Arctic Geophysics Inc.

Geophysical Surveys • Prospecting • Consulting

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Geophysical Survey with 2D Resistivity/IP
Maisy May Creek, Yukon 2012

N63 18 55.7 W138 55 24.4

Lease ID00634

FOR
La Tierra Resources Ltd.
Box 304-211 Elliott St
Whitehorse, YT, Y1A2A1

AUTHOR
Philipp Moll

WORK PERFORMED
July 5th 2012

DATE OF REPORT
15th August 2012

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1. Introduction

This geophysical investigation was done for La All-In Exploration Solutions Inc., Bud Davis.

The survey, using 2D Resistivity/IP, was conducted to prospect the ground for placer - and mineral mining interests.

The ground was tested with one 94.5m-measuring line, depth 19m.

2. Prospecting Lease

Grant Number	Claim Name	Owner
ID00634	–	Bud Davis

3. Location

The placer prospecting lease ID00634 is located on a left tributary of Maisy May Creek. Maisy May Creek flows into the Stewart River about 55 River-km upstream from the confluence with the Yukon River.

4. Access

The prospecting lease ID00634 was accessed via mining road. However, the last 2km of the way to the measuring line had to be hiked.

5. Goal

The survey was focussed on measuring and interpreting following **subsurface characteristics**:

Placer Prospecting

1. Depth and topography of bedrock
    - Paleochannels
    - Bedrock benches
2. Sedimentary stratification
3. Permafrost conditions
4. Groundwater table
5. Mining/prospecting history

6. Methods

The **Resistivity profile** is the foundation for the interpretation of the subsurface conditions for the **placer** prospection. It usually allows for good interpretation of bedrock and overburden for finding secondary deposits.

The **IP model** serves as basis for the interpretation of the mineral and petrologic conditions in **hardrock**. IP is an industry proven standard method for the detection of primary mineral deposits. The IP data support the interpretation of the Resistivity profile.

Resistivity

In this **placer** survey 2D Resistivity was used. Resistivity is a reliable geophysical method for the detection of very shallow and deep layer interfaces in nearly all surface and subsurface conditions in the Yukon. Measuring shallow interfaces for a long distance is more economic than with seismic. The depth penetration is much higher than with ground penetrating radar. Resistivity data taken in discontinuously frozen ground often provide a plausible interpretation since the profile matrix is consistently filled with data representing a material property. There are no "blind zones" in a resistivity profile like they appear in other geophysical methods purely based on signal reflection. A lightweight system is available for flexible use with a small crew.

Induced Polarization (IP)

IP data are simultaneously taken when measuring Resistivity, with the same equipment and staking. So these data are automatically at hand when using Resistivity.

7. Use of Geophysical Methods

7.1. Instrumentation

For this survey a lightweight, custom-built 2D RESISTIVITY and INDUCED POLARIZATION (IP) imaging system with rapid automatic data acquisition was used. The system includes:

- "4 POINT LIGHT" EARTH RESISTIVITY METER[1]
- 96 ELECTRODE CONTROL MODULES[2]
- 96 STAINLESS STEEL ELECTRODES[3]
- 480m MULTICORE CABLE 96x5m[4]

This system weighs approximately 90 kg. It can be run with a 12V lead battery charged by 60 Watt solar panels. The equipment facilitates high mobility and rapid data acquisition.

[1] Constructed and produced by LGM (Germany)

[2] Ditto

[3] Constructed and produced by GEOANALYSIS.COM (Germany)

[4] Ditto

7.2. Data Acquisition

The **data acquisition** is carried out by the automatic activation of 4-point-electrodes. Thus several thousand measurements are taken, one every 1-2 seconds. The AC transmitter current of 0.26 to 30 Hz is amplified by the electrode control modules, up to a maximum of 100mA and 400V peak to peak. The voltage measured at the receiver electrodes (M, N) is also amplified.

In this geoelectrical survey the **Schlumberger-array** was used. This array is appropriate to image horizontally running layers as is needed for placer prospecting.

7.3. Processing

The measured Resistivity/IP data were processed with the **RES2DINV** inversion program[5].

7.4. Interpretation

The interpretation of the measured data is supported by:

Experience - measuring practice with Resistivity/IP in Yukon/BC since 2005
Discussion - with the customer, and placer geologist William Lebarge.[6]
Comparison - between geophysical and technogenic information found in other surveys
Observation - of surficial conditions in the field
Sources - Bedrock Geology Map[7]

7.5. Profile image

In the **Resistivity profile** the interpreted layer interfaces are marked with a black line. Please be aware: The profiles show **ground-layers approximately 15% thicker** than they are in reality. The thickening of the model layers is caused by the inversion software. The correction factor of 0.85 for the determination of the true layer thickness has been established by the Arctic Geophysics Inc. team on the basis of numerous geoelectrical profiles verified by drilling, trenching, and mining done by our customers.

The **graphical markings** showing the interpreted layer interfaces in the profiles (using the black lines) are done accordingly to the data structure in the profile itself. This means: the layers there will also show up approximately

[5] Produced by GEOTOMO SOFTWARE (Malaysia)

[6] Lebarge, William; Placer Geologist, Yukon Geological Survey

[7] Gordey, S.P. and Makepeace, A.J. (comp.) 1999: Yukon bedrock geology in Yukon digital geology, S.P. Gordey and A.J. Makepeace (comp.); Geological Survey of Canada Open File D3826 and Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1999-1(D)

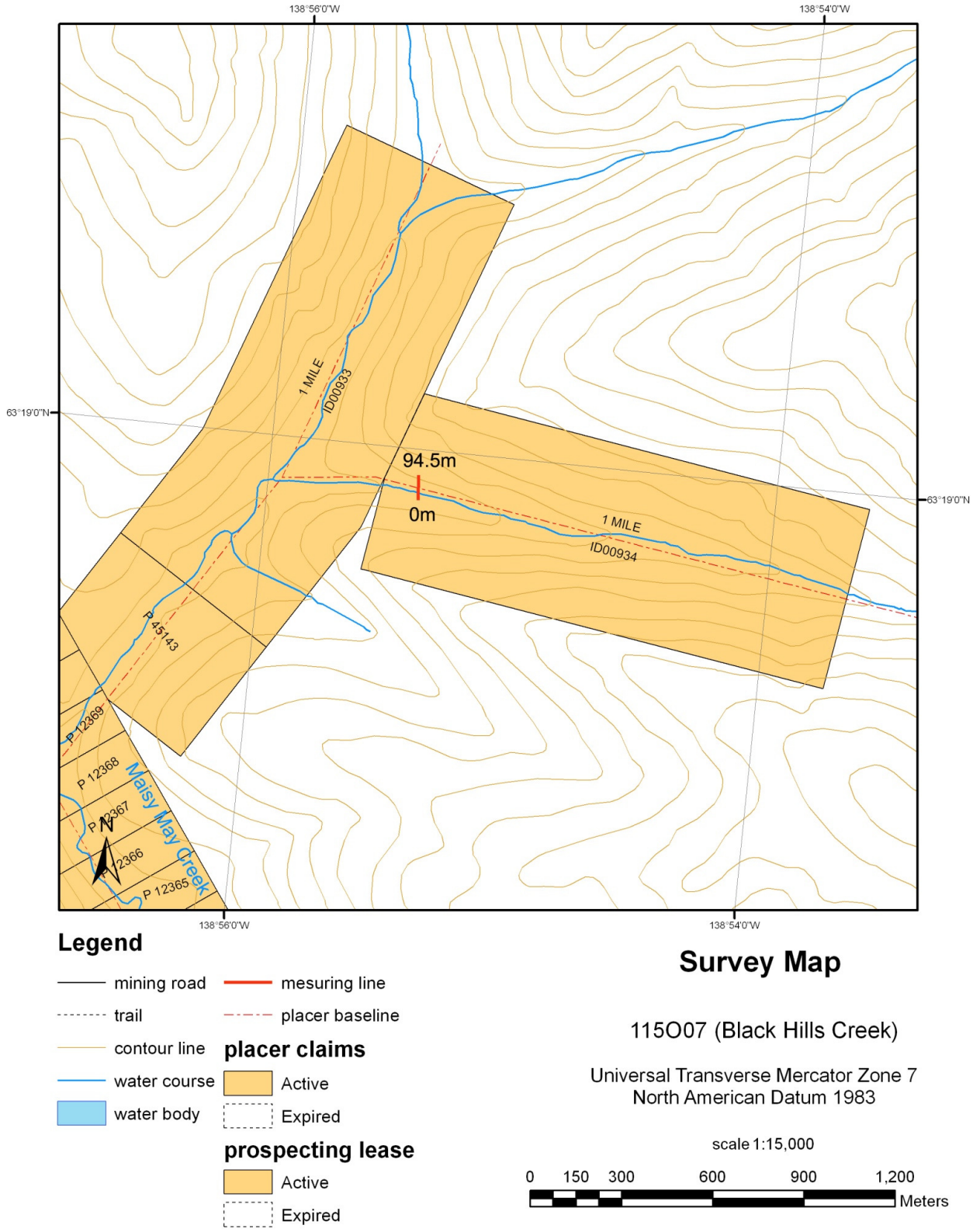
15% thicker than they are in reality. In the interpretation text the layer thicknesses and depths have been recalculated to the expected real values.

8. Resistivity/IP Survey at Maisy May Creek

Preliminary Note!

The subsurface information of this study is an interpretation based on measured geophysical data. We recommend the verification of the interpretation using physical prospecting methods such as drilling, test pitting, trenching, or shafting.

Survey Map[8]



[8] http://www.yukonminingrecorder.ca/PDFs: 115O/07

Maisy May Creek
2D Resistivity/IP, Schlumberger array
64 Electrodes: spacing 1.5m, Horizontal resolution 0.75m
Horizontal and vertical measure in [meter], Iteration error in [%]
Vertical exaggeration in model section display = 1.00
Data acquisition: Stefan Ostermaier, Franz Piechotta 6th July 2012
Processing: Franz Piechotta, 6th July 2012
Arctic Geophysics Inc., Yukon

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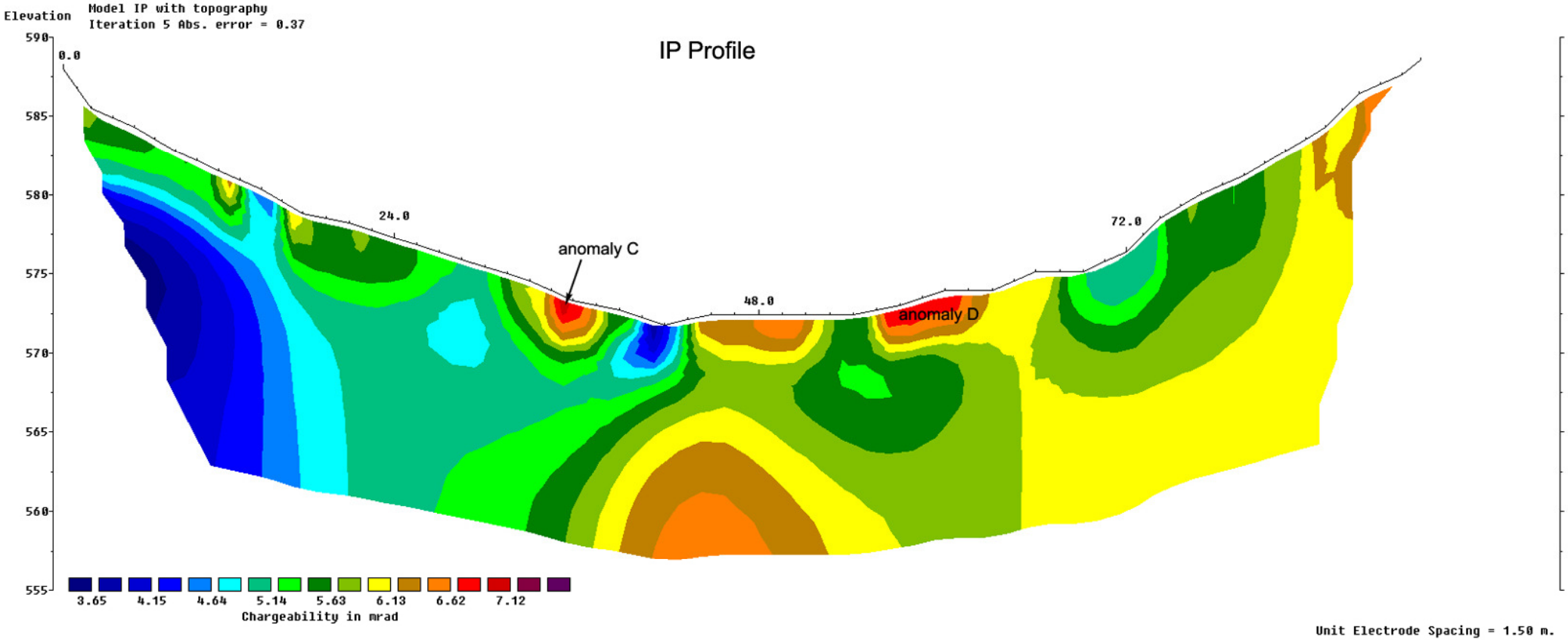

Horizontal scale is 25.37 pixels per unit spacing
Vertical exaggeration in model section display = 1.00
First electrode is located at 0.0 m.
Last electrode is located at 94.5 m.

The profile might show the ground-layers up to approximately 15% thicker than they are in reality.

This 2D Resistivity measuring result is an interpretation of geophysical data. We recommend the verification of the profile by drilling or trenching

Maisy May Creek
2D Resistivity/IP, Schlumberger array
64 Electrodes: spacing 1.5m, Horizontal resolution 0.75m
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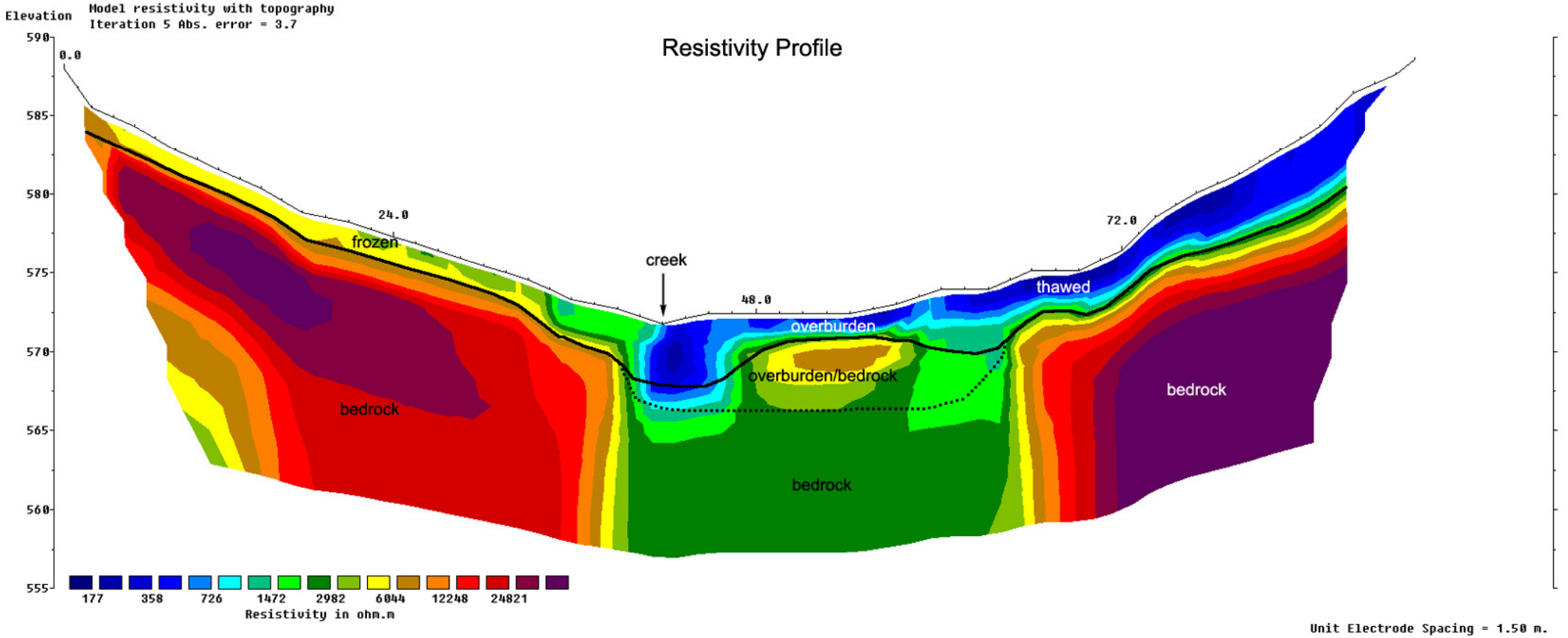

bedrock interface
alternative bedrock interface

The profile might show the ground-layers up to approximately 15% thicker than they are in reality.

This 2D Resistivity measuring result is an interpretation of geophysical data. We recommend the verification of the profile by drilling or trenching

Profile Interpretation

This resistivity profile seems to show a thin layer of water-saturated overburden (1-4m thick) on top of at least two different bedrock types. On the left side of the valley bottom a paleo-channel (main channel) could be located.

On the left slope, at 0-40.5m, the overburden, likely dominated by colluvium, might be just 1m thick.

At 40.5-46.5m, on the valley floor, there could be a paleo-channel, 4m deep, filled with thawed gravel. There seems to be the main channel. The IP model suggests just a small amount of muck on top of the channel gravel.

At 46.5-57m the bedrock seems to be covered with about 1-2m of overburden. This overburden is moist and is likely consisting of 1/3 of muck on top of 2/3 of gravel. This would be the typical overburden in this area.[9] The hypothetic muck and the gravel cannot be differentiated in the resistivity profile since both materials seem to be similarly saturated with water. However, the IP model indicates the existence of muck in the topmost overburden: The higher chargeability could be a sign for muck.[10]

At 57-64.5m the bedrock seems to drop into another channel, about 3m deep at 61.5m, filled with gravel below muck.

Alternatively and less likely, the whole valley bottom could be deposited with approx. 5m of overburden, dominated by gravel, mostly thawed, showing a permafrost lense in the middle of the valley (brown zone), and forming an U-shaped channel.

At -66-70.5m a small bedrock bench, 2m deep, covered with gravel, could be located.

After 70.5m the overburden seems to consist of just about 2-4m of colluvium likely containing a matrix of fine sediments such as silt and mud. This material is thawed and moist.

“The bedrock is mapped as the Nasina Subterrane which consists of metamorphosed early to mid-Paleozoic continental margin with superimposed late-Devonian and Early Mississippian arc volcanic and plutonic rocks”.[11] In the resistivity profile, the high resistivity zones (violet/red/orange) could be plutonic rock, possibly granite or granodiorite. The low resistivity zones could represent a volcanic rock or schist influenced by contact metamorphism.

In the IP model the chargeability high at anomalies C and D could indicate clay or a low concentrated mineralization in the overburden.

[9] Yukon Placer Database

[10] IP models show the zones in the subsurface much rougher than the resistivity profile. In reality the muck layer is expected to be much thinner than the high chargeability zone in the center of the valley.

[11] Yukon Placer Database

Recommendations

We recommend the verification of the two hypothetic channels by test pitting or drilling.

At 43.5m the bedrock could be 4m deep.

At 52.5m the bedrock could be 1.5m deep.

At 61.5m the bedrock could be 3m deep.

If these bedrock depths are not reached at these spots, we recommend digging/drilling deeper: Possibly the bedrock appears at approx 5m at all test locations. In this case the (less likely) hypothesis of the U-shaped channel would be verified.

We recommend the verification of the hypothetic bedrock bench by drilling or test pitting.

At 69m the bedrock should be 2m deep.

9. References

Literature

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Griffiths, D.H. and Barker, R.D. Two-dimensional resistivity imaging and modeling in areas of complex geology. Journal of Applied Geophysics 29 : 211 - 226. (1993)

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Loke M.H. and Barker R.D. Rapid least-squares inversion of apparent resistivity pseudosections by a quasi-Newton method. Geophysical Prospecting 44: 131-152 (1996)

Press F., Siever R., Grotzinger J., Thomas H.J. Understanding Earth, W.H. Freeman and Company, New York (2004)

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Maps

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10. Qualification

Philipp Moll

- Study of geology, University of Freiburg, Germany
- Visit of geophysical field courses, University of Karlsruhe and University of Stuttgart, Germany
- Geological Prospecting for precious metals and minerals in the Yukon, NWTs, and Alaska since 1989
- Geophysical surveying for Mining Exploration in the Yukon since 2005
- Study of biology and German language and literature, University of Freiburg, Germany
- Apprenticeship of precision mechanic, Tools Factory Hermann Bilz, Zell, Germany

Philipp Moll

Stefan Ostermaier

- Study of geology, University of Tübingen, Germany
- Visit of geophysical field courses, University of Karlsruhe and U
  Stuttgart, Germany
- Geological prospecting for precious metals and minerals in the
  since 2001
- Geophysical Surveying for Mining Exploration in the Yukon sin
- Study of computer science, University of Stuttgart, Germany

Stefan Ostermaier

11. GPS-Data

Maisy May Creek

Electrode No.	Location in Profile [m]	GPS-Coordinates Latitude/ Longitude hddd° mm' ss.s"	GPS-Accuracy [m]	Post [*]
1	0.0	N63 18 54.6 W138 55 24.3	3	*
2	3.0	N63 18 54.7 W138 55 24.3	3	
3	6.0	N63 18 54.7 W138 55 24.3	3	
4	9.0	N63 18 54.8 W138 55 24.3	3	
5	12.0	N63 18 54.9 W138 55 24.3	3	
6	15.0	N63 18 55.0 W138 55 24.4	3	
7	18.0	N63 18 55.1 W138 55 24.4	3	
8	21.0	N63 18 55.2 W138 55 24.4	3	
9	24.0	N63 18 55.3 W138 55 24.4	3	
10	27.0	N63 18 55.4 W138 55 24.4	3	
11	30.0	N63 18 55.5 W138 55 24.4	3	
12	33.0	N63 18 55.4 W138 55 24.4	3	
13	36.0	N63 18 55.5 W138 55 24.4	3	
14	39.0	N63 18 55.6 W138 55 24.5	3	
15	42.0	N63 18 55.6 W138 55 24.5	3	
16	45.0	N63 18 55.7 W138 55 24.4	3	*
17	48.0	N63 18 55.8 W138 55 24.5	3	
18	51.0	N63 18 55.9 W138 55 24.5	3	
19	54.0	N63 18 56.0 W138 55 24.5	3	
20	57.0	N63 18 56.1 W138 55 24.5	3	
21	60.0	N63 18 56.2 W138 55 24.5	3	
22	63.0	N63 18 56.3 W138 55 24.5	3	
23	66.0	N63 18 56.5 W138 55 24.6	3	
24	69.0	N63 18 56.6 W138 55 24.6	3	
25	72.0	N63 18 56.6 W138 55 24.7	3	
26	75.0	N63 18 56.6 W138 55 24.7	3	
27	78.0	N63 18 56.8 W138 55 24.8	3	
28	81.0	N63 18 56.8 W138 55 24.8	3	
29	84.0	N63 18 56.9 W138 55 24.8	3	
30	87.0	N63 18 57.0 W138 55 24.8	3	
31	90.0	N63 18 57.1 W138 55 24.7	3	
32	93.0	N63 18 57.2 W138 55 24.7	3	
33	94.5	N63 18 57.3 W138 55 24.7	3	*

12. Cost

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La Tierra Resources Limited
Box 304
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Invoice ID00634_1

Date: 5th July, 2012

Geophysical Survey for Placer Investigation 5th July 2012

Target: Inspection of sedimentary stratigraphy and bedrock depth/topography
Method: 2D Resistivity: **Measuring Line_01**
Location: Maisy May Creek drainage system, Dawson Mining District, 115O/07P
on Placer **Lease ID 00934**

Quantity	Description	Amount $CAN
Mob/Demob		
1 1/3 days	Vehicle $ 70.-- / day	93.33
306 Km	$ 0.55 / km (1/3 share)	56.10
1 day	Access + Inspection of ground $ 350.-- / day, operator + $ 250.--/Day field assistant (1/3 share)	200.--
Geophysical Survey		
1 day	Geoelectrical 2D-Resistivity imaging system + Survey leader $ 880.-- / day	880.--
1 day	Field Assistant $ 250.--	250.--
1/3 day	Data Processing, First Documentation $ 350.-- / day	116.66
1 day	Writing report , $ 350.-- / day	350.--
	Printing / Binding /Shipping	60.--
	NET Amount	$ 2006.09
GST Number 846363216RT0001	**G.S.T. (5%)**	$ 100.30
Total Due		**$ 2 106.39**