

# **NI 43-101 TECHNICAL REPORT ON THE ELDORADO PROPERTY**

LIARD MINING DIVISION  
BRITISH COLUMBIA  
CANADA

NTS: 104 H/13 & 104 H/12

UTM: 461700E, 6402800N (NAD 83, Zone 9)  
Latitude 57° 45' 56.3" N,  
Longitude 129° 38' 37.5" W

**For:**

Roughrider Exploration Limited  
625 Howe Street, Suite 420  
Vancouver, B.C. V6C 2T6



Prepared By:  
Dr. James Oliver, P.Geo

A handwritten signature in black ink, appearing to read "Jim Oliver", is positioned below the printed name.

Signature Date: March 20, 2020.  
Effective Date: March 4, 2020.

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## 1.0 SUMMARY

The Eldorado Property is located within the Liard Mining Division in northwestern British Columbia approximately 23 km southeast of the village of Iskut and immediately east of Newcrest Mining/Imperial Metals Red Chris Property. The Property consists of 9 contiguous mineral tenure claims covering an area of 3,588.59 ha.

The Property lies 10 km to the east-northeast of Imperial Metals' Red Chris open pit porphyry copper-gold Mine. Currently Red Chris contains measured and indicated resources of 1,034.7 million tonnes of 0.35% Cu, 0.35 g/t Au and 1.14 g/t Ag (SEDAR filed report, Gillstrom, et al., 2015). The qualified person has been unable to verify the information in the Red Chris resource and that the information is not necessarily indicative of the mineralization on the property that is the subject of the technical report. Although significant copper gold intersections have been obtained from historic drill programs, the Eldorado property currently contains no known mineral resources or reserves.

Early exploration began on the Eldorado Property principally between 1976 and 1995. Numerous past operators completed various exploration geochemical, geophysical and diamond drilling programs which outlined anomalous copper and gold in soils and shallow induced polarization (I.P) anomalies over a 500 m by 1,000 m area (Cooper, 1980). Subsequent drilling (4 drillholes totaling 640.4 m) was completed in 1980 by Esso Minerals who encountered distal porphyry style mineralization and alteration with 3 m intersections grading up to 0.23% copper and 0.79 g/t gold (Everett, C., 1981). Width reported intervals are drill indicated lengths as true thickness are unknown. In 1995, additional soil geochemical and rock sampling was carried out on the Property by Homestake Canada Inc and Falconbridge Limited (Patterson and Kuran, 1995). The samples were taken to cover the 1979 Esso Cu-Mo anomaly.

The Property remained dormant until the core claims were staked in 2002 and later expanded in 2003. In 2004, limited geochemical programs as well as geophysical programs were completed (Rebagliati et al., 2005) and a geochemical program consisting the collection of 303 soil samples was completed in 2007 (Ralph et al., 2008).

The property again remained dormant until 2012 when Colorado Resources Ltd. completed a geochemical program and an I.P. survey which determined that the previously identified anomaly is underlain at depth by a stronger and more continuous chargeability anomaly measuring 500 by 2,000 m (Dawson and Norris, 2013). Colorado then returned in 2013 and completed a geophysical program as well as a 5 hole (1,431 m) diamond drill program. During this program, two drill holes were abandoned due to extensive glacial cover. Three of the drill holes successfully reached bedrock and encountered significant intervals of low grade gold and copper mineralization, including 91.6 m of 0.12% copper and 0.28 g/t gold from top of bedrock (52.4 m depth) to 144 m depth in EL13-004 (Dawson and Norris, 2013). In 2014, Colorado returned and completed an infill magnetometer geophysical program consisting of 4.5-line km over the area of intended drilling and a 4 hole (891.6 m) diamond drill program. Results of this drill program included drillhole EL14-008, which intersected 196.5 m of 0.19 g/t gold and 0.06% copper and 0.005% molybdenum over the entire length of the drillhole from bedrock onward (Dawson, 2015). The quoted mineralized intervals for DDH's EL13-004 and EL 14-008 are drill indicated lengths as true thickness are unknown.

The Property was then returned to the vendor and no work has been completed since the 2014 program. The author was Chief Geoscientist of the Colorado Resources exploration team during the 2012 – 2014 programs and was project manager of the exploration field team during the 2014 program which was the last work to be completed on the Property. The QAQC program undertaken during the 2014 drill program was also under the direction of Oliver. Historic drill programs on the Eldorado property suggest:

- Portions of the Eldorado claims are underlain by several intrusive phases including crowded plagioclase phyric monzonites, by black matrix monzodiorite containing well developed intrusive breccias, biotite phyric monzonites and fine grained aplitic or felsic dykes.
- These intrusions are typically several 10's of meters in apparent thickness and are cutting up to a 400 m thick sequences of dark green propylitically altered, pyroxene bearing mafic flows. A few minor thin bedded siltstones are also encountered.
- Most intrusive phases contain alteration assemblages which would be characteristic of porphyry copper-cold mineralized systems. This includes well developed potassic alteration assemblages and includes both secondary biotite, secondary orthoclase and by secondary magnetite. Irregular zones of enhanced QSP alteration are also defined. Well developed "B" style veins, in addition to the numerous breccia zones, are commonly associated with these intrusions. Mineralization in the volcanic and sedimentary rocks is lower than that documented within the intrusions.
- Gold and copper mineralization is forming over significant intervals with DDH EL 13 – 004 cutting 91.6 m of 0.28 g/t Au and 0.12% Cu and DDH 14 -008 coring 196.5 m of 0.19 g/t Au and 0.065 Cu. Width reported intervals are drill indicated lengths as true thickness are unknown.
- The broad widths of gold-copper mineralization, although low grade, are considered to be important signatures of a potential blind porphyry system.

Two phases of exploration are recommended on the Eldorado Property during the 2020 field season. Phase two is contingent on the results of the Phase one program. Phase one's recommended program includes conducting a detailed airborne survey over portions the Eldorado Property at 100 m north-south line spacing's (approximately 400 line km). The detailed airborne magnetic survey will permit significantly improved resolution of structural and lithologic trends, will assist in the interpretation of existing geophysical, geochemical and geological data and will provide a framework for subsequent technical surveys. The phase one program is projected to cost \$300,000. The phase two recommended program consists of 50 line km of deep sensing IP over portions of the property which have no IP coverage as well as extending deep IP coverage across areas previously surveyed using IP arrays designed for shallow penetration depths. Potential porphyry copper-gold targets will be tested by approximately 5,000 m's of NQ diamond drilling which would be completed in an estimated 10-20 drill holes. Hole depths will be contingent of the depth of glacial till as well as target depths which are interpreted from geophysical and geological interpretations. Expanded geological studies as well as additional environmental and First Nations consultations will also be undertaken. The phase two program is projected to cost \$ 2,400,000.

On November 9, 2019 Roughrider Exploration Inc. announced it had entered into a property agreement with the vendors. The details of that agreement are outlined on the November 8, 2019 press release for Roughrider Exploration Ltd ([www.roughriderexploration.com](http://www.roughriderexploration.com)). At the request

of Roughrider, the author is completing this technical report to fulfill the Toronto Stock Exchange requirements as the property purchase is considered a fundamental transaction for the Company.

## 2.0 INTRODUCTION

This technical report has been prepared at the request of Mr. Scott Gibson, CEO and Director of Roughrider Exploration Limited (“Roughrider” or the “Company”), a public company which trades on the TSX Venture Exchange. Roughrider has entered into a Definitive Agreement with Cazador Resources Ltd, a private B.C. Company, Rene Bernard, an individual and Elemental Capital Partners LLP, a private B.C. Partnership, each of which is an independent party at arm’s length to the Company to acquire a 100% interest in the Gin, Eldorado and Bonanza properties (collectively the “Red Chris Area Properties”). Certain claims are subject to a 2% NSR held by the original vendors. The acquisition is subject to the approval of the TSX Venture Exchange. This report is completed on the Eldorado Property. The author has relied on information provided by Roughrider and public documents for information regarding the summary of this acquisition agreement and assumes no responsibility for it.

This technical report has been prepared in compliance with the requirements of National Instrument 43-101 and Form 43-101F1 and is intended to be used as supporting documentation to be filed with the applicable Canadian Securities Commissions.

This technical report is based on a review of previously filed reports by a number of previous operators who have conducted exploration programs on the Eldorado property. Historical reports have been downloaded using the B.C. Ministry of Energy and Mines Assessment Report Indexing System (ARIS). The author has worked extensively in the regional district on a number of mineral deposits including the Eldorado Property in 2012-2014 field season and therefore the report extensively relies on the writer’s geological expertise in the area and on the Property.

The author has personally logged all available historic 1980 Esso Mineral’s drill core. Not all of the 1980’s Esso Minerals drill core could be relogged due to loss of core over the 35 year post-drilling period. All Colorado Resources 2013 drill core was also relogged by Oliver, in 2014, and a geological map of the portions of claim group was also completed by the author at that time. All drillholes completed during the 2014 Colorado Resources exploration program were logged by Oliver. The QA-QC program undertaken during the 2014 drill program was also under the direction of Oliver. The author has carefully reviewed the ARIS assessment files for any work completed after Oliver’s involvement with the 2014 exploration programs. No assessment work has been filed on this property following the 2015 report by Dawson (Dawson, 2015) which documented the 2014 field programs. At the request of the author, the property owner, Mr. Rene Bernard has also indicated in writing, March 3, 2020 that *“I hereby confirm that neither Sunrise Resources nor myself have performed any work on the Bonanza/Eldorado property since it’s return from Colorado Resources in 2014/15.”*

As the writer has been directly involved in field review of all 1980, 2013 and 2104 data at Eldorado and as there has been no material changes in that data base since the 2014 program, no additional field reviews, or QAQC protocol, were undertaken by Oliver.

### **3.0 RELIANCE ON OTHER EXPERTS**

The writer has not relied on the opinions of other experts in the preparation of this report. All of the interpretations and conclusions contained in this report are based on the writer's geological expertise and on a personal knowledge of the Property.

## **4.0 PROPERTY DESCRIPTION & LOCATION**

### **4.1 LOCATION**

The Eldorado Property is located in north-western British Columbia (Figure 4.1) in the Liard Mining Division, approximately 23 km southeast of the village of Iskut and 10 km east-northeast of Newcrest Mining Limited/Imperial Metals' Red Chris porphyry copper-gold Mine. The Eldorado claims are located west of the Klappan River and immediately east the Red Chris Property and south of Ealue Lake on NTS map sheets 104H 12/13. The Property is approximately centered on UTM coordinates 461700E, 6402800N (NAD 83, Zone 9) or Latitude 57° 45' 56.3" N and Longitude 129° 38' 37.5" W.

### **4.2 DESCRIPTION**

The Eldorado Property consists of 9 contiguous mineral tenure claims covering an area of 3,588.59 hectares. A complete list of the claims, their size and expiry dates are provided in Table 1 and a map of the claims on Figure 4.2. Details of the status of title ownership, size and expiry dates have been obtained from the Mineral Titles Online ("MTO") database system managed by the B.C. Ministry of Energy and Mines. The title search of claims was undertaken on March 3, 2020.





Figure 4.1: Property Location Map



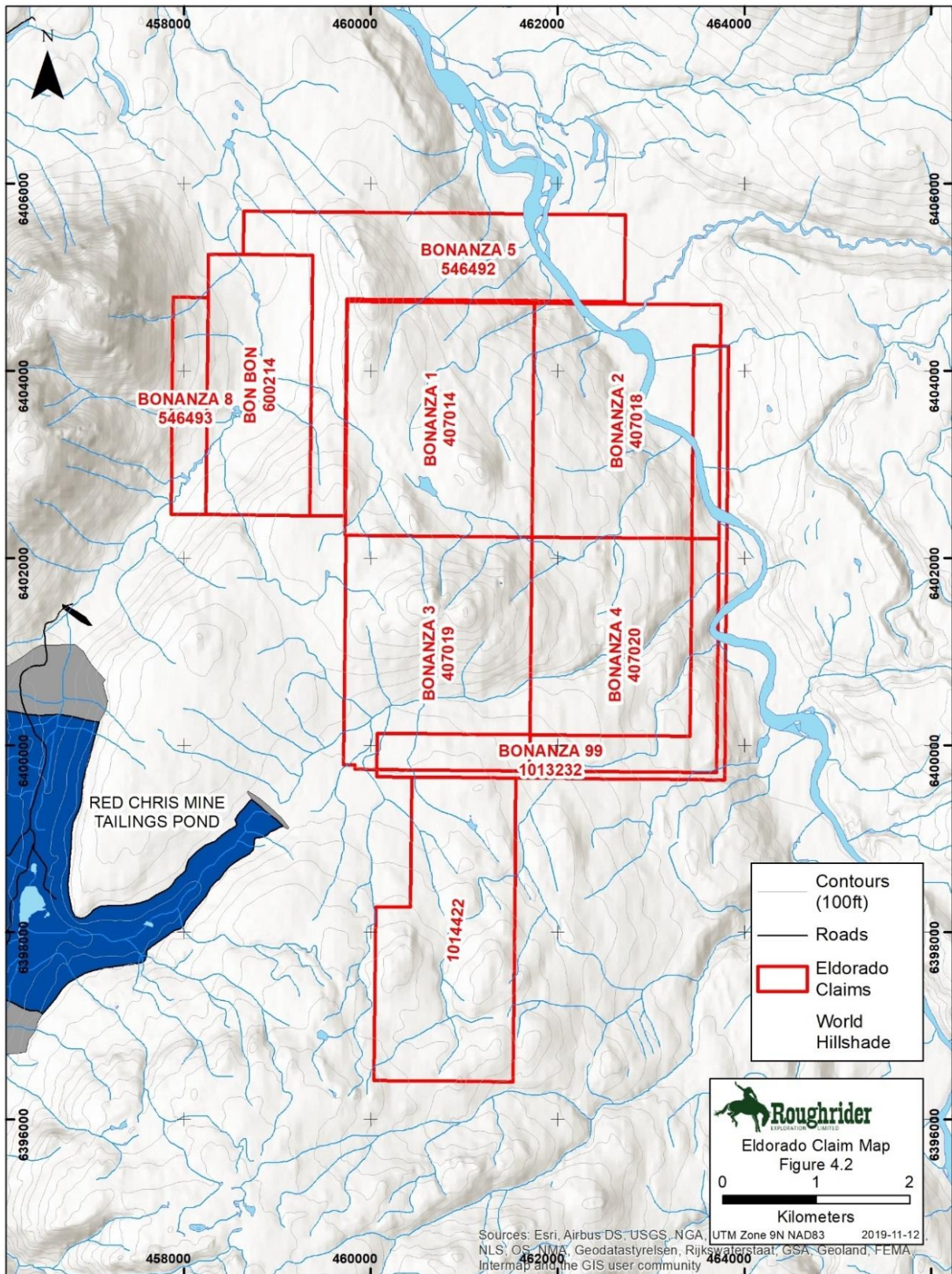


Figure 4.2: Eldorado Claim Map

**Table 1: Eldorado Property Claims**

Title Number	Claim Name	Owner*	Title Type	Map Number	Issue Date	Good To Date	Area (ha)
546493	Bonanza 8	Rene Bernard (146164)	Mineral	104H	04-Dec-06	31-May-25	86.3
600214	Bon Bon	Rene Bernard (146164)	Mineral	104H	01-Mar-09	31-May-25	310.66
1013232	Bonanza 99	Rene Bernard (146164)	Mineral	104H	26-Sep-12	31-May-25	328.16
546492	Bonanza 5	Rene Bernard (146164)	Mineral	104H	04-Dec-06	31-May-25	431.35
1014422		Rene Bernard (146164)	Mineral	104H	11-Nov-12	31-May-25	432.12
407019	Bonanza 3	Rene Bernard (146164)	Mineral	104H	27-Nov-03	31-May-25	500
407020	Bonanza 4	Rene Bernard (146164)	Mineral	104H	27-Nov-03	31-May-25	500
407018	Bonanza 2	Rene Bernard (146164)	Mineral	104H	27-Nov-03	31-May-25	500
407014	Bonanza 1	Rene Bernard (146164)	Mineral	104H	27-Nov-03	31-May-25	500

\* Claims are currently being held under one of the underlying vendors MTO account Rene Bernard 146164

### 4.3 OWNERSHIP

On December 3, 2018 Sunrise Resources Ltd (formerly known as Candorado Operating Company Ltd) and Rene Bernard entered into a purchase agreement for the Eldorado and other Red Chris area claims. The outline of the subject claims is illustrated on Figure 4.2 and relevant mineral title information is documented on Table 1. The mineral claims cover a total area of 3,588.6 hectares. All of the subject claims are in good standing until May 31, 2025 and no work commitments are required until that time. On December 3, 2018 Rene Bernard and Cazador Resources Ltd entered into a Limited Partnership Trust Agreement for the Eldorado and other Red Chris area claims. The parties entered into a 50/50 partnership whereas each partner owned an equal share of the properties.

On November 8, 2019 Cazador Resources Ltd and Rene Bernard entered into a Property Acquisition Agreement with Roughrider Exploration Limited, whereby Roughrider would make share payments to earn a 100% interest in the Property. The details of this agreement are documented in the November 8, 2019 press release filed by Roughrider Exploration Limited which stated:



*“..... Under the terms of the Definitive Agreement, Roughrider will acquire a 100% interest in the Red Chris Area Properties by issuing 11,000,000 shares in Roughrider ( “Consideration Shares”) and all current outstanding options will be cancelled in connection with the Transaction.*

*Upon completion of the Transaction, each of the vendors will become insiders holding shares in excess of 10% of the issued and outstanding shares of the Company... ”*

*“.....All of the Consideration Shares issued under the Transaction will subject to a hold period expiring four months and one day from the date of issuance. 4,000,000 of the Consideration Shares will also be subject to a voluntary hold period of one year from the date of closing.... ”.*

### **Underlying Net Smelter Returns Agreement**

Subject to both agreements listed above, the Eldorado Property is subject to a 2% Net Smelter Returns (NSR) with the underlying vendors of the Eldorado Property; Mr. A. Travis and Mr. D. Mehner.

On November 21, 2003 Candorado Operating Company Ltd entered into a Purchase Agreement on the Eldorado Copper-Gold Property with Adam Travis and David Mehner. Mr. Travis and Mr. Mehner still retain the NSR as the new property owners have assumed the outstanding NSR. (Candorado Operating Company News Release Dated November 25, 2003).

### **Surface Title and Right of Access**

Roughrider Exploration Limited does not control the surface title to the subject claims but under Section 14 of the Mineral Tenure Act of British Columbia, a mineral title holder *“may use, enter and occupy the surface of a claim or lease for the exploraiton and development or production of minerals or placer minerals ... ”* The subject claims are not within an area where mining is prohibited under the Environment and Land Use Act; they are not within a park under the Park Act or a regional park under the Local Government Act; a park or ecological reserve under the Ecological Reserve Act and the claims do not contain any protected heritage properties. These data suggest the Roughrider Exploration has legal right of access for the purposes of conducting mineral exploration within the claims which are the subject of this technical report.

The author knows of no other significant factors and risks that may affect access, title or right to perform work on the property.

## **4.4 TAXES AND ASSESSMENT WORK REQUIREMENTS**

The mineral claims that comprise the Eldorado Property are currently in good standing until May 31, 2025 (dates confirmed on Mineral Titles Online). There are no taxes payables with respect to the property, although standard work assessment requirements (at the rate of \$15 work/hectare/year) will apply to maintain the claims in good standing past the current expiry date.

## **4.5 PERMITS REQUIRED FOR EXPLORATION**

Prior to any physical work such as drilling, trenching, bulk sampling, camp construction or Induced Polarization (I.P) surveys on a mineral property, a Notice of Work permit application must be filed

and approved by the B.C. Ministry of Energy and Mines. The filing of the Notice of Work initiates engagement and consultation with First Nations, local land holders and other stakeholders.

The B.C. Ministry of Energy and Mines office for the Eldorado Property is located in Smithers B.C. and the First Nations group in the area is the Tahltan First Nations.

Following acceptance of this report, Roughrider will commence discussions with both the mines office as well as the Tahltan First Nations on submitting a Notice of Work to complete physical work on the Eldorado Property.

#### **4.6 ENVIRONMENTAL LIABILITIES**

The author is not aware of any environmental liabilities related to historical exploration work done on the Property. The last physical work to have been concluded on the Property was completed by Colorado Resources Ltd. in 2014. Colorado Resources Ltd. had a pre-existing permit on the Property which has since been closed and a property review was completed by the Ministry of Energy and Mines permit office. To the best knowledge of the author no outstanding environmental liabilities remain on the Property.

### **5.0 ACCESSABILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE & PHYSIOGRAPHY**

#### **5.1 ACCESSIBILITY**

Access to the property is easiest via helicopter, a fifteen-minute flight from the village of Iskut and Highway 37. Helicopter bases are located in Dease Lake, Stewart, Terrace and Smithers with additional seasonal helicopter bases are sometimes available for hire out of Bob Quinn or Iskut. Previous operators, with the permission of the Red Chris Mine, have utilized their roads to mobilize drill equipment to within 4 kilometres of the main drill area at Eldorado.

#### **5.2 CLIMATE**

The climate is northern temperate with moderately warm summers and cold dry winters. The region is characterised by moderate annual precipitation with a 35 year average of 406 mm total measured precipitation in Dease Lake (110 km to the north). April and May are the driest months, regionally, with August to December having greater than average precipitation. Average temperatures range between -21 °C in January to 9 °C in July, although extremes of -50 °C to 30 °C have been recorded.

Field work can normally start at lowest elevations in mid-May and the upper elevations by early to mid-June. Cold weather makes field work challenging at the upper elevations past late October although programs in the area may be carried out until late November. At the nearby Red Chris Mine with all-weather road access, heavy equipment mining and milling as well as drilling programs are conducted year-round.

### **5.3 LOCAL RESOURCES**

Services required for exploration are located in the larger city centres, however limited services are located closer to the Eldorado Property in both Iskut Village and Dease Lake. Both unskilled and skilled laborers have been trained at the past producing Eskay Creek Mine, Snip and Golden Bear mines and the operational Brucejack and Red Chris Mines. These individuals are available for hire in the Iskut Village, in Dease Lake and in Telegraph Creek. Numerous local residents, and those throughout the region, have gained valuable experience from wide ranging exploration programs and can provide support to all exploration activities. See Figure 5.1 for regional location map.

Additional accommodation, meals, internet, and pay phones are available seasonally at the Red Goat Inn (Eddontenajon), 2 km south of Iskut, and at Tatogga Lake Resort (May – October) 10 kilometers south of Iskut. Both facilities have staging areas suitable for helicopter-based exploration activities. Iskut Village has a grocery store and Canada Post Office (Kluachon Store) which sells food supplies, gasoline, and diesel. A nursing station is open in Iskut during business hours (Monday through Friday). Dease Lake located 83 kilometers north along Highway 37, has a grocery store where food supplies, gasoline and diesel can be purchased. A Canada Post Office, an RCMP Office, a Medical Center, hotels, restaurants/cafes, an airport, and a Tahltan Nation Band Office are also located in Dease Lake.

The Eldorado Property is located 10 kilometers to the southeast of the operational Red Chris Mine that has ore process facilities and ancillary facilities such as mine accommodation facilities, maintenance shops, warehouses, administration, security, and first aid facilities (Gillstrom et al, 2015).

### **5.4 INFRASTRUCTURE**

The main access route to the area is via Highway 37, which is paved from the Yellowhead Highway (16) at Kitwanga (located approximately halfway between Smithers and Terrace) a distance of approximately 404 kilometers north to Iskut. A gravel airstrip capable of handling small aircraft is located at the northern end of Iskut Village and also at Bob Quinn (located 108 kilometers south of Iskut). A paved runway and airport capable of handling small jets is located in Dease Lake. The active Brucejack and Red Chris Mines and Alta Gas hydroelectric generating station principally bus their employees in from Terrace. Terrace airport is the regional air hub and offers numerous daily scheduled commercial flights.

The Northwest Transmission Line is a 344-kilometer hydro transmission line that extends BC Hydro's power grid north of Terrace, B.C. into an area rich in mining and clean power production. AltaGas Northwest Hydroelectric Facilities located 92 kilometers to the southwest produces approximately 277 megawatts of power and joins with BC Hydro's Northwestern Transmission Line at Bob Quinn Lake, BC. The Northwest Transmission Line extends north to a substation at Tatogga where power is supplied to Red Chris Mine. The Northwest Transmission Line continues on to the Village of Iskut, providing the Village with consistent, clean electricity (BC Hydro, 2014).

The Red Chris Mine has mine process facilities such as crushers, mill complexes, and ore stockpiles. In addition, the mine has ancillary facilities such as accommodation complexes, maintenance shops, warehouses, assay laboratory, administration, security, and first aid facilities

Access to Red Chris mine is by a 23 kilometer all weather access road from Highway 37 at Tatogga (Gillstrom et al., 2015).

## **5.5 PHYSIOGRAPHY**

The Eldorado Property lies to the east of the Todagin Upland Plateau, along the northern edge of the Skeena Mountains and primarily west of the Klappan River. Relief is moderate ranging from 800 to 1300 m above sea level. Breaks in relief are in the form of deep creek gullies; the highest relief and mountain ridges are generally the only places where outcrop occurs. Several meters of glacial till cover the majority of the area. Plateau vegetation consists of small birch and willow trees with assorted grasses and mosses. Valleys have varieties of coniferous and deciduous trees including balsam, fir, cedar, spruce and aspen.

The claims which are the subject of this technical report cover an area of approximately 3,588.6 hectares. As noted, the area is of modest topography and given the size of the property, it is likely that the property is large enough to contain and support potential tailings storage areas, waste rock disposal areas, processing and mining sites.

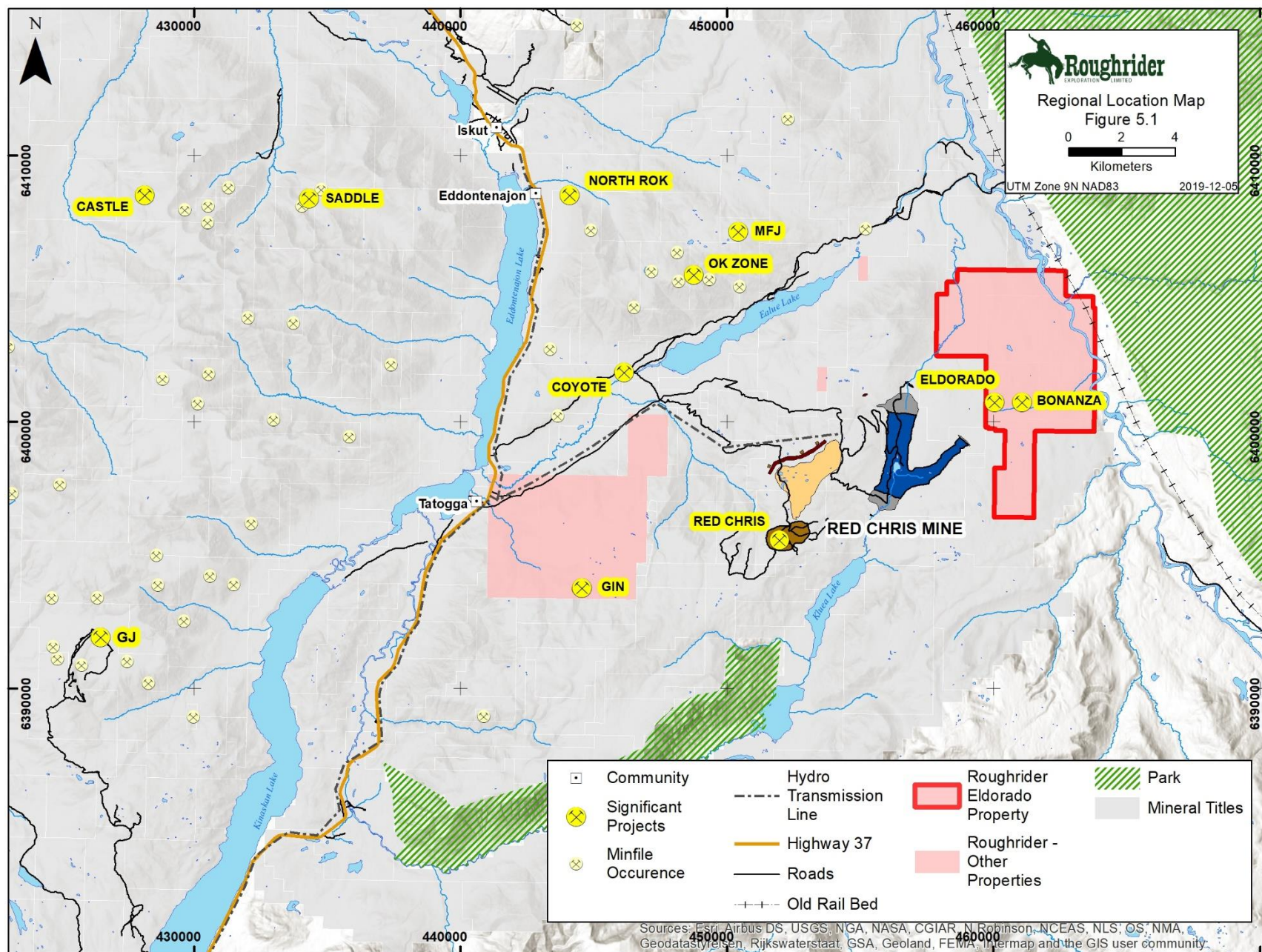


Figure 5.1 Regional Location Map

## 6.0 HISTORY

The first recorded work occurred on the Property in 1975. Various owners and operators have completed programs throughout the years up until 2014 when the last work was completed on the Property. Table 2 describes this historical work.

**Table 2: Historical Work Table**

Year Work Completed	Owner	Operator	Nature of Work	Assessment Report #
1975-1976	TexasGulf Canada Ltd	TexasGulf Canada Ltd	Geological, Geochemical and Geophysical Surveys	6016
1977	TexasGulf Canada Ltd	TexasGulf Canada Ltd	Geological, Geochemical and Geophysical Surveys and Hand Trenching	6368
1980	TexasGulf Canada Ltd	Esso Resources Canada Limited	Geochemical Report	7871
1980	TexasGulf Canada Ltd	Esso Resources Canada Limited	Geophysical Report	8351
1980-1981	TexasGulf Canada Ltd	Esso Resources Canada Limited	Diamond Drill Hole Report	9132
1995	Homestake Canada Inc and FalconBridge Limited	Homestake Canada Inc	Geological and Geochemical Surveys	24132
2004	Candorado Operating Company	Amarc Resources Ltd	Induced Polarization, Total Field magnetometer and Soil Geochemistry	27631
2007	Candorado Operating Company	Gravity West Corp	303 Soil Samples and 17.5 line km of cut grids	29981
2012	Sunrise Resources Ltd (formerly Candorado)	Sunrise Resources Ltd	Geochemical soils and Biogeochemical survey	33653
2012-2013	Sunrise Resources Ltd (formerly Candorado)	Colorado Resources Ltd	Geophysical, Diamond Drilling, Physical survey	34277
2014	Sunrise Resources Ltd (formerly Candorado)	Colorado Resources Ltd	Geophysical, Diamond Drilling, Physical survey	35324

Texasgulf Canada Limited conducted the initial exploration work on the property in 1975. The original Eldorado and Bonanza claims were staked after anomalous copper results were obtained in regional silt samples from area creeks. In the 1976 and 1977 field seasons, Texasgulf conducted soil geochemical, geological, ground magnetometer and induced polarization surveys and a small amount of hand trenching (Peatfield and Donnely, 1976; Peatfield et al., 1977).

Esso Resources Canada optioned the property in 1979 and further soil sampling, geophysics, trenching and diamond drilling programs were completed in 1979 and 1980, (Oddy, 1980; Everett,

19810. Esso completed 4 diamond drillholes (BQ size) on the Property in 1980 (see Table 3) for a total of 640.4 metres. Three of the holes (80-1, 80-2, and 80-3) were drilled along section line 5960 E (1980 grid), roughly 100 m apart. Hole 80-4 was drilled ~1 km to the west (line 4880 E; 1980 grid). Drilling encountered propylitic (chlorite-carbonate  $\pm$  epidote) and locally quartz-sericite-pyrite altered basic volcanic rocks. Drilling also encountered a feldspar porphyritic sub-volcanic intrusive unit and barren quartz-feldspar porphyry dykes. Drilling intersected non-economic copper and gold grades, reporting generally below 0.1% copper. Highlights from the 1980 drill program include 0.213% copper and 790 ppb gold over 3 m (at 33 m downhole length in drillhole 80-2), and 0.229% copper and 120 ppb gold over 3 m (at 25 m downhole length in drillhole 80-4) (Everett, 1981). Width reported intervals are drill indicated lengths as true thickness are unknown.

**Table 3: 1980 Esso Minerals Drill Collar Locations (Everett, 1981)**

Hole ID	UTM E NAD83 Zone 9N*	UTM N NAD83 Zone 9N*	Elevation (m)*	Total Depth (m)	Azimuth (°)	Dip (°)	Core Size
KBC-80-1	461145.22	6400675.95	1203.9	137.2	360	-45	BQ
KBC-80-2	461149.45	6400785.49	1219.1	209.1	360	-45	BQ
KBC-80-3	461153.15	6400899.79	1252.7	124.7	360	-45	BQ
KBC-80-4	460036.78	6400779.86	1190.1	168.9	360	-45	BQ

\*1980 drill collar coordinate location and elevation based on historic map georeferencing and ground truthing

No recorded work occurred after 1981 until 1995 when, additional soil sampling, silt sampling, rock sampling, and geologic mapping were carried out on the property by Homestake Canada Inc. and Falconbridge Limited (Patterson, 1995).

In 2003, Candorado Operating Company Ltd acquired the property from two vendors and in 2004 completed an earn-in agreement with Amarc Resources Ltd. Amarc completed a field program including brushed out 16.6 km of grid line and 2.1 km of baseline, completed 16.6 km of Induced Polarization (IP) and magnetometer surveying and collected 276 soil samples and 1 rock sample. The purpose of the IP and total field magnetometer survey was to test the apparent open ended IP anomaly identified in previous years. The soil geochemical survey covered the previous 2004 IP grid (Rebagliati and Monch, 2005).

Results of the 2004 IP survey identified two chargeability anomalies. The southern anomaly is interpreted to be the eastern extension of the chargeability anomaly identified by Esso Minerals Canada in 1980. This anomaly (200 m x 800 m) has low to moderate contrast (10-16 ms) and is associated with a resistivity high. The IP chargeability anomaly is abruptly terminated between lines 10350E and 10700E. Roughly coincident arsenic, molybdenum and zinc soil geochemical anomalies to the east of the previous copper-gold anomaly, without corresponding copper-gold, were thought to be geochemical indicators of the periphery of a porphyry system. To the north, the second chargeability anomaly identified in 2004 is roughly 300 m x 400 m in size, has a low contrast (10-12 ms) and only a very weak resistivity high along its southern flank. There is no corresponding soil geochemical response (Rebagliati and Monch, 2005).

In February 2007, Candorado Operating Company Ltd. entered into an option agreement with Gravity West Corp. In August 2007, Gravity West contracted CJL Enterprises out of Smithers B.C. to conduct a 303-soil sampling program covering unsampled sections of Amarc 2004 grid



and additional grids. The results of this program are included in an area report that was completed (Ralph et al., 2008).

In August 2012, Candorado Operating Company Ltd. changed its name to Sunrise Resources Ltd. and later in October 2012, Colorado Resources optioned the Eldorado Property from Sunrise Resources. During the fall of 2012, Colorado completed a 28.6-line kilometer IP survey covering the Eldorado and Bonanza Minfile occurrences and north, over the original mineral showing area and to the west, of the 2004 Amarc Resources survey. In the spring of 2013, Colorado Resources returned and drilled five diamond drill holes (see Table 4) testing their 2012 IP chargeability anomaly at depth and to follow up on geochemical and drilling results of previous programs. In June 2013, Colorado then completed a 44-line kilometer ground magnetometer covering the same area as the 2012 IP survey (Dawson and Norris, 2013). Colorado Resources returned in the spring of 2014 and conducted a 4.5-line kilometer ground magnetometer survey infilling the 2013 ground magnetometer survey over the area of intended drilling. Colorado Resources later drilled four diamond drill holes (see Table 5) to extend the gold-copper plus or minus molybdenum porphyry system first discovered by the 2013 drilling (Dawson, 2015). Due to other corporate priorities and difficult financing market Colorado would eventually return the property to Sunrise Resources in November 2014.

**Table 4: 2013 Colorado Resources Drill Collar Locations (Dawson and Norris, 2013)**

<b>Hole ID</b>	<b>UTM E NAD83 Zone 9N*</b>	<b>UTM N NAD83 Zone 9N*</b>	<b>Elevation (m)*</b>	<b>Total Depth (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Core Size</b>
EL13-001	461151	6400530	1079	449.0	360	-50	NQ
EL13-002	461153	6400264	1110	183.0	360	-50	NQ
EL13-003	459928	6400520	1154	99.1	360	-50	NQ
EL13-004	460600	6400750	1150	360.0	360	-70	NQ
EL13-005	460033	6400777	1194	343.5	180	-75	NQ

**Table 5: 2014 Colorado Resources Drill Collar Locations (Dawson, 2015)**

<b>Hole ID</b>	<b>UTM E NAD83 Zone 9N*</b>	<b>UTM N NAD83 Zone 9N*</b>	<b>Elevation (m)*</b>	<b>Total Depth (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Core Size</b>
EL14-006	460603	6400647	1136	239.9	360	-70	NQ
EL14-007	460990	6400721	1142	204.2	360	-45	NQ
EL14-008	460276	6400766	1183	231.1	180	-60	NQ
EL14-009	460601	6400824	1197	216.4	360	-70	NQ

See Figures 6.1 to 6.5 for historical survey location maps.



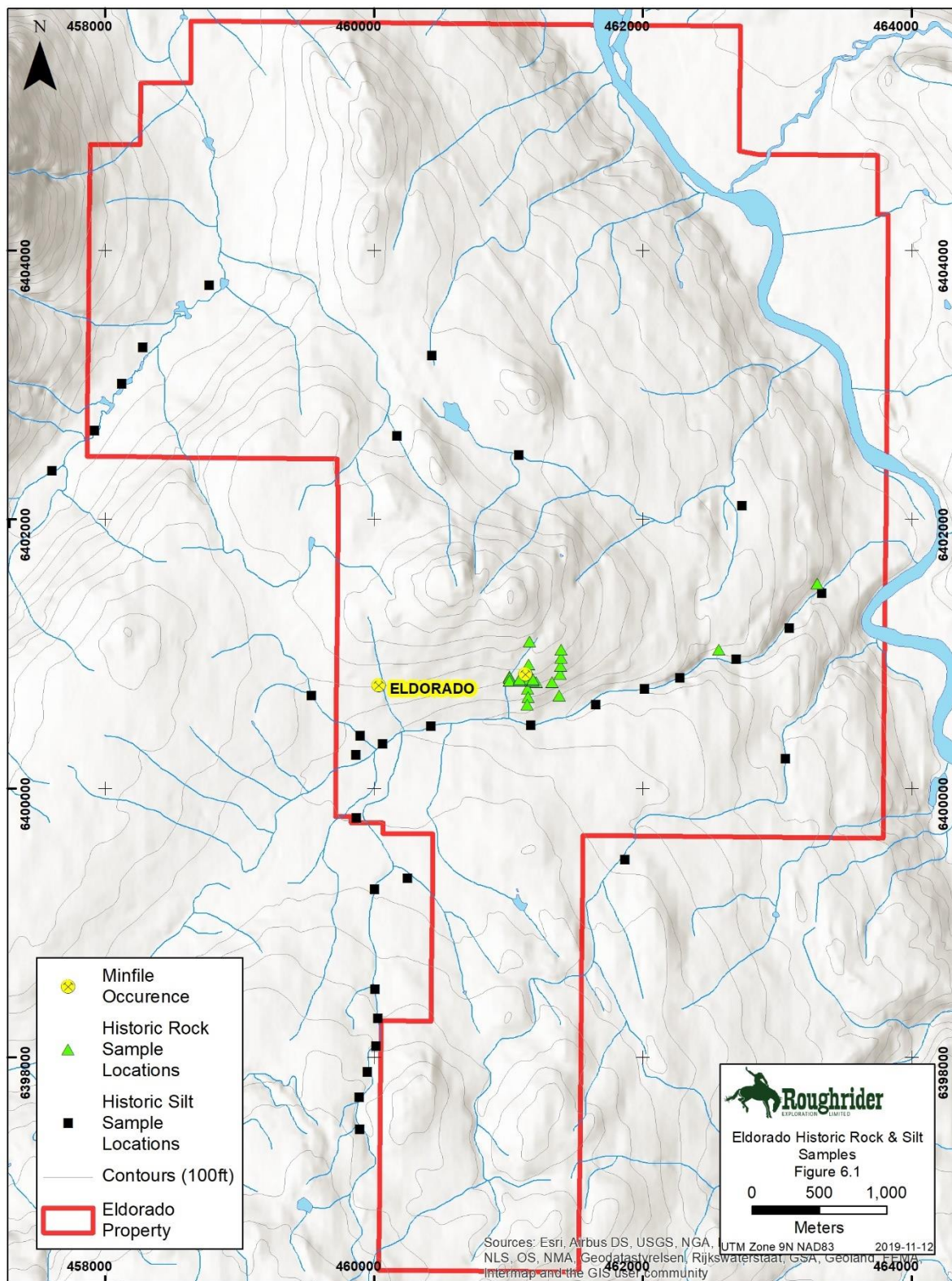


Figure 6.1: Historical Rock and Silt Samples

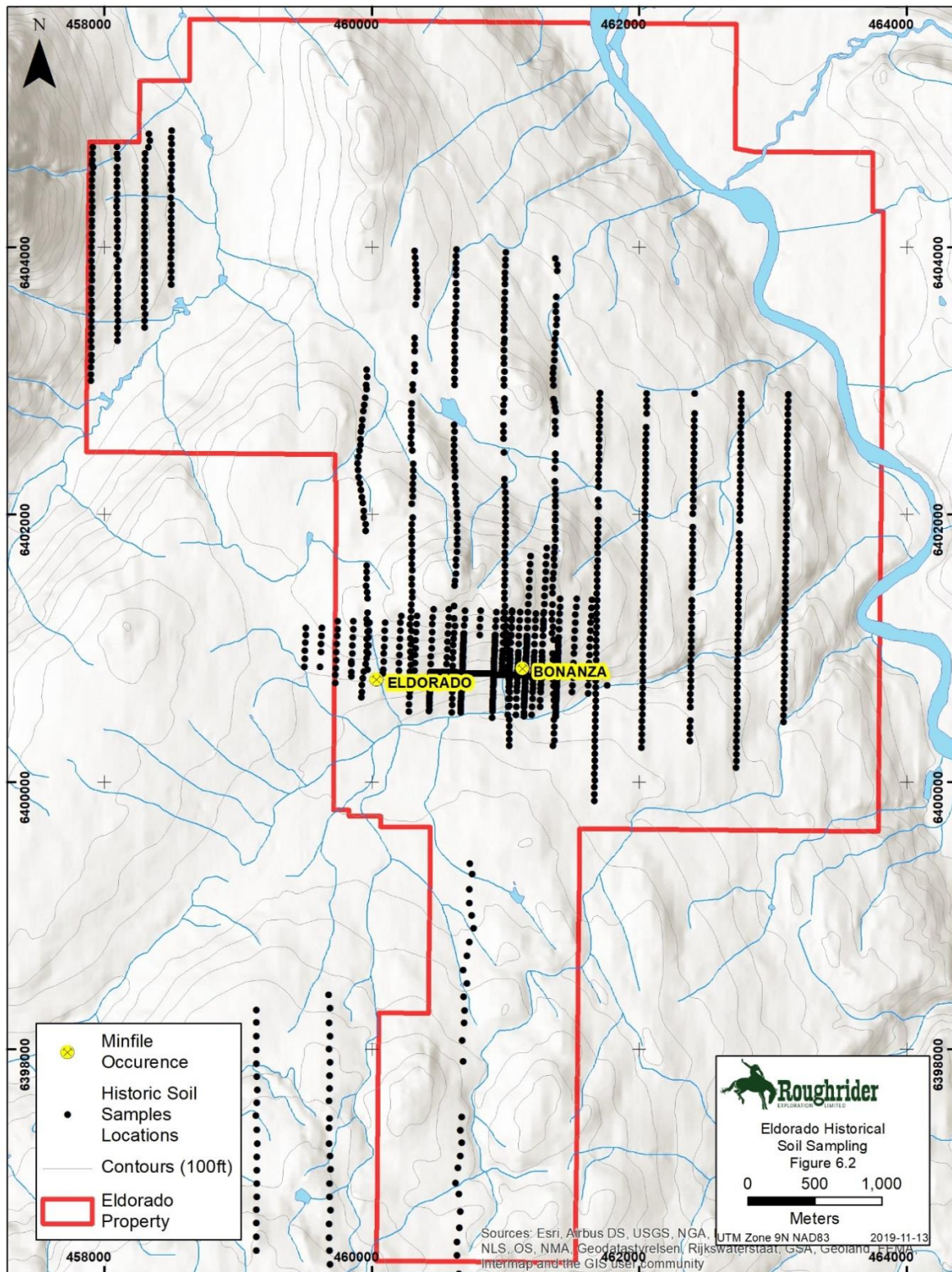


Figure 6.2: Historic Soil Sampling



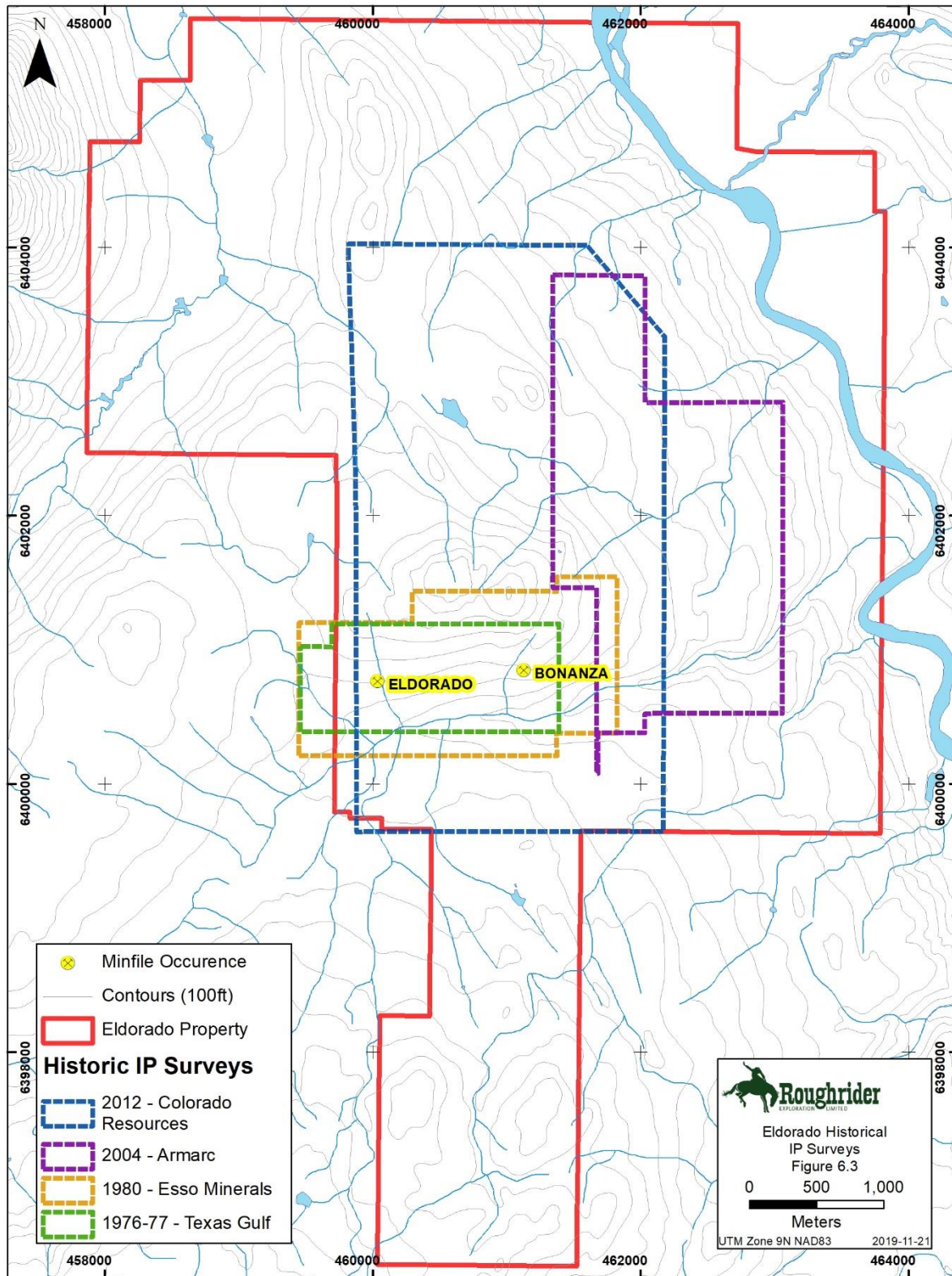


Figure 6.3: Historical IP Surveys

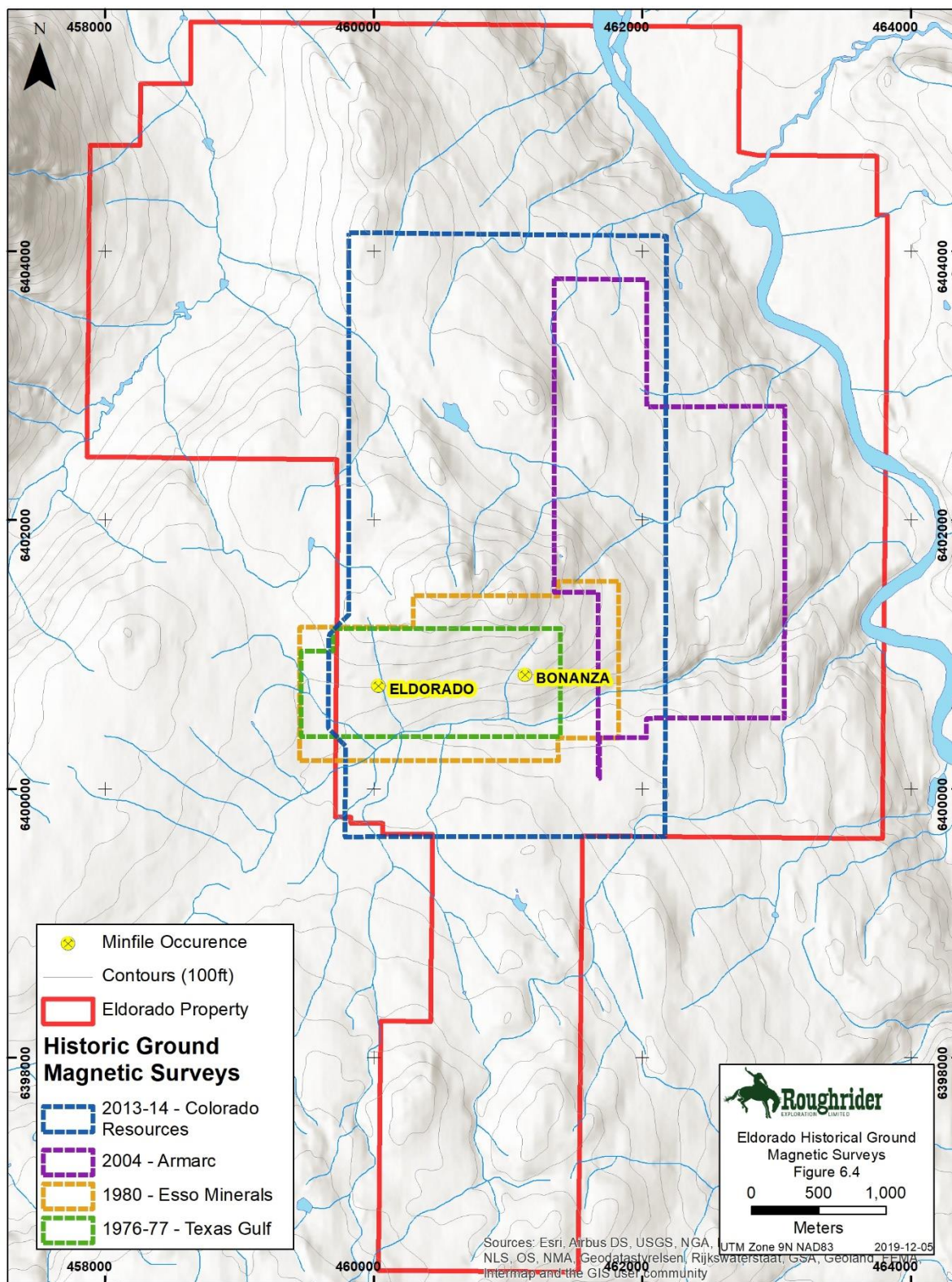


Figure 6.4: Historic Ground Magnetic Surveys



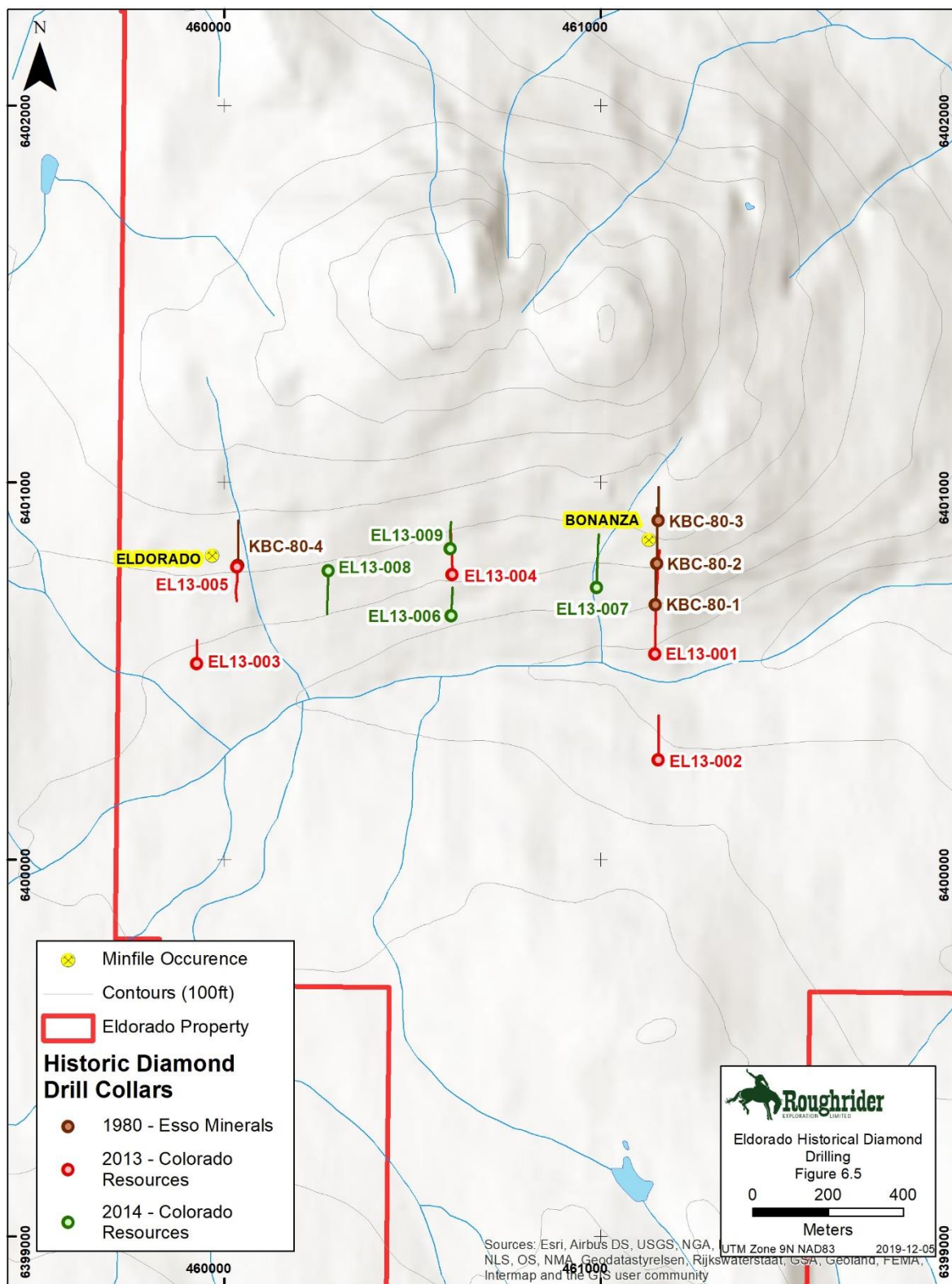


Figure 6.5: Historical Diamond Drilling

In the spring 2013, optioner Colorado Resources Ltd. conducted a 5 hole, 1,431 m NQ diamond drill program in the southern part of the Property to test the 2012 IP chargeability anomaly at depth, and to follow up on geochemical and drilling results from previous programs. Of the five drill holes completed in 2013, two were abandoned due to extensive glacial cover. The three drill holes that successfully reached bedrock encountered augite phyric basalt (Stuhini Group), and various potassically altered feldspar porphyritic monzonitic to dioritic intrusions. These drill holes encountered significant intervals of low grade gold and copper mineralization, including 91.6 m of 0.12% copper and 0.28 g/t gold from top of bedrock (52.4 m depth) to 144 m depth in EL13-004. Width reported intervals are drill indicated lengths as true thickness are unknown. The interval contains sheared and faulted dioritic intrusions with lesser mafic volcanic flows.

In 2014, Colorado conducted a 4.5-line km ground magnetic survey and a 4-hole, 891.6-meter NQ diamond drilling program. The intent of the 2014 drilling program was to utilize a broadly spaced drill pattern to extend the gold – copper+/- molybdenum porphyry system first discovered with DDH EL13-004 along strike.

Highlights of the 2014 results include drillhole EL14-008, which intersected 196.5 m of 0.19 g/t gold and 0.06% copper and 0.005% molybdenum over the entire length of the drillhole from bedrock onward. This hole is located 300 m west of drillhole EL 13-005 which reported in the previous year an intercept of 71.3 m of 0.34 g/t gold and 0.13% copper. Width reported intervals, for both drillholes, are drill indicated lengths as true thickness are unknown.

Copper-gold mineralization has been identified in drillholes over a 1,000 m strike length between drillholes EL13-005 and EL14-007. Mineralization is open to the west towards the property boundary, and depending on the strike relationships, may be open to the northwest. Over relatively broad intervals, the gold copper ratios are strongly bias in favor of gold typically with Au:Cu ratios in the range 2:1 to 3:1. Those kinds of alteration assemblages, and metal ratios, are sometimes believed to be more characteristic of phyllic alteration and alteration zones which are distal to the potassic core of the porphyry system.

The general results of historical exploration conducted on the subject from the period 1975 to 2014 suggests the following:

- Mineralized intrusions, diorites, monzonites, monzodiorites, may host broad intervals of low grade gold copper mineralization which is associated with alteration types commonly identified with porphyry copper-gold mineralizing systems.
- Spatial relationships suggest that mineralization within these intrusions is open to the west and potentially to the northwest.
- The results of historical IP, magnetic, geochemical and geological surveys suggest that several target areas exist external to the areas of historical drill testing.
- Portions of the property are overlain by thick accumulations of glacial till which will mask and obscure the geophysical, geochemical and geological signatures of mineralized intrusions.

- The size of the claim area, the limited extent of drill testing and the presence of extensive till cover suggests that significant mineralized zones could still be discovered within the subject claims.

## **7.0 GEOLOGICAL SETTING & MINERALIZATION**

### **7.1 REGIONAL GEOLOGY**

The Eldorado Property is situated regionally within the Stikine Terrane of northern British Columbia. This terrane is dominated by Early Mesozoic and lesser Late Paleozoic island-arc volcanic strata and related subvolcanic intrusions that form a broad, northwesterly trending belt along the center of the province from southern British Columbia into the southwestern Yukon Territory. Stikine terrane rocks have been regionally subdivided into Late Paleozoic Stikine, Late Triassic Stuhini Group rocks, and Early to Middle Jurassic Hazelton Groups. The Late Triassic Stuhini Group rocks are dominated by submarine calc-alkaline basaltic volcanic rocks which are commonly augite-phyric versus those of the Hazelton Group which are dominated by subaerial volcanics that display a broad range in composition from basalt to rhyolite (Souther, 1972 and Souther, 1991, Figure 7.7.1 and Figure 7.7.2).

Chris Ash of the British Columbia Geological Survey geologically mapped the immediate Red Chris area in 1994 with his work indicating that it was underlain by Upper Triassic and Lower Jurassic arc-volcanic rocks which are in fault contact along their southeastern margin with Upper to Middle Jurassic Bowser Lake Group sediments. The Mesozoic volcanic rocks are divisible into three broad northeast-trending belts. The northwestern belt is dominated by Middle to Upper Triassic andesitic volcanoclastics, mainly massive breccias. The central belt is underlain primarily by Upper Triassic and possible Lower Jurassic fine to medium grained epiclastic rocks. Lower Jurassic rocks comprise a bimodal suite of basalts and rhyolites and related subvolcanic rocks that overlie and intrude very fine to medium-grained sedimentary rocks primarily to the southeast. The younger rocks also locally intrude and overlie Triassic rocks throughout the mapped area. These rocks have been affected by folding and faulting (Ash et al., 1995, Ash et al., 1997).

A suite of earliest Early Jurassic (195 to 205Ma) stocks and dykes occur throughout the region. These intrusions are compositionally variable, ranging from hornblende quartz diorite to quartz monzonite, and are characteristically medium-grained, equigranular to porphyritic and weather a buff-white to light grey colour. The largest intrusion of this suite is the Red Stock which hosts the Red Chris Deposit (Ash et al., 1995). The Red Stock intrudes Upper Triassic massive volcanic wackes, siltstone, and possible augite-porphyritic basalt. In addition, the region hosts several isolated outcrops of olivine-phyric basalt flows, belonging to the Early Pliocene Maitland Volcanics, overlying the Stikine terrane rocks (Ash et al., 1995 and Ash et al., 1997).

Major regional faults, likely activated during the Middle Cretaceous to Tertiary, has disrupted the local stratigraphy. The east-north-easterly trending Ealue Lake fault is the most prominent structural feature projected along the Coyote Creek-Ealue Lake valley. Its presence is evident by contrasting lithologies and styles of alteration along the trace of the fault. Zones of intense carbonation with localized areas of ankerite flooding are widespread in rock only to the south of

the fault. There are also similarly-oriented faults along the northern contact of the Bowser Lake Group, one of which is interpreted as a the southside-down normal bounding fault between Bowser Lake Group rocks and the Red Stock hosting the Red Chris Deposit (Ash, et al., 1997).

Regional scale geological relationships are illustrated of Figure 7.1.1. The legend which accompanies this figure is illustrated on Figure 7.1.2.



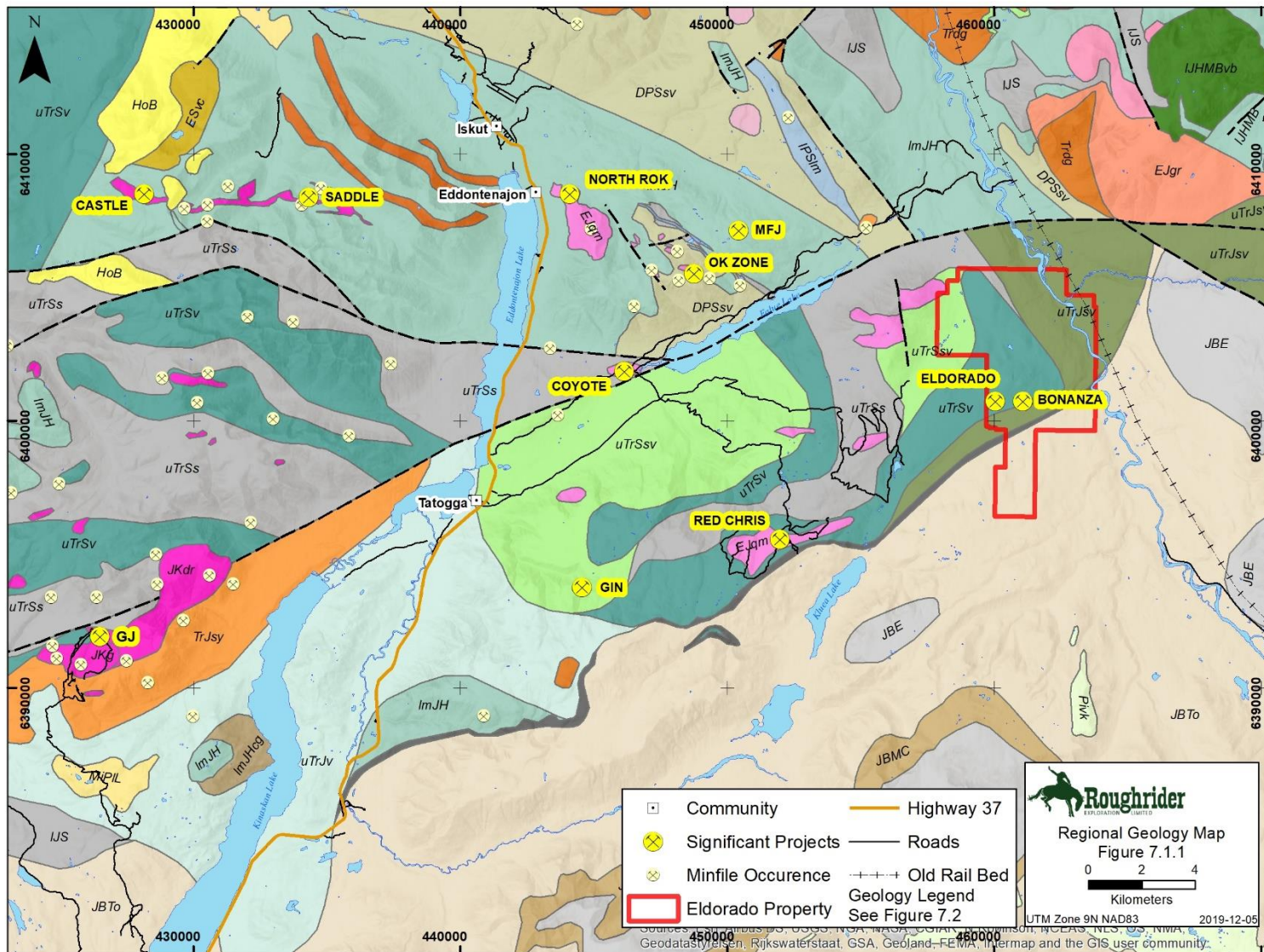


Figure 7.1.1 Regional Geology Map

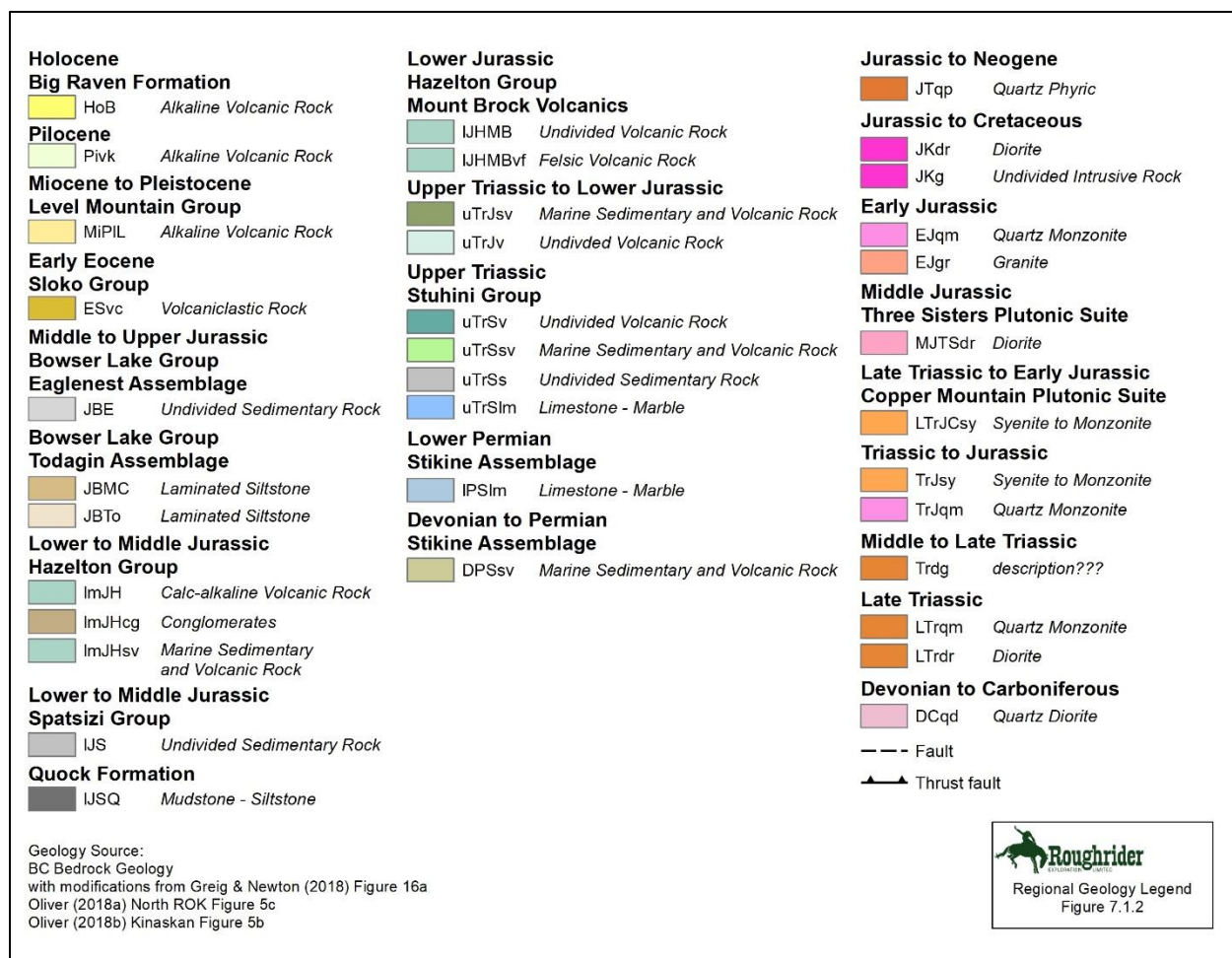


Figure 7.1.2: Regional Geology Legend

## 7.2 PROPERTY GEOLOGY

Outcrop on the Eldorado Property is rare as the majority of the Property is covered in several meters of glacial till. Using data principally from previous drilling and trenching programs, it can be suggested that the property is underlain to the northeast by Stuhini Group megacrystic augite-phyric volcanics and shallow sub-volcanic intrusions. These volcanic rocks are intruded by a later plutonic event consisting of equigranular to feldspar-phyric, medium to coarse grained diorites, monzonites and lesser felsic dykes likely ranging in age from the middle Jurassic to upper Triassic. These rocks are most commonly noted in the northwestern portions of the property. These intrusions may be correlated with the Red Stock which hosts the Red Chris Deposit located 10 kilometers to the southwest. The most southern extent of the property is underlain by Jurassic Bowser Lake Group chert pebble conglomerates, sandstones, siltstones and mudstones. Exposure of these Bowser Lake Group rocks dip shallowly to the west. The Bowser lake Group-volcanic/intrusive contact is probably faulted by an interpreted south-side down extension fault which has an approximate east-northeast strike and may be equivalent to the South Boundary Fault which forms the southern limit of the Red Chris deposit (Rees et al., 2015).

Alteration on the property consists of regional chlorite-carbonate-epidote pyrite alteration, within the volcanic package and variable levels of potassic alteration (secondary orthoclase and biotite) and quartz-sericite-pyrite alteration within intrusive rocks. Proximal to fault zones ankeritic alteration may be noted. Disseminated pyrite and chalcopyrite plus or minus magnetite occurs throughout much of Esso's 1980 drill core generally increasing in concentration in the zones of chloritic alteration. Within, and proximal to, zones of silicification, increased pyrite-chalcopyrite was observed as well as rare galena (Everett, 1981). The Esso Minerals 1980 drill holes and Colorado Resources drillhole 13-01, are largely collared in the easterly and north-easterly pyroxene bearing mafic flows which are potentially in fault contact with a series of monzonitic intrusions located to the west of the Esso Minerals 1980 drilling, Figure 10.1. This fault has an interpreted strike of between 120 and 130 degrees. The volcanic rocks contain weak gold copper grades with significantly more consistent gold-copper mineralized zones associated with selected intrusive phases.

Colorado Resources diamond drilling in 2013 and 2014 intersected units of augite phyric basalt, , intravolcanic sedimentary units, as well as numerous feldspar plus or minus hornblende porphyritic monzonites, monzodiorites to dioritic intrusive rocks. Many of the intrusive rocks exhibit moderate to strong potassium feldspar alteration and localized quartz-sericite-pyrite (QSP) alteration. Quartz-carbonate veins are localized and occasionally form stockworks with pyrite and minor magnetite. Traces of chalcopyrite, molybdenite and sphalerite are noted within these veins and are associated with pyrite (Dawson and Norris, 2013).

The results of the, 1980 Esso Minerals drill program and the 2013 and 2014 Colorado Resources drill programs significantly advanced the overall geological understanding of rock relationships on the Eldorado claims and spatial relationship between copper and gold mineralization and individual rock units. The following observations are relevant:

- Surficial cover, glacial tills, are extensive over much of the Eldorado claims and commonly exceed 50 m in true thickness. Widespread, thick till cover, creates opportunities to identify blind or concealed mineralized zones.
- Several intrusive phases including crowded plagioclase phyric monzonites, a black matrix monzodiorite containing well developed intrusive breccias and xenolithic monzonites, biotite phyric monzonites and fine grained aplitic or felsic dykes are documented.
- All of these intrusive phases may be mineralized but crowded strongly plagioclase porphyritic monzonites may have a lower probability of being mineralized and may be late mineral intrusions. Most of the intrusions are typically several 10's of m in apparent thickness.
- A few intravolcanic horizons of thin bedded Stuhini sediments are embayed within thick mafic flow sequences. Mafic flows and sediments are generally weakly mineralized
- West of the 120-degree striking extension fault, the contact between the overlying pyroxene phyric Stuhini volcanics appears is to very flat lying and the volcanic units are approximately 50 – 100 m in thickness. If this contact remains flat lying, then there may be potential to drill test and discover mineralized intrusions, at relatively shallow depths beneath the volcanic cover.
- East of the 120 degree striking extension fault, the thickness of the Stuhini mafic volcanic sequence appears to have very significantly increased to over 400 m.
- There is some potential that the significant 120 degree striking fault which traverse the central portions of the property is the equivalent of the Mabon Creek Fault which appears to be an important regional scale control of mineralization at the North Rok occurrence (Oliver, 2018a). This would require 5 – 6 km of dextral offset across the Ealue Lake fault, Figure 7.1.1.
- Most intrusive phases contain alteration assemblages which would be characteristic of porphyry copper-cold mineralized systems. This includes well developed potassic, both secondary biotite and secondary orthoclase and by secondary magnetite. Irregular zones of enhanced QSP alteration are also defined. Well developed “B” style veins, in addition to the numerous breccia zones, are commonly associated with these intrusions.
- Gold and copper mineralization is forming over significant intervals with DDH EL 13 – 004 cutting 91.6 m of 0.28 g/t Au and 0.12% Cu and DDH 14 -008 coring 196.5 m of 0.19 g/t Au and 0.065 Cu. Width reported intervals, for both drillholes, are drill indicated lengths as true thickness are unknown.

The broad widths of gold-copper mineralization, although low grade, are considered to be important signatures of a potentially blind porphyry system. Surface geochemistry and drilling programs at Eldorado have determined that the extensive glacial cover on the property may mask any geochemical signal from the underlying bedrock. Historic programs that implemented the use of power augers to collect rock chips and soil samples near the top of bedrock were more successful in identifying geochemical anomalies.

See Figure 7.2 for property geology map.



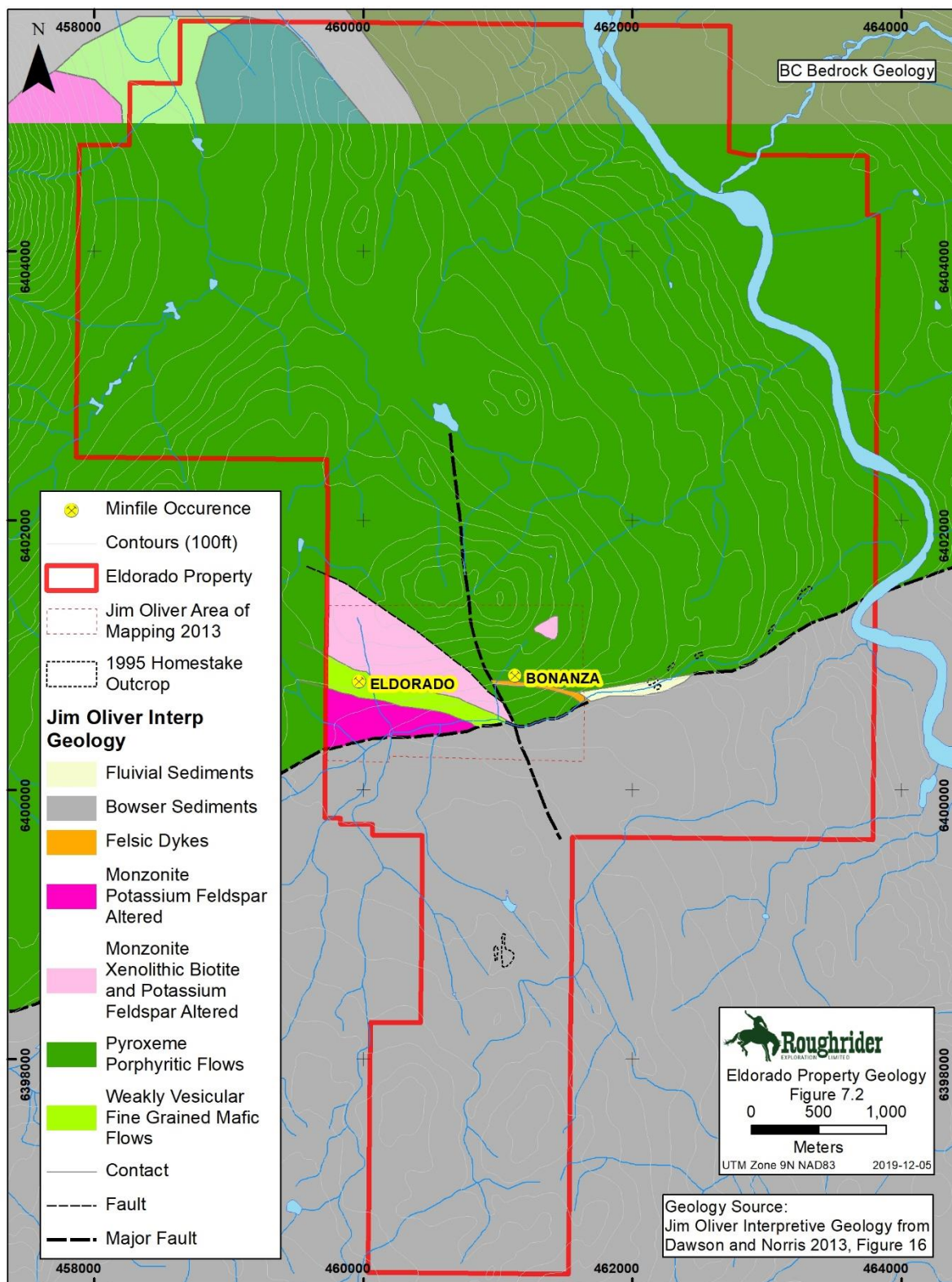


Figure 7.2: Property Geology

## 8.0 DEPOSIT TYPES

Colorado Resources diamond drilling on the Eldorado Property has provided good indication that the underlying rock has the associated characteristics of several porphyry copper gold occurrences or mines in the Iskut area including the Red Chris, (Giroux and Bellamy, 2004, Rees et al., 2015,) GJ (Hollis, L. et al., 2014) and North ROK (Giroux and Rebagliati, 2014, Figure 7.1.1). All of these occurrences are often associated with lower Jurassic to upper Triassic fine grained crowded plagioclase phyric monzonites and lesser quartz monzonites. Two major divisions of porphyry copper deposits are well documented in British Columbia and include calc-alkalic and alkalic deposits (Panteleyev, 1995 and Lang et.al., 1995). Alkalic porphyry copper deposits in the Canadian Cordillera are found in late Triassic and early Jurassic volcanic arc terranes in which emergent subaerial rocks may be present. Many alkalic porphyry copper deposits are associated with host rock types ranging from gabbro to syenite intrusions and coeval shoshonitic volcanic rocks. Magmas are introduced along the axis of the arc or in cross-arc structures that coincide with deep-seated faults. These faults are a common control on the distribution and location of higher-grade mineralized zones. Central and early formed potassic alteration zones, with potassium feldspar, secondary biotite, anhydrite and sometimes actinolite, commonly coincide with strong copper gold mineralization in alkalic porphyry systems. Mineralization occurs in large zones of stockworks, veinlets and disseminations of pyrite, chalcopyrite, bornite, and magnetite. Mineralization is spatially, temporally, and genetically associated with hydrothermal alteration of the intrusive bodies and host rocks. Porphyry deposits are marked by large-scale, zoned metal and alteration assemblages. Central portions of the porphyry system appear to have higher copper-gold ratios than the margins. In British Columbia, all known alkalic porphyry copper deposits are found in Quesnel and Stikine terranes (Panteleyev, 1995).

Recent work by Rees et al., (2015) have noted that the synmineral porphyry phases at Red Chris are not alkalic but rather high K calc-alkalic. The size, metals, alteration, and vein styles of the system are characteristic of high K calc-alkalic or monzonitic Cu-(Mo-Au) porphyry deposits, such as Bingham and Bajo de la Alumbrera. Red Chris shares few characteristics with alkalic (or syenitic) porphyry Cu-Au deposits and should not be classified as such. It is further classified as an A vein type deposit, reflecting the strong control of higher grade Cu-Au by A vein stockworks with disseminated Cu sulfides (Rees et al., 2015). Neither GJ or North ROK have received the extensive and detailed scientific studies undertaken by Rees and his coworkers at Red Chris. Although both GJ and North ROK are often interpreted to be alkalic porphyry copper gold occurrences that interpretation may be subject to revision.

## 9.0 EXPLORATION

Various programs of geochemical and geophysical work have occurred on the Property and are described below. These programs have been conducted by previous operators on the property and not by Roughrider Exploration Limited. However, the detailed compilation and synthesis of this historic data, presented in section 9.1 and section 9.2 has been undertaken by Roughrider Exploration Limited.

## 9.1 GEOCHEMICAL RESULTS

During the 1976 field season, Texasgulf Inc. completed a program of 3km of systematic soil and silt sampling within the area of interest. A total of 235 soil samples and 18 rock-chip were analyzed. The soil sampling program showed coherent anomalies in copper, zinc and molybdenum. Copper anomalies appear to terminate to the west in the rapidly thickening overburden cover and the auger-sampling program was unsuccessful in reaching sufficient depth to overcome this problem (Peatfield, G.R., and Donnelly, D.A., 1976).

In 1977, Texasgulf Inc. returned to the Eldorado property and blasted two small trenches and one blast pit, totaling an area of 16.5 square meters. Grab samples from the two trenches were assayed with results of 0.06% Cu, 0.10 ppm Au, 16.5 ppm Ag and 0.007% MoS<sub>2</sub> in trench 1 and 0.12% Cu, 0.45 ppm Au, 2.1 ppm Ag and 0.005% MoS<sub>2</sub> in trench 2. Texas Gulf sampled portions of the previous year's grid using a bedrock sampling technique that involves a "Pionjar" hammer drill and one-meter sections of 28mm diameter threaded drill rod. A total of 166 samples were taken by this bedrock sampling technique and the chip fines analyzed (Peatfield et al., 1977).

Texasgulf Inc. optioned the Eldorado property to Esso Resources Canada Limited. Esso followed up the previous Texasgulf Inc. work in 1979 by completing a sampling program which included a collection of 94 soil samples (44 soil samples, 50 bedrock surface chip fines). It was noted that the bedrock surface samples collected were not collected at the soil-bedrock interface due to failure to penetrate the clay layer. A sizable copper anomaly approximately 500 m by 700 m occurs on the east portion of the grid. The anomaly is open to the southwest and reaches a peak value of 6,900 ppm copper with several samples above 1,000 ppm copper. A smaller molybdenum anomaly approximately 150 m by 400 m is coincident with the highest values within the copper anomaly. Peak molybdenum value is 290 ppm and several samples reach values over 100 ppm. Anomalous zinc values occur in circular fashion surrounding the copper anomaly. A second copper anomaly on the west side of the grid (approximately 1,100m west of the first anomaly) has highs of 700-820 ppm and is open to the south. High molybdenum values are coincident with the high copper in this area as well. The two geochemical anomalies were thought to represent high priority targets and were later followed up by subsequent drilling (see section 10.0 Drilling) (Oddy, 1980).

No documented work occurred on the Eldorado property until 1995 when Homestake Canada Inc and Falconbridge Limited (co-owners) completed a program which included the collection of 8 rock samples, 58 soil samples and 30 stream sediment samples. Six of the rock samples were taken in the two historic trenches from 1977 and two samples were taken from outcrops along the creek to the east of the grid. Values ranged from 58 to 1,500 ppb Au and 49 to 3,364 ppm Cu. The soil samples were taken in the area of the 1979 Esso Cu-Mo anomaly; values included gold ranging from 2.5 to 294 ppb and copper up to 527 ppm. A two metre deep soil profile pit was dug to test the correlation between surface soil sample values and values obtained from samples taken at depth with a soil auger as was done by Esso (located along 1980 Esso grid 5840E 5000N value of 710 ppm Cu). Results from the profile samples show a relatively linear increase in metal concentration with depth. Values ranged from 20 ppb Au and 35 ppm Cu in the near surface to 1,296 ppb Au and 2,489 ppm Cu at 1.9 m depth. Stream sediment samples highlighted significant gold values in several of the streams sampled. Values ranged from 240 ppb Au in the uppermost end of the creek draining the west portion of the property to a cluster of anomalous values (42, 50, 73 and 36 ppb Au) from several creeks draining the swampy area along the southwest portion of the claims (Patterson, 1995).

The property remained dormant until two independent geologists staked the claims in 2003. The property was optioned to Candorado Operating Company Limited who subsequently entered into an earn-in agreement with Amarc Resources Ltd. In 2004 Amarc Resources Ltd completed a program including a soil geochemistry survey to test a porphyry copper (+ molybdenum and gold) target to the east of the historic anomalous IP chargeabilities that coincided with soil copper-molybdenum anomalies highlighted by Texasgulf and Esso. This program was unable to identify the presence of porphyry type copper-gold mineralization and the cause of the coincident arsenic, molybdenum and zinc anomalies was unknown (Rebagliati et al., 2005).

In February 2007 the property was optioned to Gravity West Corp. Gravity West contracted CJL Enterprises to conduct a soil sampling program on the Eldorado Property which resulted in the collection of 303 B horizon soil samples. Elevated copper results existed in the soils around the Bonanza Minfile occurrence (Ralph et al., 2008).

In October 2012, the property was optioned to Colorado Resources Ltd and a soil survey and biogeochemical survey were conducted on the Eldorado property. A total of 228 soil samples along with 95 organic tree twig samples were collected. Copper results were encouraging on the property with anomalous values of >200 ppm occurring over a broad area of about 500 square meters. Gold values were weakly anomalous in two areas haloing the more central anomalous areas from soil data. Both areas are open to the south and north (Murton, 2012).

The geochemical results suggest the presence of three geochemical domains which have differing geochemical signatures. These domains are outlined on Figure 9.1.1. This includes:

*Domain I Sediment Domain (SD).* The southern limits of the Eldorado claims are underlain by a thick sequence of Upper to Middle Jurassic sediments principally thin bedded siltstones, shales and lesser conglomerates. These rocks are part of the Bowser Group sediments and they are characterized by low geochemical signatures in most elements.

*Domain II. Eastern Volcanic Domain (EVD).* This geochemical domain is documented northeast of the principle area of drilling and is generally associated with lower geochemical signatures in most elements, except gold which is quite variable. It is currently believed to be underlain extensively by Stuhini volcanic rock.

*Domain III. Eldorado Intrusive Domain (EID).* The EID forms the western limit of the Eldorado property and appears to contain several intrusive phases some of which closely resemble the crowded plagioclase phyric monzonites documented at the Red Chris mine. The EID domain is in fault contact with the Eastern Volcanic Domain with the contact defined by a 120 degree striking fault.

Domain III has the strongest multielement geochemical signatures and these have been documented over much of the northwestern and west central map areas. This area has been drill tested over a relatively small selected zones with much of the target area untested.

See Figures 9.1.1 to 9.1.15 for sample locations and results.



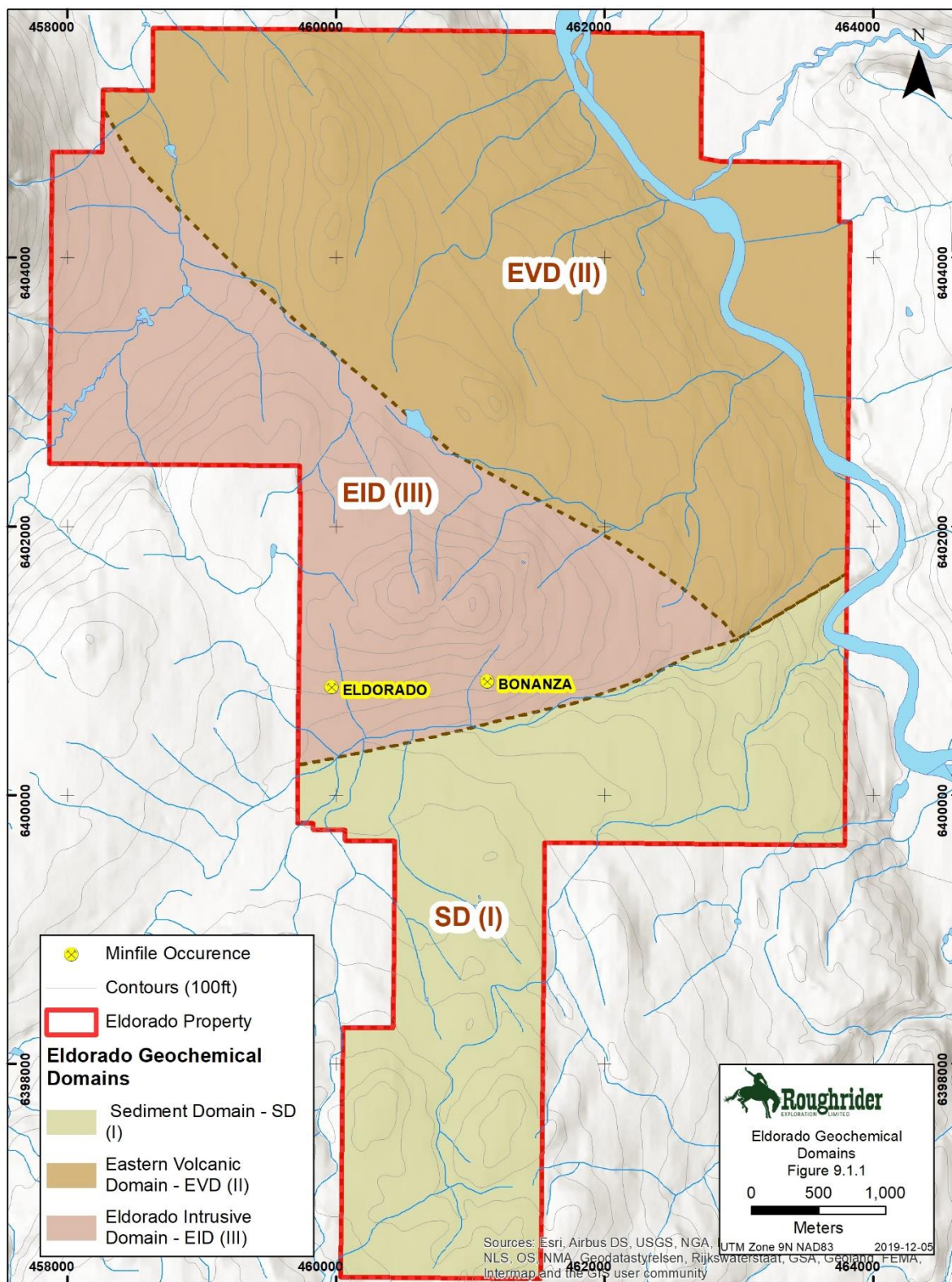


Figure 9.1.1: Eldorado Geochemical Domains



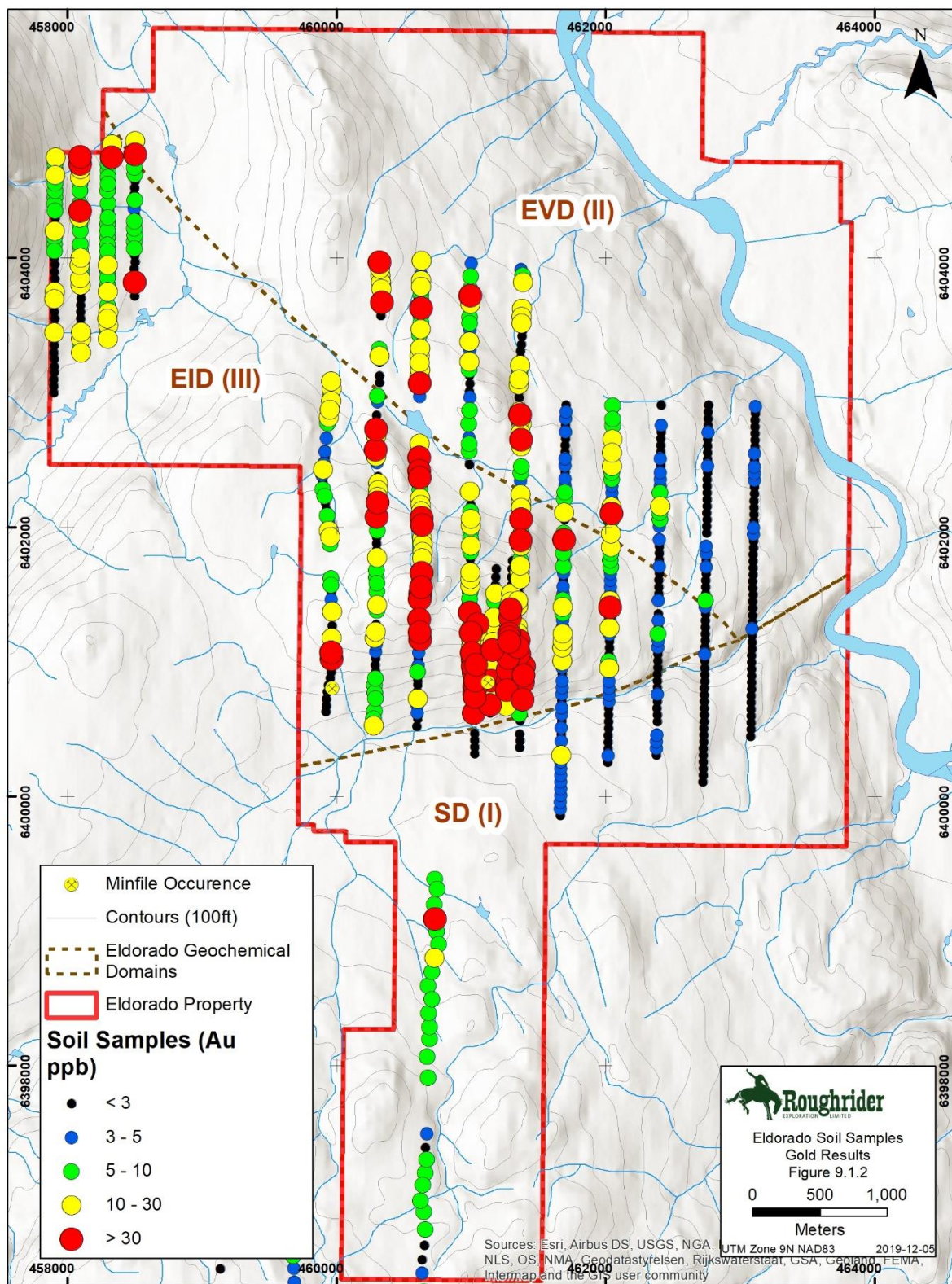


Figure 9.1.2: Soil Sample Gold Results



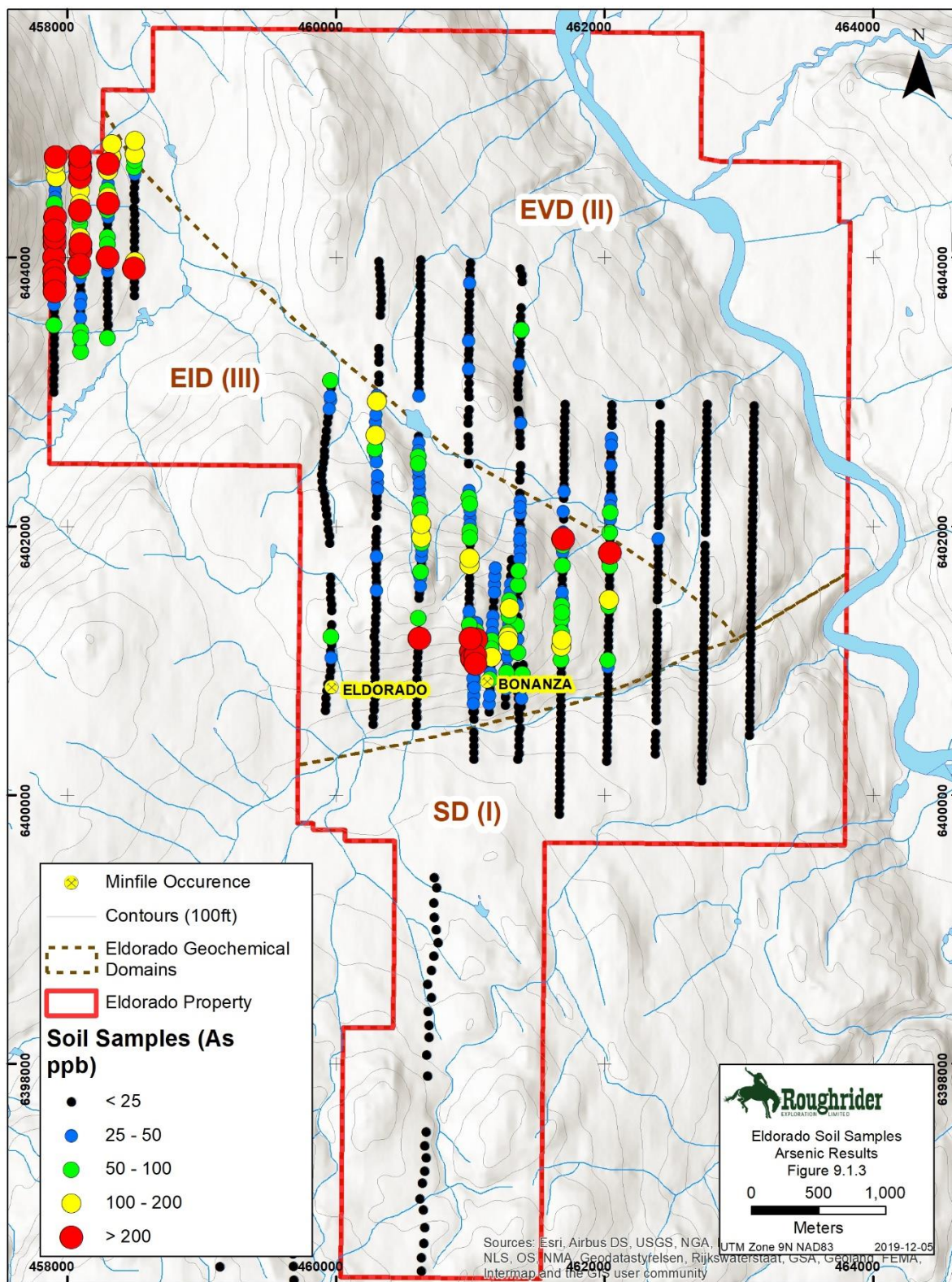


Figure 9.1.3: Soil Sample Arsenic Results



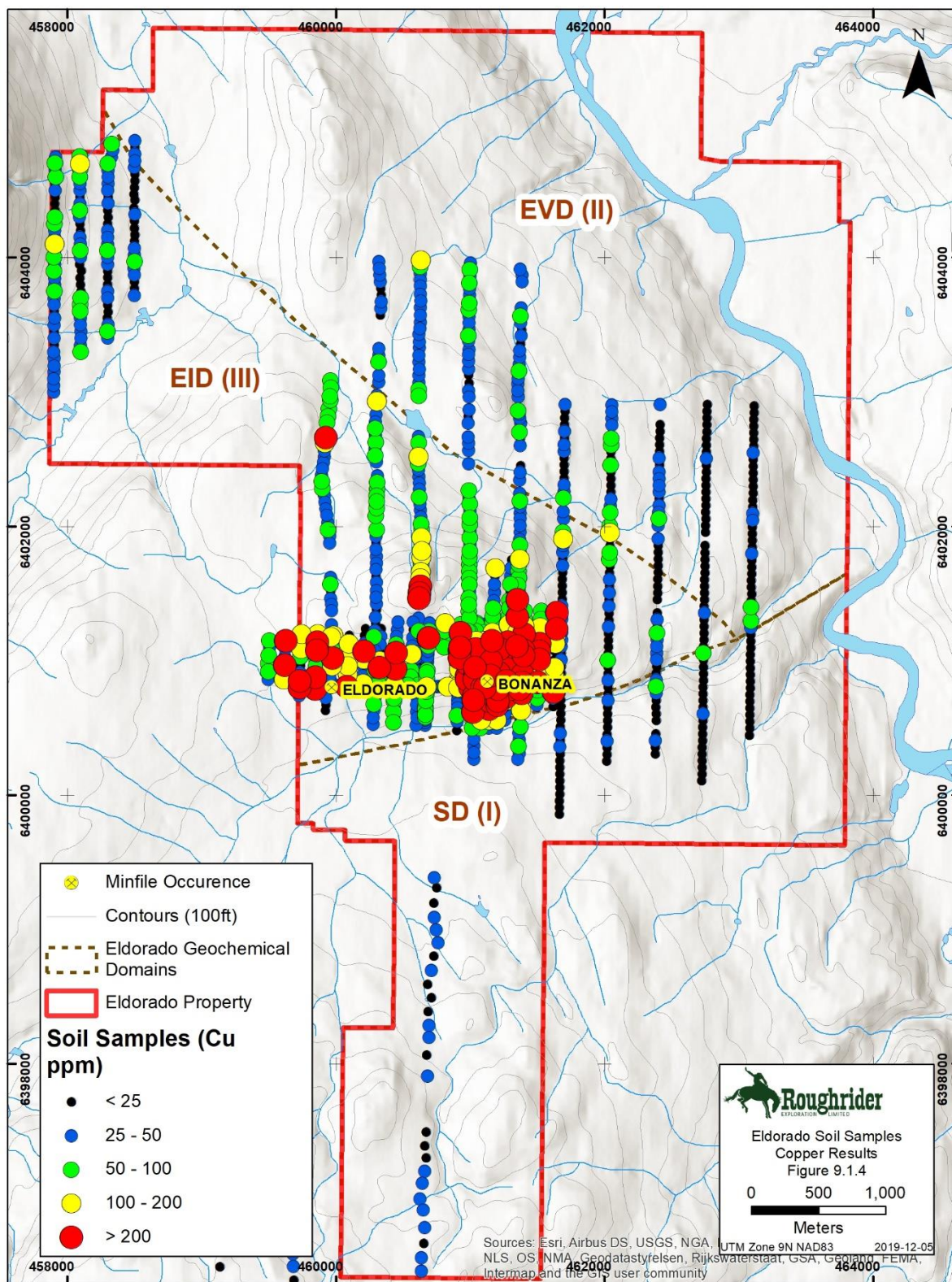


Figure 9.1.4: Soil Sample Copper Results



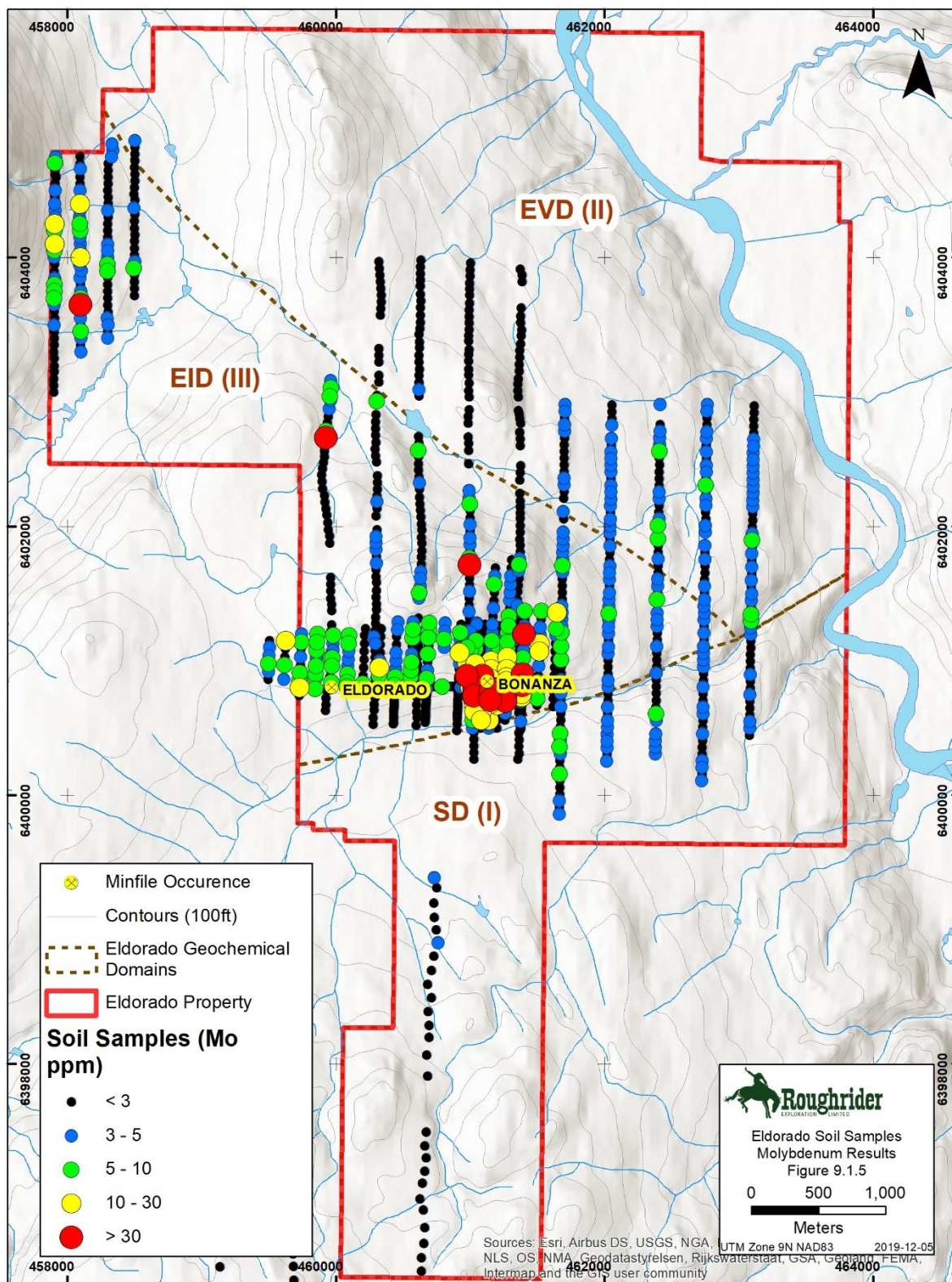


Figure 9.1.5: Soil Sample Molybdenum Results



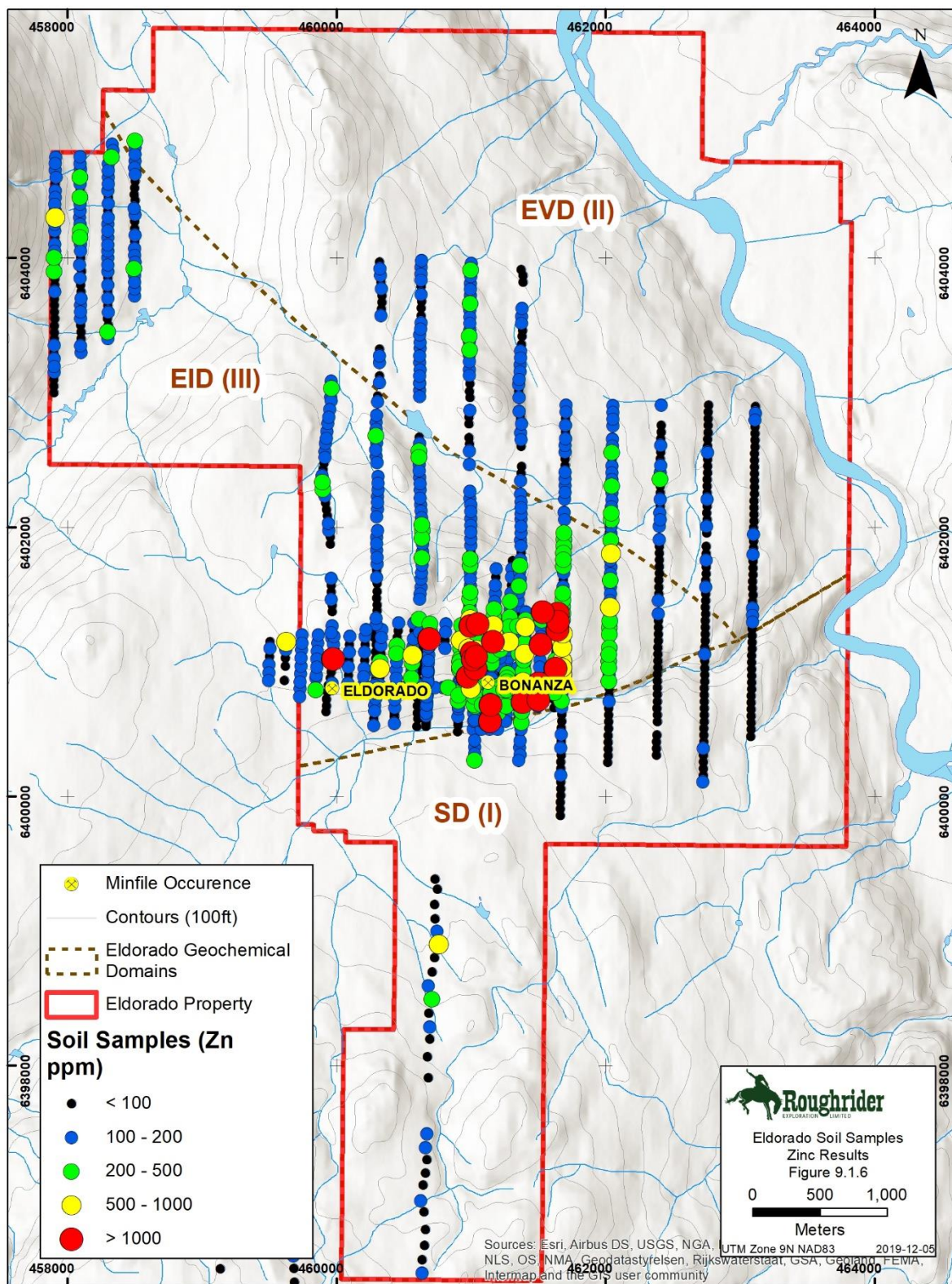


Figure 9.1.6: Soil Sample Zinc Results



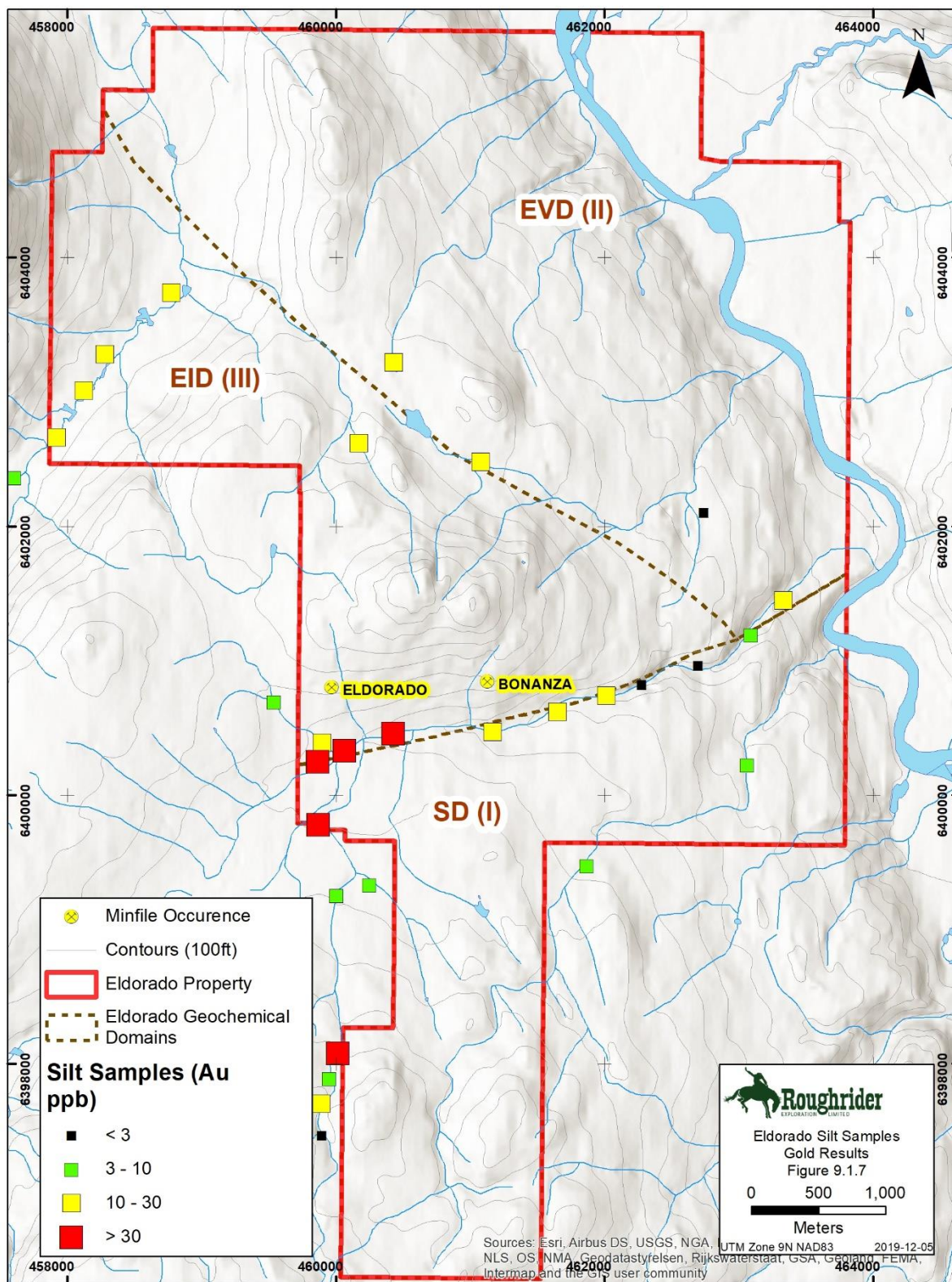


Figure 9.1.7: Silt Sample Gold Results

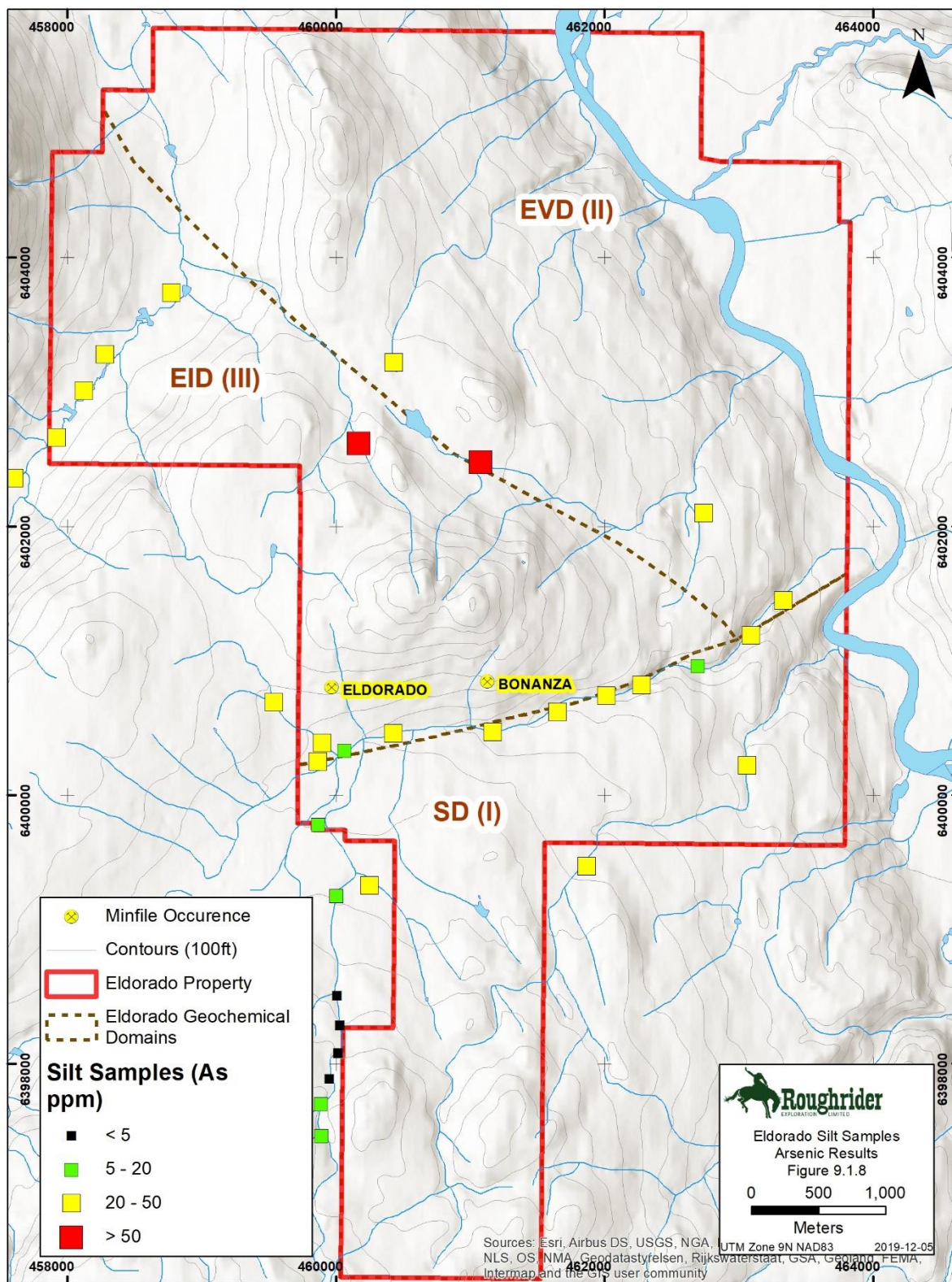


Figure 9.1.8: Silt Sample Arsenic Results



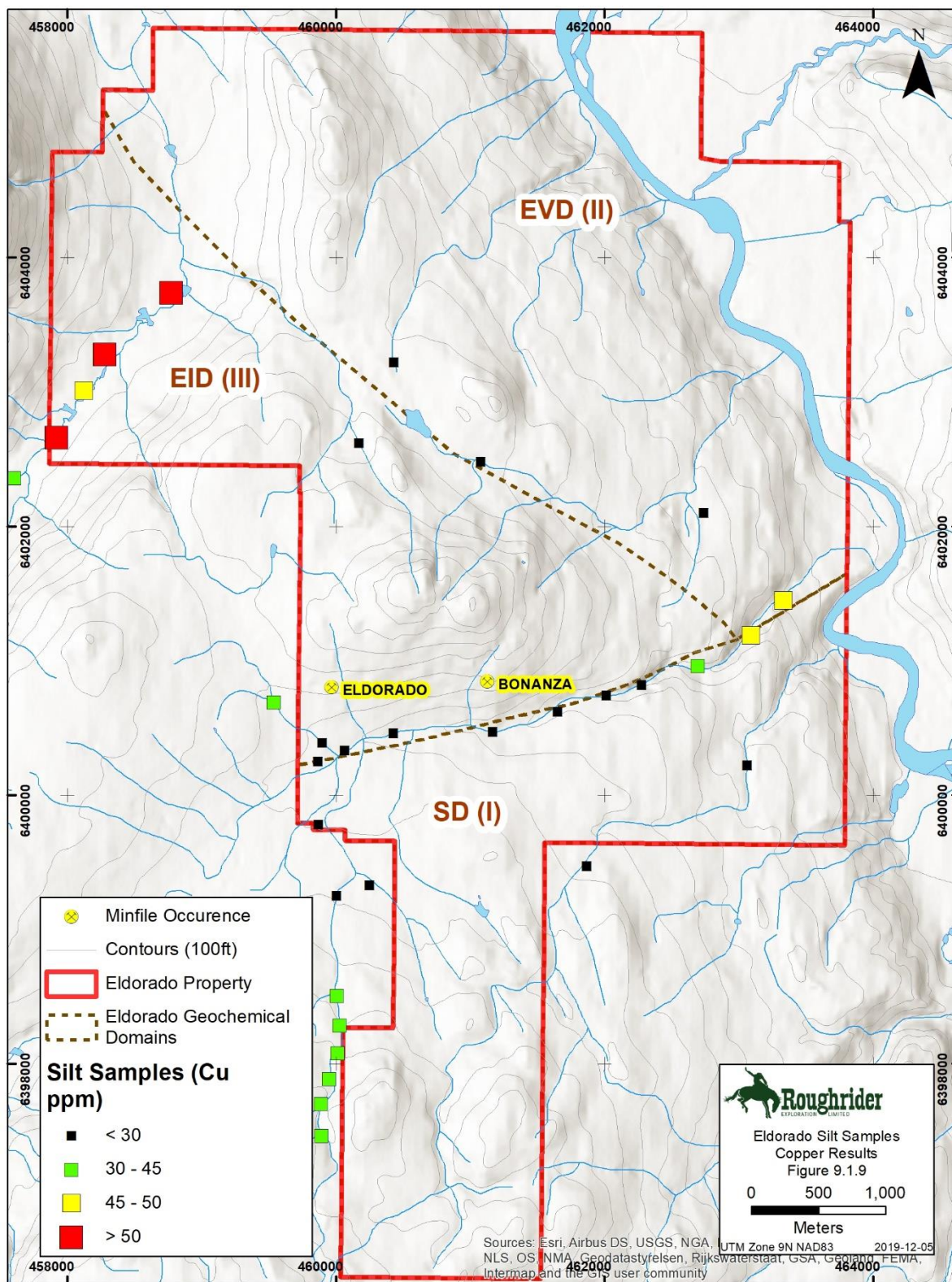


Figure 9.1.9: Silt Sample Copper Results

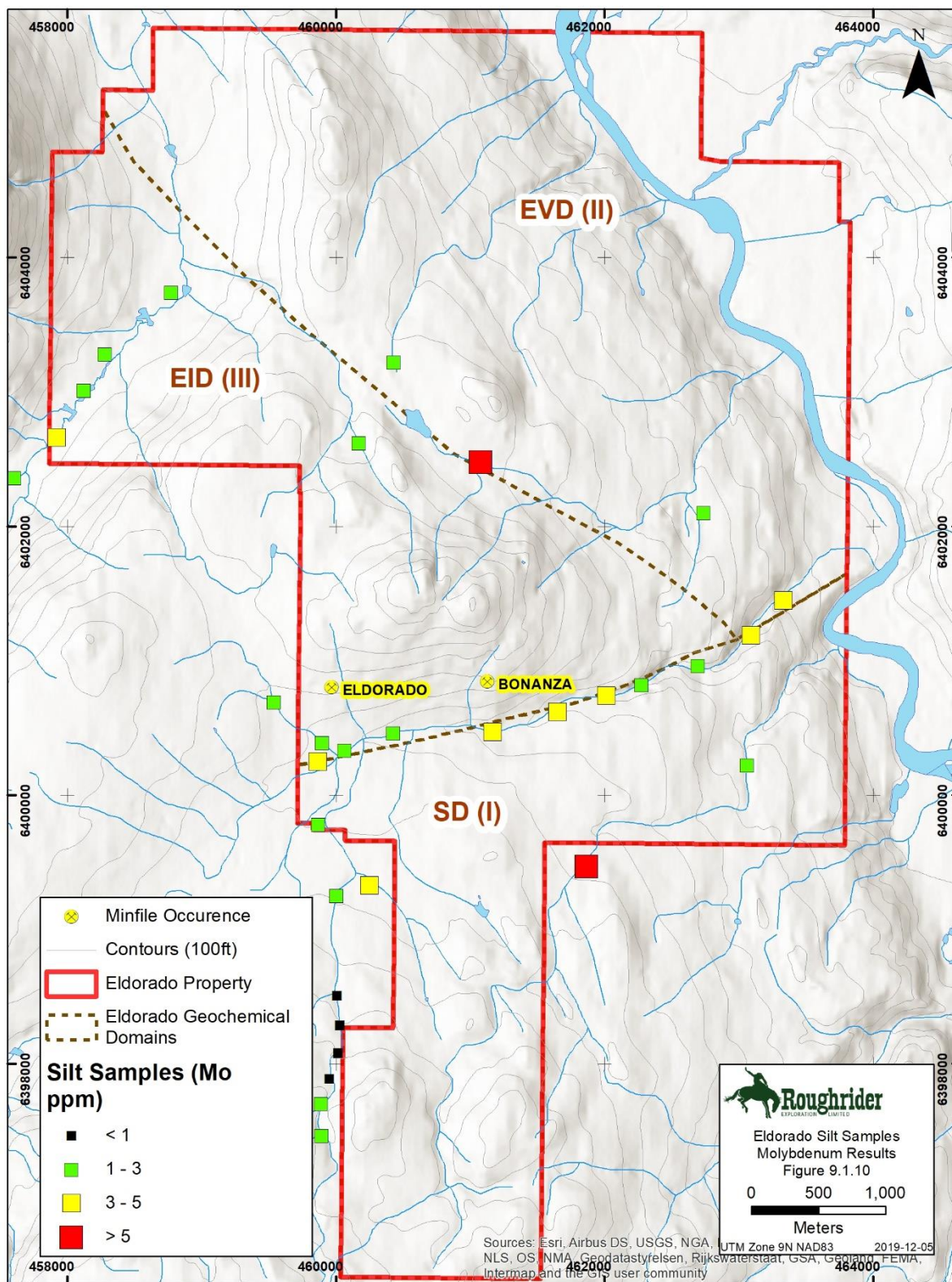


Figure 9.1.10: Silt Sample Molybdenum Results



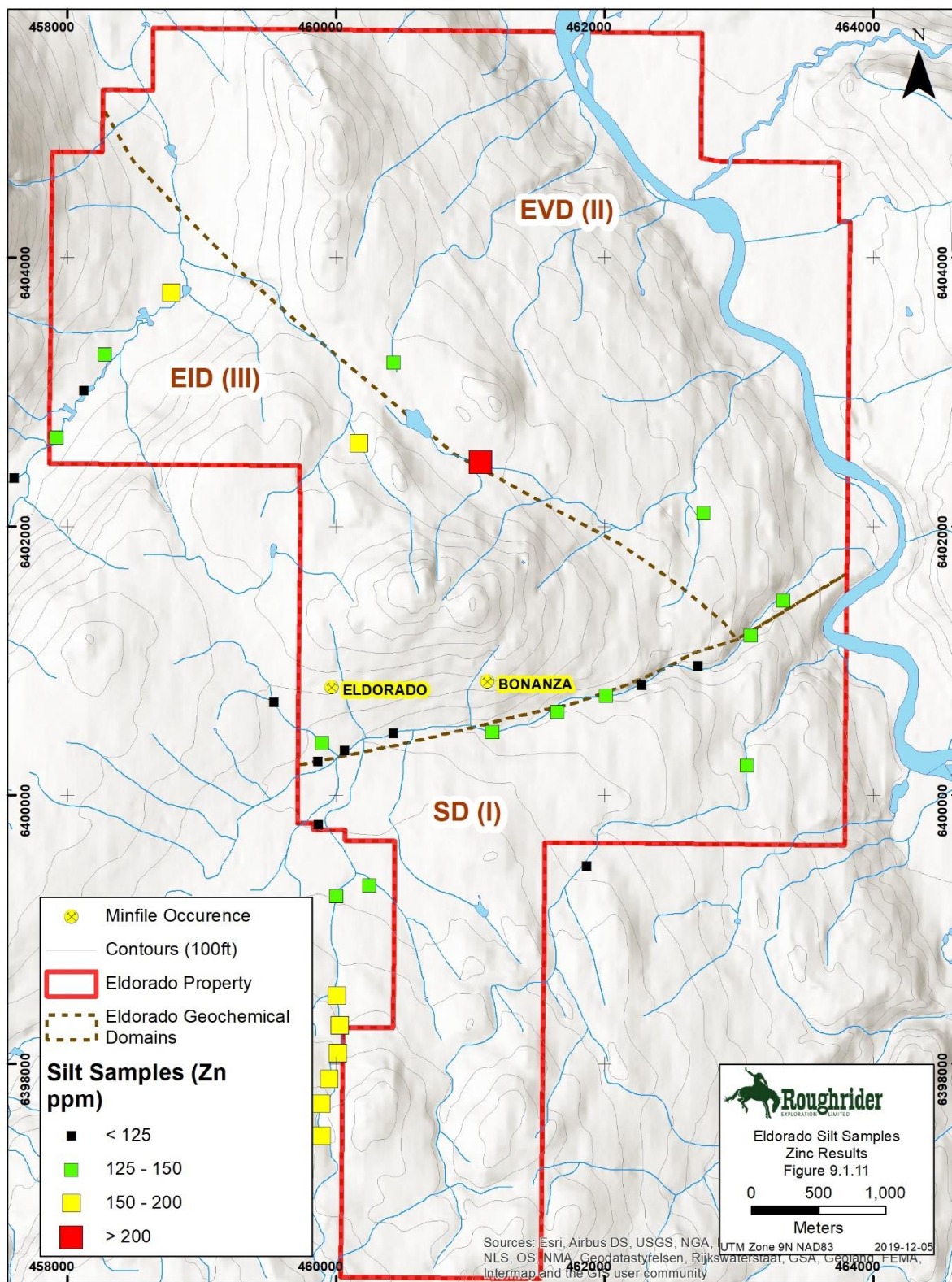


Figure 9.1.11: Silt Sample Zinc Results



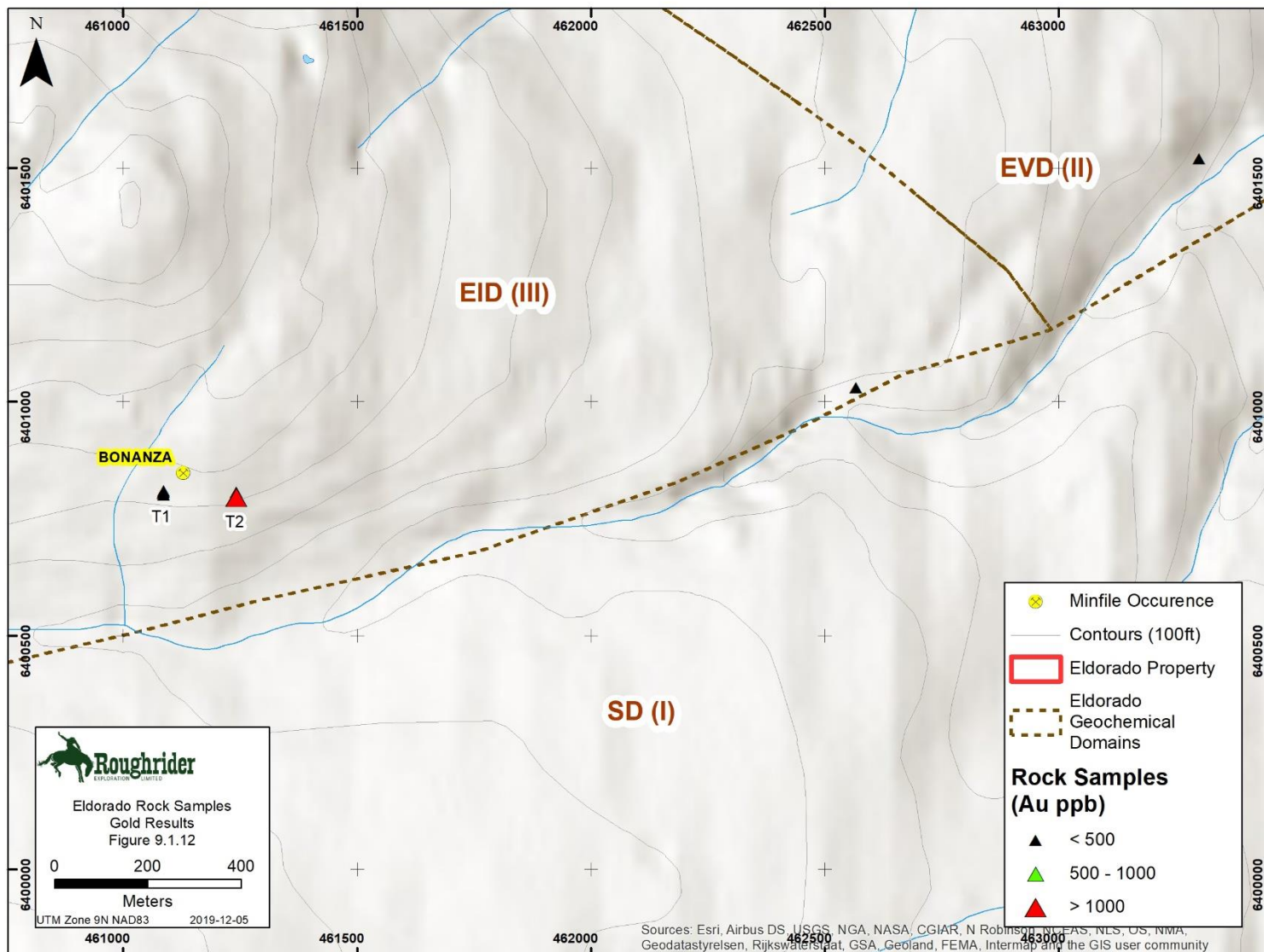


Figure 9.1.12: Rock Sample Gold Results

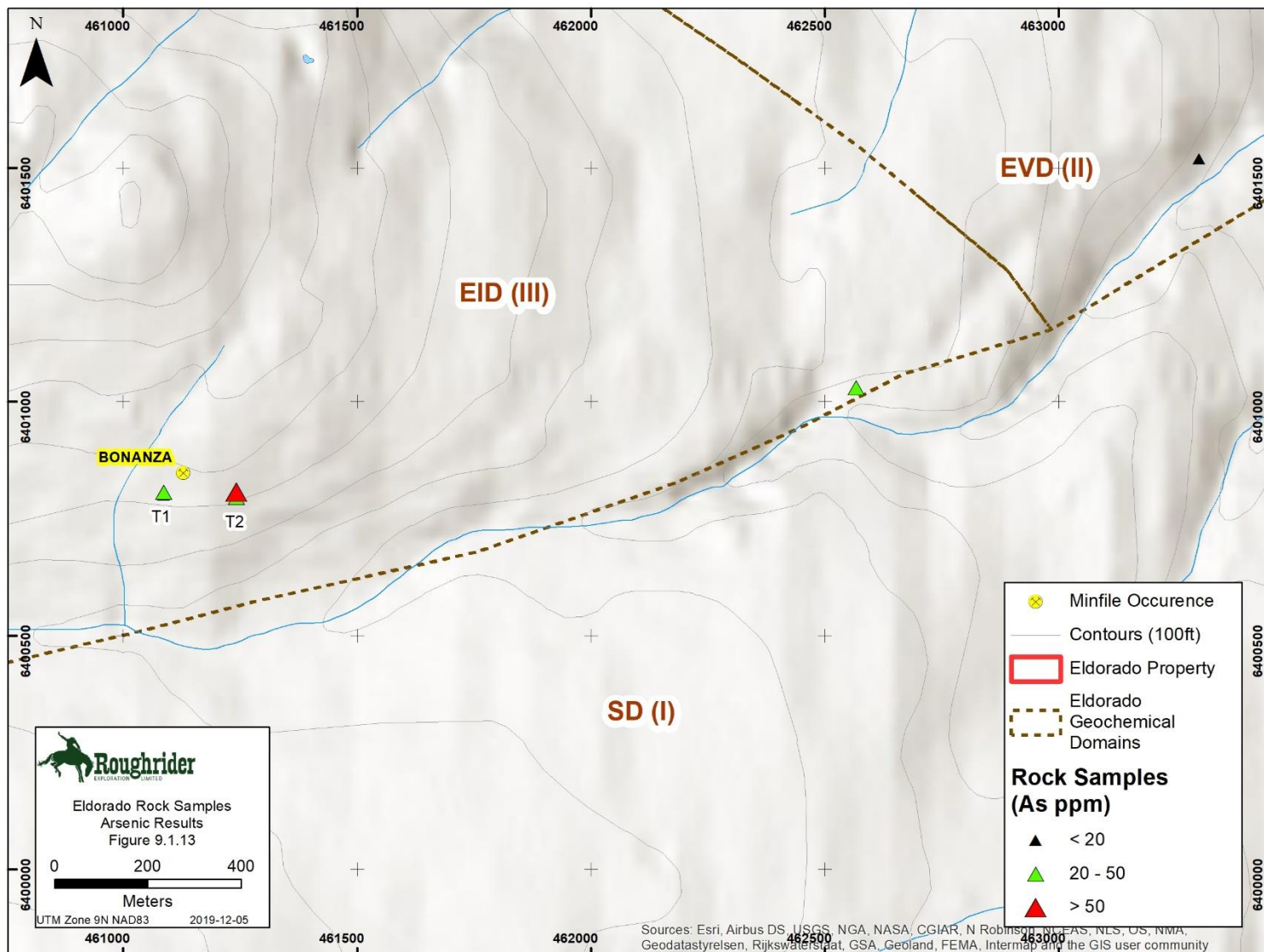


Figure 9.1.13: Rock Sample Arsenic Results

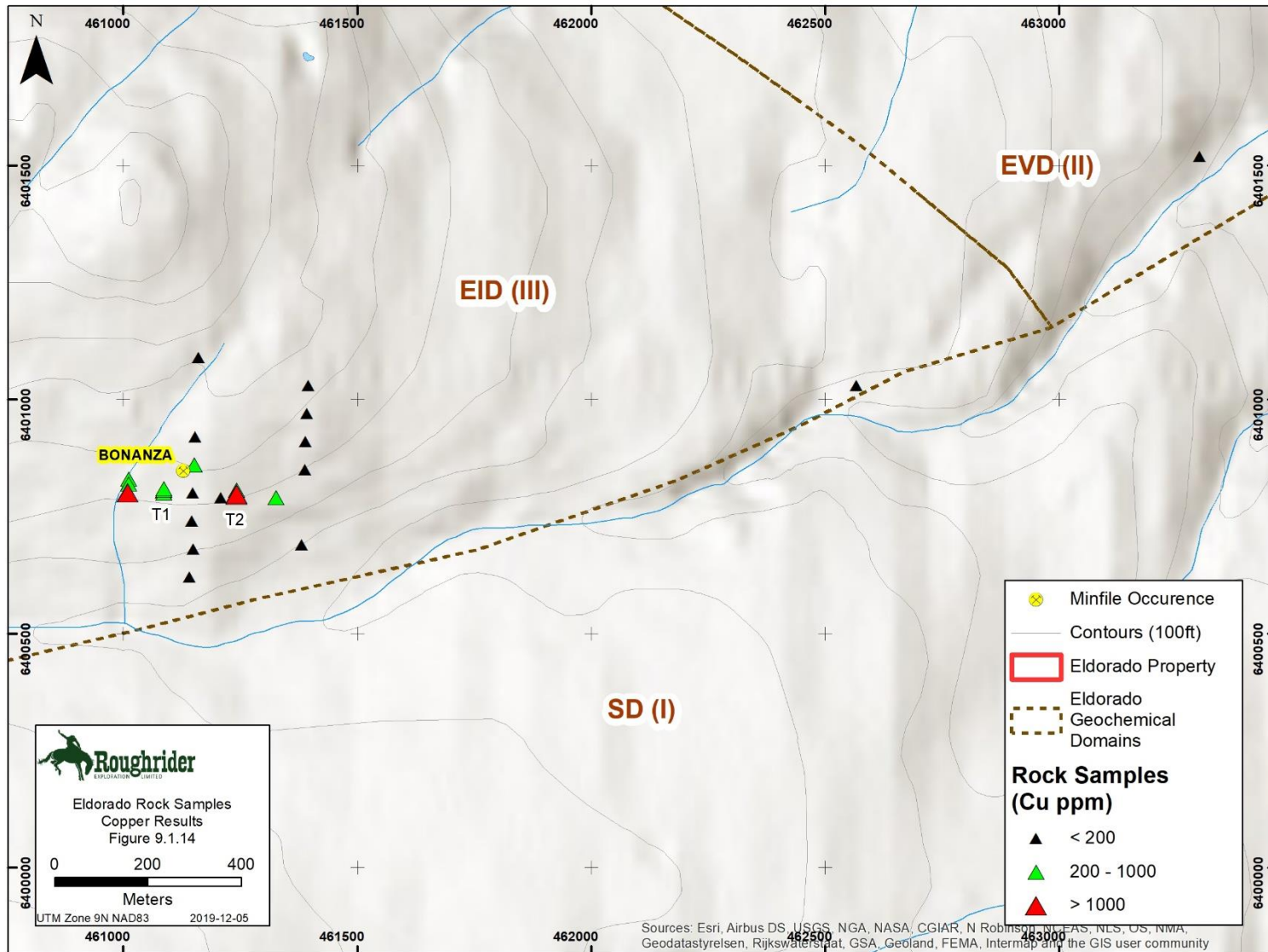


Figure 9.1.14: Rock Sample Copper Results

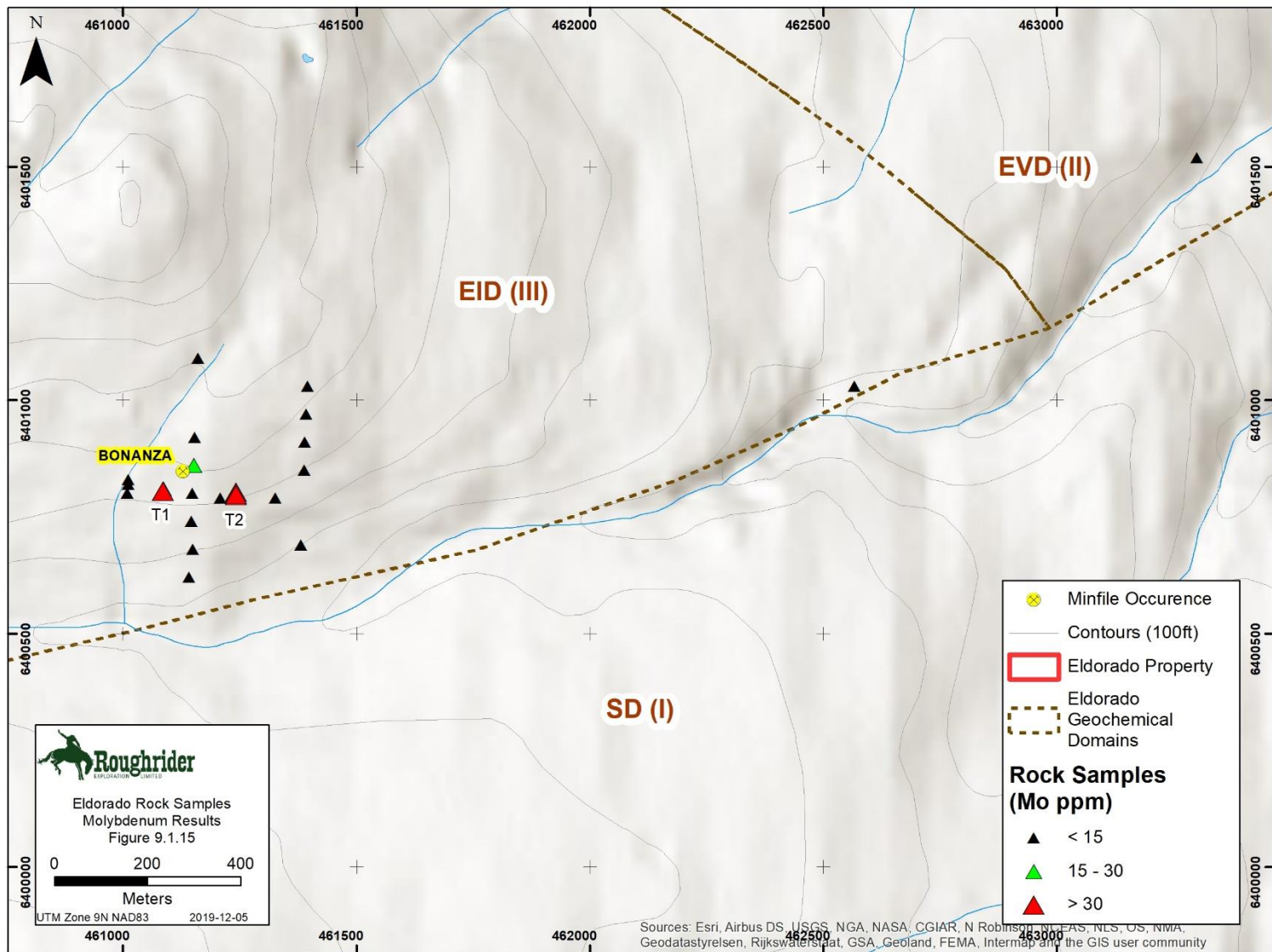


Figure 9.1.15: Rock Sample Molybdenum Results



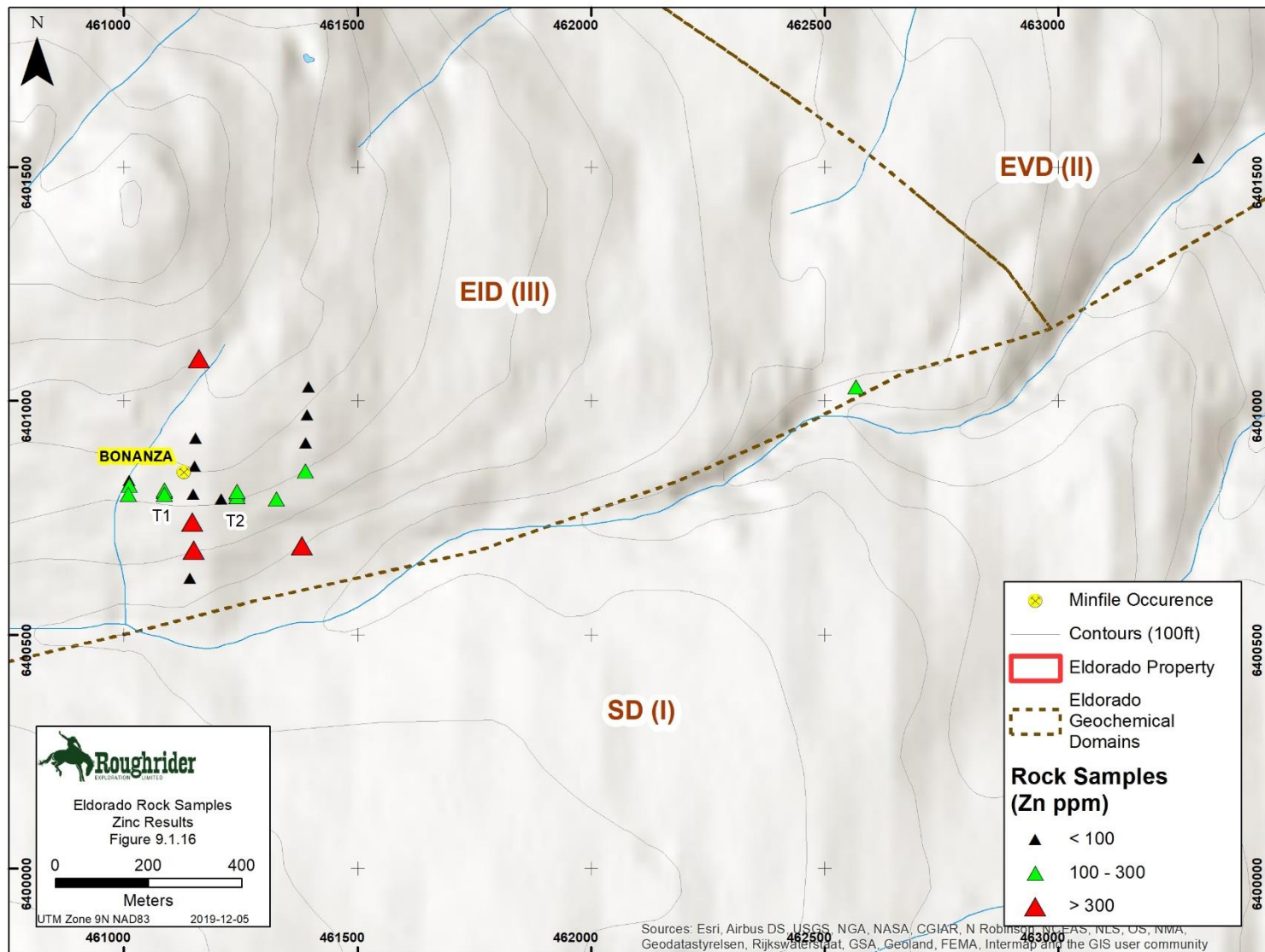


Figure 9.1.16: Rock Sample Zinc Results



## 9.2 GEOPHYSICAL RESULTS

In 1976, Texasgulf Inc. conducted an IP and ground magnetometer survey around the Eldorado and Bonanza Minfile occurrences. The survey's indicated that at the south edge there is a low resistivity, low chargeability and low magnetic susceptibility formation that is typical of Bowser Group sediments. To the north, there is a high chargeability, high resistivity, and low magnetic susceptibility unit, which could be a mineralized intrusive (Peatfield and Donnelly, 1976)

Texasgulf Inc. returned to the property in 1977 and conducted geological mapping as well as IP and ground magnetometer surveys. The survey consisted of filling in and extending various anomalous responses detected during previous work undertaken in 1976. From the previous years' work, it was concluded that linear east-west trends existed on the portion of the property west of line 5720E. Fill in lines in this area have confirmed this trend outlining two chargeability highs centred near the 500N base line on lines 4649E and 4880E. In the eastern portion of the property detailed magnetics has indicated a number of narrow east-west trending anomalies. The I.P. survey shows some high chargeability in the vicinity of 5200N on line 6020E through to 6200E (Peatfield et al, 1977).

In 1980 Esso Resources completed a geophysical program on the optioned Eldorado property from Texasgulf Inc. The target of the surveys was copper (+/- molybdenum, gold) mineralization associated with sub-volcanic intrusive porphyries similar to the porphyry copper-gold deposits located on the nearby Red Chris Property. Three anomalous I.P. zones were detected, two of which have high copper geochemical values as noted in Table 6 (Cooper,1980).

**Table 6: 1980 I.P. Anomalous Zone**

Zone A	Lines 4520 E to 5360 E at about 5150 N	Zone A had a relatively weak I.P. response, the zone may continue to the west
Zone B	Lines 5480 E to 6560 E at about 5150 N	Zone B is the largest of the three and is interpreted from both the 60 m dipole and 30 m dipole work. The I.P responses are relatively stronger and vary in this zone. The depth to the zone appears to decrease from west to east.
Zone C	Lines 6440 E to 6680 E at about 5600 N	Zone C is the smallest and has the weakest I.P. response of the three zones. The resistivities along this zone show a decrease with increase in depth. The responses get stronger to the east and possibly this zone continues east of line 6680 E.

Amarc Resources Ltd completed an I.P and Total Field Magnetometer survey in 2004. The purpose of these surveys was to test the apparent open I.P. anomaly identified in previous years. Two chargeability anomalies were identified. The southern (200m x 800m) anomaly has low to moderate contrast (10-16ms) with a corresponding resistivity high suggestive of a sulphide bearing intrusion. This anomaly is interpreted to be the eastern extension of the chargeability anomaly identified by Esso Minerals Canada in 1980. The IP anomaly abruptly terminates between lines 10350E and 10700E. Roughly coincident arsenic, molybdenum and zinc soil geochemical anomalies without corresponding copper-gold may be indicative of the periphery of a porphyry

system. The second chargeability anomaly (300m x 400m) has a low contrast (10-12ms) and only a very weak resistivity high along its southern flank. There is no corresponding soil geochemical response (Rebagliati et al. 2005).

In the fall of 2012, Sunrise Resources Limited and Colorado Resources Ltd. conducted a 28.6 line km IP geophysical survey on the southern part of the Eldorado Property. The IP survey used a 200 m dipole spacing with the ability to measure to 600 m depths. The 2012 IP survey determined that the previously identified anomaly is underlain at depth by a stronger and more continuous chargeability anomaly measuring 500 by 2,000 m. It relevant to note that at the Red Chris deposit, deeper higher grade mineralized zones are associated with a strong chargeability anomaly (Dawson and Norris, 2013).

In July 2012, Geo Data Solutions GDS Inc. was awarded a contract by Geoscience BC to carry out a high-resolution helicopter borne magnetic survey, named Block 3, near Iskut B.C. The survey was executed from July 26, 2012 to August 6, 2012 consisting of 18 production flights for a total of 5746-line kilometers flown. Geoscience BC shares this data with the public (Geoscience BC, 2013). The Eldorado property was covered by Geo Data Solutions helicopter bore magnetic survey.

In June 2013, a 44 line kilometer ground magnetometer survey was completed by Peter E. Walcott and Associates, with 175 m line spacing over the extent of the 2012 IP chargeability anomaly. The 2013 ground magnetometer survey identified several isolated zones of high magnetic intensity (> 56750 nT) including a broad zone at the southern extent of the property. Several smaller zones of high magnetic intensity are present within the area of the 2012 chargeability anomaly and the 1980 drilling, and were the focus of the later drill holes of the 2013 exploration program. Additional magnetic highs occur to the north and northeast of main chargeability anomaly and remain untested by drilling (Dawson and Norris, 2013).

In order to fine tune the location of the 2014 drill holes, a 4.5 line kilometer infill magnetometer survey was completed in the area of intended drilling. The survey did not appreciably change the overall magnetic pattern defined in 2013. Geophysical surveys and historical drilling suggested that gold-copper mineralization could be associated with a porphyry style mineralizing system measuring a least 1,000 m wide by 2,000 m long. Significant potential therefore remains to expand the mineralized system primarily along the margins of the sulphide system in areas of magnetic highs (Dawson, Greg, 2015).

The three domains defined by the geochemical data may have close correlates with the geophysical data. Geophysically the three domains are defined by:

*Domain I. Sediment Domain (SD).* This domain lies to the south of the historical drilling and is defined by sedimentary rocks which have low chargeabilities and low resistivities. They are typically magnetic lows although a magnetic high may be developing along the eastern portions of Domain I.

*Domain II. Eastern Volcanic Terrain (EVD).* The EVD overlies a roughly northwest trending 20 millivolt chargeability high which is associated with a moderate resistivity anomaly. This domain typically has a flat magnetic signature.

*Domain III. Eldorado Intrusive Domain (EID).* The EID is located near the western and northwestern property boundary is underlain by a series of roughly east-west trending, wormy to discontinuous magnetic highs, a roughly east west striking resistivity high and coincident chargeability high. Geophysical data is truncated over the northwestern corner of this domain.

See Figures 9.2.1 to 9.2.5 for geophysical survey results.

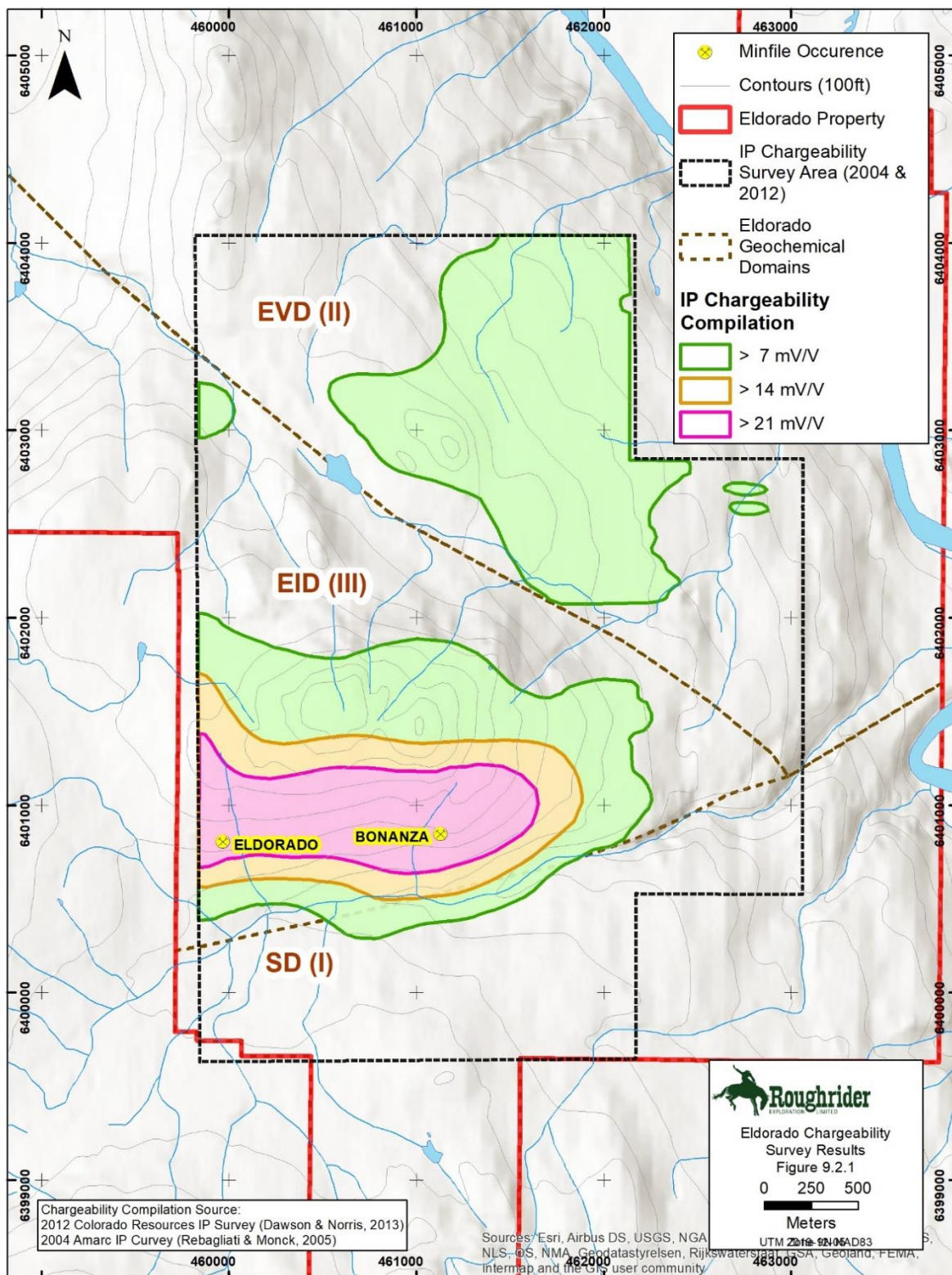


Figure 9.2.1: Eldorado Chargeability Results



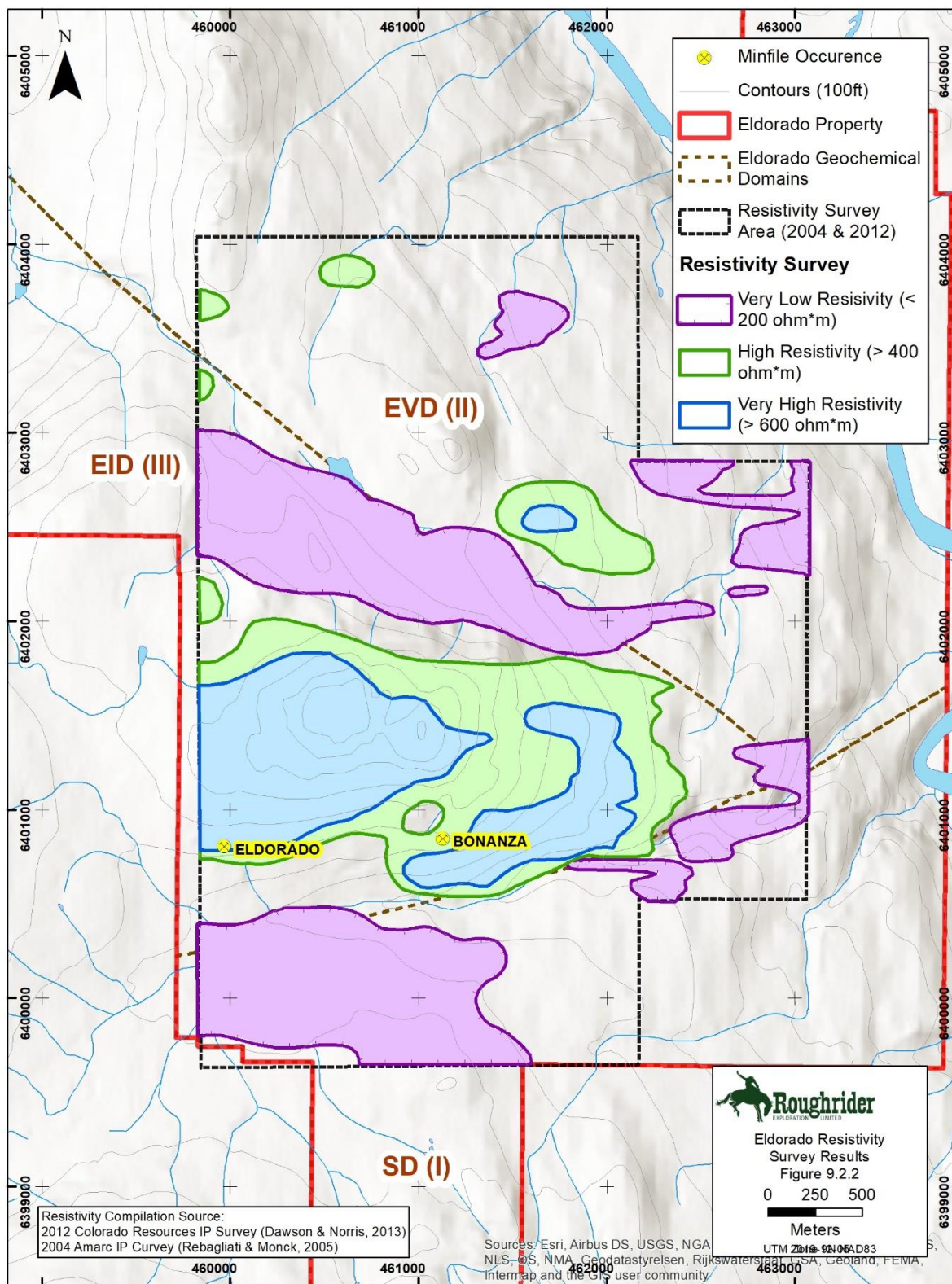


Figure 9.2.2: Eldorado Resistivity Results



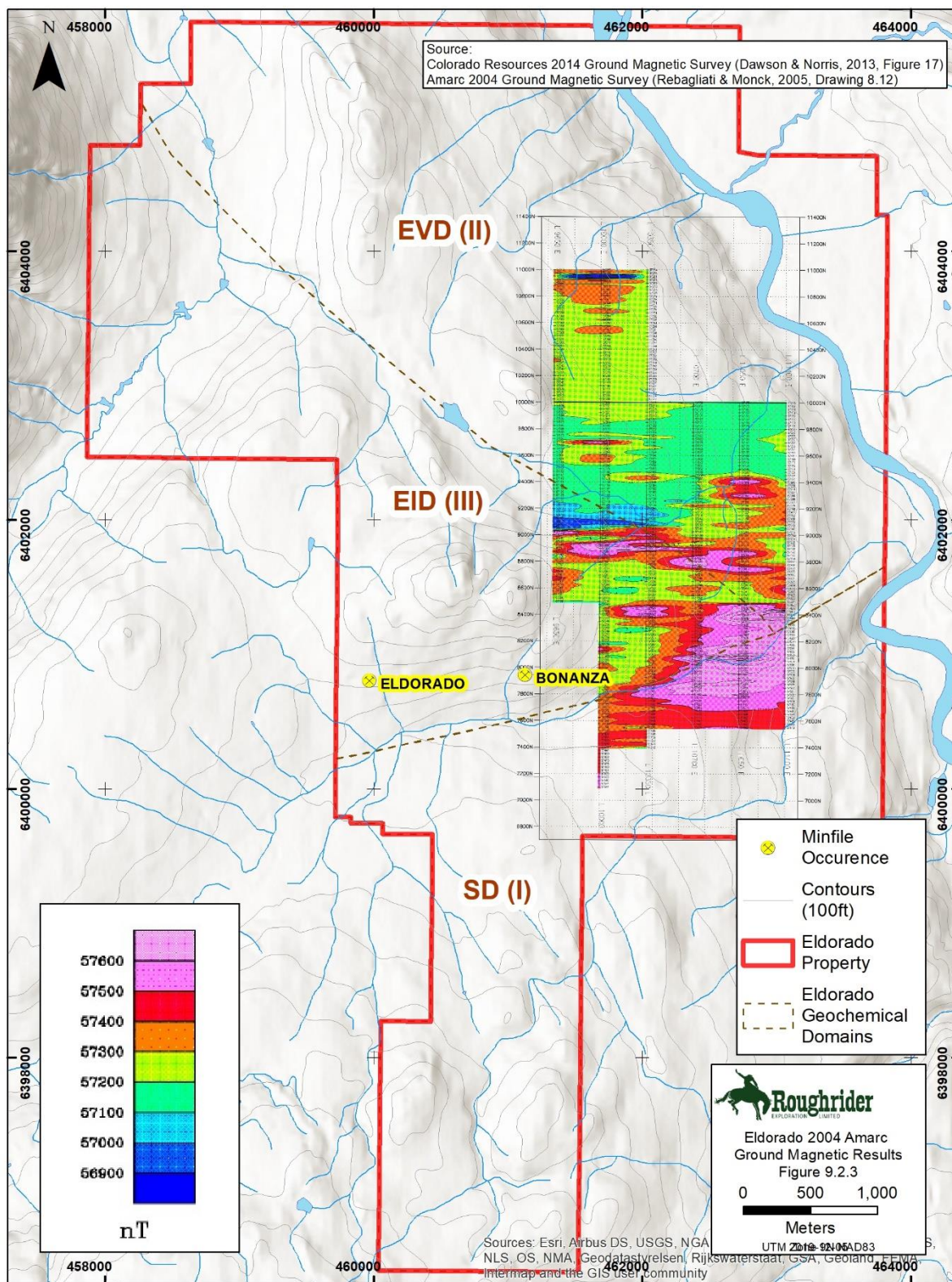


Figure 9.2.3: 2004 Amarc Ground Magnetic Results



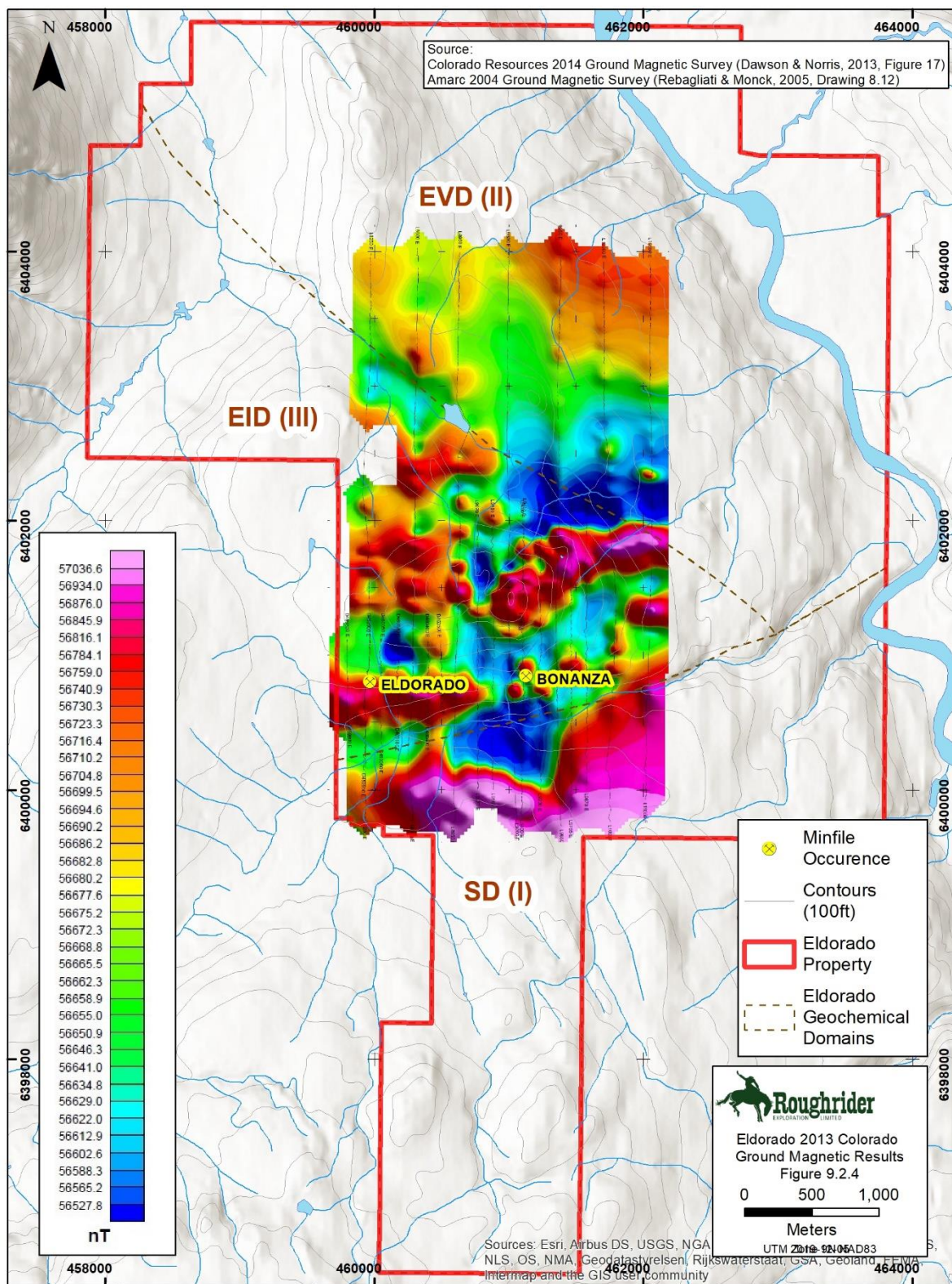


Figure 9.2.4: 2013 Colorado Ground Magnetic



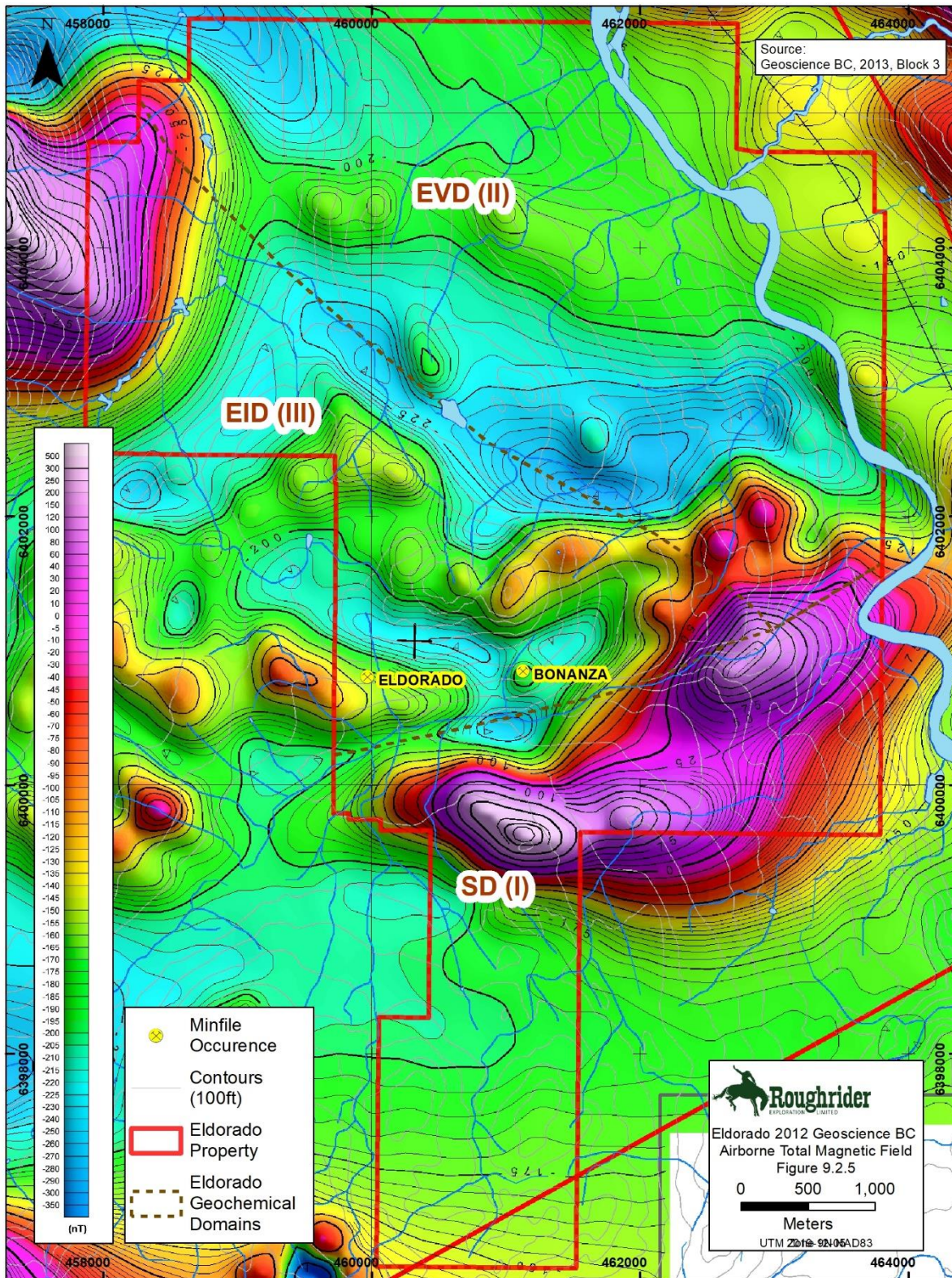


Figure 9.2.5: 2012 Geoscience BC Airborne Total Magnetic Field Survey

## 10.0 DRILLING

Roughrider Exploration Limited has conducted no diamond drill programs on the claims which are the subject of this technical report. However, the detailed compilation and synthesis of the historic data, presented in section 10 has been undertaken by Roughrider Exploration Limited.

In 1980 Texasgulf Inc and Esso Resources Canada Limited completed a 640.4 m 4 hole BQ diamond drill program on the Eldorado property under the joint venture agreement. KBC-80-1, -2 and - 3 tested an I.P. anomaly and coincident copper/molybdenum soil geochemical anomalies. Three of the holes (80-1, 80-2, and 80-3) were drilled along section line 5960 E (1980 grid), roughly 100 m apart. Hole 80-4 was drilled ~1 km to the west (line 4880 E; 1980 grid). Drilling encountered propylitic alteration (chlorite-carbonate  $\pm$  epidote) and locally quartz-sericite-pyrite altered basic volcanic rocks. Drilling also encountered a feldspar porphyritic monzonitic intrusion and barren quartz-feldspar porphyry dykes. Drilling intersected non-economic copper and gold grades, reporting generally below 0.1% copper. Highlights from the 1980 drill program include 0.213% copper and 790 ppb gold over 3 m (at 33 m downhole length in drillhole 80-2), and 0.229% copper and 120 ppb gold over 3 m (at 25 m downhole length in drillhole 80-4). See Table 7 (Everett, 1981).<sup>2</sup>

**Table 7: 1980 Summary of Diamond Drilling** (Width reported intervals are drill indicated lengths as true thickness are unknown.)

Hole ID	From (m)	To (m)	Interval (m)	Au (g/t)	Cu %	Mo ppm
KBC-80-2	54	69	15	0.213	0.059	45.6
KBC-80-3	80	83	3	1.750	0.016	11.0
KBC-80-4	135	150	15	0.191	0.020	6.4

In the spring 2013, optioner Colorado Resources Ltd. conducted a 5 hole, 1,431 m NQ diamond drill program in the southern part of the Property to test the 2012 IP chargeability anomaly at depth, and to follow up on geochemical and drilling results from previous programs. Of the five drill holes completed in 2013, two were abandoned due to extensive glacial cover. The three drill holes that successfully reached bedrock encountered augite phyric basalt (Stuhini Group), and various potassically altered feldspar porphyritic monzonitic to dioritic intrusions. These drill holes encountered significant intervals of low grade gold and copper mineralization, including 91.6 m of 0.12% copper and 0.28 g/t gold from top of bedrock (52.4 m depth) to 144 m depth in EL13-004. Width reported intervals are drill indicated lengths as true thickness are unknown. The interval contains sheared and faulted dioritic intrusions with lesser mafic volcanic flows. See Table 8 (Dawson and Norris 2013 and Colorado Resources [News Release], 2013).

**Table 8: Summary of 2013 Significant Diamond Drilling Results** (Width reported intervals are drill indicated lengths as true thickness are unknown.)

Hole ID	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)
<b>EL13-004</b>	52.4	259.0	206.6	0.09	0.17
<i>including</i>	52.4	144.0	91.6	0.12	0.28
<i>including</i>	52.4	123.7	71.3	0.14	0.33

<b>EL13-005</b>	108.8	264.4	155.6	0.06	0.16
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In 2014, Colorado conducted a 4.5-line km ground magnetic survey and a 4-hole, 891.6-meter NQ diamond drilling program.

The intent of the 2014 drilling program was to utilize a broadly spaced drill pattern to extend the gold – copper+/- molybdenum porphyry system first discovered with DDH EL13-004 along strike.

Highlights of the 2014 results include drillhole EL14-008, which intersected 196.5 m of 0.19 g/t gold and 0.06% copper and 0.005% molybdenum over the entire length of the drillhole from bedrock onward. See Table 9. This hole is located 300 m west of drillhole 13-005 which reported in the previous year an intercept of 71.3 m of 0.34 g/t gold and 0.13% copper. For both DDH EL14 – 008 and DDH 13 – 005, width reported intervals are drill indicated lengths as true thickness are unknown. See Table 9. (Dawson, 2015).

Copper-gold mineralization has been identified in drillholes over a 1,000 m strike length between drillholes EL13-005 and EL14-007. Mineralization is open to the west towards the property boundary, and depending on the strike relationships, may be open to the northwest along the contact which defines the interpreted Domain II and Domain III boundaries. Over relatively broad intervals, the gold copper ratios are strongly bias in favor of gold typically with Au:Cu ratios in the range 2:1 to 3:1. Those kinds of alteration assemblages, and metal ratios, are sometimes believed to be more characteristic of phyllic alteration and alteration zones which are distal to the potassic core of the porphyry system.

These data are summarized on Figures 10.1 to 10.8.

**Table 9: Summary of 2014 Significant Diamond Drilling Results** (Width reported intervals are drill indicated lengths as true thickness are unknown.)

<b>Hole</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)*</b>	<b>Au (g/t)</b>	<b>Cu (%)</b>
<b>EL14-006</b>	220.8	236.8	16.1	0.12	0.07
<b>EL14-007</b>	6.1	153.8	147.7	0.17	0.05
<i>includes</i>	9.1	39.0	29.9	0.18	0.07
<b>EL14-008</b>	33.5	230.0	196.5	0.19	0.06
<i>includes</i>	33.5	113.8	80.3	0.22	0.07
<i>includes</i>	160.2	191.8	31.6	0.26	0.10
<b>EL14-009</b>	92.4	93.9	1.5	2.48	0.04



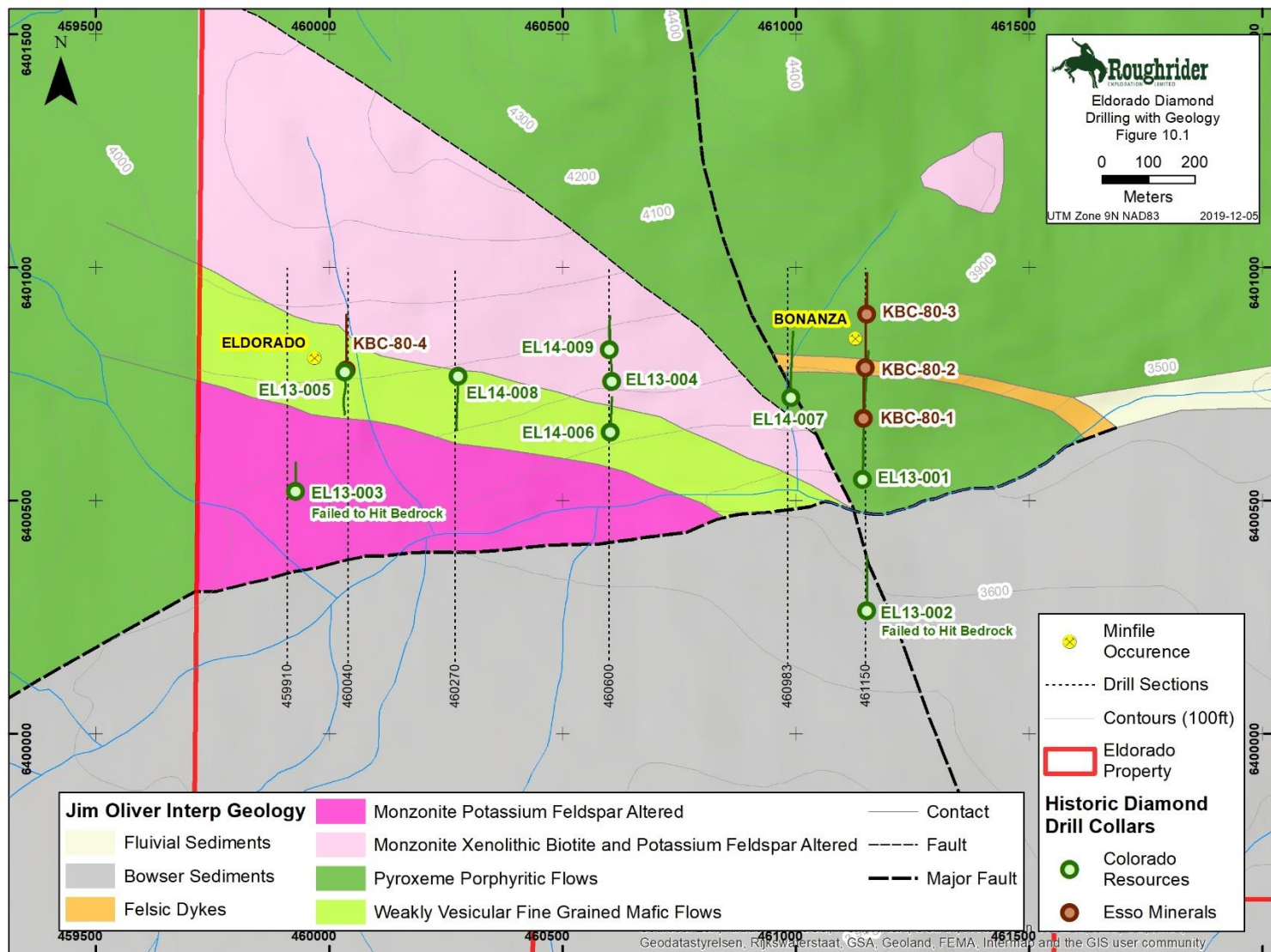


Figure 10.1: Eldorado Diamond Drilling with Geology

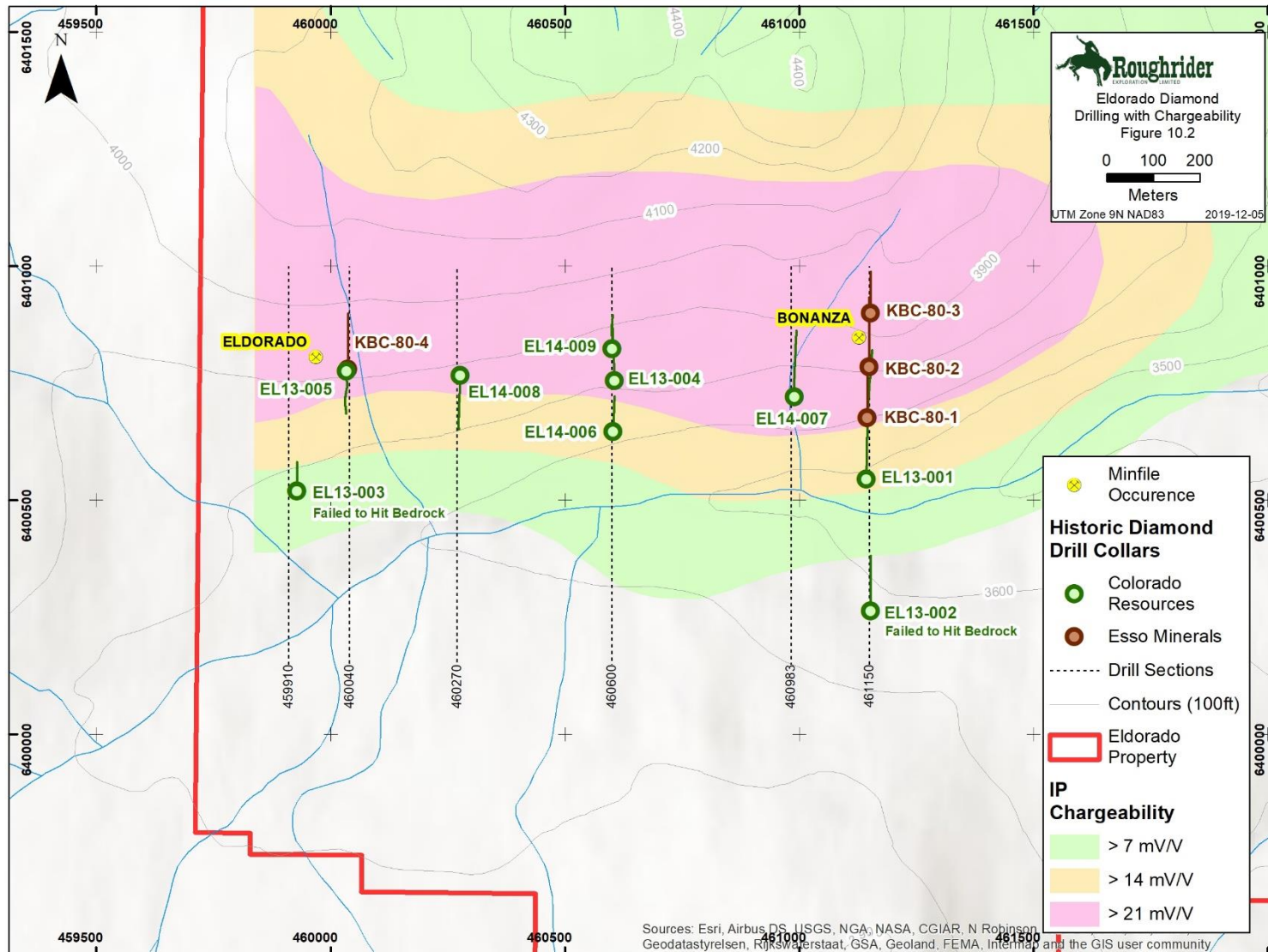


Figure 10.2: Eldorado Diamond Drilling with Chargeability

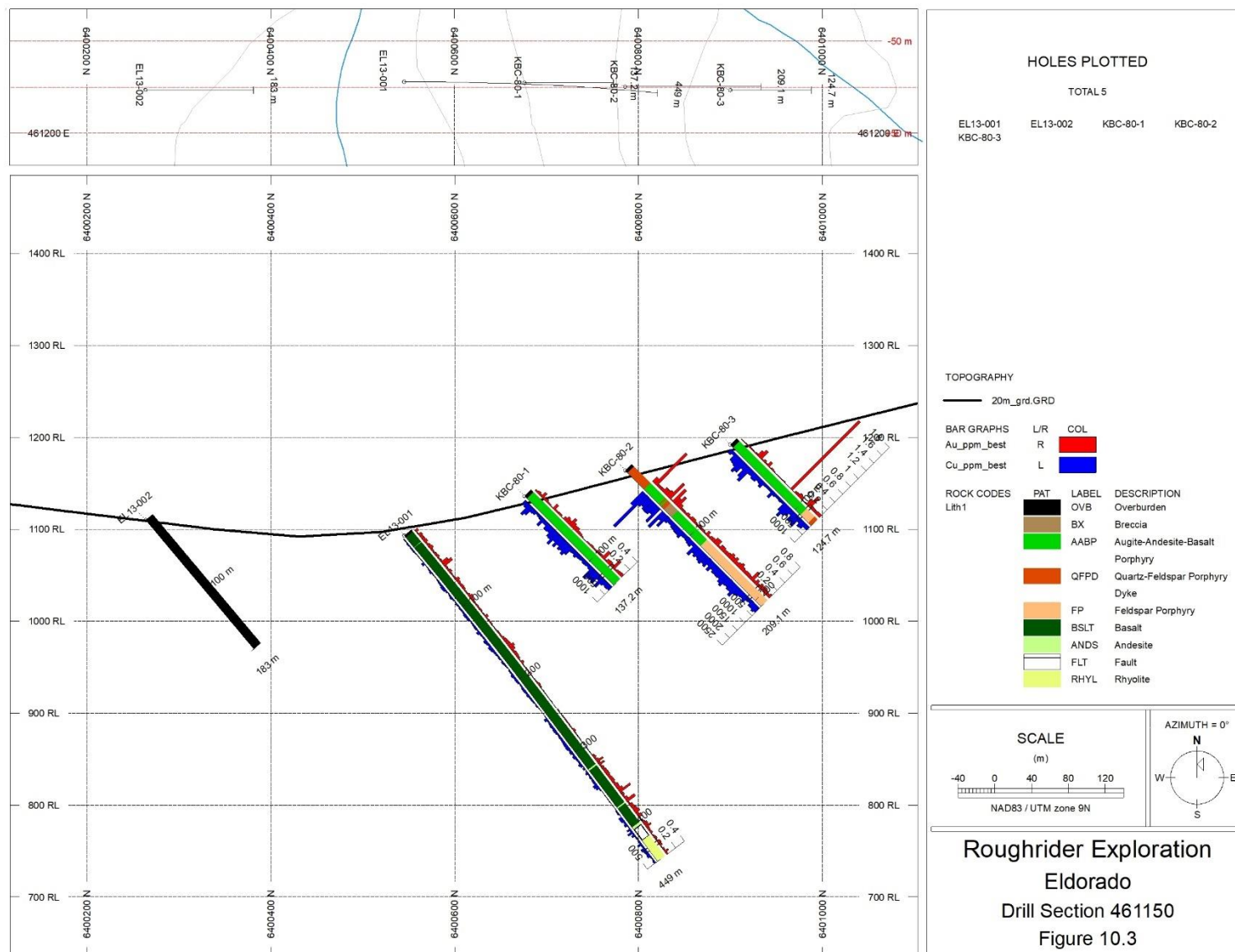


Figure 10.3: Drill Section 461150

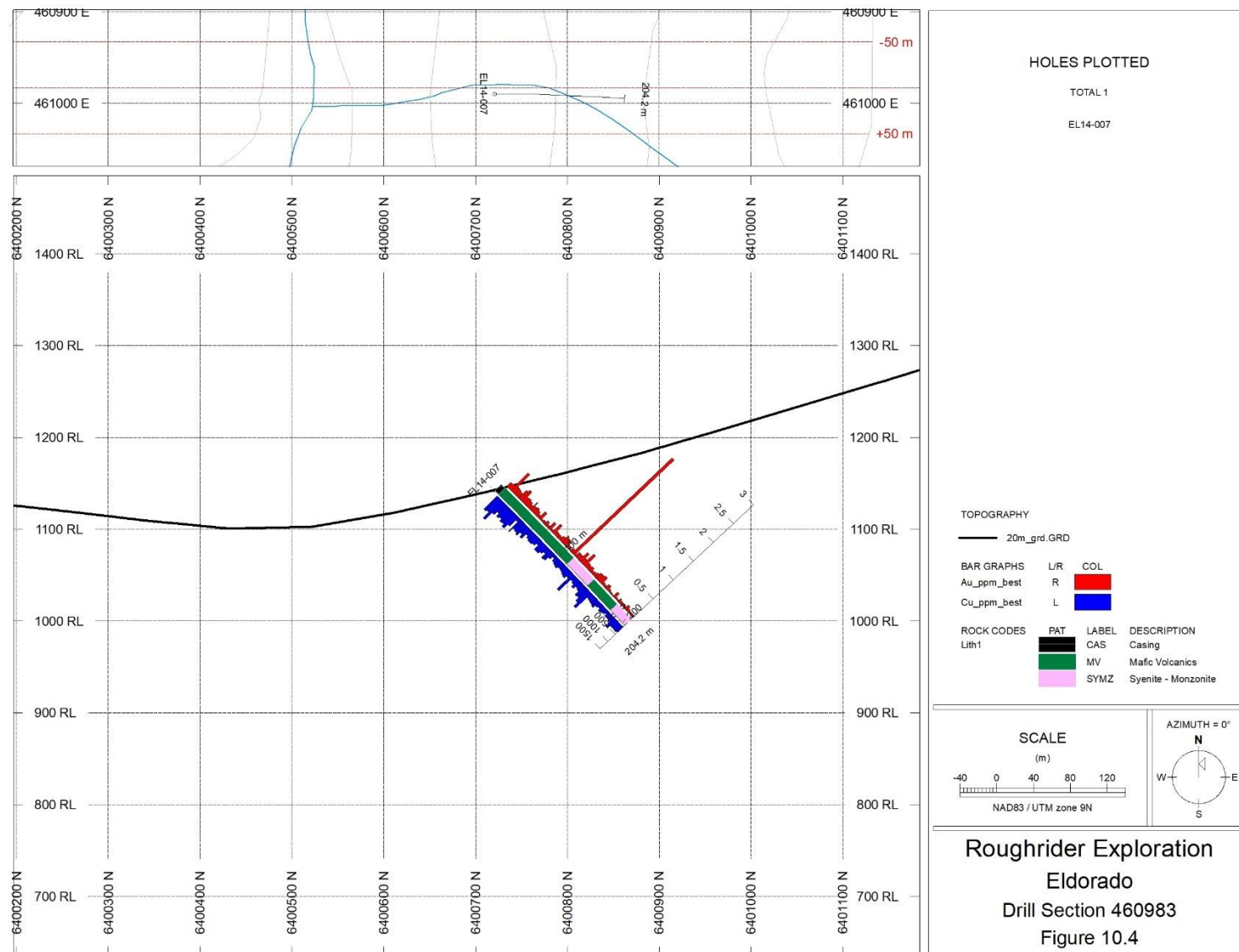


Figure 10.4: Drill Section 460983



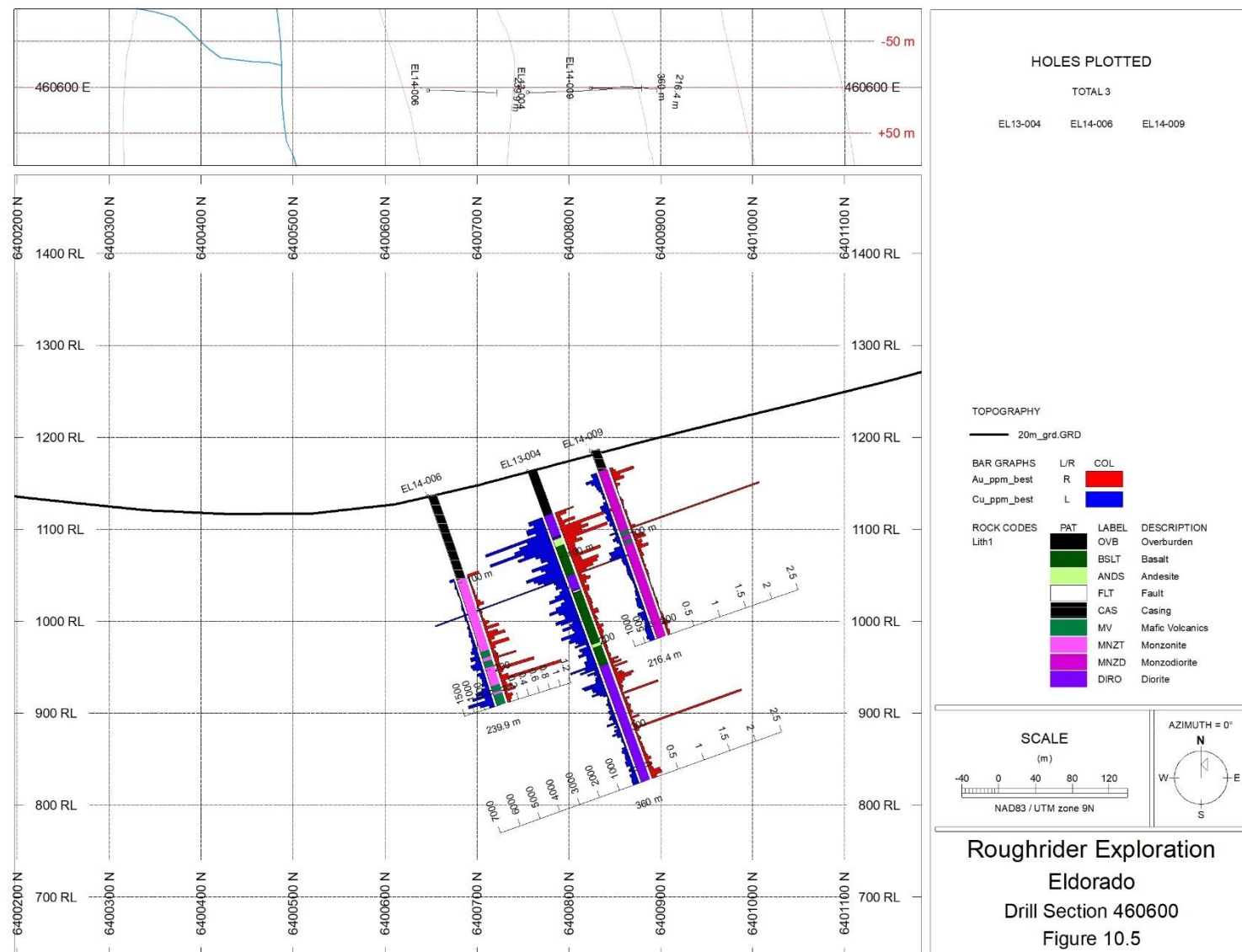


Figure 10.5: Drill Section 460600

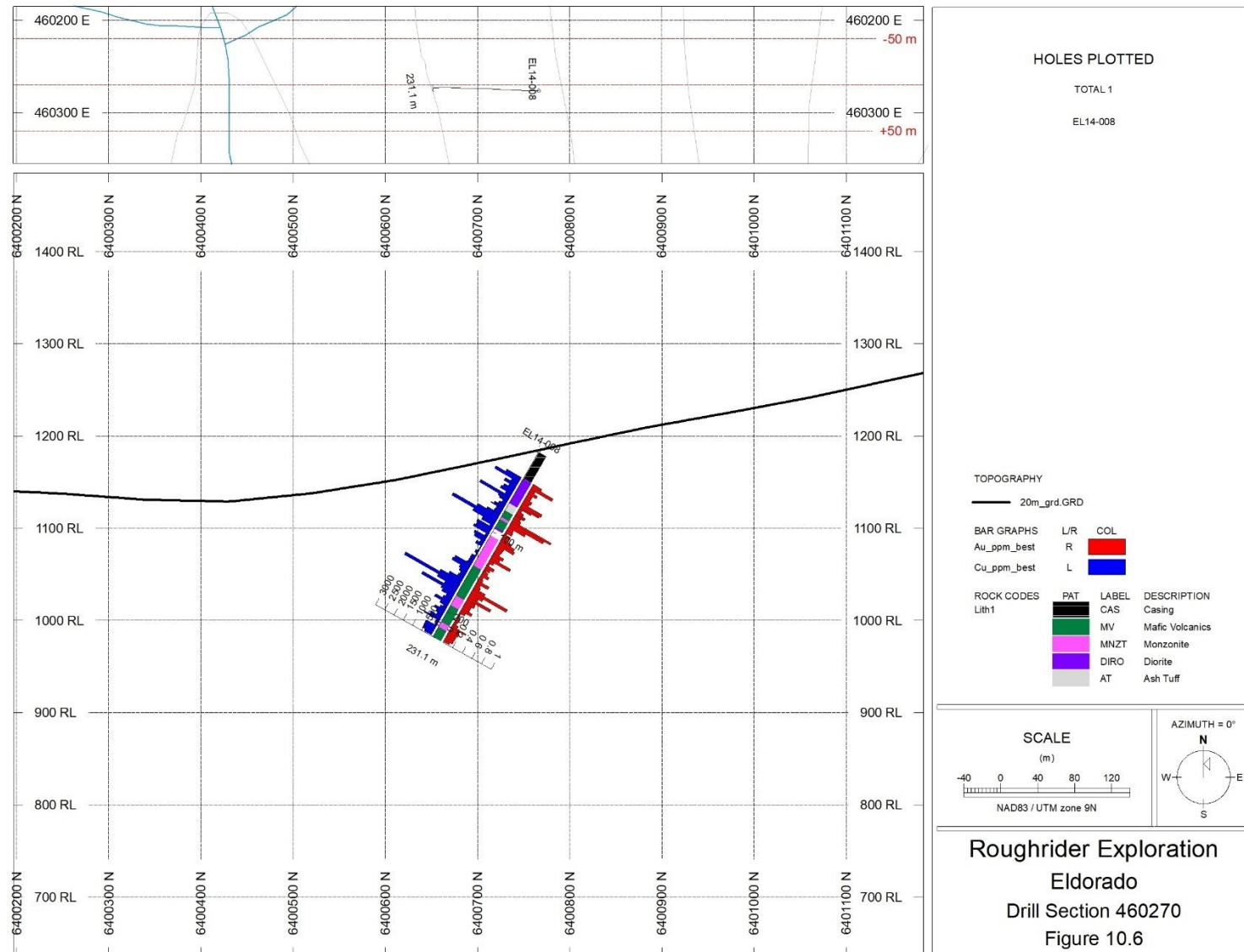


Figure 10.6: Drill Section 460270

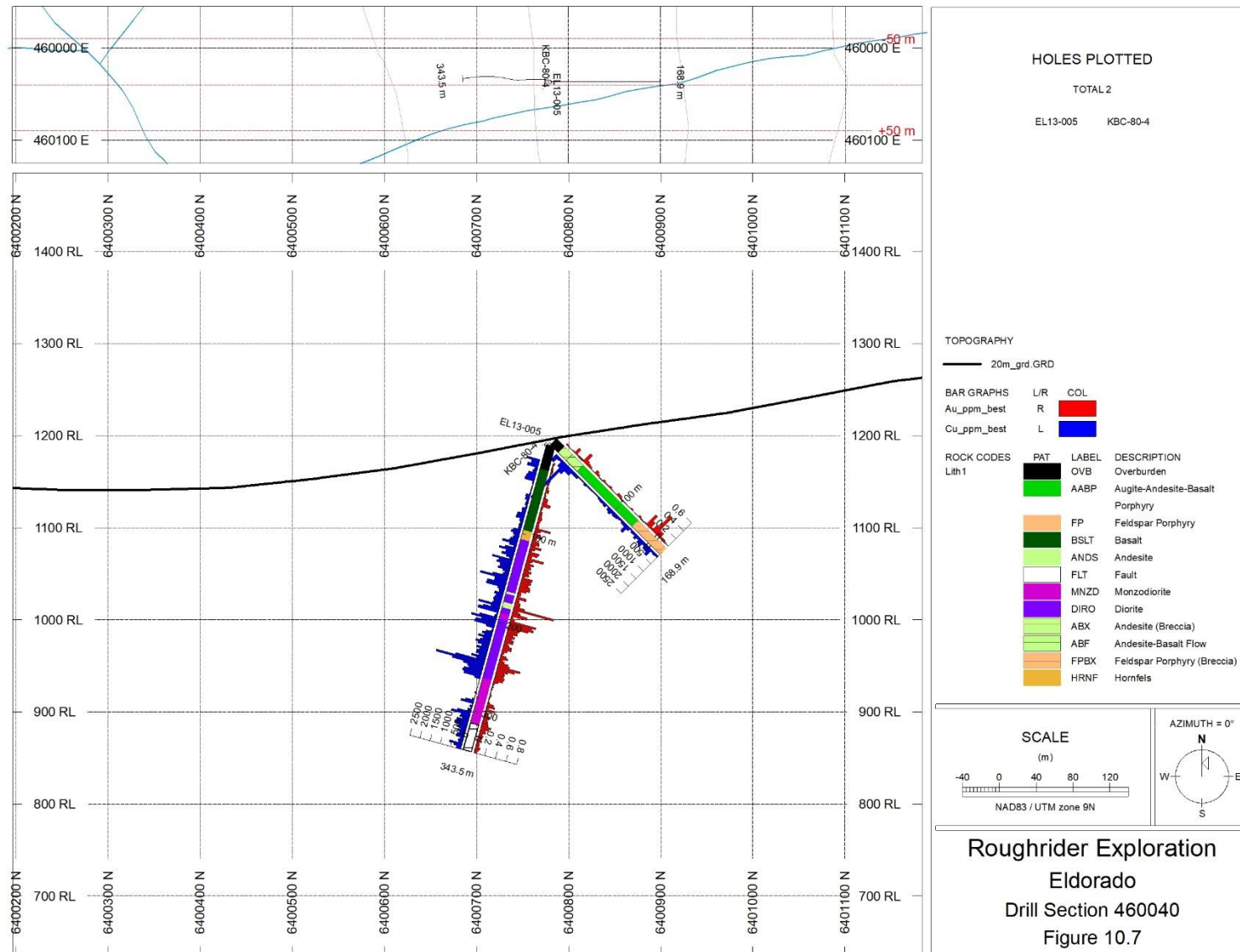


Figure 10.7: Drill Section 460040



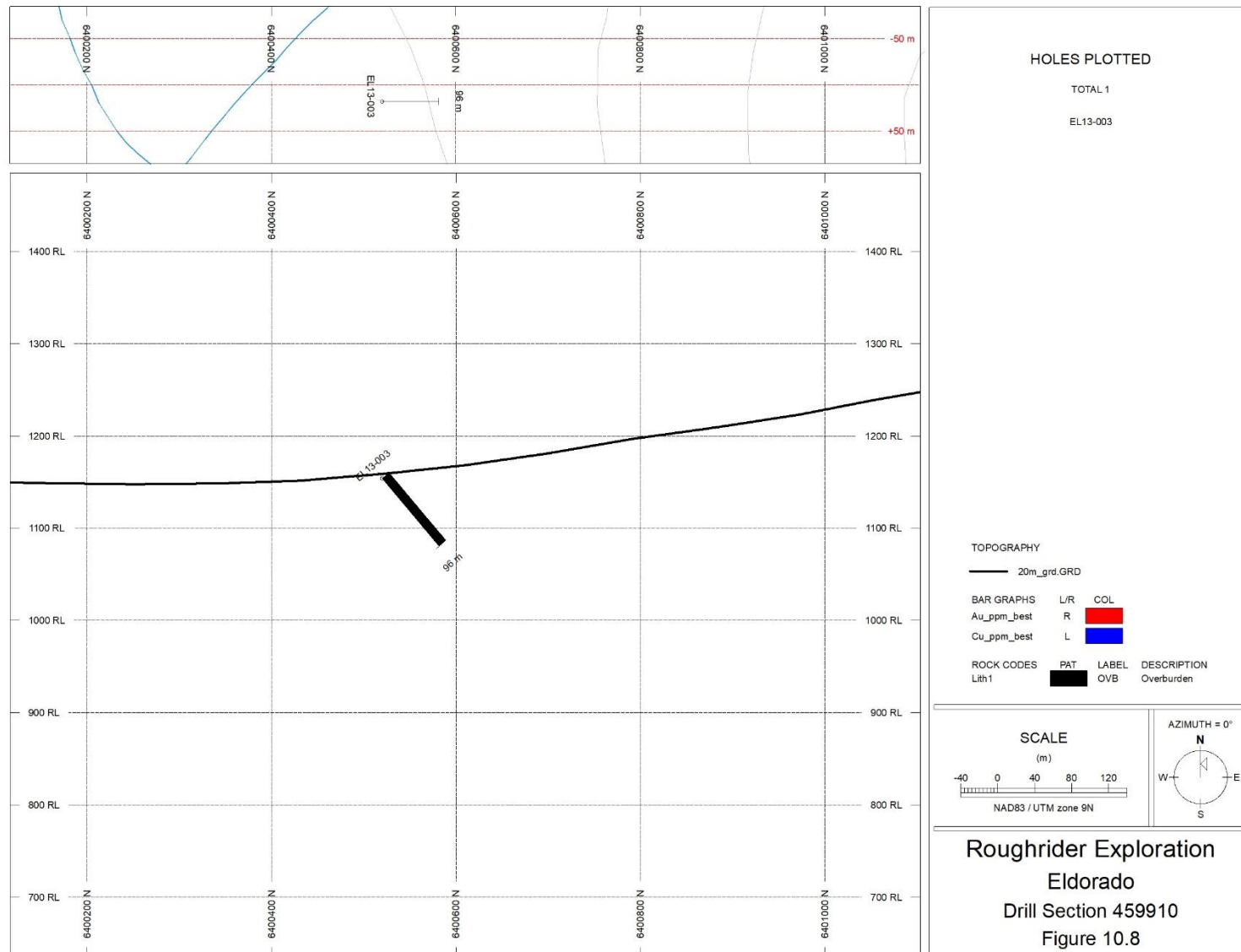


Figure 10.8: Drill Section 459910

## **11.0 SAMPLE PREPARATION, ANALYSES and SECURITY**

Roughrider Exploration Ltd., has not conducted drilling programs, rock or soil sampling programs, and as such has not undertaken any sample preparation, analyses or security. The information in section 11.0 documents the protocols used by previous operators including those historic 2013 and 2014 programs which the author participated in.

### **11.1 DRILLING**

#### **11.1.1 ESSO MINERALS 1980 DRILLING**

The Esso Minerals report by Everett (1980) did not indicate any core sampling procedure, sampling analysis or sampling security of their drill core from their 1980 drill program. Core logs from this drill program indicate that Esso Minerals analyze for gold, copper, and molybdenum but it was not stated on the type of analysis was undertaken nor any laboratory analytical certificates accompanying the 1980 report.

#### **11.1.2 2013-2014 COLORADO RESOURCES**

The 2013 and 2014 Colorado Resources drill program sampling procedure began with the core sample intervals laid out and recorded by the logging geologist on site. Samples were taken as 2 m or 3 m intervals for visually mineralized and visually un-mineralized core, respectively. Samples may locally have been broken at geological boundaries. Sample locations and associated sample numbers were marked on the core using a red grease pencil. Pre-numbered, 3-part, sample analytical tags were filled out with the appropriate information (Project, Drill Hole Number, Sample Interval, Date, Geologist) and stapled into the core boxes at the start of each sample. All drill core was sampled, top to bottom, where bedrock core was recovered (Dawson and Norris, 2014 and Dawson, 2015).

Under the supervision of the logging geologist, a trained geotechnician converted all run blocks from feet to meters and measured and recorded the drill core recovered between blocks (down hole depth markers). The geotechnician then measured and recorded the rock quality designation (RQD) for all intervals of drill core (between blocks). Measured along the centerline of the core, the RQD value is a sum of all the pieces of drill core that are 10 cm or greater in length. Core breaks caused by drilling processes or manual breaks are fitted together and counted as a coherent piece of drill core. Photographs of core boxes were taken that clearly identify the project, drill hole, and interval of drill core photographed (Dawson and Norris, 2014 and Dawson, 2015).

Drill core was cut using a Pothier Enterprises electric core cutting saw. Samples intervals were sawn in half, with one-half being placed in a poly-ore bag, pre-labelled with the associated sample number. The corresponding sample number tag was placed in the bag with the sample, with one remaining sample tag being left stapled to the core box at the appropriate location. The remaining half of sawn drill core was placed back into the core box. Care was taken to ensure that the same half of the core was sampled for an entire sample interval to maintain sample consistency. Sample bags were sealed with zip-ties and set aside for bagging prior to shipment to the analytical laboratory (Dawson and Norris, 2014 and Dawson, 2015).

All of Colorado Resources drill core samples were stored in rice-bags at the Colorado Resources Ltd core logging facility behind the Iskut Motor Inn. Samples were placed in sealed poly-ore bags, clearly labelled with the sample number. Samples were then placed in sealed and labeled rice bags,

and were then transported by Bandstra Transportation Systems to the Acme Analytical Laboratories Ltd. preparation facility in Smithers, BC. At all times the samples were under complete control of Colorado Resources Ltd employees or contactors. The assay laboratory catalogues all samples and assures a complete chain of custody of each sample through the analytical process (Dawson and Norris, 2014 and Dawson, 2015).

Colorado Resources drill core sample preparation was conducted by Acme Analytical Laboratories Ltd. at their preparation facilities in Smithers, BC. Diamond drill core samples (half-core) were crushed, split, and pulverized (250g) to produce an 80% minus 200 mesh sample (Acme Preparation Code RP70-200). An assay analysis on drill core was conducted by Acme Analytical Laboratories Ltd. in Vancouver, British Columbia. Drill core samples were analyzed by the AQ200 and FA430 methods. 'AQ200' analyzes a 0.5g sample split by leaching it in hot (95°C) Aqua Regia and analyzing the solution by ICP-MS. Analytical package 'FA430' analyzes a 30g sample split, analyzing the sample by Fire Assay (for gold only) with an AA (atomic absorption) finish. Additionally, automatic over-limit analyses of drill core samples were requested for copper and gold. For copper, any samples reporting >10000 ppm by the AQ200 method were re-analyzed by the 'AQ370' package. The 'AQ370' package is a 1:1:1 Aqua Regia digestion with an ICP-ES finish (Dawson and Norris, 2014 and Dawson, 2015). At the time the assays were undertaken Acme Analytical Laboratories was an accredited lab (No. 720) with the Standards Council of Canada and conformed with the requirements of CAN-P-1579 and CAN – P – 4E.

Colorado verified the core sample results using an industry standard QA-QC program that involved collecting field duplicates and inserting standard and blank control samples into the sample stream at a total frequency of 8 %. Primary samples and field duplicate samples are each one-quarter core samples of the same sample interval, with a half-core left in the core box. Certified reference material was supplied by Canadian Resources Laboratories while the blank material was a white limestone bought at a garden supply store in Smithers BC. The control sample scheme is detailed in Table 10. In addition to the QA-QC program used by Colorado Resources Ltd, Acme Laboratories routinely utilizes standards and duplicate analysis of samples as part of their quality assurance procedures. The Acme QA-QC procedures include sample preparation blanks, pulp duplicates to monitor analytical precision, reagent blanks to measure background, and aliquots of in-house reference material (Dawson and Norris, 2014 and Dawson, 2015).

**Table 10: Colorado Resources QA-QC Control Input Procedure**

<b>Sample Number</b>	<b>Standard Type</b>
xxxx00	Standard
xxxx20	Standard
xxxx25	Duplicate
xxxx40	Standard
xxxx50	Blank
xxxx60	Standard
xxxx75	Duplicate
xxxx80	Standard
xxxx90	Blank



The technical data relevant to the interpretation of this QA-QC data is contained in Appendix A. In the authors opinion, the implementation of the 2013 and 2014 Colorado Resources QA-QC program meets or exceed the industry standards for best practices and that results of those programs are representative and reliable.

## **11.2 GEOCHEMISTRY SAMPLING**

The 1976 and 1977 surface geochemical sampling program was conducted by hand sampling techniques, a hand auger, and using a “Poinjar” hammer drill with one-meter 28mm diameter drill rods to collect samples near bedrock where the till overburden was too thick. Surface and hammer drill samples collected in kraft bags, were air dried and sent to Bonder-Clegg & Co laboratories in Norther Vancouver, B.C. Soil and chip fine samples were prepared using –80 mesh fraction and -10 +80 mesh fraction and were analyzed for copper, zinc, and molybdenum using hot acid extraction (Peatfield, G.R., and Donnelly, 1976 and Peatfield, et al.,1977).

Esso Minerals personnel, in 1979, collected soil samples by hand techniques and contracted Bema Industries Ltd of Langley B.C. to conduct overburden drilling, using a Poinjar” hammer drill, to test the material near the bedrock till interface. Soil samples and rock ship fines were stored in kraft bags and sent to Min-en Lakes in North Vancouver B.C. where the samples were air dried, prepped to -80 fraction and analyzed for copper, molybdenum, and zinc using nitric, perchloric acid digestion (Oddy, 1980)

The 1995 Homestake and Falconbridge surface geochemistry program consisted of hand sampling the two previous trenches, sampling of outcrop along the creek to the east, 30 stream sediment samples, and 58 conventional ‘B’ horizon soil samples at the same sites augured by Esso Minerals. The report on this exploration program by Patterson and Kuran (1995) did not indicate any sampling procedure, sample analysis or sample security in detail. It is known from analytical certificates attached to the report that samples were sent to International Plasma Laboratory in Vancouver, B.C where fire assay analyses were done for gold and ICP analyses was done for 31 elements (Patterson and Kuran, 1995).

The 2004 AMARC Resources geochemical sampling program was analyzed at Eco Tech Laboratory Ltd in Kamloops B.C. where 29 elements were analyzed for. No sample descriptions as to how the samples were collected, their description or other information is available (Rebagliati et al., 2005).

The 2007 Gravity West Mining geochemical samples were collected using a 1.3m corkscrew soil auger and/or spade in order to penetrate as deep in to the soil as possible. Generally, the samples were successful when collected at depths equal to or greater than 1m (the B horizon). Once collected the samples were placed in standard kraft soil bags and sent to Acme Analytical Laboratories Ltd. prep lab in Smithers B.C. for standard soil prep processing. Once dried and sieved a small portion of each sample was shipped to Acme’s analytical lab in Vancouver B.C. and assayed according to package 1Dx and Fire Assay for gold (Ralph et al.2008).

The 2012 geochemical and biogeochemical sampling program completed by Sunrise Resources were collected at approximately 40-50 cm depths with a mattock, generally from the B horizon (some samples showed a small amount of organic material from the A horizon near swampy areas). All samples were placed in kraft waterproof brown paper bags, air dried and placed in rice bags for hand delivery to Actlabs facility in Kamloops B.C. Soil samples were dried at low temperatures

and sieved to -80 mesh. A 1g sub sample was digested in 95°C aqua regia and then analysed by procedure Ultratrace 1 ICP-MS techniques. Quality control samples were included as lab standards for the soil samples in approximately every 40 samples, blanks approximately every 60 samples and duplicates in approximately every 15 samples (Murton, 2012).

## **12.0 DATA VERIFICATION**

Roughrider Exploration Ltd., has not conducted drilling programs, rock or soil sampling programs, and as such has not undertaken any process of data verification. The author was directly involved with the 2014, drill program and was responsible for collection and interpretation of all QA-QC data associated with the 2014 drill program.

The author has personally logged all available historic 1980 Esso Mineral's drill core. Not all of the 1980's Esso Minerals drill core could be relogged due to loss of core over the 35 year post-drilling period. All Colorado Resources 2013 drill core was also relogged by Oliver, in 2014, and a geological map of portions of claim group was also completed by the author at that time. All drillholes completed during the 2014 Colorado Resources exploration program were logged by Oliver. The QA-QC program undertaken during the 2014 drill program was also under the direction of Oliver.

. The 2013 and 2014 QA-QC programs utilized field duplicates, blank samples and certified reference standards. The results of the 2013 and 2014 QA-QC programs strongly indicate that, with very minor exception, the assay results of those programs fall within generally accepted statistical limits for accuracy, precision and reliability. As there has been no changes in that data base since the 2014 program, no additional field reviews, or QA-QC protocol, were undertaken by Oliver.

The author has independently undertaken a review to ensure that no material change has occurred since the time of his last inspection. The process of that review and the result of that review, is documented in section 2.0 of the technical report.

It is the opinion of the writer that the data used in this report is of high reliability and is more than adequate for the purposes in which it is used in this document.

## **13.0 MINERAL PROCESSING AND TESTING**

Roughrider Exploration Limited has not completed any work on the Property to date. This NI 43-101 report is required by the TSX Venture as it is a fundamental transaction for the Company.

## **14.0 MINERAL RESOURCES ESTIMATES**

No Mineral Resource estimate has been completed on the Property at this stage.

## **23.0 ADJACENT PROPERTIES**

Two main projects that are adjacent to the Eldorado Property include the Red Chris Mine which is owned by Newcrest Mining Limited and Imperial Metals and the North ROK property which is owned by Colorado Resources Ltd. See Figure 15.1 for adjacent property location relative to the Eldorado Property.

## **Red Chris Mine**

The Red Chris Mine is located 10 km south of the Eldorado Property. The Red Chris porphyry copper-gold deposit is distributed along the central axis of the pervasively altered and fractured intrusion the Red Stock which is the predominate host of the mineralization. Mineralization and associated alteration are intense adjacent to the ancestral northeast striking en-echelon fault system, the Border Fault. This fault may assist in the localization of the stock and may serve as a focus of hydrothermal fluids and subsequent alteration and mineralization. Pyrite, chalcopyrite, bornite, with minor chalcocite are the principle sulphide minerals of the shallower portions of the Red Chris deposit. Minor covellite occurs as inclusions in pyrite, and molybdenite, sphalerite, and galena occur locally in trace amounts. Gold, second in economic importance to copper, occurs spatially and genetically associated with copper mineralization (Gillstrom et al, 2015).

The 2012 open pit/block cave constrained mineral resource of measured and indicated is 1,034.7 million tonnes of 0.35% Cu, 0.35 g/t Au and 1.14 g/t Ag. (Imperial Metals 2012 Technical Report). The qualified person has been unable to verify the information in the Red Chris resource and that information is not necessarily indicative of the mineralization on the property that is the subject of the technical report. In 2018 the year end metal production for the mine was 60,349,000 lbs Cu and 41,935,000 oz Au (Imperial Metals Website).

Imperial Metals acquired the Red Chris project in 2007 and began mine construction in the second quarter of 2012. Imperial Metals completed mine construction and the hydro transmission line from Bob Quinn Lake, B.C. in the last quarter of 2014. Imperial metals began mining operation at Red Chris in the first quarter of 2015. On March 10, 2019, Imperial announced an agreement to sell a 70% interest in Red Chris to Newcrest Mining Limited. Imperial and Newcrest have formed a joint venture for the operation of Red Chris. A plan to mine the deep resource beneath the current open pits will be developed to exploit the high grades in the deep East zone. (Imperial Metals Website).

## **North ROK Property**

The North ROK Property is located 20 kilometers to the northwest of the Eldorado Property. The North ROK porphyry copper-gold deposit is located within the extensive Mabon mineralized alteration zone or Mabon Zone. The Mabon Zone is an upper Triassic to lowest Jurassic alkalic porphyry copper-gold system. Mineralization is predominately hosted in an elongate 3000m by 1000m fine-grained, quartz deficient plagioclase phyric monzodiorite intrusion, the Mabon Stock, dated by UPb methods at  $215.8 \pm 3$  Ma and by ReOs methods at  $207.2 \pm 0.9$  Ma (Oliver, 2018a; van Straaten, 2017). The Mabon Stock and enclosing volcanic rocks support well defined zoned hydrothermal and contact metamorphic alteration assemblages. The alteration zones, starting from high temperature to low temperature, are potassic alteration, to quartz-pyrite (phyllic), to epidote, and to chlorite. A well-developed early biotite hornfels alteration assemblage is documented in the volcanic rock along the northeastern flank of the Mabon Stock. Copper and gold mineralization, as disseminated and vein-hosted chalcopyrite, has been identified by diamond drilling over a strike length of 900m at the Mabon Zone (Giroux and Rebagliati, 2014). On January 27, 2014 Colorado announced the results of an inferred mineral resource of 142.3 million tonnes of 0.22% Cu, and 0.26 g/t Au (0.20% CuEQ cut off) (Giroux and Rebagliati, 2014). The qualified person has been unable to verify the information in the Red Chris resource and that information is not necessarily indicative of the mineralization on the property that is the subject of the technical report. Colorado

Resources would complete two small diamond drilling programs at the Mabon Stock in 2014 and then again in 2017. The data from the 2014 and 2017 diamond drill programs has not yet been brought into the North ROK resource model. In the spring of 2017, Colorado Resources announced it had entered in to a purchase agreement with Firesteel Resources Ltd to acquire a 100% interest in the ROK-COYOTE copper gold property, significantly expanding the prospective trend of the Mabon Stock (Colorado Resources, 2017).

The Report on the *2017 Geochemical Sampling, Prospecting, Geological Mapping and Diamond Drilling on the North ROK Copper-Gold Project* concluded that:

*“Unlike the deposits and occurrences reported by Barr et al. (1976) and Lang et al. (1995) the lithogeochemical data presented earlier in this report strongly suggests that the North ROK occurrence lies within calc-alkaline fields and may have more in common with other transitional calc-alkaline occurrences in this district including Red Chris (Rees et al, 2015). On the basis of these and other characteristics the North ROK deposit is considered to represent a calc-alkaline to transitional alkaline porphyry deposit, with the following features:*

- *Lack of free quartz (quartz-deficient);*
- *Copper-gold metal signature (no significant molybdenum);*
- *Development of strong magnetite-rich potassic and potentially calc-potassic alteration assemblages associated with copper-gold mineralization.*

*Due to the relatively early stage of exploration at North ROK, the geological model and exploration concepts will continue to be developed as future programs progress. The current understanding of the Mabon Zone at North ROK indicates that the highest copper and gold grades are associated with intense potassium feldspar associated with locally significant magnetite, quartz, and lesser amounts of actinolite, chlorite, epidote, biotite, garnet, and diopside. Sheeted grey quartz veinlets are the hallmark of highest grade mineralized zones. Although some copper gold mineralization may be hosted within the enclosing volcanic rocks the majority, estimated at greater than 90% of the mineralized rock volume are hosted within a fine grained, quartz deficient, plagioclase phyric monzodiorites. The distribution of copper and gold grades is also linked to specific intrusive phases with strongly hornblende phyric phases, as well as coarser grained plagioclase phyric phases, typically having lower copper-gold contents than the fine grained dominantly plagioclase phyric monzodiorites which are closely associated with higher grade mineralized zones”. (Oliver, 2018a)*



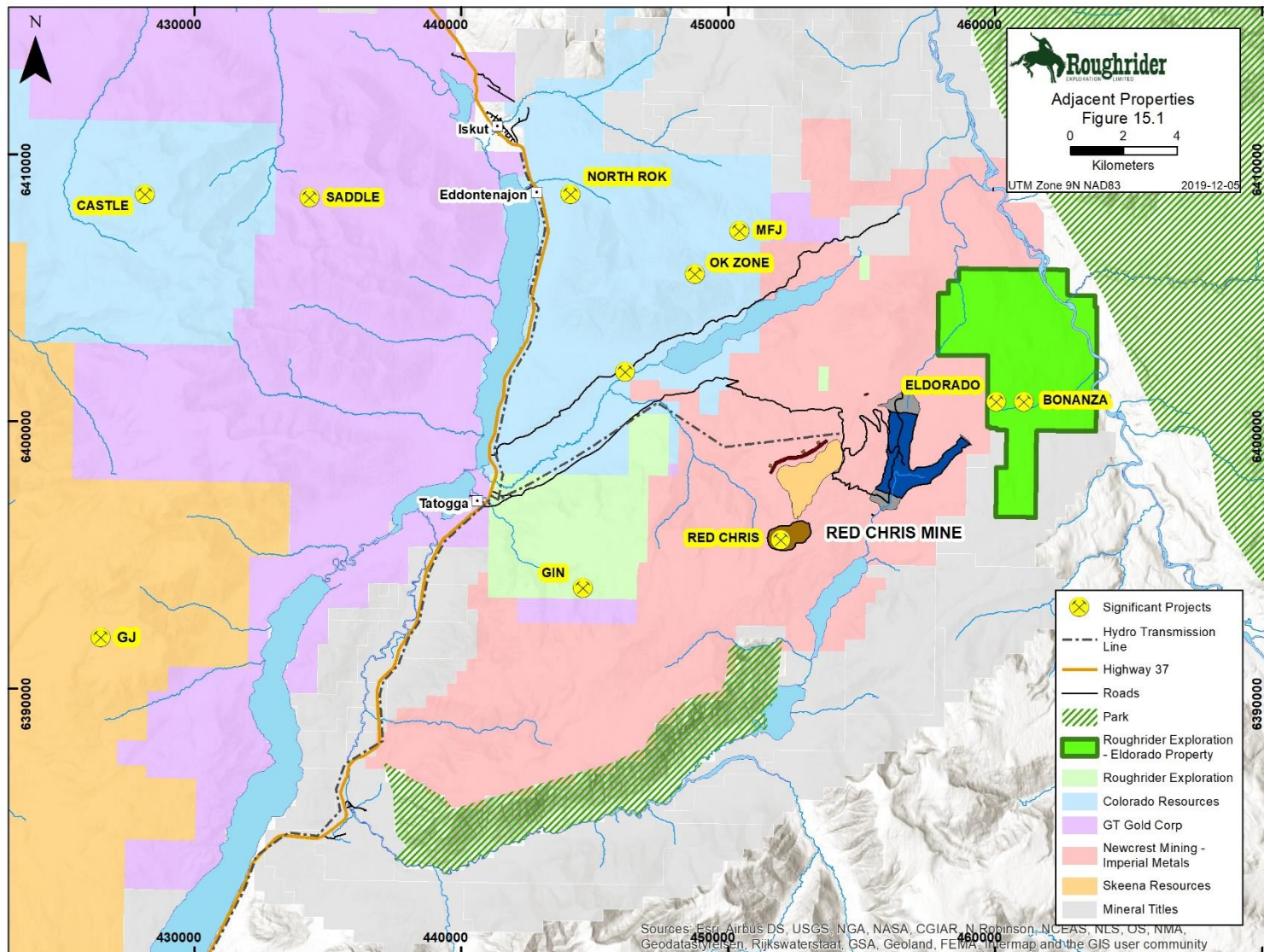


Figure 15.1: Adjacent Properties

## 24.0 OTHER RELEVANT DATA AND INFORMATION

To the knowledge of the author, all relevant information has been included within this report. To the best of the authors knowledge no relevant information has been withheld or omitted. The technical information in this report is sufficient to make the report understandable and not misleading.

## 25.0 INTERPRETATIONS AND CONCLUSIONS

The historical data developed from exploration programs conducted over a nearly 40 year period from approximately from 1976 to 2014 and previously summarized in this report suggest the following:

- Extensive drift cover covers much of the Eldorado claims. Glacial drift commonly overlies the principle structural contact between the middle to lower Jurassic Bowser sediments and Triassic mafic volcanic and sedimentary sequences. In many cases till cover exceeds 50 m in thickness. Although soil geochemistry has been effective in selected portions of the Eldorado claims it is likely that the thick till cover may mask the geochemical signatures of buried or blind porphyry copper-gold occurrences. Even in this area of extensive drift, cover historic soil samples returned anomalous gold and copper over the Bonanza Minfile occurrence over an area approximately 750 m by 600 m wide. Anomalous gold and copper also appear in the north eastern portion of the property in an area that has not been tested by geophysical or drilling programs.
- The Triassic volcanic section is cut by a series of generally silica deficient monzonite to monzodiorite intrusions. Historical drilling over a 1,000 m by 500 m area on the Eldorado Property has returned encouraging results such as EL13-004 from 52.4 to 123.7 m returned 0.14% Cu and 0.33 g/t Au (Dawson and Norris J.2013), as well as EL14-008 which intersected 196.5 m of 0.06 % Cu and 0.19 g/t Au and 0.005% Mo over the entire length of the drillhole, from bedrock onwards (Dawson, G. 2015). For drillholes EL 13-004 and EL 14 – 008, width reported intervals are drill indicated lengths as true thickness are unknown. Mineralized intrusions at Eldorado may be affected by broad zones of potassic alteration along with lesser quartz-sericite-pyrite mineralization. Volcanic rocks are more characteristically altered by chlorite-epidote-pyrite.
- Mineralization at Eldorado is in the form of very fine grained disseminated sulphides and with sulphides associated with stockwork veins and breccia zones.
- The alteration patterns and the gold-copper (approximately 2:1 to 3:1) ratios documented in the Colorado Resources 2013 and 2014 programs suggest mineralization may be developing distal to the central core of the porphyry system. The location of more proximal porphyry copper-gold mineralization on the Eldorado claims has not yet been defined.
- Major fault systems including the northeastern extension of the Boundary Fault at the Red Chris deposit and a significant 120 degree striking fault system in the central claim area may be closely related to the development of mineralized zones. These faults will also assist in the formation of large scale lithotectonic blocks which may have significantly different geochemical and geophysical signatures. Early mineralized faults and mineralized zones may be offset by late or post mineral faults. Structural complexities are likely to be significant.

- The currently known mineralized zones at Eldorado are developing on the margins of a resistivity and chargeability high and on the shoulders to magnetic highs. Several of these permissive target areas have not been drill tested. Historic IP surveys have outlined a 800 by 2,000 m chargeability anomaly over the Eldorado and Bonanza Minfile occurrences as well as a lesser chargeability anomaly approximately 1,000 m northeast of the Bonanza Minfile occurrence that is approximately 1,000 by 1,000 m in size. An east-west striking magnetic anomaly underlies the Eldorado Minfile occurrence and several other magnetic highs with more northwest strike lines are documented north of the Eldorado occurrence. Much of this area has been untested by drilling
- The geochemical, geophysical and geological data suggest that the Eldorado claims may be broken into three dominant lithotectonic elements which are likely fault bounded. These include the SD (Sediment Domain), EVD (Eastern Volcanic Domain) and EID (Eldorado Intrusive Domain). Of these major domains, the EID domain may have highest potential to host a copper-gold mineralized intrusion and the CS domain the lowest.
- QA-QC information for the much older Esso Minerals 1980 drill program is not available and the core for this program is no longer suitable for additional QA-QC sampling. QA-QC results from historic drill programs conducted by Colorado Resources in 2013 and 2014 meet or exceed industry norms for this data set. The results of the 1980 drill program are similar in magnitude to the results obtained from the 2013 and 2104 program which may suggest the validity of the 1980 data.
- The project contains no foreseeable risks or uncertainties which are in any way above the norm for early stage exploration programs. There are no identifiable environmental, cultural or ownership issues and all historic exploration programs have been successfully executed. The historic data appears to be of high quality and much of it has been personally vetted by the author or has been directly collected, compiled and interpreted by the writer.

Although encouraging, the historic drill results obtained at Eldorado are, at current metal prices, sub-economic. The historic data does however strongly suggest that the Eldorado claims have the potential to support a significant gold-copper mineralizing system. Detailed reconnaissance geochemical, geophysical, geological and diamond drill results provide valuable vectors in the targeting of additional mineralized zones external to areas of historic drill testing. Based on the results and interpretation all historic data, it may be concluded that additional geophysical, geochemical, geological and diamond drilling programs are warranted.

## **26.0 RECOMMENDATIONS**

The review of all historical work on the Eldorado claims indicates that additional exploration on these claims for porphyry related gold-copper mineralization is warranted. To that end, two phases of exploration should be implemented on the Eldorado Property beginning in the 2020 field season. The phase two program is contingent on achieving successful results in phase one program. Phase one's recommended program includes conducting a detailed airborne magnetic survey over portions of the Eldorado Property at 100 m north-south line spacing's (approximately 400 line km). The detailed airborne magnetic survey will permit significantly improved resolution of structural and lithologic trends, will assist in the interpretation of existing geophysical, geochemical and geological data and will provide a framework for subsequent technical surveys.

The phase two recommended program consists of 50 line km of deep sensing IP. The IP surveys will focus on providing coverage in areas of no historical IP data as well as providing deeper penetration in selected areas of existing, but shallow depth IP coverage. The program will also include an estimated 5,000 m's of NQ diamond drilling which would be completed in approximately 10-20 drill holes (depending on depth of holes as noted in historical programs glacial till exists at varied levels throughout the property). The drillholes would be designed to target:

- The on strike and down dip continuations of mineralized zones encountered in the 1980, 2013 and 2014 diamond drilling programs. In addition, drillholes will target areas of anomalous geochemistry which have not previously been tested by historic drill programs.
- High priority targets are those areas whose geophysical responses are characterized by IP chargeability highs, resistivity highs and often associated with, or flanked by, magnetic highs.

Additional geological surveys will also be undertaken as well expanded environmental studies and First Nations consultations.

**Table 11: Recommended Budget**

<b>Phase 1</b>		
Airborne Survey (all in)	400 line km	\$300,000.00
	<b>Estimated cost for Phase 1</b>	<b><u>\$300,000.00</u></b>
<b>Phase 2</b>		
Deep Sensing IP Survey	50 line	\$ 300,000
Geology	Mapping – field supervision	\$ 50,000
NQ Diamond Drilling	5,000 m	\$2,000,000.00
( all in \$400/m)		
First Nations Consultation, Environmental Studies, Permitting and Reclamation		\$50,000.00
	<b>Estimated cost for Phase 2</b>	<b><u>\$2,400,000.00</u></b>



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## **CERTIFICATE OF QUALIFIED PERSON**

I, James (Jim) Oliver, Ph.D., P.Geo., am employed as the President of Oliver Geoscience International Ltd., with an address at 4377 Karindale Road, Kamloops, B.C. Canada. V2B 8N1.

This certificate applies to the technical report titled “NI 43-101 Technical Report On The Eldorado Property” dated March 4, 2020 (the “technical report”, prepared for Roughrider Exploration Limited.

I am registered in good standing as a Professional Geoscientist (P.Geo., license # 20153) with the Engineers and Geoscientists of British Columbia.

I hold a Hons., BA (Psychology) from Simon Fraser University granted in 1976, a Hons. B.Sc., in Geophysics and Geology granted by the University of British Columbia in 1982, a M.Sc., in Mineral Exploration granted by Queens University in 1984 and a Ph.D., in Geology granted by Queens University in 1996.

I have worked as a geologist, in the field of mineral exploration, for a total of 37 years since graduation from University. I have conducted mineral exploration work in approximately 35 countries and have examined or worked on approximately 400 mineral occurrences.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101, *Standards of Disclosure for Mineral Projects (NI 43-101)*.

I have conducted field programs on the Eldorado property during the 2013 and 2014 field seasons, for a combined period of activity of 4 months. I have been involved with the Eldorado property since November of 2019, during preparation of the *NI 43-101 Technical Report On The Eldorado Property*.

I have not conducted a site review of the property since 2014. No material changes in the technical data base has occurred since the time of the 2014 inspection.

I am responsible for all sections in this technical report, Sections 1.0 – 14.0 and 23.0 – 27.0, inclusive.

I am independent of Roughrider Exploration Ltd., as independence is described by Section 1.5 of NI 43-101. I am also independent of the property and the property vendor.

I have read NI 43-101 and all sections of this report have been prepared in compliance with that Instrument.

As of the effective date of the technical report, to the best of my knowledge, information and belief, all sections of the technical report contain all scientific and technical information that is required to be disclosed to make those sections accurate, objective and not misleading.

Signature Date: March 20, 2020.

Effective Date: March 4, 2020.

A handwritten signature in cursive script, appearing to read "Jim Oliver".

James (Jim) Oliver, Ph.D., P.Geo.