



# GroundTruth Exploration Inc.

Box 70, Dawson YT, Y0B 1G0 (867) 993-5612

## GEOPHYSICAL REPORT on the Dan Man Creek Placer Prospecting Lease

Whitehorse, Yukon Territory

Lease No.: IW00383 – Owner: James Scott 100%

NTS # 115J/14

Latitude: 62° 56.9N Longitude: 139° 19.6 W

Whitehorse Mining District

WORK PERFORMED: September 20<sup>th</sup>, 2013  
DATE OF REPORT: October 20<sup>th</sup>, 2013



120284



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## Table of Contents

Summary .....	3
1.0 Location and Access .....	3
2.0 Property .....	3
3.0 Physiology and Geology .....	4
4.0 Resistivity Survey Procedure(s).....	5
4.1 Resistivity Survey Theory Applied to Placer Exploration.....	5
5.0 Magnetic Survey Procedure.....	6
5.1 Magnetic Field Theory Applied to Placer Exploration.....	6
6.0 Resistivity and Magnetic RESULTS.....	7
6.1 DC Resistivity Results and Interpretation: .....	8
6.2 Magnetic Survey Results and interpretation:.....	9
6.3 Combined Interpretation: .....	9
7.0 Conclusion/ Recommendations .....	9
8.0 Statement of Expenditures .....	10
9.0 Certification .....	11
10.0 Figures.....	11
11.0 Supersting R8 IP Technical Specifications .....	12



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## Summary

A High Resolution Resistivity survey and coincident detailed Total Magnetic Field ground survey was conducted on the Dan Man Creek placer lease to map bedrock profile and classify overburden material. The lease is located 120km South of Dawson on Dan Man Creek which flows directly into the Yukon River (figure 1).

The survey was conducted by Groundtruth Exploration on September 20th, 2013. The property was accessed by helicopter based at the mouth of Coffee Creek. One resistivity profile was set up and read using 3 separate arrays. A detailed ground magnetic survey was ran for one day over the resistivity profiles at 25m line spacing parallel to the resistivity profile. The Resistivity Survey was read using a Supersting R8 resistivity meter with 84 electrodes spaced at 5m. The Magnetic survey was conducted using a GEM Systems GSM-19T Proton Magnetometer in 'walk mode', with a GPS tagged reading being recorded every 0.5 of a second.

The resistivity survey was successful in profiling bedrock depth and detecting permafrost depth interval. The detail mag survey was successful in focusing magnetic placer channel interpreted location over resistivity profile.

## 1.0 Location and Access

The prospecting lease is located 120km South of Dawson City within the Yukon river drainage system in west-central Yukon Territory. It is centered at 62° 56.9 N, 139° 19.6 W, on NTS mapsheet 115J/14 (Figure 1). It is accessible in winter on the Yukon river via snowmobile, and accessible by helicopter year round. Neighbouring Kaminak Coffee Camp is has a developed airstrip that can be utilized year round and is accessed seasonally by Barge from Minto Landing. Thistle Creek (~15km to the northwest) has active placer mines which are currently accessed from Dawson City by barge on the Yukon River to the mouth of Thistle creek.

## 2.0 Property

The Dan Man Creek Placer Prospecting lease Tenure:

Location: Dan Man Creek, IW0383

Length: 5 miles

Expiry: September 28/2013 (renewed)

(Figure 2)

140°0'0"W

130°0'0"W

120°0'0"W

70°0'0"N

70°0'0"N



**GroundTruth Exploration Inc.**

**Placer Lease Locator**

Figure:  
**Figure 1**

Prepared By: **I. Fage**

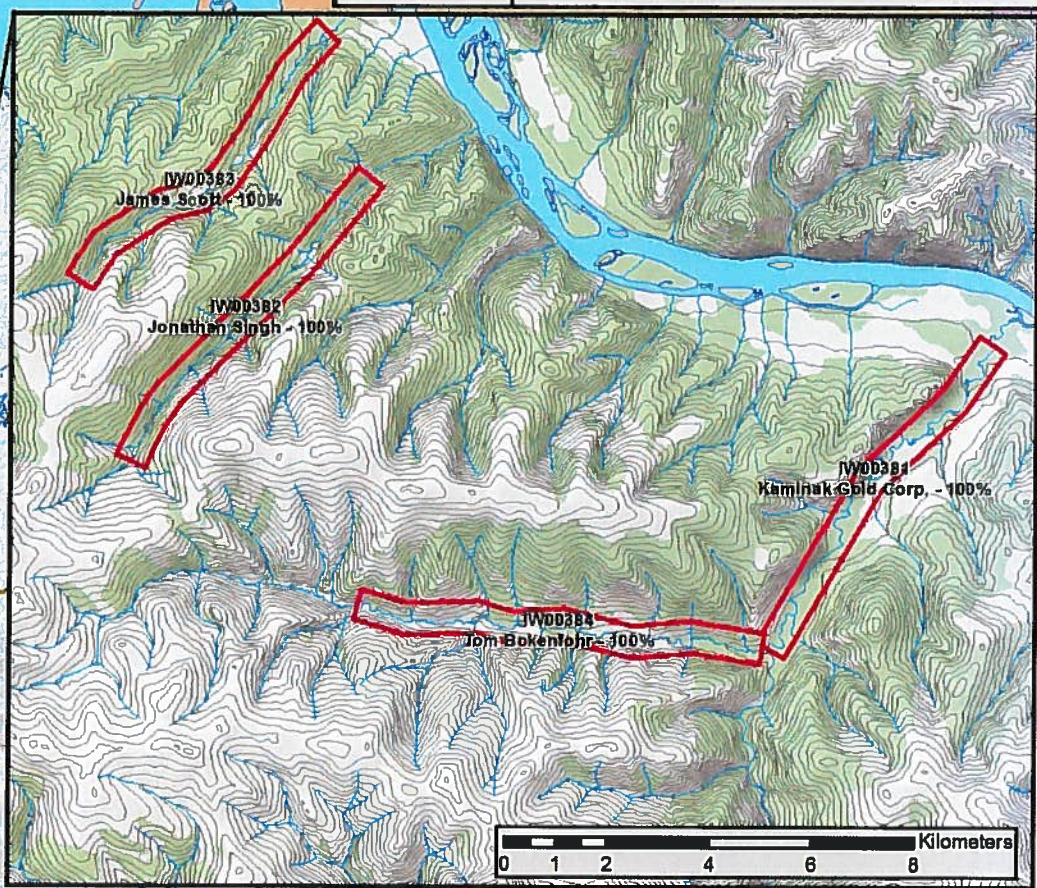
Date: **Sept 25/13**

Scale: **1 : 5,000,000**

Datum: **NAD83, Albers**

65°0'0"N

65°0'0"N



Dawson

Mayo

Beaver Creek

Carmacks

Ross River

Haines Junction

Whitehorse

Watson Lake

60°0'0"N

60°0'0"N

0 100 200 400 Kilometers

140°0'0"W

130°0'0"W



NTS Mapsheet:  
115J/14

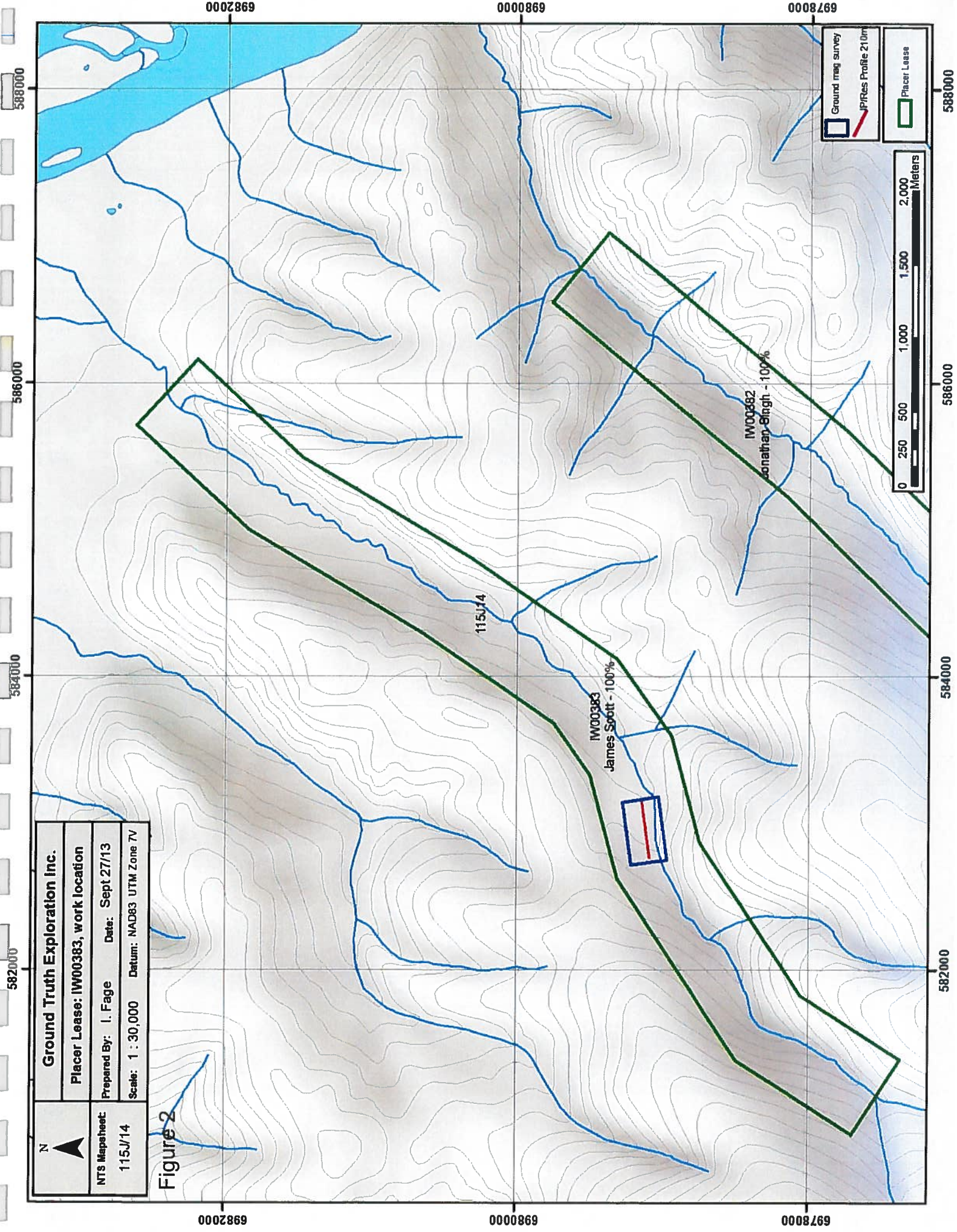
**Ground Truth Exploration Inc.**

Placer Lease: IW00383, work location

Prepared By: I. Fage    Date: Sept 27/13

Scale: 1 : 30,000    Datum: NAD83 UTM Zone 7V

Figure 2



Ground map survey  
IP/Res Profile 210m  
Placer Lease



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## 3.0 Physiology and Geology

The Dan Man Creek placer prospecting lease is located within the Yukon-Tanana Terrane. The landscape is composed broad valleys bordered by moderately sloped, tree covered hills ranging in elevations from 1200 to 5000 feet. The area experiences typical climatic conditions for central Yukon Territory with short, warm and dry summers and cold winters. Temperatures range from  $-20^{\circ}\text{C}$  to  $-60^{\circ}\text{C}$  in the winter and  $+10^{\circ}\text{C}$  to  $+30^{\circ}\text{C}$  in the summer.

The Dan Man Creek placer lease is underlain by a Devonian-Mississippian metamorphic unit (See Figure 3).

### Legend for Figure 3: Regional Geology:

#### Devonian-Mississippian

<b>DMN3</b>	<b>DMN3: NASINA:</b> quartzite, micaceous quartzite, quartz muscovite (chlorite; feldspar augen) schist, and minor metaconglomerate and metagrit as in (1), but may locally include significant Nisling Assemblage
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#### Early Jurassic

<b>EJgA</b>	<b>EJgA: AISHIHIK SUITE:</b> medium- to coarse- grained, foliated biotite-hornblende granodiorite; biotite-rich screens and gneissic schlieren; foliated hornblende diorite to monzodiorite with local K-feldspar megacrysts; may include unfoliated monzonite of the Long Lake Suite (Aishihik Suite)
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<b>EJqL</b>	<b>EJqL: LONG LAKE SUITE:</b> massive to weakly foliated, fine to coarse grained biotite, biotite-muscovite and biotite-hornblende quartz monzonite to granite, including abundant pegmatite and aplite phases; commonly K-feldspar megacrystic (Long Lake Suite)
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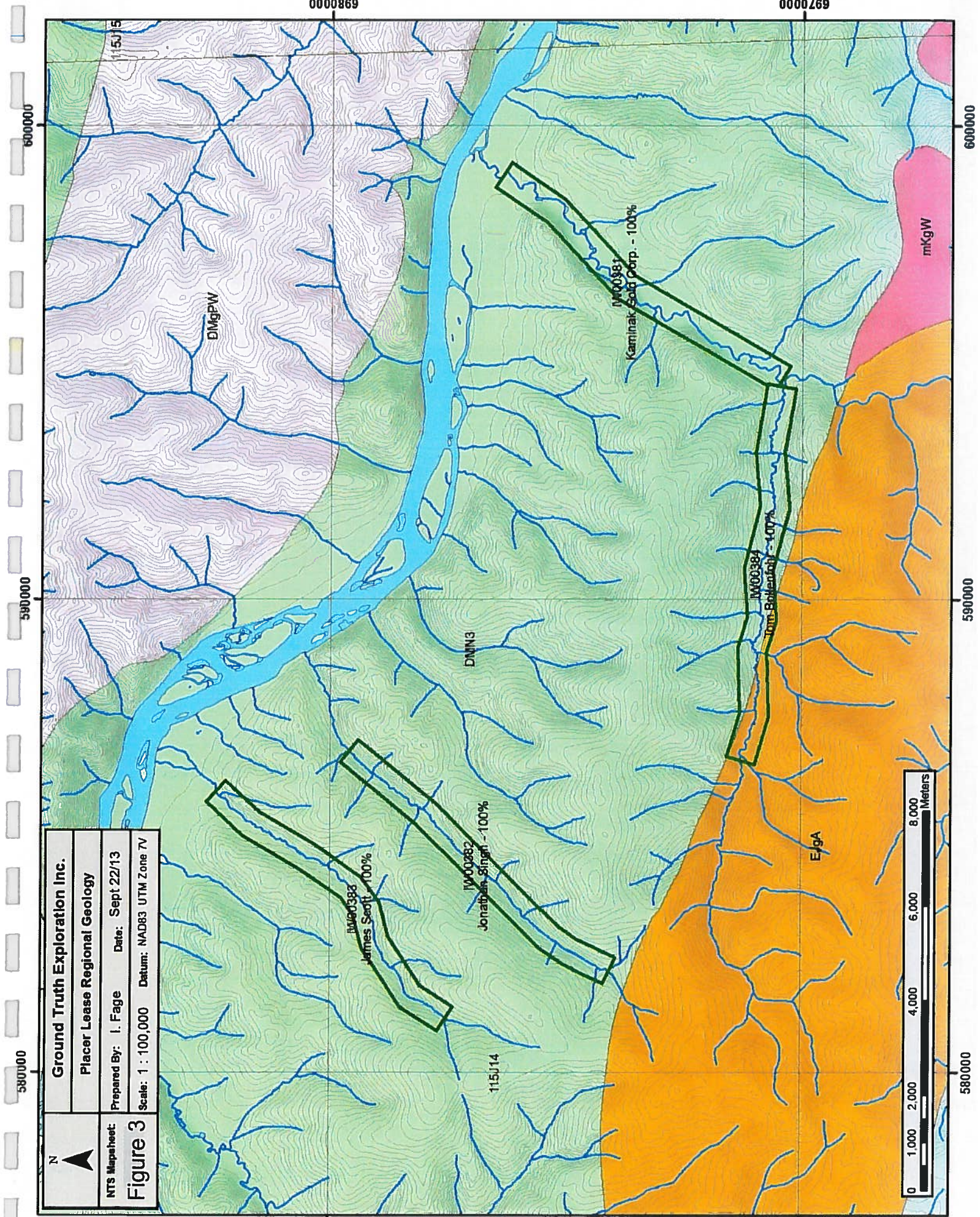
#### Upper Cretaceous

<b>uKC1</b>	<b>uKC1: CARMACKS:</b> augite olivine basalt and breccia; hornblende feldspar porphyry andesite and dacite flows; vesicular, augite phyric andesite and trachyte; minor sandy tuff, granite boulder conglomerate, agglomerate and associated epiclastic rocks (Carmacks Gp., Little Ridge Volcanics, Casino Volcanics)
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**Ground Truth Exploration Inc.**  
**Placer Lease Regional Geology**  
Prepared By: I. Fage    Date: Sept 22/13  
Scale: 1 : 100,000    Datum: NAD83 UTM Zone 7V

**Figure 3**





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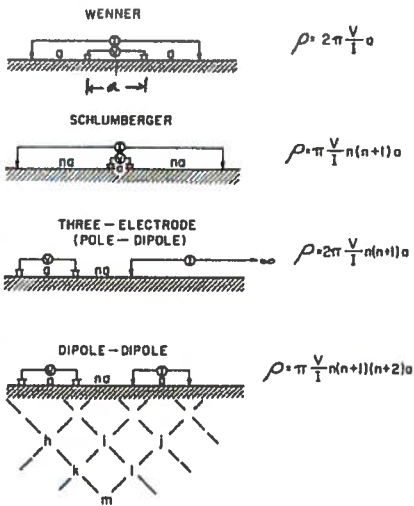
## 4.0 Resistivity Survey Procedure(s)

Ground Truth crews used a 206-L helicopter based out of the Coffee Project camp to gain access to the placer lease surveyed. The pre-arranged traverses were located using Ashtech GPS, then cut & chained at 5M, for the 420m traverse.

The DC Resistivity survey was completed using Advanced Geoscience Inc., Supersting instrument (Instr. specs. Addendum). The instrument is placed at a center point of the traverse; referred to as **electrode #42**, with 42 electrodes on either side. The Supersting gathered apparent Resistivity component only, using the -following arrays:

1. Schlumberger Inverted **Si3 Array** (with expanding AB and MN dipoles)
2. Schlumberger Inverted **Si2 Array** (with expanding MN only)
3. Strong Gradient **sG Array**

The equipment comprises; Supersting (combined transmitter/ receiver), switch box, motor generator with 6 x 14 electrode cable= 84 electrodes.



When doing small A spacings <3M, the stainless electrodes are put into the ground at a lesser depth to help avoid coupling.

Contact Resistances (CRS) are the governing factor for collecting good data, giving high Signal/Noise ratio.

CRS are taken before survey, and attempts always put forward to keep them below the 2 kohm threshold when doing IP effects simultaneously.

The traverse is also surveyed using differential GPS to produce an accurate terrain file, for post processing.

The survey result is presented here-in using Earth Imager, and Surfer software.

## 4.1 Resistivity Survey Theory Applied to Placer Exploration

High Resolution DC Resistivity surveys can be applied to placer exploration by exploiting unique petrophysical properties of overburden and bedrock material. Measurement of the apparent resistivity at depth on continuous profiles provides a method to discriminate between overburden (muck/gravel) and bedrock interface. The results are mapped in symbolized section figures and interpreted. Ideally these interpretations should be validated by drilling or test pits to confirm the resistivity based interpretation.





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## 5.0 Magnetic Survey Procedure

The Equipment necessary to complete the survey consisted of:

Magnetometer Field Unit:	GEM Systems GSM-19T Proton Magnetometer
Base Station:	GEM Systems GSM-19T Proton Magnetometer
Data Processing	Laptop Computer
Software:	GEM Systems proprietary magnetometer upload, download software, MapInfo mapping software, Oziexplorer for grid planning and GPS interface.
Grid Establishment:	Garmin map76cx GPS (x3) Machete, Flagging, Marker

The magnetometer survey was conducted according to the following specifications:

Field Magnetometer Observation Frequency: 1 reading per 0.5 of a second.

Base Station Magnetometer: Set to record an observation every 20 seconds for the duration of the survey.

Levelling: None required

### 5.1 Magnetic Field Theory Applied to Placer Exploration

In a placer setting, magnetite derived from bedrock weathering is concentrated in the main channel of a creek or river where the water flow has the highest velocity and the greatest turbulence. As a result, minerals with high specific gravity (magnetite, ilmenite, gold, etc.) are preferentially concentrated in this region of the stream, while material with lower specific gravity is winnowed from the sediment. High concentrations of "black sand" (magnetite, ilmenite, chromite) are often recorded in auriferous pay streaks where the stream bed has remained relatively immobile from some period, permitting hydraulic concentration to build up a significant volume of these materials.

The materials comprising black sand are magnetically susceptible. Magnetite has a very high magnetic susceptibility of  $1200-19200 \times 10^{-3}$  SI units, ilmenite ranges from  $300-3500 \times 10^{-3}$  SI units, and chromite measures from  $3-1100 \times 10^{-3}$  SI units. Average magnetic susceptibilities for sedimentary, igneous (excluding ultramafic) and metamorphic rocks are: 0-10, 3-160 and 0-70 x



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$10^{-3}$  SI units respectively. Fluvial sediments register magnetic susceptibility in the range of  $0-2 \times 10^{-3}$  SI units. There is consequently a significant susceptibility contrast between gravels enriched with black sand and average gravels/ underlying bedrock.

## 6.0 Resistivity and Magnetic RESULTS

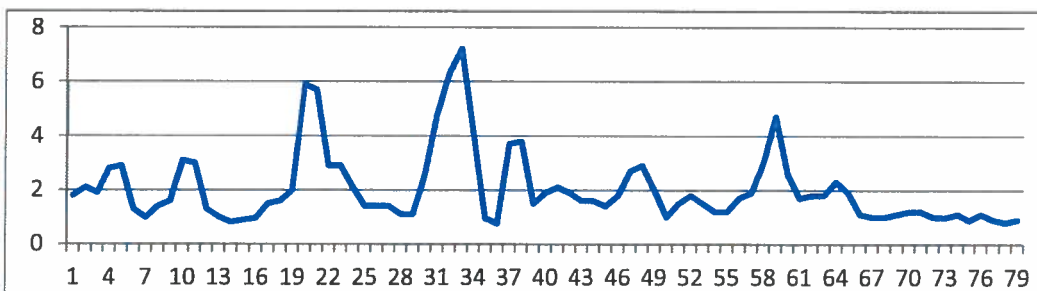
### DC Resistivity Surveys:

Survey 1: 84 Electrodes spaced at 5, 420m horizontal length

Arrays Read:

- (1) Inverse Schlumberger (Si3A),
- (2) Inverse Schlumberger (Si2A)
- (3) Strong Gradient (SG)

### Contact Resistance: Dan Man Creek Resistivity Survey



CONTACT RESISTANCES (CRS) in Kohm's/ (measured by electrode # 1-84)

The survey was pushed onto the north side of the creek once crew arrived onsite due to unworkable ground on the south side which consisted of large boulders devoid of soil. On repositioned site, mean contact resistance was 2.0 kohms. Rationale was to position line in workable local location to best evaluate surficial geology with good data.



Photos from Field survey on Dan Man Creek Resistivity survey.

## 6.1 DC Resistivity Results and Interpretation:

A notable near N-S underlying structure near 220E inhibited the survey attempting to map horizontal impacts to a degree. The Si2, and Si3 surveys depicts resistive permafrost limiting surficial layering. All three surveys infer top of the Tertiary bedrock to an average of 12M down. A trough (highly weathered rock with good permeability) is suspect under 175 to 195E.

The Si2 and Si3 arrays outlined the contact between resistive permafrost overburden and the less resistive underlying bedrock. The line was surveyed at an oblique angle to the valley and is only useful to interpret bedrock depth along the valley which is 15-25m depth. Bedrock appears to be at a near uniform depth from surface along the profile. There is resistivity low feature that comes to surface at 215m which may indicate zone of melted permafrost.

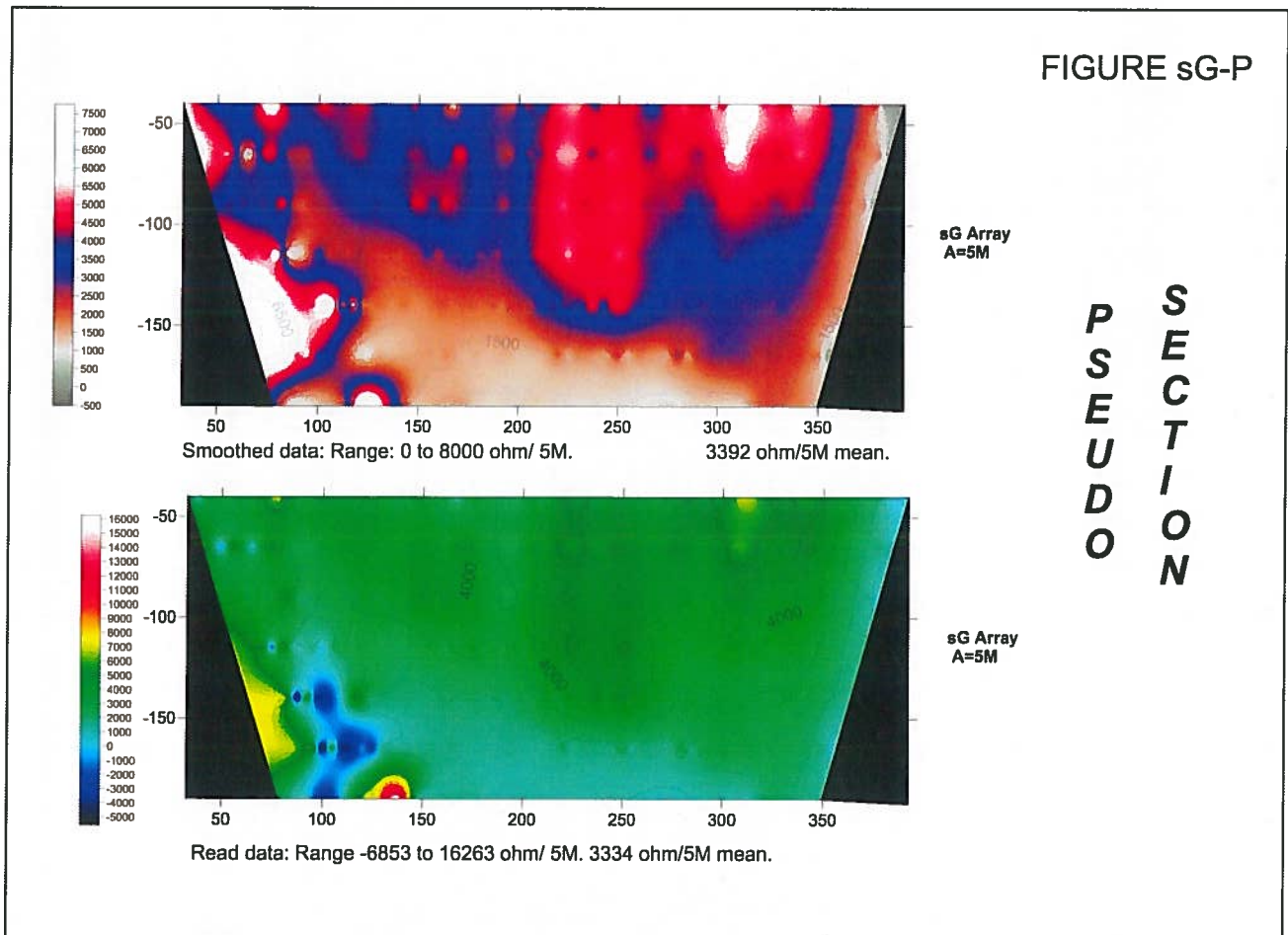
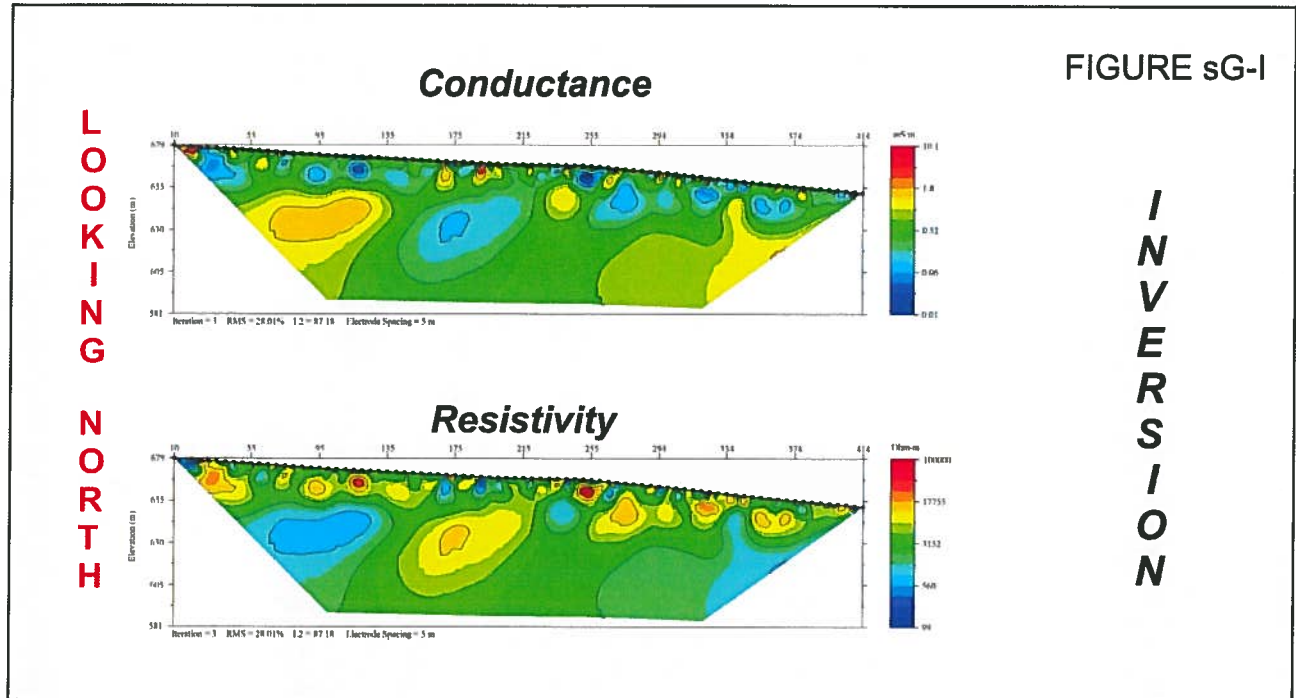
The Strong Gradient (SG) array did not perform well on this survey as it is reflecting deeper bedrock related features and did not discriminate bedrock profile and overburden well.

(See interpretation Figures 4-6)

Figure 4

**KAMINAK**  
**Gold Corporation**  
DC Resistivity Imaging  
**Strong Gradient Array**  
AB=expanding MN=expanding

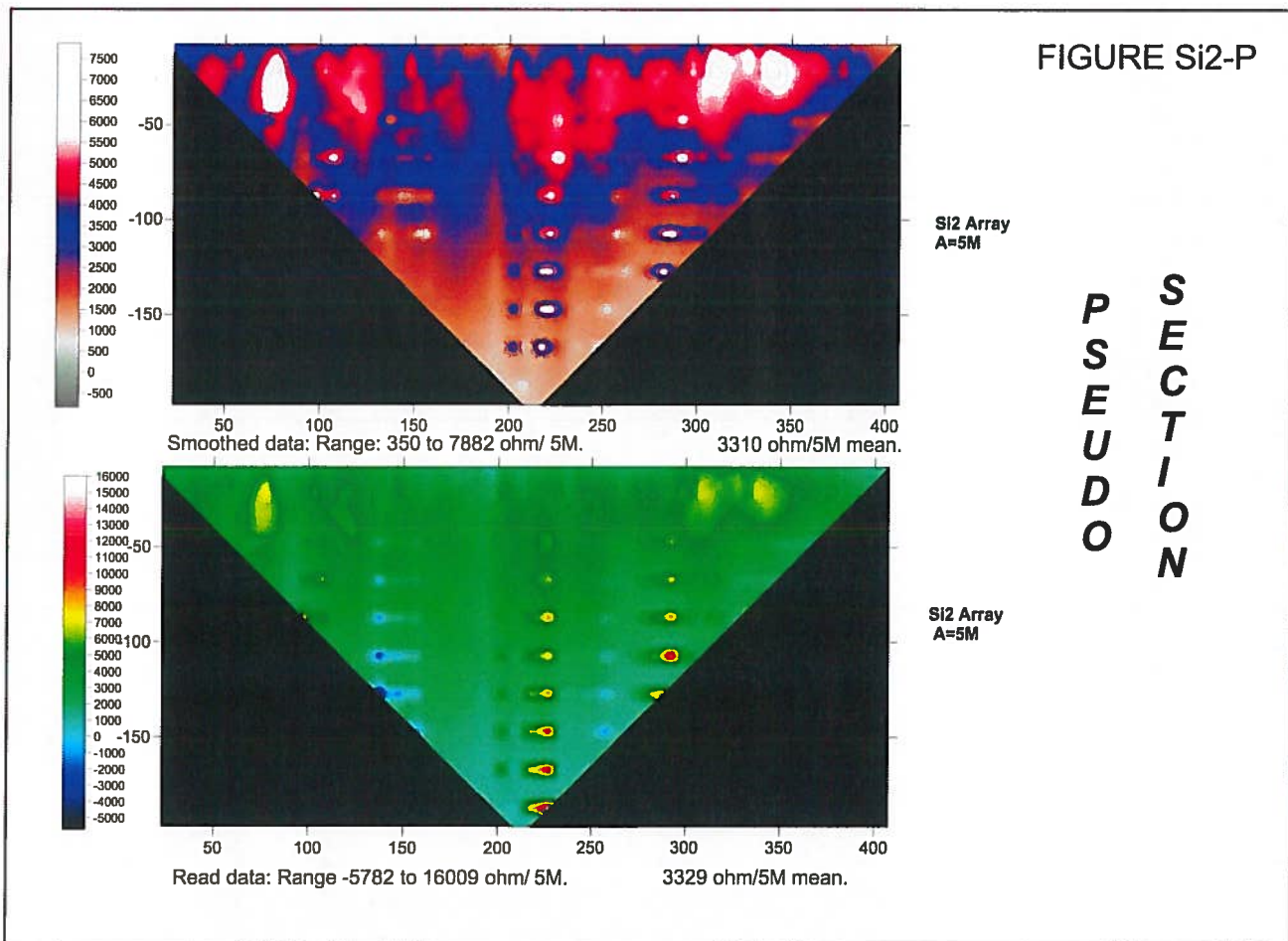
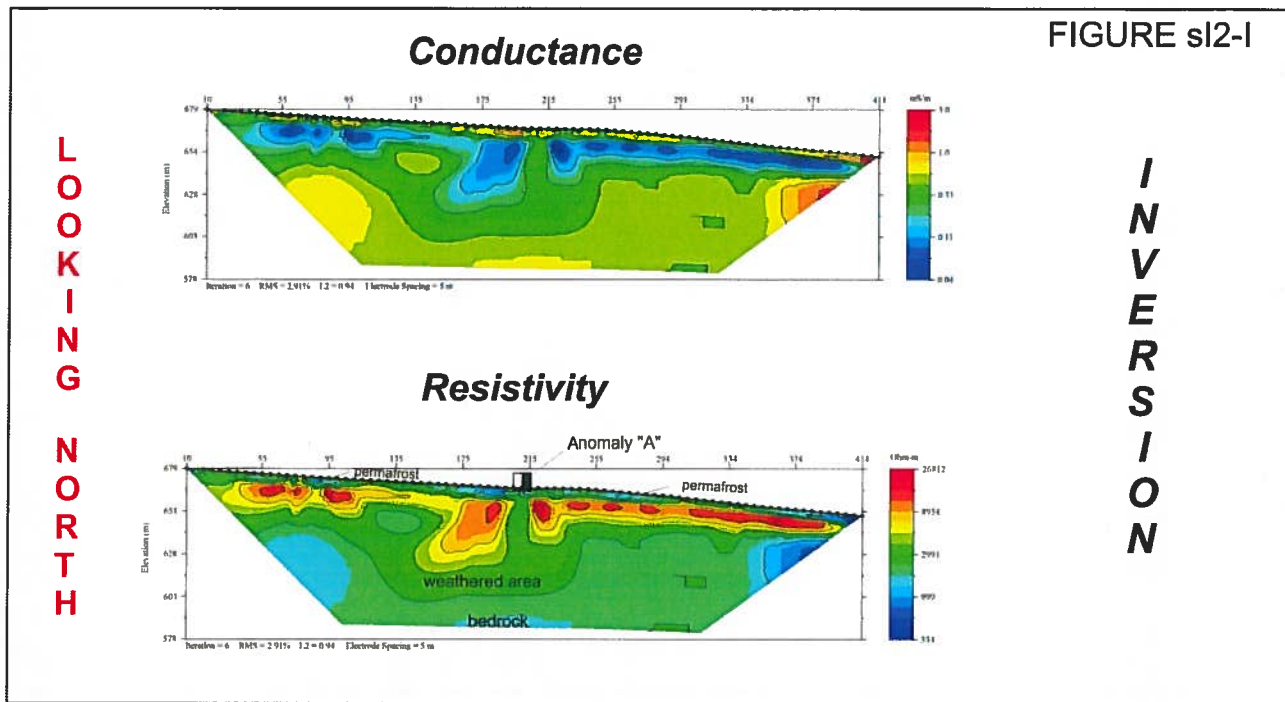
**Placer Lease IW 00383 (Dan Man Creek)**



# KAMINAK Gold Corporation

**DC Resistivity Imaging**  
**Schlumberger Inverted Array- Si2**  
**AB= 5M & 15m MN=expanding**

**Placer Lease IW 00383 (Dan Man Creek)**



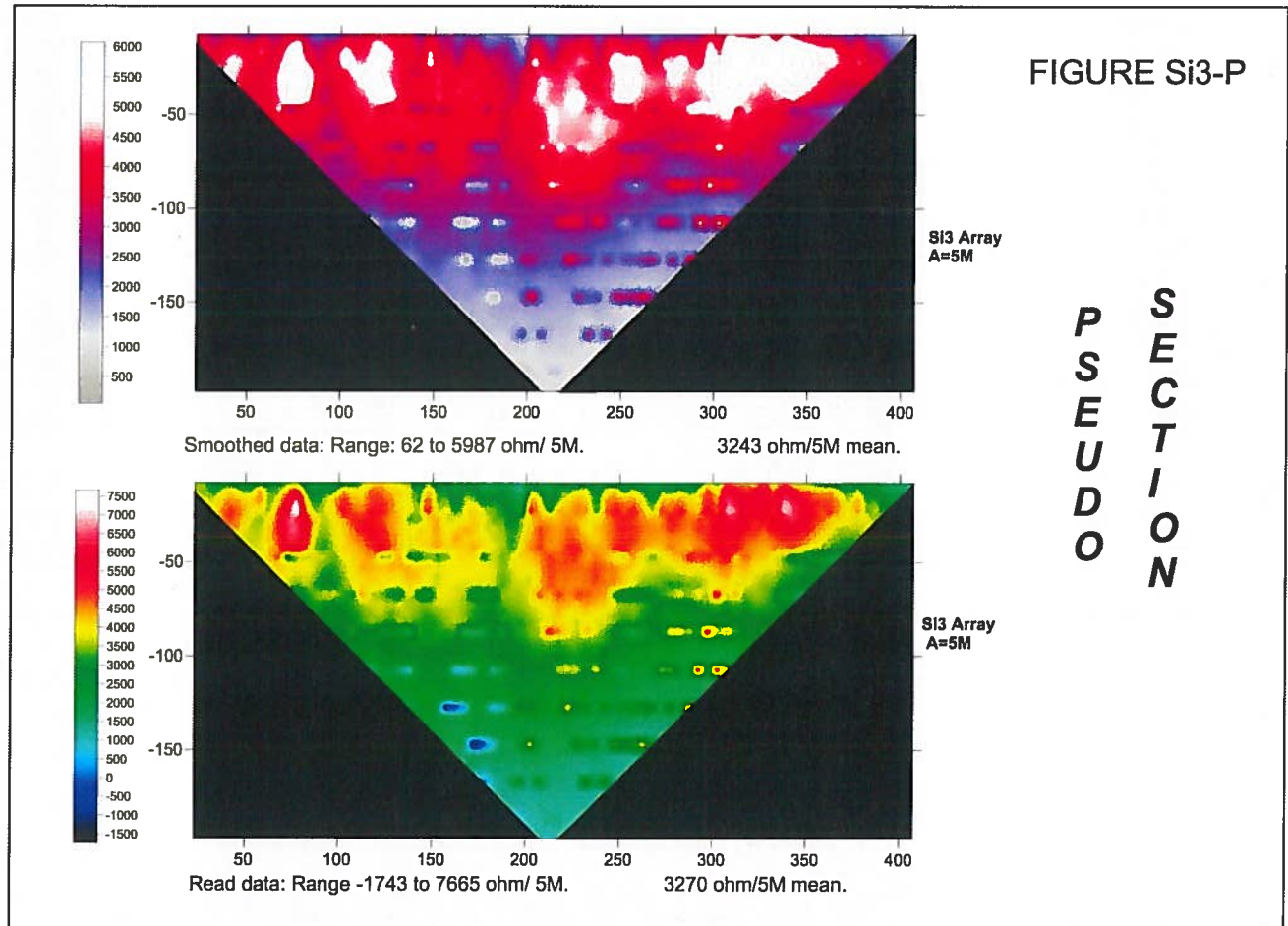
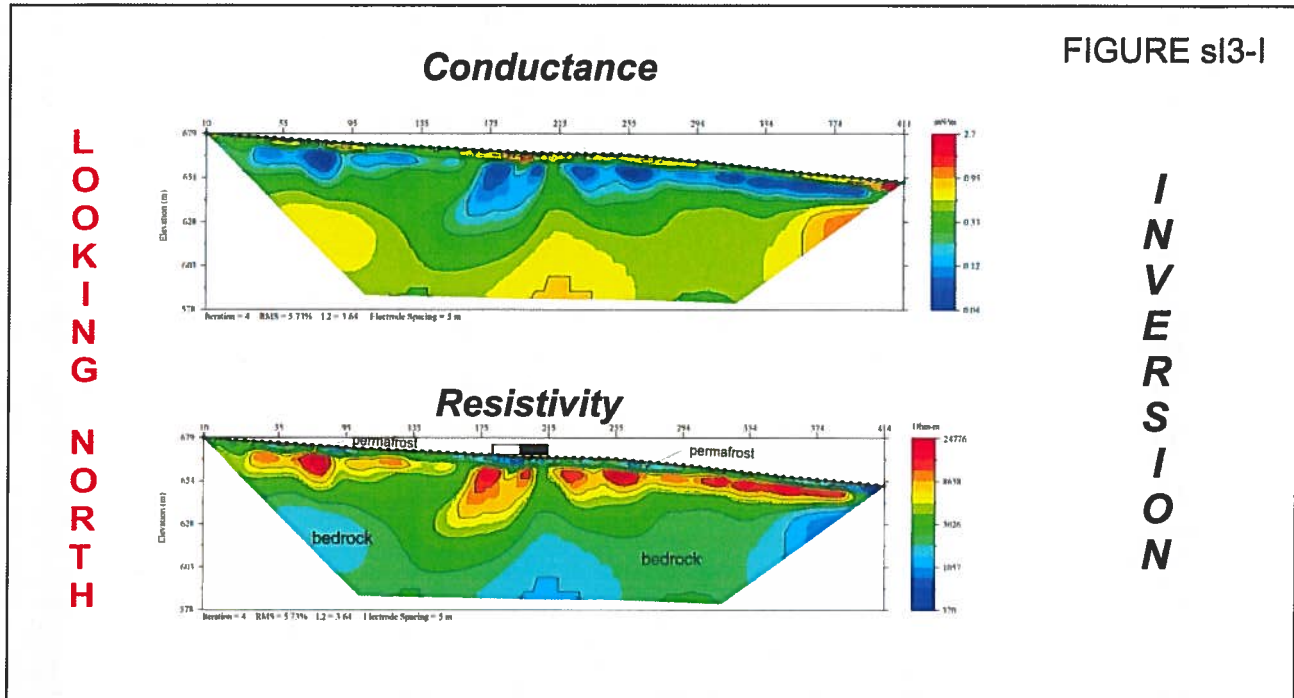
**KAMINAK  
Gold Corporation**

**DC Resistivity Imaging**

**Schlumberger Inverted Array- SI-3**

AB=expanding MN=expanding

**Placer Lease IW 00383 (Dan Man Creek)**





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## **6.2 Magnetic Survey Results and interpretation:**

The survey is comprised of a total of 3,802 geo-referenced magnetometer readings. The detail survey largely reflected underlying bedrock features. The mag survey was oriented perpendicular to creek valley. The creek is showing as an E-W mag low which is likely structurally related. There is a vague magnetic lineament that runs parallel with the creek and cuts the Resistivity profile at an oblique angle, crossing at 265m. It is inconclusive whether this is related to a placer gravel channel. (See Figure 7)

## **6.3 Combined Interpretation:**

**Si3 and Si2 Resistivity Array with Magnetics:** Both Si2 and Si3 arrays produced similar inversions showing the resistive permafrost layer near surface at same depth. The magnetic low at 210m correlates with the observed break in the resistivity. This may be associated with a zone of thawed permafrost.

See figure 8 for interpretation with Inverted Resistivity.

## **7.0 Conclusion/ Recommendations**

Additional work is left to the client's discretion. Interpreted results need to be proofed by follow-up. Multiple arrays are useful for comparison and interpretation of overburden and underlying bedrock. The Si3 and Si2 arrays proved to be more useful for discriminating between permafrost and overburden. Survey would have provided more useful information if it had been possible to survey with the planned orientation crossing the creek. Crew was forced to adjust onsite after helicopter departed for the day. A reconnaissance trip to planned survey location could have helped relocate the survey to a more suitable location on the lease.



NTS Mapsheet:  
115J/14

**Ground Truth Exploration Inc.**

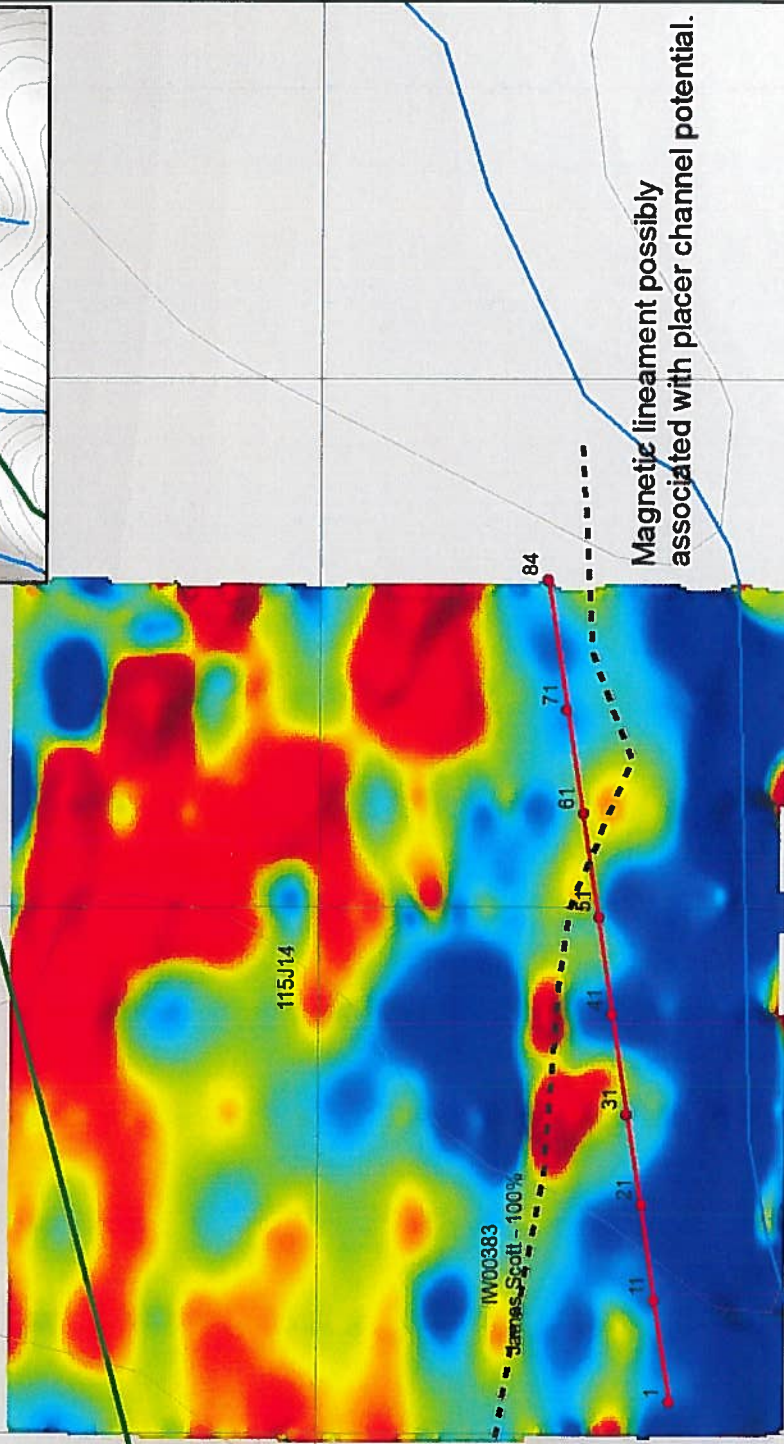
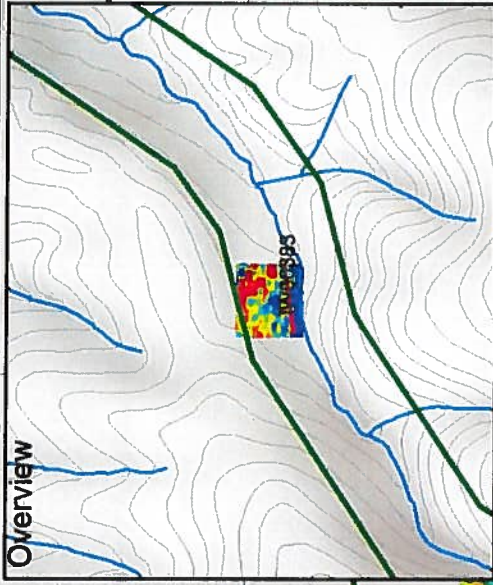
**Dan Man Magnetic Survey**

Prepared By: I. Fage    Date: October 23/13

Scale: 1 : 3,500    Datum: NAD83 UTM Zone 7V

Figure 7

**Overview**



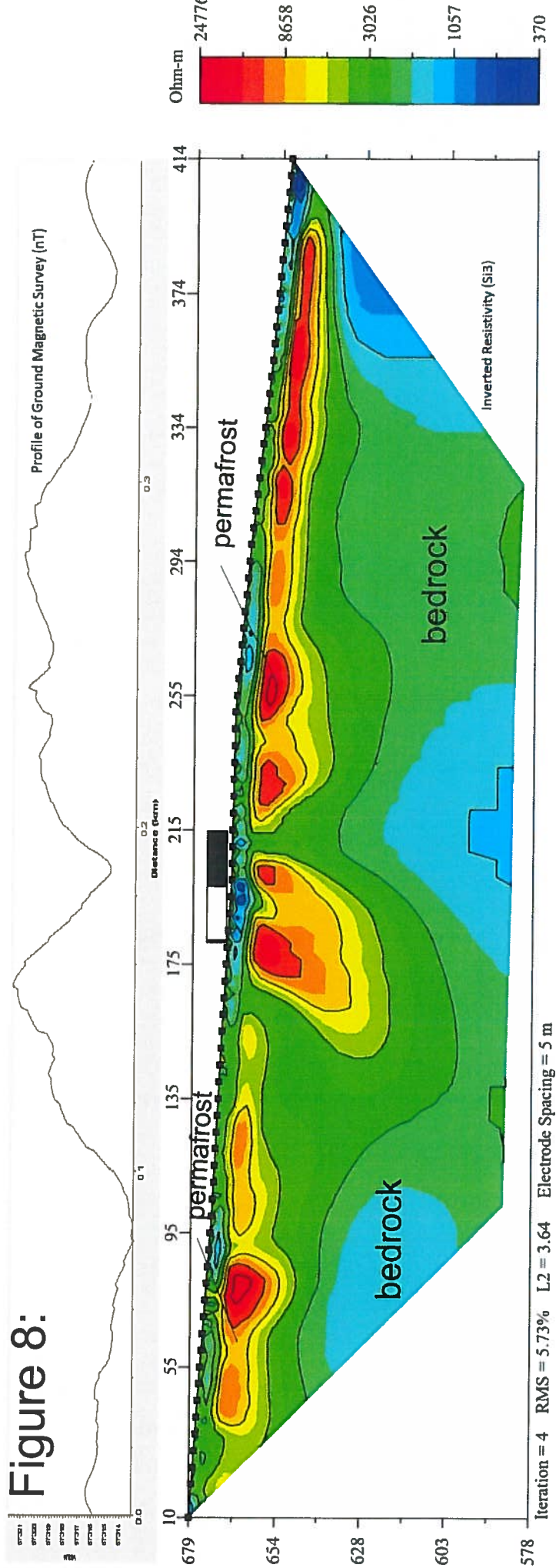
Magnetic lineament possibly associated with placer channel potential.

- Electrode #
- Resistivity Profile





Figure 8:





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## 8.0 Statement of Expenditures

**IP/Resistivity Survey: On 5 mile Placer Lease: IW00383**



**Survey Date: September 20, 2013**

**Work Performed:**

1 IP/Resistivity line set up and read plus one day of ground magnetic survey on IW00383 lease.

Survey 1: 84 electrodes spaced at 5m, 420m horizontal length.

Inverse Schlumberger x2 (two variations), and Strong Gradient arrays read for IP and Resistivity.


Survey 2: Ground magnetic survey over IP profile line plus 8 mag lines ran at 25m line spacing on either side of IP profile

**Survey Operation Daily Cost:**

<b>Wages:</b>	
1 Geophysical Operator * \$450/day	\$450
4 Field Assistants * \$350/day	\$1,400
Daily Data Processing: 1h*\$60/h	
Download survey, DGPS, QC Field Data, Package and email to Client/Geophysicist	\$60
<b>Food/Camp:</b>	
Food: Crew of 5 * \$50/day	\$250
Camp: Crew of 5* \$35/day	\$175
<b>Survey Equipment:</b>	
IP/Resistivity Meter: Supersting 8 Channel meter w/cables, electrodes	\$600
Precision GPS: Ashtech Promark 100 differential GPS	\$75
Laptop w/Inversion and Mag processing software for nightly download and review	\$50
Iridium Sat Phone	\$35
Chainsaw	\$50
Radios \$5/day * 5	\$25
<b>Consumable Supplies:</b>	
Electrodes: wear & tear- 2 per profile, \$6 ea	\$12
Calcium Chloride: 4kg per profile, \$2/kg	\$8
Pickets every 50m: 9 per profile, \$1/picket	\$9
Spray paint: 1 can per profile, \$10/can	\$10
<b>Total Cost:</b>	<b>\$3,209</b>

<b>Ground Magnetic Survey: Operator \$400, Walk Mag \$200, Base \$100, Camp \$35, Food \$50</b>	<b>\$785</b>
<b>Processing of Magnetic Data: 2 hours @ \$60/hour</b>	<b>\$120</b>
<b>Assessment Report for Placer Lease: \$1000</b>	<b>\$1,000</b>

**Total Expenditures for Assessment on Lease: \$5,114**

  
Sep 27/13



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## 9.0 Certification

I, Richard Daigle of Thorold, Ontario certify that I am a graduate Certified Electronic Technologist. I have been practicing Geophysics since 1980.

R. J Daigle

October 2013

I, Isaac Fage of Dawson, Yukon Territory certify that I hold an Advanced Diploma in GIS/Remote Sensing from the Centre of Geographic Sciences (COGS). I am an owner and President of GroundTruth Exploration Inc. I have been working in the Mineral Exploration continuously since 2004.

I. Fage

October 2013

## 10.0 Figures

1. Property Location
2. Tenure
3. Geology
- 4-6. Resistivity Survey
7. Magnetic Survey
8. Combined Survey Interpretation



# GroundTruth Exploration Inc.

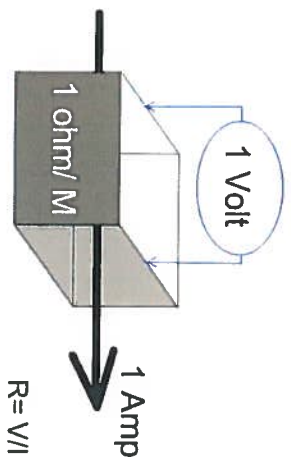
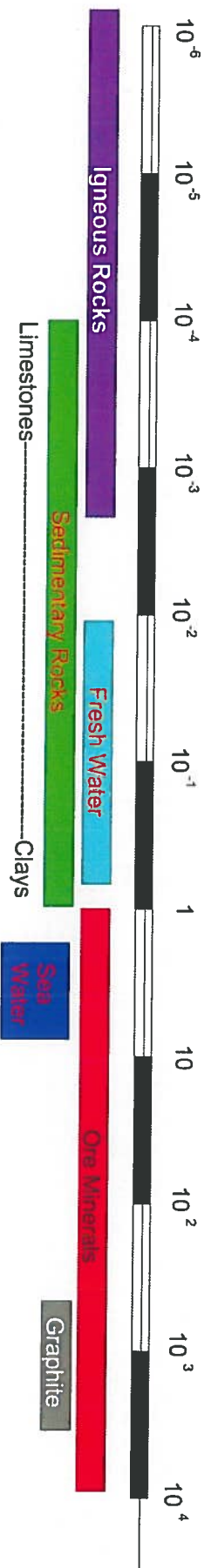
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## 11.0 Supersting R8 IP Technical Specifications

from [www.agiusa.com](http://www.agiusa.com)

Measurement modes	Apparent resistivity, resistance, induced polarization (IP), battery voltage.
Measurement range	+/- 10V.
Measuring resolution	Max 30 nV, depends on voltage level.
Output current intensity	1mA - 2000 mA continuous, measured to high accuracy.
Output voltage	800 Vp-p, actual electrode voltage depends on transmitted current and ground resistivity.
Output power	200W.
Input channels	Eight channels.
Input gain ranging	Automatic, always uses full dynamic range of receiver.
Input impedance	>150 MOhm.
Input voltage	Max 10 V.
SP compensation	Automatic cancellation of SP voltages during resistivity measurement. Constant and linearly varying SP cancels completely (V/I and IP measurements).
Type of IP measurement	Time domain chargeability (M), six time slots measured and stored in memory.
IP current transmission	ON+, OFF, ON-, OFF.
IP cycle times	0.5, 1, 2, 4 and 8 s.
Noise suppression	Better than 100 dB at $f > 20$ Hz.
Powerline noise suppression	Better than 120 dB at power line frequencies (16 2/3, 20, 50 & 60 Hz) for measurement cycles of 1.2 s and above.
Total accuracy	Better than 1% of reading in most cases (lab measurements). Field measurement accuracy depends on ground noise and resistivity. Instrument will calculate and display running estimate of measuring accuracy.

# Crude apparent CONDUCTIVITY/RESISTIVITY classification



$R = V/I$  ohm's law.

Resistance Voltage (V) / Current (I) in ohms  $\Omega$  (ohm)  
 Resistivity Resistance per unit volume in ohms  $\rho$  (rho)  
 Conductivity  $1/R$   $\sigma$  (siemens)

