BC Geological Survey Assessment Report 34875

ASSESSMENT REPORT

REGIONAL AND PROPERTY SCALE

STRUCTURAL ANALYSIS

OF THE

YENNEK PROPERTY

CENTRAL BRITISH COLUMBIA,

CANADA

NTS 093F/10

UTM: 368826 E, 6012040 N, NAD 83, Zone 10

53°35'30" N LATITUDE, 124°52'30" W LONGITUDE

OMINECA MINING DIVISION

by

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August 8, 2014

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SUMMARY

The Yennek property (or the "Property") holds potential for two distinct target types: 1. Low sulphidation epithermal to transitional or sub-volcanic precious metal deposits, including high grade deposits associated with structures and bulk tonnage zones associated with stockworks, breccias and permeable horizons, often associated with calderas and extensional structural environments; and 2. Porphyry Cu +/-Mo +/- Au deposits, Porphyry Mo+/-Cu+/-Au deposits, of which Endako and Chu are the closest examples.

This report describes a structural analysis of the Yennek property and its regional setting conducted by and on behalf of the property's owners, John A. Chapman and Gerald G. Carlson. The study was conducted during the period May 1th to 25^h, 2014.

The Yennek property is located 500 km north of Vancouver and 150 km west-southwest of Prince George, British Columbia, in the Omineca Mining Division

The Property consists of 8 BCMTO mineral tenures, as listed in Table 1 and shown in Figure 2, covering 3,646 ha, owned 50% by John A. Chapman (Free Miner Certificate no. 104633) and 50% by Gerald G. Carlson (Free Miner Certificate no. 104271), held by Carlson on behalf of KGE Management Ltd.

The Yennek property is located in the Interior Plateau of British Columbia, within the Intermontane Belt, late Paleozoic to late Tertiary sedimentary and volcanic rocks belonging to the Stikine, Cache Creek and Quesnel Terranes. The Property lies within eastern edge of the Stikine Terrane, near its boundary with the Cache Creek Terrane and immediately south of the Skeena Arch. Strata of the Stikine Terrane in central British Columbia include late Paleozoic to Tertiary island and continental margin arc assemblages and epicontinental sedimentary sequences.

The Property straddles the eastern margin of the Cheslatta Caldera Complex, a 60 km diameter circular area underlain by Early Tertiary Ootsa Lake Group felsic volcanics and mafic volcanics of the Endako Formation. The caldera complex cuts basement rocks of the Stuhini Group, Hazelton Group and Bowser Lake Group.

Epithermal style gold-silver mineralization has been discovered in bedrock in a number of locations in the Stubb-Lalinear area in the southeast portion of the Property. Similar mineralization has been discovered in angular float within two separate boulder trains in the western portion of the Property.

The regional study, completed at a scale of 1:1,500,000, showed that the Yennek property is located at the intersection of a number of northeasterly and northwesterly trending linears. One of the northeasterly trending linears that cuts the Property correlates with the Natalkuz Fault, while the northwest trending structures appear to tie together a number of known deposits, including Huckleberry, Capoose, Blackwater Davidson, Gibraltar and Yennek.

Property scale (1:100,000) linears were determined from MapPlace topography and geophysics plus a DIGHEM airborne geophysical survey that covered the Property and extended to the northeast over the Trout occurrence. From this analysis, the Property is shown to lie along what appears to be an important northeast trending linear, likely an extension of the Natalkuz Fault. This linear is intersected by a number of north to northwest trending cross structures.

This linear analysis, when combined with the results of previous exploration programs on the Property, has led to the definition of three priority target areas: The Stubb showing area, the Fish Lake boulder train zone and the Gold Fish boulder train zone.

It is recommended that the next exploration step should involve grid drilling over the three target areas using a RAB or RVC drill capable of penetrating the overburden and extending 10-15 m into bedrock.

INTRODUCTION

The Yennek property (or the "Property") holds potential for two distinct target types (Lane and Schroeter, 1997): 1. Low sulphidation epithermal to transitional or sub-volcanic precious metal deposits, including high grade deposits associated with structures and bulk tonnage zones associated with stockworks, breccias and permeable horizons, often associated with calderas and extensional structural environments; and 2. Porphyry Mo+/-Cu+/-Au deposits, of which Endako and Chu are the closest examples.

This report describes a structural analysis of the Yennek property and its regional setting conducted by and on behalf of the property's owners, John A. Chapman and Gerald G. Carlson. The study was conducted during the period May 1th to 25th, 2014, at a cost of \$5,400.



Figure 1 - Yennek Property Location and Infrastructure Map (from BC MapPlace).

PROPERTY DESCRIPTION AND LOCATION

The Yennek property is located 500 km north of Vancouver and 150 km west-southwest of Prince George, British Columbia, in the Omineca Mining Division, on NTS sheet 93F/10 and centred at UTM 1,074,000E and 955,000N (NAD 83, Zone 10N), as shown on Figure 1.

MINERAL TENURES AND OWNERSHIP

The Property consists of 8 BCMTO mineral tenures, as listed in Table 1 and shown in Figure 2, covering 3,646 ha, owned 50% by John A. Chapman (Free Miner Certificate no. 104633) and 50% by Gerald G. Carlson (Free Miner Certificate no. 104271), held by Carlson on behalf of KGE Management Ltd.

Tenure Number	<u>Type</u>	Claim Name	Good Until	<u>Area</u> (ha)
<u>1019865</u>	Mineral	YENNEK ONE	20140528	882.6492
<u>1019896</u>	Mineral	YENNEK TWO	20140529	556.7514
<u>1019928</u>	Mineral	YENNEK THREE	20140530	287.7682
<u>1019929</u>	Mineral	YENNEK	20140530	211.1901
<u>1020041</u>	Mineral	YENNEK FOUR	20140603	422.3153
<u>1020175</u>	Mineral	YENNEK FIVE	20140609	153.6327
1021899	Mineral	YENNEK SIX	20140827	479.85
<u>1021900</u>	Mineral	YENNEK SEVEN	20140827	652.2452

Table I. Yennek Property Tenures.

Total Area: 3646.4021 ha

ACCESSIBILITY, CLIMATE, LOCAL INFRASTRUCTURE AND PHYSIOGRAPHY

RESOURCES,

ACCESS

The center of the Property is situated approximately 90 kilometres by road from Highway 16 at Vanderhoof, on the north side of Knewstubb Lake of the Nechako Reservoir. Access to the property is obtained by travelling southwest from Vanderhoof along the Kenney Dam Forest Service Road to the Nechako Reservoir Road, which trends easterly through the southern portion of the claim group. A series of secondary roads provides access to the north and south portions of the property.

CLIMATE AND VEGETATION

The climate is typical of central British Columbia with below freezing temperatures (0° C to -40° C) from November to April and periods of hot weather in the summer ranging from 5° to over 30° C. Precipitation averages 430 mm a year, with a substantial portion in the form of snow averaging 90 cm per year. In typical years, field work can usually start in April and continue through October.



Figure 2 - Yennek Property tenure map (from BC MapPlace).

Vegetation is dominated by evergreens (pine and spruce) with poplar and cottonwood in lowlying areas. The region has been severely damaged by infestations of the Rocky Mountain Pine beetle. Vast areas have been affected by this insect which has killed large stands of commercial timber. Because of these infestations forest fires may pose a threat to exploration activities during the summer months.

LOCAL RESOURCES

The main economic activity in the area is logging. There are a few ranches along the lower Nechako River and some farming northwest of Cheslatta Lake in the Takysie-Grassy Plains area. Tourism is a minor activity and consists mostly of fishing and, in the fall, hunting.

INFRASTRUCTURE

Infrastructure in the area is primarily a well maintained network of logging roads that transect the area of the claims. The nearest power lines, gas pipelines and rail heads are located at Vanderhoof along the Highway 16 corridor.

Both Vanderhoof and Prince George are main supply centres for work on the property. A large variety of geological contractors as well as all types of necessary heavy equipment, camp supplies, work personnel and expeditors is available for hire in both communities. Daily jet services link Prince George with Vancouver, B.C.

Physiography

The Nechako Basin is part of the Interior Plateau of the Canadian Cordillera, comprising the Nechako Plateau north of the Blackwater River, and the Fraser Plateau south of it. The Property lies within the Nechako plateau which maintains a fairly constant overall elevation, but can be dissected at the local scale in a distinctive basin and range (horst and graben) structural style.

Topography is gentle, with isolated low-lying hills dissected by the northeasterly drainages of Cutoff and Swanson Creeks and numerous subsidiary creeks. Several small lakes are present and swampy ground is common. Elevations range from approximately 850 metres along the shoreline of Knewstubb Lake to a high of 1,070 metres at the highest point on the Property.

GEOLOGICAL SETTING AND MINERALIZATION

REGIONAL GEOLOGY

The Property is located in the Interior Plateau of British Columbia, within the Intermontane Belt, late Paleozoic to late Tertiary sedimentary and volcanic rocks belonging to the Stikine, Cache Creek and Quesnel Terranes. The Yalakom and Fraser Fault systems bound the Interior Plateau to the southwest and northeast. The Property lies within eastern edge of the Stikine Terrane, near its boundary with the Cache Creek Terrane and immediately south of the Skeena Arch (Figure 4). Strata of the Stikine Terrane in central British Columbia include late Paleozoic to Tertiary island and continental margin arc assemblages and epicontinental sedimentary sequences.

The structural elements of the Nechako Plateau area are part of a regional extensional system that extends 1000 kilometres from northern Washington State, into the Babine district of north-central British Columbia. This belt crosses all major terrane boundaries and underlies the Quesnel, Kootenay and Omineca Terranes in the south and the Stikine Terrane in the north, crossing the oceanic Cache Creek Group. The localization of epithermal mineralization such as at Blackwater Davidson and Capoose may be related to such structures.

The oldest stratigraphic assemblages of the Nechako Plateau in central British Columbia consist of Upper Triassic to Middle Jurassic island arc volcanics of the basaltic Stuhini Group and calcalkaline Hazelton Group (Diakow et al. 1997). These rocks were intruded by the Topley plutonic rocks and experienced at least two distinct cycles of uplift, erosion and related sediment deposition. These extensive sedimentary deposits include Upper Jurassic black mudstone, chert pebble conglomerate, and sandstone of the Bowser Lake Group (Ashman Formation) and the overlying Lower Cretaceous Skeena Group.

Rocks of the Hazelton and Bowser Lake groups are overlain by Upper Cretaceous and Paleocene continental volcanic arc intermediate volcanic rocks and related sedimentary rocks of the Kasalka Group (Diakow et al. 1997). Widespread Eocene volcanic arc related extensional felsic volcanic rocks and minor sedimentary rocks of the Ootsa Lake Group overlie the older rocks and are themselves overlain on higher ridges by basalt and andesite of the Eocene Endako Group (Diakow et al. 1997).

Younger volcanic rocks and related sub-volcanic intrusives are important from an economic geology perspective and include the Upper Cretaceous andesitic Kasalka Group, the felsic Ootsa Lake Group (both deposited in caldera environments and associated with granodiorite

stocks and plugs of Quanchus and Bulkley Intrusions) and basaltic Eocene to Oligocene Endako Group. The Kasalka Group has been interpreted as the host to New Gold's Blackwater Davidson deposit, 40 km to the south, as well as the nearby Capoose deposit.

PROPERTY GEOLOGY

The Yennek property straddles the eastern margin of the Cheslatta Caldera Complex, a 60 km diameter circular area underlain by Early Tertiary Ootsa Lake Group felsic volcanics and mafic volcanics of the Endako Formation. The caldera complex cuts basement rocks of the Stuhini Group, Hazelton Group and Bowser Lake Group. The Natalkuz Fault, a regional northeast trending extensional structure which has been mapped to the southwest of the property (Green and Diakow, 1993), may extend through the Property as discussed below. This structure juxtaposes pre-Tertiary strata against a dominantly Eocene and younger volcanic pile. Property and regional geology is presented in Figure 3 while the local stratigraphic column is shown below in Table II.

Table II. Geologic Map Units for the Yennek Project Area

Miocene

MiC Chilcotin Group – basalt

Eocene

EE Nechako Plateau Group, Endako Formation – andesitic volcanics

Late Cretaceous to Pliocene

LK Unnamed intrusives, undivided

Middle to Late Jurassic

JBA Bowser Lake Group, Ashman Formation – conglomerate, course clastics

Middle Jurassic

JHN Hazelton Group, Naglico Formation – undivided volcanics

Early Triassic to Late Jurassic

TrJB Brooks Diorite Complex

The following discussion is taken from Payne (1996), who mapped the Property and the area to the northeast, including the Trout showing, for Phelps Dodge. The Property is underlain by volcanic, pyroclastic and sedimentary assemblages of upper Jurassic to Eocene in age. The oldest sequence is of middle Jurassic Hazelton Group felsic to intermediate volcanic and sedimentary rocks. The most widespread assemblage which underlies the central part of the property includes andesite and associated pyroclastic rocks of upper Cretaceous Kasalka Group. Eocene Ootsa Lake Group felsic volcanic rocks and associated pyroclastic sequences are exposed in the southwestern part of the property. Endako Group basalt minor andesite and associated sedimentary rocks of Eocene to Oligocene age underlie most of the western and northwestern parts of the claims.

Hazelton Group rocks are dominated by feldspar phyric and locally quartz phyric, maroon to mottled cream white to green rhyolite and intercalated with minor dacite flows. Rhyolite is massive to flow banded with local felsite dykes intruding the sequence. Thick sequences of

Yennek Property Assessment Report

lapilli tuff and lesser ash and block tuffaceous units are intercalated with the flow rocks. Angular to subrounded fragments within the lapilli tuff range in size from ash to over two metres. Intercalated sediments include black silty argillite, greywacke, sandstone and minor conglomerate.



Figure 3 - Yennek property area geology and showings (from BCGS MapPlace). Faults in black, see text (Table II) for lithology legend.

The Kasalka Group volcanic assemblage underlies most of the central part of the property and extends from immediately north of the Trout showing south to Stubb Bay on Knewstubb Lake. This sequence of rocks is dominated by lapilli tuff, andesite and flow breccias. Poorly sorted matrix supported cobble to pebble conglomerate, sandstone, pebbly sandstone and siltstone occur in the southern part of the property. The age relationship of the volcanodastic rocks in the Stubb Bay area to the volcanic rocks to the east is uncertain. A series of grey to mottled pink fine to medium grained feldspar porphyry rhyolite sills, dykes and small plugs intrude Kasalka Group along the lineament extending from Stubb Bay through the Trout showing to the north.

A small sill of monzonite intrudes the volcanic rocks in the Lalinear area. The monzonite is pink to light green with feldspar and abundant lath shaped hornblende phenocrysts.

The southwestern part of the Property is underlain by Eocene Ootsa Lake group rhyolite, lapilli tuff and associated volcaniclastic sediments. Rhyolite outcrops along the 500 Forest Service Road and along the north shore of Knewstubb Lake. Outcrops along the 500 Forest Service Road are argillically altered cream to yellow to maroon coloured quartz phyric rhyolite, locally flow banded, minor flow breccia and lapilli tuff.

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MINERALIZATION

The Stubb (see Figure 3) gold anomaly extends for a length of some 3 km from the shore of Knewstubb Lake to the northeast and has a width of several hundred metres. Three showings have been found in place – the Stubb South, Stubb North and Osprey showings. Stubb South showing is 1000 m by 300 m is characterized by anomalous gold values associated with quartz veins, stringers, stockworks and chalcedonic breccia fillings hosted in propylitically altered feldspar porphyry, granodiorite and sediments. Values up to 4.3 gpt Au and a 2 m trench sample assayed 2.87 gpt Au have been obtained from bedrock (Payne, 1996). Intensely silica-carbonate flooded and brecciated volcanodastic rocks from the Stubb Bay area contain highly anomalous gold values to 1,666ppb Au and 1,198ppb Ag.

At the Lalinear showing, Cogema sampled two anomalous gold values (820 ppb Au and 580 ppb Au) along a northeast-southwest oriented structural trend between the Trout and Stubb Bay showings. The host is feldspar porphyry that s intermittently day altered, brecciated and carbonate and/or silica flooded. Pyrite and chalcopyrite are found locally with quartz veinlets or silica banding and occasional blue quartz. Payne (1996) reports that gold values from these samples range from 76 ppb Au to 295 ppb Au, silver from trace to 2,360 ppb Ag and copper from trace to 5,098 ppm Cu.

Two areas of float mineralization, Fish Lake and Gold Fish, have been identified on the Property. At Fish Lake, a 3 metre by one metre boulder of black matrix rhyolite breccia was found, along with abundant angular boulders of argillically altered, silica flooded quartz phyric rhyolite with trace to 1 percent disseminated pyrite and trace arsenopyrite, plus abundant boulders of massive grey-blue banded quartz and chalcedony. Gold values range from 57ppb Au to 287ppb Au, silver values from 1,180ppb Ag to 2.145ppb Ag and 9.451.6ppm arsenic are reported by Payne (1996).

An 1,800 m long soil anomaly has been defined just south of Fish Lake and is coincident with an interpreted fault extending through the grid area. The highest gold value in this soil anomaly is 232ppb Au. The anomaly is in part coincident with anomalous arsenic and mercury, both of which show a wider and more continuous anomaly associated with the fault zone.

At Gold Fish, red scoria and volcanic bombs in Endako basalt indicate a near vent environment during the Eocene epoch. Abundant one metre by one metre boulders of massive banded quartz-chalcedony, silica flooded argillically altered sandstone and conglomerate with chalcedony veining throughout this area.

EXPLORATION HISTORY

The area of the Yennek property was the target of regional porphyry copper exploration programs dating back to the 60's. In the 1980's, both gold and base metals were targeted by companies such as Rio Tinto, Kennecott, Cogema, Granges, Asarco and Phelps Dodge (Caldwell and Mitchell, 2010; Fox, 1995 & 1996; Lindner, 2008; Payne, 1996; Pritchard, 1993; Schimann, 1994) aided by regional geophysical surveys by the Geological Survey of Canada and regional geochemical surveys by the BC Geological Survey.

Mineralization in what is now known as the Trout Showing, 7 km northeast of the Property, was first discovered during a regional reconnaissance program conducted by Kerr Addison Mines Ltd. in 1984. Work conducted during the 1980's by Kerr Addison and later by Welcome North Mines and Goldrite Mining Corp. included soil sampling, magnetometer and induced polarization surveys, trenching, 20 diamond drill holes and 13 reverse circulation holes, all on the Trout prospect. Drill intersections returned up to 3.8 gpt gold over 20 metres in hole RDH 87-3. However, subsequent attempts to extend the mineralized zone were a disappointment and the project was abandoned.

Cogema Resources staked the Cut claims in 1993, including the Trout prospect area and a sizeable block of unexplored ground along strike to the southwest including what is now the Property. At Yennek and on the adjacent Trout property, in 1993 and 1994, Cogema Resources carried out prospecting and regional till geochemistry, a 377 line-km DIGHEM airborne magnetics and EM survey (Pritchard, 1993), followed by core drilling of 1221 m in eleven holes on the Trout prospect. Their work resulted in the discovery of several new prospects, including the Stubb gold prospect in the south-central part of the Property (see Figure 3).

From 1995 to 1997, Phelps Dodge Corporation of Canada acquired the property and collected 1,025 soil samples, completed rock geochemical sampling and 10.2 km of IP surveying, followed by 615.4 m of core drilling in four holes, also on the Trout prospect (Payne, 1996).

In 2006, Nechako Minerals Corp. acquired the property and completed a compilation and analysis of available regional magnetic, gravity and geochemical data. They then carried out a 63 km IP survey over the central part of the claim group (Lindner, 2006; Caldwell & Mitchell, 2011).

During 2012 Venerable Ventures completed 78 line kilometres of line cutting, 78 line km of 3D IP resistivity and chargeability surveying, opened 8 backhoe trenches, re-sampled historical drill core and completed 2019 metres of core drilling in 10 holes (Cuttle, 2012).

In August, 2013, John Chapman and Trevor Davidge completed a one day reconnaissance of the Property.

STRUCTURAL ANALYSIS

It has long been recognised that the location of major ore deposits is often controlled by structures (see for example - Billingsley, 1941; Ernst, 2013; Kutina, 1987; Lowell, 1974). On a regional scale, major, crustal penetrating structures, or the intersection of such structures, may control the ascent of magmas and related ore-forming fluids. Near surface, smaller structures such as faults, calderas or vents can provide both channelways and depositional sites for hydrothermal fluids.

In this study, topographic features and airborne geophysical patterns, viewed as overlays on the BC government MapPlace web site at 1:1,500,000 (regional) and 1:100,000 (local) scales have been used to define linear features. It is assumed that, in many cases, these features represent zones of crustal weakness, likely faults and fractures.

REGIONAL 1:1,500,000 SCALE ANALYSIS

Many types of mineral deposits that are related to magmatic and hydrothermal activity have been shown to occur along major structures, including porphyry systems, VMS and Sedex deposits. Indeed, many intrusive and volcanic associated deposits, such as porphyry and epithermal deposits, have been shown to be associated not only with structures parallel to the regional tectonic fabric but also, more importantly, with deep, crustal penetrating cross structures (Kutina, 1987). It is therefore important to examine any prospect in terms of its regional structural setting.

Regional and Tectonic Setting of the Yennek Property

The Yennek property lies within the Intermontane Belt, along the western edge of the Stikine Terrane, adjacent to its boundary with the Cache Creek terrane, in central British Columbia (Figure 4). This is a known and establish belt of porphyry molybdenum (Endako, Huckleberry) and epithermal gold-silver mineralization (Blackwater, Capoose) but, due to extensive cover, in this case mainly glacial till overburden, no significant mineral deposits have as yet been discovered in the immediate vicinity of the Yennek property.

The following section examines linears as interpreted from regional topographic, magnetic and gravity data and compares these data to regional faults as mapped by the BC Geological survey and to MINFILE occurrences. The analysis was completed at 1:1,500,000 scale on the BC Geological Survey MapPlace web site on an image with the Yennek property in the centre of the map. However, the actual location of the Property was not positioned on the map until after the analysis was completed.

The styles of mineralization being sought at Yennek would be most similar to porphyry Mo as at Endako and epithermal Au-Ag such as at to Blackwater Davidson and Capoose. There are similarities between the Trout occurrence just to the northeast of Yennek and the Stubb occurrence within the Property and Blackwater/Capoose styles of mineralization.



Figure 4 - BC terrane map and significant deposits. (AX – Alexander, N – Nisling, SK – Stikine, CC – Cache Creek, Q – Quesnel, SM – Slide Mountain, K – Kootenay, C – Cassiar, NA – North America; known significant deposits as yellow stars.)

Linears from Topography

Geomorphology is a reflection of underlying geologic features, such as faults, stratigraphy, intrusive contacts and alteration zones as modified by the forces of weathering, most particularly glaciers and rivers. When examining the distribution of lakes, rivers and topographic features from afar, in this case a scale of 1:1,500,000, there is potential to recognise large, crustal scale structures, in particular those that are greater than 100 km in length, that could have importance in focusing hydrothermal and mineralizing fluids.

The blue dashed lines in Figure 5 are the major linears as interpreted from 1:500,000 scale topography. The predominant orientations are northwesterly, parallel or sub-parallel to the main trends of the cordillera, and cross-cutting northeasterly trends. A major east-west linear cuts through the Endako deposit as well as the centres of Vanderhoof and Prince George. Some significant north trending linears are observed in the eastern half of the map.

The major northeast linear cutting through the Property is likely equivalent to the Natalkuz Fault, at least in part.



Figure 5 - Regional scale linears identified based on topography.

Linears from Magnetics

The regional magnetic data are useful for outlining linears (Figures 6 and 7). In this case, the mag is most effective in mapping fault offsets of regional stratigraphic units that have varying magnetic intensity. These features are typically northeast trending cross structures. The northwest trending structures parallel major lithologies and the Cordilleran tectonic trend, and may or may not be fault contacts.

The dashed lines in Figure 6 show linears from total field magnetics where major offsets are evident. There is a significant set of east-northeast (N65°E) linears with a periodicity of 50-75 km. These could represent major cordilleran cross structures and they are, in fact, sub-parallel to the Skeena Arch, a major uplift and centre of intrusive activity to the north of the Property (see Figure 4). The other trend noted in this figure is northerly, again mainly on the east side of the study area.

The first vertical derivative (1VD) map (Figure 7) provides greater detail of magnetic patterns. It is curious that the cross linears are evident, but that they are at a steeper angle, closer to 45° ,



Figure 6 - Regional scale linears based on regional total field magnetics.



Figure 7 - Regional scale linears based on regional first vertical derivative magnetics.

when compared with the total magnetic field linears. The difference could be attributed to the total field magnetics reflecting deeper features while the 1VD magnetics may reflect shallower features. Also defined by the 1VD linears are possibly important northwesterly trends that appear to align with a number of mines, deposits and the Property.

Linears from Gravity

The regional gravity data is quite course and, as a result, the Bouger gravity map tends to reflect only deep structures or features. In the case of Figure 8, the dashed red lines indicate a number of east-northeast linears that are parallel to those defined by the total field magnetics. In the eastern part of the map, north trending linears are again evident, while in the western and central part of the study area, north-northwest linears, parallel or sub-parallel to the main trend of the cordillera, are observed.



Figure 8 - Regional scale linears based on regional Bouger gravity.

Summary of Regional (1:1,500,000) Scale Linears

Figure 9 depicts a compilation of all the linears determined from the above data superimposed on topography while Figure 10 shows the same compilation on the terrane map. Also shown are the Skeena Arch, the Topley Magmatic Arc (Bright, 1964; Chapman, pers. Com.)) and significant mines and occurrences. Those areas where three or more linears from different data sets aligned were combined into a single thicker line.



Figure 9 - Regional scale linear compilation (lines with 3 or more superimposed linears are thicker than 2 or less).



Figure 10 - Regional scale linear compilation over GSC terrane map of BC.

Four major linears are noted. A north-south linear corresponds with the Fraser River valley, through Prince George and Quesnel. The strong east-west linear, previously noted, cuts through Endako, Prince George and Vanderhoof. Two northeast trending linears parallel the Skeena Arch. The Yennek property is located at the intersection of a number of northeasterly and northwesterly trending linears and along the southern boundary of the Topley Magmatic Arc. As noted previously, one of the northeasterly trending linears correlates with the Natalkuz Fault, while the northwest trending structures appear to tie together a number of known deposits, including Huckleberry, Capoose, Blackwater Davidson, Gibraltar and Yennek.

It is curious that very few of these linears correlate with the mapped terrane boundaries and most of these correlations are cross structures rather than terrane parallel structures.

PROPERTY 1:150,000 SCALE ANALYSIS

The property scale analysis was conducted using topographic and magnetic patterns from BC MapPlace at a scale of 1:100,000. Magnetic data include both total field and 1VD magnetics. In addition, both total field magnetic and resistivity data were used from DIGHEM airborne geophysical survey flown over the property in 1993 (Pritchard, 1993). As was done for the regional setting, linear features were identified on each map and compiled. From the compilation map target locations, identified for further exploration, were determined based on intersections along main linears, as well as other supporting data.

Linears based on Topography

Linears defined by topography are indicated in Figure 11. Some of the most obvious features are northeast trending and relatively short length and are a result of the most recent glaciation. These have been largely ignored for the purposes of this study.

The most prominent linears are northeast trending, including that which is believed to correlate with the Natalkuz Fault (Figure 11). The other important topographic linears are mainly northwesterly.



Figure 11 - Property scale linears based on topography.

Linears based on Magnetics

Both the total field and 1VD magnetic data were used at the property scale to help better define local trends (Figures 12 and 13). Most of the linears recognized in the total field magnetics are bounding features, with a strong magnetic high on the north side of the Property and a second high in the southeast corner of the map. A possibly important magnetic low embayment is noted by the circular feature in the northern half of the Property. The orthogonal nature of some of these linears suggests they may be related to a block faulting structural regime, could reflect the structural regime related to Tertiary volcanism in the Babine Plateau region.

Linears at the property scale from the first vertical derivative magnetics (Figure 13) show a more detailed and complex pattern. They appear to show almost a radiating pattern away from the Property, relating to the intersection of mainly northwesterly and northeasterly linears.



Figure 12 - Property scale linears based on total field magnetics.



Figure 13 - Property scale linears based on first vertical derivative magnetics.

Linears based on DIGHEM Magnetics and EM

Figures 14 and 15 show the DIGHEM airborne magnetic and resistivity data from the 1993 survey that covers the Property and the area of the Trout showing to the northeast. Thanks to the low level of the survey, the data is quite detailed.

The magnetics define a number of strong linears, the most important of which, the possible extension of the Natalkuz Fault, which separates predominantly higher magnetic field to the northwest and lower magnetics to the southeast. To the south, this main structure is intersected by northwest trending structures, while to the north, the intersecting structures are more north trending. Two strong magnetic lows have been noted. These correspond to the broad mag low noted in the 1:100,000 total field magnetics analysis above.

The resistivity shows the same important northeast trending structure as the magnetics, this time separating a high resistivity (Hazelton Group) domain to the southeast from a lower resistivity domain (Endako Formation) to the northwest. This linear appears to have a minor offset in the resistivity data, in the vicinity of the magnetic lows mentioned above. These features suggest structural complexity and possibly igneous and related hydrothermal activity in this area.



Figure 14 - Linears based on DIGHEM magnetics survey.



Figure 15 - Linears based on DIGHEM EM survey.



Figure 16 - Compilation from DIGHEM survey linears.

The compilation shown in Figure 16 shows the linear features that are reflected in both the magnetics and resistivity. The Trout gold occurrence lies along the Natalkuz Fault extension to the northeast, suggesting that this could be an important mineralizing structure. Two magnetic lows and possibly related cross structures have been identified within the Property and these could have important exploration implications.

Summary of Property (1:100,000) Scale Linears

All linears from the property scale datasets were compiled and superimposed onto the geology base (Figure 17). The heavy dashed blue lines represent three or more coincident linears from different data sets, while the thin dashed lines are single or double linears. The heavy red dashed lines are from the DIGHEM survey linear compilation.



Figure 17 - Compilation of property scale linears over BCGS geology and faults (lines thicken with the number of linears superimposed on top of each other; 3 or more are thicker than 2 or less).

The key linear is the northeast trending linear through the centre of the Property that appears to be an extension of the Natalkuz Fault. This linear, and possibly adjacent parallel structures, appears to be important in separating Jurassic rocks in the south from Eocene volcanics to the north, it appears to control known mineralization and showings, from Stubb and Fish Lake in the southwest to Trout in the northeast (Figure 18), and it separates different magnetic and resistivity domains as shown by the DIGHEM survey. The structure also appears to localize a small, linear occurrence of Miocene Chilcotin Group basalt (MiC).

Most other linears are parallel or sub-parallel with this trend, or they are northwesterly trending structures. These latter structures may be more important on a more regional basis for controlling or localizing mineralization. A number of north-northwest to north-northeast tending linears occur in the immediate vicinity of the Property. In terms of mineral potential, these structures could be important where they intersect the main northeast trend. Some could be splays off the northeast structure.

In summary, the Property lies along what appears to be an important northeast trending linear and, within and around the Property, this linear is intersected by a number of cross structures. These are discussed in greater detail in the Target section below.

TARGETS FROM THE STRUCTURAL STUDY

Three target areas have been defined from the structural study, outlined as red ovals in Figure 18, utilizing also the results from previous exploration on the Property.



Figure 18 - Compilation of property scale linears with target locations (red ovals).

Target 1 is the Stubb showing zone with known gold in bedrock mineralization and scattered anomalous gold soil anomalies. The zone is partly underlain by a coincident IP chargeability and resistivity anomaly. Thus, there is a potential bulk tonnage target as indicated by the IP. Target 1 is linked to Target 2 by a northwesterly trending structure and this direction is suggested to be important in localizing mineralization in the Babine Plateau area.

Target 2 is defined by the Fish Lake float showings of epithermal style mineralization that extend over a broad area, supported by a gold-arsenic-mercury soil anomaly, 1,200 m in length.

The target lies along the important Natalkuz Fault, roughly 10 km from the Trout showing and at its intersection with the northwesterly trending structure from Target 1.

Target 3 corresponds with the Gold Fish boulder train, another broad an anomalous zone indicating underlying epithermal mineralization. The target also lies along the Natalkuz Fault extension at its intersection with a north-northeast linear and is defined by two magnetic lows from the DIGHEM survey, or a broader mag low from the BCGS data, indicating a potential hydrothermal alteration zone with related magnetite destruction. The complexity of the structure in the area as indicated by the DIGHEM mag and resistivity data also suggests a good potential site for the focus of hydrothermal fluids.

CONCLUSIONS AND RECOMMENDATIONS

The Yennek Property holds potential for two distinct target types: 1. Low sulphidation epithermal precious metal deposits, including high grade deposits associated with structures and bulk tonnage zones associated with stockworks, breccias and permeable horizons, often associated with calderas and extensional structural environments; and 2. Porphyry Mo+/-Cu+/-Au deposits.

This structural analysis of the Yennek property and its regional setting was carried out for the purpose of defining new targets and focusing exploration efforts.

The regional study, completed at a scale of 1:1,500,000, identified four major linears. A northsouth linear corresponds with the Fraser River valley, through Prince George and Quesnel. A strong, east-west linear cuts through the Endako deposit, Prince George and Vanderhoof. Two northeast trending linears parallel the Skeena Arch. The Yennek property is located at the intersection of a number of northeasterly and northwesterly trending linears and along the southern boundary of the Topley Magmatic Arc. One of the northeasterly trending linears that cuts the Property correlates with the Natalkuz Fault, while the northwest trending structures appear to tie together a number of known deposits, including Huckleberry, Capoose, Blackwater Davidson, Gibraltar and Yennek.

Property scale (1:100,000) linears were determined from MapPlace topography and geophysics plus a DIGHEM airborne geophysical survey that covered the Property and extended to the northeast over the Trout occurrence. From this analysis, the Property has been shown to lie along what appears to be an important northeast trending linear, likely an extension of the Natalkuz Fault. This linear is intersected by a number of north to northwest trending cross structures.

This linear analysis, when combined with the results of previous exploration programs on the Property, has led to the definition of three priority target areas: The Stubb showing area, the Fish Lake boulder train zone and the Gold Fish boulder train zone.

Previous exploration programs have involved prospecting, till and soil geochemistry, ground geophysics (IP) and airborne geophysics (DIGHEM mag and EM). The Property is heavily overburden covered with little outcrop exposure. It is therefore recommended that the next exploration step should involve grid drilling over the three target areas using a RAB or RVC drill capable of penetrating the overburden and extending 10-15 m into bedrock. Approximately 30 holes should be budgeted for each target, averaging 25 m deep, for a total of 2,500 m of drilling. The total budget for such a program is estimated to be on the order of \$200,000.

STATEMENT OF EXPENDITURES

Period: May 1-25, 2014	PROJECT: Yennek Property – Vanderhoof Area, BC						
Professional Wages							
G. Carlson	Structural study	3.0	days @	\$1,200.00	/day	\$3,600.00	
	Report compilation	1.5	days @	\$1,200.00	/day	<u>\$1,800.00</u>	
		ΤΟΤΑ	L	\$5,400.00			

STATEMENTS OF QUALIFICATIONS

I, Gerald G. Carlson, hereby certify that:

- 1. I am a consulting mineral exploration geologist residing at 1740 Orchard Way, West Vancouver, B.C. V7V 4E8.
- 2. I am a graduate of the University of Toronto, with a degree in Geological Engineering (B.A.Sc., 1969). I attended graduate school at Michigan Technological University (M.Sc., 1974) and Dartmouth College (Ph.D., 1978). I have been involved in geological mapping, mineral exploration and the management of mineral exploration companies continuously since 1969, with the exception of time between 1972 and 1978 for graduate studies in economic geology.
- 3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia, Registration No. 12513 and of the Association of Professional Engineers of Yukon, Registration No. 0198.
- 4. I am the author of this report on the Structural Study of the Yennek Property.
- 5. The report is based on a literature review, on assessment reports and on my analysis of linears related to topographical and geophysical data.
- 6. I am the registered owner of 50% interest in the Yennek property.

Dated at Vancouver, B.C. this 8th day of August, 2014,

Gerald G. Carlson, Ph.D., P. Eng.



I, John Arthur Chapman of the City of Surrey, Province of British Columbia, Canada, do hereby certify as follows:

- (1) I am a consulting mining engineer residing at #43 1725 Southmere Cr., Surrey, British Columbia, V4A 7A7;
- (2) I graduated with honours in Mining Technology from the British Columbia Institute of Technology, June 1967 and I graduated with honours in Mining Engineering (B.Sc.) from the Colorado School of Mines, January 1971;
- (3) I am a Professional Engineer registered (No. 8840) in the Province of British Columbia, Canada, since 1973;
- (4) I am a Fellow of the Canadian Institute of Mining and Metallurgy;
- (5) I have practised my profession continuously since 1973 in Canada, United States and Philippines;
- (6) Since 1983 I have provided services to the mining industry as the Principal of J.A. Chapman Mining Services;
- (7) Prior to 1983 I served five years with Manalta Coal Ltd., Canada's largest coal company, as Operations Manager then as Vice-President and General Manager. Prior to that I served eleven years with Placer Dome Inc. in engineering, supervision and management at large open-pit copper and molybdenum mines;
- (8) I am a co-author of this report on the Yennek property. The report is based upon a literature review, discussions with neighboring claim owners and on a Property visit during 2013;
- (9) I am the registered owner of 50% interest in the Yennek property.

Dated at Surrey, British Columbia this 19th day of July 2014.

John Arthur Chapman, B.Sc., P.Eng., FCIM



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