was drilled north of the limit of the IP (subsequently extended an additional 400 m north by the 2015 IP survey) and soil geochemical coverage and intersected 158 m of 380 ppm Cu in MRC-007, including **12.3 m of 0.172% Cu**, confirming that the mineralized system is open to the north beyond the limits of current geophysical and geochemical coverage. To date the mineralization intersected by drilling is consistent with that from the periphery of a porphyry mineralized system. Interpretation is complicated by the presence of a large post-mineral breccia pipe. Mineralized clasts noted within this pipe indicate it has passed through porphyry-style mineralization at depth. Further work is required to fully define the extent and geometry of what appears to be a very large mineralized system, in order to define the location of the potassic core of the system which would be expected to produce higher grade intercepts.

Work in Area II has identified copper-gold mineralization associated with a chlorite-sericite altered biotite granodiorite. The large magnetic low at the centre of Area II remains unexplained.

Little work has been carried out in Areas III and IV. Potential in Area III appears to be for high level epithermal gold mineralization, while Area IV is a copper-molybdenum target. Both of these areas are currently ranked to be of lower priority to Targets I and II. Sufficient work has been filed to keep Target III until December 31, 2021 and Target IV until December 31, 2019. As these mineral claims in these areas are contiguous with Targets I and II, any work completed on these targets can be applied to retain Targets III and IV for future exploration.

## **19 RECOMMENDATIONS**

As detailed in Section 4.5 (Permits), the previous Rogers Creek Property Mineral Exploration Permit MX-7-188 expired on October 1<sup>st</sup>, 2018, and on September 28th, 2018, Tocvan applied



for a new 5 year MYAB Mineral Exploration Permit providing for the recommended exploration program detailed below. This permit application is under review and has not been granted by MEMPR as of the Effective Date of this Technical Report (November 21, 2018).

### **Phase I**

Objectives of Phase I exploration include renewing the Rogers Creek Property MYAB Mineral Exploration Permit and further definition of the size, northern limits, internal geometry and metal zonation of the Target I IP anomaly in preparation for a Phase II drill program.

The proposed Phase I work program includes geological mapping and road-cut sampling along new logging roads near Target Areas I, II and III, 3 - 3-kilometer Induced Polarization (DCIP) and soil sampling lines (200-300 soil samples in total) at Target I, 200 metres, 400 metres and 600 metres north of 2015 IP line L11100N to further define the northern limits of the mineralizing system. Results should be integrated with the new constrained 3D model to refine drill targeting for the Phase 2 follow-up drilling program.

### **Phase II**

Between 1,000 and 1,200 meters of drilling is recommended in 2-3 diamond drill holes, with at least 1 hole targeting the northern IP chargeability anomaly from the drill hole MRC-007 platform. The exact locations of the other 2 drill holes would be determined from Phase I exploration results and modelling.

Drill testing of coincident geological and geophysical targets at Target I should be prioritized, particularly at depth on the western margin of the breccia-pipe. This is where potassic and sericite-chlorite altered-biotite/hornblende diorite, exhibiting high density hydro fractures and veins has been intersected by previous drilling.

Work in Area II has identified copper-gold mineralization associated with a chlorite-sericite altered biotite granodiorite. The large, linear magnetic low at the centre of Area II remains unexplained and could be a potential drill target.

The \$500,000 (Phase I - \$200,000 & Phase II - \$300,000) proposed budget for the recommended work program above is summarized below in Table 9.

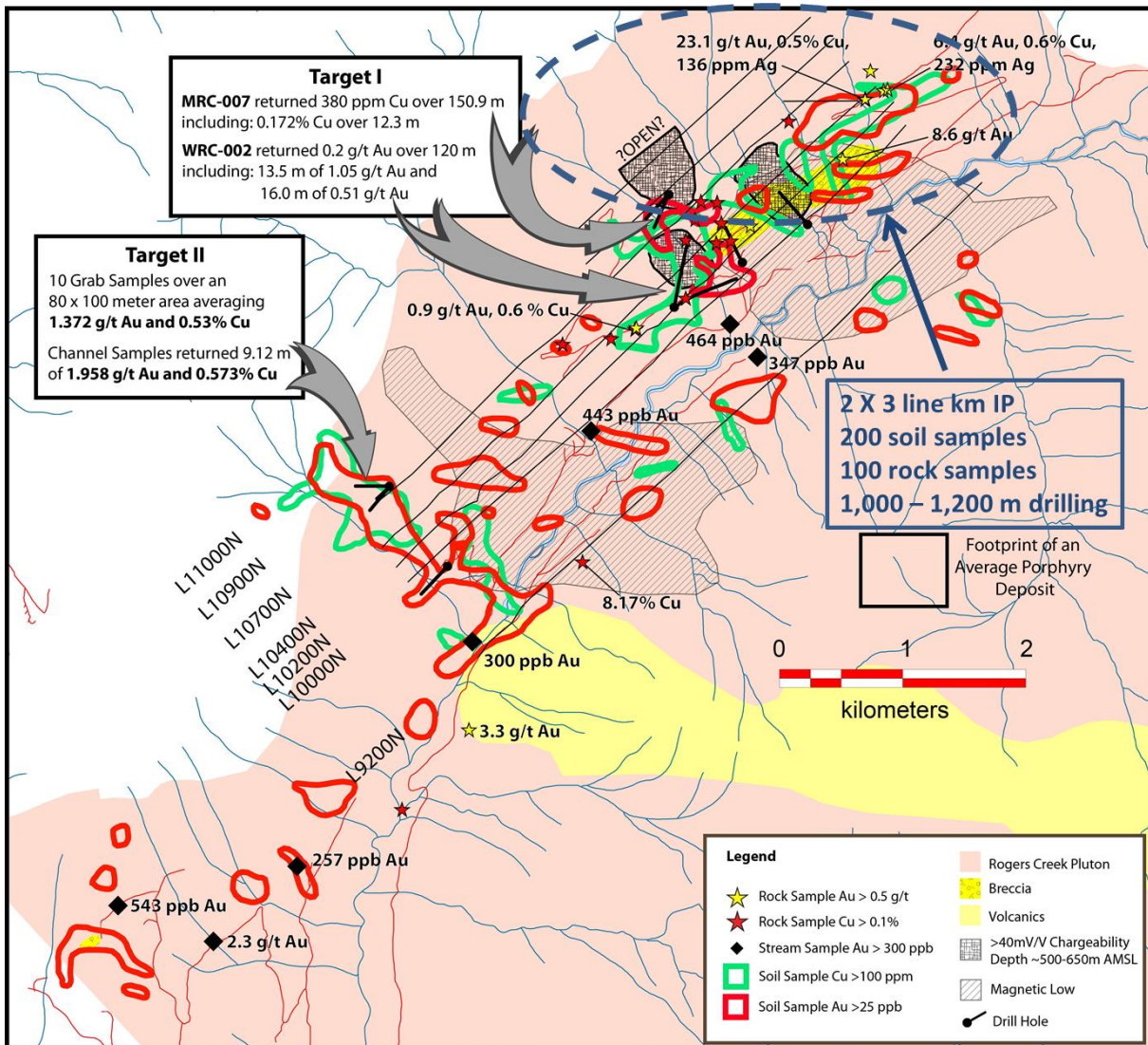


Figure 29: Rogers Creek Property - Location of Proposed Work Program

The proposed budget for the proposed work program above is summarized below in Table 9:

Table 9: Rogers Creek Property Proposed 2019 Work Program and Budget

<b>Proposed Work</b>	<b>Budget</b>
<b><u>PHASE I</u></b>	
Renew MYAB Mineral Exploration Permit, detailed review and compilation of all existing geochemical data to delineate all known porphyry factor vectors and zoning patterns related to potential mineralization.	\$10,000
Review and interpretation of the 2016 3D model by Mira Geosciences	\$10,000
Miscellaneous (Trucks, ATVs, maintenance, etc.)	\$10,000
9 additional line-kilometers of IP to extend the current grid towards the north	\$80,000
SGH or soil sample program over expanding open ended anomalies within Targets 1, 2 and 4, including prospecting and mapping focused on alteration. Mapping of newly exposed outcrop along fresh logging roads above Target 3. Mapping and sampling south of Target 1 on the south side of Rogers creek in an attempt to try and explain the IP and elevated soil anomalies.	\$70,000
<b><u>TOTAL PHASE I</u></b>	\$180,000
Contingency (~10%)	\$20,000
<b><u>TOTAL with contingency</u></b>	<b>\$200,000</b>
<b><u>PHASE II</u></b>	
<u>Diamond Drilling (1,000 – 1,200 metres in 2 to 3 holes)</u> <u>(All Inclusive – Helicopter, fuel, samples etc.)</u>	\$275,000
<u>Contingency (~9%)</u>	\$25,000
<b><u>TOTAL PHASE II Drilling</u></b>	<b>\$300,000</b>
<b><u>GRAND TOTAL</u></b>	<b>\$500,000</b>

## 20 REFERENCES

- Armstrong, R. L. (unpublished). GSC Open File(3176).
- Bailey, J., 2010: Technical Summary: Miocene Metals Limited Cu-Au-Mo Properties in Southwestern BC, prepared for Miocene Metals Limited (Internal Report).
- Boyce, R. A. (1984). "Geochemical Report for Assessment Credit: Cloud Claims; Assessment Report No. 12079." Geological Survey of British Columbia.
- Camus, F. and J. H. Dilles (2001). "A Special Issue Devoted to Porphyry Copper Deposits in Northern Chile." Economic Geology **96**(2): 233-237.
- Carube Copper Corp website (www.carubecopper.com)
- Crickmay, C. H. (1930). "The structural connection between the Coast Range of British Columbia and the Cascade Range of Washington." Geological Magazine **67**: 482-491.
- Garcia, J.S., 2011. 2010 Report on the Airborne Survey for Rogers Creek Project, (RC South Fire Mountain) Southwestern British Columbia
- Garcia, J.S., 2011. 2010 Report on the Drilling Activities for Rogers Creek Project, Southwestern British Columbia
- Garcia, J.S., 2012. Report on the 2010 Geochem Survey and Mapping Activities for Rogers Creek Project, Southwestern British Columbia
- Garcia, J.S., 2012. Report on the 2011-2012 Geochem Survey and Mapping and 2011 Diamond Drilling Activities for Rogers Creek Project, BC
- Jago, B.C., 2008: 2007 and 2008 Technical Report on the Rogers Creek Property, British Columbia, NI 43-101 Technical Report Filed on SEDAR by Wallbridge Mining Company Ltd.
- Jago, B.C., 2009: 2009 Technical Report on the Rogers Creek Property, British Columbia, NI 43-101 Technical Report Filed on SEDAR by Wallbridge Mining Company Ltd.
- Journey, J. M. and J. W. H. Monger (1997). "Geoscience library for the southern Coast and Intermontane belts, S.W. British Columbia." Geological Survey of Canada Open File **3276**.
- Lasmanis, R., 1995: Regional geological and tectonic setting of porphyry deposits in Washington State, in T.G. Schroeter, ed., Porphyry Deposits of the Northwestern Cordillera of North America, CIM Special Volume 46.

McDonough, B., 2011: Technical Report on the Cu-Au-Mo Properties Southwestern British Columbia, Canada, NI 43-101 Technical Report for Miocene Metals Limited by Scott Wilson Roscoe Postle Associates Inc. and filed on SEDAR by Miocene Metals Limited, 146p.

McMillan, W. J., Thompson, J. F. H., Hart, C. J. R. and Johnston, S.T., 1995: Regional Geological and Tectonic Setting of Porphyry Deposits in British Columbia and Yukon Territory; in *Porphyry Deposits of the Northwestern Cordillera of North America*, T. Schroeter (Editor), Canadian Institute of Mining, Metallurgy and Petroleum, Special Volume 46, pages 40-57.

McDonough, Barry (2010), Technical Report on the Cu-Au-Mo properties, Southwestern British Columbia, Canada – Scott Wilson Roscoe Postle Associates Inc.

Miocene Metals Limited website ([www.miocenemetals.com](http://www.miocenemetals.com))

Monger, J. W. H. and J. M. Journeay (1994). Basement geology and tectonic evolution of the Vancouver region, Geological Survey of Canada.

Nockleberg, W.J., Bundtsen, T.K., Eremin, R.A., Ratkin, V.V., Dawson, K.M., Shipikerman, V.I., Goryachev, N.A., Byalobzhesky, S.G., Frolov, Y.F., Khanchuck, A.I., Kock, R.D., Monger, J.W.H., Pozdeev, A.I., Roxenblum, I.S., Rodionov, S.M., Parfenov, L.M., Scotese, C.R., Sidorov, A.A., 2005: Metallogensis and Tectonics of the Russian Far East, Alaska, and the Canadian Cordillera, USGS Professional Paper 1697, 429p.

Pemberton, V. o. (2009, 09 Dec 2008). "About Pemberton." Retrieved March 16th, 2009, from [http://www.pemberton.ca/index.php?option=com\\_content&task=view&id=66&Itemid=318](http://www.pemberton.ca/index.php?option=com_content&task=view&id=66&Itemid=318).

Sinclair, W. D., Ed. (2007). Porphyry deposits. Mineral Deposits of Canada: A Synthesis of major deposit-types, District Metallogeny, the Evolution of Geological Provinces, and Exploration Methods, Geological Association of Canada, Mineral Deposits Division, Special Publication No. 5, pp 223-243.

Sunder Raju, P.V. (2008). Role of pathfinder elements in gold exploration in Chitradurga Schist belt. *Current Science*, Vol. 95, No. 3, 10 August 2008: 323-325.

Watts, A.H. (2002). Discovery of the Ujina Cu deposit, Collahuasi District, Chile. SEG Int'l Exposition and 72nd Annual Meeting \* Salt Lake City, Utah \* October 6-11, 2002

Wilson, R. G. (1986). "Report on Geology and Geochemistry on the RC1 and RC2 Claims: Assessment Report Number 14119." Geological Survey of British Columbia.

Wolfe, W. J. 1995. Exploration and Geology of the Quartz Hill molybdenum deposit, southeast Alaska. In T.G. Schroeter, ed., *Porphyry Deposits of the Northwestern Cordillera of North America*, CIM Special Volume 46.

Wood, P.C. (2013). 2013 Technical Summary Report on the Rogers Creek Property, British Columbia.

## 21 CERTIFICATE

I, Brian P. Fowler, P.Geol., do hereby certify the following:

- I am the author of this Technical Report titled “2018 Summary Technical Report on the Rogers Creek Property, dated November 21<sup>st</sup>, 2018 (the “Technical Report”).
- I take responsibility for all sections of the Technical Report.
- I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with professional associations, and past relevant work experience, I fulfil the requirements to be a “Qualified Person” for the purposes of NI 43-101.
- I am a graduate of the University of Alberta (1981) and hold a B.Sc. Degree (Specialization) in Geology.
- I am registered as a Professional Geologist with the Association of Professional Engineers and Geoscientists of BC (APEGBC).
- I have worked in my profession as a Geologist for 38 years, as an employee of major and junior mining companies, an officer and director of a number of public junior mining companies and as an independent consultant. I have worked at a variety of mining and exploration projects and mineral property evaluations in Canada, United States, Mexico, Chile, Peru, Ecuador, Argentina, Tanzania, South Africa, Australia, Indonesia and PNG.
- I have read NI 43-101, Companion Policy 43-101CP, and Form 43-101F1; and the Technical Report has been prepared in compliance with that instrument and form.
- At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- I did a field inspection of the Rogers Creek Property on July 27, 2018.
- I am independent of Tocvan Ventures Corp. as defined by Section 1.5 of NI 43-101, and do not expect to become an insider, associate or employee of the Issuer.
- I operate under the business name Brian P. Fowler, P.Geol., a business independent of Tocvan Ventures Corp.
- The business address of Brian P. Fowler, P.Geol. is Suite 1104, 1101 – Pacific Street, Vancouver, B.C., V6E 1T3

X

---

"signed" Brian Fowler

Brian P. Fowler, P.Geol.  
November 21, 2018