

**Ministry of Energy, Mines & Petroleum Resources**  
Mining & Minerals Division  
BC Geological Survey

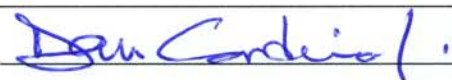
**Assessment Report**  
**Title Page and Summary**

TYPE OF REPORT [type of survey(s)]: Geological & Prospecting Reconnaissance

TOTAL COST: \$1,520.00

AUTHOR(S): D.G. Cardinal, P.Geo.

SIGNATURE(S):



NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): \_\_\_\_\_

YEAR OF WORK: 2008

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 4281182, 2009/May/10

PROPERTY NAME: MA ZONE

CLAIM NAME(S) (on which the work was done): \_\_\_\_\_

MA ZONE

COMMODITIES SOUGHT: Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: AR 15086 & 16730

MINING DIVISION: New Westminster

NTS/BCGS: 92H025

LATITUDE: 49 ° 17 ' 37 " LONGITUDE: 121 ° 08 ' 10 " (at centre of work)

OWNER(S):

1) Dan Cardinal

2) \_\_\_\_\_

MAILING ADDRESS:

1883 Agassiz Ave.

Agassiz, BC V0M 1A3

OPERATOR(S) [who paid for the work]:

1) same

2) \_\_\_\_\_

MAILING ADDRESS:

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Property is underlain by cherty argillite rocks of the Hozameen Group of Permian to Jurassic age. The cherty argillites are in fault-contact with northwest trending band of serpentinized ultramafic traceable for several kilometres. The footwall of the serpentine host gold-copper-silver-bearing mineralization hosted in talcose quartz-carbonate veins in places up to 4-5 metres wide. Veins tend to be lensoid along strike and contain malachite and disseminated chalcopyrite.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 15086 & 16730

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping	1:8500 1kmx1km		\$1000.00
Photo interpretation			
<b>GEOPHYSICAL (line-kilometres)</b>			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
<b>GEOCHEMICAL (number of samples analysed for...)</b>			
Soil			
Silt			
Rock			
Other			
<b>DRILLING (total metres; number of holes, size)</b>			
Core			
Non-core			
<b>RELATED TECHNICAL</b>			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
<b>PROSPECTING (scale, area)</b>	1:8500 1kmX1km		\$520.00
<b>PREPARATORY / PHYSICAL</b>			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
<b>TOTAL COST:</b>			\$1,520.00

Event Number: 4214894

**GEOLOGICAL & PROSPECTING RECONNAISSANCE  
ASSESSMENT REPORT**

**BC Geological Survey  
Assessment Report  
30999**

On The

**MA (MASTER ACE) ZONE MINERAL PROPERTY**  
Tenure Number 584006

Centre of Property:  
49° 17' 37" N and 121° 08' 10" W

NTS Mapsheet: 92H025

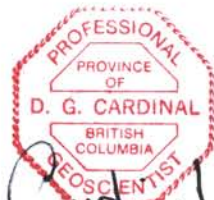
Owner-Operator:

D. G. Cardinal  
1883 Agassiz Ave.  
Agassiz, BC

Report Prepared By:

D. G. Cardinal, P.Geo.  
1883 Agassiz Ave.  
Agassiz, BC V0M 1A2

August 2, 2009



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## A. INTRODUCTION

The MA Zone mineral claim also referred to as the 'Master Ace' zone in this report was acquired through MTO property acquisition to cover an auriferous-bearing structure.

The claim is located 24 air-kilometres southeast of the town of Hope, BC. The claims can be accessed by helicopter based in Hope or by series of logging roads and then an arduous 2-3 hour hike along the ridge to reach the claim. The claim is centrally located with UTM co-ordinates: Zone 10, 634948E and 5461876N on NTS Mapsheet: 92H025.

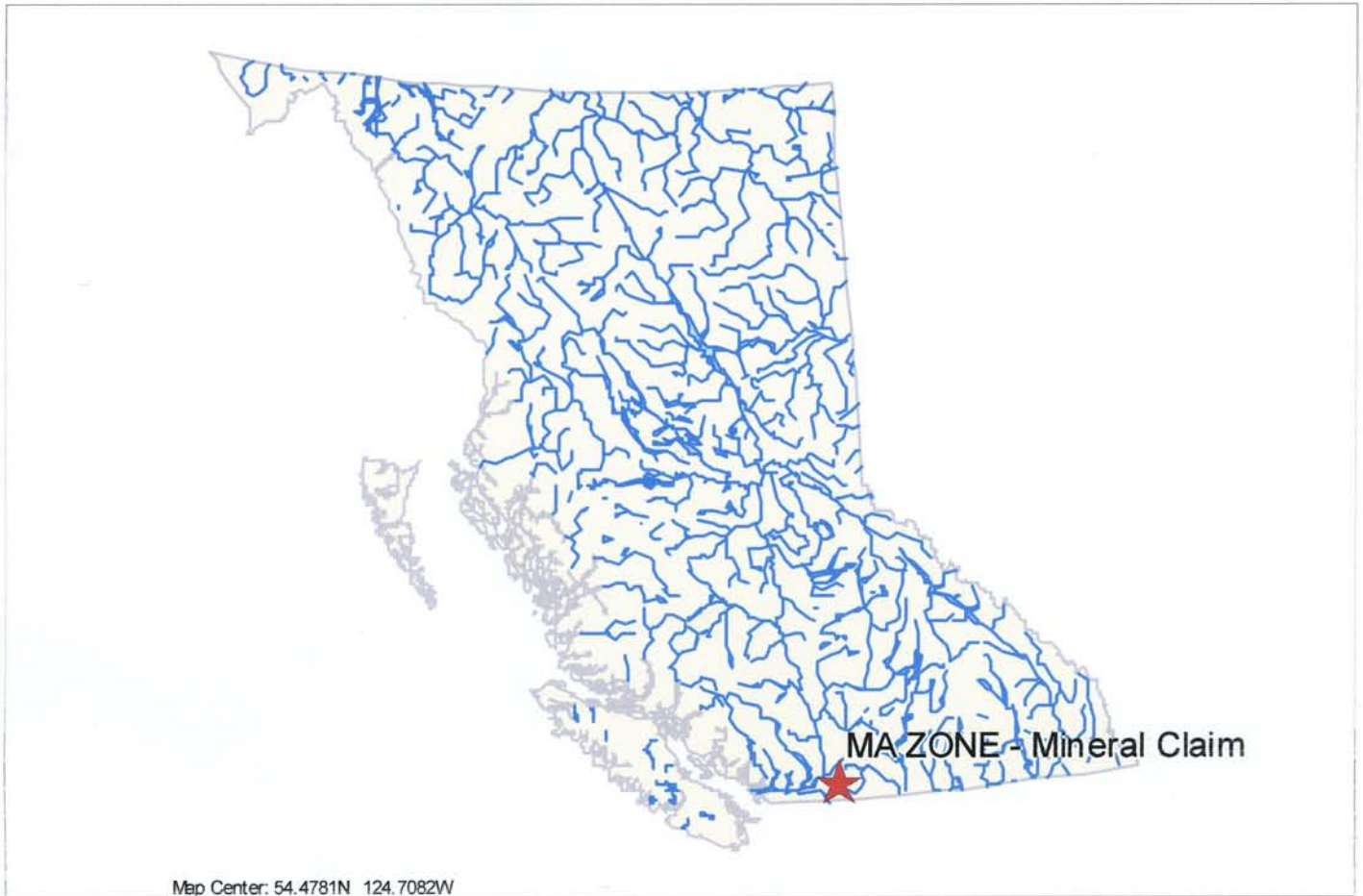
The claim is recorded as tenure number: 584006 and covers 189.61 hectares and is in good standing until May 11<sup>th</sup>, 2011.

The property is underlain predominately by highly foliated, steeply dipping, northwest trending cherty argillites which form part of the Hozameen Group of Permian to Jurassic age. The cherty argillites host a fault bounded band of serpentized ultramafic, traceable for several kilometres along northwesterly strike.

A gold-copper-silver-bearing talcose-quartz-carbonate structure is hosted along the footwall of the west dipping serpentinite and hanging wall of the cherty argillites. Where observed, the talcose-quartz-carbonate vein is highly sheared and contains malachite associated with disseminated chalcopyrite. The vein appears to be lensoid and in places is 4-5 metres wide. The structure contains elevated gold, silver and copper values. Some of the documented historical assays obtained along the vein included: 4.1 gm/t Au, 22 gm/t Ag and 1.3% Cu.

A 2-day reconnaissance geology and prospecting survey was undertaken in August of 2008. Several old open-cuts and pits were examined where talcose shears hosting lenses of quartz-carbonate veins were observed. Veins were noted to be coated with malachite staining, fresh break showed disseminated chalcopyrite. Limited traverses were conducted for mapping as well as panning some of the oxidized soils obtained from the old workings. Panned concentrates showed fine crystalline gold.

The above-noted work was filed for assessment on May 10<sup>th</sup>, 2009 recorded under event number: 4281182. The MA Zone mineral claim is in good standing until May 11<sup>th</sup>, 2011.



## LOCATION MAP

### **MA ZONE (Master Ace Zone) Mineral Claim**

MAP CENTRE: 54.4781N; 124.7082W

UTM: ZONE 10

634948E; 541876N

NTS Mapsheet: 92H025

Figure 1.



**MINERAL CLAIM MAP**  
**MA ZONE**  
**Tenure Number 584006**  
**Map Centre: 49.2936N; 121.1356W**  
**Area: 189.61 Ha**  
**NTS Mapsheet: 92H025**

**Map Scale: 1:19500**  
**Figure 2.**

## B. TENURE INFORMATION

The MA (Master Ace) Zone is comprised of 1 claim covering 189.61 hectares. Claim summit is at elevation of 2060 metres. The UTM co-ordinate centre of the claim: Zone 10 634948E; 5461876N (NTS co-ordinates: 49° 17' 37" N; 121° 08' 10" W), on NTS mapsheet: 92H025.

Pertinent tenure data:

<u>Tenure #</u>	<u>Claim Name</u>	<u>Issue Date</u>	<u>Good To Date</u>	<u>Area</u>
584006	MA Zone	2008/may/11	2011/may/11	189.61

## C. LOCATION AND ACCESS

The claim is located some 24 kilometres due east southeast of the town of Hope. It flanks the eastern slopes of Mount Outram which has a peak elevation of 2430 m.

Access to the property can be reached by logging roads or helicopter. A helicopter company is permanently based out of Hope that can be utilized to access the Master Ace zone some 15 minutes ferry time. The claim was accessed by road, driving on Highway 5 east of Hope for 20 km where an off-ramp is taken at the Sowaqua Creek turn-off. From here, a 4-wheel vehicle is required. A logging road parallels the eastern side of the creek to its headwaters for about 23 km. At this point the road ends and an arduous 2 hour climb from 1400m to 1830m elevation traversing along an east-west trending ridge for a total of some 2 km leads you to old workings on the claim Master Ace zone.

The author and assistant established a small 2-person camp for 2 nights just above the tree-line along the alpine at 1830m elevation from where reconnaissance surveys were conducted.

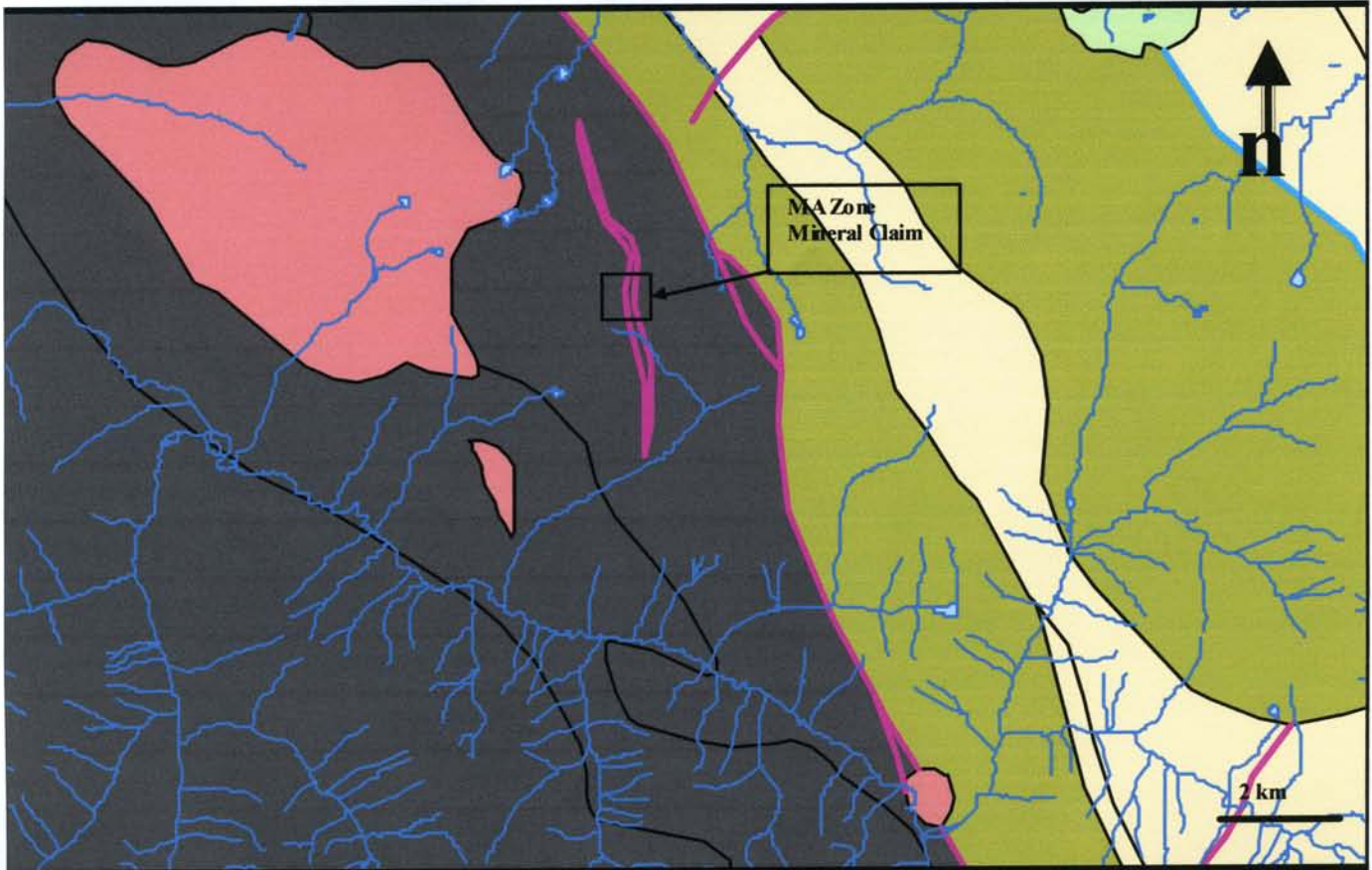


#### **D. BRIEF HISTORICAL BACKGROUND:**

Gold was initially discovered on the property in the late 1920s by a small group of prospectors from Coalmont-Tulameen area. The key claim staked at the time was referred to as the Master Ace covering an auriferous-bearing structure. The workings were first briefly recorded by the BC Minister of Mines in 1930. In 1932, P.B. Freeland of the Ministry of Mines documented in more detail the local geology and mineralization underlying the claims and gave a favourable review (Report of the Minister of Mines, 1932, pg. 157.)

However, by the late 1930s, the claims received limited exploration and the interest waned. Over decades the area remained unexplored this also was partly attributed to the fact that the Master Ace mineral occurrence on the initial BC Minfile maps was plotted incorrectly, leading a number of mining companies to search for the old workings in the wrong area, 4-5 km northerly of the actual workings. In 1985, under the guidance of retired prospector from Tulameen, Mr. P.J. Rabbitt (recently deceased), the writer was able to relocate the old Master Ace gold showing. The area was re-staked and in 1986 a Vancouver based junior resource company conducted a series of exploration surveys. A number of the old showings and workings were relocated both geology, geophysics (VLF-EM) and geochemical surveys were carried out followed by limited diamond drilling in 1987 (D. Cardinal, 1988).

The claims eventually lapsed and with the advent of computer staking on-line through BC Mineral Titles Online (MTO) the area was re-staked a number of times by various interested parties but no work was ever carried out on the Master Ace zone. In 2008, the writer had the opportunity to again acquire the MA Zone and subsequently conducted limited reconnaissance exploration-prospecting surveys herein described under event number 4281182.



**REGIONAL GEOLOGICAL SETTING**

**MA ZONE MINERAL CLAIM**

**Tenure No.: 584006**

**NTS: 92H025**

**Legend:**

- Post Accretion Intrusive  
Eocene Granodiorite
- Overlap  
L. Cretaceous Jackass Mtn. Grp.,  
Undivided fine to coarse clastic sedimentary rocks
- Terrane: Cadwallader  
L-M Jurassic Ladner Grp., undivided sedimentary rocks
- Terrane: Bridge River  
Permian to Jurassic Hozameen Complex  
Undivided sedimentary, volcanic and ultramafic rocks
- Accretionary-Suture zone – Hozameen Fault

Scale: 1: 140,000

Figure 3.

Plotted by: D. Cardinal, P.Geo.

## **E. REGIONAL GEOLOGICAL SETTING**

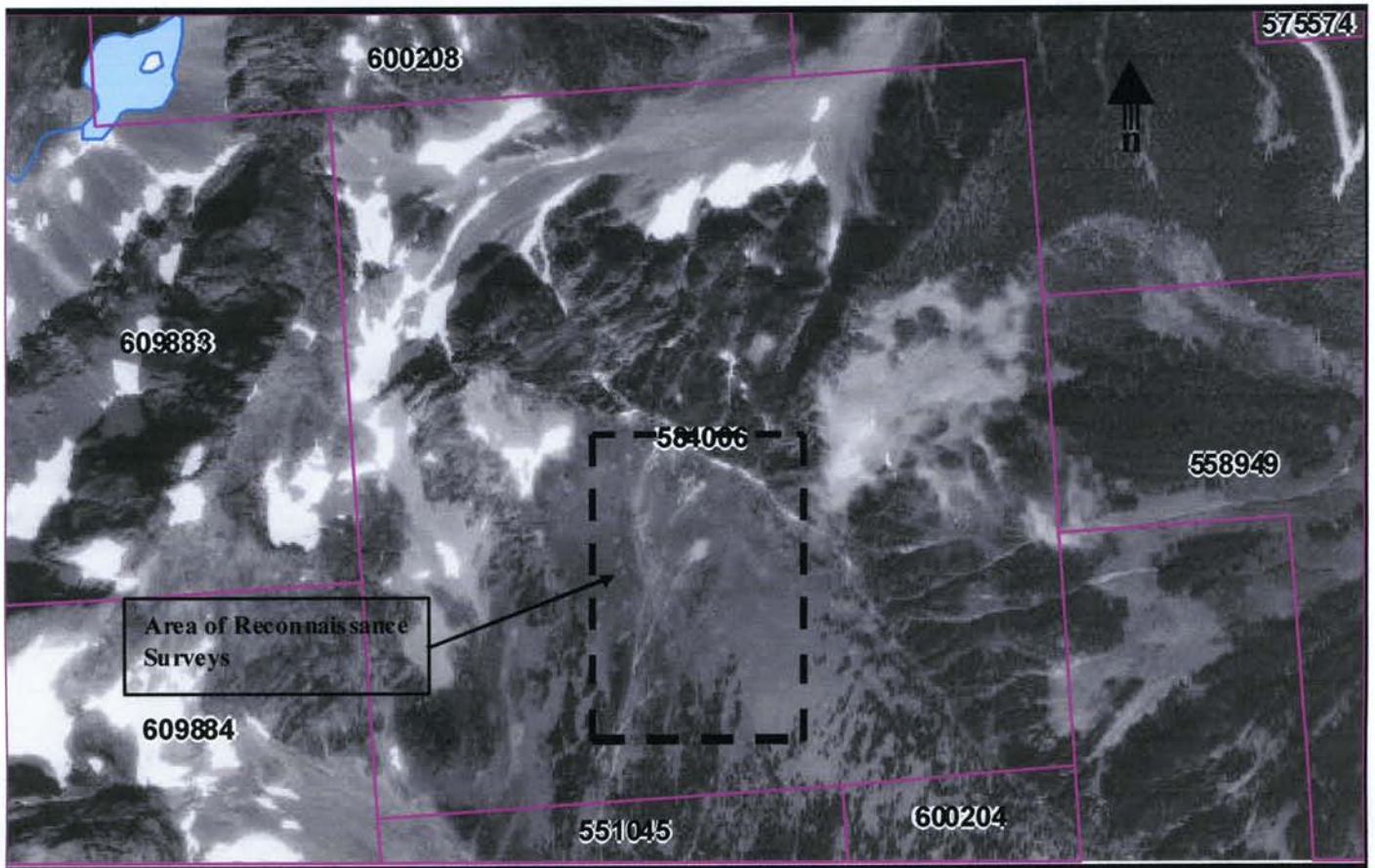
The regional geological framework is marked by a prominent accretionary structure or suture zone referred to as the Hozameen Fault (J.W.H. Monger, 1989). The fault is characterized by a belt of serpentine spatially related to a number of gold occurrences and former producing mines including the Carolin mines referred to as the Coquihalla Gold Belt (G. Ray, 1984), located some 27 kilometres northwest of the MA claim.

The fault represents a collision boundary between two distinct lithological tectonic terranes. East of the fault is the Cadwallader Terrane (also referred to as the Methow terrane) comprised of Lower to Middle Jurassic Ladner Group sediments which consist predominately of steeply dipping, northwest trending argillite, shale, siltstone and basal conglomerates. The basement rocks are comprised of Triassic Spider Formation andesitic-basaltic volcanics (G. Ray, 1990). West of the fault is the Bridge River Terrane, an oceanic assemblage of greenstone, deep water pelagic cherts, siliceous siltstone and serpentinite. Regionally, the Bridge River rocks are referred to as the Hozameen Group of Permian to Jurassic age (J. Monger 1994), consist mainly of highly foliated, northwest trending, low grade metamorphic siliceous siltstone, graphitic argillite, chert bands and siliceous greenstone. In the area of the claim a northwest trending band of serpentinite hosted in the Hozameen rocks is traceable for several kilometres (Figure 3) described in more detail below.

## **F. PROPERTY GEOLOGY**

The claim is underlain predominately by 2 main rock types: cherty-graphitic argillites in fault-shear contact with talcose-serpentinized ultramafic. The cherty, siliceous argillaceous sediments are weakly metamorphosed to greenschist facies, highly foliated, deep steeply to the southwest and trend northwest. Sedimentary bedding is rarely observed. The sill-like serpentinite is semi-concordant with the sediments and dips steeply to the west. The serpentine is traceable across the entire length of the claim although much of it along the southern slopes is covered by alpine vegetation and at lower elevations is masked by glacial till. From the ridge top looking north, at an elevation of 2060m, the serpentine trends northwest following an inaccessible precipitous cliff face where it is quite visible. The serpentine is lenticular in shape and in places appears to be up to 100 metres wide.

Most of the old workings occur along the ridge top and additional pits can be found down slope to the southeast for some 250 metres. Best viewed along the ridge, the footwall of the serpentine is altered to talcose shears hosting quartz-iron carbonate veining with malachite staining associated with elevated gold and copper values. In 1986, the writer collected chip samples from an old trench with malachite quartz-iron carbonate

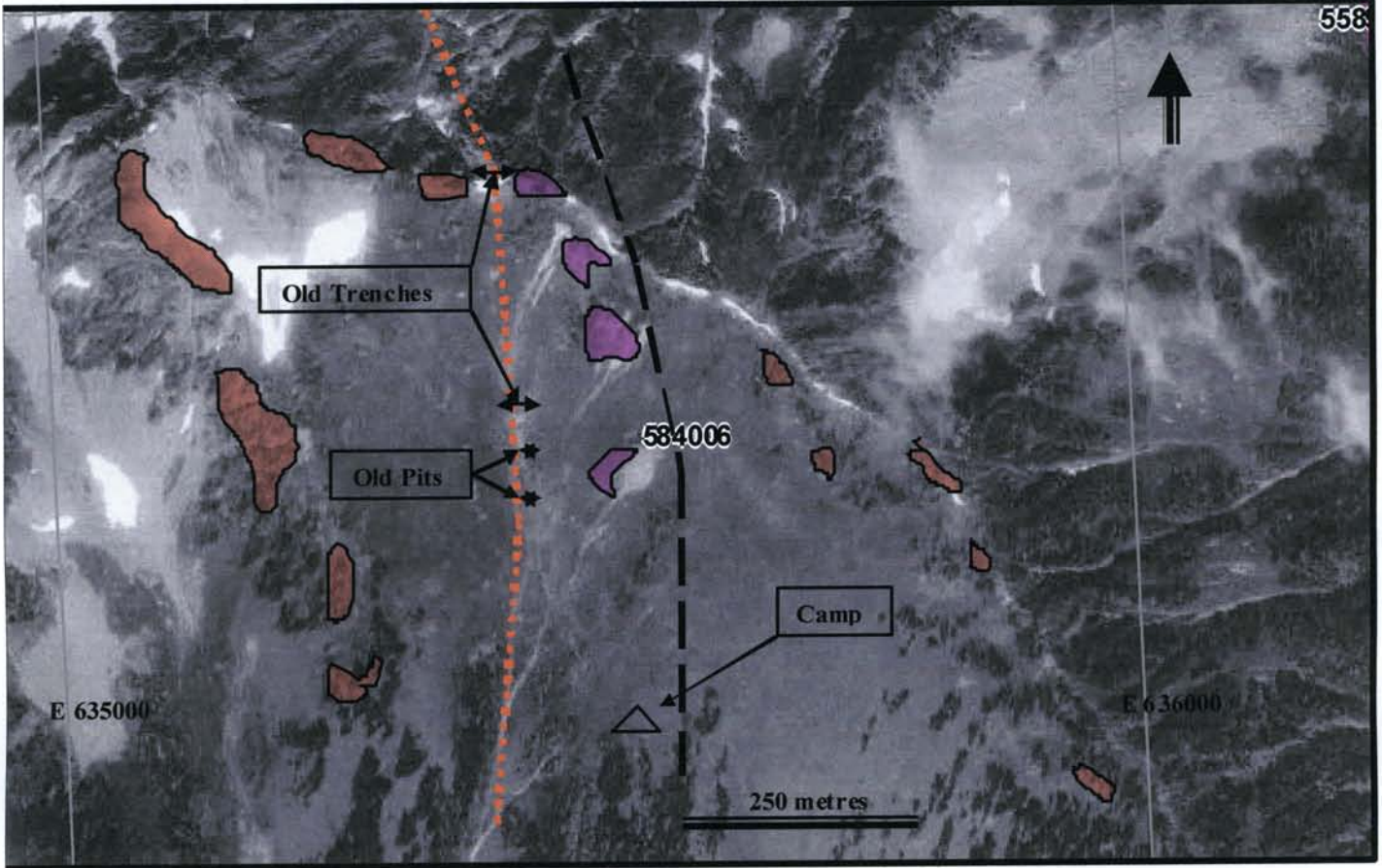


**MA ZONE MINERAL CLAIM  
Tenure Number:584006**

**Location of Reconnaissance Geology  
And Prospecting**

Scale: 1:18,500

Figure 4A.



### MA ZONE MINERAL CLAIM

Tenure Number: 584006

### RECONNAISSANCE PROSPECTING AND GEOLOGY MAP (Showing Bedrock Outcrop)

**Legend:**



Highly foliated cherty argil lite



Sheared, faulted serpent inized ultramafic



Location of bedrock outcrop.



Auriferous-bearing quartz-carbonate veining



Fault-contact

Scale: 1:8500

Figure 4B.

mineralization across 4.7 metres which assayed: 4.1 gm/t Au and 15.8 gm/t Ag. Other grab samples taken along the talcose quartz-iron carbonate shear zone assayed as high as 3.2 gm/t Au, 22 gm/t Ag and 1.3% Cu.

The auriferous-bearing horizon is structurally controlled and hosted in talcose quartz-iron carbonate shear long the footwall of the serpentinized ultramafic.

## **G. FIELD PROCEDURES**

Between August 29<sup>th</sup>-30<sup>th</sup>, 2008 2 days were spent conducting brief reconnaissance surveys consisting of prospecting and geological traverses on the property. A small 2-person camp was established at elevation 1830 m just above the tree-line. The old workings, mainly shallow trenches and open cuts along the ridge top were examined. Mapping was conducted at a scale of (1:xxxx). Most prominent bedrock outcrops were examined and their positions fixed with hand held GPS unit with an error of +/- 3m and then plotted onto an orthophoto downloaded from Minfile, The Map Place ([www.em.gov.bc.ca/Mining/Geolsurv/MapPlace](http://www.em.gov.bc.ca/Mining/Geolsurv/MapPlace)).

A seasoned prospector collected a number of bulk soil samples both from a small stream leading from the mineralized old workings as well as oxidized soils from the some of the trenches and pits. These samples were then panned into concentrates at camp and were returned to the office where they were examined in more detail under binocular microscope. Some fine, wire-like, coarse textured visible residual gold was observed.

## **H. SUMMARY**

The Master Ace (MA) zone hosting structurally controlled gold-silver-copper mineralization was first discovered in the early 1920s. The zone was rediscovered by the author in 1985 and staked. The claims were subsequently optioned to a Vancouver based junior resource company. The company conducted a series of systematic exploration surveys included geological, geochemical and geophysical surveys, followed by limited diamond drilling 1987.

The claims were allowed to lapse and with the introduction of Mineral Titles computer on-line claim acquisition, the area was staked by various individuals over a period of time. The area recently again came open to staking and in 2008 the author had the opportunity to acquire the old Master Ace zone.

In 2008, the author and assisted by a prospector, hiked to the MA zone and established a small camp for 2 nights and conducted reconnaissance geological and prospecting surveys and re-examined some the old workings.

A number of the old pits and open cuts were examined. Mineralization observed consists predominately of malachite stained, disseminated chalcopyrite hosted in talcose-quartz-carbonate veins. Historical samples (1985-87) report the chalcopyrite to be associated with elevated values in gold and silver. The talcose-quartz-carbonate veins are structurally hosted along the footwall of a westerly dipping band of serpentinite which, in turn, is hosted in cherty argillites of the Hozameen Group, part of the Bridge River terrane complex.

More work is required in order to properly define and trace the auriferous-bearing structure along strike. Historical reports indicate the structure to be traceable for several kilometres. Future mapping and prospecting would help to verify if this is truly the case. If so, then the potential of discovering other enriched lenses of gold-copper-silver mineralization would make the claim an excellent target for precious metal exploration.

**I. COST BREAKDOWN – STATEMENT OF EXPLORATION**

Reconnaissance mapping and prospecting surveys were conducted on the MA Zone mineral claim for 2 days between August 29<sup>th</sup> & 30<sup>th</sup>, 2008 filed under event number 4281182. Expenses incurred are as follows:

Field Crew:	Cost Incurred:
Geologist, 2 days @ \$400 per day	\$ 800.00
Prospector-Assistant, 2 days @ \$250 per day	500.00
 Camp Expenses:	
Food and supplies, 2 days @ \$50 per day	100.00
 Transportation:	
4-wheel drive truck, 2 days @ \$60 per day	120.00
 Total Expenses Incurred:	<b><u>\$ 1,520.00</u></b>

Respectfully submitted;



D.G. Cardinal, P. Geo.



## J. REFERENCES

Cardinal, D.G., 1986: Prospecting Assessment Report on the Master Ace Gold Group; AR Number 15086.

Cardinal, D.G., 1988: 1987 Diamond Drill Project on the Master Ace Claim Group; AR Number 16730.

Freeland, P.B., 1932: Peers Creek Section – Master Ace; B.C. Minister of Mines Annual Report (Report of the Minister of Miners 1932, page A157).

Journey, J.M. and J.W.H. Monger, 1994: Preliminary Map, Geology Of The Southern Coast And Intermontane Belts, British Columbia; Geological Survey of Canada, Scale 1:500,000.

Monger, J.W.H., 1989: Map 41-1989 Sheet 1 Geology, Hope, British Columbia; Geological Survey of Canada, Scale 1:250,000

Ray, G.E., 1984: Coquihalla Gold Belt Project, B.C. Ministry of Energy, Mines & Petroleum Resources; Geological Fieldwork, 1983, Paper 1984-1.

Ray, G.E., 1990: The Geology And Mineralization Of The Coquihalla Gold Belt And Hozameen Fault System, Southwestern British Columbia; BC Ministry of Energy, Mines and Petroleum Resources, Mineral Resources Division, Geological Survey Branch; Bulletin 79.

## K. PROFESSIONAL CERTIFICATE

I, Daniel G. Cardinal, of the District of Kent, British Columbia, do hereby certify that:

- I am a Professional Geoscientist and reside at 1883 Agassiz Ave., Agassiz, BC V0M 1A2.
- I am a graduate of the University of Alberta (1978), BSc.-Geology and received a 2-yr. Diploma certificate from the Northern Alberta Institute of Technology (NAIT) 1972.
- I am member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (P.Geo.), membership 18455; and a member in good standing with the Association of Professional Engineers, Geologists and Geophysicists of Alberta (P.Geol.), membership No. M29405 and a Fellow of the Geological Association of Canada (F.G.A.C).
- I have practiced my profession continuously for the past 30 years.
- I am the registered owner of the MA Zone mineral claim – Tenure Number 584006.
- and that, I conducted the field surveys described in this report.

Signed in Agassiz, BC this 2<sup>nd</sup> day of August, 2009.

*Dan Cardinal*  
A red octagonal seal with a double-line border. The text inside the seal reads: "PROFESSIONAL" at the top, "PROVINCE OF" in the middle, "D. G. CARDINAL" in the center, "BRITISH COLUMBIA" below the name, and "GEOSCIENTIST" at the bottom.

Daniel G. Cardinal, P.GEO.