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Combined IP and 2D Resistivity Geophysical Survey

for Quartz Prospecting in the Whitehorse Copper area, Yukon

Survey and Report prepared for:

44236 Yukon Inc. c/o Brian Scott

Box 77 Tagish YT. Y0B1T0 Whitehorse Mining District Quartz Claim

YB46600

NTS MAPSHEET 105D11 (Whitehorse)

Location (UTM): 497015, 6723040

Survey Performed October 2nd

OWNER:	44236 Yukon Inc
CONSULTANT:	**Arctic Geophysics Inc**.
	PO Box 31441 RPO Main St, Whitehorse, YT, Y1A 6K8
AUTHORS:	**Stefan Ostermaier,** Arctic Geophysics
DATE SUBMITTED:	January 15th, 2016

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1. Location and Access

This geophysical investigation, using a combination of IP and 2D Resistivity, was done at the Whitehorse Copper site for 44236 Yukon Inc.

The IP and 2D Resistivity profile was conducted to prospect the ground for quartz mining interests. The geophysical prospecting program was focused on measuring and interpreting the following subsurface characteristics:

1. Location and size of suspected extended mineralization
2. Depth of overburden

The ground was tested with one 475m long survey line. The fieldwork was done on October 2nd, 2015.

The survey area is located in the Whitehorse Mining District of Yukon, 7 km south of Whitehorse Airport.

The survey area was reached via the Alaska Highway, Mt. Sima Road and local spur roads.

List of claims

Tenure Number	Claim Name	Claim/Lease Owner
YB46600	FYDB 8	44236 Yukon Inc.

2. Crew

Geophysical team: Stefan Ostermaier, Arctic Geophysics Inc.

Support, Documentation: Heidi Kulcheski, Arctic Geophysics Inc.

Line planning: 44236 Yukon Inc. and Arctic Geophysics Inc.

3. Fieldwork – Schedule

Fieldwork: October 2nd 2015

Processing, Interpretation: October 3rd 2015

4. Geophysical Methods

Induced Polarization (IP): IP is a material property. It is measured by introducing current into the ground and turning it off abruptly. The measured property is the time and strength of the decaying signal that was induced by the current. This data is an indication of electrically active minerals in the ground. Sulfides (for example pyrite) result in a strong signal while clay-like minerals result in a weak signal. The equipment used is the same as for resistivity and has the same geometry and depth penetration. The measurements were taken at the same time as the resistivity measurements.

Resistivity is a material property that measures how strongly a material opposes the flow of electric current. The purpose of resistivity surveys is to measure the subsurface resistivity distribution. The resistivity of earth materials is related to mineral species, fluid content, porosity, and degree of water saturation. Resistivity measurements are commonly performed by injecting current through the ground with two current electrodes and measuring the resultant voltage difference between to potential electrodes. The equipment used in this study is designed to measure layer interfaces in depths from 1m to 100m by varying the spacing between electrodes.

Resistivity/IP measuring station, Stefan Ostermaier, Arctic Geophysics Inc., Atlin, BC 2013

5. Use of Geophysical Method

5.1. Instrumentation

For this survey a lightweight, custom-built 2D RESISTIVITY imaging system with rapid data acquisition was used. The system includes[1]:

- "4 POINT LIGHT" EARTH RESISTIVITY METER[2]
- 128 ELECTRODE CONTROL MODULES[3]
- 128 STAINLESS STEEL ELECTRODES[4]
- 640m MULTICORE CABLE: CONNECTOR SPACING: 5m[5]

This system weighs approximately 120 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.

5.2. Data Acquisition

IP/Resistivity

The data acquisition is carried out by the automatic activation of 4-point-electrodes. 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 resistivity survey the **Wenner-Schlumberger-array** was used. The Schlumberger array is appropriate to image horizontal layers as is ideal for placer prospecting.

The 2D Resistivity imaging system, used for this survey, allows measurements with a depth of up to 100-120m. An electrode spacing of 5m was used, resulting in a horizontal measuring resolution of 2.5m. This spacing has proven itself reliable in the determination of bedrock topography and sedimentary stratigraphy for placer investigation under most environmental conditions.

[1] In this survey only 96 electrodes were used

[2] Constructed and produced by LGM (Germany)

[3] Ditto

[4] Constructed and produced by GEOANALYSIS.DE (Germany)

[5] Ditto

5.3. Processing

IP/Resistivity

The measured IP and Resistivity data were processed with the **RES2DINV** inversion program[6].

5.4. Interpretation

Using high quality data the interpretation of the Resistivity model conforms closely to fact and produces a data structure in the model that is most plausible. The resistivity profile is the basic source for the interpretation of placer-related subsurface aspects of overburden and bedrock.

6. Profile image

In the Resistivity profile the interpreted layer interfaces are marked with a black line. The **graphical markings** showing the interpreted layer interfaces (black line) in the profiles are done according to the data structure in the profile itself. The section is looking southwest and has no vertical exaggeration.

7. Line Arrangement

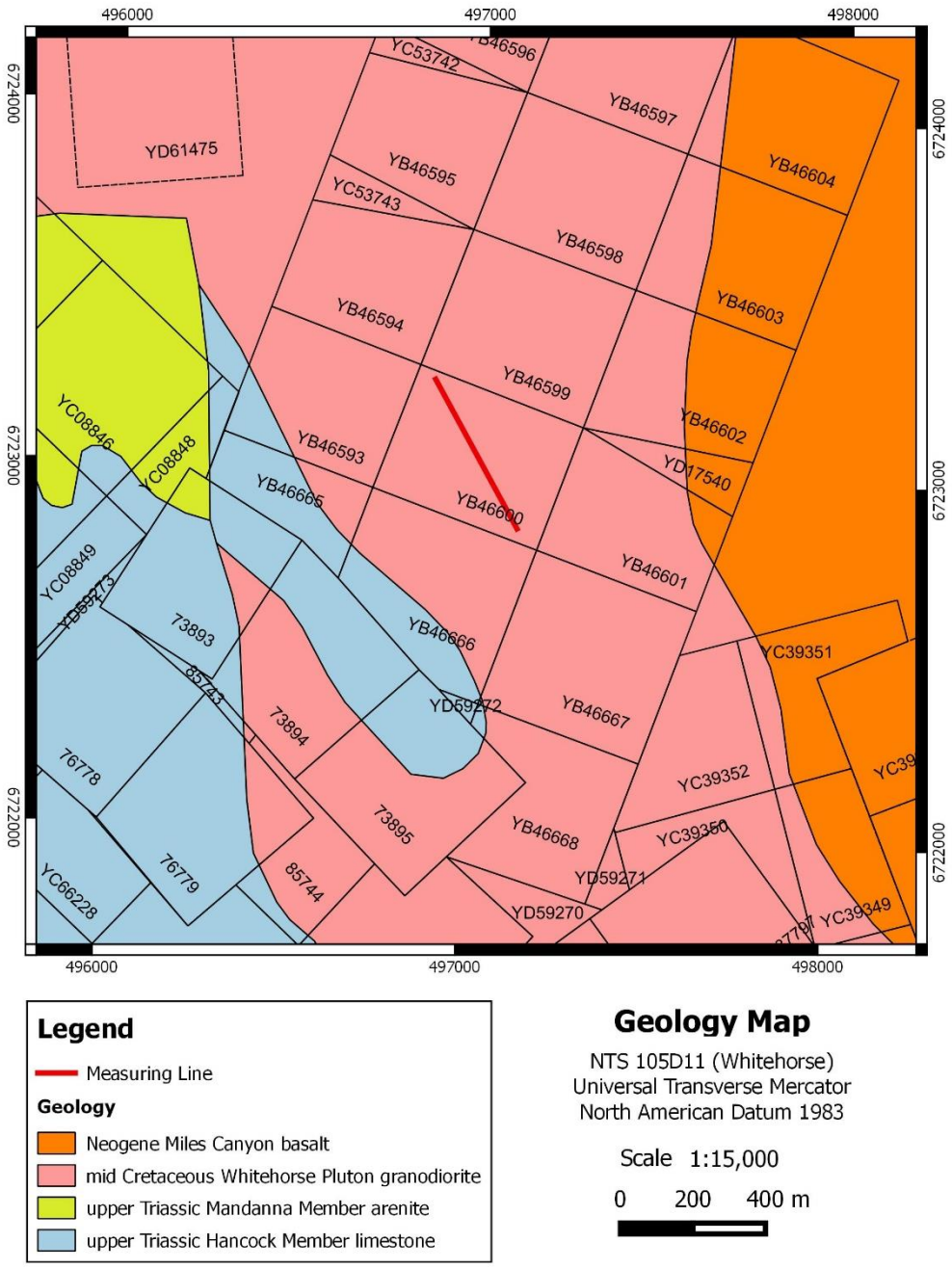
The line locations were designated by 44236 Yukon Inc. and Arctic Geophysics Inc.

8. Geology

The Whitehorse copper belt is a 30 km long zone of over 30 copper-bearing skarn occurrences located to the west of Whitehorse, Yukon Territory (Bidwell, 1986). The Whitehorse Copper Mine was owned and operated by Hudson Bay Mining and Smelting from 1967 to 1982. Production numbers state that 267,490,930 pounds of copper, 224,565 ounces of gold, and 2,837,631 ounces of silver were recovered from 11,017,738 tonnes of ore milled (Scott, 2007).

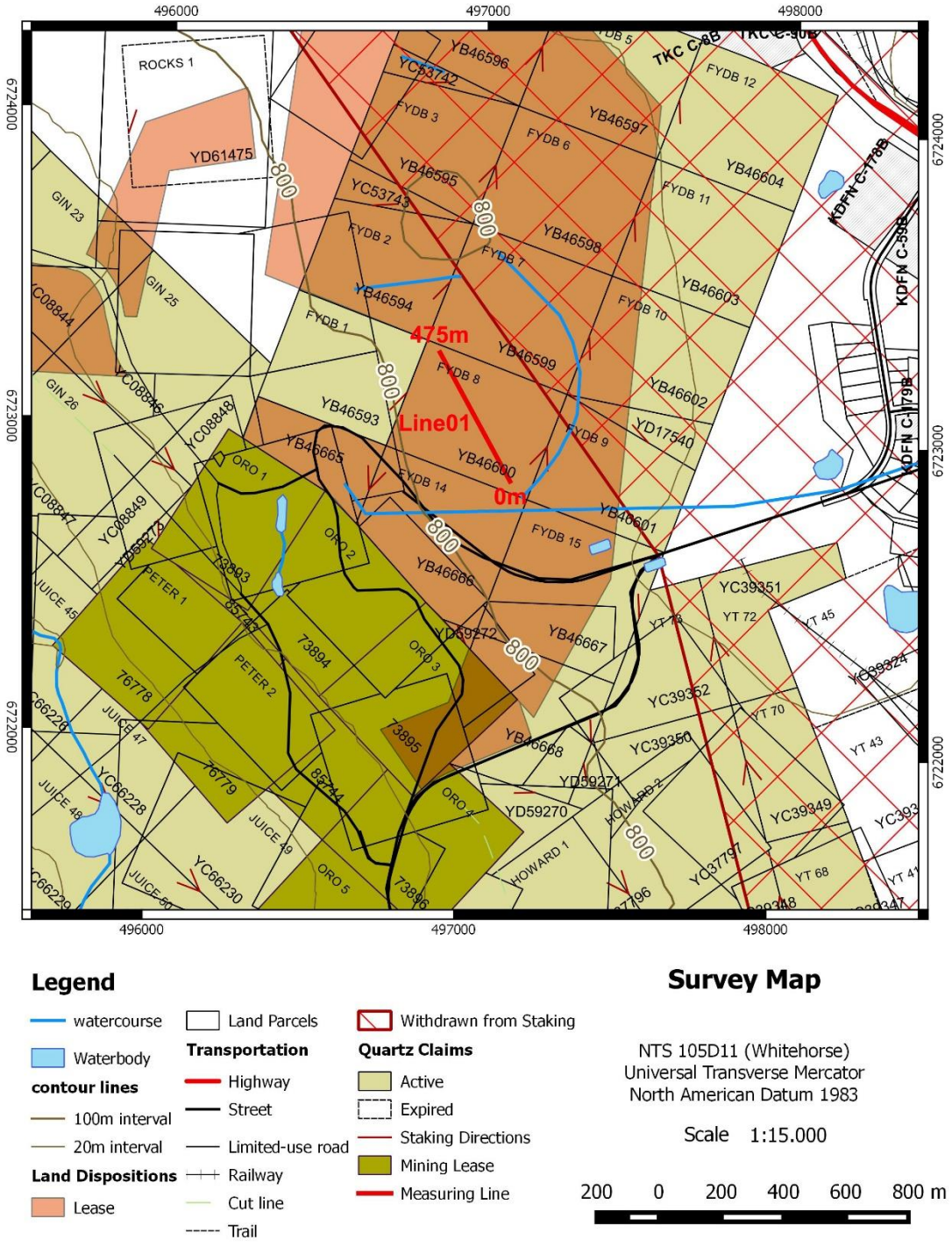
The regional geology was mapped by Hart and Radloff (1990). The Hancock Member (upper Triassic) limestone in this area is white to grey, massive to thickly bedded. These are overlain by rocks of the Mandanna Member (upper Triassic) to the west of the study area, described as a coarse-grained lithic-rich arenite with minor shale and angular pebble conglomerate. The Whitehorse pluton (mid Cretaceous) includes biotite-hornblende granodiorite, tonalite, and diorite. Alteration to chlorite and epidote is common. To the east, the Miles Canyon basalt unconformably overlies the other units in the study area.

[6] Produced by GEOTOMO SOFTWARE (Malaysia)



Modified from Gordey and Makepeace (1999).

9. Survey Map



Legend

- watercourse
- Waterbody

contour lines

- 100m interval
- 20m interval

Land Dispositions

- Lease
- Land Parcels

Transportation

- Highway
- Street
- Limited-use road
- Railway
- Cut line
- Trail

- Withdrawn from Staking

Quartz Claims

- Active
- Expired
- Staking Directions
- Mining Lease
- Measuring Line

Survey Map

NTS 105D11 (Whitehorse)
Universal Transverse Mercator
North American Datum 1983

Scale 1:15.000

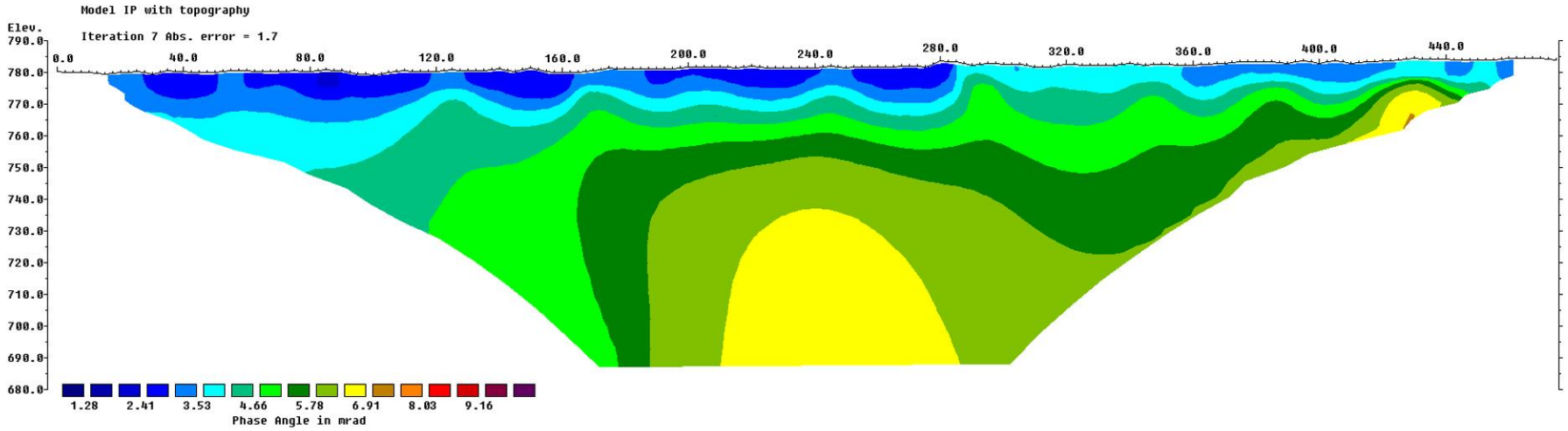
200 0 200 400 600 800 m

10. Profiles: Interpretation and Recommendation

10.1 Line01

10.1.1 IP

Line 01 - IP
2D IP, Schlumberger array
96 Electrodes: spacing 5m
Horizontal and vertical measure in [meter], Iteration error in [%]
Vertical exaggeration in model section display: 1.0
Data acquisition: Stefan Ostermaier 2nd October 2015
Processing: Stefan Ostermaier, 3rd October 2015



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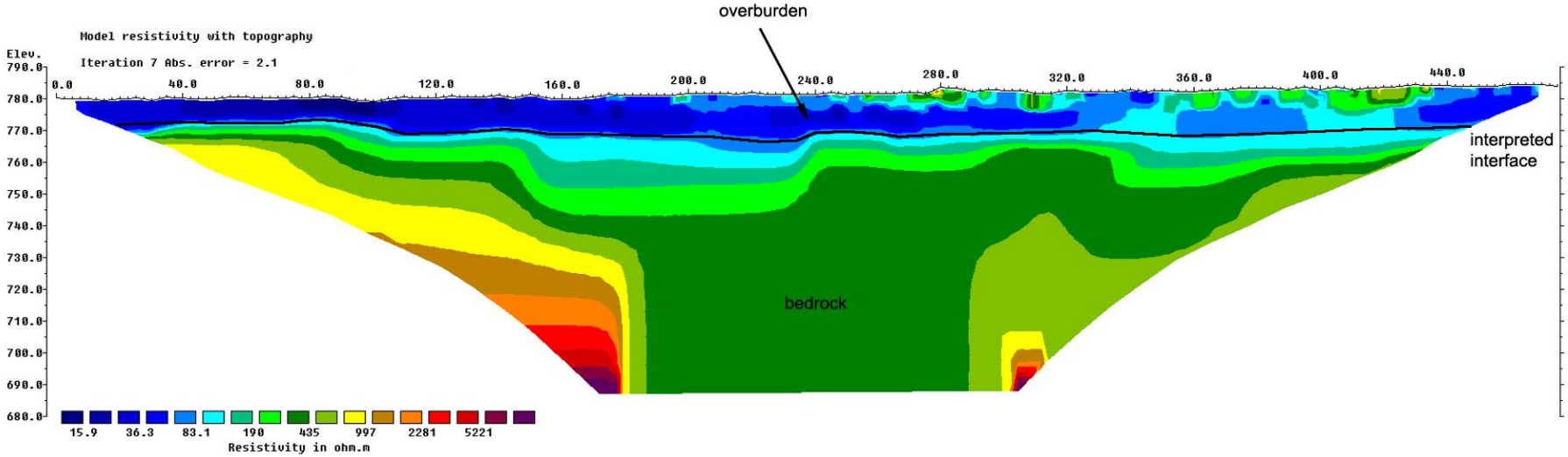
10.1.2 Resistivity

Line 01 - Resistivity
2D Resistivity, Schlumberger array
96 Electrodes: spacing 5m
Horizontal and vertical measure in [meter], Iteration error in [%]
Vertical exaggeration in model section display: 1.0
Data acquisition: Stefan Ostermaier 2nd October 2015
Processing: Stefan Ostermaier, 3rd October 2015

Interpretation



This 2D Resistivity measuring result is an interpretation of geophysical data. We recommend the verification of the profile interpretation with test pits, drilling, or shafting.

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10.1.3 Interpretation

The IP profile shows a moderate signal (4-7mrad) in the bedrock. The overburden has a very low IP signal (1-2mrad) with the exception of the area from 285m 357.5m. In this area the overburden, which consists of the dried remnants of a settling pond, shows elevated IP values (~4mrad).

The resistivity profile shows overburden with a thickness of 7-15m. Most of the overburden has very low resistivity values (blue, 15-80 Ohm*m) due to the origin of the overburden as a tailings pond. From 195m-440m along the measuring line there are areas in the overburden that show elevated resistivity values (green, 200-700 Ohm*m). This indicates some variation in the tailings.

The bedrock has increasing resistivity values from 200 Ohm*m at the bedrock - overburden interface to more than 3000 Ohm*m at depth.

Recommendation

Drilling is recommended at the 70m marker and at the 320m marker. Bedrock is expected at a depth of 10m or 15m respectively and bedrock shows the largest variation in both IP and Resistivity along the profile.

11. Conclusion

The survey area is underlain by granodiorite according to the geology map.

The survey did show a generally elevated IP signal, in the bedrock, that shows its highest values from 160m-475m along the profile. This is consistent with the known skarn mineralization and would suggest that the source of the elevated IP signal that was measured is an endoscarn.

12. Qualifications

Stefan Ostermaier, Geophysical Surveyor, Managing Partner, Arctic Geophysic Inc

PO Box 31441 RPO Main St, Whitehorse, YT, Y1A 6K8
867-456-4343 / stefan.ostermaier@arctic-geophysics.com

Work Experience
Founded and employed at Arctic Geophysics Inc. since June 2007
Geophysical Surveying for Mining Exploration in the Yukon since 2005
Geological prospecting for precious metals and minerals in the Yukon and Alaska since 2001

Publications:
Numerous Assessment Reports BC & YT including:

2008	Dredge Master Gold Ltd.	Dawson Mining District	Yukon	Sixty Mile Area
2009	10796 Yukon Ltd.	Dawson Mining District	Yukon	Scroggie Creek
2010	Mel Zeiler	Mayo Mining District	Yukon	Duncan Creek
2010	YGS	Dawson Mining District	Yukon	White River
2011	Gold Miners Group Inc.	Whitehorse Mining District	Yukon	Kluane Lake
2011	Al Dendys	Atlin Mining Division	BC	Atlin
2012	Stephen Swaim	Whitehorse Mining District	Yukon	Livingston Area
2012	Bonnyville Oilfield Service & Supply Ltd	Whitehorse Mining District	Yukon	Carmacks
2013	Victor Casavant	Atlin Mining Division	BC	Atlin
2014	Bens Contracting & Rental	Whitehorse Mining District	Yukon	Kluane Lake
2014	Angel Jade Mines Ltd.	Liard Mining Division	BC	Liard area
2014	Ron Berdahl	Whitehorse Mining District	Yukon	Carmacks
2014	Zenith Mineral Resources Ltd.	Cariboo Mining Division	BC	Likely

Geophysical survey (45 field days) for Yukon Government: Yukon Geological Survey, 2D Resistivity/IP Data Release for Placer Mining & shallow Quartz Mining-Yukon 2010 http://virtua.gov.yk.ca:8080/lib/item?id=chamo:164867&theme=emr "2D resestivity / IP data release for placer mining and shallow quartz mining - Yukon 2010 : Los Angeles Creek, Wolf Creek, Ladue River, and Rice Creek ; Philipp Moll and Stefan Ostermaier"

Education
Study of Geology, University of Tübingen, Germany
Geophysical field courses, University of Karlsruhe and University of Stuttgart, Germany
Study of computer science, University of Stuttgart, Germany

Confirmation

We have interpreted the data and prepared this report entitled **Combined IP and 2D Resistivity Geophysical Survey for Quartz Prospecting in the Whitehorse Copper area, Yukon** for assessment credit, the survey was carried out by Arctic Geophysics Inc. of Whitehorse, Yukon Territory

Stefan Ostermaier

Costs

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Invoice

DATE: October 5/ 2015
INVOICE #: 2015-S-100019

BILL TO:
44236 Yukon Inc
c/o Brian Scott, Box 77, Tagish, Yukon, Y0B 1T0

JOB	IP Survey for mineral exploration	PAYMENT TERMS
	Whitehorse Copper Mine	**Invoices are due upon receipt**

QTY	DESCRIPTION	AMOUNT
	Mob/Demob - Local	
80 km	Travel from Whitehorse to claims and return @ .55/km	$44.00
	SUB TOTAL MOB/DEMOB	$44.00
	Geophysical Survey	
1 day	Geoelectrical 2D Resistivity Imaging System:	
	96 electrodes, 6 Electrode Control Modules, 475m multi-core cable, PC,	
	GPS, altimeter, 1 man crew @ $1450.00	$1,450.00
1 day	Pick up truck @ $120.00 day	$120.00
.25 day	Data Analysis, Interpretation, Processing & Reporting	$385.00
	SUB TOTAL SURVEY COSTS	$1,955.00
	SUBTOTAL	$1,999.00
	G.S.T. (5%) #846363216RT0001	$99.95
	TOTAL	**$2,098.95**
	Invoices are due upon receipt	

Please make all checks payable to Arctic Geophysics. Thank you for your business!
Advance / Final payments can be made by cheque or Interac E Transfer / deposit
For banking information please contact the office at 867-456-4343 or email info@arctic-geophysics.com

Appendix

Work Cited

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)

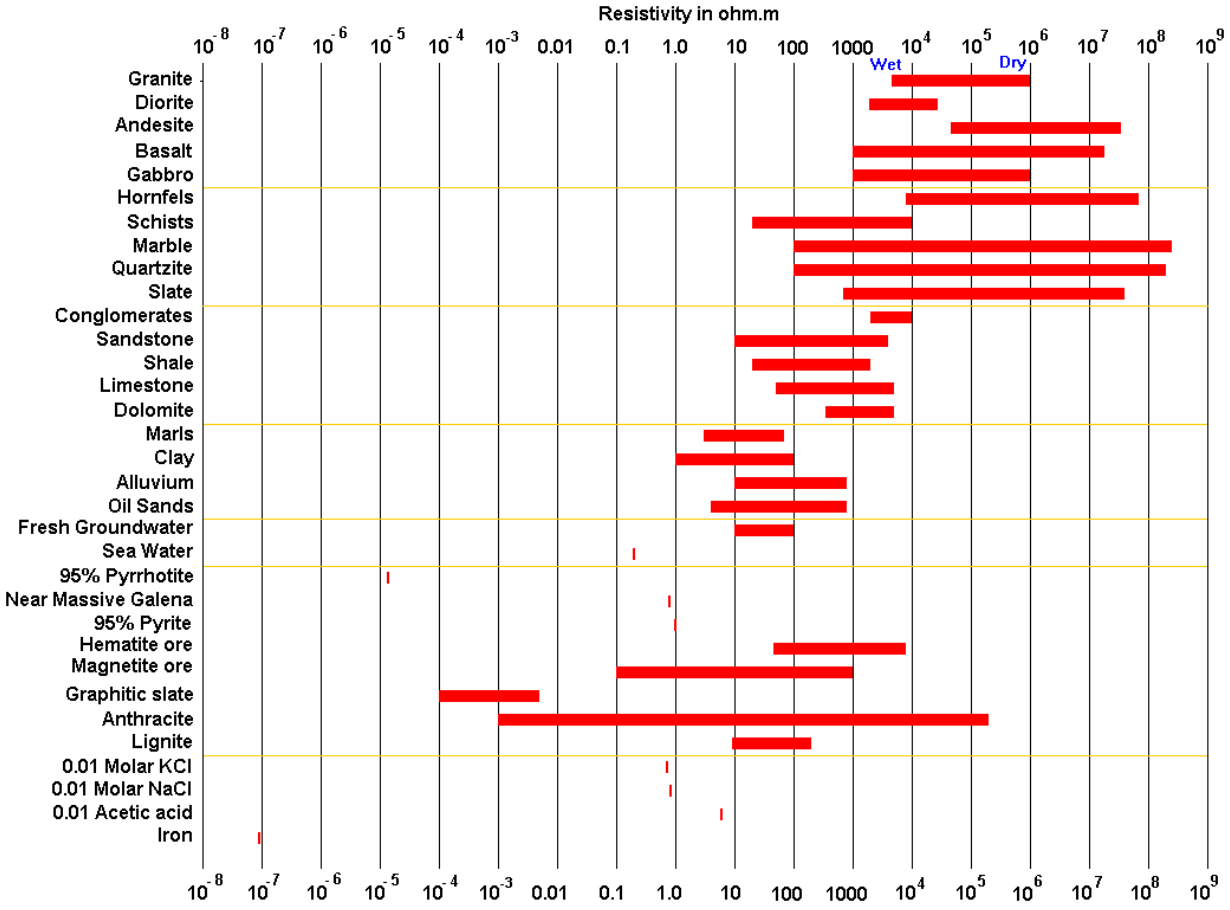
Bidwell, G., 1986. Assessment report on Whitehorse Copper Mines property drilling programs. Assessment Report 092042, 25 p.

Hart, C.J.R. and Radloff, J.K. 1990. Geology of Whitehorse, Alligator Lake, Fenwick Creek, Carcross and part of Robinson map areas (105D/11, 6, 3, 2 &7) Indian and Northern Affairs Canada, Northern Affairs: Yukon Region, Open File 1990-4, 126 p.

Loke , M.H., 2015. Tutorial : 2-D and 3-D electrical imaging surveys

Scott, B. 2007. Whitehorse copper tailings property 2007 auger drilling program Whitehorse mining district NTS 105D/11. Assessment Report 094863, 23 p.

Resistivity of Common Earth Materials



From Loke (2015).

GPS Data

Electrode No.	Location in Profile [m]	GPS Coordinates UTM NAD83	GPS Accuracy [m]	Post
1	0	497125 ;6722851	3	
2	5	497122 ;6722855	3	
3	10	497120 ;6722860	3	
4	15	497117 ;6722864	3	
5	20	497115 ;6722868	3	
6	25	497112 ;6722872	3	
7	30	497109 ;6722876	3	
8	35	497107 ;6722881	3	
9	40	497105 ;6722885	3	
10	45	497102 ;6722889	3	
11	50	497100 ;6722893	3	
12	55	497097 ;6722898	3	
13	60	497095 ;6722903	3	
14	65	497092 ;6722907	3	
15	70	497090 ;6722911	3	
16	75	497087 ;6722916	3	
17	80	497085 ;6722920	3	
18	85	497083 ;6722924	3	
19	90	497080 ;6722928	3	
20	95	497078 ;6722933	3	
21	100	497075 ;6722936	3	
22	105	497073 ;6722941	3	
23	110	497070 ;6722945	3	
24	115	497068 ;6722949	3	
25	120	497065 ;6722954	3	
26	125	497063 ;6722958	3	
27	130	497061 ;6722962	3	
28	135	497059 ;6722967	3	
29	140	497056 ;6722972	3	
30	145	497053 ;6722976	3	
31	150	497050 ;6722979	3	
32	155	497048 ;6722984	3	
33	160	497046 ;6722988	3	
34	165	497044 ;6722993	3	
35	170	497041 ;6722997	3	
36	175	497039 ;6723002	3	
37	180	497036 ;6723006	3	
38	185	497033 ;6723010	3	
39	190	497031 ;6723013	3	
40	195	497028 ;6723017	3	

Electrode No.	Location in Profile [m]	GPS Coordinates UTM NAD83	GPS Accuracy [m]	Post
41	200	497026 ;6723022	3	
42	205	497023 ;6723027	3	
43	210	497021 ;6723031	3	
44	215	497018 ;6723036	3	
45	220	497015 ;6723040	3	
46	225	497013 ;6723045	3	
47	230	497010 ;6723049	3	
48	235	497007 ;6723053	3	
49	240	497005 ;6723057	3	
50	245	497003 ;6723062	3	
51	250	496999 ;6723066	3	
52	255	496997 ;6723070	3	
53	260	496994 ;6723075	3	
54	265	496992 ;6723079	3	
55	270	496989 ;6723084	3	
56	275	496986 ;6723088	3	
57	280	496984 ;6723091	3	
58	285	496981 ;6723095	3	
59	290	496979 ;6723099	3	
60	295	496977 ;6723102	3	
61	300	496974 ;6723107	3	
62	305	496972 ;6723111	3	
63	310	496969 ;6723116	3	
64	315	496966 ;6723120	3	
65	320	496964 ;6723124	3	
66	325	496961 ;6723128	3	
67	330	496959 ;6723133	3	
68	335	496956 ;6723137	3	
69	340	496954 ;6723142	3	
70	345	496951 ;6723146	3	
71	350	496949 ;6723151	3	
72	355	496945 ;6723155	3	
73	360	496943 ;6723159	3	
74	365	496941 ;6723162	3	
75	370	496938 ;6723166	3	
76	375	496936 ;6723171	3	
77	380	496934 ;6723176	3	
78	385	496931 ;6723180	3	
79	390	496928 ;6723185	3	
80	395	496926 ;6723188	3	
81	400	496923 ;6723192	3	
82	405	496921 ;6723196	3	
83	410	496919 ;6723201	3	
84	415	496916 ;6723205	3	
85	420	496913 ;6723210	3	

Electrode No.	Location in Profile [m]	GPS Coordinates UTM NAD83	GPS Accuracy [m]	Post
86	425	496911 ;6723213	3	
87	430	496908 ;6723218	3	
88	435	496906 ;6723222	3	
89	440	496903 ;6723227	3	
90	445	496900 ;6723231	3	
91	450	496897 ;6723235	3	
92	455	496894 ;6723239	3	
93	460	496891 ;6723243	3	
94	465	496889 ;6723247	3	
95	470	496886 ;6723251	3	
96	475	496884 ;6723255	3	