Pure Gold Gulch
Placer Assessment Report

Project Location:
Pure Gold Gulch, Tributary to Bonanza Creek
Dawson Mining District
NTS: 115 O15
Placer Claims: P521146-P521149
Location of central claim area: 64.99433N, 139.340555W

Submitted by:
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Executive Summary

This project sought to use resistivity and induced polarization geophysics to determine depth to bedrock on the right limit of Pure Gold Gulch. The image showed an incised channel with bedrock depth of 2.5-4.0m below the surface as well as a historical shaft and drift. This is consistent with depths observed in a reclaimed mining cut several hundred meters downstream.

Introduction

Pure Gold Gulch is a right limit tributary to Bonanza Creek roughly 4 km upstream of its confluence with the Klondike River. The creek has been partially mined and this survey was intended to see if the depths to bedrock in the lower section continued into the upper reach of the creek. A total of one day was spent on site accessing the claims and conducting the geophysics survey. PGG1-4 are grouped and PGG1-4 and the lease have Class 1 notification permitting geophysics, drilling, test pitting and bulk sampling.

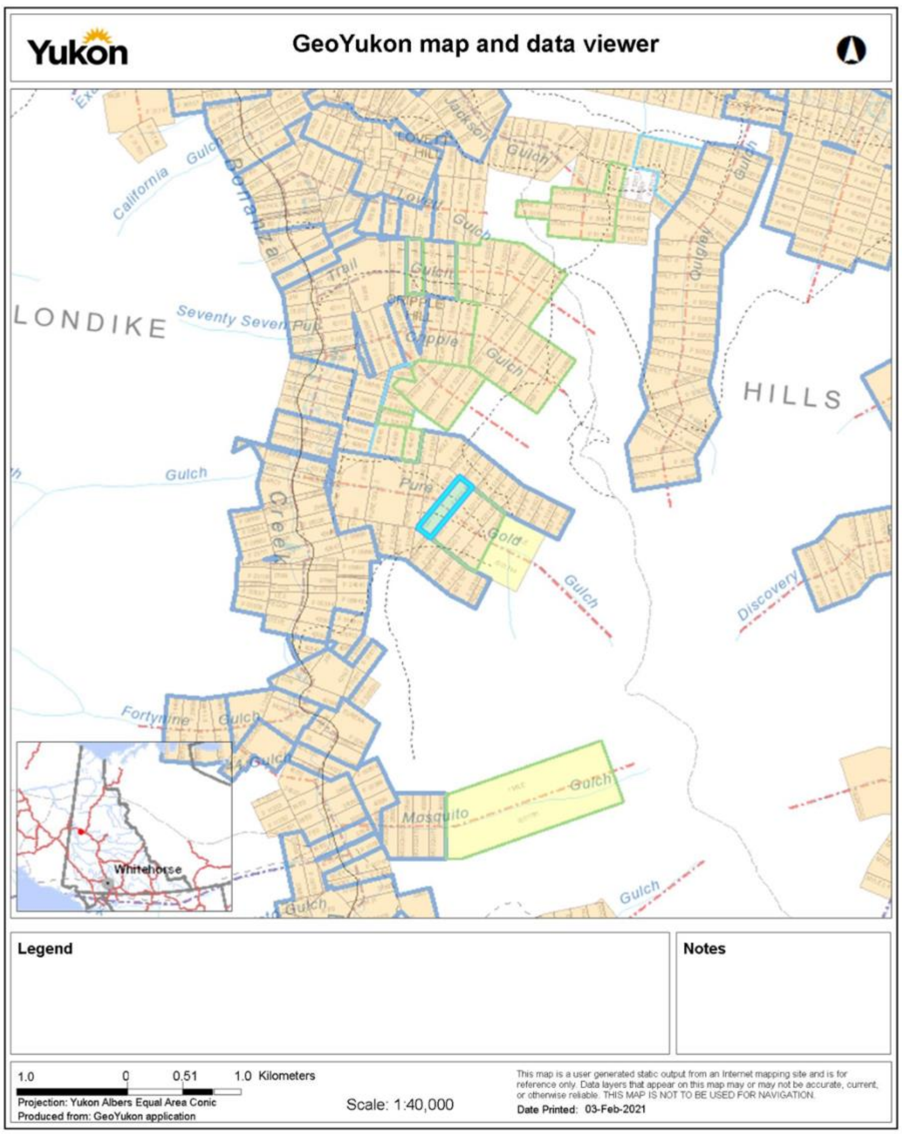


FIGURE 1. LOCATION OF CLAIM BLOCK.

Location and Access

The property is 4 km south of Dawson City, located on the right limit of Pure Gold Creek roughly 1km upstream of the confluence of Pure Gold Creek and Bonanza Creek. Access is via the Bonanza Creek Road and North Klondike Highway. A rough gravel road leads from the Bonanza Creek Road to the lower end of the claims. Alternate access is along the historical ditch line road that accesses the upper end of the claims.

Placer Tenure

The property consists of four claims and a lease that are grouped and owned 100% by Kryotek Arctic Innovation Inc. Class 1 notification has been completed for this property.

History of Exploration and Mining

Mining in this area began in 1897. Gold was discovered on Bonanza Creek in 1896 and exploration on surrounding creeks including Bonanza Creek swiftly followed. Hand mining took place predominantly on Bonanza Creek from 1897 to 1902. Dredging on Bonanza Creek followed from 1902 to 1966.

Numerous modern mechanised placer mining operations have been active on Bonanza Creek and its high-level benches from the early 1900s to the modern day. Large open-pit mines on the high-level White Channel bench deposits within two kilometres of the property along Bonanza Creek have been particularly rich, producing grades of up to $1,500 per cubic yard.

Modern Exploration

No evidence of modern exploration has been found on the claim. Pure Gold Gulch has been mined downstream of the claim to the Bonanza Creek confluence since 2017.

Regional Bedrock Geology

The bedrock geology under the claim block is mapped as Klondike Schist with isolated quartz veins.

Physiography and Vegetation

The claim is located in the Bonanza Creek Valley at an elevation of about 500 meters elevation. There is bedrock outcrop nearby, but none has been found on the claims. The terrain is a high

hilltop with well-drained soils and widely spaced trees. Poplar, spruce, and willow are moderately dense.

Flat and south-facing slopes are thawed to bedrock with 1 m of seasonal frost penetration. Up to 0.3 m of groundwater is present in gravels just above bedrock. North-facing slopes are frozen and thaws down about a meter in the summer months. Ground water collects in low-lying areas and forms small ponds above the permafrost. Black bears, grizzly bears, moose, lynx, coyotes, wolves, hawks, owls, ducks and brown bats frequent the area.

Geological Description and Previous Work

History of the Area

Hunker Creek is one of the most heavily prospected and mined regions in the Klondike. High level benches, tributaries and the creek bed itself along Bonanza have yielded some of the highest gold values in the Klondike.

Surficial Geology

The 'White Channel gravel' (WCG) found within the drainages of the Klondike district are economically important auriferous high bench gravel deposits. The gravels are within the drainages of Bonanza and Hunker Creeks, both of which flow into the Klondike River. The WCG deposits sit uncomformably on the White Channel strata, an eroded bedrock surface composed mainly of Klondike Schist of the Yukon-Tanana terrane, at heights of 10 m to 200 m above the modern creeks (Lowey, 2004).

The WCG deposits in Bonanza and Hunker Creeks are locally overlain by loess ('black muck') and colluviums (Lowther et al, 2014). The current proposed mode of deposition for the WCG involves continuous deposition by shallow gravel-bed braided river systems in the paleo-creeks (Morison, 1985; Morison and Hein, 1987; Lowey, 2004; 2006). The braided river system that deposited the WCG was initially a larger river system with a low aggradation rate, which produced large gravel bars (Table 1) that were largely erosive as they migrated and stacked (Lowther et al, 2014).

Placer mining activities generally concentrate on processing the lowest stratigraphic levels in the

WCG and creek gravels and it is generally accepted that the highest gold grades are found at the bedrock contact.

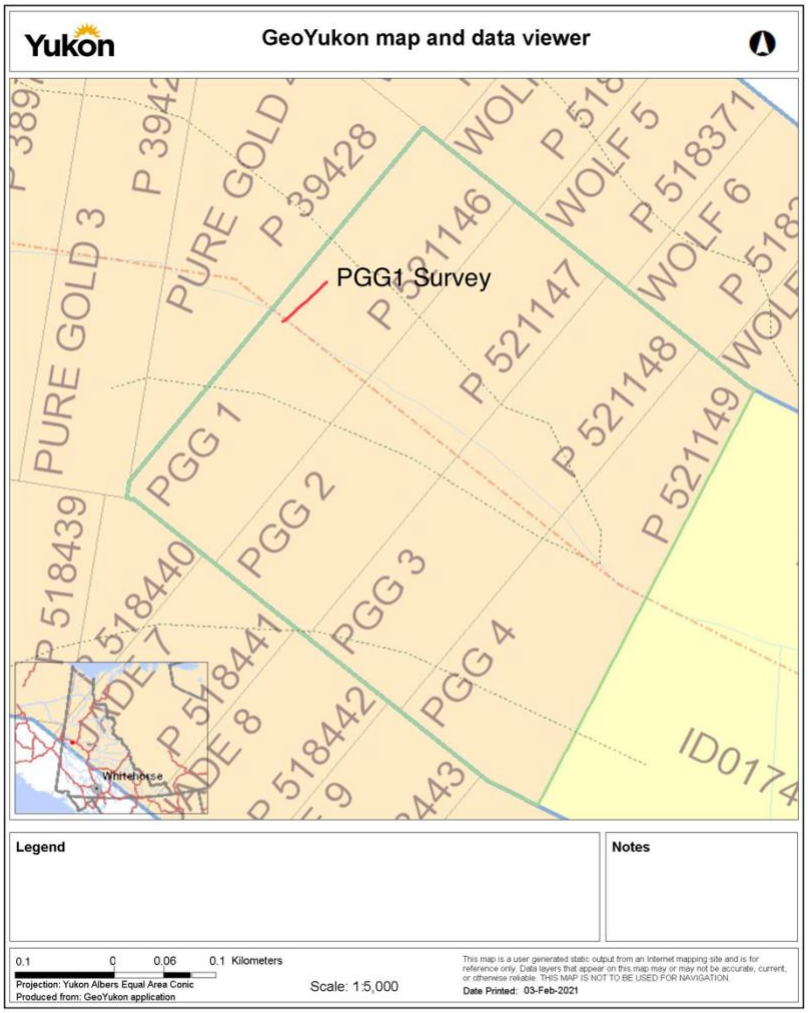
Claim block location in relation to Bonanza Creek as viewed from the southwest

Previous Work on the Property

We found no evidence of modern workings on the claim although there may be overgrown or collapsed test pits. The claim was likely prospected during the 1898 gold rush and there is visible evidence of pitting, shafting or sluicing. The geophysics survey was conducted directly over what appeared to be a historical shaft.

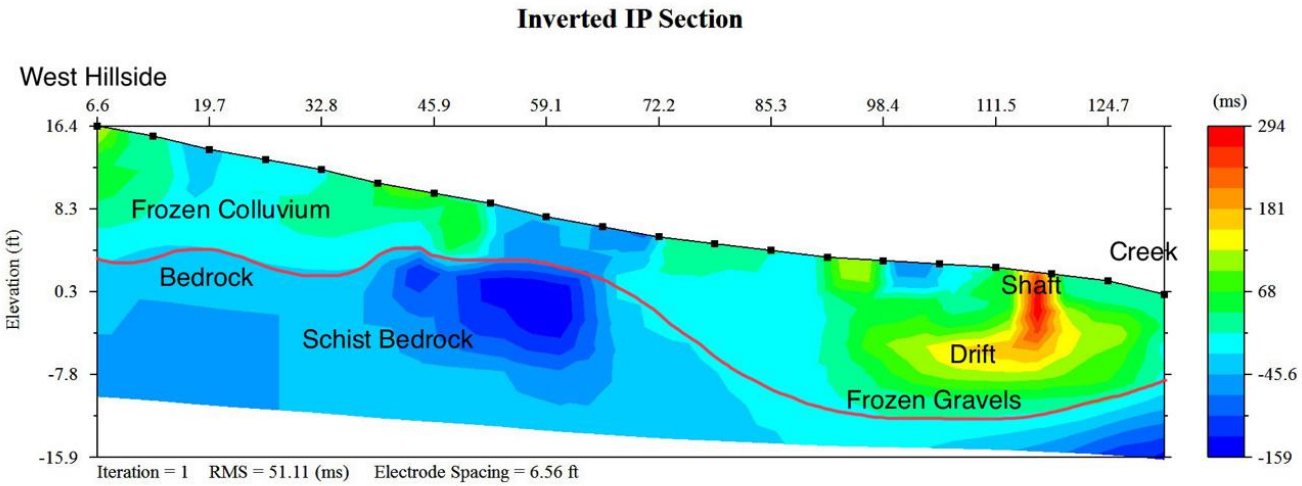
Electrical Resistivity Geophysics

One Lippman 4-point AC Electrical Resistivity and Induced Polarization Survey was conducted over the areas of interest to determine depths to bedrock and define the length and width of the gravel deposit. We were interested in finding any paleochannels that have been incised into bedrock. Work was conducted in October 2020.
The survey runs from 63.9944N, 139.3399W to 63.99433N, 139.3404W.



Survey location on PGG1.

Geophysics Results



This survey extends from northeast to southwest, starting at the base of the bedrock hill slope and running down to the edge of the creek. The entire area is permafrost. Blocky schist colluvium is present on the west hillside. Depths to bedrock may be shallower than presented in this image as highly decomposed schist with interstitial clay and silt mimics colluvium in induced polarization imagery. The red line on the image is the inferred bedrock contact. A channel from 85-124 feet on the horizontal scale is 8-12 feet in depth and 30-40 feet in width. A historical collapsed mineshaft was observed on the surface and appears to be present at 111 feet on the horizontal scale as a red/yellow object that matches the shape of a shaft with a drift or cavern at its base. This is a good indication of historical mining activity. H

Summary

One electrical resistivity and induced polarization geophysics survey was conducted on the Rounded Rocks claim. Noisy data made the resistivity image unusable, however the induced polarization image showed an incised channel and bedrock at 2.5-4.0 m (8-12 feet) with a 2-3.0 m (6-9 feet) deep shaft and drift. Overburden is frozen and a combination of schist slide rock and black muck.

Summary of Costs

As per 2020 YMEP rates

Geophysics Equipment: $1875/day	$1875.00
Geophysics Operator/Geologist: $500/day	$500.00
Geophysics Assistant: $350/day	$350.00
Truck: $50/day	$50.00
ATV: $40/day	$40.00
Camp (2x$100/day)	$200.00
Reporting: $500	$500.00
Total	$3515.00

Statement of Qualifications

James Coates – Senior Geomorphologist and Geophysicist

I, James Coates DO HEREBY CERTIFY THAT:

1. I am a Consulting Geomorphologist with current address at 2180 2nd Ave Whitehorse, Yukon, Y1A 5N6.

2. I am a graduate of the University of Calgary (B.Sc., 2004, Geography) and the University of Ottawa (M.Sc., 2008, Geography), University Laval PhD (Deferred, 2011).

3. I have practiced my Profession as a Geomorphologist continuously since 2008.

4. I am a former Placer Geological Technician with the Yukon Geological Survey and Co-Author of the Yukon Placer Atlas.

5. I am a specialist in the use of Electrical Resistivity Tomography for placer gold exploration.

Astrid Grawehr- Field Technician and Logistics

I, Astrid Grawehr DO HEREBY CERTIFY THAT:

1. I am a practicing geoscience technician with current address at 2180 2nd Ave Whitehorse, Yukon, Y1A 5N6.

2. I am a geophysics technician with over 1,000 hours of field time conducting resistivity/IP surveys.

3. I am a graduate of Bishop's University (B.A. Geography, 2008).

4. I am Director of Operations of Kryotek Arctic Innovation Inc.

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Appendix 1

Geophysics Overview

Resistivity and Induced Polarization Geophysics will be used for this area as the electrical properties of gravel, schist bedrock and mineralized fault systems are distinct and easily definable. A Lippmann 4-point Resistivity System will be used. This system allows up to 40 m of depth penetration. This system has been used by Kryotek for mineral exploration and subsurface definition in 2013 at the Casino property, Dawson goldfields area, Burwash Landing, Whitehorse area, Mt Nansen, Norman Wells and Fairbanks, Alaska.

Data will be collected and inverted using AGI Earth Imager 2D software. Noisy data points and electrodes with poor contact resistance will be removed and data will be filtered for spikes or depressions in resistivity. The software will produce two-dimensional tomograms using a smoothed, least squares damped and robust inversion parameters. Preliminary interpretations will be conducted on the processed data.

DC Electrical Resistivity Tomography

This technique injects a direct electrical current into the ground surface, and then measures the voltage that remains at a number of distances from the injection point. As different soils have different resistances to electrical current, a tomogram (subsurface diagram) of resistivity can be produced.

Induced Polarization Tomography

This technique is conducted simultaneously with the DC electrical resistivity. As the electrical current is injected into the ground, a charge is retained in soil and rock materials and then decays as a function of time. This differs according to the electrical properties of the ground materials and can be useful in differentiating subsurface material types and boundaries.

Earth Imager 2D Software

Earth Imager 2D software (Advanced Geosciences Inc.) will be used to invert and process the geophysics data. This software produces two-dimensional tomograms of resistivity data. The images will be processed using both smoothed and robust inversion parameters in order to clarify transitions between material types as well as resistivity properties of those materials.