

**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)]: TECHNICAL, MANUAL PLACER GOLD TESTING

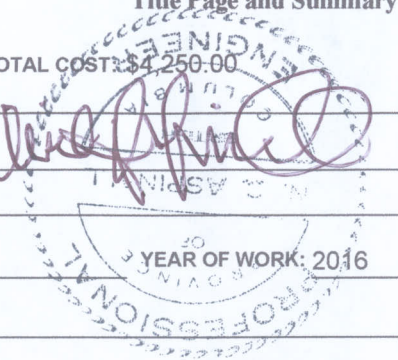
TOTAL COST: \$4,250.00

AUTHOR(S): NICHOLAS CLIVE ASPINALL

SIGNATURE(S): 

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): N/A

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): EVENT 5622115 (2016)



PROPERTY NAME: BURDETTE CREEK, ATLIN MD

CLAIM NAME(S) (on which the work was done): TENURE 1041164, BURDETTE #1

COMMODITIES SOUGHT: PLACER GOLD

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: N/A

MINING DIVISION: ATLIN

NTS/BCGS: 104 N

LATITUDE: 59 ° 19.769 ' " LONGITUDE: 133 ° 28.753 ' " (at centre of work)

OWNER(S):

1) NICHOLAS CLIVE ASPINALL 2) \_\_\_\_\_

FMC 101024

MAILING ADDRESS:

P.O BOX 22, 952 PILLMAN HILL ROAD

ATLIN, BC, V0W 1A0

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

1) AS ABOVE 2) \_\_\_\_\_

MAILING ADDRESS:

AS ABOVE

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

LOWER BURDETTE CREEK, ATLIN ACCRETIONARY COMPLEX, ATLIN OPHIOLITE ASSEMBLAGE, CACHE CREEK GROUP, ULTRA-MAFIC GEOLOGY, UPPER PALEOZOIC, WISCONSIN GLACIATION

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: \_\_\_\_\_

AITKIN, J.D. 1959

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	_____	_____	_____
Photo interpretation	_____	_____	_____
<b>GEOPHYSICAL (line-kilometres)</b>			
<b>Ground</b>			
Magnetic	_____	_____	_____
Electromagnetic	_____	_____	_____
Induced Polarization	_____	_____	_____
Radiometric	_____	_____	_____
Seismic	_____	_____	_____
Other	_____	_____	_____
<b>Airborne</b>	_____	_____	_____
<b>GEOCHEMICAL (number of samples analysed for...)</b>			
Soil	_____	_____	_____
Silt	_____	_____	_____
Rock	_____	_____	_____
Other	MANUAL SLUICING/PANNING GRAVELS	_____	_____
<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>			
<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>	<b>\$4,250.00</b>

Event 5622115  
Manually Testing Placer Claim Tenure 1041164, Burdette #1, Burdette Creek, Atlin  
MD, Centered at 59 deg 19.796' N and 133 deg 28.753' W, NTS 104 N.



Tenure 1041164, Burdette Creek, Atlin MD, working manually to recover placer gold, 2016

By

Nicholas Clive Aspinall, P.Eng  
Aspinall Geological Consultants  
952 Pillman Hill Road  
P.O Box 22, Atlin, BC. V0W 1A0  
Tel: 250-651-0001  
E-mail: [ncaspinall@gmail.com](mailto:ncaspinall@gmail.com)

Work Done: Placer Claim Tenure 1041164, Burdette #1, Atlin, MD.  
Work Period: Over Twelve Weekend periods 2016/Jul/01 to 2016/Sep/18.  
Report: 14<sup>th</sup> January 2017

### **Summary**

A Whitehorse, Yukon Territory placer miner and his volunteer assistant spent a total of 45 hours over a 12-day (over weekends) period testing the property.

During 45 manual work hours, it is estimated 1 cubic yard of placer gravels were sieved through a ½ inch grizzly and washed in a sluicing system using a light pump.

The concentrate was then panned, giving a total 2.3 grams of placer gold

It estimated for a first pass, lower Burdette Creek placer gold grade to be 2.3 grams cubic yard.

It is recommended 2017 mining on tenure 1041164 be for venture tourism purposes, only using shovels, picks, buckets, a sluice box, and a light weight water pump. It is one of the very few remaining gold bearing creeks that has received only very limited mechanized development in the Atlin Gold Camp.

Since an open space for camping is readily available, and road accessible from Atlin, tenure 1041164 on Lower Burdette Creek is ideal site for venture tourism gold mining, especially for overseas visitors, who in 2016, were looking for available Atlin gold mining sites to manually work for 2 weeks or more.

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**Introduction and Terms of Reference**

The author, FMC 101024, staked electronically staked title 1041164, Burdette #1, located on Lower Burdette Creek, Atlin MD, on 10<sup>th</sup> January 2016, Figures 1,2, &3.

The purpose of this claim acquirement was to test the lower end of Burdette Creek for placer gold.

During 2015 the author incorporated a venture tourism company. Its web site can be found at [WWW.Atlin Gold Fields Geotours Inc](http://WWW.AtlinGoldFieldsGeotoursInc). The goal of the company is to take interested venture tourists placer mining only using manual equipment, on his optioned placer claims, or those he has 100% title.

During 2015 the author contacted the Senior Regional Mines Inspector at Smithers, B.C by e-mail to notify him of his venture tourist mining intentions, and has communicated directly with the Lands officer at the Taku River Tlingit office in Atlin, BC during 2015 and 2016.

In both cases no discouragement has been given. No mining permits have been applied for, as operations are environmentally friendly, strictly manual, except for occasional use of a small water pump. The operations require no tree cutting, nor trail building.

Historically, since 1898, Atlin is one of the renowned gold placer camps of British Columbia. Current Atlin free gold mining facilities for tourists are not adequate or appealing to those keen on manually placer mining for Atlin gold.

The Atlin Board of Trade, Atlin hotels and local B&B and RV parks have shown their strong support for venture gold mining in Atlin, as it helps to keep summer tourists in Atlin for longer periods.

This report provides details of assessment work done between 2016/July/01 to 2016/September/18 to test the above claim for placer gold, and potential venture tourism placer site.

**Reliance on other Experts**

The author contacted Robert Vallee, manual placer gold miner, of Whitehorse, Yukon, to test the claim's gold grade per cubic yard.

**Work Area Description and Location**

The Atlin area is traditionally territory of the Taku River Tlingit First Nations, Figure 1.

During 2016, assessment work was completed on placer claim tenure 1041164, within Lower Burdette Creek channel. Figures 2&3. Work completed on this tenure is subject to approvals following the submittal of this report to BC. Mineral Titles.

TABLE 1

Title Number	Claim Name	Owner	Title Type	Title Sub Type	Map Number	Issue Date	Good To Date	Status	Area (ha)
1041164	BURDETTE #1	101024 (100%)	Placer	Claim	104N	2016/JAN/10	2026/JAN/10	GOOD	32.9916

Placer claim Burdette #1, can be road accessed from Atlin, following the Warm Bay road. The distance from Atlin to Burdette Creek is approximately 30 kilometers. The road journey takes approximately 40 minutes. An open space for overnight camping is available on site.

### **Accessibility to Atlin, Climate, Local Resources, Infrastructure, Physiography Wildlife.**

Atlin is the most northerly community in British Columbia. This community is accessible from Whitehorse, by the Alaska Highway and the Atlin road, a distance of 180 km. Atlin also lies east of the Coast Range Mountains and 140 air kilometers east of Juneau, Alaska.

Whitehorse is modern Canadian northern city with daily jet flights to Vancouver and other Canadian cities, and has a wide range of modern hotels, supermarkets and shopping malls, mineral exploration expediting services, fixed wing and helicopter charters.

Atlin has a fixed wing base; two helicopter bases, two hotels and stores, several bed and breakfast facilities, as well as an exploration and a placer mining workforce.

The region's climate is typical of northern British Columbia with winters averaging - 23 ° C in January with moderate snowfall. Winter conditions arrive with a vengeance around the 15<sup>th</sup> October and last until the middle of April, when longer spring days and spring thaw occur just as suddenly. Summers are pleasant with average temperatures up to 20° C with variable precipitation. Total annual precipitation averages 279.4 millimeters of moisture.

Relief of the area ranges from 600 meters ASL at Atlin Lake to mountainous areas peaking at 2000 meters ASL, at the headwaters of Burdette Creek.

Moose caribou, black bear, grizzly, beaver, marten foxes and wolves are indigenous to the region.

### **History**

Atlin became known as a productive Canadian placer gold camp in 1898, after the discovery by two prospectors, Miller and McLaren, (who were probably informed where to find placer gold by a source in Juneau, Alaska). They confirmed paying gold

on Pine Creek in January 1898. As news spread, other gold seekers found impressive amounts of gold on Spruce, McKee, Otter, Ruby, and Boulder and Birch creeks.

Atlin Creek placer gold production, as determined by Holland (1950) from 1898 to 1946 was 634,147 ounces. At todays price would be range of \$761 million.

Up to the mid-1960s, placer mining was mainly carried out using high-pressure monitors. Some operators used bulldozers, excavators, draglines, and very rarely, dredges. Small-scale placer mining was also active, using sluice boxes, rocker boxes, and even wheelbarrows to haul gravels. By the mid 1980s and to the turn of the century heaver mechanized placer mining had become the fore.

The author anticipates the Atlin Camp has been producing several thousand ounces gold annually from 1980 to 2016 from Birch, Boulder, Ruby, Otter, Pine, Spruce and McKee creeks. Since 2007 to present, Otter Creek, Boulder Creek, and Ruby Creek have become sites of major operations.



Photo#1. A Partial Clean up, Otter Creek 2015

On Otter Creek, reported gold concentrations are a 5-meter thick horizon on bedrock, with gold production varying from approximately 0.5 to 2 g per square meter<sup>1</sup>.

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<sup>1</sup> Levson and others, 2003.



Unlike many other placer creeks in the Atlin camp, Burdette Creek has almost been totally neglected to heavy mechanized gold mining. Basically, Burdette Creek is still virgin and a non-developed creek.

The author recalls Danny Crumb of Atlin mining Burdette Creek in the late 1960's. The author also staked placer claims during years 2006-7, but did no work, and allowed his claims allowed to lapse.

More recently Lance Fuller of Atlin carried out very limited work, until he dropped his claims in late 2016. Reports from Atlin prospectors who have sluiced and panned the creek over the years speak favorably about Burdette Creek's potential placer gold.

### **Regional Geological Setting of Atlin Terrane**

Cache Creek Group rocks, belong to the Atlin Terrane, are Upper Paleozoic in age, designated as Mississippian-Pennsylvanian.

Most of the rock bodies in the Cache Creek Group are lensoidal and discontinuous, features that are in part primary depositional and in part due to later deformation.<sup>2</sup>

Pine Creek Fault, Boulder-Otter Creek Fault, are recognized fault systems.

A strong north-south lineament following Burdette Creek, suggest Burdette Creek channel could reflect a fault system, and possible original source of gold.

### **Local Geology**

The following two sections quote directly Ash, Bulletin 108.

The geology of the Atlin area is divisible into two distinct litho-tectonic elements. A structurally higher, imbricated sequence of oceanic crustal and upper mantle lithologies termed *the 'Atlin Ophiolitic Assemblage'*, is tectonically superimposed over a lower and lithologically diverse sequence of steeply dipping to moderately dipping, tectonically intercalated slices of pelagic meta-sedimentary rocks with tectonized pods and slivers of meta-basalt, limestone, and greywacke termed the *'Atlin accretionary complex'*. Locally these rocks are intruded by the Middle Jurassic (Mihalynuk, and others 1992) calc-alkaline Fourth of July batholith and related quartz-feldspar porphyritic and melanocratic dike rocks.

#### *Atlin Ophiolitic Assemblage*

The Atlin Ophiolitic assemblage comprises an imbricated sequence of relatively flat-lying, coherent thrust slices of obducted oceanic crustal and upper mantle rocks. Mantle lithologies are dominated by harzburgite tectonite containing subordinate dunite and lesser pyroxenite dikes. Oceanic crustal lithologies in the Atlin map area, in decreasing order of abundance, include metamorphosed basalt, ultramafic

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<sup>2</sup> Monger, J.W.H.

cumulates, diabase and gabbro with metabasalts dominating. Serpentinized peridotite displaying ghost cumulate textures and sporadically preserved relict poikilitic texture is suspected to originally be wehrlite.

Metagabbro is the least commonly seen Ophiolitic component in the Atlin map area.

#### *Atlin Accretionary Complex*

The Atlin Accretionary complex comprises a series of steeply to moderately dipping and folded lenses of structurally intercalated meta-sedimentary and meta-volcanic rocks that underlie the Keystone Project area. Pelagic meta-sedimentary rocks dominate the unit and consist of argillite, cherty argillites, argillaceous cherts, and banded (bedded) cherts. They range from highly mixed zones with well-developed flattened fabric indicative of tectonic mélange to relatively coherent lenses. Individual lenses range from metres to several hundred metres in width. Indications of stratigraphy are well preserved in the banded, (bedded) cherts. Contact relationships between many individual lenses within the Keystone Project area have not been established due to lack of exposure.

During 2009 and 2010, Vancouver Junior mining Blind Creek Resources Ltd in the airport area of Atlin carried out a diamond drill program. Eleven diamond drill holes were programed to drill through *Atlin Ophiolitic Assemblage* into the *Atlin Accretionary Complex*,<sup>3</sup>.

The listwanite alteration zone at the base of the *Atlin Ophiolitic zone* was anomalous in only one hole ranging up to 1000 ppb Au.<sup>4</sup>

#### **Geomorphology**

During the Tertiary Period, the Atlin area was part of the Taku Plateau, a gentle rolling surface with a mature drainage<sup>5</sup>.

Towards the end of the Tertiary Period, up lifting of several hundred feet, resulting in peneplanation of some mountain tops, similar to other areas of North Western America, likely elevated the Atlin region.<sup>6</sup> In the Atlin region, this would have caused down cutting of existing creeks, and erosion of exhumed gold deposits from bedrock, and shedding of placer gold into the waterways.

Black, in his 1953 report, observed, (italics):

*The down cutting of the streams caused a reworking of the stream gravel deposits and a re-concentration of gold and other heavy minerals in, on,*

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<sup>3</sup> Aspinall, 2009 and 2010.

<sup>4</sup> Aspinall, 2010.

<sup>5</sup> Trans. Roy. Soc. Of Canada Vo. 8, Sec. 4, 1890, pp. 16-17.

U.S.G.S. Prof. Paper No. 45, 1906, p. 294.

<sup>6</sup> *ibid*

*and near bedrock.*

*At that time gravel deposits probably occurred on all the creeks of the area but the gold content must have varied depending on the distance from the source of the gold and on the nature of the creek channel.*

About 80,000 years before present, and after uplift and renewed erosion, the Wisconsin Ice Age began.

Evidence indicates this glacial period had a profound affect on the geomorphology of the Atlin area primarily in creating U-Shaped valleys, eskers, minor cirques, and rock glaciers. Most of all glacial tills were deposited over 80% of the region, hiding placer deposits and limiting rock exposure.

These combination of geological events, uplift, rapid erosion, and then the Wisconsin glacial event, may have completely eroded away or deeply buried the original source of placer gold source in the Atlin area.

As observed by Black, (1953) a detailed examination of events during Wisconsin Ice Age is necessary for an understanding of the distribution of placer deposits in the area.

It is assumed Burdette Creek will have a "pay zone" in pre-Wisconsin gravels close to bedrock.

**2016 Placer Gold Testing, Placer Claim tenure 1041164, Burdette #1.**

The author contacted Robert Vallee, of Whitehorse , an experienced Yukon placer miner, to spend 12 days (over 12 weekends) manually testing tenure 1041164.

This period was from 1<sup>st</sup> July 2016 to 18<sup>th</sup> September 2016.

Working 3.75 hours man hour days, over a 12 day weekend period, a total of 45 hours or more were spent testing Burdette#1 placer claim, by Mr .Vallee, Figures 2, 3.

Mr. Vallee had one volunteer assistant. During work period, both crew camped on site.

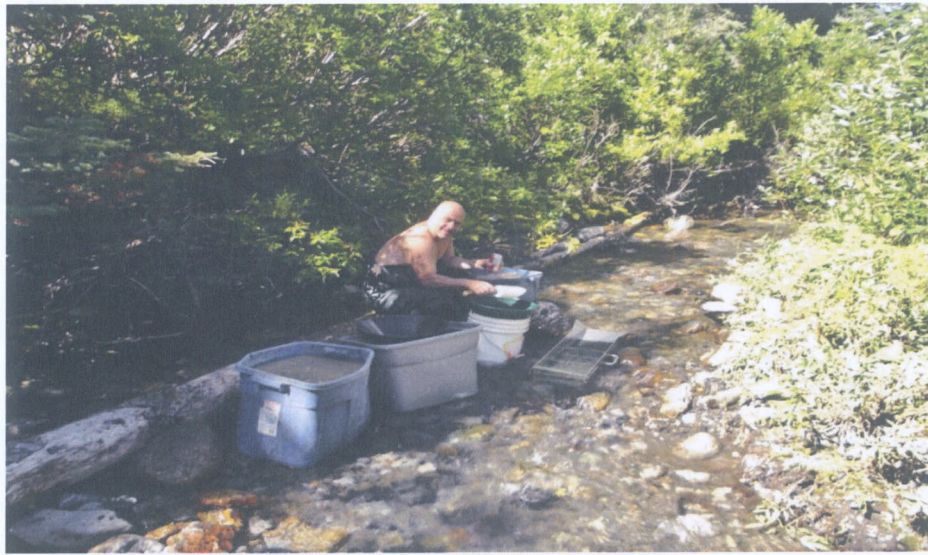
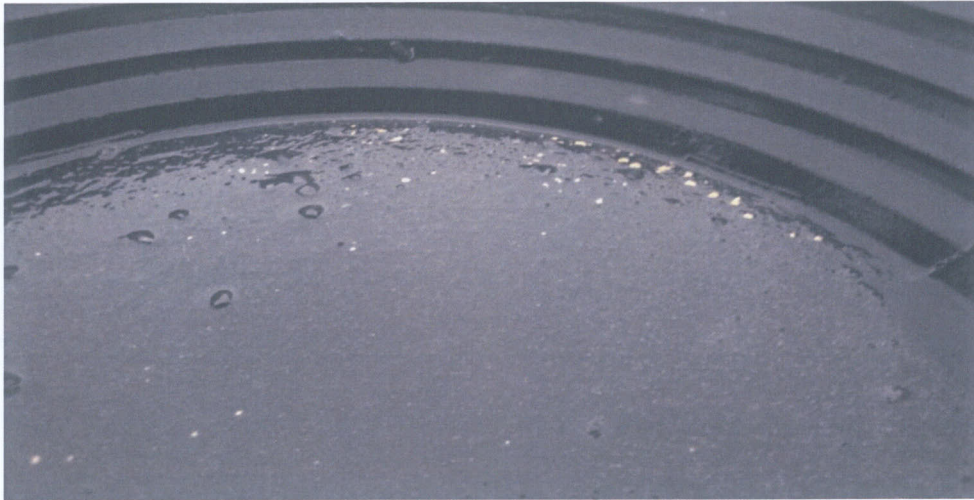


Photo #1. Tenure 1041164, Mr. Vallee sieving gravels through a ½ inch grizzly.



Photo#2 Mr. Vallee sluicing minus ½ gravels



Photo#3, some of the panned gold recovered manually from tenure 1041164, Burdette#1 placer claim after sluicing



Photo#4. Mr. Vallee camp site on tenure 1041164, Burdette#1 placer claim.

Worked creek channel is seen in upper section photograph.

Using only shovels, picks, a sluice box, a Honda WX10 water pump, and gold pans, Mr. Vallee and his assistant, over a 12 day period, manually ran 40 five gallon pails of creek gravels through a ½ inch grizzly sieve, the residue then through homebuilt sluice box, before panning the concentrate. The author estimates 40 five gallon pails are equivalent to one cubic yard of unsorted gravels.

The Honda pump was used approximately one hour each working day, to wash gravels in the sluice box. Its capacity is estimated at 126 liters a minute, using a 1.5 inch hose.

The accumulated panned gold was reported by Mr. Vallee weighed 2.3 grams gold.

#### **Data Verification**

The author personally knows Mr. Vallee to be a highly professional laboratory technician and placer gold miner, who works diligently and fast, and trusts his reporting on all phases of placer testing of tenure 1041164.

#### **Adjacent Placer Properties**

Wilson Creek  
O'Donnel Creek  
McKee Creek

#### **Other Relevant Data**

Usually Mr. Vallee drove Whitehorse YT to Atlin BC. On a Friday evening, worked on the claim on a Saturday, returning to Whitehorse on a Sunday afternoon. This work period was from 1<sup>st</sup> July 2016 to 18<sup>th</sup> September 2018.

During the initial start-up of this testing period, Mr. Vallee spent several days doing a reconnaissance of the claim and surrounding area.

Mr. Vallee had one assistant. No time is accredited to his assistant for any work done.

No charges are included for any work, time, gas used, out side of BC.

No other relevant data, other than reported, is included in this report.


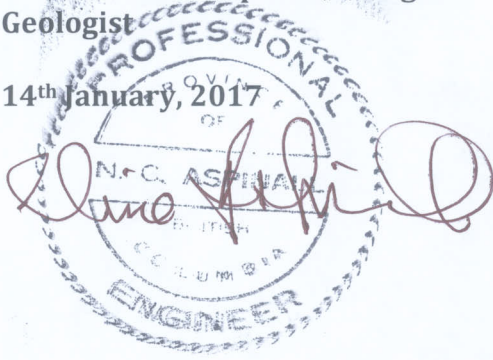
#### **Interpretation and conclusions**

It is estimated for a first pass, lower Burdette Creek gold placer gravels to be in the 2.3 grams cubic yard range.

**Recommendations**

It is recommended 2017 mining on tenure 1041164 be for venture tourism purposes, only using shovels, picks, buckets, a sluice box, and a light weight water pump.

Since an open space for camping is readily available, and road accessible from Atlin, tenure 1041164 is ideal site for venture tourism gold mining, especially for overseas visitors, who in 2016, were looking for gold mining sites to manually work for 2 weeks or more.

  
**Nicholas Clive Aspinall, P.Eng**  
**Geologist**  
14<sup>th</sup> January, 2017  


## References

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Mark, David, G., Payie, G, (2007) A Mobile Metal Ion (MMI), Geochemical Soil Sampling Assessment Report on the, Main Block Claim Group Atlin Project Atlin Mining Division NTS 104K/08 Latitude 59° 29' 58" North Longitude 133° 24' 31"

West Owner: Blind Creek Resources Ltd. 15th Floor -675 West Hastings Vancouver, British Columbia V6B IN2.

Mark, David G., Payie, Garry. (2007) Assessment Report on the Main Block Claim Group, Atlin Project, Atlin MD, NTS 104K/08, Latitude 59 24 31 N., 133 24 31 West, owner Blind Creek Resources Ltd. 15th Floor -675 West Hastings Vancouver, British Columbia V6B IN.

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Latitude 59° 29' 58" North Longitude 133° 24' 31" West Owner: Blind Creek Resources Ltd. 15th Floor -675 West Hastings  
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Zagorevski, A., Paper 2015-1

## Appendices

## 2016 Assessment Work Costs

2016 Assessment Work Testing on Placer Claim Tenure 1041164, Burdett Creek, Atlin MD					
Work Period, Over 12 weekends 01 July 2016 to 18th					
September 2016. Additional Days Spent Doing Reconnaissance					
First week in July 2016					
Personnel	No hours	days	Rate/hr\$	Rate/day	Total \$
Robert Vallee	45		30		1,350.00
Vehicle	16		20		400.00
Mining Equip	45		9		450.00
Food/Accom/Gas		12		112.5	1,350.00
Report	10		70		700.00
					<b>\$4,250.00</b>

Figures



# Burdette Creek




## Legend

- Placer Titles (MTO)**
- MTO Grid
  - Title (current)
    - LEASE
    - CLAIM
  - Reserves
    - No Registration
    - Conditional
  - Heritage/Historic Site
  - Placer Claim Areas
  - Placer Claim and Lease Areas
- Crown Land Layers (Tantalis)**
- Land Act Survey Parcels - Tantalis - Legal Descriptions
    - Label Text
  - Land Act Survey Parcels - Tantalis - Outlined
- Administrative Boundaries**
- Federal Transfer Lands - Outlined
  - Federal Transfer Lands - Colour Filled
  - National Parks - Outlined
  - National Parks
  - National Parks - Colour Filled
  - Conservancy Areas - Tantalis - Colour Filled
  - Ecological Reserves - Tantalis - Colour

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.  
 THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Printed using the Mineral Titles Online (MTO) application.

Center: 53°50'16", -131°55'60"  
 Scale: 1 : 17333717  
 SRS: EPSG:3857  
 UTM Zone: 9



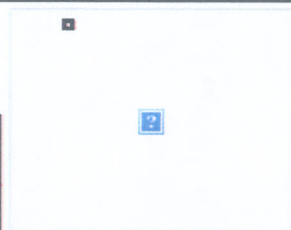
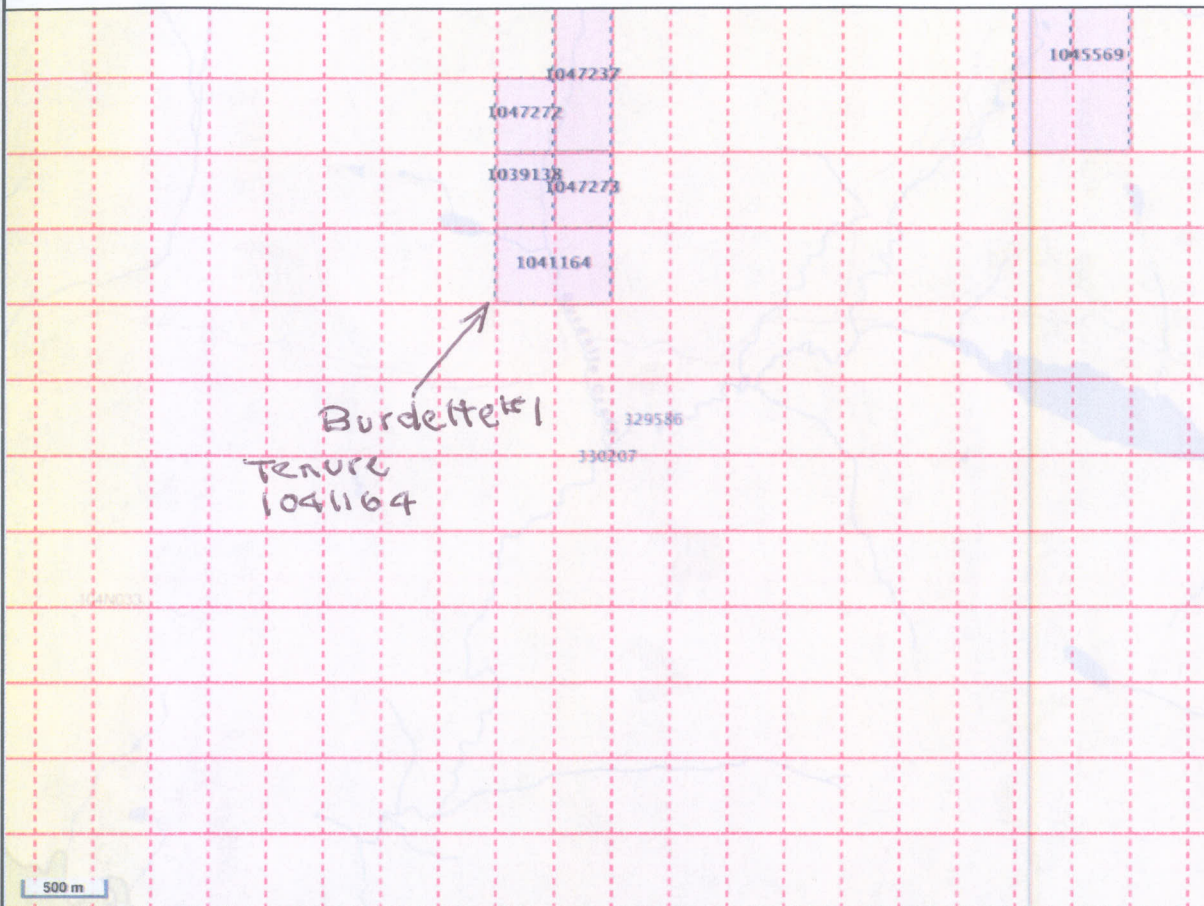
Location  
 Burdette Cr.  
 Atlin, B.C.

Fig 1

14 / Jan / 17



# Burdett Creek



### Legend

#### Placer Titles (MTO)

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- Placer Claim Areas
  - Placer Claim and Lease Areas

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  - Label Text
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  - Federal Transfer Lands - Colour Filled
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  - National Parks - Colour Filled
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THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Printed using the Mineral Titles Online (MTO) application.

Center: 59°21'28", -133°26'45"  
 Scale: 1 : 67710  
 SRS: EPSG:3857  
 UTM Zone: 8



Placer Claim  
 Tenure #1041164

Fig 2

14/Jan/17



59° 19. 796'N  
 133° 28. 753'W } Work Test Site.

Fig 3

Bordelette Creek

Arvin M.D

Scale

1000m

14/Jan/17

**Certificate of Authorship**

I, Nicholas Clive ASPINALL, P.Eng of Pillman Hill, the community of Atlin British Columbia, do hereby certify that:

I am an independent consulting geologist with offices at the above address.

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.

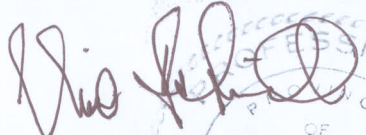
I am registered member in good standing of the Associations of Professional Engineers and Geoscientists in the province of British Columbia.

I have practiced mineral exploration for 52 years since graduation from McGill University. I am familiar with the regional geology of the Atlin Mining Division and I have had an office based in Atlin since 1968.

I have worked in the following provinces of Canada and internationally; Newfoundland, Ontario, Quebec, British Columbia & Yukon; Libya, Morocco, Saudi Arabia, Yemen, Indonesia, Mexico, Peru, Argentina & USA.

I have title to a 100% to placer tenure 1041164, Burdette#1 covered in this report

I am the author of Assessment Report: **Event 5622115**  
**Manually Testing Placer Claim Tenure 1041164, Burdette #1, Burdette Creek, Atlin MD, Centered at 59 deg 19.796'N and 133 deg 28.753' W, NTS 104 N.**

  
**Nicholas Clive Aspinall, P.Eng**  
**Geologist**  
**14<sup>th</sup> January 2017**

