

Arctic Geophysics Inc.



Geophysical Surveys • Prospecting • Consulting

www.arctic-geophysics.com

Box 747, Dawson City, Yukon Territory, Y0B 1G0, Canada

Phone: 867-993-3671 (Cell), info@arctic-geophysics.com

Geophysical Survey with 2D Resistivity Victoria Creek, Yukon

Mount Nansen Area, P 26220 (TERRY 4)

N62° 05' 25.7" W137° 07' 12.2"

FOR

Steve and Laurie Harasimiuk

Bonnyville Oilfield Service & Supply Ltd

Box 6409, Bonnyville, Alberta, T9N 2G9

AUTHORS

Stefan Ostermaier,

Franz Piechotta

WORK PERFORMED

June 27th 2012

DATE OF REPORT

Oct 28th 2012

Table of contents

1. Introduction.....	3
2. Placer Claims	3
3. Location	3
4. Access	3
5. Goal	3
6. Geophysical Method	3
7. Use of Geophysical Methods	5
7.1. Instrumentation	5
7.2. Data Acquisition	5
7.3. Processing.....	6
7.4. Interpretation.....	6
8. Profile image	6
9. Resistivity Survey at Victoria Creek.....	6
Preliminary Note!	6
10. Survey Map.....	7
11. Bedrock Geology Map – Overview	8
12. Bedrock Geology Map – Survey Area.....	10
13. Geology	11
13.1. Bedrock	11
13.2. Physiography / Glaciation / Placer Gold Deposits.....	11
14. Profile – Interpretation	13
15. Recommendation	16
16. References.....	17
Literature.....	17
Maps.....	17
17. Qualification	18
18. Confirmation	19
Addendum.....	20
Cost.....	20
GPS-Data	22

1. Introduction

This geophysical investigation was done for Steve and Laurie Harasimiuk, Bonnyville Oilfield Service & Supply Ltd. The survey, using 2D Resistivity, was conducted to prospect the tenures listed below for the localisation of possible targets for placer gold. The ground was tested with one 2D measuring line of 620m in length, the depth of investigation is approx. 100m.

2. Placer Claims

Grant Number	Claim Name	Owner
P 26220	TERRY 4	44995 Yukon Inc.

3. Location

The placer property is located app. 45km west of Carmacks on Victoria Creek, at the foot of Mount Nansen, map number 115I03.

4. Access

The exploration site was accessed from Carmacks via the Mount Nansen gravel road.

5. Goal

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

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

6. Geophysical Method

Resistivity is not a time domain geophysical method such as Ground Penetrating Radar or Seismic. Resistivity measures a material property. In the Resistivity model the different underground zones are material-dependently differentiated according to their electrical conductivity. Thus, Resistivity promises good chances in respect of measuring the kind and character of the subsurface materials as well as the groundwater distribution, which would be of interest for placer mining. The equipment used (see below) allows for measuring of layer

interfaces in depths from 0.5m to 100m by varying the electrode spacing. – Therefore, this prospecting concept is based on the use of 2D Resistivity.



Figure 1: 2D Resistivity measurement, Stefan Ostermaier, Arctic Geophysics Inc., Yukon 2009

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 data acquisition was used. The system includes:

- “4 POINT LIGHT” EARTH RESISTIVITY METER¹
- 128 ELECTRODE CONTROL MODULES²
- 128 STAINLESS STEEL ELECTRODES³
- 625m MULTICORE CABLE: CONNECTOR SPACING: 5m⁴

This system weighs approximately 150 kg which is about one third of regular standard equipment. It can be run with a 12V lead battery. The equipment facilitates high mobility and rapid data acquisition with a small crew.

7.2. Data Acquisition

Resistivity

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 horizontal layers as is needed for placer prospecting.

The 2D Resistivity imaging system, used for this survey, allows measurements with a depth of up to 100m. With a depth to bedrock of more than 6m, an electrode spacing of 5m can be used for placer surveys. This allows the measuring of large profile lengths in short time with a horizontal measuring resolution of 2.5m. This system has proven itself to be reliable in the determination of the bedrock topography and sedimentary arrangement for placer investigation at the most environmental conditions.

¹ Constructed and produced by LGM (Germany)

² Ditto

³ Constructed and produced by GEOANALYSIS.DE (Germany)

⁴ Ditto

7.3. Processing

Resistivity

The measured Resistivity data were processed with the **RES2DINV** inversion program⁵.

7.4. Interpretation

The interpretation of the profiles should be verified by physical prospecting methods such as digging test holes/trenches, drilling, or shafting.

8. Profile image

In the **Resistivity profile** the interpreted layer interfaces are marked with a black line. 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.⁶

The **graphical markings** showing the interpreted layer interfaces in the profiles (using a black line) are done according to the data structure in the profile itself. This means: the layers there will also show up approximately 15% thicker than they are expected in reality. In the interpretation text, the layer thicknesses and depths have been recalculated to the expected real values.

9. Resistivity Survey at Victoria Creek

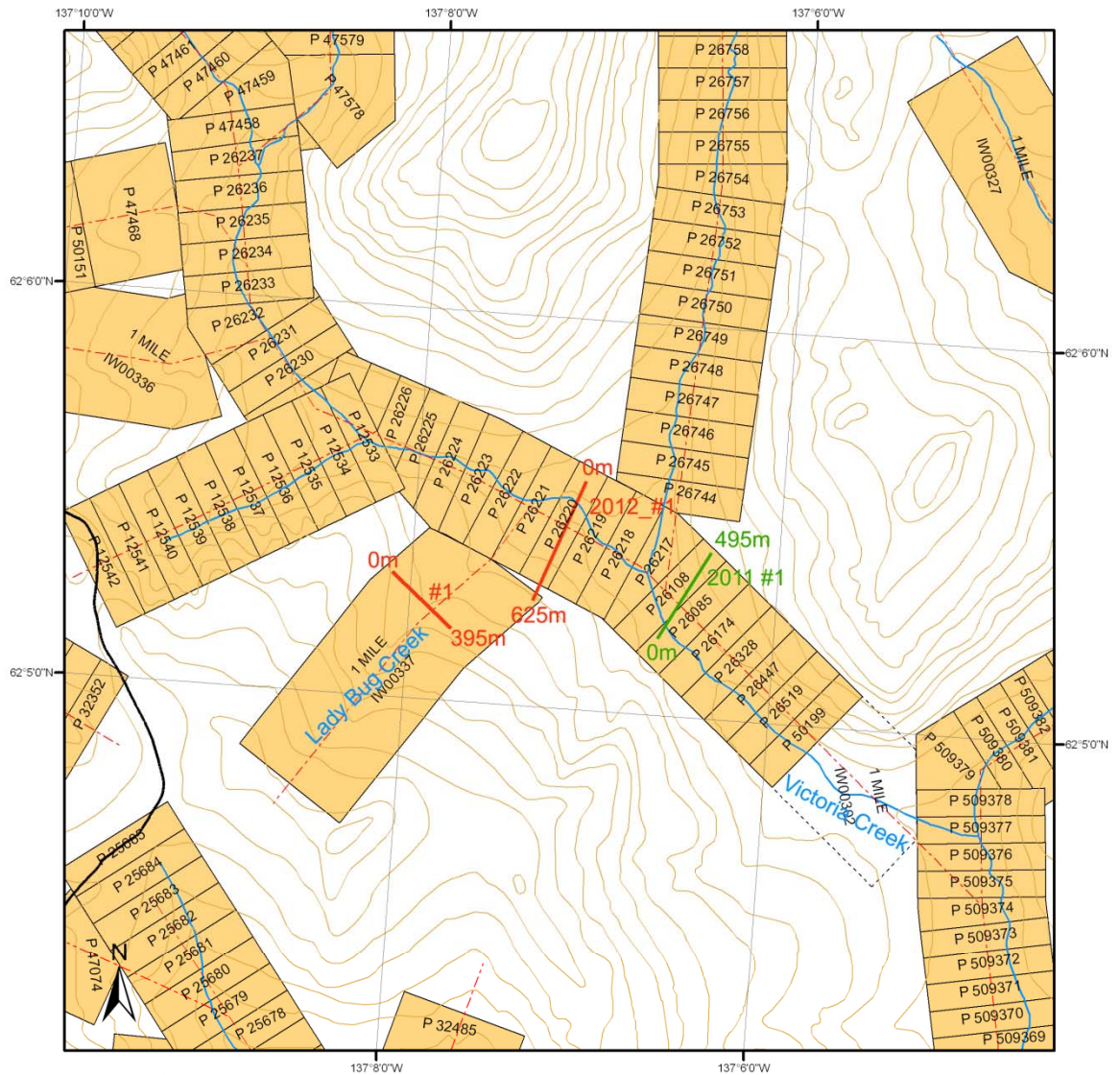
Preliminary Note!

The subsurface information of this study is an interpretation and cannot be guaranteed.

⁵ Produced by GEOTOMO SOFTWARE SDN. BHD (Malaysia)

⁶ Program settings in RES2DINV for modifying the layer thickness do frequently not work well for our use and could falsify the profile. That's why this mode was not used.

10. Survey Map⁷



Legend

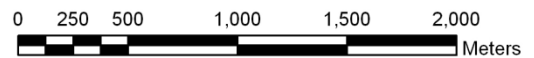
- mining road
- contour line
- watercourse
- water body
- measuring line 2012
- measuring line 2011
- - - placer baseline
- placer claims**
- Active
- Expired
- prospecting lease**
- Active
- Expired

Survey Map

115I03 (Mount Nansen)

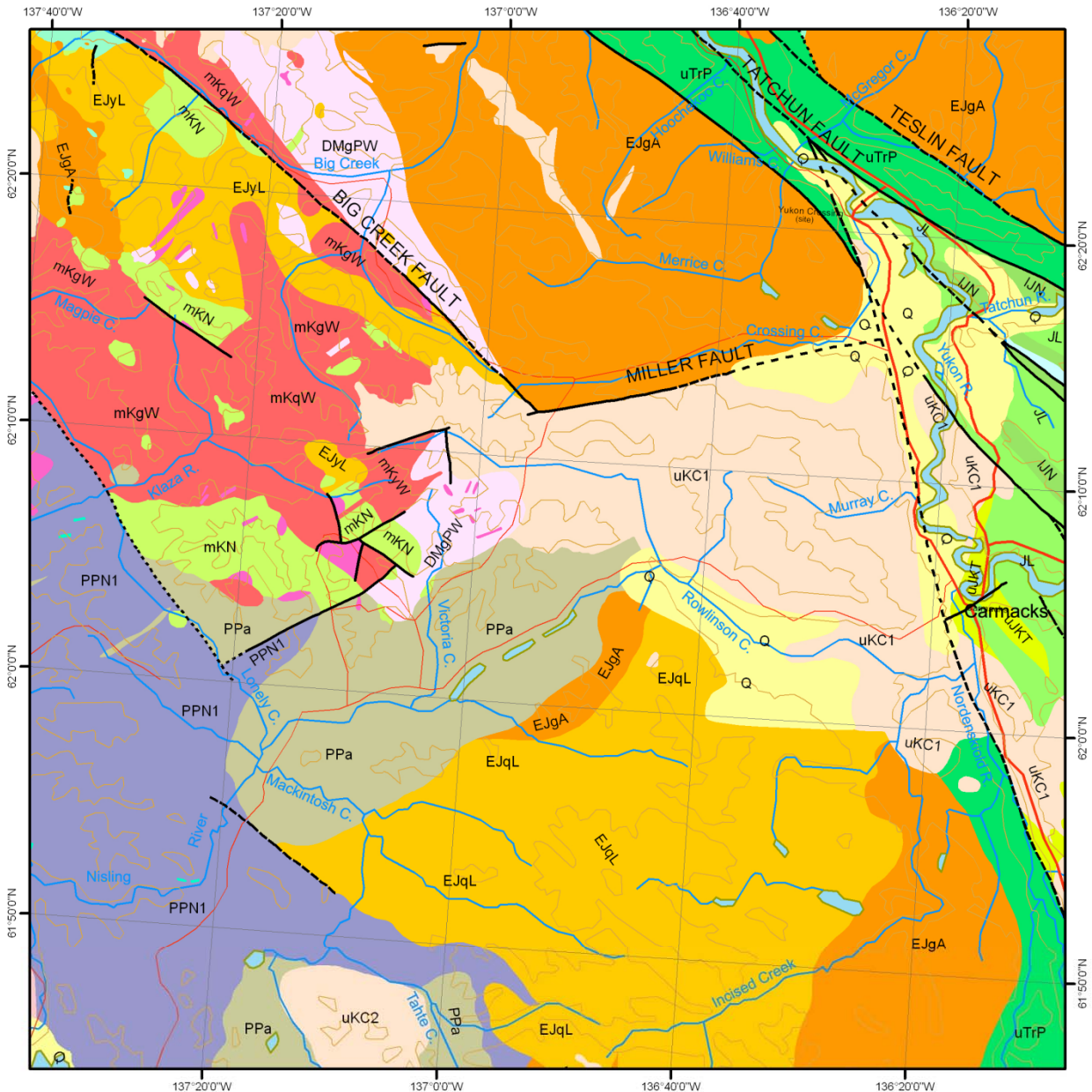
Universal Transverse Mercator Zone 8
North American Datum 1983

scale 1:25,000



⁷ Government of Canada, Natural Resources Canada, Centre for Topographic Information
<ftp://ftp.geomaticsyukon.ca/Mining>

11. Bedrock Geology Map – Overview⁸



Legend

- paved
- gravel
- contour line
- water course

Fault Lines

- NORMAL / REVERSE**
- defined
- MOVEMENT UNDEFINED**
- defined
- - - - approximate
- · · · · assumed
- · - · - extrapolated

Carmacks Bedrock Geology

Scale 1:400,000



⁸ 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)

Legend

QUATERNARY

Q: QUATERNARY: unconsolidated glacial, glaciofluvial and glaciolacustrine deposits; fluvial silt, sand, and gravel, and local volcanic ash, in part with cover of soil and organic deposits

EARLY TERTIARY

ETfN: NISLING RANGE SUITE: orange and buff weathering light-coloured feldspar porphyry dyke and flow rocks of intermediate to acid composition

LATE CRETACEOUS TO TERTIARY

LKdP: PROSPECTOR MOUNTAIN SUITE: coarsely crystalline gabbro and diorite

LKqP: PROSPECTOR MOUNTAIN SUITE: quartz monzonite, biotite quartz-rich granite; porphyritic alaskite and granite with plagioclase and quartz-eye phenocrysts; biotite and hornblende quartz monzodiorite, granite, and leucocratic granodiorite with local alkali feldspar phenocrysts (Prospector Mountain Suite, Carcross Pluton)

LKfP: PROSPECTOR MOUNTAIN SUITE: quartz-feldspar porphyry

MID-CRETACEOUS

mKgW: WHITEHORSE SUITE: biotite-hornblende granodiorite, hornblende quartz diorite and hornblende diorite; leucocratic, biotite hornblende granodiorite locally with sparse grey and pink potassium feldspar phenocrysts (Whitehorse Suite, Casino granodiorite, McClintock granodiorite, Nisling Range granodiorite)

mKqW: WHITEHORSE SUITE: biotite quartz-monzonite, biotite granite and leucogranite, pink granophyric quartz monzonite, porphyritic biotite leucogranite, locally porphyritic (K-feldspar) hornblende monzonite to syenite, and locally porphyritic leucocratic quartz monzonite (Mt. McIntyre Suite, Whitehorse Suite, Casino Intrusions, Mt. Ward Granite, Coffee Creek Granite)

mKyW: WHITEHORSE SUITE: hornblende syenite, grading to granite or granodiorite (Whitehorse Suite)

mKN: MOUNT NANSEN: massive aphyric or feldspar-phyric andesite to dacite flows, breccia and tuff; massive, heterolithic, quartz- and feldspar-phyric, felsic lapilli tuff; flow-banded quartz-phyric rhyolite and quartz-feldspar porphyry plugs, dykes, sills and breccia (Mount Nansen Gp., Byng Creek Volcanics, Hutshi Gp.)

UPPER CRETACEOUS

uKc1: CARMACKS: 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)

uKc2: CARMACKS: acid vitric crystal tuff, lapilli tuff and welded tuff including feeder plugs and necks; felsic volcanic flow rocks and quartz feldspar porphyries; green and purple massive tuff-breccia with feldspar-phyric fragments (Carmacks Gp., Donjek Volcanics, some rocks formerly mapped as Mt. Nansen Gp.; the felsic part of the Carmacks Gp. is difficult to distinguish from similar Tertiary and mid-Cretaceous (Mt. Nansen) felsic volcanic strata)

UPPER JURASSIC AND LOWER CRETACEOUS

uJKT: TANTALUS: massive to thickly bedded chert pebble conglomerate and gritty quartz-chert-feldspar sandstone; interbedded dark grey shale, argillite, siltstone, arkose and coal; at one locality includes red-weathering dacite to andesite flows at base (Tantalus)

EARLY JURASSIC

EJgA: AISHIHIK SUITE: 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)

EJyL: LONG LAKE SUITE: resistant, dark weathering, massive, coarse- to very coarse-grained and porphyritic, mesocratic hornblende syenite; locally sheared, commonly fractured and saussuritized; locally has well developed layering of aligned pink K-feldspar tablets (Big Creek Syenite)

EJqL: LONG LAKE SUITE: 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)

LOWER AND MIDDLE JURASSIC, HETTANGIAN TO BAJOCIAN

JL: LABERGE: poorly sorted, medium bedded to massive arkosic sandstone and minor shale with interbeds and thick members of resistant heterolithic pebble and boulder conglomerate; recessive, dark brown weathering, thin bedded, dark brown to greenish, silty shale (Laberge Gp.)

LOWER JURASSIC, PLEINSBACHIAN TO TOARCIAN

IJN: NORDENSKIOLD: resistant, reddish brown weathering, massive, khaki-green dacite tuff with fresh plagioclase, hornblende and biotite; grades locally to pale green, punky weathering, salt and pepper textured, massive sandstone; interbedded conglomerate (Nordenskiold Dacite)

UPPER TRIASSIC, CARNIAN TO NORIAN

uTrAK2: AKSALA: massive to thick bedded limestone; minor thin bedded argillaceous to sooty limestone; coarsely crystalline, massive dolostone; minor laminated chert; massive to poorly bedded, limestone conglomerate debris flows and fanglomerate (Hancock mb. of Aksala)

UPPER TRIASSIC, CARNIAN AND OLDER (?)

uTrP: POVOAS: augite or feldspar-phyric, locally pillowed andesitic basalt flows, breccia, tuff, sandstone and argillite; local dacitic breccia and tuff with minor limestone; greenschist, chlorite schist, chlorite-augite-feldspar gneiss, amphibolite (Povoas)

PROTEROZOIC AND PALEOZOIC

PPa: AMPHIBOLITE: metamorphosed mafic rocks including amphibolite (1) and ultramafic rocks (2) of unknown association; i.e.) may belong in part or entirely to Nisling, Nasina, and Slide Mountain assemblages and (3), mafic-ultramafic intrusions within Nasina assemblage

LATE DEVONIAN TO MISSISSIPPIAN

DMgPW: PELLY GNEISS SUITE - SOUTHWEST: foliated medium grained, homogeneous biotite granite gneiss to biotite or hornblende granodiorite gneiss; massive to strongly foliated dioritic to granodioritic gneiss; includes interfoliated amphibolite, quartz-mica schist and phyllite (Selwyn Gneiss, Pelly Gneiss, N. Fiftymile Batholith, Moose Creek Orthogneiss)

DEVONIAN, MISSISSIPPIAN AND(?) OLDER

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

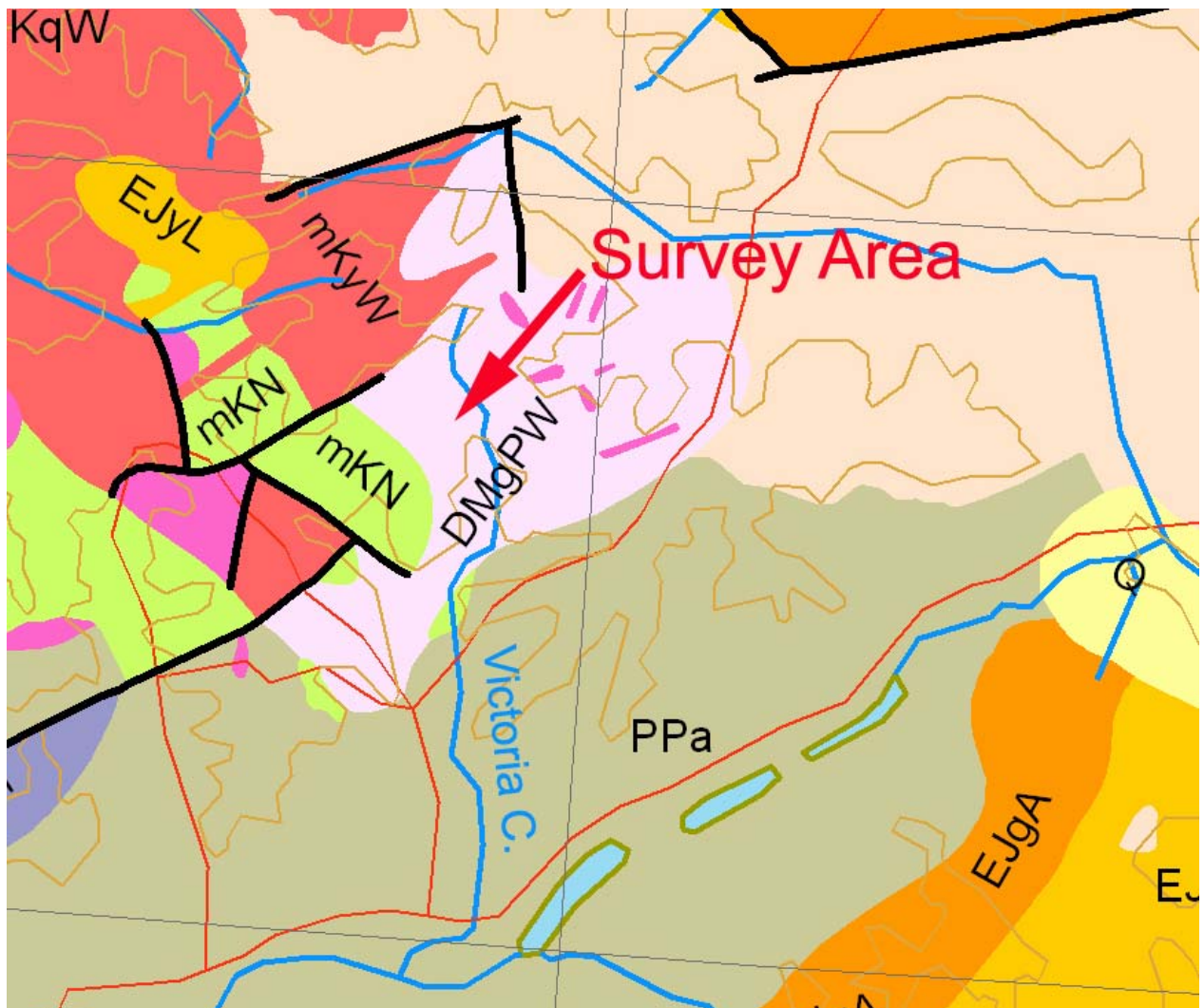
DMN4: NASINA: quartzite, micaceous quartzite, quartz muscovite (chlorite; feldspar augen) schist, and minor metaconglomerate and metagrit as in (1), but may locally include significant Klondike Schist Assemblage

LATE PROTEROZOIC AND PALEOZOIC

PPN1: NISLING: dark grey to brown, biotite-muscovite-quartz-feldspar schist, quartzite and micaceous quartzite, garnetiferous; felsic chlorite-biotite orthogneiss; rare amphibolite; minor(?) two-mica gneiss and hornblende diorite gneiss; may include Nasina Assem. (Nisling assem.)

PPN2: NISLING: bleached white-weathering, white to grey, coarsely crystalline, flow banded, fetid marble; graphite, chert, metabasite and calc-silicate lamina are common (Nisling assem.)

12. Bedrock Geology Map – Survey Area



13. Geology

13.1. Bedrock

In the survey area of **Victoria Creek**, the bedrock basically shows resistivity data between 500-2000 Ohm meters. 95% of the bedrock shows around 200 Ohm meters: This data would basically fit with Pelly Gneiss Suite seen in the Bedrock Geology Map.

The bedrock in the profile shows patterns with highly varying resistivity, which might be caused by changes of the bedrock type and/or mineral composition, and changing amounts of weathering and water saturation in the rock.⁹

13.2. Physiography / Glaciation / Placer Gold Deposits

The overburden measured in this survey consists of virgin material.

In the survey area the overburden shows heterogeneous resistivity data. The heterogeneity of the data might be caused by different kinds/shapes of the sediments: The local deposits might be dominated by glacial till in addition to glaciofluvial, possibly glaciolacustrine deposits, and modern stream-gravels, and colluvium. Furthermore, the overburden shows different amounts of groundwater and permafrost.

The known creek systems and the glaciation of the valley can result in highly developed placer deposits with potentially high grade. Pre-glacial river gravel, most likely bearing placer gold, was eroded by the glacier. The glacier might have produced large deposits of till. When the ice started thawing, till was transported by melt-water creating glaciofluvial deposits, which could have re-concentrated the pre-glacial placer gold. The glacial melt-water drainage could have played a significant role even this far in the head-waters of Victoria Creek: First, melt-water from up the slope could have run down the streambed. Second, melt-water which was hindered to flow down valley by ice damming could have run perpendicular to Victoria valley. These scenarios could have produced bedrock channels bearing valuable placer gold deposits in Victoria Creek. Alternatively, those auriferous glaciofluvial deposits could sit in till instead of bedrock. The bedrock sources are estimated to be richer.

The general case is that glacial till will incorporate placer gold into it and dilute placers into a larger volume lower grade deposit which may be un-economic. So placer gold in till is actually fairly rare in most settings, and usually only occurs when the glacial activity is right on top of a bedrock gold source. But this actually may be the case in Victoria Creek. Due to their depth and limited horizontal extend, the possible channels, found in the Victoria Creek Valley, act as geological traps, which catch and hold heavy minerals.

⁹ Weathering significantly changes the conductivity of rocks. Bedrock gets fractured by frost wedging, faults, and other mechanical influences in the subsurface. The fractures produce cavities which get filled with water. This increases the conductivity and decreases the resistivity. Fractured bedrock starts chemical weathering which increases the pore volume of the rock that is filled with (stationary) water collecting high amounts of solved minerals. The resistivity is reduced even more. Larger fractures in the rock can become penetrated by water saturated sediments. – All these factors could have significantly decreased the resistivity of the local bedrock. All these influences might have controlled the varying resistivity in the bedrock measured in the profiles.

With a lower probability silt- and/or clay-rich layers of glaciolacustrine origin could appear in the survey area at Victoria Creek. Those glaciolacustrine deposits could have been created in melt-water basins caused by ice damming in Victoria Creek. Clay layers protect the deposits underneath from glacial erosion. So, the material in and below clay-rich layers ("false bedrock") could have preserved older placers.

Each new sediment discovered when doing physical prospecting would be worth sampling.

14. Profile – Interpretation

Victoria Creek Line 01

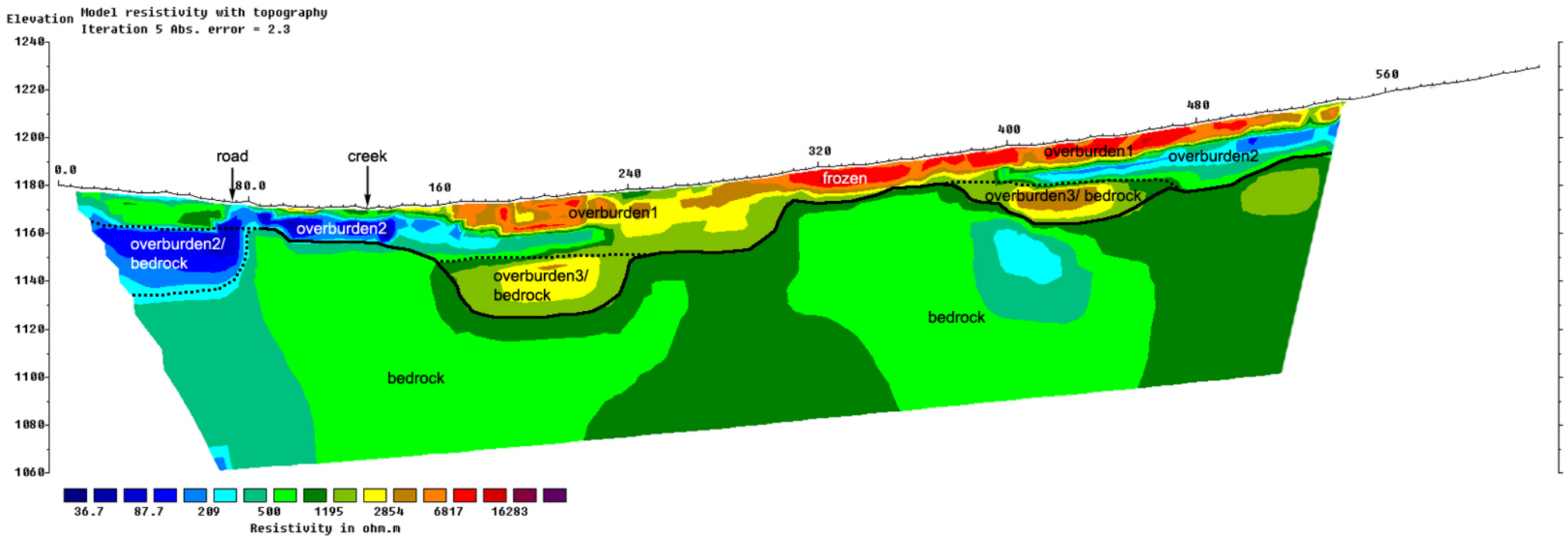
2D Resistivity/IP, Schlumberger array
 126 Electrodes: spacing 5m, Horizontal resolution 2.5m
 Horizontal and vertical measure in [meter], Iteration error in [%]
 Vertical exaggeration in model section display = 1.00
 Data acquisition: Stefan Ostermaier, Franz Piechotta 27th June 2012
 Processing: Stefan Ostermaier, 27th June 2012
 Arctic Geophysics Inc., Yukon

Arctic Geophysics Inc.



Geophysical Surveys • Prospecting • Consulting

www.arctic-geophysics.com
 Box 747, Dawson City Y.T., Y0B-1G0, Canada
 Phone: 867-993-3671 (Cell), info@arctic-geophysics.com



- overburden1: continuously frozen overburden(permafrost)
- overburden2: thawed water saturated gravel or clay(groundwater table)
- overburden3: mostly thawed gravel
- bedrock: most likely intermediate and mafic magmatites
- bedrock interface
- alternate bedrock interface

Interpretation

This resistivity profile might show 8.5-45m of overburden on top of bedrock. The overburden shows up to three layers representing different resistivity data.

At 0-80m a paleochannel, roughly 37m deep at 50m on the measuring line, could be located. The overburden on top of this channel is double-layered referring to the resistivity of the ground materials. The upper overburden layer (bright green) is most likely dominated by glacial till, possibly associated with lower amounts of glaciofluvial gravels - both moderately saturated with groundwater. The overburden layer below (overburden2, blue) is considered to be thawed, water-saturated, glacial till, likely part of the ground-water table, or a glaciolacustrine clay-rich deposit.

Alternatively there is no channel at all; in this case the bedrock interface could be found at about 12m depth. And the blue layer below would likely be fractured, weathered bedrock filled with stationary water, rich in solved minerals.

At 80-160m the overburden is single-layered on top of a bedrock bench; the sediment (overburden2) is considered to again be water-saturated glacial till, possibly associated with glaciofluvial sediment zones, or glaciolacustrine clay.

At 160-240m the overburden is triple-layered, covering a bowl-shaped paleochannel, approx. 48m, deep at 200m. The topmost overburden layer (overburden1) is likely a continuously frozen glacial till or glaciofluvial gravel (permafrost). The layer underneath (green/blue, overburden2) most likely consists of the same materials as interpreted above, but seems to contain less water than on the left hand side. The bottom layer (green/yellow, overburden3) might be a partly frozen glacial till, probably deposited while an older glacial cycle, or (less likely) could represent a pre-glacial frozen fluvial gravel which has been preserved from glacial erosion.

At 240-310m there is a double-layered overburden. Just like before, overburden1 represents the topmost layer. The layer underneath would be a less clay-rich or frozen variation of overburden2.

At 310-375m the overburden is single-layered, it is interpreted as overburden1, same material as described above.

At 375-470m the overburden is triple-layered. The topmost layers are overburden1 and 2 as described above. The deepest layer is again overburden3 (brown, yellow) which filled up a possible channel at 425m. This channel would be 32m deep.

At 470-545m the overburden is double-layered, consisting of overburden 1. The layer underneath (blue/green, overburden2) is interpreted as the same clay-rich variation as described above.

The bedrock data are mostly homogeneous, slight changes in limited areas are likely an effect of decomposition, or mineral changes in the hypothetical Pelly Gneiss.

Conclusion

The Victoria Creek valley has been scoured likely by different glacial periods. Pre-glacial river gravel was eroded and re-deposited. Only overburden layer3 could be remaining in the possible channels which could have protected those sediments from glacial abrasion.

Overburden1 and overburden2 seem to be syn¹⁰ - or post- glacially deposited sediment layers.

Another interpretation, thought to be likely, could be a solely glacial deposition scenario in this section of Victoria Creek valley: The deposits could have been completely reworked including the material in the possible channels. This means overburden3 is estimated to be glacial till with possible glaciofluvial gravel instead of original river gravel.

¹⁰ syn-glacial sedimentation - deposition *during* the glaciation

The potential channels that can be found at 200m and 425m seem to be at least as old as the lowermost (oldest) sediment layer, since it looks like they are filled with this material.

The possible channel at 40m seems to be younger than the first two channels, but older than overburden2.

An alternative interpretation of the channel at 425m is that it belongs to Ladybug Creek, which intersects with Victoria Creek. This interpretation is estimated to be less likely.

15. Recommendation

Geophysical results should be confirmed by drilling, shafting or digging.

Possible points of interest for advanced placer prospecting are shallower parts of the profile, for example at 360m (estimated depth 9.4m) to confirm the results of the 2D Resistivity measurements.

Another point of interest is the possible channel at 40m, with an estimated depth of 37m.

The channels that are likely to be found at 200m, with a depth of 48m, and at 425m, with a depth of 32m, might be interesting drill targets as well.

Drilling these targets is recommended to confirm their depth and verify gold deposits, which are assumed to be found in these channels.

Another point of interest might be at about 160m on the measuring line to get an impression of overburden2's composition and the border between overburden2 and overburden3, which should be found in an approximated depth of 5m.

16. References

Literature

Chesterman W. Ch. and Lowe K.E. Field Guide to Rocks and Minerals - North America, Chanticleer Press Inc. New York 2007

Evans A.M. Erzlagerstättenkunde, Ferdinand Enke Verlag Stuttgart (1992)

Griffiths, D.H., Turnbull, J. and Olayinka, A.I. Two dimensional resistivity mapping with a computer-controlled array, First Break 8: 121-129 (1990)

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)

Keller, G.V. and Frischknecht, F.C. Electrical methods in geophysical prospecting. Oxford: Pergamon Press Inc. (1966)

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)

Robb L. Introducing to Ore-Forming Processes, Backwell Science Ltd., 2005

Maps

Government of Canada, Natural Resources Canada, Centre for Topographic Information

<ftp://ftp.geomaticsyukon.ca/Mining>

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)

17. Qualification

Stefan Ostermaier

Box 747, Dawson City, Yukon, Y0B 1G0

Phone: 001-867-993 3671 (Canada)

01149 (0)7021 -59866 (Germany)

Email: stefan.ostermaier@arctic-geophysics.com

- Study of geology, University of Tübingen, Germany
- Visit of geophysical field courses, University of Karlsruhe and University of Stuttgart, Germany
- Working for Arctic Geophysics Inc. since June 2007 (foundation)

Geophysical field surveys using 2D Resistivity, Induced Polarization, Magnetics: Data acquisition, processing, interpretation, documentation



- Geophysical surveying for Mining Exploration in the Yukon since 2005

- Geological Prospecting for precious metals and minerals in the Yukon, NWTs, and Alaska since 2001

- Publications:

A) Numerous Assessment Reports about geophysical surveys done for Yukon mining companies, filed at Yukon Mining Recorder

B) Geophysical survey (45 field days) for Yukon Government: Yukon Geological Survey, Publication:

<http://www.geology.gov.yk.ca/recent.html> Open Files: Moll, P., & Ostermaier, S., 2010. 2D Resistivity/IP Data Release for Placer Mining and shallow Quartz Mining - Yukon 2010. Yukon Geological Survey Miscellaneous Report MR-4. [PDF Report](#) [10.3 MB Data Profiles [45.4 MB 

Franz Piechotta

Box 747, Dawson City, Yukon, Y0B 1G0

Phone: 001-867-993 3671 (Canada)

01149 177 239 55 98 (Germany)

Email: franz.piechotta@arctic-geophysics.com

- Study of Applied Geosciences at the Martin-Luther-University Halle-Wittenberg, Germany
- Passed a Practical Course as a Geophysical Prospector.
- Working for Arctic Geophysics Inc. since May 2012. For this company I have worked on geophysical field surveys using 2D Resistivity, Induced Polarization and Magnetics: Data acquisition, processing, interpretation, documentation.
- Geophysical surveying for mining exploration in the Yukon and British Columbia since 2012.

18. Confirmation

I have prepared this report entitled “*Geophysical Survey with 2D Resistivity Victoria Creek, Yukon*” for assessment credit, and have collected and reviewed the data contained in the report titled: “*Geophysical Survey with 2D Resistivity Victoria Creek, Yukon*”.

The survey was carried out by Arctic Geophysics Inc.

Dettingen unter Teck, Germany, 28th October 2012
“Signed and Sealed” Stefan Ostermaier



Stefan Ostermaier

Addendum

Cost

Arctic Geophysics Inc.



Geophysical Surveys • Prospecting • Consulting

Steve Harasimiuk
 Bonnyville Oilfield Service & Supply Ltd
 Box 6409, Bonnyville
 Alberta, T9N 2G9

Arctic Geophysics Inc.
 Box 747
 Dawson City, Yukon
 Y0B-1G0, Canada
 Phone: 867-993-3671 (Cell)
www.arctic-geophysics.com

Service: 2D Resistivity survey for placer investigation, 5 measuring lines

Survey Locations:

IW00337	Klaza River	Laurie Harasimiuk,
P 26220	Victoria Creek	44995 Yukon Inc.,
IW00342	Klaza River	Robert Harasimiuk,
IW00343	Klaza left tributary	Rob's Offroad Mechanical,
IW00345	Klaza left tributary	Bonnyville Oilfield Service & Supply Ltd,

Invoice # 2012713

Date: 13th July, 2012

Quantity	Description	Amount \$CAN
Mob/Demob		
2 days	Vehicle 70.--/ day [50% share with other customer]	70.--
700 Km	\$ 0.55/km [50% share with other customer]	192.50
2 days	Driving 450.--/day, operator + assistant [50% share with other customer]	450.--
Geophysical Survey		
5 days	Geoelectrical 2D-Resistivity Imaging System + Survey Leader, 880.--/day	4400.--
5 days	Field assistant, 250.--/ day	1250.--
1/2 day	Working data, Documentation, 2 operators 600.-- /day	300.--
		NET Amount \$ 6 662.50
GST Number 846363216RT0001		G.S.T. (5%) \$ 333.12
Total Due		\$ 6 995.62
Costs for this survey; claim P 26220		1/5 (20%) \$ 1399.12

Arctic Geophysics Inc.



Geophysical Surveys • Prospecting • Consulting

Steve Harasimiuk
Bonnyville Oilfield Service & Supply Ltd.
Box 6409, Bonnyville
Alberta, T9N 2G9

Arctic Geophysics Inc.
Box 747
Dawson City, Yukon
Y0B-1G0, Canada
Phone: 867-993-3671 (Cell)
info@arctic-geophysics.com
www.arctic-geophysics.com

Survey Location: Victoria Creek, P 26220

Invoice # 201210281

Date: Oct 28th, 2012

Services provided:

Quantity	Description	Amount \$CAN
Documentation		
1½ days	Report writing @ \$350.--/day	350.--
	Printing/Binding/Shipping	50.--
		NET Amount \$ 400.--
GST Number 846363216RT0001		G.S.T. (5%) \$ 20.--
Total Due		\$ 420.--

GPS-Data

Victoria Creek 2012 Line01

Electrode No.	Location in Profile [m]	GPS-Coordinates Latitude/ Longitude hddd° mm' ss.s"	GPS-Accuracy [m]	Post [*]
1	0.0	N62 05 35.2 W137 07 05.0	3	*
2	5.0	N62 05 35.0 W137 07 05.1	3	
3	10.0	N62 05 34.9 W137 07 05.2	3	
4	15.0	N62 05 34.7 W137 07 05.3	3	
5	20.0	N62 05 34.6 W137 07 05.5	3	
6	25.0	N62 05 34.4 W137 07 05.5	3	
7	30.0	N62 05 34.3 W137 07 05.5	3	
8	35.0	N62 05 34.1 W137 07 05.7	3	
9	40.0	N62 05 33.9 W137 07 05.9	3	
10	45.0	N62 05 33.7 W137 07 06.0	3	
11	50.0	N62 05 33.6 W137 07 06.1	3	
12	55.0	N62 05 33.4 W137 07 06.1	3	
13	60.0	N62 05 33.2 W137 07 06.2	3	
14	65.0	N62 05 33.1 W137 07 06.3	3	
15	70.0	N62 05 33.0 W137 07 06.3	3	
16	75.0	N62 05 32.8 W137 07 06.4	3	
17	80.0	N62 05 32.6 W137 07 06.5	3	
18	85.0	N62 05 32.5 W137 07 06.6	3	
19	90.0	N62 05 32.3 W137 07 06.7	3	
20	95.0	N62 05 32.2 W137 07 06.8	3	
21	100.0	N62 05 32.0 W137 07 06.9	3	
22	105.0	N62 05 31.9 W137 07 07.0	3	
23	110.0	N62 05 31.7 W137 07 07.1	3	
24	115.0	N62 05 31.6 W137 07 07.2	3	
25	120.0	N62 05 31.4 W137 07 07.4	3	
26	125.0	N62 05 31.3 W137 07 07.5	3	
27	130.0	N62 05 31.1 W137 07 07.6	3	
28	135.0	N62 05 30.9 W137 07 07.6	3	
29	140.0	N62 05 30.8 W137 07 07.8	3	
30	145.0	N62 05 30.7 W137 07 07.9	3	
31	150.0	N62 05 30.5 W137 07 08.1	3	
32	155.0	N62 05 30.4 W137 07 08.2	3	
33	160.0	N62 05 30.2 W137 07 08.3	3	
34	165.0	N62 05 30.0 W137 07 08.4	3	
35	170.0	N62 05 29.9 W137 07 08.6	3	
36	175.0	N62 05 29.7 W137 07 08.7	3	
37	180.0	N62 05 29.6 W137 07 08.8	3	
38	185.0	N62 05 29.5 W137 07 09.0	3	
39	190.0	N62 05 29.3 W137 07 09.1	3	
40	195.0	N62 05 29.1 W137 07 09.2	3	
41	200.0	N62 05 29.0 W137 07 09.4	3	
42	205.0	N62 05 28.8 W137 07 09.5	3	
43	210.0	N62 05 28.7 W137 07 09.6	3	

Electrode No.	Location in Profile [m]	GPS-Coordinates Latitude/ Longitude hddd° mm' ss.s"	GPS-Accuracy [m]	Post [*]
44	215.0	N62 05 28.5 W137 07 09.7	3	
45	220.0	N62 05 28.4 W137 07 09.8	3	
46	225.0	N62 05 28.2 W137 07 10.0	3	
47	230.0	N62 05 28.0 W137 07 10.1	3	
48	235.0	N62 05 27.9 W137 07 10.2	3	
49	240.0	N62 05 27.8 W137 07 10.4	3	
50	245.0	N62 05 27.6 W137 07 10.4	3	
51	250.0	N62 05 27.5 W137 07 10.6	3	
52	255.0	N62 05 27.4 W137 07 10.7	3	
53	260.0	N62 05 27.2 W137 07 10.8	3	
54	265.0	N62 05 27.0 W137 07 10.9	3	
55	270.0	N62 05 26.9 W137 07 11.1	3	
56	275.0	N62 05 26.7 W137 07 11.2	3	
57	280.0	N62 05 26.6 W137 07 11.3	3	
58	285.0	N62 05 26.5 W137 07 11.5	3	
59	290.0	N62 05 26.3 W137 07 11.6	3	
60	295.0	N62 05 26.2 W137 07 11.7	3	
61	300.0	N62 05 26.0 W137 07 11.9	3	*
62	305.0	N62 05 25.8 W137 07 12.0	3	
63	310.0	N62 05 25.7 W137 07 12.2	3	
64	315.0	N62 05 25.5 W137 07 12.2	3	
65	320.0	N62 05 25.4 W137 07 12.4	3	
66	325.0	N62 05 25.3 W137 07 12.6	3	
67	330.0	N62 05 25.1 W137 07 12.6	3	
68	335.0	N62 05 25.0 W137 07 12.7	3	
69	340.0	N62 05 24.8 W137 07 12.8	3	
70	345.0	N62 05 24.6 W137 07 13.0	3	
71	350.0	N62 05 24.5 W137 07 13.1	3	
72	355.0	N62 05 24.3 W137 07 13.3	3	
73	360.0	N62 05 24.2 W137 07 13.4	3	
74	365.0	N62 05 24.1 W137 07 13.4	3	
75	370.0	N62 05 23.8 W137 07 13.5	3	
76	375.0	N62 05 23.7 W137 07 13.7	3	
77	380.0	N62 05 23.6 W137 07 13.8	3	
78	385.0	N62 05 23.4 W137 07 13.9	3	
79	390.0	N62 05 23.3 W137 07 14.1	3	
80	395.0	N62 05 23.1 W137 07 14.2	3	
81	400.0	N62 05 23.0 W137 07 14.3	3	
82	405.0	N62 05 22.8 W137 07 14.4	3	
83	410.0	N62 05 22.7 W137 07 14.5	3	
84	415.0	N62 05 22.6 W137 07 14.6	3	
85	420.0	N62 05 22.5 W137 07 14.7	3	
86	425.0	N62 05 22.4 W137 07 14.9	3	
87	430.0	N62 05 22.1 W137 07 15.0	3	
88	435.0	N62 05 22.0 W137 07 15.1	3	
89	440.0	N62 05 21.9 W137 07 15.2	3	
90	445.0	N62 05 21.7 W137 07 15.4	3	
91	450.0	N62 05 21.6 W137 07 15.4	3	

Electrode No.	Location in Profile [m]	GPS-Coordinates Latitude/ Longitude hddd° mm' ss.s"	GPS-Accuracy [m]	Post [*]
92	455.0	N62 05 21.5 W137 07 15.6	3	
93	460.0	N62 05 21.3 W137 07 15.8	3	
94	465.0	N62 05 21.1 W137 07 15.9	3	
95	470.0	N62 05 20.9 W137 07 16.1	3	
96	475.0	N62 05 20.8 W137 07 16.2	3	
97	480.0	N62 05 20.7 W137 07 16.3	3	
98	485.0	N62 05 20.5 W137 07 16.4	3	
99	490.0	N62 05 20.4 W137 07 16.5	3	
100	495.0	N62 05 20.2 W137 07 16.6	3	
101	500.0	N62 05 20.1 W137 07 16.7	3	
102	505.0	N62 05 19.9 W137 07 16.8	3	
103	510.0	N62 05 19.7 W137 07 16.9	3	
104	515.0	N62 05 19.6 W137 07 17.1	3	
105	520.0	N62 05 19.4 W137 07 17.2	3	
106	525.0	N62 05 19.3 W137 07 17.3	3	
107	530.0	N62 05 19.1 W137 07 17.4	3	
108	535.0	N62 05 19.0 W137 07 17.5	3	
109	540.0	N62 05 18.9 W137 07 17.6	3	
110	545.0	N62 05 18.7 W137 07 17.8	3	
111	550.0	N62 05 18.6 W137 07 17.9	3	
112	555.0	N62 05 18.4 W137 07 18.0	3	
113	560.0	N62 05 18.3 W137 07 18.1	3	
114	565.0	N62 05 18.2 W137 07 18.2	3	
115	570.0	N62 05 18.0 W137 07 18.4	3	
116	575.0	N62 05 17.8 W137 07 18.5	3	
117	580.0	N62 05 17.7 W137 07 18.6	3	
118	585.0	N62 05 17.6 W137 07 18.8	3	
119	590.0	N62 05 17.4 W137 07 18.8	3	
120	595.0	N62 05 17.2 W137 07 19.0	3	
121	600.0	N62 05 17.1 W137 07 19.1	3	
122	605.0	N62 05 16.9 W137 07 19.2	3	
123	610.0	N62 05 16.8 W137 07 19.3	3	
124	615.0	N62 05 16.7 W137 07 19.4	3	
125	620.0	N62 05 16.5 W137 07 19.6	3	
126	625.0	N62 05 16.3 W137 07 19.8	3	*