# Assessment Report on Continued Geochemical & Petrological Investigations

# Imperial Mineral Claim, (12 Units), Tenure Number 379554.

Munro Mountain in the Atlin Mining Division, British Columbia, Canada.

## Location, Inventory, Minfile.

- NTS Series 104N/12,
- LCP located at: North 59 degrees, 36 minutes and 24 seconds; West 133 degrees, 35 minutes and 37.1 seconds
- Elevation LCP: 921.87 metres
- National Mineral Inventory 104N12 Au3:
- Minfile No. 104N 008

By

• N. Clive Aspinall, M.Sc., P.Eng-(FMC#101024) Pillman Hill Road, Atlin, BC, V0W- 1A0. Canada Tel: 1-250-651-0001., Fax: 1-250-651-0002. E-mail: krakatoa@northwestel.net

Petrological work by John G. Payne, Ph.D., P.Geol.

Field work Date 3<sup>rd</sup> October 2007 Report Dated: 5<sup>th</sup> December 2007

### Clive Aspinall Geological

From:

<MT.online@gov.bc.ca>

To: Sent: <krakatoa@northwestel.net>
Friday, October 05, 2007 12:25 AM

Subject:

SOW-M (4173463) 2007/OCT/04 21:25:39 Mineral Titles Online, Transaction event, Email

confirmation

Event Number: 4173463

Event Type: Exploration and Development Work / Expiry Date Change

Work Type Code: T

Required Work Amount: 2400.00

Total Work Amount: 2000.00

Total Amount Paid: 120.33

PAC Name: ncaspinall

PAC Debit: 400.00

Tenure Number: 379554

Tenure Type: M Tenure Subtype: C

Claim Name: IMPERIAL

Old Good To Date: 2007/oct/15 New Good To Date: 2008/oct/15

Tenure Required Work Amount: 2400.00

Tenure Submission Fee: 120.33

Your technical work report is due in 90 days as per Section 33 of the Mineral Tenure Act and Section 16 and Schedule A of the Mineral Tenure Act Regulation. Please attach a copy of your confirmation page to the front of your report.

Server Name: PRODUCTION





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

# ASSESSMENT REPORT TITLE PAGE AND SUMMARY

ASSESSMENT REPORT: COLUMNIAVED GEOCHEM	TOTAL COST \$2,875. 0 0
IMPERIAL MINIERAL CLAIM (120 MITS)	TEMURE NUMBER 37,9654, DECEMBER 5,200
AUTHOR(S) SI	GNATURE(S)
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NOTICE OF WORK PERMIT NUMBER(S)/DATE(S) Now - MEC	here ed YEAR OF WORK
STATEMENT OF WORK - CASH PAYMENT EVENT NUMBER(S)/DATE(S)_	4173463
PROPERTY NAME IMPERIAL	
CLAIM NAME(S) (on which work was done)	
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MINING DIVISION ATLIN	76 76
LATITUDE $59^{\circ}$ $36^{\circ}$ $24^{\circ}$ LONGITUDE $1$	55 ° 55 ' 31 " (at centre of work)
OWNER(S)	
1) N.C. ASPINALL 2	
MAILING ADDRESS	
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ATLIN, B.C. VOWIAD	
OPERATOR(S) [who paid for the work]	
1) AS ABOVE 2	)
MAILING ADDRESS	
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Cache Creek terrane; electring	,
REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT I	REPORT NUMBERS 17, 495
	)

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL			
(number of samples analysed for)			
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Other	/		
DRILLING			
(total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying  Petrographic 2/59/4/	\ <u>\</u>		1 11 77 7
Petrographic X 34W	Nes .		1,437.5
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY/PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail _			
Trench (metres)			
Underground dev. (metres)			
		TOTAL C	00.278, K TEO:

Tenure Number	Tenure Type	Claim Name	Owner	Map Number	Good To Date	Status	Mining Division	Area	Tag Number
379554	Mineral	IMPERIAL	101024 (100%)	104N063	2008/oct/15	GOOD	ATLIN	300	209661
569656	Mineral	IMPERIAL 2	101024 (100%)	104N	2008/nov/08	GOOD	ATLIN	392.8876	
569657	Mineral	IMPERIAL 3	101024 (100%)	104N	2008/nov/08	GOOD	ATLIN	343.8143	
569658	Mineral	IMPERIAL 4	101024 (100%)	104N	2008/nov/08	GOOD	ATLIN	409.232	
Total			400 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					1,445.93	

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E-mail: krakatoa@northwestel.net

Petrological work by John G. Payne, Ph.D., P.Geol.

Field work Date 3<sup>rd</sup> October 2007 Report Dated: 5<sup>th</sup> December 2007

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#### Summary

The original Imperial property was first staked in 1899. Gold had been discovered in a 150 metre long quartz vein. Over the following two years, two cross-cut adits, an upper and a lower, were driven to intersect the discovered quartz vein. This quartz vein reportedly trends between 295°-310°NW dipping southwest at 50°-60°.

The vein width varies reportedly from 0.12 metres to 2.6 metres. A bunk-house and a small stamp mill were built by a syndicate called Nimrod.

According to BC Minfiles and other reports, in 1900 the Nimrod Syndicate miners milled 245 tonnes from the upper level, which yielded 13.7 grams per tonne gold while the lower tunnel produced 23 tonnes ore, which yielded 5.1 grams per tonne gold.

In 1902, it is reported a 1485 kilogram (3267 lbs) test sample from the upper tunnel was collected and treated in Vancouver. This sample analyzed 1.2 oz/t Au and 1.26 oz/t Ag.

No information is available on the Imperial property from 1902 until 1984, when the Imperial and adjacent properties, were acquired by Lear Oil and Gas, and then optioned to Homestake Mineral Development Ltd.

Homestake carried out extensive surface exploration in 1987, with discouraging results.

On 9<sup>th</sup> August 2000, Clive Aspinall of Atlin BC staked the property and carried out limited surface work during 2000, 2003, 2006 and the present year 2007.

Given past records and local complex geology, the property needs be diamond drilled.

#### Introduction

This report is to document the assessment work carried-out on the Imperial mineral claim, tenure #379554 carried out by Nicholas Clive Aspinall, (FMC#101024) of Atlin BC, on 3<sup>rd</sup> October 2007, ref: Figure 1, 2, 3, & 4, appendices.

In 2007 field work objectives were to collect outcrop rock samples for thin section study, in addition rock samples for geochemical analysis. Six soil samples were also collected for geochemical analyses. These six soil samples are not included here since they were not analyzed by the laboratory at time of writing this report.

#### **Reliance on Other Experts**

Dr. J.G Payne completed the petrology for this report. Reference is made to GSC and BC mining survey reports, in addition to a Homestake Mineral Development Ltd assessment report made on the Imperial property.

#### Location, Accessibility, Climate, Infrastructure and Physiography

The Imperial claim is located 7 km northeast of the community of Atlin. A bush road leads from Surprise lake road to the base of Munro Mountain, where the claim is situated.

The Imperial mineral claim is a legacy claim of 12 units, tenure # 379554 and located on the south-facing slope of Munro Mountain, near Atlin BC, see Figure 2, appendices.

The claim falls on NTS (National Topographic System) 104N/12E.

The LCP is located in a wooded area. Geographic Positioning System (GPS) Co-ordinates are: North 59 degrees, 36 minutes and 24 seconds, West 133 degrees, 35 minutes and 37.1 seconds, elevation 921.8 metres.

The south facing slopes of Munro Mountain are relatively steep, with slopes being up to 45° in steepness. These slopes ascend for approximately 250 metres above the Pine Creek valley.

The climate of the Atlin area has witnessed some changes recent years. Falls are mild, extending from September to December, with some –40° F below days during January. Snows usually have been coming late, arriving to stay in December and last until April.

Atlin Lake freezes over for shorter periods than previously, starting from early January and breaks up in early May. The lake has open areas at some locations, and can be thin where major creeks flow in to the lake, such as in Pine Creek Bay.

Spring and summer weather is variable from year to year, and influenced by Pacific Ocean coastal patterns.

#### History

Much of the following history of mineral exploration and gold mining on the Imperial Claim has been taken from the 1988 Homestake Mineral Development Ltd assessment report on Imperial Property, (A/R 17,495) and BC.Minfiles.

The original property was first staked in 1899. Gold had been discovered in a 150 metre long quartz vein. Two cross cut tunnels, and upper and a lower, were driven to intersect the discovered quartz vein. This quartz vein reportedly trends between 295°-310° dipping Southwest at 50°-60°.

The veins width varies reportedly from 0.12 metres to 2.6 metres. A bunk-house and a small stamp mill were built from funding by a syndicate called Nimrod.

According to BC Minfiles and other reports, in 1900 the Nimrod Syndicate miners milled 245 tonnes from the upper level, which yielded 13.7 grams per tonne gold while the lower tunnel produced 23 tonnes ore, which yielded 5.1 grams per tonne gold. These records testify the Imperial claim as the only "past producer" of hard rock gold in the Atlin mining camp. Yet all records continue to show the property has never been drilled.

In 1902, a 1485 kilogram (3267 lbs) test sample from the upper tunnel was collected and treated in Vancouver. This sample analyzed 1.2 oz/t Au and 1.26 oz/t Ag.

The Homestake report continues to state that in 1933 a geologist from BCMM took 14 samples from a 0.5 metre section of the upper tunnel vein over a length of 10.9 metres (35 feet). These samples reportedly averaged 0.8 oz/t Au and 1.0 oz/t Ag.

No information is available on the Imperial property from 1902 until 1984, when the Imperial and adjacent properties, were acquired by Lear Oil and Gas. This company contracted out a program of geological mapping, soil sampling, and VLF-EM and magnetometer surveys.

The property was then optioned by Homestake Mineral Development Company Ltd during the 1980's, and carried out the following work in 1987.

- 19 Km of grid line surveys
- Detailed geological mapping at 1:1000
- Collection of 245 rock and 26 soil samples for multi-element analysis.

The property was allowed to lapse and re-staked by the writer on 9<sup>th</sup> August 2000.

Tables I and II record samples collected by the writer prior to 2007.

Table I. Samples collected from West Sector Imperial Claim 2004

Sample No.	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Cr ppm	Field Relationships
IMP04-1	20	0.4	7	<2	13	962	163	Talus boulder fragments of altered ultramafics and quartz vein material, 50 m below Imperial quartz vein
IMP04-2	120	0.4	32	<2	13	763	286	Outcrop of altered ultramafic on hanging wall to Imperial fault and associated Imperial quartz Vein.
IMP04-3	205	6.2	411	154	640	6	138	Quartz veins in ultramafics -contact zone - trace chalcopyrite and galena.
IMP04-4	715	24.5	153	50	206	4	153	Quartz veins in basalts-contact zone-trace chalcopyrite, pyrite, and galena.
IMP04-5	355	7.9	157	150	236	2	157	Quartz boulder fragments with sulphides

Table II. Samples collected from Central Sector Imperial claim in 2006

Sample No.	Au ppb	Ag ppm	Cu	Pb Ppm	Zn	Ni	Cr	Description
Soils	рро	hbiii	ppm	грш	ppm	ppm	ppm	
Imperial #1	5	<0.2	26	16	65	228	133	Grey talus fines/soil gabbro diabase outcrop. Trace of pyrrhotite. Occasional white stringer veinlets in gabbro
Imperial #2	10	<0.2	25	36	38	512	122	Talus fines/soil collected just north of gabbro contact. Brownish colour; some organics.
Imperial #6	30	<0.2	27	14	42	395	186	Talus fines talus fragment of Cache Creek conglomerate from up-slope
Imperial #7	5	,0.2	6	14	33	260	163	Talus fines/soil, light brown, some organics.
Rock								
Imperial #3	10	0.3	6	6	8	335	156	Carbonatized U/B boulder rock sample from local outcrop with SE tending quartz veinlets, up to 8cm thick, dipping 75 deg to SW, following same trend as Imperial Fault.
Imperial #4	10	0.3	25	<2	9	659	139	Talus boulder, originating up hill and south of Imperial Fault. Carbonatized U/B with quartz veinlets 10 cm thick. Fuchsite.
Imperial #5	25	<0.2	2	<2	15	727	269	As above

#### Regional Geological Setting

The Imperial claim falls within the northwestern margin of the northern Cache Creek Terrane. This Terrane consists of allochthonous remnants of a late Paleozoic to early Mesozoic Tethyan Ocean.<sup>1</sup>

The Tethyan ocean basin was destructed during the early Mesozoic subduction event when an ancient outboard island arc known as Stikinia collided with ancient North America, obducting Cache Creek Terrane onto a subduction- accretionary complex.

Within the Atlin area where the Imperial claim is situate, Cache Creek rocks consists of individual ultra-mafic thrust slices of the allocthonous remnants mentioned above, including limestone, argillites and meta-volcanic rocks now referred to as the Atlin Accretionary Complex.

The Atlin region for the past 100 years has been a focus of placer gold mining, and the source of gold has been attributed to the proximity of the ultra-mafic rocks in the region, specifically carbonate altered ultramafics, or listwanites.

<sup>&</sup>lt;sup>1</sup> Ash, 1994.

Ultramafic rocks in the Atlin region include harzburgite associated with dunites and peridotite cumulates, believed to be wehrlite. These rocks are associated with argillites, greywackes, limestone and meta-andesites.

Lineaments proximal to the Imperial claim, such as the Torres Inlet-Macdonald Lake Lineament, the Pictou- Adera Fault Extension? and the Pine Creek Fault are considered important, (to the writer) to gold placers in the Atlin camp, ref: Figure 3, appendices.

#### **Property Geology**

With the help of BC Bulletin 95<sup>2</sup>, the writer reclassified Imperial claim property rocks to include the following, ref: Figure 4 in appendices,

- Fine grained metagabbro
- Listwanites, carbonatized ultramafics
- Harzburgite, dunite, peridotite cumulates, non-differentiated
- Meta andesite-basalts
- Scattered quartz veins with sulphides, copper carbonates and fuchsite are associated with the carbonatized ultramafics and meta andesite-basalts within fault zones and contact zones.

The following descriptions are taken from the writer's 2004 observations and Dr. J.G Payne's petrology work from rocks collected from the property.

**Fine grained metagabbro:** Within the Imperial Claim, two metagabbro bodies are recognized. One forms a distinct plug and lies on the west side of the claims. The second is mostly covered by the rock glacier debris and overburden.

The outward morphology the western plug is very different to all other rock exposures on the Imperial claim. It dome like, yet rugged and saw tooth with steep cliff slopes in places. It stands an estimated 50 metres above its base. No petrology work has been done on this rock type to date.

Listwanites, carbonatized ultramafics In weathered outcrop, the rock is light tan in colour, and on fresh surface is light grey, very hard and very fine-grained. Mariposite is concentrated as macro-lenses and averages up to 15% as seen on selected rock surfaces. Silica alteration is pervasive and gives the rock its hard characteristic. It is almost cherty in texture. Silica alteration is associated with the carbonate, described as magnesite in the Homestake report. Carbonate is more pervasive than the silica alteration, and is reflected on weathered surface by providing the tan colour to surface exposures. In all cases, it is the mariposite, which catches the eye, and detailed prospecting reveals it uniquely associated with the ultramafic rocks.

<sup>&</sup>lt;sup>2</sup> Ash, 1994

Under thin section this rock s scattered clusters of chromite (altered to pyrite and locally magnetite) enclosed with intergrowths of magnesite and quartz that in places show strongly elongated textures. Minor patches of fuchsite are in part associated with chromite and in part associated with quartz.

Harzburgite, dunite, peridotite cumulates, non-differentiated. In hand specimen this is a dark rock ranging from aphanitic to porphyritic in texture. In this section the dunite shows minor relic grains of chromite in replaced and recrystallized intergrowths of extremely fine grained magnesite and coarser grained ankerite, with less abundant quartz and minor fuchsite and opaques. Subparallel, fracture-filling veinlets are dolomite/magnesite.

Meta andesite-basalts. In hand specimen this is a fine grained dark grey rock, and looks more like basalt than an andesite. Under the microscope plagioclase and actinolite is present as moderate to strong, but in varying proportions. Disseminated opaques are concentrated in patches and seams, mainly in actinolite-rich zones. Numerous veinlets of quartz, in part with minor actinolite and/or plagioclase; some show evidence of strong deformation and recrystallization. A few veinlets are of actinolite.

Traces of sulphide and copper carbonate mineralization: In hand specimen sulphides are only seen in quartz, especially where quartz shows composite veining. The sulphides show preference to one pulse of quartz veining. In 2004 a thin section of quartz showed: Seams of sericite-ankerite and disseminated grains and clusters of sulphides. One sulphide patch consists of chalcopyrite and pyrite with minor gold/electrum. Another smaller sulphide patch consists of galena and chalcopyrite. Sulphides and ankerite are altered moderately to strongly to limonite, hematite, and malachite.

Rock samples collected in 2007 identified with the help of Dr. J.G Payne, ref Figure 4, appendices.

Diorite/diabase dike, (Sample 662950): In hand sample, the rock is crystalline, dark grey, fine grained, with diabase texture. Shows traces of disseminated pyrite. Is located in fault zone. Under the microscope one sample shows phenocrysts of plagioclase (altered completely to quartz and ankerite), a few of clinopyroxene (altered completely to chlorite-ankerite), and one of quartz in a groundmass of plagioclase (altered strongly to sericite-ankerite), patches of ankerite, disseminated elongate flakes of biotite, interstitial patches of quartz, and minor pyrite, No quartz is present within this dike, but has been subject to alteration with adjacent carbonate ultramafics.

**Diorite dike** (Sample 662946). During 2007 work a diorite dike was noted on the northwest side of the Imperial claim. In hand specimen, rock is crystalline, dark grey, porphyritic, sericite alteration. Under thin section, the rock can be described as porphyritic diorite that contains phenocrysts of plagioclase (altered slightly to sericite)

and minor ones of hornblende (altered completely to tremolite/actinolite and biotite) in a groundmass of equant plagioclase, prismatic tremolite/actinolite, and flakes of biotite.

#### Faults, Lineaments, Dikes and Geological Contacts.

Faults within the Imperial claim are believed by this writer to be faults influenced by the 180° (magnetic) Torres Inlet-Macdonald Lake lineament, which passes out side, and immediately to the NW of the area of the Imperial claim, ref: Figure 3.

Related to this major lineament are the Ruffner Silver Mine near Macdonald Lakes, and a molybdenum prospect near Davenport Creek and Gladys Lake, (outside maps enclosed).

Close examination of the Imperial fault in 2007 suggested be described as thrust fault at 125° azimuth, with off-set faults at 155° to 160°. Within the central part of the claim quartz veining, fuchsite and attendant specks of mineralization are associated with the off-set faults, rather than to Imperial Fault, ref: Figure 4.

Furthermore, at least one off-set fault is the conduit of porphyritic diorite/diabase dike, ref: **Sample 662950.** 

The geological 4<sup>th</sup> July Granite Batholith contact zone with Cache Creek rocks on the west side of the Imperial claim is considered prospective. Talus debris proximal to this fault zone indicated one speck of gold/electrum in a 2004 polished section sample.

#### Mineral Deposit Type

Investigations in 2000, 2004, 2006 and 2007 show Imperial mineralization to be very weak as seen on surface, only with traces of sulphides in scattered quartz veinlets. Only one sample shown as a microscopic speck of gold/electrum, (identified in polished section in 2004).

#### It is proposed:

- The quartz veinlets are mesothermal
- Priority quartz veins with traces sulphide mineralization are proximal to NE Pictou fault extension and the Jurassic 4<sup>th</sup> July granite batholiths.
- Secondary important quartz veins with traces sulphide mineralization are associated with off-set faults to Imperial fault.

Although the Imperial property has been considered a listwanite style mesothermal vein deposit in the past, field work since 2000 suggests fault structures and the proximity to the 4<sup>th</sup> July Granite Batholith may have contributed to the quartz veins and presence of electrum, as well as traces of other sulphides.

#### Mineralization

On surface mineralization is seen in trace amounts only. A 2004 quartz sample under microscope showed mineral content to be:

Mineral	percentage	main grain	size range (mm)
Quartz	93-95%	0.7-3	(recrystallized zones 0.02-0.1)
Sericite	3-4	0.02-0.05	
Ankerite	1-2	0.02-0.05	
Chalcopyrite	0.3	0.05-0.5	
Pyrite	0.3	0.1-0.3	
Calcite	0.2	0.2-0.5	(one grain 1.5 mm)
Galena	0.1	0.05-0.2	
Malachite	0.1	0.05-0.07	
Muscovite	minor	0.05-0.1	
Gold/electrum	traces	0.02-0.05	

#### **Drilling**

The Imperial property is a grass roots property, and there are no known records that show diamond drilling ever took place on the property.

#### Sample method and Approach

During 2007 four rock samples were collected; two for geochemical and two for petrology description. Six geochemical samples collected are not included as the laboratory had not completed analyses by the time this report goes to press.

#### Sampling Preparation, Analysis and Security

All rock samples were kept under the writer's scrutiny until couriered to Acme Laboratory, 1020 Cordova Street, Vancouver, BC, V6A 4A3

Samples were then analyzed according to MULTI ELEMENT ICP ANALYSIS

#### **Data Verification**

The petrology work and geochemical analyses carried out on this property since 2000, was done by qualified and respected professionals in the industry.

Both adits on the property are now covered by talus debris, and this writer has never verified the original vein mined by the Nimrod Syndicate,

#### **Adjacent Properties**

Other mineral properties are situating in the area:

- Yellow Jacket, gold
- Atlin Ruffner, silver
- Ruby Creek Molybdenum

#### Mineral Processing and Metallurgical Testing

There is no history of metallurgical testing on the Imperial property. During 2007 there was no metallurgical work done on mineralized material from the property.

#### Mineral Resource and Mineral Reserve Estimates

Despite this property classified as a past gold producer, it is very much a grass roots property and no mineral reserves or estimates are possible at present time.

#### Other Relevant Data

No other relevant material than already discussed, included below or included in the appendices of this report is deemed important enough for inclusion into this report.

#### **Interpretation and Conclusions**

In 2003 a trace of gold/electrum was identified in quartz vein talus sourced to altered meta-andesite basalt, within a fault zone proximal to the Jurassic 4th July Batholith contact.

Although the Imperial property has been considered a listwanite style mesothermal vein deposit in the past, field work since 2000 suggests fault structures and the proximity to the 4<sup>th</sup> July Batholith may have contributed to the quartz veins and presence of electrum, as well as traces of other sulphides.

Despite records of the imperial property as a past hard rock 'producer' the Imperial property has never been drilled.

#### Recommendations

In 2007 Clive Aspinall staked additional ground north of the present Imperial claim, with the intention of investigating projected extensions of these fault-contact structures.

Given past historical records for this property, it should be drill tested using a light-weight fly-in drill. Drill targets should intersect known fault zones proximal to 4<sup>th</sup> July Batholith, as well as the Imperial Fault zone.

Clive Aspinall, P.Eng Geologist

5th December 2007

#### References.

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**Ash, Chris.** (1994). Origin and Tectonic Setting of Ophiolite Ultramafic and Related Rocks in the Atlin Area, British Columbia (NTS 104N). BCMM

Aspinall, NC. (1002). Assessment Report Covering preliminary geological investigations for jade and serpentines on and around the Imperial mineral claim, (12 Units), tenure number 379554, Monroe Mt., Located in the Atlin Mining Division, British Columbia, Canada.

Aspinall, NC. (2004). Assessment Report Covering Preliminary Geological Investigations on Altered Ultramafic and Volcanic Rocks on the Imperial Mineral Claim, (12 Units), Tenure Number 379554, Monroe Mountain in the Atlin Mining Division, British Columbia, Canada. (with Petrology Report by Dr. John Payne).

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**Dandy, Linda.** (2005). Technical Report on the Atlin Gold Property, Atlin Mining Division, BC. For Muskox Mineral Corp., Suite 120, 3442-118 Ave SE, Calgary, Alberta, T2Z 3X1.

Holland, S.S., (1950). Placer Gold Production of British Columbia. B.C Ministry of Energy, Petroleum Resources, Bulletin 28, pp.89.

Claim (20 units), Margarita (1Claim), Butterfly (1 Claim). Kerr, Dawson & Associates LTD.

## **Appendices**

## Cost of Work

Geologist, 1 day field work at \$850 per day	\$850.00
Report, Geologist at \$850 per day/2 days	51,700.00
Two polished section sample/report/microphotographs	\$220.00
2 rock samples, geochemistry	.\$45.00
Mail Post	\$35.00
Report Reproduction	\$25.00
Total	\$2,875.00

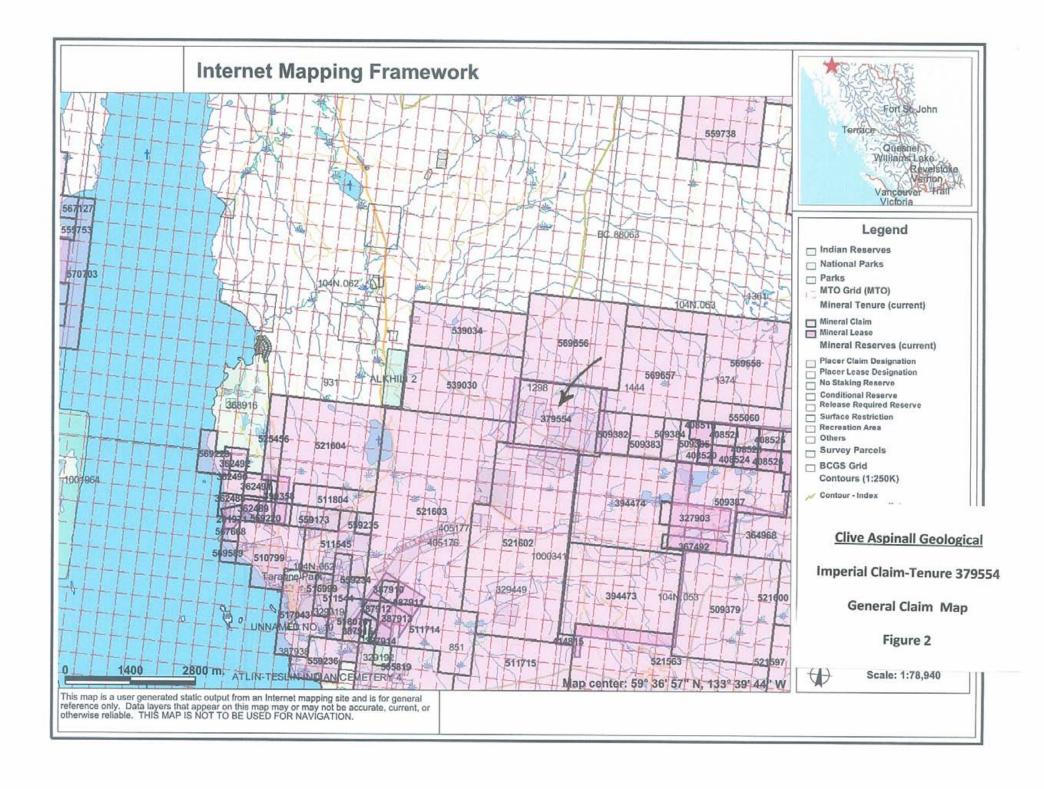


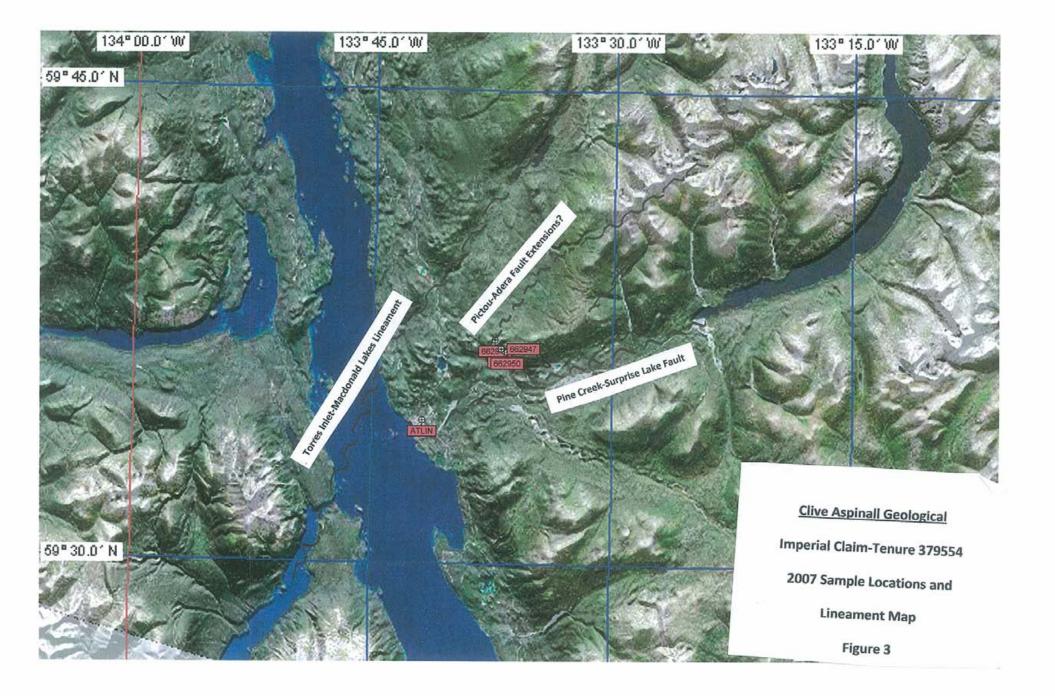
# Clive Aspinall Geological

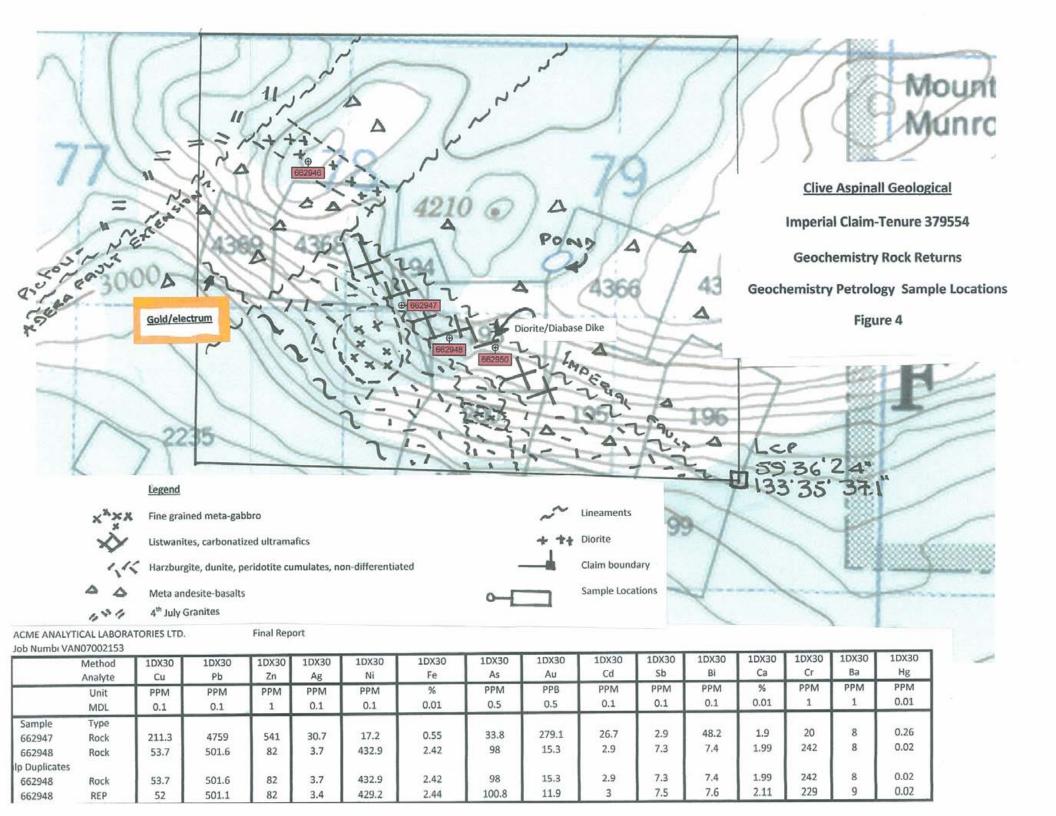
Imperial Claim-Tenure 379554

**Location Map** 

Figure 1







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Final Report

Client: Clive Aspinall Geological

File Create ####### Job Numbi VAN07002153

Number of 2

Project: Imperial Shipment ID: P.O. Number:

Received: 12-Oct-07

	Method	1DX30	1DX30	1DX30	1DX30	1DX30	1DX30	1DX30	1DX30	1DX30	1DX30	1DX30	1DX30	1DX30	10030	1DX30								
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р	La	Cr	Mg
	Unit	PPM	%	PPM	PPM	PPB	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%							
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1	1	0.01
Sample	Type																					_	-	0.01
662947	Rock	0.5	211.3	4759	541	30.7	17.2	2	122	0.55	33.8	0.2	279.1	0.3	112	26.7	2.9	48.2	<2	1.9	0.003	2	20	1.03
662948	Rock	0.2	53.7	501.6	82	3.7	432.9	21.6	453	2.42	98	0.1	15.3	0.1	193	2.9	7.3	7.4	5	1.99		<1	242	7.73
Pulp Dupl	licates																			2.00	0.002		- 14	7.73
662948	Rock	0.2	53.7	501.6	82	3.7	432.9	21.6	453	2.42	98	0.1	15.3	0.1	193	2.9	7.3	7.4	5	1.99	<0.001	<1	242	7.73
662948	REP	0.2	52	501.1	82	3.4	429.2	22	453	2.44	100.8	0.1	11.9	0.1	193	3	7.5	7.6	5	2.11		<1	229	7.73
Reference	e Materials																			-				7.00
STD DS7	STD	19.7	100.5	63.2	360	0.8	50.8	9	579	2.22	58.8	4.2	59.1	3.5	65	4.9	5	3.9	79	0.91	0.066	11	183	0.99
STD DS7	STD	21.4	107.5	65.2	375	0.8	55.7	9.4	589	2.34	45.5	4.4	55.2	3.9	67	5.5	5.3	4.2	84	0.9	0.069	11	193	1.03
BLK	BLK	< 0.1	< 0.1	< 0.1	<1	< 0.1	< 0.1	< 0.1	<1	< 0.01	< 0.5	< 0.1	< 0.5	< 0.1	<1	< 0.1	<0.1	<0.1	<2	<0.01		<1	<1	<0.01
Prep Was	h												222022	80000	1000	2311170			-	10102	-0.002	-	-	40.01
G1	Prep Blan	k 0.2	3	9.7	47	0.1	4.1	4.1	508	1.61	32.4	1.9	2.8	3.2	39	0.1	0.7	<0.1	32	0.37	0.068	5	10	0.58
G1	Prep Blan	k 0.2	2.1	4.5	42	<0.1	4.6	4.3	512	1.7	10.3	2.3	2.5	3.7	43	<0.1	0.2	<0.1	33	0.41	0.071	6.	12	0.57

1DX30	1DX30	1DX30	1DX30	1DX30	1DX30	1DX3	0 1DX30	1DX30	1DX30	1DX30	1DX3	(1DX30
Ва	Ti	В	Al	Na	K	W	Hg	Sc	TI	5	Ga	Se
PPM	%	PPM	%	%	%	PPM	PPM	PPM	PPM	%	PPM	PPM
1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5
8	<0.001	<1	0.04	0.002	0.02	<0.1	0.26	0.8	<0.1	0.12	<1	4.4
8	<0.001	<1	80.0	0.003	0.02	0.2	0.02	3.4	<0.1	< 0.05	<1	0.8
8	<0.001	<1	0.08	0.003	0.02	0.2	0.02	3.4	<0.1	< 0.05	<1	0.8
9	<0.001	<1	80.0	0.003	0.02	0.2	0.02	3.5	<0.1	<0.05	<1	8.0
324	0.117	34	0.98	0.081	0.41	3.8	0.17	2.1	3.6	0.2	5	3.4
346	0.122	34	0.96	0.078	0.42	3.8	0.21	2.2	4.2	0.19	5	3.5
<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5
182	0.108	<1	0.84	0.037	0.45	<0.1	<0.01	1.5	0.3	<0.05	5	<0.5
182	0.117	<1	0.9	0.042	0.46	0.1	< 0.01	1.8	0.3	< 0.05	4	<0.5

## Qualifications of writer

I, N. Clive ASPINALL, of Pillman Hill, the community of Atlin, British Columbia, and the City of Whitehorse Y.T do hereby certify that:

- I am a geologist with private offices within the above community and City
- I am a graduate of McGill University, Montreal, Quebec, with B.Sc degree in Geology (1964), and a Masters degree (1987) from the Camborne School of Mines, Cornwall, England, in Mining Geology.
- I am registered member of the Associations of Professional Engineers in the province of British Columbia.
- I own 100% interest in the Imperial claim.
- I have practiced mineral exploration for 50 years, in countries such as Libya, Saudi Arabia, North Yemen, Morocco, Indonesia, Mexico, Peru, Argentina, USA, Newfoundland, Ontario, Quebec, British Columbia and Yukon Territory, Canada.
- I am author of: Assessment Report on Continued Geochemical & Petrological Investigations <u>Imperial Mineral Claim</u>, (12 <u>Units</u>), <u>Tenure Number 379554</u>, <u>Munro Mountain in the Atlin Mining Division</u>, British Columbia, Canada. Petrological work and rock descriptions by John G. Payne, Ph.D., P.Geol. Report dated 5<sup>th</sup> December 2007

Signed in Whitehorse, YT, 5th December 2007

Respectfully submitted,

N. CLIVE ASPINALL, M.Sc, P.Eng. Geologist

#### Petrology, by Dr. J.G Payne

#### **Summary**

Sample 662946 is a porphyritic diorite that contains phenocrysts of plagioclase (altered slightly to sericite) and minor ones of hornblende (altered completely to tremolite/actinolite and biotite) in a groundmass of equant plagioclase, prismatic tremolite/actinolite, and flakes of biotite.

Sample 662950 is a porphyritic diorite/diabase that contains phenocrysts of plagioclase (altered completely to quartz and ankerite), a few of clinopyroxene (altered completely to chlorite-ankerite), and one of quartz in a groundmass of plagioclase (altered strongly to sericite-ankerite), patches of ankerite, disseminated elongate flakes of biotite, interstitial patches of quartz, and minor pyrite.

#### **Photographic Notes:**

The scanned sections show the gross textural features of the sections; these features are seen much better on the digital image than on the printed image. Sample numbers are shown in or near the top left of the photos and photo numbers at or near the lower left. The letter in the lower right-hand corner indicates the lighting conditions: P = plane light, X = plane light in crossed nicols, R = reflected light, R = reflected light and plane light in crossed nicols. Locations of digital photographs (by photo number) are shown on the scanned sections. Descriptions of individual photographs are given at the end of the report.

#### Sample 662946 Porphyritic Diorite

Alteration: Tremolite/Actinolite-Biotite

Phenocrysts of plagioclase (altered slightly to sericite) and minor ones of hornblende (altered completely to tremolite/actinolite and biotite) are set in a groundmass of equant plagioclase, prismatic tremolite/actinolite, and flakes of biotite.

Mineral	percentage	main grain siz	ze range (mm)
Phenocrysts		_	
Plagioclase	12-15%	0.5-1.5	
Hornblende	5-7	0.5-0.8	(a few up to 1.7 mm long)
Groundmass			, , ,
Plagioclase	35-40	0.07-0.15	
Tremolite/actinolite	25-30	0.07-0.2	
Biotite	8-10	0.05-0.2	
Quartz	3-4	0.03-0.05	
Opaque	0.1	0.03-0.07	

Plagioclase forms subhedral phenocrysts that were altered slightly too locally moderately to disseminated flakes of sericite and patches of equant grains of clinozoisite (0.005-0.01 mm).

Hornblende forms stubby prismatic phenocrysts that were replaced completely by pseudomorphic tremolite/actinolite and flakes of biotite.

In the groundmass, plagioclase forms equant, slightly interlocking grains that are relatively fresh. Tremolite/actinolite forms prismatic anhedral to subhedral grains with pleochroism from neutral to ale green.

Biotite forms stubby flakes, mainly intergrown with tremolite/actinolite. These intergrowths probably are secondary after primary hornblende. Biotite is pleochroic from light to medium orangish brown.

Quartz forms anhedral interstitial grains and clusters of a few grains.

Opaque forms minor anhedral grains associated with biotite and tremolite/actinolite. It probably is ilmenite.

# Sample 662950 Porphyritic Diorite/Diabase Alteration: Ankerite-Sericite

Phenocrysts of plagioclase (altered completely to quartz and ankerite), a few of clinopyroxene (altered completely to chlorite-ankerite), and one of quartz are set in a groundmass of plagioclase (altered strongly to sericite), patches of calcite, disseminated elongate flakes of biotite, interstitial patches of quartz, and minor pyrite.

Mineral Phenocrysts	percentage	main grain si	ze range (mm)
Plagioclase	7-8%	1-1.5	
Clinopyroxene	2-3	0.7-2	
Quartz	0.3	1.9	
Groundmass			
Plagioclase	50-55%	0.1-0.3	
Ankerite	25-30	0.1-0.3	
Biotite	5-7	0.2-0.5	
Quartz	3-4	0.05-0.08	(a few up to 0.2 mm across)
Pyrite	0.3	0.03-0.05	

Plagioclase forms subhedral stubby prismatic phenocrysts that were replaced completely by aggregates of quartz and ankerite.

Clinopyroxene forms equant subhedral to euhedral phenocrysts that were altered completely to chlorite (0.02-0.03 mm) and much less abundant ragged patches of ankerite.

Quartz forms one phenocryst 1.9 mm across that has a core up to 1.5 mm in size that is free of inclusions and a rim containing patches with abundant dusty inclusions of uncertain composition.

In the groundmass, plagioclase forms subhedral prismatic grains that were altered strongly to sericite and ankerite.

Ankerite forms anhedral patches, probably in part as a replacement of groundmass plagioclase.

Biotite forms disseminated slender flakes with pleochroism from pale to medium orangish to reddish brown. Some grains were altered to muscovite.

Quartz forms anhedral equant grains interstitial to plagioclase.

Pyrite forms disseminated clusters of a few to several equant, anhedral to subhedral; grains.

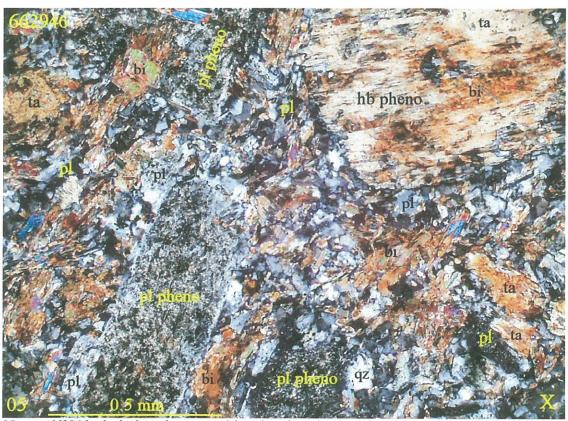
John G. Payne, Ph.D., P.Geol.

Tel: (604)-597-1080

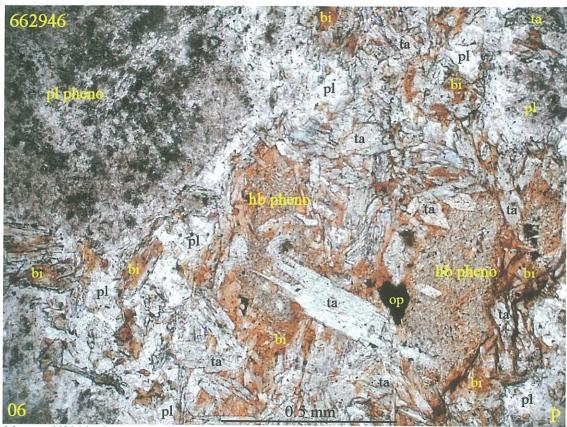
Fax: (604)-597-1080 (call first)

email: jgpayne@telus.net

#### List of Micro-Photographs



662946 plagioclase phenocrysts (altered moderately to sericite-clinozoisite) and a hornblende phenocryst (altered completely to pseudomorphic tremolite/actinolite and irregular patches of biotite) in a groundmass of plagioclase, tremolite/actinolite, biotite, and lesser quartz.



06 662946 phenocrysts of plagioclase (altered moderately to sericite and dusty clinozoisite)
and cluster of phenocrysts of hornblende (altered completely to extremely fine
grained biotite in cores and coarser biotite-tremolite/actinolite intergrowths
along the margins; groundmass of plagioclase with lesser tremolite/actinolite
and biotite; one grain of opaque.



662950 plagioclase phenocrysts (altered completely to intergrowths of quartz and ankerite) in a groundmass of lathy plagioclase (altered strongly to sericite and ankerite) with disseminated flakes of biotite, interstitial patches of quartz and minor patches of pyrite.



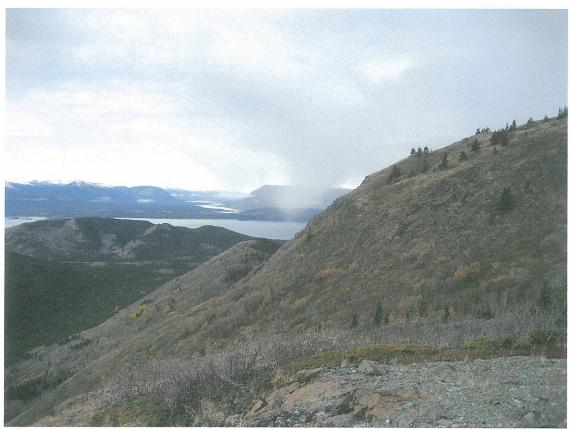
662950 to the right: clinopyroxene phenocryst (altered completely to chlorite with disseminated irregular patches of ankerite some of which are concentrated along the margin of the grain and minor patches of pyrite in ankerite); to the left: host rock: anhedral plagioclase with disseminated slender flakes of biotite and patches of a

left: host rock: anhedral plagioclase with disseminated slender flakes of biotite

### **Photographs of Property**



Photograph 1: Looking west to Atlin Lake, community of Atlin, and Atlin airstrip from Imperial claim. Atlin Mountain to right, Theresa Mountain to left in background.



Photograph 2: Looking West from Imperial claim, and northwest contact zone between ultramafics (foreground) and Cache Creek meta andesite basalt (background), Atlin Lake and Graham Inlet in distance.



Photograph #3, Location: 662950. Diorite/diabase dike left centre as hanging wall following 155° fault zone with carbonaceous ultramafics, which host quartz veins with traces of sulphides.



Photograph #4: Location 662948: quartz veinlets in carbonaceous ultramafics. Note green fuchsite above geological pick.