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PO Box 31441 RPO Main Street  
Whitehorse, YT, Y1A 6K8  
Phone: (867) 456-4343  
info@arctic-geophysics.com  
www.arctic-geophysics.com

## **Total Magnetic Field Geophysical Survey on the 5 Mile Prospecting Lease IW00458 in the Mount Nansen area, Yukon**

Surveys and Assessment Report prepared for:

**Stefan Ostermaier**

Whitehorse Mining District Prospecting Lease

IW00458 – 5 Mile Lease

NTS MAPSHEET 115I03 (Mount Nansen)

Location (UTM): 379168 6882013

**OWNER:** Stefan Ostermaier  
PO Box 31441 RPO Main St, Whitehorse, YT, Y1A 6K8

**CONSULTANT:** Arctic Geophysics Inc.  
PO Box 31441 RPO Main St, Whitehorse, YT, Y1A 6K8

**AUTHORS:** Stefan Ostermaier, Arctic Geophysics

**DATE SUBMITTED:** July 20th, 2016

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## 1. Location and Access

This geophysical investigation, using a magnetometer to measure the Total Magnetic Field, was done at Unnamed Tributary to Lonely Creek for Stefan Ostermaier.

Geophysics work was conducted to prospect the ground for placer mining interests. The program was focused on measuring and interpreting the following subsurface characteristics:

Distribution of magnetite (black sand)

Magnetometer work was carried out on July 7<sup>th</sup> – 9<sup>th</sup> 2016.

The survey area is located in the Whitehorse Mining District of Yukon, 55 km west of Carmacks YT.

The survey area was accessed by 4x4 truck on the Mount Nansen Road to the Nansen Creek valley and from there on foot to the actual survey site.

Tenure

Tenure Number	Claim Name	Claim/Lease Owner	Geophysical Method
IW00458	-	Stefan Ostermaier	Total Magnetic Field

## 2. Crew

Magnetometer crew: Stefan Ostermaier and Elijah Istchenko, Arctic Geophysics Inc.

Support, Documentation: Heidi Kulcheski, Arctic Geophysics Inc.

Line planning: Stefan Ostermaier, Arctic Geophysics Inc.

## 3. Fieldwork – Schedule

Fieldwork: The magnetometer survey was conducted on July 7<sup>th</sup> - 9<sup>th</sup> 2016.

Processing, Interpretation of Magnetometer data on July 11<sup>th</sup> 2016.

## 4. Geophysical Methods

### 4.1 Total Magnetic Field

A magnetometer survey measures the total magnetic field anomaly in the area of interest. Geological units with relatively high total field strength are likely to contain higher concentrations of ferrimagnetic minerals. By far the most common of these is magnetite, which has a specific gravity of 5.2 g/cm<sup>3</sup>. With its high density magnetite settles on stream beds to form black sands. Black sands are expected to be associated with heavy minerals, including gold. Total magnetic field is measured in nanoTesla (nT).

## 5. Use of Geophysical Method

### 5.1 Magnetometer Instrumentation

The equipment used includes:

GEMSYS GSM-19 GW (rover) with Integrated GPS

GEMSYS GSM-19 (base)

### 5.2 Magnetometer Data Acquisition

The GEMSYS GSM-19 was used as a base station. It was set in exactly the same location during the survey. The cycling time (time between measurements) for the base station was set to 4s.

The GEMSYS GSM-19 GW with integrated GPS attachment set to walking mode was used as the “rover” magnetometer. Once the integrated GPS acquired satellite coverage, it synced its internal clock with UTC (Coordinated Universal Time). The base and rover stations were connected with a six pin cable to sync the base station to UTC. For the rover unit, a cycling time of 2 seconds was used.

The waypoints for the survey lines were programmed into the integrated GPS. Lines were positioned 25m apart and ran perpendicular to the baseline. The tolerance for lateral movement on these lines was set to 5m. The first lines are 2000ft (appx. 609m) long. In order to minimize noise, efforts were made to remove all magnetic items from the operator.

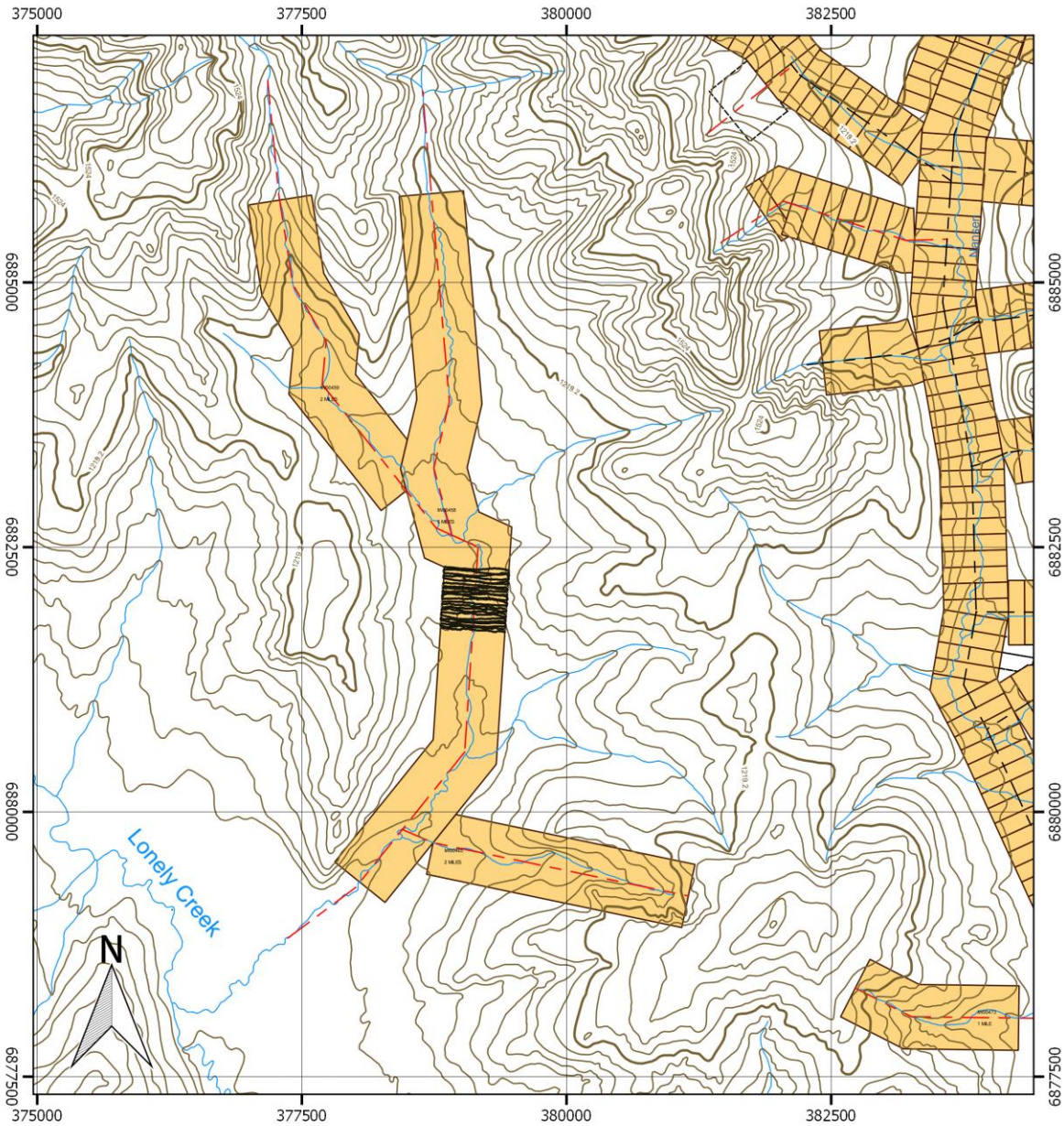
### 5.3 Magnetometer Data Processing

The magnetometer data was processed with GemLink 5.31 to correct for diurnal variation. A datum of 56,000 nT was chosen. Data was then checked for outliers with Microsoft Excel. Spatial interpolation of the data was performed with QGIS. Ordinary kriging was used to produce a map of total field anomaly.

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<sup>1</sup> Produced by GEM Systems (Canada)

# 6 Magnetometer Survey Map



## Legend

- |                 |                       |
|-----------------|-----------------------|
| watercourse     | placer claims         |
| contour lines   | Active                |
| 1000ft          | Expired               |
| 100ft           | prospecting leases    |
| placer baseline | Active                |
| unsurveyed      | Expired               |
| surveyed        | magnetic survey point |

## Total Magnetic Field Survey Map

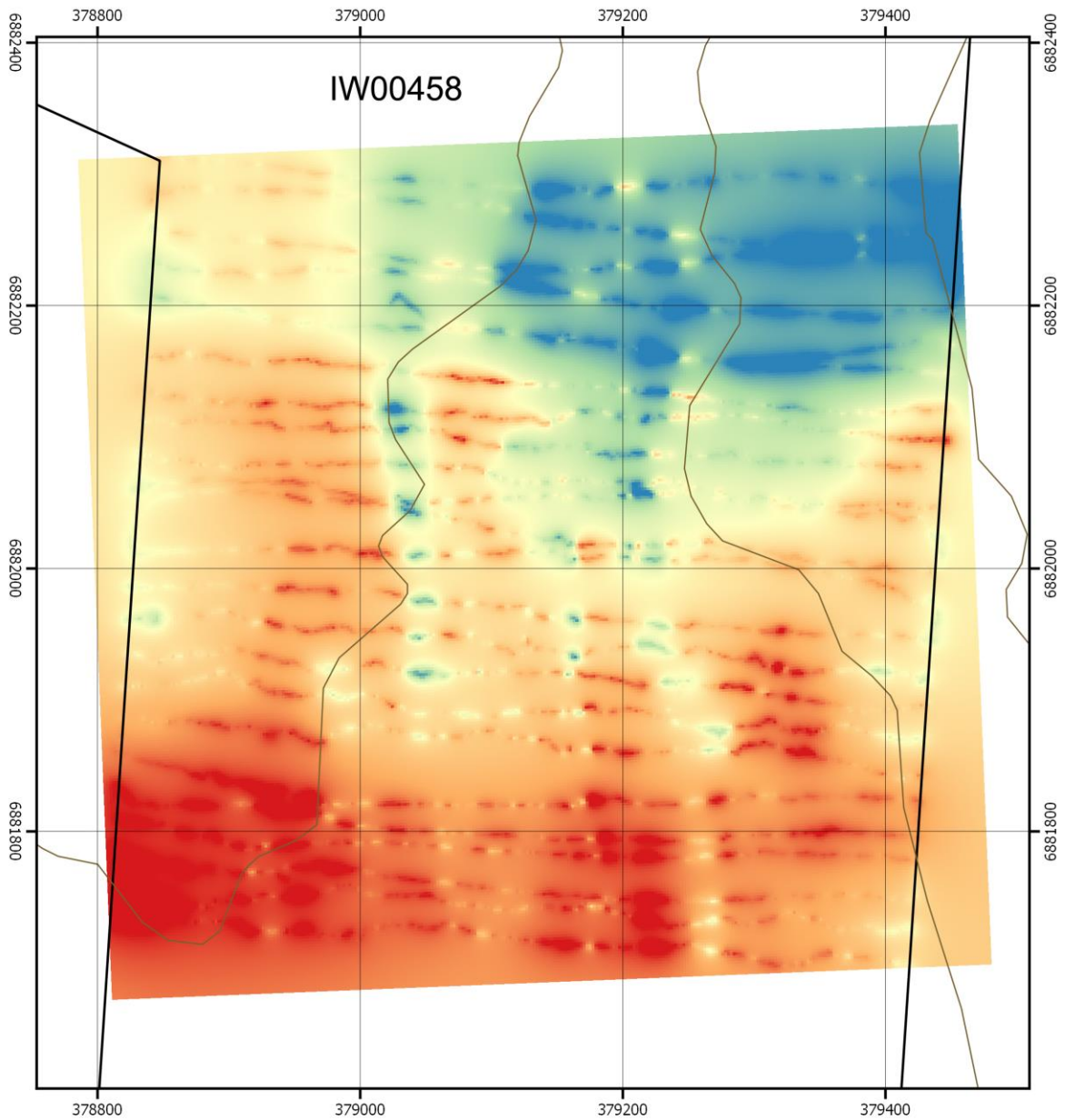
NTS MAPSHEET 115103 (Mount Nansen)  
 Universal Transverse Mercator  
 North American Datum 1983  
 Map Date July 13th 2016

Scale 1:50,000

750 0 750 1500 2250 3000 m

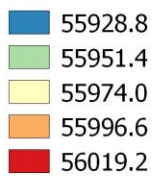


## 7. Ground Magnetics



### Legend

Total Magnetic Field [nT]



contour lines

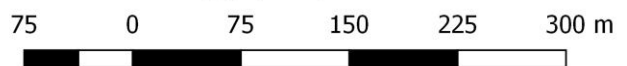


prospecting leases outline

### Total Magnetic Field Anomaly Map

NTS MAPSHEET 115I03 (Mount Nansen)  
 Universal Transverse Mercator  
 North American Datum 1983  
 Map Date July 13th 2016

Scale 1:4,000



## 7.1 Interpretation – Ground Magnetics:

The northeastern part of the survey area shows a magnetic low whereas the southwestern part shows a magnetic high. Since these are larger structures it is possible that they are the product of larger scale magnetic anomalies in the bedrock. There are a number of anomalies with magnetic lows trending north to south. The most distinct one in the right hand third of the survey area appears to be coinciding with a sand bar / bench. The other north south trending magnetic lows have no obvious correlation in the observed topography and bear further testing.

## 8. Recommendations

It is recommended that the north south running anomalies be tested for black sands and gold. Furthermore it is recommended to do more Total Field Magnetics on the prospecting lease to get a more complete picture of the possible channels. 2D Resistivity is also recommended to test for depth to bedrock and thickness of observed sand deposits.

## 9. Conclusion

The survey found a number of more or less distinct north south running anomalies that are interpreted as sand deposits of sufficient thickness to mask underlying black sand or have replaced the black sand that might have been there. The survey will have to be followed up with intensive testing in the field to correlate with the findings of the Total Field Magnetics survey.

## 10. Qualifications

Stefan Ostermaier, Geophysical Surveyor, Managing Partner, Arctic Geophysics Inc.

[stefan.ostermaier@arctic-geophysics.com](mailto: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 resistivity / 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 **Total Magnetic Field Geophysical Survey on the 5 Mile Prospecting Lease IW00458 in the Mount Nansen area, Yukon** for assessment credit, the surveys were carried out by Arctic Geophysics Inc. of Whitehorse, Yukon Territory

A handwritten signature in black ink, appearing to read 'Stefan Ostermaier', written in a cursive style.

Stefan Ostermaier

Appendix

## GPS Data

(see CD – Data files excessively large to be included with this report)



# INVOICE

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**Stefan Ostermaier**  
PO Box 31441  
Whitehorse, YT, Y1A 6K8

Date: 2016-07-20

Invoice No.: 2016-O(M)07-0105

Quantity	Description	Amount
<b>Job:</b> Unnamed Tributary		
<b>Payment Terms:</b> Mag Survey (5 Mile Lease)		
<b>Survey</b>		
3 days	GEM GSM-19 High Precision Over Hauser Magnetometer	
	GPS/Mag Operator (geologist) @ 945.00/day	\$2,835.00
3 days	Field Technician - Line / Brush Cutting/Clearing/Griding @	\$1,380.00
3 days	Chainsaw/Fuel	\$110.00
1 day	Data Analysis, Interpretation/Processing (75% of Survey Rate)	\$945.00
	<i>for Assessment Reporting</i>	
	<b>Total Survey Cost</b>	<b>\$5,270.00</b>
	Subtotal	\$ 5,270.00
	G.S.T. (5%) #846363216RT0001	263.50
	<b>TOTAL</b>	<b>\$ 5,533.50</b>