



#### ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: GEOPHYSICAL REPORT

TOTAL COST: \$23,714.10

AUTHOR(S): Nicholas Gust SIGNATURE(S): Nicholas Gust

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): STATEMENT OF WORK EVENT NUMBER(S)/DATE(S ): 5952094

YEAR OF WORK: 2022 PROPERTY NAME: Wright Creek CLAIM NAME(S) (on which work was done): Its All Wright (1084596)

COMMODITIES SOUGHT: Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

MINING DIVISION: Cariboo NTS / BCGS: 104N LATITUDE: 59°36'5.775"N LONGITUDE: 133°21'13.963"W

OWNER(S): Brian Scott

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REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**)

Cache Creek Complex, Cherts, Cretaceous, Granites, Kedahada Formation, Limestones, Marbles, Mississippian-Permian, Nakina Formation, Placer gold, Placers, Siliciclastics, Surprise Lake Batholith, Ultramafic rocks, Surprise Lake Plutonic Suite, Basaltic volcanic rocks, Siliceous argillites, Alkali-feldspar granites

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:

ARIS 06510)

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			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic	4,500 meters	1084596	\$23,714.10
Other			
Airborne			
GEOCHEMICAL (number of sample	es analysed for)		
Soil			
Silt			
Rock			
Other			
DRILLING (total metres, number of	holes, size, storage location)		
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (sca	ale, area)		
Legal Surveys (scale, area)			
Road, local access (km)/tra	il		
Trench (number/metres)			
Underground development	(metres)		
Other			
		COST	\$23,714.10

## **GEOPHYSICAL REPORT**

Tenure # 1084596

Atlin Mining Division Map 104N

DATE OF REPORT November 19, 2022

REPORT PREPARED BY Nicholas Gust

CENTER OF WORK Lat. 59°36'5.775"N, Long. 133°21'13.963"W

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#### Introduction

From September 28 - October 2, 2022, a geophysical survey was conducted on the Wirght Creek Property.

The purpose of the survey was to map bedrock and subsurface layers to aid in placer exploration. The main goal was to provide evidence for a possible paleochannel running through the valley.

A passive seismic system was utilized in this survey. The instrument that we used records ambient seismic noise and does not require a source. In processing, we used the Horizontal-to-Vertical Spectral Ratio (HVSR) technique to identify bedrock depth over the survey area. The results of the survey provided clear evidence of the paleochannel and provided new targets for future exploration and mining.

The survey was conducted by West Coast Placer. The crew consisted of a three-person team led by Nicholas Gust, who is trained in the application and interpretation of this technique.

#### Location and Access

The Wright Creek placer claim is located in the province of British Columbia, Canada, in the Atlin regional district. The Wright Creek claims are located approximately 30 kilometers east of the town of Atlin, B.C. The Surprise Lake road is taken out of Atlin and there are unnamed dirt roads that provide access to the claims.





#### **Property Description**

The property consists of one placer claim, title # 1084596 The total workable area is 737.7 hectares.

The Property is found within the Teslin Plateau, which is part of the Yukon Plateau, which itself is a physiographic unit of the Interior Plateau System. The Teslin Plateau consists of an upland surface that rises to heights of 1800 and 2100 meters, such as Mount Barham (2,093 meters) west of Surprise Lake.

The tree line is at about 1400 meters (4600 feet) on north-facing slopes and 1500 meters (4900 feet) on south-facing slopes. Above the tree line, the property is mostly covered in alpine vegetation, which is predominantly heather and sedges, as well as stunted buck brush. Below the tree line, it is covered with light to medium forest consisting of lodge-pole pine, black spruce, aspen, and scrub birch. The underbrush is generally light but can be thick in areas around streams

#### **Previous Work**

The Atlin goldfields were discovered during the Yukon gold rush of 1898. There was evidence of Russian miners working in the Surprise Lake area prior to that but it was very limited. In February1898 Fritz Miller and Kenneth Mclaren discovered placer gold on Pine Creek and staked the discovery claim. Despite their efforts to keep news of this discovery a secret, reports of gold in the region soon spread, and late that summer miners began arriving in earnest. By the end of the 1898 mining season approximately 3,000 people had migrated to the Atlin area, and the gold rush had begun (Bilsland, 1952).

Gold was first discovered on Wight Creek in 1898 by H. Blinkinship, C. Welsh, and J. Wright. After two days of panning the group produced \$109 worth of coarse gold (5.5 ounces). The rest of the creek was staked soon after.

A letter from Alec Smith dated printed in the Vancouver Daily World in 1898 describes the staking of Wright Creek:

I came down to town yesterday to record a claim on Wright Creek. We all got a claim each, and Al Queen of Vancouver got three. I expect that you will have heard of this creek before this. It is one of the best in the camp. It had all been staked off about September 1st, but owing to some of the oversight on the miner part of the miner laws, the whole creek was jumpable it has all been restaked.

It is not as rich as some of the creeks in the Klondike, but off the discovery claim two men cleaned up 50 oz in four weeks. A nugget weighing two pounds was found the other day at Pine Creek. Chas. Lambert and ex-Ald. Coupland of Vancovuer have three good claims on Pine Creek and are doing well. I think there will be a fine camp next spring. It costs \$10 a day for a man to represent a claim here during the winter.

Most of the shallow, easily worked, gravel deposits were worked out in the first few seasons by holders of individual claims and leases. The difficulty of working deeper ground and disposing of tailings on small claims forced many miners to leave the camp. This made it possible for those who remained to group several claims together and work at a larger scale. Hydraulicking took place as early as 1901 on Wright Creek but production was small.

In the 1930s Hodges and partners carried out hydraulicking operations using two monitors. They produced 485 oz of gold in 1936-7 and 1,154 oz in 1938. The hydraulic operation suffered from a lack of water resulting in poor production. A number of hydraulic partnerships tried to mine Wright Creek between 1898 and the 1930s but failed for similar reasons.

Between 1898 and 1946 (the period for which reports are available), placer gold production from creeks in the Atlin camp totalled 634,147 oz. Wright Creek had a recorded total of 14,729 ounces during the same period. (Holland, 1950).

Page 43B of the 1899 GSC Summary Report (Dawson, G M, 1902) states:

Wright creek flows into Surprise lake from the south. It is the most easterly of the productive creeks south of Pine valley. The length of this stream is six and a half miles. Its sources are like those of Spruce and McKee creeks upon the Alpine uplands of this district. The upper portion is above timber line. The stream flows over a rather soft biotite slate which wears down without leaving boulders. It is this upper exposed portion of the stream bed which has so far proved productive. The gold values appear in some places to be found deep in the decomposed slate and i the banks at some distance from the stream. The rock is heavily impregnated with pyrites. Free mercury, cinnabar native copper are said to be found also, but no certain evidence was obtained. The lower three miles of this valley are covered too deeply with drift to afford placer diggings. The Pendugwig Hydraulic Company has operated to some extent on this portion of the stream.

Shafting and churn drilling was undertaken in the early 1950s by a company called Surprise Resources. Drill logs indicate that pay gravels were intersected with an average grade of \$12.64 per cubic yard in 1954. A shaft was driven in 1956 to a depth of approximately 110 feet. A drift was continued for 180 feet northwest following an ancient channel. These workings were near the 2022 survey area. (ARIS 06510)

#### A report in 1953 by J.M. Black stated the following:

"The creek below the main hydraulic appears not to be have been worked. Above the pit much of the surface gravel has been worked but gold was still being recovered from surface gravel, some of which was being washed down to sluices by automatic shooters."

Placer mining activity on Wright Creek picked up considerably in the 1970s and 80s.

Andrew Diduck mined for 14 years on Wright Creek beginning in 1979. Diduck and a helper used a D8H bulldozer and a 950 loader to mine approximately 20,000 square feet in the creek's headwaters.

Alan Matson mined nearby from 1981 to 1982 using a D7 dozer and a sluice box with a 20-yard-per-hour capacity.

L. Hodgson began working on the same ground as Surprise Resources in 1981. He used a D3 bulldozer and a backhoe. He continued the shaft from the 1950s mining underground by drilling and blasting. A team of 4 men shoveled the gravel by hand onto a tram car on tracks. (Debicki, 1984)

Andy Didac was mining near the confluence of Wright Creek and Eagle Creek in the early 90s.

Since the 1980s activity on the creek has slowed down and there aren't many records of machine assisted placer operations.

### **Regional Geology**

The Surprise Lake Area is predominantly underlain by the Atlin Ophiolitic Assemblage, a sequence of mid-Jurassic, relatively flat-lying, coherent thrust slices of oceanic crustal and upper mantle rocks. The most dominant lithological unit is metabasalt. Ultramafic peridotite occurs in an arcuate thrust slice in the northwestern part of the property and as small lenses in the southeast.

Placer deposits in the Atlin camp are situated in stream valleys occurring within erosional windows through the carbonatized, relatively flat lying thrust faults within the ophiolitic assemblage. The placers are considered to be derived from auriferous quartz lodes previously hosted by the ophiolitic crustal rocks. Large parts of the Surprise Lake property are situated within the drainage basins of several prolific gold placer streams such as Pine Creek and Spruce Creek. It can be concluded that some of the placer gold was likely derived from the bedrock on the property. Gold quartz veins in the Atlin area are poorly and erratically developed within the ultramafic rocks and more commonly occur as random fracture fillings. Wider, more continuous tabular fissure veins have only been identified in the mafic igneous crustal components (andesite, gabbro, and diabase) of the Atlin ophiolite assemblage.

Gold-quartz vein deposits and their derived placers are commonly associated with carbonate+/-sericite+/-pyrite altered ophiolitic and ultramafic rocks known as "listwanites". Provincial examples of gold camps with spatially associated ultramafic rocks include the Bridge River, Cassiar and Rossland lode gold, and the Atlin and Dease Lake placer camps.

The prospective ophiolite assemblage and the adjacent carbonatized ultramafic rocks underlie large parts of the Surprise Lake property. Listwanites have also been identified at the Surprise showing. These favourable geological settings indicate that the property has the potential to host gold deposits of the listwanite association. The best target is considered to be within a belt enveloping the contact zone between the ultramafic and ophiolitic assemblages.

#### Survey Method and Theory

The passive seismic HVSR method consists of recording ambient or natural seismic energy vibrations using a seismometer. The seismometer must be able to record ground motion in three axes (XYZ), over a broad range of frequencies (0-128 Hz), and over a long time period (1 min to 60 min, usually 20 min).

Traditional seismic surveys use an energy source such as dynamite, or a dropped weight. The HVSR method is very different in that it utilizes ambient vibrations in the surface of the earth. These are considered noise in traditional surveys but in this case, provides the source vibrations.

The ambient signal consists primarily of surface Rayleigh and Love waves, which are generated from natural sources. Sources of ambient vibration are ongoing crustal microtremors, rain, and wind. In more populated areas sources can come from human activities such as traffic movement, construction and factories.

The ambient seismic energy creates seismic resonance within the near-surface strata and regolith. This resonance is a function of the thickness and the shear-wave velocity of the subsurface layers, and is particularly amplified when layers have a strong and sharp acoustic impedance contrast boundary. Acoustic impedance is a function of the density multiplied by the shear wave velocity of a layer. That impedance is how we can identify different layers and their depth.

In processing with proprietary software the recorded time-series data (X, Y and Z) is converted to the frequency domain using a Fast Fourier Transform (FFT), and the two components are displayed as a power spectrum.

After the inversion, the horizontal components are usually very similar unless there is strong anisotropy in the near-surface. The Vertical component dips where resonance occurs from trapping by underlying layers. Where the vertical component deviates from the two horizontal components a H/V peak is interpreted. The frequency at which the peak occurs can be used to calculate the depth from surface.

This resonant frequency is related to the thickness and shear wave velocity of the resonant layer by the following equation from Nakamura (2000):

f₀ = Vs/4h

where  $f_0$  = peak resonant frequency (Hz), Vs = shear wave velocity (m/s), and h = layer thickness (m). In a two-layered earth model, resonance frequency ( $f_0$ ) can be used in estimating the overburden thickness (h) using the equation



From processing the data we know the peak resonant frequency but there are still two unknowns. Vs and the thickness (h). In order to accurately calculate the thickness for each location, we need to know the shear wave velocity of the overburden layers. That can be acquired by running a test station at an area of known depth such as a drill hole. Once the velocity is known it is simple to calculate the thickness.

#### Equipment

The Tromino 3G BLU Seismograph, manufactured by MoHo Science & Technology from Italy was used on this survey. The Tromino works on the HVSR principle, is a very light and portable instrument that records seismic noise in the frequency range of 0.1 to 1024 Hz.

The Tromino is a small (1 dm3, < 1 kg) all-in-one instrument, equipped with:

- 3 velocimetric channels (adjustable dynamic range)
- 3 accelerometric channels
- 1 analog channel
- GPS receiver

The Tromino does not require cables or a source and acts as a standalone geophysical instrument.

A Reach RS2 multi-band RTK GNSS receiver, manufactured by Emlid was used to record spatial information for computer mapping. Some of the specs are here below:

- Dimensions: 126x126x142 mm
- Weight: 950 gram
- Ingress protection: IP67
- Corrections: NTRIP, VRS, RTCM3
- Position output: NMEA, LLH/XYZ
- Positioning kinematic horizontal: 7 mm + 1 ppm
- Positioning kinematic vertical: 14 mm + 1 ppm
- GNSS signals tracked: GPS/QZSS L1C/A, L2C, GLONASS L1OF, L2OF, BeiDou B1I, B2I, Galileo E1-B/C, E5b

Number of channels: 184

#### Survey Procedure

Station spacing was set at 30m for the survey lines. A 30m rope was used to layout the survey lines using two people. Line locations were chosen in advance in GIS software and layed out in the field using a handheld GPS. Each station was marked with a pin flag and recorded on the GPS for processing.

Each reading takes 20 minutes, which allows for sufficient data collection to be modeled in the interpretation software. It is important for the seismometer to have good contact with the ground. At most stations, it was necessary to remove the vegetative mat and expose soil/subsoil that the instrument can be planted into.

The seismometer used in this survey is extremely sensitive since it's designed for picking up faint, ambient energy in the earth. The trade-off is that it is also sensitive to sources of noise.

Station data is stored on the device and downloaded each day to check for data quality. Initial processing was completed in the evening each day. To estimate the shear wave velocities seismic data was recorded at several of the drill hole locations that were completed in previous years. Those velocities were used to satisfy the equation above and calculate the layer thicknesses.

#### **Processing and Interpretation**

Each station is processed independently using proprietary software that utilizes the HVSR method described above. Each trace is analyzed for quality and if necessary noisy sections can be removed using a windowing technique. There were two stations that had too much noise and had to be repeated but most were below the noise threshold or able to be cleaned up.

The coordinates and calculated bedrock depth are populated into a CSV file to be gridded. Surfer software was used for gridding the data and the resulting vector data can be used in GIS software such as ArcMap.

The final data is presented as a topographical map showing the difference between surface and bedrock elevations.

#### Interpretation

#### **Cross Sections**

Line 1 is near the junction of a small, unnamed creek and Wright Creek. Station L1S1 was at the Southern end of the line and overburden from previous mining was observed at the surface from stations L1S1 - L1S6. The cross-section shows a deep section from L1S3 - L1S5 with the deepest point at L1S4 (42m). The bedrock shape is consistent with a paleochannel in that section.

Line 2. Exposed tailings were visible at the surface from station L2S3 to L2S7. The bedrock was deeper in the middle of the line at stations L2S4 - L2S6, with the deepest part at L2S5 (28m).

Line 3 is is to the west of line 2 continuing up a small valley between Wright Creek and Otter Creek. There were no observed tailings on this line. A small creek was present at station L3S6. The bedrock profile mimics the surface topography. The deepest part, near the creek, is 15 meters to bedrock.

Line 4 lies to the west of LIne 3 and showed a very similar profile. The bedrock profile again follows the surface topography. The deepest part, near the creek, is 14.1 meters to bedrock at station L4S5.

Line 5 had some changes in the topography, there was a rise in the center of the valley which diverts the small creek in the bottom. The bedrock profile showed a distinct high point in the bedrock at station L5S7 where it's only 12 meters deep. The center of the valley at stations L5S5 and L5S6 were much deeper, around 19 meters. Up the hill to the north, the bedrock drops significantly, up to 40 meters at station L5S9. The deep section at L5S5 and L5S6 is interpreted as part of a paleochannel.

Line 6 showed two deep spots in the bedrock, L6S5 and L6S10. There was a dry creekbed at L6S5 and the creek appears to flow seasonally towards Otter Creek. There is a height of land between Line 5 and Line 6 that divides the valley. The deep section at L6S5 is interpreted as part of a paleochannel that continues through the valley.

Line 7 was in an area where previous mining had occurred. The profile showed very deep ground in this area with the deepest part at 106 meters from the surface.

Line 8 was also in an area where previous mining had occurred. Tailings were visible over much of the line. The bedrock was deep for the central part of the line, around 50 meters. There is a relative high point at station L8S4 which is only 27 meters deep. The east end of the line near the road is much less deep, around 13 meters.

Line 9 was to the north of line 8 and oriented in an east-west direction. The line ended near an old tailings pond of unknown depth. Bedrock was relatively shallow near the road at about 19 meters and increased to 88 meters near the old pond.

Line 10 covered an area with a large pile of old mine tailings in the center of the valley. Stations to L10S6 to L10S9 were on a huge pile of tailings. That area also had very deep ground with the deepest spot at L10S7, 71.9 meters. The tailings appear to be covering a deep paleochannel. The section on the West side of Wright Creek was much more shallow, averaging about 10 meters.

Line 11 was similar to Line 10. There was a large pile of tailings parallel to the valley that appears to be covering a deep paleochannel. The deepest part of this line is station L11S4 at 117.6 m deep.

Line 12 was to the north of Line 11. There was no evidence of previous mining in this area. There is a deep section in the middle of the line that appears to be a paleochannel. The natural topography is easier to see in this section due to the lack of huge tailings piles. Stations L12S6 - L12S9 have deep bedrock and thick overburden ranging from 24-34 meters with the deepest part at L12S6.

Line 13 also showed no evidence of previous mining, except for some remains of an old flume near the start of the line. There was a deep section at station L13S8 at 33m deep, which could be part of a paleochannel. The rest of the valley bottom had a bedrock depth of around 15m.

Line 14 was the northernmost line of the survey. There were some tailings near the main road. The bedrock was deeper from station L14S7 to L14S9, around 30m. The other part of the line was about 13 meters deep on average. The deep section could be part of a paleochannel.

### Conclusion

The seismic survey was successful in highlighting deep areas in the bedrock that are consistent with the shape of a bedrock paleochannel. The survey provided evidence for a main paleochannel of ancient Wright Creek as well as a channel below the small creek in the side valley (lines 1-6).

The survey was successful in providing a better understanding of the buried paleochannels in this area. It is recommended to conduct further seismic exploration to map more of the channel and test the deep areas for gold values with a sonic or RC drill.

### Costs

Personnel	Days/QTY	Rate	Subtotal
Geophysical Technician - Nicholas Gust	5	\$1,200.00	\$6,000.00
Equipment Costs	5	\$600.00	\$3,000.00
Field Assistant - Aaron Mckenzie	5	\$500.00	\$2,500.00
Field Assistant - Richard Burgess	5	\$500.00	\$2,500.00
Transportation (4x4 truck)	5	\$100.00	\$500.00
Survey Planning	1	\$500.00	\$500.00
Data Processing and Interpretation	1	\$900.00	\$900.00
Report Writing	1	\$1,500.00	\$1,500.00
Accommodation	1	\$5,729.10	\$5,729.10
Mob/Demob Costs	900	\$0.65	\$585.00
Flights	1	\$593.51	\$593.51
То	\$23,714.10		

#### References

Nakamura, Y., 2000, Clear identification of fundamental idea of Nakamura's technique and its applications, Proc. 12WCEE, No. 2656, 177–402.

Holland, S.S., 1950, Placer gold production of British Columbia: British Columbia Geological Survey, Bulletin 28, 89 p.

Bilsland, W.W. 1952, Atlin 1898-1910: The Story of a Gold Boom; in The British Columbia Historical Quarterly, Vol. XVI; p.121-179.

Dawson, G M., 1902, Geological Survey of Canada, Annual Report vol. 12, (1899)

Smith, Alec, 1989, Vancouver daily World, Oct 13, 1898

Black, J.M. (1953): Atlin Placer Camp, Unpublished Report, 116 pages

Debicki, R. L., 1984, An overview of the placer mining industry in Atlin mining division, 1978 to 1982

### Statement of Qualifications

I, Nicholas Gust, of the city of Mission, in the province of British Columbia do hereby certify that:

- 1. I am a graduate of the University of Calgary with a B.Sc.in Geophysics. I am also a graduate of the Southern Alberta Institute of Technology and hold a diploma in Exploration Technology.
- 2. I have received training from the manufacturer of the instrument used in this survey in the application of field techniques and interpretation.
- 3. I have worked in the exploration industry and have been conducting geophysical surveys since 2008.
- 4. This report is compiled and interpreted from data obtained from a passive seismic survey carried out under my field supervision.
- 5. I have based the conclusions and recommendations contained in this report on my knowledge of geophysics, my previous experience, and the results of the field work conducted on the property.

Appendix I: Maps and Data

## Wright Creek 2022 - Seismic Stations



# Wright Creek 2022 - Seismic Lines



## Wright Creek 2022 - Overburden Thickness



# Wright Creek 2022 - Bedrock Elevation



## Wright Creek 2022 - Interpretation



Appendix II: Cross Sections

## Wright Creek Passive Seismic 2022

Line 1





























