BC Geological Survey Assessment Report 38372



ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: 2019 GEOCHEMICAL ASSESSMENT PROGRAM ON THE SANTA BARBARA MINERAL PROPERTY (LUKWA RIDGE ZONE)

TOTAL COST:\$3,502.16

AUTHOR(S): PAUL HOOGENDOORN

SIGNATURE(S): Paul Hoogendoorn

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): **5738149**

YEAR OF WORK: 2019

PROPERTY NAME: SANTA BARBARA

CLAIM NAME(S) (on which work was done):

SASKATOON I

COMMODITIES SOUGHT: GOLD, SILVER, COPPER, ZINC

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092L 157

MINING DIVISION: ALBERNI NTS / BCGS:092L LATITUDE: 50°1' 59.0" LONGITUDE 126°45' 53.5" UTM Zone: 09 EASTING: 660070

NORTHING: 5544690

OWNER(S): PAUL HOOGENDOORN

MAILING ADDRESS: 8904 99 AVE FORT ST. JOHN, BC. V1J 1S9 OPERATOR(S) PAUL HOOGENDOORN MAILING ADDRESS: Same as above

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**) Triassic, Vancouver Group, Parson Bay Formation, Limestones, Slates, Siltstones, Argillites, Quatsino Formation, Calcareous sedimentary rocks, Eocene-Oligocene, Mount Washington Plutonic Suite, Quartz diorites, Intrusive rocks, Carbonate hosted gold, Dolomites, Andesites, Silver, Zinc, Copper

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOCHEMICAL (number of sam Soil	ples analysed for …) 2	1046931	\$583.70
Rock	2	1046931	\$583.70
PROSPECTING (scale/area)	3 hectares	1046931	\$2,334.76
		TOTAL COST	\$3,502.16

2019 GEOCHEMICAL ASSESSMENT PROGRAM ON THE SANTA BARBARA MINERAL PROPERTY, NEAR ZEBALLOS, BRITISH COLUMBIA

Paul Hoogendoorn, FMC #144909 July 2019

Fort St. John, British Columbia

660070 E x 5544690 N UTM Zone 09 126°45'53.5"W x 50° 1'59.0"N NTS Map: 092L.007

Mineral Titles Online Event 5738149

Mineral Tenure 1046931

Contents

INTRODUCTION
PROPERTY
LOCATION, PHYSIOGRAPHY & ACCESS
Location4
Physiography5
Access
Location map10
GEOLOGICAL SETTING
Regional geology11
Regional geology map12
Property Geology13
Property geology map14
Exploration & Development History
General – Zeballos District
Santa Barbara Claim Group15
Adjacent showings – Lukwa Ridge zone15
Adjacent showings – Curly Creek zone16
Assessment Reports17
2019 Work Program
Description of work
Rock sampling21
Soil samples26
Results
Rock samples:
Soil samples:27
Conclusions and recommendations
References
Sample locations and results
Cost Statement
Assay Certificate
Statement of Qualifications

INTRODUCTION

This report describes a preliminary geological assessment of mineral tenure 1046931, forming part of the **SANTA BARBARA** mineral property. The Santa Barbara mineral property is located within the Zeballos mining camp on northwest Vancouver Island. The prospecting and geochemical analysis described in this report is referred to herein as the "2019 Work Program".

The Santa Barbara mineral property was secured by the author by map-staking in 2016. The property was acquired to enable the investigation of carbonate-hosted disseminated gold mineralization related to Eocene plutonism marginal to the economically significant Zeballos stock. It was speculated that the limestone bodies adjacent the Zeballos stock may be a favourable exploration target for low-grade gold mineralization.

The Zeballos mining camp reportedly produced over 9,600kg of gold (over 300,000 troy ounces) and 4,100 kg of silver (132,000 troy ounces) up to 1948, from approximately 651,000 tonnes of ore. This represents a mined grade of 14.5 grams per metric tonne (Sinclair and Hansen). Several thousand additional tonnes of ore were mined in the 1980s (MINFILE 092L 008). Additionally, there was a significant amount of base metal production developed from limestone stratigraphy in the camp: at the Ford iron-magnetite skarn, 1.28 million tonnes of iron were won at an average mined grade of 76% Fe in the 1960s (MINFILE 092L 028).

Gold production in the Zeballos camp was primarily from narrow quartz veins within the quartzdiorite Zeballos stock. Gold production was recorded from 18 occurrences over a 20 km² area, of which 9 produced over 1,000 ounces of gold¹.

The author believes the large number of gold producers developed in the camp – despite the scarcity of outcrop, the extremely inhospitable steep-slope coastal physiography, the lack of modern "blind" exploration; and the very fragmented, unconsolidated mineral tenure ownership – make the district a compelling modern exploration target. Furthermore, the large geographic extent of relatively high-grade gold veins adjacent to a permissive limestone unit, and the proven potential for bulk-tonnage skarn mineralization adjacent the Zeballos stocks – gives credence to the possibility of disseminated mineralization that may have eluded the Depression-era high-graders who built the camp. As was succinctly stated by a British Columbia Geological Survey report, "although not the largest gold camp in British Columbia...[Zeballos] is in all likelihood significantly underexplored due to its poor access, heavy vegetation, mountainous rugged terrain and relative lack of geological research" (Marshall et al, 2005).

Since the author acquired the Santa Barbara property in 2016, the larger Zeballos district has been reinvigorated by the first major exploration program since the late 1980s. A private mine developer, Surespan Ltd//Privateer Gold Ltd. reportedly encountered grades of up to 1,386.50 grams per tonne (g/t) Au over 0.30m at a downhole depth of 85m in the newly discovered 88 Vein at the Privateer mine, 7.12 metres of 5.81 grams per tonne gold in 50 metre step-out drill at the former Prident mine, and 0.55 metres of 24.20 g/t gold from 61.50 metres downhole in an 80 metre

¹ Calculated from table provided at

 $[\]underline{http://www.empr.gov.bc.ca/Mining/Geoscience/MINFILE/ProductsDownloads/PublicationsList/Pages/092LTab1.aspx}$

step-out drill to the southwest of the past producing White Star Mine. (Troubadour Resources Inc., March 11 and March 26, 2019 news releases, retrieved from www.Sedar.com).

PROPERTY

At the time of the 2019 Work Program, the 560.6 hectare² **SANTA BARBARA** Property consisted of the following mineral tenures, all registered as to a 100% interest by the author:

Title		Good To-		
Number	Claim Name	Date	Status	Area (ha)
1046931	SASKATOON I	2020/APR/27	GOOD	145.3
1046932	SANTA BARBARA	2019/OCT/19	GOOD	20.8
1047594	SANTA BARBARA II	2019/OCT/19	GOOD	228.4
1051141	YOUSSEF I	2019/OCT/19	GOOD	62.3
1051142	YOUSSEF	2019/OCT/18	GOOD	83
1051143	SASKATOON III	2019/OCT/18	GOOD	20.8

Table 1 Claims listing

The property title is not subject to any encumbrance, option, earn-in right, royalty or similar interest.

Good-to dates shown are subject to acceptance of this assessment report. The Property is in the traditional territory of the Ehattesaht Tribe, a Nuu-Chah-Nulth Nation.

LOCATION, PHYSIOGRAPHY & ACCESS

Location

The Santa Barbara Mineral Property is located in the Alberni Mining Division, on northwest Vancouver Island. The property location is within NTS map sheet 092L/02.

The property is on the northeast portion of the Zeballos camp, southwest of the Nomash River, on the north-facing slope of Lukwa Mountain. The property includes several topographic drainages, including Curly Creek and two parallel, unnamed drainages flowing into the Nomash River.

² The property areas reported are **inclusive of underlying Crown Granted mineral rights which have sole and exclusive claim to all minerals contained within their boundaries**, and which have no work commitments. Portions of the property, including areas of known mineralization, are subordinate to Crown Grants. Due to the underlying Crown granted mineral rights, the effective property size is smaller than the 560.6 hectares listed in Table 1. The 2019 Work Program was conducted in areas with no underlying Crown Grants.

Physiography

There are two distinct topographic areas to the Santa Barbara mineral property:

- the Curly Creek headwaters, covered by tenures 1047594, 1046932 and the southern portion of tenure 1051142; and
- the north-running ridge of Lukwa mountain, comprising primarily the east-facing wall of the ridge but also straddling the crest of the ridge at the headwater of Monckton Creek, covered by tenures 1046931, 1051141, 1051143, and the western portion of 1051142

These areas are referred to in this report as the Curly Creek and the Lukwa Ridge areas, respectively.

The project area is characterized by rugged coastal physiography, with steep slopes and dense west coast forest. Elevation within the Santa Barbara property ranges from 109 metres above sea level (m.a.s.l.) at the Nomash River, to 1,112 m.a.s.l. on the Lukwa Ridge on tenure 1051142, representing an average slope gradient of over 43% over 2.3km.

Fauna in the Curly Creek valley appears to be second and third growth coastal coniferous forest, including fir, cedar and hemlock., with alder and thick deciduous growth along road alignments and recently disturbed areas. In the Lukwa Ridge area, vegetation appeared older, comprising first and second growth timber.

What's more, the considerable quantity of tangled windfall and slash in clearings and ravines makes foot passage extremely arduous. There are considerable areas of boulder-fields at the higher elevation within the Curly Creek portion of the claim block; with precipitous crevices between boulders concealed by thick moss. On the Lukwa Ridge areas, steep ravines locally become precipitous cliffs. Overall, prospecting is quite hazardous. Altogether, the physiography within the project area is very challenging and not readily passable.

The region receives considerable precipitation, as may be expected by its coastal location. Much precipitation is in the form of snow at the higher alpine. The regional Environment Canada weather station for northern Vancouver Island (at Cape Scott) reports average annual precipitation of 260cm, which is believed to be illustrative of conditions in the project area. There was only very minor snow seen on the property on the March 27 visit, in shady draws at high elevations.

Typical physiography from the Santa Barbara mineral property is shown below:



Figure 1 Looking north from ZEB19-03 – Lukwa Ridge Zone



Figure 2 Looking north into the Nomash River Valley from tenure 1046932 (taken in 2017, Curly Creek zone)



Figure 3 Looking north across the Curly Creek valley towards the Homeward Mine, taken from within a cut-block near the boundary of claim 1046932 and 1047594 – taken in 2017



Figure 4 Mature forest in the south slope of the Curly Creek valley - taken in 2017



Figure 5 Boulder strewn terrain within the property. Boulders primarily comprise diorite - taken in 2017

Access

Access to the property is by the Nomash Main logging road, a well-maintained gravel resource road that follows the Nomash River.

A smaller, de-commissioned logging road switch-backs across tenure 1047594 towards the Golden Horn mine and the cut blocks of the Curly Creek valley. This road is currently impassable to vehicles due to water bars and alder growth, but the base seems in reasonably good state of repair, and it could be rehabilitated for 4x4 truck access up to the Curly Creek at 660950E x 5543490N.

Access to the Lukwa Ridge portion of the claim is by foot, from the Nomash Main road. A GPS base map had shown a road running uphill (west-east) through the central portion of 1046931, but this was not located in the field and the author does not believe it exists.

The nearest regional centre is Campbell River, approximately 190km by road. Campbell River has long serviced the mining industry, including the past-producing Island Copper, Quinsam Coal, and Myra Falls mines, and has all services required for exploration and development. The village of Zeballos is located approximately 14km by road from the Santa Barbara Mineral Property; Zeballos is on tidewater, and is accessible by float plane.

Road access to the project area is as follows:

- From Campbell River, travel 150km north on Hwy 19;
- From a point approximately 22km north of Woss, turn left (southwest) on the Zeballos Main Road.

- Travel 32km southwest on the Zeballos Main Road, and turn left (southeast) on the Nomash Main Road, at 657980 E x 5546170 N;
- Travel 3.2km southeast on the Nomash Main Road, and veer right (southwest) on an unnamed logging road at 660610 E x 5545050 N.

Accommodation, fuel, groceries, and land-line telephone and Internet services are available in Zeballos. There is heavy machinery for hire in the area should it be required for future exploration and development, and hydroelectricity is available within several kilometers of the property.

With a long history of natural resource development, a workforce experienced in the extractive sectors, low population density, and proximity to tidewater, northern Vancouver Island is an attractive region for mineral exploration. There has been considerable public geoscience investment in the northern Island in the last decade.

Location map



Figure 6 Location map

GEOLOGICAL SETTING

Regional geology³

The Santa Barbara property is located in the Wrangellia Terrane. The Wrangellia Terrane is a complex stratigraphic sequence comprising (a) Paleozoic arc-derived volcanic basement rock, (b) enormous oceanic flood basalts from Triassic time, up to 6km thick locally, (c) later Triassic carbonate and sedimentary formations that accumulated during subsequent periods of subsidence of the volcanic pile, (d) Bonanza-group volcanic and coeval intrusive rocks of Jurassic-aged and (e) intrusive rocks primarily of post-accretion (Cretaceous to Tertiary) age.

Post-accretion intrusive rocks have been described as belonging to either the Catface group or the Mount Washington Intrusive Suite; both terms are applied to a series of post-accretion intrusions of the kilometres (pluton) scale. These bodies are associated with economically compelling mineralization elsewhere on the Island.

On Vancouver Island, basement rocks of the Wrangellia Terrane comprise Devonian arc rocks, namely the economically significant Mt. Sicker and Buttle Lake formations. Beginning in the Triassic, these were overlain by massive eruptions of flood basalts (the Karmutsen formation), which laid down a kilometres-thick sequence of volcanic rock in a relatively short period. In the project area, these Karmutsen volcanics are the oldest exposed stratum.

After the formation of the Karmutsen unit, volcanism paused and subsidence occurred, resulting in the deposition and accumulation of carbonate and sedimentary deposits atop the resultant oceanic shelf. These are represented in the project area by the limestones of the Quatsino and the mixed sedimentary rocks of the younger Parsons Bay formations. Collectively, the Karmutsen volcanics, the Quatsino limestones, and the volcanic-sedimentary Parsons Bay formations comprise the Triassic-age Vancouver Group.

Subsequently re-activated volcanism in Jurassic time resulted in an overlying sub-aerial volcanic pile (the Bonanza Group) with co-eval intrusive rocks of the Island Plutonic Suite. After forming an off-shore composite terrane via consolidation with several smaller terranes, Wrangellia accreted to ancestral North America approximately 100 million years ago. Subsequent subduction fostered plutonism throughout Vancouver Island.

Structurally, the project area is located astride the north-trending Nimpkish-Hustan fault system, which appears to pre-date the Eocene-aged Zeballos stock and is reflected in the local topography, from Hecate Strait across the north Island. This is hypothesized as an important structural control on mineralization in Zeballos.

³ References: Regional geology is compiled from: Ferri et al 2008, Greene et al 2008, Gonzalez 2004, Nixon et al 2006, Stevenson 1950, Marshall et al 2006

SANTA BARBARA REGIONAL GEOLOGY



Figure 7 Regional geology, taken from BCGS Mapplace, 1:100,000 scale

Property Geology

The Santa Barbara property is located on the mapped boundary of the Eocene-aged Zeballos stock and the upper Triassic carbonates of the Quatsino formation. Blue-green and sitic volcanic rock, believed to be the Karmutsen formation, is also present in the project area.

The Quatsino limestone is well displayed where it forms karst features in the channel of the Nomash river, several hundred meters east of 1046931.

The Eocene Zeballos stock, which appears locally to comprise quartz-diorite, is the dominant bedrock in the claim-group. It has been observed that mineralization favours the outer margins of the stock, with gold believed to have been sourced from the core and deposited in this outer "chill margin" (Gonzalez).

Intrusive rock presumed to be of the Zeballos stock was the primary rock type encountered during prior prospecting in the Curly Creek area (please see the author's assessment report 37150 *Geochemical Assessment Report on the Santa Barbara Mineral Property*). However, it was less ubiquitous in the Lukwa Ridge area prospected in 2019, where a volcanic rock was more pervasive in the small (~3 hectare) area prospected.

It might be noted that, while bedrock maps show the mines of Zeballos to be hosted uniformly within the Zeballos-group intrusive rock, underground exploration (as reported in Minfile) suggest far more heterogenous lithologies than might be inferred from bedrock maps. Both andesites and limestones were reportedly encountered underground and proved important local host rocks in the camp - e.g. at the Mount Zeballos (MINFILE 092L 012), Golden Gate (MINFILE 092L 005) and Tagore (MINFILE 092L 006). Gonzalez (2004) observed that: *From underground maps, most vein mineralization is within a complex sequence of calcium-rich volcanic rocks, pyro- metasomatic altered limestone rocks, hornfels altered lime-silicate volcanic rocks, and narrow tongues of quartz diorite and granodiorite rocks related to the Island Intrusive. Rapid erosion of the non-intrusive rocks may be the reason that some of these units are not readily visible on the surface" (A.R. 27428, 2004).*

In respect of the Central Zeballos mine, located on the adjacent side of the Lukwa Ridge, MINFILE 092L 212 speaks to this localized, and economically relevant, geological complexity:

The area of the Central Zeballos mine is underlain by dark-coloured granodiorite near its gradational contact with a lighter coloured, border phase of granodiorite and quartz diorite. Roof pendants or inliers of calc-silicate rocks, skarn-altered limestone and dark green andesite of the Quatsino Formation and Bonanza Group are present nearby.



SANTA BARBARA 1046931 - 2019 work area, property geology

Figure 8 Property geology, 1:5,000 scale

Exploration & Development History

General – Zeballos District

The history of exploration and development of the Santa Barbara property is part of the broader history of the Zeballos mining camp. Readers are referred to the works of Stevenson (1950) and Hoadley (1953) who provide compelling histories of the mining camp, from the initial development of the Tagore gold vein in 1929 (MINFILE 092L 006) to the closing of the Privateer Mine in 1948 (MINFILE 092L 008).

During this peak period, which all but ended with the closure of the gold mines during World War II, over 300,000 ounces of gold were mined from 18 small producers. These mining operations were mostly small-scale and invariably hard-scrabble. The isolated camp was fragmented into many small crown-grants, capital was evidently scarce, and as befits the Depression-era, development consisted of the pursuit of small surface veins underground to feed small mills by labour intensive methods. The most prolific producers were located on the northwest edge of the stock (Gonzalez).

Through the 1960s, the open-pit Ford Magnetite deposit provided a second act for the district, with over 1.2 million metric tonnes of magnetite recovered from a limestone body peripheral the Zeballos stock (MINFILE 092L 028).

In the 1980s, the Privateer and Spud Valley mines of the Zeballos camp were re-activated, with a new mill built on the Privateer mine (MINFILE 092L 028). 2,000 tonnes of ore were mined from the Privateer Mine through 1991. As well, underground exploration and development was carried out at the Spud Valley and Goldfield (MINFILE 092L 013) mines by McAdam Resources Inc. These programs failed to achieve commercial success, however.

In 2017, drilling resumed at the Privateer Mine, described in the 2017 and 2018 B.C. Geological Survey annual report as the Surespan Gold project.

Overall, the crown granted ownership of the mineralized areas within the camp has resulted in a relatively scant assessment work history relative to the scale of development that has been achieved.

Santa Barbara Claim Group Adjacent showings – Lukwa Ridge zone

The only known showing on the Lukwa Ridge zone of the Santa Barbara property is MINFILE No 092L 157 "Climax", which is within the present-day tenure 1046931, but is secured by an underlying Crown grant. This underlying Crown grant supersedes the Santa Barbara property.

This showing was worked by Consolidated Skeena Mines Ltd., as described in the Minister of Mines and Petroleum Resources 1966 Annual Report:

The property consists of seven Sonny and Black Knight claims situated about 5 miles in a direct line northeast of Zeballos and east of Goldvalley Creek. Chalcopyrite, pyrite, and bornite mineralization occurs at a granite-skarn contact. Three surface holes totalling 1,110 feet were diamond drilled, and one hole was diamond drilled from an old underground adit for a length of 531 feet. An electromagnetic survey and some topographical mapping were done. The property was serviced by helicopter, although it is also accessible by trail.

In the early 1980s, Goldfever Resources Ltd. expanded upon the Consolidated Skeena work, seeking further extensions of the Central Zeballos mineralized system through the Nomash River valley, at the base of Lukwa Ridge, through to the showings on the eastern wall of the Nomash valley. This is described in their Assessment Report 12864.

Also in the 1980s, Impact Resources Inc./New Impact Resources Inc. followed up on the Consolidated Skeena work, with geological mapping east/upslope from the Central Zeballos mine, near the crest of the Lukwa Ridge immediately west of present-day tenure 1046931. This is described in assessment reports 12077 and 18770.

Both the Goldfever Resources Ltd. and Impact Resources Inc. had a common hypothesis of seeking eastward continuation of the Central Zeballos mineralization along strike, through the Lukwa Ridge. This exploration hypothesis is consistent with the objective of the 2019 Work Program, and is relevant to assessing the potential of the Santa Barbara property.

Adjacent showings – Curly Creek zone

The exploration history of what is now the Curly Creek zone of the Santa Barbara Property parallels the history of the larger Zeballos mining camp, of which it is part. The documented exploration history of the project area begins with the development of the Homeward mine (MINFILE 092L 019, also referred to as Golden Horn), on the southern boundary of tenure 1051142 (note: rights to the Homeward mine are not secured by the Santa Barbara claim group, due to an over-riding crown grant Lot 1795).

Homeward Mine (MINFILE No 092L 019)

The Homeward mine (also known as the Golden Horn) consists of 5 east-west (85°) striking gold veins, of which the No 1 vein was exposed in the Curly Creek bed, and has been reportedly traced over 1,000 meters horizontally over a vertical distance of 600 meters. The No. 1 vein was mined from 1941 – 1942. Over 3,300 tonnes of ore were removed from workings comprising two parallel adits at the 607metre and 643metre levels respectively, and a series of two stopes between them. Mined ore processed through the 50-tonne per day mill yielded approximately 1,500 ounces gold, for a head grade of 0.40 ounces per tonne. The two adits follow the No. 1 vein for approximately 260m. (Stevenson, 1950).

The Homeward Mine is the most southeasterly mine in the Zeballos camp.

Monitor Showing (MINFILE 092L 083)

Roughly 1,300m from the Homeward Mine, and to the immediate west of 1046932, the Monitor property saw "several short adits...driven on the 280 to 295 degree striking, steeply dipping quartz-pyrite-gold veins" (MINFILE 092L 083). Furthermore, this adjacent property reportedly hosted "...massive copper sulphide replacement in limestone of the Upper Triassic Vancouver Group, Quatsino Formation near an intrusive contact" (MINFILE 092L 083). Details are scant on this showing, and there is no history of modern exploration.

As the Monitor occurrence is roughly on strike with the veins of the Homeward mine, the Santa Barbara claim group secures the gap between the two where any segments of continuous mineralization which may exist might be found. The Property's proximity to the Monitor showing is also significant because of the reported presence of limestone replacement mineralization, which is suggestive of the possibility of disseminated mineralization in the Quatsino horizons peripheral to the Zeballos stock.

Assessment Reports

Fjetland, G. <u>Geological Report on the Central Zeballos, Scafe, Britannia B. and Britannia M</u> <u>Claims.</u> For Impact Resources Inc. 1983. Vancouver, B.C. A.R. 12,077

This work program included considerable prospecting and geological mapping at the upper reaches of Bibb Creek, several hundred meters west of the present tenure 1046931, on the west facing slope of the Lukwa Ridge. This work encountered a limestone body (the "south skarn") immediately adjacent present-day tenure 1046931 with two of three hand samples returning economically interesting results:

CZ-102-83	0.029 oz/tn Au	10.25 oz/tn Ag	32,322ppm Cu
CZ-103-83	0.046 oz/tn Au	5.39 oz/tn Ag	10,892ppm Cu

The south skarn appears to constitute the CLIMAX (L.1874) Minfile showing (092L 157), based on the description provided of historical drilling by Consolidated Skeena Mines Ltd. This is unresolved by the author, however, as this work program appeared to have been located well south of Lot 1874.

McDougall, J.J. and Presunka, S. <u>Drilling, Geological and Geophysical Report on the Golden</u> <u>Sun, Nomash Gold, Newfound Gold, Golden Horn, Black Knight 1-4, 7 Claims</u>. For Goldfever Resources Ltd. 1983. Richmond, B.C. A.R. **12,864**.

The work program described in this report targeted east-west trending lineaments projecting from the Central Zeballos mine to the Nomash Gold claims along the Nomash River. According to the author: "Structural lineaments joining mined or well explored gold copper occurrences on the west Central Zeballos gold property to prospects containing similar mineralization on the east are believed to pass through the far more accessible valley bottom" (p. 4). The major linear feature identified on VLF-EM survey passed through what is now tenure 1046931, in the area of the 2019 Work Program. This geophysical feature was considered prospective as the projection of the

feature was on strike with both the Central Zeballos mine and several base metal showings on the east side of the Nomash valley.

Shallow x-ray drilling of a karst limestone body in the Nomash River was also described. Sulphiderich limestone contacts were encountered, but no economic mineralization was discovered in the short holes. Drilling of the short holes was hampered by voids in the limestone.

Freeze, J.C. <u>Geological Report on the Rimy and H & J Mineral Claims.</u> For New Impact Resources Inc. and Canalaska Resources Ltd. 1989. Vancouver, B.C. A.R. 18770

This report described two petrographic samples taken from the former Rimy (L. 1766) and H&J (L. 1997) crown grants. Both crown grants partially overlap with the present-date Santa Barbara property, and are presumed to have the senior claim to minerals within their boundaries.

Both rock samples were taken from within the Zeballos intrusion. Sample 1 (H&J claim) was described as "*Slightly chloritized, hornblende - biotite granodiorite (cut by K-spar veinlets)*". Sample 2 (Rimy claim) was described as: "*Biotite - hornblende quartz diorite*".

Graham, J. Campbell. <u>Geophysical Report on the Gold Quad Property, Zeballos Area, British</u> <u>Columbia.</u> For Golden Quadrant Resources Ltd. 1989. Vancouver, B.C. A.R. **18,928.**

This report describes a geophysical survey conducted in the Nomash River valley. It included a line of magnetometer surveying on the "Nomash Silver" claim that extended into the lower regions of the Curly Creek valley.

The southern portion of Curly Creek valley was characterized by relatively lower magnetic response, which the worker conjectured may reflect a thickening body of limestone obscuring the higher background intrusive rock.

Gonzalez, Ralph A. <u>Geologic Survey and Geochemical Sampling on the Central Zeballos Property</u>. For Canalaska Ventures Ltd. 2004. Vancouver, B.C. A.R. **27428.**

While this work program covered much of the Zeballos district beyond the Santa Barbara project area, it also included a 104-sample soil and silt geochemical survey of the Curly Creek drainage, including much of what is now the Santa Barbara property. Sampling followed the existing road network.

Key observations included:

• A low-level gold-in-soil anomaly was located below Homeward Mine, within the Curly Creek valley. Despite the relative enrichment, absolute values were surprisingly low, and there was no copper or zinc enrichment to speak of:

Sample	Easting	Northing	Gold (ppm)
CCN034	660795	5542876	0.25
CCN043	660741	5542868	0.22
CCN044	660741	5542868	0.04
CCN045L	660683	5542916	0.10
CCN046	660671	5542966	0.06
CCN047	660724	5542703	0.01
CCN048L	660655	5543015	0.08

• A copper-, molybdenum- and zinc-in-soil anomaly was identified approximately 200 m north of tenure 1046932, along the ridge line dividing the Curly Creek valley from the Nomash River valley to the east. The anomaly was identified by the following adjacent samples:

			Copper	Zinc	Molybdenum	Strontium
Sample	Easting	Northing	(ppm)	(ppm)	(ppm)	(ppm)
CC013	661058	5543396	71	45	16	23
CC022	661097	5543475	90	44	8	53
CC014	661109	5543413	20	32	2	12
CC015	661131	5543406	2	4	14	4
CC016	661145	5543398	66	39	62	150
CC021	661152	5543468	58	54	5	51
CC017	661155	5543395	76	84	6	42
CC018	661158	5543403	68	50	2	798
CC019	661174	5543403	90	46	5	189
CC020	661183	5543412	180	128	2	352

- These results compared to n=104 average responses of 28ppm copper and 29ppm zinc. This anomaly also had strong strontium responses, as noted above.
- The entire Curly Creek survey area had considerably lower aluminum and calcium background than the remainder of the Zeballos dataset.

2019 Work Program

The 2019 work program was a continuation of the author's 2017 prospecting program, as previously described in Assessment Report 37150 "*Geochemical Assessment Report on the Santa Barbara Mineral Property*". The 2017 prospecting program focused on the Curly Creek portion of the property. The 2019 program described herein targeted the Lukwa Ridge portion of the property.

Description of work

The work consisted of a day of prospecting on tenure 1046931. The author, who is the registered owner and operator of the claim, together with two other workers (Mr. Niclas Haglund, whom holds an unregistered interest in the property, and a prospector, Mr. Christopher Delorme), mobilized to the nearest service centre, Campbell River, B.C., on the afternoon of March 26, 2019. Early in the morning of March 27, 2019, the work party mobilized to the property itself.

Crossing the Nomash River from a bridge at 660536 E x 5544802 N, the work crew parked and headed due west, up the steep slope forming the west wall of the Nomash River valley and climbing the northern portion of Lukwa Ridge. The path roughly paralleled, to the south, a steep walled creek (unnamed). It was hoped the creek would provide ample prospecting opportunities and reasonable overland passage, but the steep ravine did not afford any safe opportunities for exploration.

Within the Santa Barbara property, areas of visible outcrop were prospected, including bedrock exposed by massive blown-over first-growth trees.

Rock sampling

Bedrock was encountered and sampled in several locations. Field descriptions are provided below:

ZEB 19-01	660128	5544728	
Rock Sample	Volcanic rock with quartz veining		
Bedrock contained a ~25 cm of	crystalline quartz vein striking	290°, dipping 20° E.	
Within the same outcrop, ther	e was a band of alternating qu	artz veins described as follows:	
5 cm quartz vein, 2 cm blue an	ndesite, 5 cm quartz vein, 2 cm	blue andesite, 5 cm qtz vein, 10	
cm vuggy quartz carbonate. T	he entire sequence was striking	g 290° N	
ZEB 19-02	660150	5544663	
Rock Sample	Granodiorite with milky qua	artz vein	
4-7 cm milky quartz vein, stee	ply dipping, striking northeast	/southwest; primary fracture	
orientation is northwest/south	east striking. The granodiorite	e is well-weathered with rounded	
fracture edges. Two 0.5cm qu	artz stringers with the same or	ientation as the 4-7 cm vein have	
up to 2 cm biotite; minor rust	alteration		
ZEB 19-03 ("CANYON")	660059	5544520	
Rock Sample	Silicified andesite		
Fractures strike northeast-sou	uthwest, perpendicular to creek	k. Andesite is silicified, very fine	
grained.			
ZEB 19-04	660213	5544478	
Rock Sample	Silicified rock		
Highly silicified, could not de	termine original composition i	n field; no crystals visible to the	
naked eye; east-west striking	fracture set with intense rust a	Iteration at surface associated	
with fractures.			

The rock samples were photographed, both at normal resolution and high resolution, as shown below:











Prospecting also revealed a highly oxidized "gossaneous" zone near 660005 E x 5544625N. This area of intense oxidization appeared to have been exposed by recent⁴erosion within the upper reaches of the steep unnamed creek. The erosion revealing this highly oxidized zone appears, in all probability, to post-date the last period of exploration in the Central Zeballos area, circa 1989. Unfortunately, with daylight waning in the early spring period, and given its location across an arduous ravine, the work party was unable to reach this zone on our 1-day program. It remains a priority target for future prospecting. Given the intensity and extent of the oxidization, the concealed, inaccessible location within a steep ravine, and the probability it was not exposed during the last period of industry activity, this gossaneous zone was deemed a compelling follow-up target.

Unfortunately, it was subsequently determined that rock samples ZEB19-02 and ZEB19-04 were taken slightly east of the property boundary, on unstaked ground. Accordingly, the costs of those samples were removed from the assessment value submitted pursuant to this report. The geochemical analysis discussed below considers only those samples taken from within the property boundaries.

Soil samples

In the course of the rock sampling, three B-horizon soil samples were also obtained from the vicinity of the rock samples. These are described as follows:

ZEB 19S-01	660118	5544738			
Soil sample					
No sample description re	tained.				
ZEB 19S-02	660137	5544648			
Soil sample	Soil sample				
sample pit – float is ruste	d at surface, but clean on j	ree, exposed 10 to 60 cm angular rubble in freshly broken surfaces; float in sample pit			
green-blue andesite with	few inclusions.				
green-blue andesite with ZEB 19S-03	few inclusions.	5544550			
0		5544550			

Results

The samples were selected to ALS Canada Ltd., an accredited assay lab, in North Vancouver, B.C.

The analytical tests undertaken were as follows:

⁴ Perhaps within the last 1-2 decades, judging by the age of regrowth amidst the cutblock in which it is located)

Rock samples:

Preparation:

CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

Analysis:

Samples were assessed for silver, copper and zinc.

The only result of interest is rock sample ZEB 19-01, which returned the following results:

SAMPLE	Ag	Cu	Zn
DESCRIPTION	ppm	ppm	ppm
ZEB 19-01	0.6	567	73

This result was considered very promising, for the following result:

(1) The width of the vein (~25cm) encountered at this sample site was comparable to economically significant veins elsewhere in the district. From MINFILE Central Zeballos 092L 212:

The best mineralization occurs in the wider sections of quartz, usually 20 to 25 centimetres, where comb structures and well-formed quartz crystals may be present.

- (2) The orientation of the quartz veining (east-west) at this sample site parallels the economically significant vein systems in the camp.
- (3) The andesitic host rock is supportive of the exploration hypothesis, that gold-potential may be present at the margins of the Zeballos intrusion, extending beyond the mapped limits of the intrusive stock.

Soil samples:

Preparation:

SCR-41 Scre	en to -180um and save both
-------------	----------------------------

Analysis:

ME-ICP41 35 Element Aqua Regia ICP-AES (3 elements reported)
--

The key result of interest was sample ZEB 19S-01, which was taken from base of the same outcrop that yielded rock sample ZEB 19-01:

SAMPLE	Ag	Cu	Zn
DESCRIPTION	ppm	ppm	ppm
ZEB 19S_01	0.6	689	667

The soil sample provided excellent repeatability of the anomalous silver and copper results reported at rock sample ZEB19-01, and additionally, anomalous zinc.

Anomalous zinc was an encouraging result, given the reported relationship of sphalerite with gold mineralization in the district (Freeze, 1989, p 17).

Conclusions and recommendations

The discovery of the anomalous sample location 19-01 from the brief field visit is encouraging, especially as it is well beyond any historical showing area. The anomalous result, repeated both in the rock and soil samples, merits additional work, in the author's opinion. Recommended work includes:

- obtain gold analysis from the samples;
- cut a fresh surface from the rock sample ZEB19-01 for more detailed determination of mineral content and lithology
- carry out a small and tight (10 m x 10 m) B-horizon or MMITM soil geochemical survey on the showing area;
- conduct detailed geological mapping of the outcrop, and all adjacent outcrops

References

Earle, Steven. <u>The Geology & Geological History of Vancouver Island</u>. Vancouver Island University. Retrieved from: https://web.viu.ca/earle/geol111/geology-of-vancouver-island.pdf

Ferri, F., Nixon, G.T. and Reyes, J. Organic geochemistry of Late Triassic to Early Jurassic sedimentary rocks in northern Vancouver Island; <u>Geoscience Reports 2008</u>, B.C. Ministry of Energy, Mines and Petroleum Resources, pages 13-23. 2008. Victoria, B.C.

Fjetland, G. <u>Geological Report on the Central Zeballos, Scafe, Britannia B. and Britannia M</u> <u>Claims.</u> For Impact Resources Inc. 1983. Vancouver, B.C. A.R. 12,077.

Freeze, J.C. <u>Geological Report on the Rimy and H & J Mineral Claims.</u> For New Impact Resources Inc. and Canalaska Resources Ltd. 1989. Vancouver, B.C. A.R. 18770.

Gonzalez, Ralph A. <u>Geologic Survey and Geochemical Sampling on the Central Zeballos Property</u>. For Can Alaska Ventures Ltd. 2004. Vancouver, B.C. A.R. 27,428.

Graham, J. Campbell. <u>Geophysical Report on the Gold Quad Property</u>, <u>Zeballos Area</u>, <u>British</u> <u>Columbia</u>. For Golden Quadrant Resources Ltd. 1989. Vancouver, B.C. A.R. 18,928.

Greene, A.R., Scoates, J.S., and D. Weis. <u>Wrangellia Terrane on Vancouver Island, British</u> <u>Columbia: Distribution of Flood Basalts with Implications for Potential Ni-Cu-PGE</u> <u>Mineralization in Southwestern British Columbia.</u> in Geological Fieldwork 2004, British Columbia Ministry of Energy and Mines, Paper 2005-1, p 209-220. 2005. Victoria, B.C.

Hansen, M.C. and Sinclair, A.J. <u>A Preliminary Assessment of Zeballos Mining Camp (092L)</u>. British Columbia Geological Survey Geological Fieldwork 1983. Department of Geological Sciences, University of British Columbia. 1983.

Hoadley, J.W. <u>Geology and Mineral Deposits of the Zeballos-Nimpkish Area, Vancouver Island,</u> <u>British Columbia</u> in Geological Survey of Canada, Memoir 272. 1953. Ottawa, ON.

Marshall, D., Close, S., Podstawskyj, N. and A. Aichmeier. *Gold Mineralization and Geology in the Zeballos Area, Nootka Sound, Southwestern British Columbia* in <u>Geological Fieldwork 2004</u>, British Columbia Ministry of Energy and Mines, Paper 2005-1, p 301-310. 2005. Victoria, B.C.

Massey, N.D. *The Vancouver Island Mineral Potential Project*; in <u>Geological Fieldwork 1994</u>, Grant, B. and Newell, J.M., Editors, B.C. Ministry of Energy, Mines and Petroleum Resources, Paper 1995-1. 2008. Victoria, B.C.

Muller, J.E., Cameron, B.E.B and Northcote, K.E. <u>Geology and Mineral Deposits of Nootka Sound</u> <u>Map-Area Vancouver Island, British Columbia</u>. Geological Survey of Canada, Paper 80-16. Ottawa, ON.

Nixon, G.T., Kelman, M.C., Steveson, D. Stokes, L.A., and K.A. Johnston. *Preliminary Geology of the Nimpkish Map Area (NTS 092L/07), Northern Vancouver Island, British Columbia*; in <u>Geological Fieldwork 2005</u>, British Columbia Ministry of Energy, Mines and Petroleum Resources, Paper 2006-1 and Geoscience BC, Report 2006-1, p 135-152. 2006. Victoria, B.C.

Northcote, B. <u>Exploration and mining in the Coast Area</u>, <u>British Columbia</u> in: *Exploration and Mining in British Columbia*, 2014. British Columbia Ministry of Energy and Mines, British Columbia Geological Survey, Information Circular 2015-2, pp. 83-95. 2015. Victoria, B.C.

Stevenson, J. S. <u>Geology and Mineral Deposits of the Zeballos Mining Camp. British Columbia</u> <u>Department of Mines, Bulletin No. 27</u>. 1950. Victoria, B.C.

Santa Barbara

2019 work program



All geochemical results in ppm ("parts per million")



Figure 9 Sample locations and gold results, 1:5,000 scale. From BCGS Mapplace base maps. Crown grants shown in amber.



Figure 10 View looking SOUTH towards 2019 work area, from Google Earth $^{\rm TM}$

Cost Statement

Exploration Work type	Comment	Days			Totals
Personnel (Name) / Position	Field Days (list actual days)	Days	Rate	Subtotal*	
Paul Hoogendoorn	March 26, 2019 (travel)	1	\$350.00	\$350.00	
Chris Delorme	March 27, 2019 (travel)	1	\$350.00	\$350.00	
Paul Hoogendoorn	March 27, 2019 (work)	1	\$520.00	\$520.00	
Chris Delorme	March 27, 2019 (work)	1	\$400.00	\$400.00	
Niclas Haglund	March 27, 2019 (work)	1	\$250.00	\$250.00	
					\$1,870.00
Office Studies	List Personnel				
Sample preparation, photography, delivery to lab	Chris Delorme	1	\$350.00	\$350.00	
Report preparation	Paul Hoogendoorn	1	\$520.00	\$520.00	
					\$870.00
Geochemical Surveying	Number of Samples	No.	Rate	Subtotal	
Assay – VA19141341 on tenure rock samples only	ZEB19-01 ZEB19-03 "CANYON"	2	\$39.78	\$79.56	
Assay – <i>VA19141340</i> on tenure soil samples only	ZEB19S-01 ZEB19S-03	2	\$32.05	\$64.10	
Sampling supplies		4	\$1.00	\$4.00	
					\$147.66
Equipment Rentals					
Field Gear (Specify)	Spot TM tracker, GPS, chainsaw	2	\$30.00	\$60.00	
					\$60.00
Food and accommodation		Qty	Rate	Subtotal	·
Food – per diem		5	\$20	\$100.00	
					\$100.00
Transportation		Qty	Rate	Subtotal	
¹ / ₂ tonne pickup from Maple Ridge	, BC to Zeballos, BC (round-trip)	465km	\$0.58	\$269.70	
BC Ferries (roundtrip)		2	\$92.40	\$184.80	
					\$454.50
TOTAL Expenditures					\$3,502.16

Assay Certificate



ALS Canada Ltd.

2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218 www.alsglobal.com/geochemistry To: TATLA MINING PARTNERS 8904 99 AVE FORT ST. JOHN BC V1J 1S9 Page: 1 Total # Pages: 2 (A) Plus Appendix Pages Finalized Date: 18-JUN-2019 This copy reported on 21-JUN-2019 Account: MITPAR

CERTIFICATE VA19141341

This report is for 5 Rock samples submitted to our lab in Vancouver, BC, Canada on 10-JUN-2019.

The following have access to data associated with this certificate: PAUL HOOCENDOORN

SAMPLE PREPARATION					
ALS CODE	DESCRIPTION				
WEI-21	Received Sample Weight				
EXTRA-01	Extra Sample received in Shipment				
CRU-QC Crushing QC Test					
LOG-22 Sample login - Rcd w/o BarCode					
PUL-QC Pulverizing QC Test					
CRU-31 Fine crushing - 70% <2mm					
SPL-21 Split sample - riffle splitter					
PUL-31	Pulverize split to 85% <75 um				
DISP-01	Disposal of all sample fractions				

	ANALYTICAL PROCEDURES	
ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP41	35 Element Aqua Regia ICP-AES	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature: Colin Ramshaw, Vancouver Laboratory Manager

***** See Appendix Page for comments regarding this certificate *****



To: TATLA MINING PARTNERS 8904 99 AVE FORT ST. JOHN BC V1J 1S9 Page: 2 - A Total # Pages: 2 (A) Plus Appendix Pages Finalized Date: 18-JUN-2019 Account: MITPAR

CERTIFICATE OF ANALYSIS VA19141341

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Cu ppm 1	ME-ICP41 Zn ppm 2	
ZEB 19-01 ZEB 19-02 ZEB 19-03 ZEB 19-04		1.60 0.74 Not Recvd 1.28	0.6 <0.2 <0.2	567 8 7	73 22 3 27	
CANYON		1.10	0.2	31	27	



To: TATLA MINING PARTNERS 8904 99 AVE FORT ST. JOHN BC V1J 1S9 Page: Appendix 1 Total # Appendix Pages: 1 Finalized Date: 18-JUN-2019 Account: MITPAR

CERTIFICATE OF ANALYSIS VA19141341

		CERTIFICATE CON	IMENTS				
Applies to Method:	LABORATORY ADDRESSES Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. CRU-31 CRU-QC DISP-01 EXTRA-01 LOG-22 ME-ICP41 PUL-31 PUL-31 PUL-QC						
	SPL-21	WEI-21					



To: TATLA MINING PARTNERS 8904 99 AVE FORT ST. JOHN BC V1J 1S9 Page: 1 Total # Pages: 2 (A) Plus Appendix Pages Finalized Date: 25-JUN-2019 Account: MITPAR

CERTIFICATE VA19141340

This report is for 3 Soil samples submitted to our lab in Vancouver, BC, Canada on 11-JUN-2019.

The following have access to data associated with this certificate: PAUL HOOGENDOORN

ALS CODE DESCRIPTION WEI-21 Received Sample Weight DISP-01 Disposal of all sample fractions LOG-22 Sample login - Rcd w/o BarCode SCR-41 Screen to -180um and save both

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP41	35 Element Aqua Regia ICP-AES	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

***** See Appendix Page for comments regarding this certificate *****

Colin Ramshaw, Vancouver Laboratory Manager



To: TATLA MINING PARTNERS 8904 99 AVE FORT ST. JOHN BC V1J 1S9

Page: 2 - A Total # Pages: 2 (A) Plus Appendix Pages Finalized Date: 25-JUN-2019 Account: MITPAR

CERTIFICATE OF ANALYSIS VA19141340

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Cu ppm 1	ME-ICP41 Zn ppm 2	
ZEB 195_01 ZEB 19_02 ZEB 195_03		0.18 0.22 0.12	0.6 0.2 0.3	689 37 33	667 30 42	



To: TATLA MINING PARTNERS 8904 99 AVE FORT ST. JOHN BC V1J 1S9 Page: Appendix 1 Total # Appendix Pages: 1 Finalized Date: 25-JUN-2019 Account: MITPAR

CERTIFICATE OF ANALYSIS VA19141340

	CERTIFICATE COMMENTS							
Applies to Method:	LABORATORY ADDRESSES Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. DISP-01 LOG-22 ME-ICP41 SCR-41 WEI-21							

Statement of Qualifications

Paul Hoogendoorn

I, Paul Hoogendoorn, of Fort St. John, British Columbia, do hereby certify that:

- I personally undertook and supervised the work described in this report. I have previous experience prospecting the project area.
- I did author the above report and believe the contents of the report to be true and accurate.
- I did complete the MINE 1001 course at the British Columbia Institute of Technology in 2002, and I have been active as a prospector since 2008.

Paul Hoogendoorn

July 28, 2019