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**Geophysical Report:**

**Resolve™ Frequency Domain Airborne EM Survey**

**Aussie Creek Placer Leases**

<b>Lease</b>	<b>Tenure Holder:</b>
ID01248	Ryanwood Exploration Inc.
ID01249	Wildwood Exploration Inc.
ID01250	Cathy Wood
ID01251	Daniel Murray

**Dawson Mining District**

NTS: **116A/04**  
Datum: **NAD 83** UTM Zone: **8N**  
Easting: **366400** Northing: **7111700**

All Work Performed Between: November 18-19, 2016  
Date of Report: Dec 19, 2016  
Prepared By: Isaac Fage

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## 1 Introduction

The 2016 exploration program undertaken on the Aussie creek and IdaOro creek placer leases consisted of an Airborne Frequency Domain EM (FDEM) survey. A total of 100 line km of airborne EM resistivity was surveyed across all leases on November 18-19, 2016. The Resolve™ FEM system was contracted by CGG for this work. The objective of the survey was to determine depth to bedrock and overburden horizon thicknesses across large sections of the leases to focus targets of highest economic placer gold potential. Aussie Creek is a placer gold target located in the Klondike River drainage system in the Ogilvie Mountains of the Yukon Territory, Canada.

All FDEM airborne survey work was supervised by GroundTruth Exploration Inc.

## 2 History

No significant historic placer exploration has been documented on the Aussie creek draining. Previous survey work has been conducted on the leases in 2015, including: UAV drone coverage on the ID01248,49 leases and upper half of ID01250 in; DC Resistivity surveys on all leases, and a Rotary Air Blast (RAB) drilling program in October 2015.

## 3 Location and Access

The Aussie Creek placer leases ID01248, ID01249, ID01250, and ID01251 are located on Aussie Creek and an unnamed tributary that flows from the IdaOro deposit (IdaOro Creek) (figure 1). They are approximately 51km EastNorthEast of the Dempster Highway turn-off from the Klondike Highway, and 20km EastNorthEast of the Brewery Creek Deposit. (figure 1)

All leases fall within the Dawson Mining District on NTS mapsheet 116A/04.

The property is accessed by helicopter from Dawson City, 82km to the west.

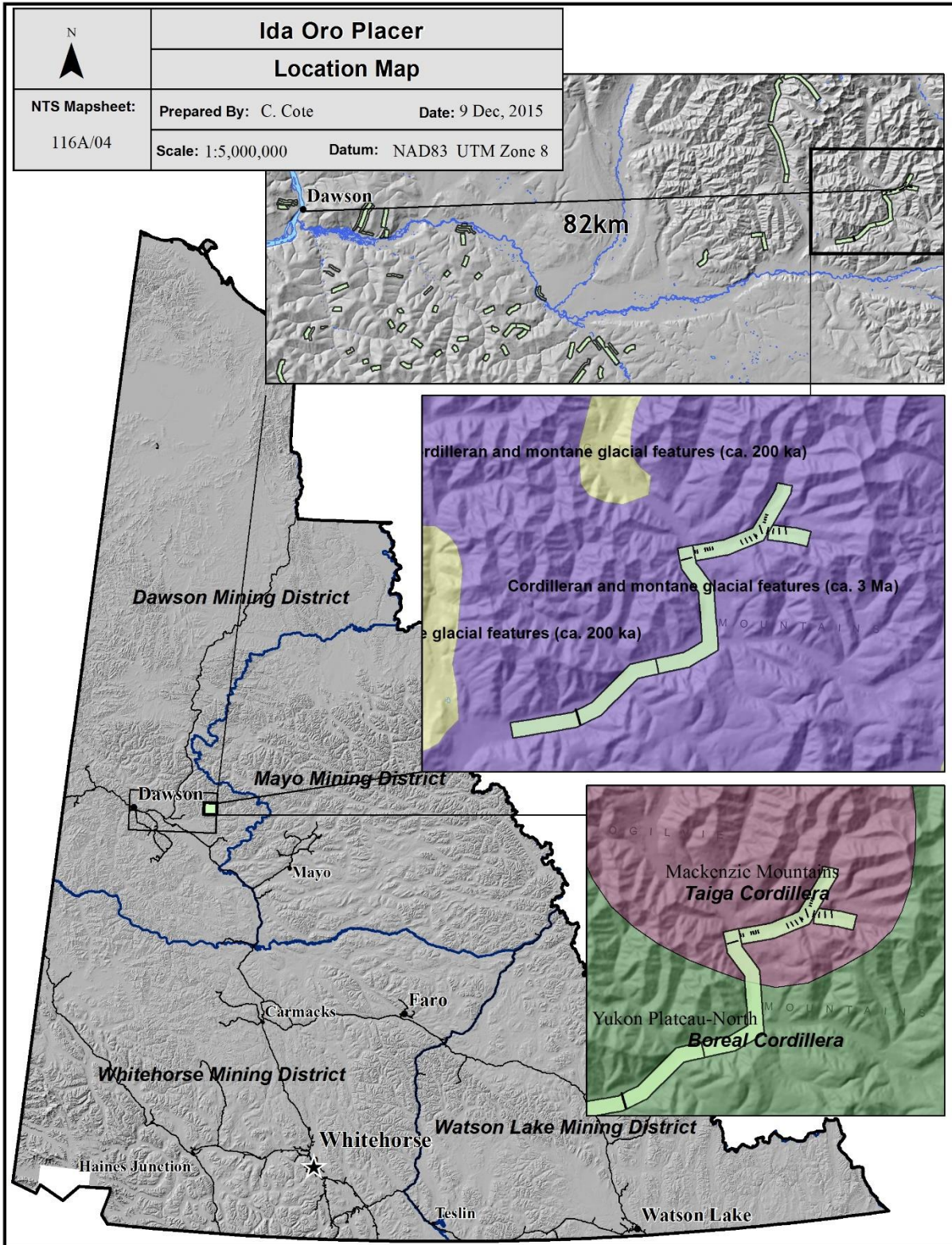


Figure 1: Location, Glacial Extent, and Eco Zones

#### 4 Property Descriptions

The Aussie Creek placer lease ID01248 is a 3 mile long Placer Lease 100% owned by Ryanwood Exploration Inc. Placer lease ID01249 is a 1 mile long Placer Lease 100% owned by Wildwood Exploration Inc. Lease ID01250 is a 4 mile long Placer Lease 100% owned by Cathy Wood and ID01251 is a 4 mile lease owned by Daniel Murray.

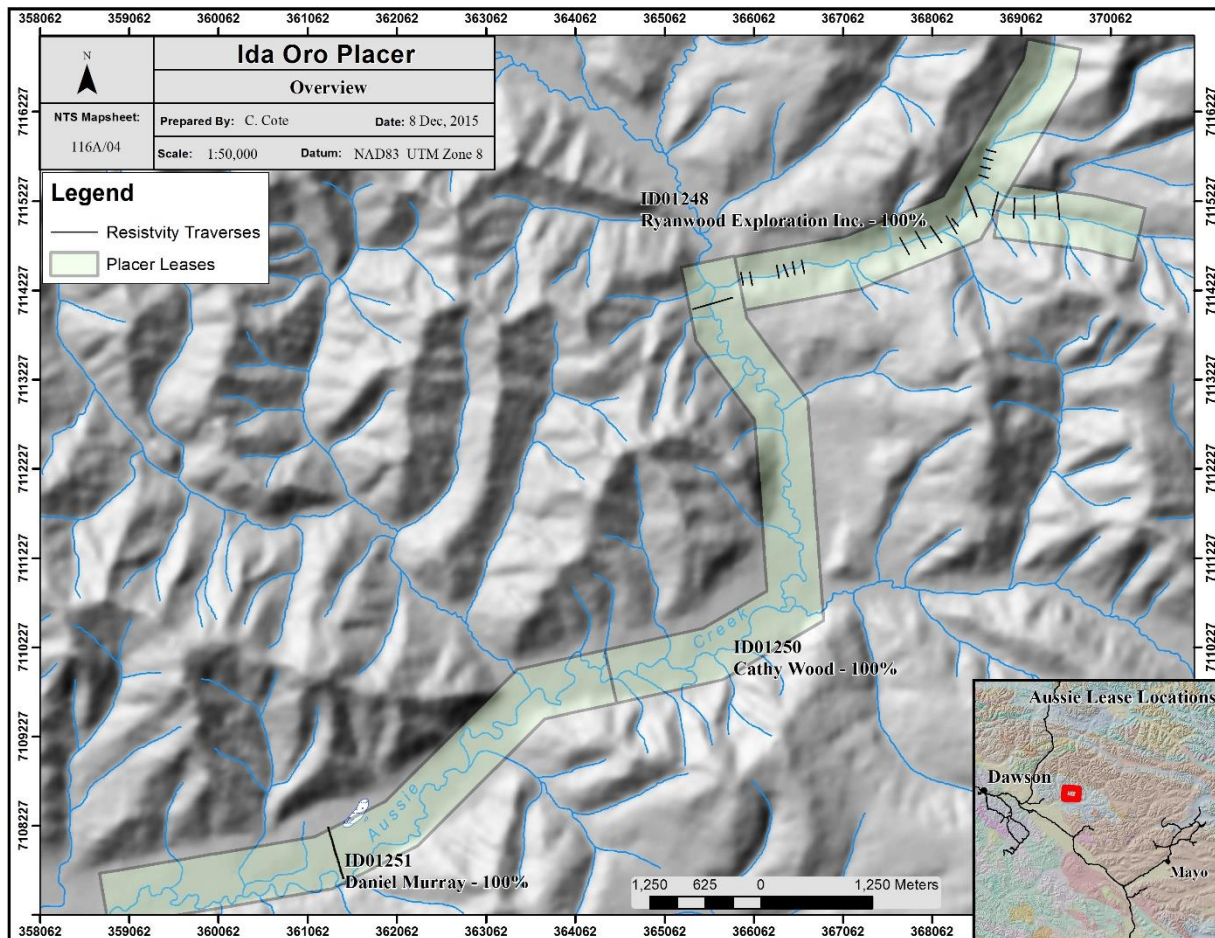


Figure 2: Overview of Placer Leases

## 5 Physiography

The Aussie Creek placer properties cover Aussie Creek and two forks of an unnamed tributary (IdaOro Creek) that flows into Aussie Creek at E365616E, N7114242N (figure 2).

Lease ID1251 and the southern half of Lease ID01250 lies within the Yukon Plateau-North region of Canada's Boreal Cordillera, while the northern half of Lease ID01250, along with Leases ID01248 and ID01249 are in the Mackenzie Mountain region of Canada's Taiga Cordillera ecozone (figure 1).

Due to its location in Canada's discontinuous permafrost zone, permafrost is distributed unevenly throughout the property. The valley bottoms and northern slopes have thick moss mats, black spruce, and alder thickets over ice rich permafrost, while southern slopes are generally more sparsely vegetated with ground leaf cover and white spruce, aspen and birch forests.

## 6 Climate

### 6.1 Yukon Plateau-North

Mean annual temperatures in this ecoregion are near  $-5^{\circ}\text{C}$ , but there is a strong seasonal variability accentuated by difference of elevation. Mean January temperatures range from below  $-30^{\circ}\text{C}$  in the lower valleys (Fig. 176-3) to above  $-20^{\circ}\text{C}$  over the higher terrain. This gradient is dramatically reversed by July as mean temperatures in the lower valley floors of  $15^{\circ}\text{C}$  drop to near  $8^{\circ}\text{C}$  over the higher terrain. Extreme temperatures in the lower valley floors have ranged from  $-62$  to  $36^{\circ}\text{C}$ . Over higher terrain the extremes are more moderate. Frost can occur at any time of the year but is less likely from mid-June to late July.

Precipitation is relatively moderate showing an increase over eastern sections as a result of upslope conditions over the higher terrain of the east. Annual amounts range from near 300 mm in a minor rain shadow along the Tintina Trench, especially near Ross River, to near 600 mm over the higher terrain of the eastern sections. Amounts are fairly low from December through May, being only 20 to 30 mm per month. The wettest period is during July and August, with monthly amounts of 40 to 80 mm from rainshowers and thunderstorms. Winds are generally light, and only moderate to strong in association with thunderstorms or unusually active weather systems.

*Section quoted from:*

([http://www.emr.gov.yk.ca/oilandgas/pdf/bmp\\_boreal\\_cordillera\\_ecozone.pdf](http://www.emr.gov.yk.ca/oilandgas/pdf/bmp_boreal_cordillera_ecozone.pdf))

### 6.2 Mackenzie Mountain

Mean annual temperatures are near  $-6^{\circ}\text{C}$ . There is a seasonal variability, but locally it is not as marked as in many other Yukon ecoregions due to the consistently high elevations here. Mean January temperatures are near  $-25^{\circ}\text{C}$  and in July near  $8^{\circ}\text{C}$ . Extreme temperatures from near  $-50$  to  $30^{\circ}\text{C}$  have occurred in the valley floors but probably only range from  $-35$  to  $15^{\circ}\text{C}$  over the highest terrain. In part due to the higher elevations, thawing temperatures can occur in all the

winter months and frosts at anytime during the summer. Precipitation is relatively heavy, particularly over the eastern portions of this ecoregion. Typical annual amounts range from 450 to 600 mm, higher in some years. The heaviest precipitation occurs in July and August with monthly amounts of 50 to 70 mm. Even during the summer, this precipitation can occasionally be in the form of snow, particularly over the higher terrain. The least amount of precipitation is from December to May with monthly amounts of 20 to 30 mm

*Section quoted from:*

([http://www.emr.gov.yk.ca/oilandgas/pdf/bmp\\_taiga\\_cordillera\\_ecozone.pdf](http://www.emr.gov.yk.ca/oilandgas/pdf/bmp_taiga_cordillera_ecozone.pdf))

## 7 GEOLOGICAL SETTING

The entire area is underlain by the Ordovician to lower Devonian ODR unit, primarily composed locally of shale with granitic intrusions up stream of placer claims.

### ORDOVICIAN TO LOWER DEVONIAN

ODR

#### ODR: ROAD RIVER - SELWYN

black shale and chert (1) overlain by orange siltstone (2) or buff platy limestone (3); locally contains beds as old as Middle Cambrian (4); correlations with basinal strata in Richardson Mountains include: ODR1 with CDR2 (upper part) and ODR2 with CDR4 (**Road River Gp.**)

1. black, gun-blue, or silvery white weathering black graptolitic shale and black chert; resistant grey weathering, thin to medium bedded, light grey to black, greenish grey or turquoise chert; minor argillaceous limestone (**Road River Gp., Duo Lake and Elmer Creek**)
2. rusty dark green to orange buff weathering, pyritic, burrowed, thin to thick bedded, argillite and dolomitic siltstone with members or partings of black shale and chert; minor bright orange dolostone (**Road River Gp., Steel**)
3. blue-grey weathering, black limestone; tan, buff, or dark grey weathering platy, silty limestone (**Sapper**)
4. black shale; limestone, limestone conglomerate, and interstratified argillite and pale yellow limestone

## 8 Geophysics: Resolve™ Frequency Domain EM Survey

### 8.1 Introduction

The purpose of the survey is to define the depth to bedrock and outline various overburden units such as muck, sand, gravel, large boulders and permafrost.

21 lines were cut and surveyed with a variety of line lengths and electrode spacings (figure 4). Four of these lines (IDARES15-05 to -08) were analyzed and re-surveyed at a smaller electrode spacing in order to get increased detail in an area of interest.

### 8.2 Contractors

The survey was conducted by the following GroundTruth Exploration personnel:

1. CGG Canada Services Ltd. Resolve™ FDEM Survey Contractor
2. Canadian Helicopters Helicopter Contractor
3. Bemex Consulting Intl. FDEM QC and Interpretation
4. GroundTruth Exploration Inc. Supervising Contractor



CGG Resolve™ Airborne unit preparing to take off in Dawson, YT.



### 8.3 Survey Summary

The Resolve™ was flown over 2 days on all of the placer leases. A total of 100 line km of FDEM resistivity was surveyed on 40 lines. 30 line km of Resolve was flown on ID01248, 5 line km was flown on ID01249, 60 line km flown on ID01250, and 5 line km on ID01251.

The Resolve™ is a Frequency Domain Electromagnetic system that is specialized to map horizontal and near horizontal features in the near surface (top 150m). It is equipped with the following coils: Coplanar in phase/quadrature 400Hz, 1800Hz, 8200Hz, 40kHz; and Coaxial inphase/quadrature 3300Hz. All data is converted Resistivity values. (Ohm-m).



Mel Best of Bemex Consulting International, in Dawson, YT for start up of surveys, Nov 2016

### 8.4 Data Processing

The collected data is sent to CGG for validation and initial processing. Data submitted with this report includes all raw survey data in geosoft .gdb format and differential resistivity in geosoft voxel as well as depth slices and vertical sections in geosoft .grd format.

#### 602997\_RESOLVE\_FINAL\_DATA\_ARCHIVE\_DEC\_2016

##### Geosoft Database Layout:

Variable	Description	Units
X_WGS84_Z7N	Easting WGS84 Zone 7N	m
Y_WGS84_Z7N	Northing WGS84 Zone 7N	m
Fid	fiducial	-
Flight	Flight number	-
altrad_heli	Helicopter height above ground from radar altimeter	m
altlas_tx	Bird height above ground from laser altimeter	m
ZHG_TX	Bird height above geoid	m
DTM	Digital terrain model (above geoid)	m
diurnal_cor	Diurnal correction – base removed	nT
MAG_RAW	Total magnetic field, - spiked rejected	nT
MAG_LD	Total magnetic field, - corrected for lag and diurnal	nT
IGRF	international geomagnetic reference field	nT
RMI	Residual magnetic intensity	nT
cpq400_filt	Coplanar inphase 400 Hz, spherics rejected	ppm
cpq400_filt	Coplanar quadrature 400 Hz spherics rejected	ppm
cpq1800_filt	Coplanar inphase 1800 Hz spherics rejected	ppm
cpq1800_filt	Coplanar quadrature 1800 Hz spherics rejected	ppm
cxq3300_filt	Coaxial inphase 3300 Hz spherics rejected	ppm
cxq3300_filt	Coaxial quadrature 3300 Hz spherics rejected	ppm
cpq8200_filt	Coplanar inphase 8200 Hz spherics rejected	ppm
cpq8200_filt	Coplanar quadrature 8200 Hz spherics rejected	ppm
cpq40k_filt	Coplanar inphase 40 kHz spherics rejected	ppm
cpq40k_filt	Coplanar quadrature 40 kHz spherics rejected	ppm
cpq140k_filt	Coplanar inphase 140 kHz spherics rejected	ppm
cpq140k_filt	Coplanar quadrature 140 kHz spherics rejected	ppm
cpq400	Coplanar inphase 400 Hz, FINAL	ppm
cpq400	Coplanar quadrature 400 Hz FINAL	ppm
cpq1800	Coplanar inphase 1800 Hz FINAL	ppm
cpq1800	Coplanar quadrature 1800 Hz FINAL	ppm
cxq3300	Coaxial inphase 3300 Hz FINAL	ppm
cxq3300	Coaxial quadrature 3300 Hz FINAL	ppm
cpq8200	Coplanar inphase 8200 Hz FINAL	ppm
cpq8200	Coplanar quadrature 8200 Hz FINAL	ppm

cpi40k	Coplanar inphase 40 kHz FINAL	ppm
cpq40k	Coplanar quadrature 40 kHz FINAL	ppm
cpi140k	Coplanar inphase 140 kHz FINAL	ppm
cpq140k	Coplanar quadrature 140 kHz FINAL	ppm
res400	Apparent resistivity 400 Hz	ohm·m
res1800	Apparent resistivity 1800 Hz	ohm·m
res8200	Apparent resistivity 8200 Hz	ohm·m
res40k	Apparent resistivity 40 kHz	ohm·m
res140k	Apparent resistivity 140 kHz	ohm·m
res3300	Apparent resistivity 3300 Hz	ohm·m
dep400	Apparent depth 400 Hz	m
dep1800	Apparent depth 1800 Hz	m
dep8200	Apparent depth 8200 Hz	m
dep40k	Apparent depth 40 kHz	m
dep140k	Apparent depth 140 kHz	m
dep3300	Apparent depth 3300 Hz	m
ddep400	Differential depth 400 Hz	m
ddep1800	Differential depth 1800 Hz	m
ddep8200	Differential depth 8200 Hz	m
ddep40k	Differential depth 40 kHz	m
ddep140k	Differential depth 140 kHz	m
cppl	Coplanar power line monitor	
DiffRes_150depth_by_5m[]	Differential Resistivity array sliced at 5 metre intervals to a depth of 150 metres below surface	ohm·m

Note – The null values in the GDB archive are displayed as \*.

**GroundTruth RESOLVE Grid Archive:**

**Geosoft Grids:**

block\_\*, where the '\*' denotes the block number

<b>File</b>	<b>Description</b>	<b>Units</b>
GroundTruth_RMI_block_*	Residual Magnetic intensity	nT
GroundTruth_DTM_block_*	Digital Terrain Model	m
GroundTruth_diffRes_surface_block_*	Differential Resistivity Depth Slice at surface	ohm-m
GroundTruth_diffRes_5metres_block_*	Differential Resistivity Depth Slice at 5 metres	ohm-m
GroundTruth_diffRes_10metres_block_*	Differential Resistivity Depth Slice at 10 metres	ohm-m
GroundTruth_diffRes_20metres_block_*	Differential Resistivity Depth Slice at 20 metres	ohm-m
GroundTruth_diffRes_30metres_block_*	Differential Resistivity Depth Slice at 30 metres	ohm-m
GroundTruth_diffRes_40metres_block_*	Differential Resistivity Depth Slice at 40 metres	ohm-m
GroundTruth_diffRes_50metres_block_*	Differential Resistivity Depth Slice at 50 metres	ohm-m
GroundTruth_diffRes_60metres_block_*	Differential Resistivity Depth Slice at 60 metres	ohm-m
GroundTruth_diffRes_75metres_block_*	Differential Resistivity Depth Slice at 75 metres	ohm-m
GroundTruth_diffRes_100metres_block_*	Differential Resistivity Depth Slice at 100 metres	ohm-m
GroundTruth_diffRes_125metres_block_*	Differential Resistivity Depth Slice at 125 metres	ohm-m
GroundTruth_diffRes_150metres_block_*	Differential Resistivity Depth Slice at 150 metres	ohm-m

9 Survey Results

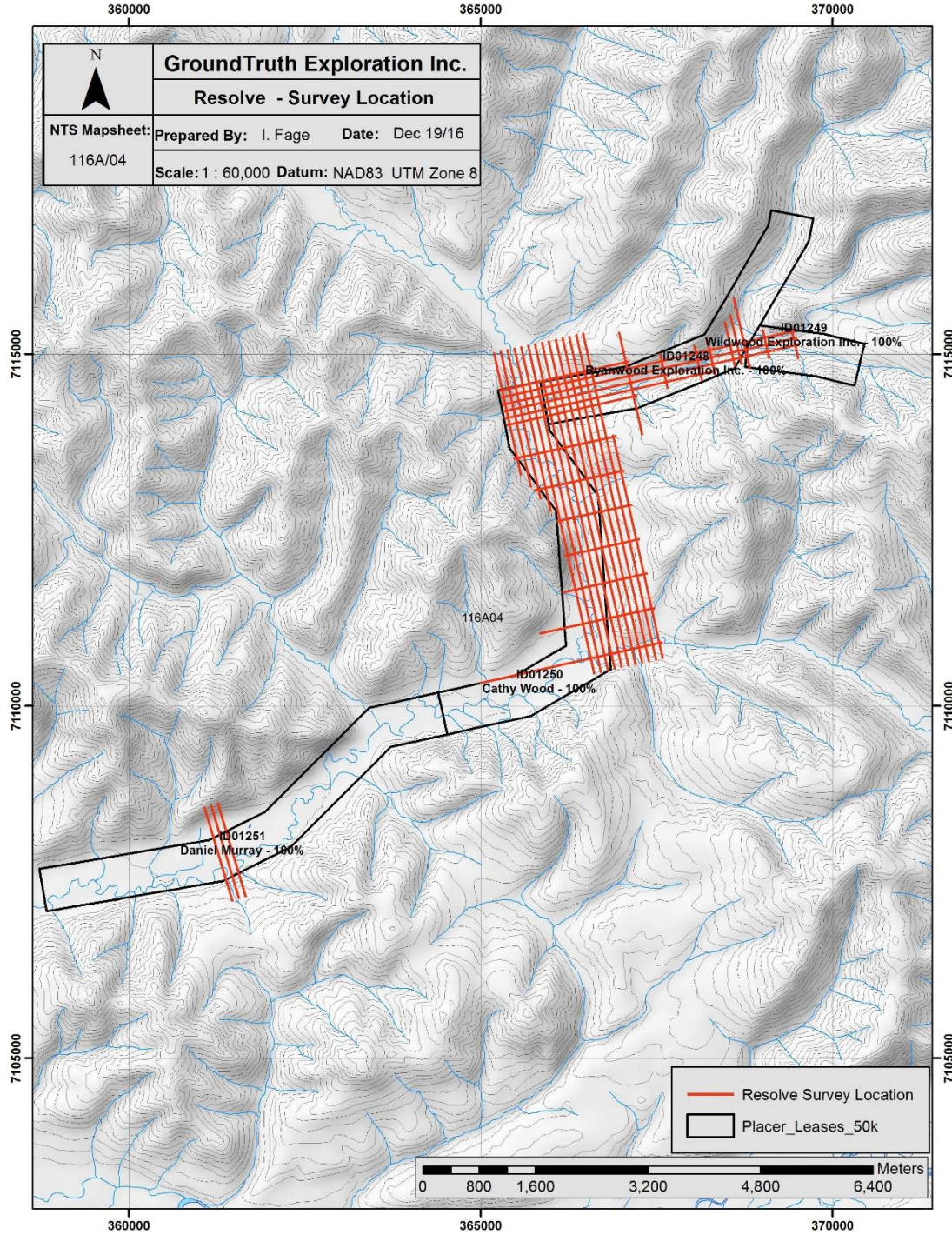
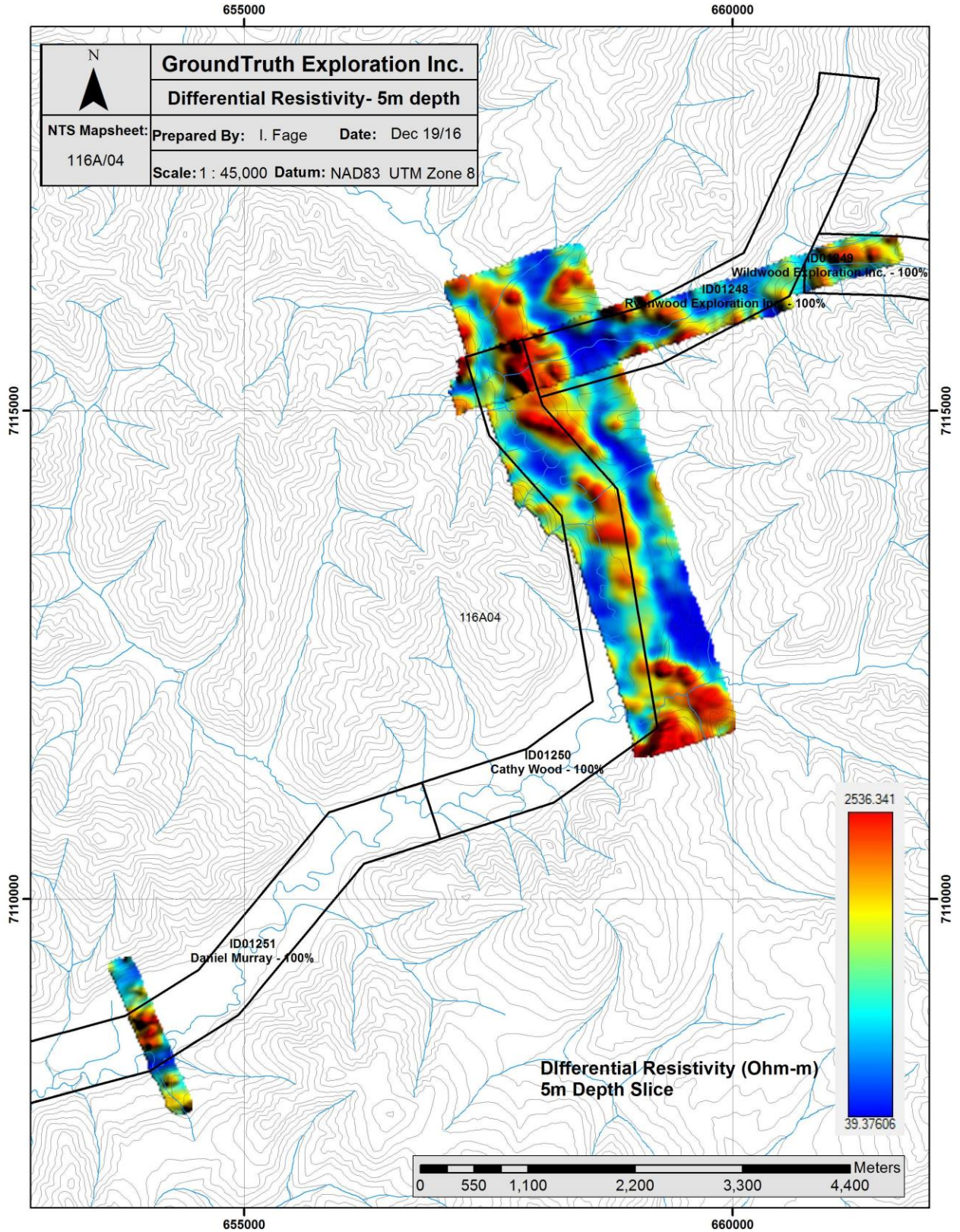
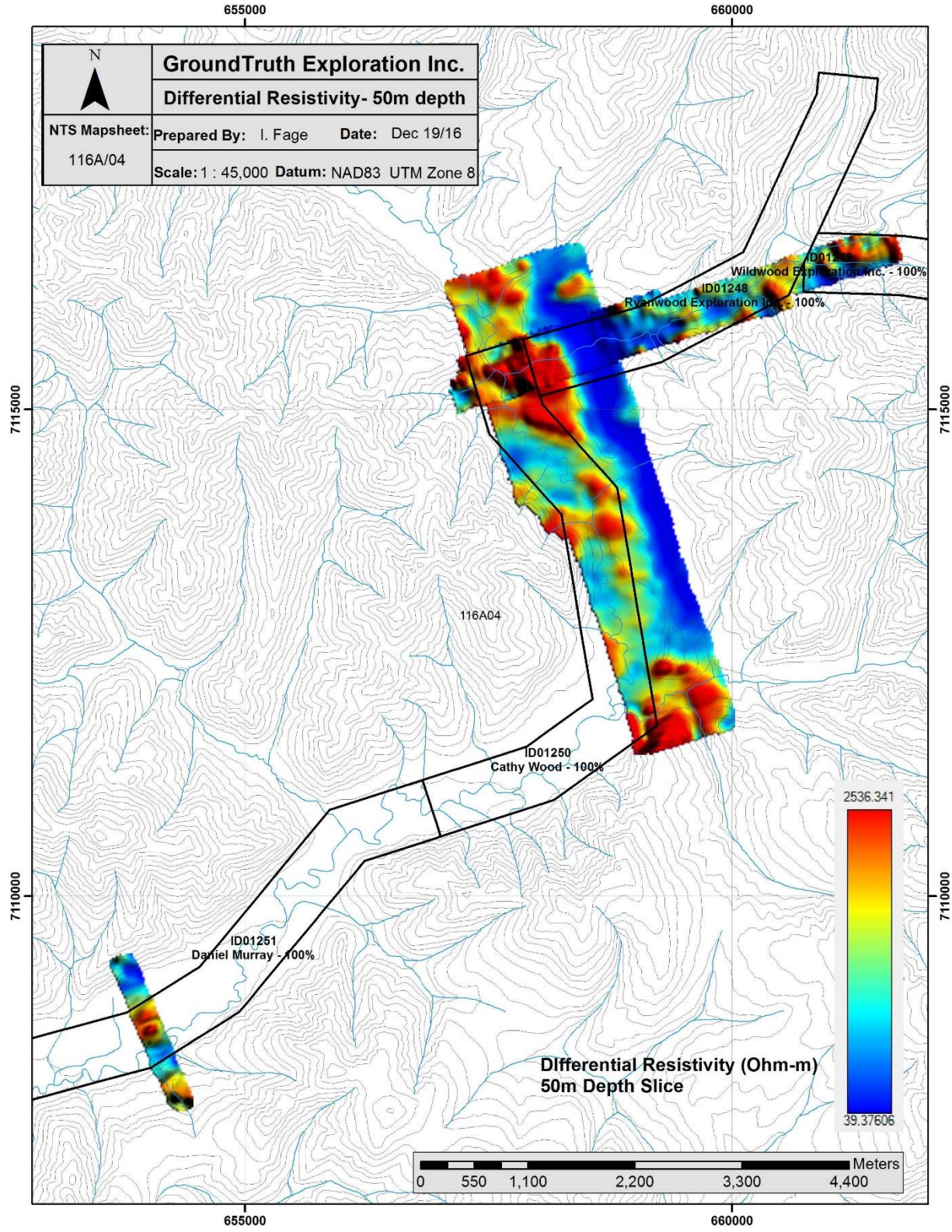


Figure 1: Resolve Survey Location Work Overview



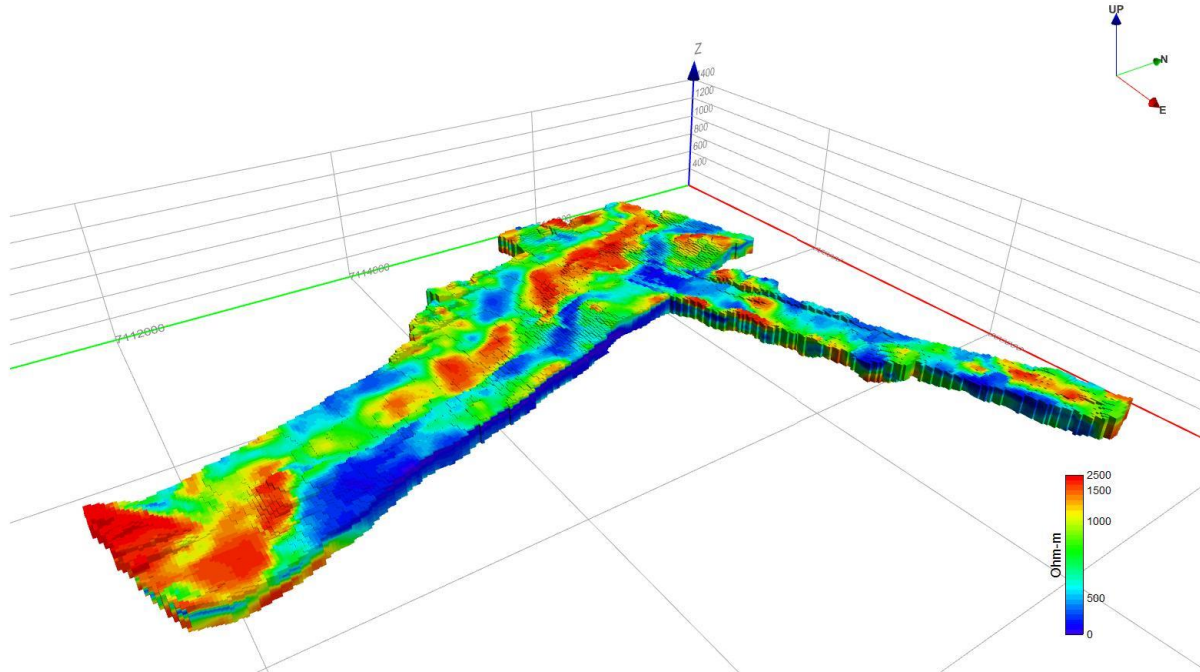
**Figure 2: Differential Resistivity on Lease ID01248-51- (5m depth slice)**



**Figure 3: Differential Resistivity on Lease ID01248-51- (50m depth slice)**

Differential Resistivity 3D Grid for ID01248, 49, 50:

Resolve 3D Grid - Differential Resistivity



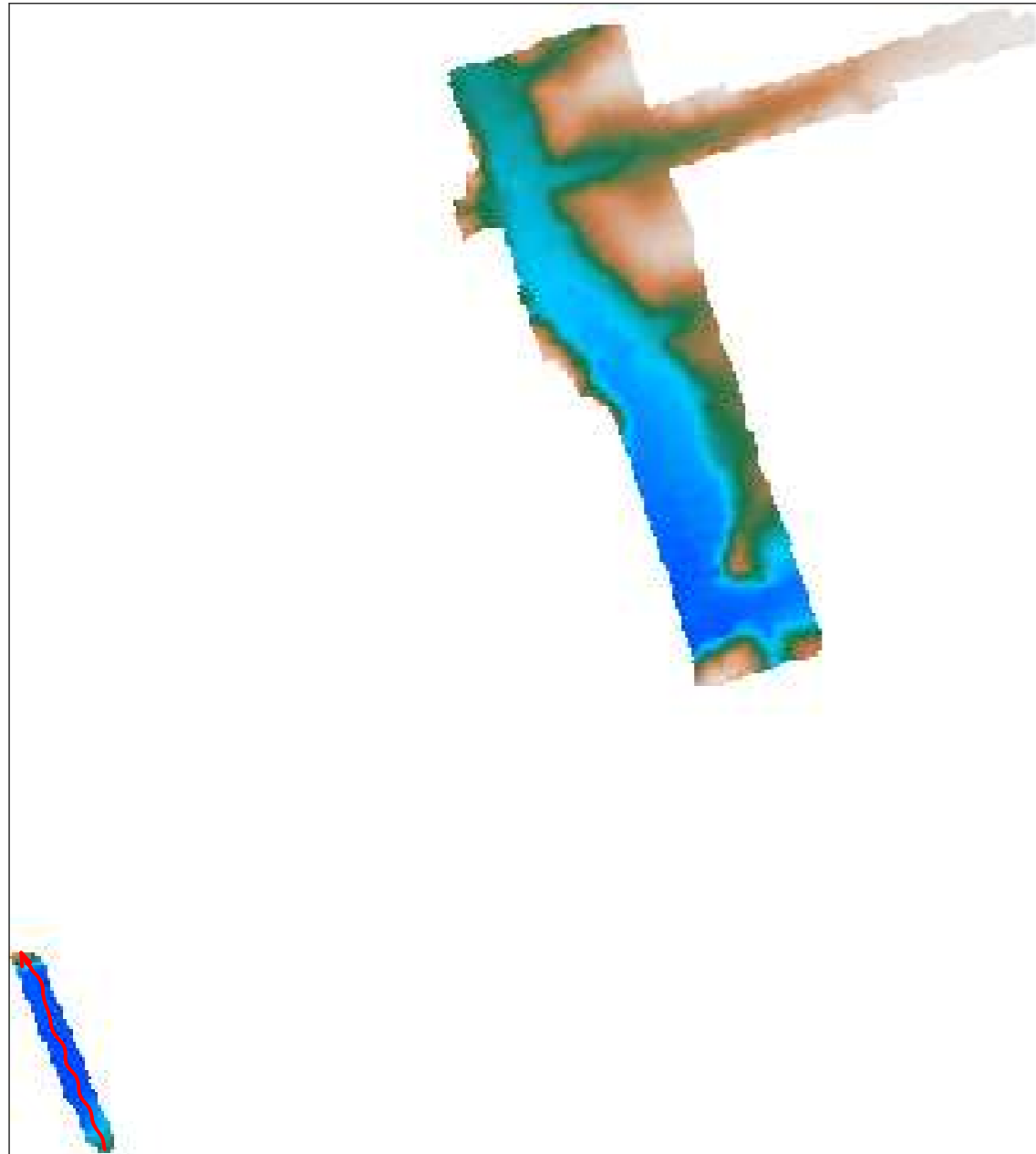
Differential Resistivity Sections for ID01248, 49, 50, 51:

(following pages)



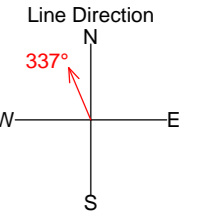
# RESOLVE AREAS 33 to 35 GROUNDTRUTH EXPLORATION RESOLVE HFEM DATA

L360020 Flight 8022  
Horizontal Scale 1:10000



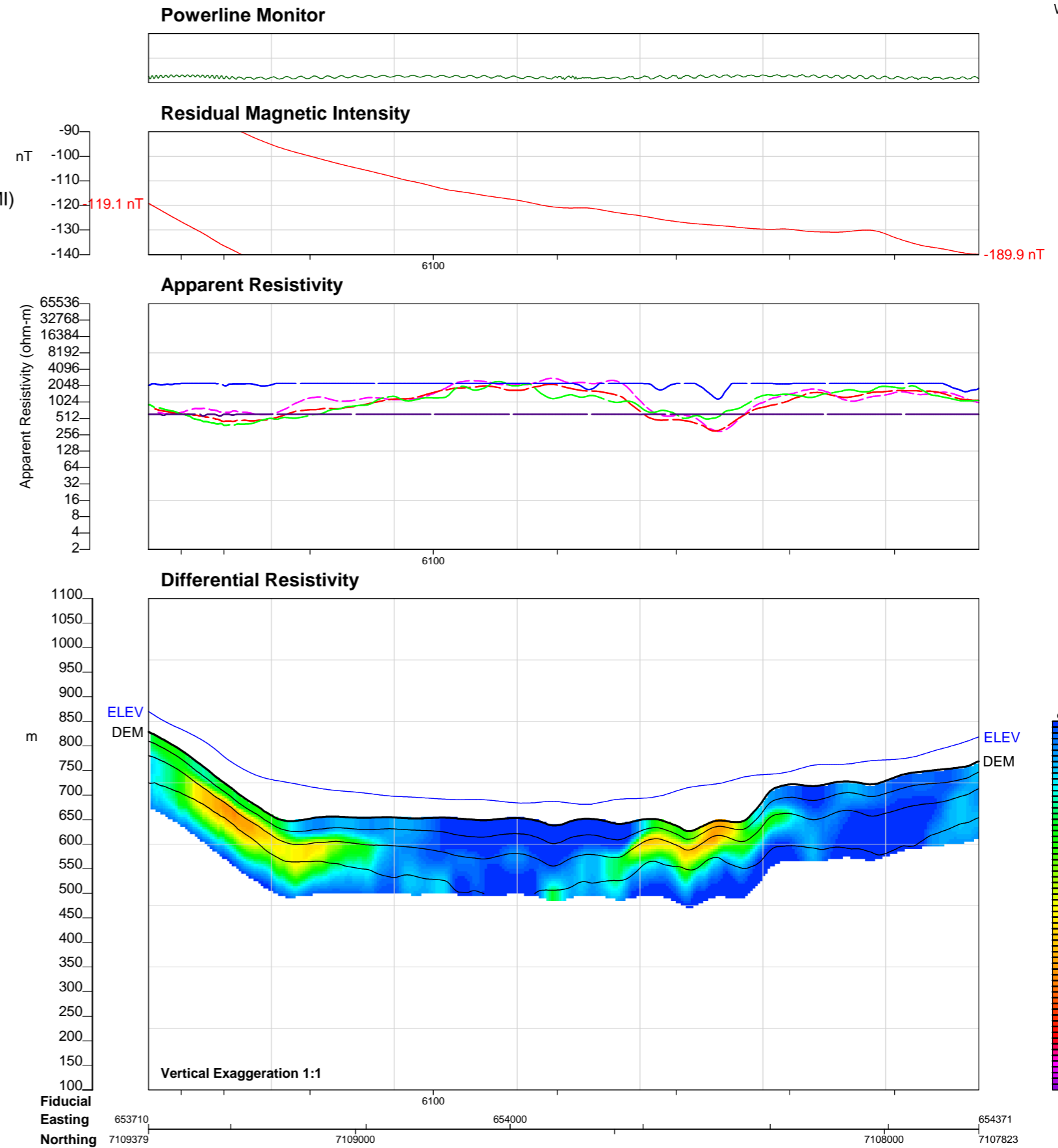
Topography with Flight Line

Projected coordinate system: WGS84 UTM zone 7N



Residual Magnetic Intensity (RMI)

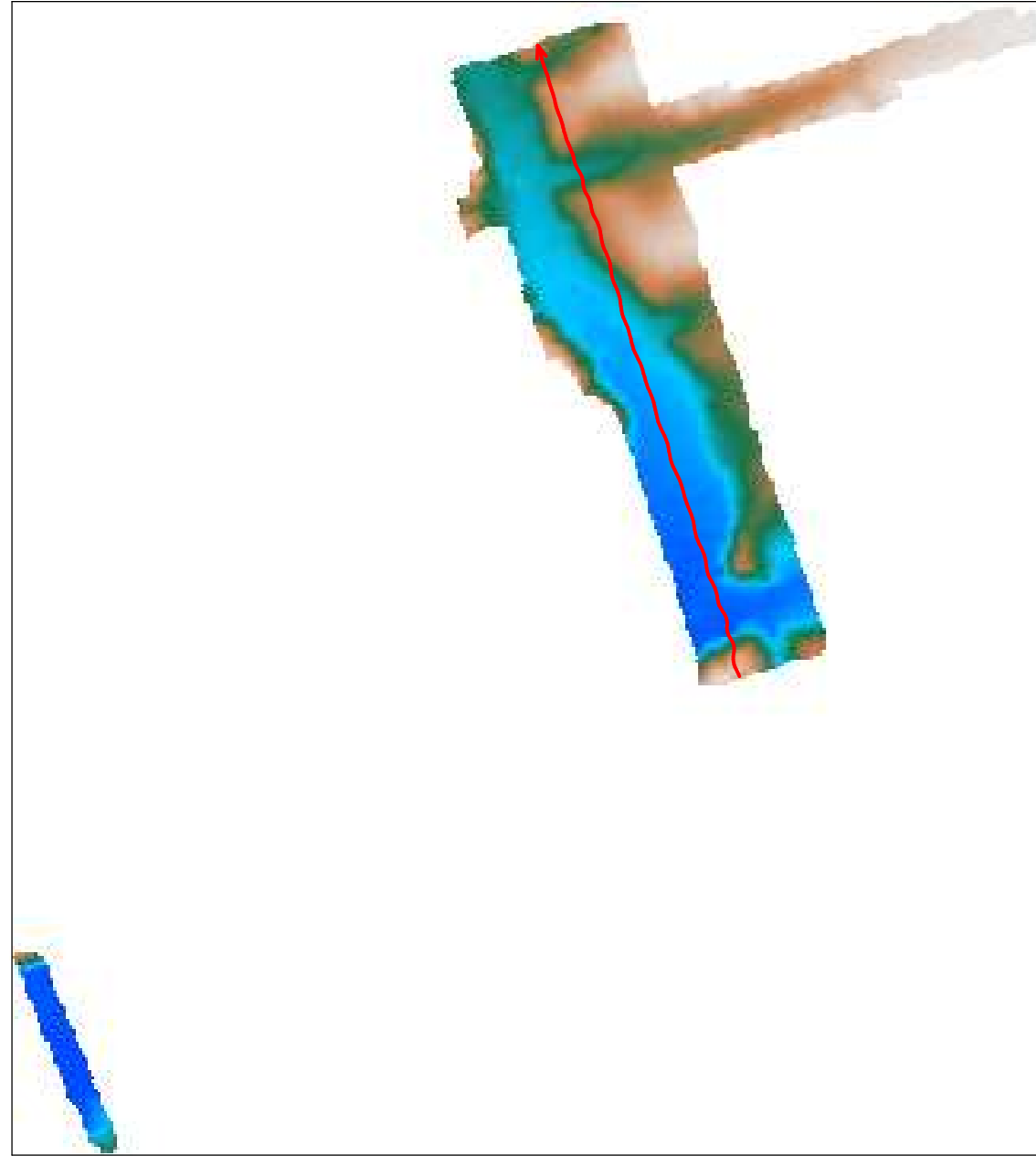
Resistivity 140K  
Resistivity 40K  
Resistivity 8200  
Resistivity 1800  
Resistivity 400



Fiducial Easting 653710 6100 654000 7108000 654371  
Northing 7109379 7109000 7108000 7107823

**RESOLVE AREAS 33 to 35**  
**GROUNDTRUTH EXPLORATION**  
**RESOLVE HFEM DATA**

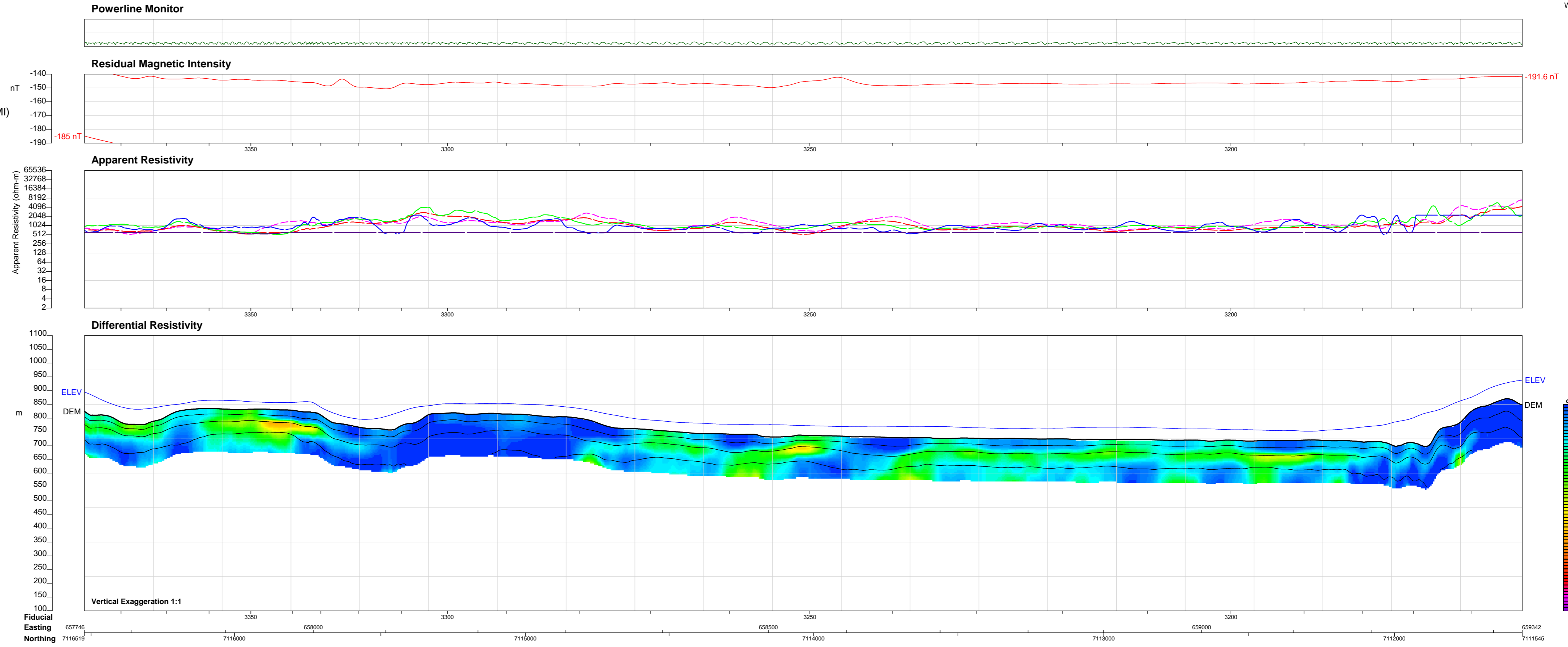
**L370080** Flight 8021  
Horizontal Scale 1:10000



Projected coordinate system: WGS84 UTM zone 7N

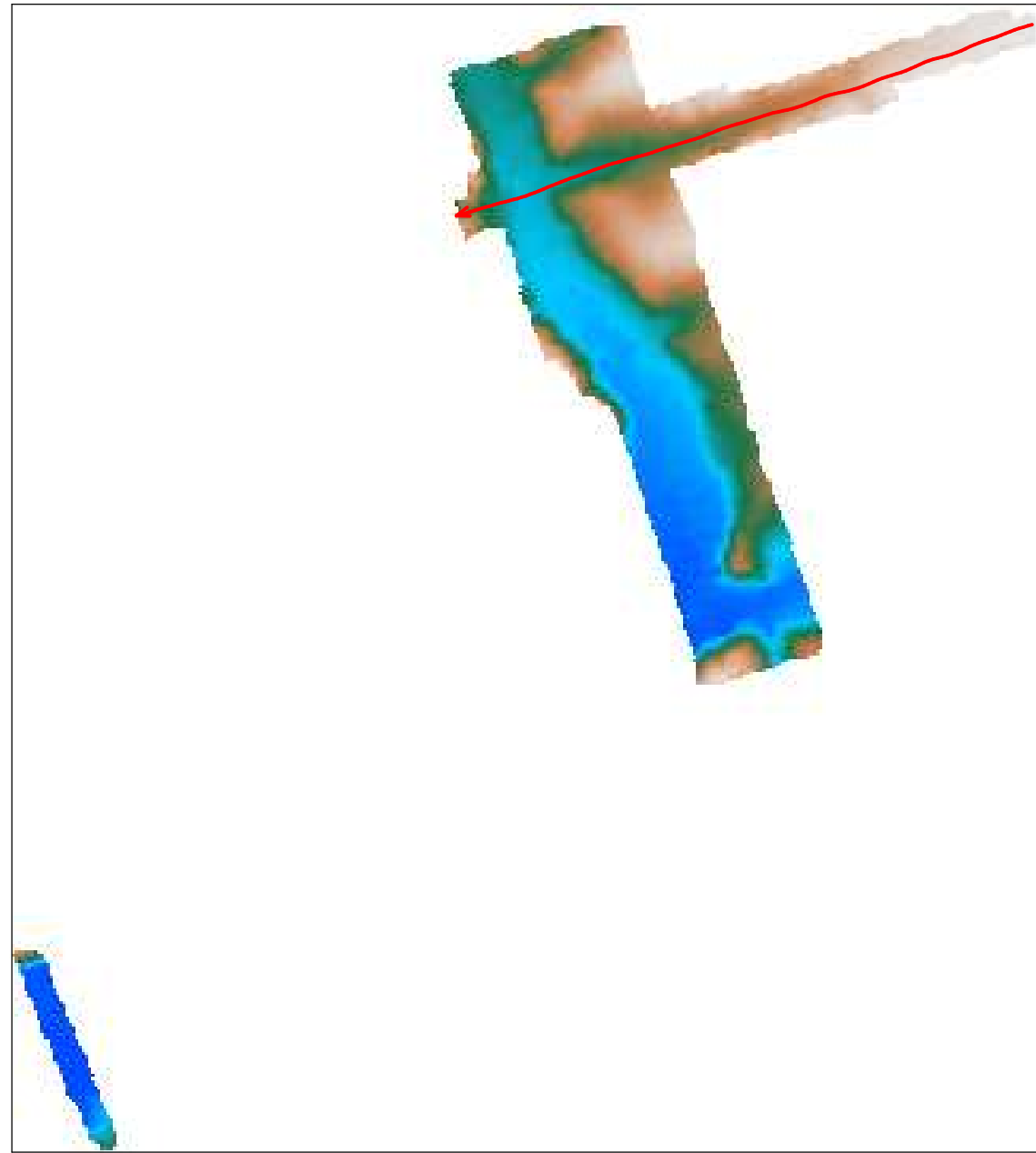
Residual Magnetic Intensity (RMI)

- Resistivity 140K
- Resistivity 40K
- Resistivity 8200
- Resistivity 1800
- Resistivity 400



**RESOLVE AREAS 33 to 35**  
**GROUNDTRUTH EXPLORATION**  
**RESOLVE HFEM DATA**

**L380040** Flight 8022  
 Horizontal Scale 1:10000

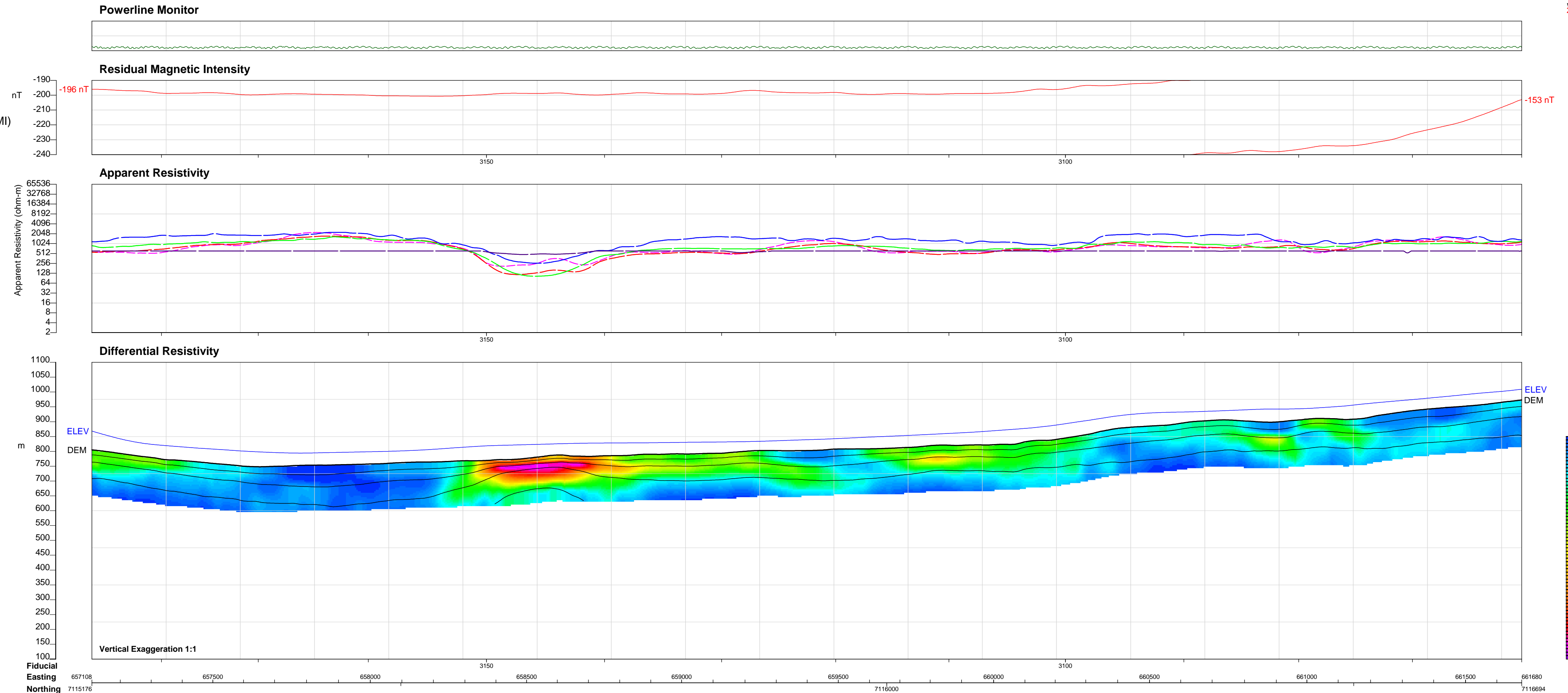


Topography with Flight Line

Projected coordinate system: WGS84 UTM zone 7N

Residual Magnetic Intensity (RMI)

- Resistivity 140K
- Resistivity 40K
- Resistivity 8200
- Resistivity 1800
- Resistivity 400



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## 10 Conclusion and Recommendations

The Resolve™ frequency domain airborne EM survey proved successful in continuously covering a large area at a much lower relative cost than ground based DC Resistivity. With the overlapping coverage of Resolve and DC Resistivity to tie in, the next step will be an evaluation of the agreement between the two. Coincident drillhole data will also be plotted against Resolve sections to determine the success of identifying bedrock contact through Airborne EM. The data has just been received from the provider at the time of writing this report, preliminary visual inspection shows that there are near surface horizons that can be discriminated using Resolve and the method is generating consistent data between survey lines on vertical sections. A rigorous study to compare observed resistivity values, features discriminated and relative agreement between Resolve and DC Resistivity is recommended. Drone Imagery overlay to identify landforms, topographic and drainage features and relationship to Resolve data is recommended. Drillhole overlay to compare logged material and bedrock depth with Resolve data is recommended.

## 11 Statement of Costs

Geophysical Work Performed On: November 18-19, 2016

### **ID01248 Expenses:** 3 mile lease, Ryanwood Exploration Inc. 100%

Helicopter Airborne Survey: Frequency Domain EM - Resolve System

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Resolve EM System/Staff \$5000/day \* 0.5 days (Nov 18-19/16) = \$2,500

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Astar B2 (Canadian Helicopters Ticket# 418970), (Nov 19/16) 1.5 hours = \$2,925

---

EM Interpretation - Bemex Consulting Intl. Inc. \$1,000/day \* 0.25 days = \$250

---

Final Report and Plotting by GroundTruth Exploration Inc. = \$250

---

Total: \$5,925

### **ID01249 Expenses:** 1 mile lease, Wildwood Exploration Inc. 100%

Helicopter Airborne Survey: Frequency Domain EM - Resolve System

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Resolve EM System/Staff \$5000/day \* 0.25 days (Nov 18-19/16) = \$1,250

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Astar B2 (Canadian Helicopters Ticket# 418970), (Nov 19/16) 0.3 hours = \$585

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EM Interpretation - Bemex Consulting Intl. Inc. \$1,000/day \* 0.25 days = \$250

---

Final Report and Plotting by GroundTruth Exploration Inc. = \$250

---

Total: \$2,335

**ID01250 Expenses: 4 mile lease, Cathy Wood 100%**

Helicopter Airborne Survey: Frequency Domain EM - Resolve System

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Resolve EM System/Staff \$5000/day \* 1.0 days (Nov 18-19/16) = \$5,000

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Astar B2 (Canadian Helicopters Ticket# 418969-70), (Nov 18-19/16) 2.5 hours = \$4,875

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EM Interpretation - Bemex Consulting Intl. Inc. \$1,000/day \* 0.25 days = \$250

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Final Report and Plotting by GroundTruth Exploration Inc. = \$250

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Total: \$10,375

**ID01251 Expenses: 4 mile lease, Daniel Murray 100%**

Helicopter Airborne Survey: Frequency Domain EM - Resolve System

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Resolve EM System/Staff \$5000/day \* 0.25 days (Nov 18/16) = \$1,250

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Astar B2 (Canadian Helicopters Ticket# 418969), (Nov 18/16) 1.2 hours = \$2,340

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EM Interpretation - Bemex Consulting Intl. Inc. \$1,000/day \* 0.25 days = \$250

---

Final Report and Plotting by GroundTruth Exploration Inc. = \$250

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Total: \$4,090

## 12 References

**Regional Geology:** 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)

**Airborne Geophysics:** Lowe, C., Miles, W., and Kung, R. and Makepeace, A.J. 2003: Aeromagnetic data over the Yukon Territory in Yukon digital geology, Version 2.0, S.P. Gordey and A.J. Makepeace (comp.); Geological Survey of Canada Open File 1749 and Yukon Geological Survey Open File 2003-9(D)

**Regional Stream Geochemistry:** Heon, D. (compiler), Yukon Regional Geochemical Database 2003, [http://www.geology.gov.yk.ca/databases\\_gis.html](http://www.geology.gov.yk.ca/databases_gis.html)

**Yukon Minfile Occurrences:** <http://data.geology.gov.yk.ca/>

**Yukon Terranes:** Colpron, M. and Nelson, J.L., 2011. A Digital Atlas of Terranes for the Northern Cordillera. Accessed online from Yukon Geological Survey ([www.geology.gov.yk.ca](http://www.geology.gov.yk.ca)), September 23, 2011

**Mineral Titles:** Yukon Mining Recorder, Mining Claims Database – [www.yukonminingrecorder.ca](http://www.yukonminingrecorder.ca)

**Topographic data:** NR Canada, CanVec Topographic Database- [www.geogratis.ca](http://www.geogratis.ca)

Additional review of various published scientific and reporting papers on the geology and mineral deposits of the region for indirect reference.

## 13 Qualification

I, Isaac Fage have been president of GroundTruth Exploration in Dawson City since May 2010. I have worked continuously in Mineral Exploration since 2004. I hold an advanced diploma in Remote Sensing from the Centre of Geographic Sciences in Lawrencetown, Nova Scotia.

I have overseen the survey work described in this report.

Dated this 19th of December, 2016 in Amherst, Nova Scotia, Canada

Respectfully submitted

Isaac Fage