

*Operations Report for TRUE CLAIM EXPLORATION INC.  
Gradient-Magnetic, Radiometric and XDS VLF-EM Survey; SCADDING TOWNSHIP PROPERTY, Sudbury, ON*



---

**Operations Report for  
TRUE CLAIM EXPLORATION INC.**  
Gradient-Magnetic, Radiometric and XDS VLF-EM Survey  
SCADDING TOWNSHIP PROPERTY  
Sudbury, Ontario

June 7, 2010

**Report #: B-313**

Prepared by:  
Charles Barrie, Managing Partner  
**Terraquest Ltd.**

## Table of Contents

<b>1. INTRODUCTION .....</b>	<b>4</b>
1.1. EXECUTIVE SUMMARY .....	4
1.2. SURVEY LOCATION .....	5
<b>2. SURVEY SPECIFICATIONS .....</b>	<b>6</b>
2.1. LINE SPECIFICATIONS .....	6
2.2. NAVIGATION SPECIFICATIONS .....	7
2.3. FLIGHT PLAN .....	9
2.4. TOLERANCES - REFLIGHT .....	9
1. Traverse Line Interval .....	9
2. Terrain Clearance: .....	10
3. Diurnal Variation: .....	10
4. GPS Data: .....	10
5. Radio Transmission: .....	10
6. Sample Density: .....	10
2.5. NAVIGATION AND RECOVERY .....	11
<b>3. AIRBORNE GEOPHYSICAL EQUIPMENT .....</b>	<b>12</b>
3.1. EQUIPMENT SUMMARY .....	12
3.2. SURVEY AIRCRAFT .....	13
1. Aircraft Specifications .....	13
2. Aircraft Modifications .....	13
3.3. SURVEY EQUIPMENT AND SPECIFICATIONS: .....	14
1. Data Acquisition System .....	14
2. Magnetics: .....	14
3. Compensation Sensor .....	15
4. XDS VLF-EM System .....	15
5. Spectrometer System .....	15
6. Radar Altimeter .....	16
7. Barometric Altimeter .....	16
8. Navigation System .....	16
9. GPS Differential Receiver .....	16
10. Camera .....	17
<b>4. BASE STATION EQUIPMENT .....</b>	<b>18</b>
4.1. BASE STATION MAGNETOMETER / GPS RECEIVER .....	18
<b>5. TESTS AND CALIBRATIONS .....</b>	<b>19</b>
5.1. MAGNETIC FIGURE OF MERIT .....	19
5.2. RADAR ALTIMETER CALIBRATION .....	19
5.3. RADIOMETRIC SAMPLE CHECKS .....	19
5.4. RADIOMETRIC SENSITIVITY FACTORS .....	19
5.5. RADIOMETRIC ALTITUDE ATTENUATION .....	19
5.6. RADIOMETRIC COMPTON COEFFICIENTS .....	19

<b>6. LOGISTICS .....</b>	<b>20</b>
6.1. PERSONNEL .....	20
6.2. FIELD REPORTING.....	20
6.3. BASE OF OPERATIONS .....	20
6.4. ACCOMMODATION.....	20
<b>7. DATA PROCESSING .....</b>	<b>21</b>
7.1. DATA QUALITY CONTROL & PRELIMINARY PROCESSING .....	21
7.2. FINAL MAGNETIC DATA PROCESSING.....	21
7.3. FINAL ELECTROMAGNETIC DATA PROCESSING .....	23
7.4. FINAL RADIOMETRIC DATA PROCESSING.....	24
7.5. LIST OF FINAL PRODUCTS.....	29
<b>8. SUMMARY.....</b>	<b>30</b>
<b>9. APPENDICES.....</b>	<b>31</b>
9.1. APPENDIX I - CERTIFICATE OF QUALIFICATION .....	31
9.2. APPENDIX II – DAILY LOG .....	32
9.3. APPENDIX III– FIGURE OF MERIT .....	33
9.4. APPENDIX IV – RADAR ALTIMETER CALIBRATION .....	34
9.5. APPENDIX V – RADIOMETRIC ALTITUDE ATTENUATION .....	35
9.6. APPENDIX VI – RADIOMETRIC COSMIC CALIBRATION .....	37
9.7. APPENDIX VII – PAD TESTS: COMPTON COEFFICIENTS .....	39
9.8. APPENDIX VIII – SENSITIVITIES BRECKENRIDGE .....	41
9.9. APPENDIX IX – README FILES.....	42

# **1. Introduction**

---

## **1.1. Executive Summary**

This report describes the specifications and parameters of an airborne geophysical survey carried out for:

**TRUE CLAIM EXPLORATION INC.**

96 Hagerman Cres.,  
St. Thomas, ON  
Canada N5R 6K3

Attention: Mr. John Carter, President  
Telephone: 519-851-9202  
Email: [cartera@sympatico.ca](mailto:cartera@sympatico.ca)

The survey was performed by:

**Terraquest Ltd.,**

2 - 2800 John Street, Markham  
ON, Canada  
L3R 0E2

Phone: 905-477-2800 ext. 22  
Email: [hb@terraquest.ca](mailto:hb@terraquest.ca)

The purpose of the survey of this type is to collect geophysical data that can be used to interpret the subsurface geology for purposes of offshore exploration.

To obtain this data, the area was systematically traversed along parallel flight lines by aircraft, carrying geophysical sensors and recording equipment. The lines are spaced and oriented to intersect the geology and structure so as to provide optimum contour patterns of the geophysical data.

## 1.2. Survey Location

The survey is located in northern Ontario, approximately 30 kilometres northeast of Sudbury, immediately southeast of Lake Wanapitei. It covers primarily Scadding, Street and Davis Townships and to a minor degree extends slightly into Sudbury Regional Municipality and Loughrin Township. The survey area is accessible by an all season road leading north from Highway #17, the Trans Canada Highway, and numerous smaller roads throughout the survey area. The Canadian National Railway passes east-west through the southern part of the survey area. The survey outline is irregular in shape with 43 corners; the centre coordinates are approximately 46 degrees 39 minutes north and 80 degrees 31 minutes west.



## 2. SURVEY SPECIFICATIONS

---

### 2.1. LINE SPECIFICATIONS

Parameter	Specification	Instrument Precision
Mean Aircraft Speed	78.0 m/sec 281 km/hr	
Sampling Interval	7-8m (10Hz)	
Aircraft MTC	80 metres	+/- 5m
Flight-line Interval	100 metres	+/- 3m
Flight-line Direction	000/180 degrees	
Control-line Interval	1000 metres	+/- 3m
Control-line Direction	090/270 degrees	

Lines Type	Number of Lines	Kilometres Contract	Kilometres Flown
Traverse Lines	237	2,632.1 km	
Tie Lines	18	287.3 km	
Total		2,919.4 km	2,943.9 km

## 2.2. NAVIGATION SPECIFICATIONS

The client provided poly files of the survey outlines. The following file shows the navigation parameters including the survey corner coordinates (in WGS84 projection zone 17), line spacing, line direction, master line and other navigational parameters.

```
0 b313_1
1 U 279
2 526379.0 5155122.0 AREA CORNER 1
2 526390.0 5156710.0 AREA CORNER 2
2 524790.0 5156710.0 AREA CORNER 3
2 524790.0 5157777.0 AREA CORNER 4
2 526390.0 5157790.0 AREA CORNER 5
2 526360.0 5161465.0 AREA CORNER 6
2 526000.0 5161465.0 AREA CORNER 7
2 526040.0 5163040.0 AREA CORNER 8
2 525580.0 5163040.0 AREA CORNER 9
2 525580.0 5163514.0 AREA CORNER 10
2 523536.0 5163500.0 AREA CORNER 11
2 523513.0 5165480.0 AREA CORNER 12
2 521880.0 5165480.0 AREA CORNER 13
2 520307.0 5166234.0 AREA CORNER 14
2 520300.0 5169980.0 AREA CORNER 15
2 523490.0 5170150.0 AREA CORNER 16
2 523480.0 5168100.0 AREA CORNER 17
2 525580.0 5168120.0 AREA CORNER 18
2 525580.0 5168940.0 AREA CORNER 19
2 526810.0 5170005.0 AREA CORNER 20
2 526810.0 5173155.0 AREA CORNER 21
2 530019.0 5173155.0 AREA CORNER 22
2 530019.0 5170636.0 AREA CORNER 23
2 533213.0 5170631.0 AREA CORNER 24
2 533230.0 5170167.0 AREA CORNER 25
2 535100.0 5170167.0 AREA CORNER 26
2 535100.0 5170820.0 AREA CORNER 27
2 536040.0 5170820.0 AREA CORNER 28
2 536026.0 5172820.0 AREA CORNER 29
2 543948.0 5172820.0 AREA CORNER 30
2 543989.0 5163270.0 AREA CORNER 31
2 537858.0 5163148.0 AREA CORNER 32
2 537858.0 5161935.0 AREA CORNER 33
2 535414.0 5161919.0 AREA CORNER 34
2 535420.0 5161460.0 AREA CORNER 35
2 532890.0 5161436.0 AREA CORNER 36
2 533230.0 5158670.0 AREA CORNER 37
2 533250.0 5155280.0 AREA CORNER 38
2 531740.0 5155260.0 AREA CORNER 39
2 531740.0 5156240.0 AREA CORNER 40
2 529060.0 5156240.0 AREA CORNER 41
```

Operations Report for TRUE CLAIM EXPLORATION INC.

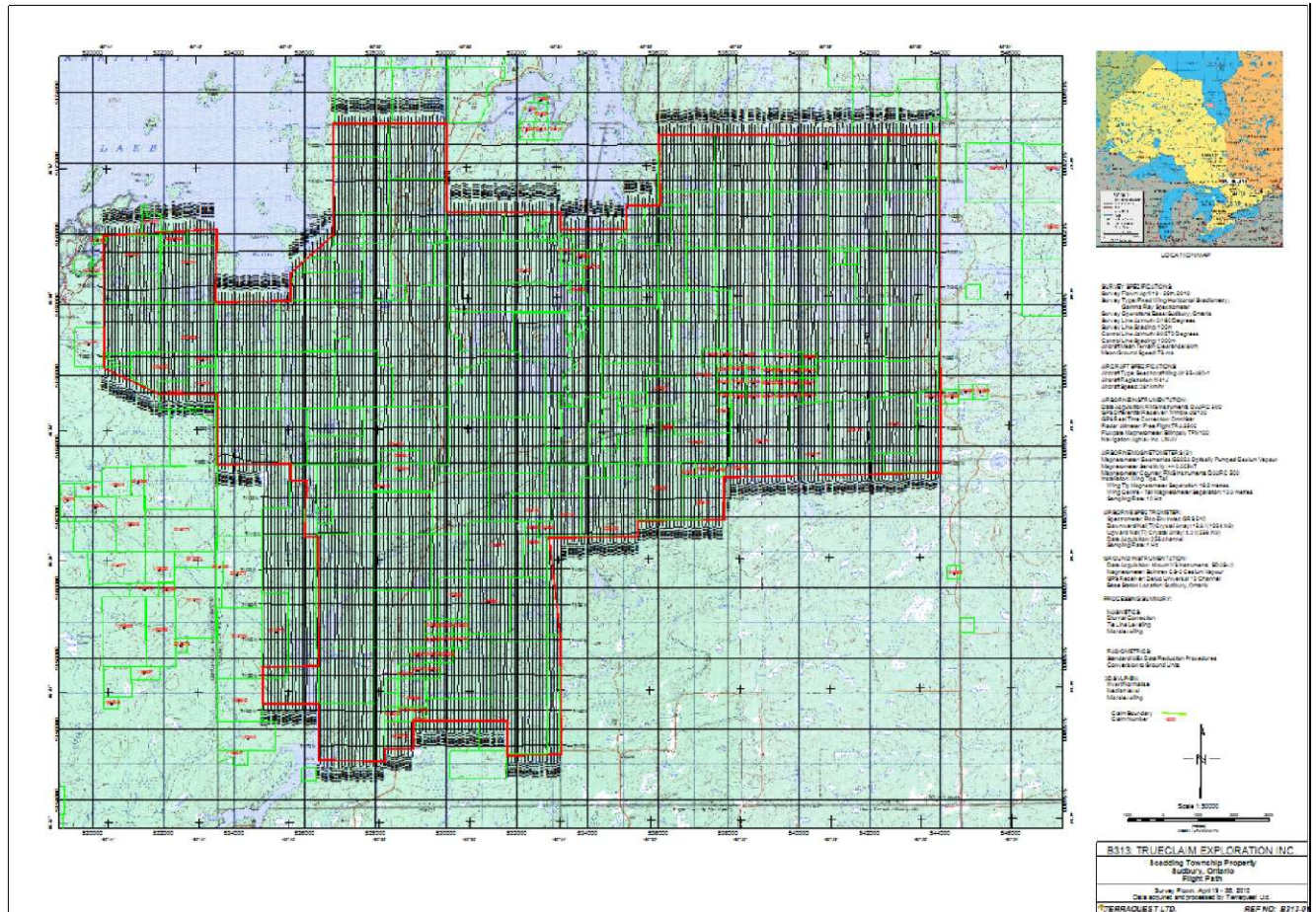
Gradient-Magnetic, Radiometric and XDS VLF-EM Survey; SCADDING TOWNSHIP PROPERTY, Sudbury, ON

2	529065.0	5155445.0		AREA CORNER 42
2	528275.0	5155445.0		AREA CORNER 43
2	528260.0	5155120.0		AREA CORNER 44
3	526379.0	5155122.0	W	WAYPOINTS 1
4	237			NUMBER OF LINES
5	100.0			SPACING, m.
6	543945	5172819		MASTER LINE BL
7	543952	5172534		MASTER LINE TL
8	75			MAX CROSS TRACK, m.
9	0	0	0	DELTA X/Y/Z
10	2			LOG FPR EVERY 2 SECS
11	0.9996000000	0.0		0.0 K0, X/Y SHIFT
14	200			LINES EXTENDED BEYOND AREA
16	10			FIRST LINE NUMBER
17	543945	5172819	180.00	MASTER POINT, HEADING
20	WGS-84	6378137.0	298.257223563	22 ELLIPSOID
21	0			NO EQUATORIAL CROSSING
30	20	9600	N 1 8	RS-232 PORT 2 INCOMING FORMAT
31	20	9600	N 1 8	RS-232 PORT 1 OUTGOING FORMAT
38	0			METRIC SYSTEM
39	5			RACE TRACK
41	0.00			SYSTEM LAG, Sec.
80	0.00			PLANNED ALTITUDE, units
83	0			GPS ALTITUDE FOR VERTICAL BAR
85	50			MAX VERTICAL BAR SCALE
102	UTM			UTM X/Y SCALE



## 2.3. FLIGHT PLAN

The following flight plan is superimposed over the available topographic map and claim numbers as supplied by the client.



## 2.4. TOLERANCES - REFLIGHT

### 1. Traverse Line Interval

Re-flights would take place if the flight line separation of the final corrected flight path is greater than 25 metres from the intended flight path over a distance greater than 1 kilometre.

**2. Terrain Clearance:**

The aircraft mean terrain clearance was smoothly maintained at 80 metres MTC in a drape mode using a computer generated flight surface based on the aircraft climb and descent rates and available digital topographic data. Normally re-flights are done if the final differentially corrected altitude deviated from the specified flight altitude by +/-15m over a distance of 3 kilometres or more if, in the pilot's opinion, it was safe to do so.

**3. Diurnal Variation:**

Diurnal activity during the survey was limited to 10 nT deviation from a 5 minute chord.

**4. GPS Data:**

GPS data included at least four satellites for accurate navigation and flight path recovery. There were no significant gaps in any of the digital data including GPS and magnetic data.

**5. Radio Transmission:**

The pilot makes no radio transmission that interferes with the magnetic response.

**6. Sample Density:**

A reflight is required if the sample density along one or more of the survey lines exceeds 10 metres over a cumulative total of 1,000 metres for the magnetic survey.

## **2.5. NAVIGATION AND RECOVERY**

The satellite navigation system was used to ferry to the survey sites and to survey along each line. The survey outline was supplied by the client and was used to establish the survey boundaries and the flight lines.

A computer generated flight surface was created from the available digital topographic data using the climb and descent rate of the specific aircraft as criteria to confine the altitude of the aircraft. The purpose of this technique is to ensure that the altitude of the aircraft is smooth and consistent over the entire survey area and especially that the differences in altitudes of the traverse and control lines at their intersections are minimized.

The flight path guidance accuracy is variable depending upon the number and condition (health) of the satellites employed. The accuracy was for the most part better than 10 metres. Real-time GPS correction service provided by Omnistar for North America improves the accuracy to less than 3 metres.

### 3. AIRBORNE GEOPHYSICAL EQUIPMENT

The primary airborne geophysical equipment includes three high sensitivity cesium vapour magnetometers located in the tail and two wing tip pods, a proprietary VLF-EM system and a Spectrometer system. Ancillary support equipment includes a tri-axial fluxgate magnetometer, digital camera, CD recorder, radar altimeter, barometric altimeter, GPS receiver with a real-time correction service, and a navigation system. The navigation system comprises a left/right indicator for the pilot and a screen showing the survey area, planned flight lines, and the real time flight path. All data were collected and stored by the data acquisition system. The following provides summary and detailed equipment specifications:

#### 3.1. EQUIPMENT SUMMARY

<b>Aircraft</b>	King Air 90
<b>Equipment:</b>	
Magnetometers (3)	Geometrics G822A Cesium Vapour
Counter & DAS	RMS DAARC500
VLF-EM System	Terraquest proprietary XDS
Spectrometer System	Pico Envirotec GRS510
3-axis Magnetometer	Billingsley Magnetics TFM100-LN
GPS Receiver	Trimble AG132
Radar Altimeter	Free Flight TRA 3500
Barometric Altimeter	Sensym Model LX18001AN
Navigation	AgNav Inc. P151 with real time GPS correction
<b>Magnetic Specifications:</b>	
Mag Output Sample Rate	10 Hz
4 <sup>th</sup> difference noise envelope	0.10 from tail stinger
FOM index (Tail)	<1.5 nT
Sensitivity	0.001 nT

## 3.2. SURVEY AIRCRAFT

### Stinger and Wing Tip Pod Equipped King Air 90



The Beech King Air 90 is an ideal platform for carrying out an airborne geophysical survey in these demanding environmental conditions. It is IFR equipped with twin PT6-20 turbines that will ensure reliability at both high ferry speed and slow survey speed. It is equipped with the long-range tanks capable of carrying approximately six hours of fuel.

#### 1. Aircraft Specifications

<b>Manufacturer</b>	Beechcraft
<b>Model</b>	King Air 90
<b>Registration</b>	N41J
<b>Ownership</b>	Dynamic Aviation.
<b>Range</b>	5.4 hours / 1100 n miles
<b>Cruise Speed</b>	200 Knots, 370 Km/hr
<b>Survey Speed</b>	288 Km/hr
<b>Climb</b>	1,220 ft/min
<b>Climb sustained</b>	~ 500 ft/min
<b>Fuel</b>	Jet A with cold weather additive
<b>Fuel Consumption</b>	60 us gal/hr 227 litres/hr
<b>Oil Consumption</b>	3 liter/hr

#### 2. Aircraft Modifications

The aircraft has three seats to accommodate the pilot, co-pilot and operator, the rest have been removed. It is equipped with long-range tanks, heavy-duty tires, cargo door and full avionics.

The aircraft has been extensively modified to support a tail stinger. Considerable effort has been made to remove all ferruginous materials near the sensors and to ensure that the aircraft electrical system does not create any noise.

### 3.3. Survey Equipment and Specifications:

#### 1. Data Acquisition System

<b>DAS &amp; Compensation</b>	Combined Analogue, Serial, Magnetic Processor and Compensation
<b>Model</b>	DAARC 500
<b>Manufacturer</b>	RMS Instruments
<b>Operating System</b>	QNX 6.3 or greater
<b>Time</b>	104 MHz temperature compensated crystal clock
<b>Front End Magnetic Processing</b>	Resolution 0.32pT; system noise <0.1pT; sample rate 160, 640, 800m or 1280 Hz
<b>Front End - Fluxgate</b>	I/F module; oversampling, self calibrating 16 bit A/D converter
<b>Compensation</b>	Improvement Ratio (total field) 10-20 typical
<b>Input Serial</b>	8 isolated RS232 channels; ASCII & Binary formats
<b>Input Analog</b>	16 bit, self calibrating A/D conv.
<b>Input Events</b>	Four latched event inputs
<b>Raw Data Logging</b>	At front end sampling rate, 1 MB buffer
<b>Output/Recording</b>	Rate 10 or 20 Hz; Serial up to 115.2 kbps; Recording media 1 GB Flash; 80 GB Hard Drive; Flash disk via USB; Display
<b>Front Panel Indicators</b>	8 LEDs for mag input; 2 LEDs for Front End status

#### 2. Magnetics:

Three high resolution cesium vapour magnetometers, mounted in a tail stinger and two wing tip pods. The magnetic system is fully compensated automatically in real time for aircraft manoeuvre noise

<b>Sensor Type</b>	Cesium Vapour
<b>Model</b>	G822A
<b>Manufacturer</b>	Geometrics Ltd.
<b>Resolution</b>	0.001 nT counting at 0.1 per second
<b>Sensitivity</b>	+/- 0.005 nT
<b>Dynamic Range</b>	20,000 to 100,000 nT
<b>Fourth Difference</b>	0.02 nT
<b>Recorded Sample Rate</b>	0.1 seconds
<b>Noise Envelope</b>	0.10 nT (Tail Mag)

### 3. Compensation Sensor

The fluxgate tri-axial magnetometer (which is used for compensation of aircraft motion) is mounted in midsection of the tail stinger and monitors manoeuvre and magnetic interference.

<b>Sensor Type</b>	Fluxgate
<b>Model</b>	TFM100-LN or equivalent
<b>Manufacturer</b>	Billingsley Magnetics
<b>Description</b>	Low noise miniature triaxial fluxgate magnetometer
<b>Axial Alignment</b>	> Orthogonality > +/- 0.5 degree
<b>Accuracy</b>	< +/- 0.75% of full scale (0.5% typical)
<b>Field Measurement</b>	+/- 100,000 nanotesla
<b>Linearity</b>	< +/- 0.0035% of full scale
<b>Sensitivity</b>	100 microvolt/nanotesla
<b>Noise</b>	< 14 picotesla RMS/-Hz @ 1 Hz

### 4. XDS VLF-EM System

The XDS VLF-EM System is a recently developed proprietary VLF system by Terraquest Ltd. It uses 3 orthogonal coils mounted in the pod of the tail stinger, and coupled with a receiver-console, tuned to a half power bandwidth of 22-26 kHz which includes both Cutler Maine NAA frequency 24 kHz and Seattle, WA NLK frequency 24.8 kHz plus any other natural or man-made signals in that range. Recorded parameters are the separate X, Y and Z coils.

<b>VLF - EM</b>	
<b>Model</b>	XDS
<b>Manufacturer</b>	Terraquest Ltd.
<b>Primary Source</b>	Magnetic field component radiated from government VLF radio transmitters
<b>Parameters Measured</b>	X, Y and Z components, absolute field
<b>Frequency Range</b>	Half power 22.0 - 26.0 kHz
<b>Gain</b>	Constant gain setting
<b>Filtering</b>	No filtering

### 5. Spectrometer System

<b>Type</b>	Digital Gamma Ray Spectrometer
<b>Model</b>	GRS 510
<b>Manufacturer</b>	Pico Envirotec Inc.
<b>Crystals</b>	NaI
<b>Downward Volume</b>	16.8 litres (1024 cu in)

<b>Upward Volume</b>	4.2 litres (256 cu in)
<b>Peak Detection</b>	Digital peak detection
<b>Software</b>	Automatic tuning, system tracking, detector calibration
	Real time linearization and gain stabilization
<b>Dead Time</b>	Insignificant for counts less than 20,000 cps/detector
<b>Collected Spectrum</b>	256 channels

#### 6. Radar Altimeter

<b>Type</b>	Radar
<b>Model</b>	3500
<b>Manufacturer</b>	Free Flight
<b>Accuracy</b>	Plus or Minus 5% at 50 to 500 feet
<b>Radar Output</b>	Digital for pilot and data acquisition

#### 7. Barometric Altimeter

<b>Type</b>	Barometric
<b>Model</b>	LX18001AN
<b>Manufacturer</b>	Sensym
<b>Source</b>	coupled to aircraft barometric system

#### 8. Navigation System

<b>Navigation System</b>	
<b>Model</b>	P151
<b>Manufacturer</b>	AgNav Inc.
<b>Operating System</b>	Windows
<b>Microprocessor</b>	CPU Pentium based
<b>Ports</b>	RS232 for all devices
<b>Graphic Display</b>	Colour Screen
<b>Pilot Display</b>	P202: position, left/right, up/down navigational info

#### 9. GPS Differential Receiver

<b>GPS Differential Receiver</b>	
<b>Model</b>	AG 132
<b>Manufacturer</b>	Trimble
<b>Antenna</b>	L1/L2
<b>Channels</b>	12
<b>Position Update</b>	0.2 second for navigation
<b>Correction Service</b>	Real time correction service subscription – Omnistar



<b>Sample Rate</b>	1 second
<b>Accuracy</b>	~ 3 meters

#### 10. Camera

<b>Type</b>	Digital camera
<b>Model</b>	DXW-SX910
<b>Manufacturer</b>	Sony
<b>Lens</b>	2.7 Fujinon
<b>Correlation</b>	GPS time and location overlay
<b>Image</b>	Video or still (jpeg)
<b>Recording</b>	Hard drive

## 4. Base Station Equipment

---

### 4.1. BASE STATION MAGNETOMETER / GPS RECEIVER

A high sensitivity magnetic base station data was provided by a cesium vapour sensor with time synchronization from an internal GPS base station receiver. The base station was provided as a package as follows:

<b>Magnetometer Type</b>	Cesium Vapour
<b>Model</b>	CS-2
<b>Manufacturer</b>	Scintrex Ltd.
<b>Sensitivity</b>	0.022 nT / vHz@1Hz
<b>Resolution</b>	0.001 nT
<b>Dynamic Range</b>	15,000 – 120,000 nT
<b>GPS model</b>	Universal 12 channel
<b>GPS manufacturer</b>	Deluo

## **5. TESTS AND CALIBRATIONS**

---

### **5.1. MAGNETIC FIGURE OF MERIT**

Compensation calibration tests were performed to determine the magnetic influence of aircraft maneuvers and the effectiveness of the aircraft compensation method. The aircraft flew a square pattern in the four survey directions at a high altitude over a magnetically quiet area and performed pitches ( $\pm 5^\circ$ ), rolls ( $\pm 10^\circ$ ) and yaws ( $\pm 5^\circ$ ). The sum of the maximum peak-to-peak residual noise amplitudes in the total compensated signal resulting from the twelve maneuvers is referred to as the Figure of Merit (FOM) index. The FOM for the left, right and tail magnetometers on this survey was 1.09, 1.87 and 0.71 nT respectively. It was flown on April 19, 2010 (see Appendix).

### **5.2. RADAR ALTIMETER CALIBRATION**

A radar altimeter calibration was done over the runway at Sudbury airport on April 19, 2010 (see Appendix).

### **5.3. RADIOMETRIC SAMPLE CHECKS**

The performance and consistency of gamma ray system was checked before and after each flight day using sample pucks to ensure that there was no change in the system.

### **5.4. RADIOMETRIC SENSITIVITY FACTORS**

The radiometric system sensitivity was determined on April 28, 2010 from measurements acquired over the Breckenridge calibration test site monitored by a Terraquest ground crew using a spectrometer supplied by the Geological Survey of Canada.

### **5.5. RADIOMETRIC ALTITUDE ATTENUATION**

The altitude attenuation was determined on April 19, 2010 from the results of flying over the Sudbury Airport.

### **5.6. RADIOMETRIC COMPTON COEFFICIENTS**

A pad calibration was performed using the Pico Envirotec pads in Holland Landing prior to installation.

## **6. LOGISTICS**

---

### **6.1. PERSONNEL**

The contractor supplied the following properly qualified and experienced personnel to carry out the survey and to reduce, compile and report on the data:

Field:	Pilots	Dan Landis, Dwight Mionk
	First Officer	Tim Wescott, Jessica Jackson
	Operator	Mark Andrews
	Geophysicists	Carolyn Boone Brendan Purchase
Office:	Geophysicists	Al Duffy John Charlton Carolyn Boone
	Manager	Charles Barrie

### **6.2. FIELD REPORTING**

The aircraft arrived in Sudbury on April 18, 2010; the base station was setup and tested. The calibration and testing flight was performed on flight N41J1 on April 19<sup>th</sup>. The survey was flown successfully in 8 flights N41J 2 to 9 over 7 days from April 20 to 26, 2010. (see Appendix).

### **6.3. BASE OF OPERATIONS**

The main base of operations was at the Sudbury airport; the ferry distance from to the survey area is approximately 30 kilometres.

### **6.4. ACCOMMODATION**

Accommodations for the crew were the responsibility and cost of Terraquest. The crew was housed at the Comfort Inn closest to the airport, 440 2nd Avenue North, Sudbury - (705) 560-4502. High speed internet was available.

## 7. Data Processing

---

### 7.1. DATA QUALITY CONTROL & PRELIMINARY PROCESSING

Throughout the data acquisition period, the data were monitored and reviewed thoroughly for quality control and tolerances on all channels by an infield geophysicist. This included any corrections to the flight path, making flight path plots, importing the base station data, creating a database on a flight-by-flight basis, and posting the data. All data were checked for continuity and integrity. Any errors or omission or data beyond tolerances were flagged for re-flight and the crew was notified, ready for their flight in the morning. The raw magnetic data was compensated for aircraft motion effects using data from the fluxgate sensor automatically in real time by the DAARC500.

### 7.2. FINAL MAGNETIC DATA PROCESSING

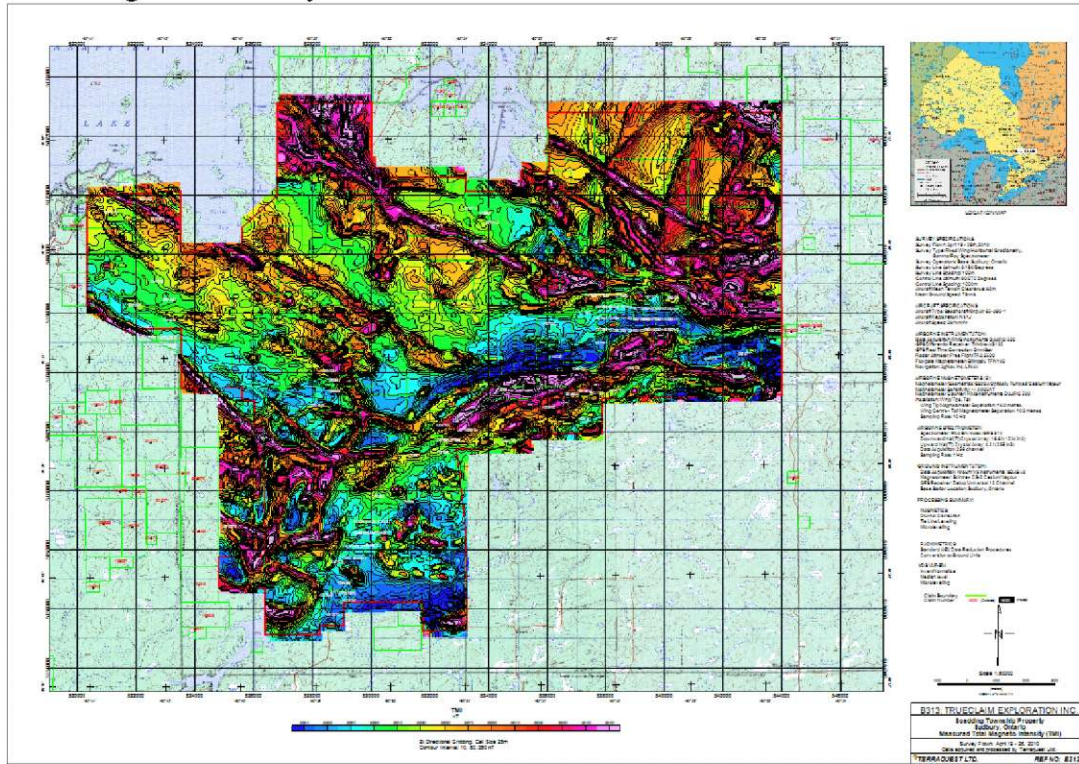
In the final correction process, the compensated tail sensor magnetic data were corrected by diurnal subtraction. This was followed by standard tie-line intersection leveling. The intersections of traverse and control lines were calculated and the difference in observed magnetic values was attributed to remnant diurnal variation. In some active areas, with steep magnetic gradients, the difference reflects not only diurnal, but also some error due to small inaccuracies in both horizontal and vertical position at the line intersection. If the implied diurnal correction at these intersections was inconsistent with adjacent diurnal indications, the indicated correction was ignored. The correction applied was a linear sloping datum connecting the interpreted diurnal value at each control line intersection.

A mild micro-levelling procedure was performed to improve the down line data quality. The vertical magnetic gradient was subsequently calculated from the final processed total magnetic field data grid. The finalized datasets were gridded with bi-directional gridding technique with a grid cell size of 25 metres.

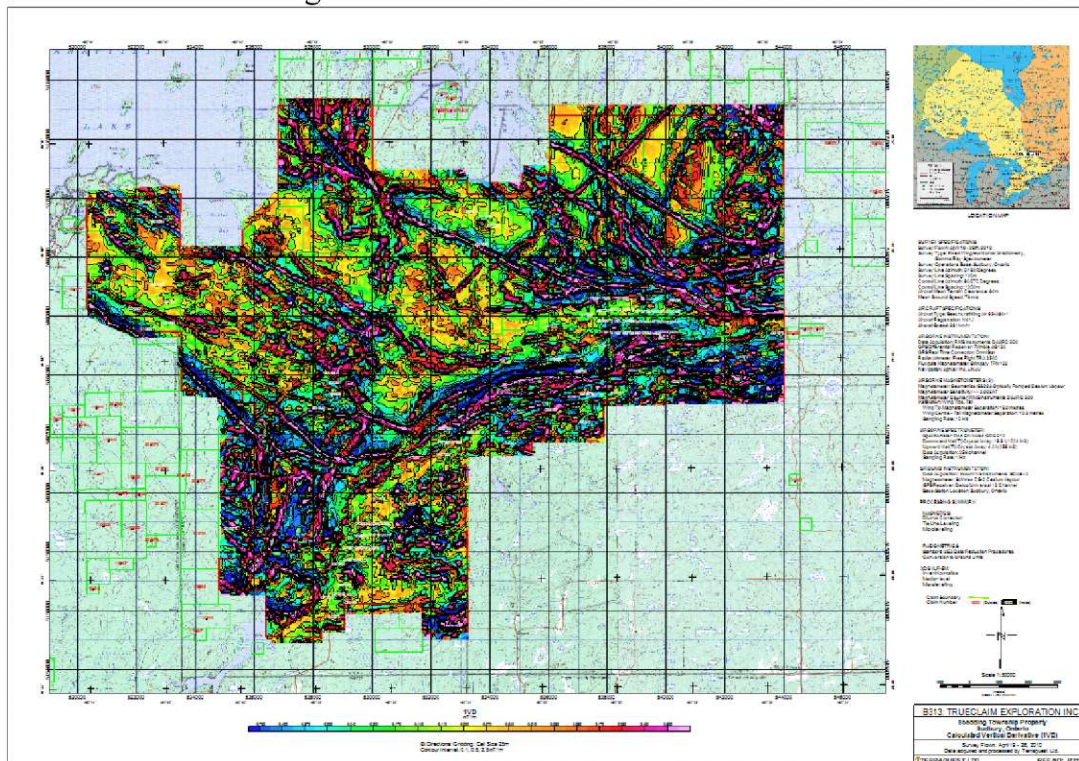
The measured lateral magnetic gradients for each flight direction were obtained by subtracting the left wing sensor reading from the right wing sensor reading and dividing the resulting value by the tip-to-tip separation (16.2 metres), yielding the measurement expressed as nT/m. The along line magnetic gradient was calculated by subtracting successive data points from the tail sensor measurement. It was then “DC shifted” by subtracting the median value on a line-by-line basis and converted from aircraft-centric to survey grid orientation by selectively inverting (multiplying by -1) in the south and westbound directions. The Reconstructed Total Field (RTF) has also been calculated from the individual measured horizontal gradients based on the Nelson method. Note that the RTF is a very good tool for high resolution, near surface features, but

because the horizontal gradient does not respond well to long to medium wavelength features, it should not be used for quantitative modeling.

### Total Magnetic Intensity



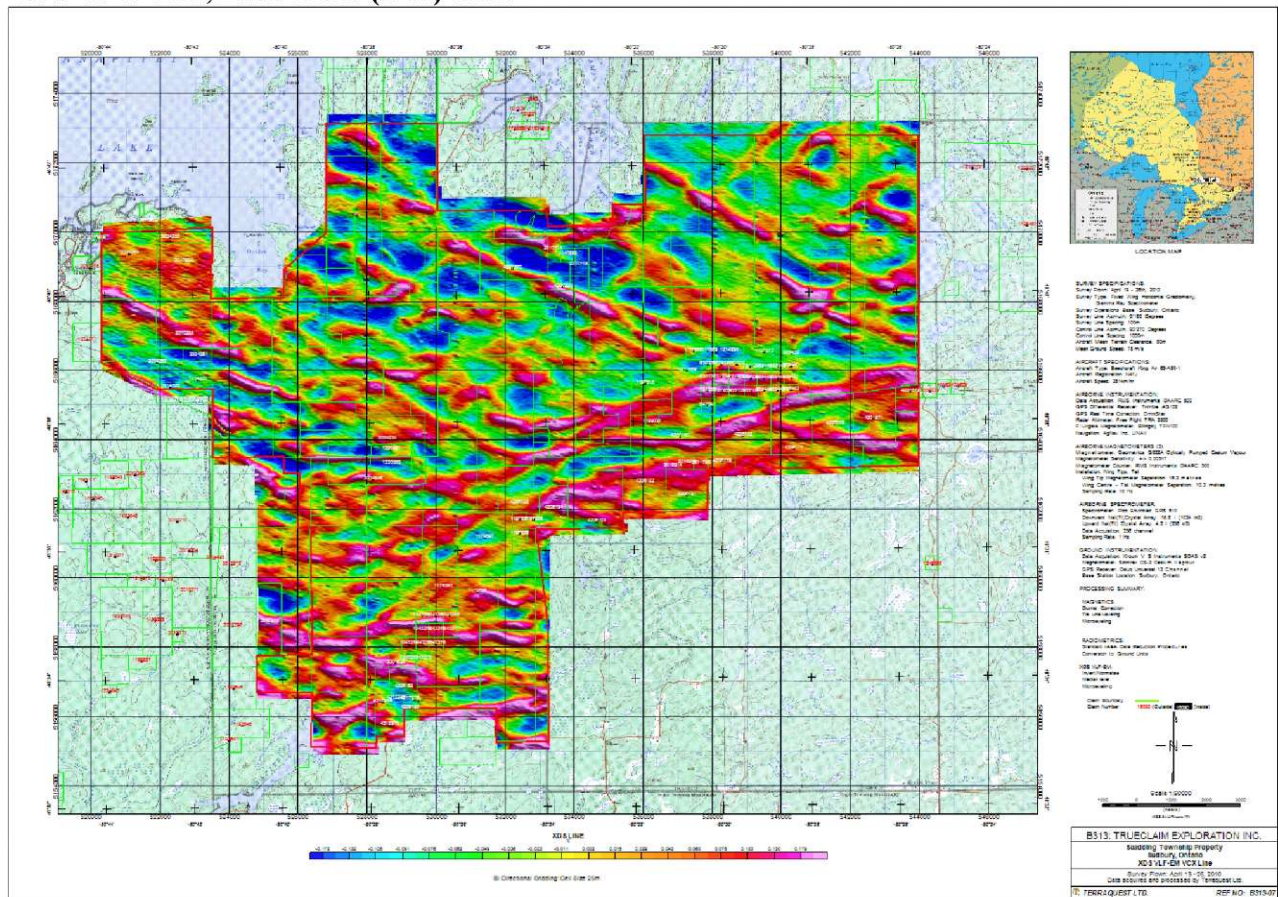
### Calculated Vertical Magnetic Gradient



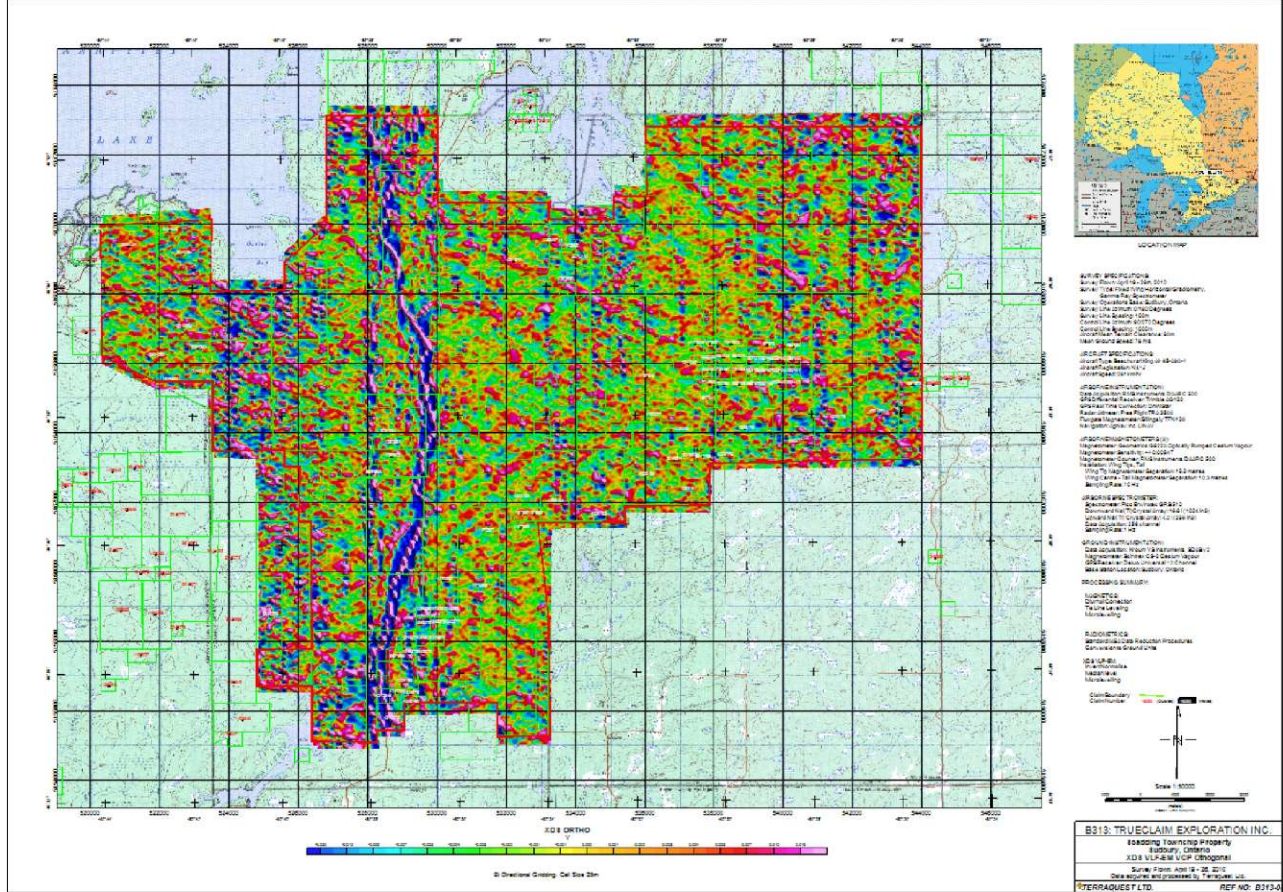
### 7.3. FINAL ELECTROMAGNETIC DATA PROCESSING

The Terraquest XDS VLF-EM system produced generally good results, however the variabilities in the primary fields create some line to line and flight to flight variations that could not be totally leveled in the Ortho and especially Vertical components. The x, y and z components of the XDS VLF-EM data in the half power range of 22.0 to 26.0 kHz (which include Cutler, North Dakota and Seattle transmitter signals and any other natural or man-made signals in that range), were rescaled (where required), low pass filtered, DC shift corrected and levelled. The data were presented as contour plots of the a) Line Field (Vcx) coil, b) Ortho Field (Vcp) coil and c) Vertical Field (Hcp) coil.

#### XDS VLF-EM, Line Field (Vcx) Coil



### XDS VLF-EM, Ortho Field (Vcp) coil



## 7.4. FINAL RADIOMETRIC DATA PROCESSING

The radiometric data were processed according to guidelines established in the definitive IAEA Technical Report “Airborne Gamma Ray Spectrometer Surveying” (IAEA Technical Reports Series No. 323, 1991). The following specifics were performed:

- Recorded as a 256 channel spectrum, the four raw integral (or “terrestrial”) windows (Total Count, Potassium, Uranium and Thorium) were initially generated by summing the recorded counts between their appropriate channel limits – as specified below:

*256 Channel ROI definitions (based on 0-255 channel indices):*

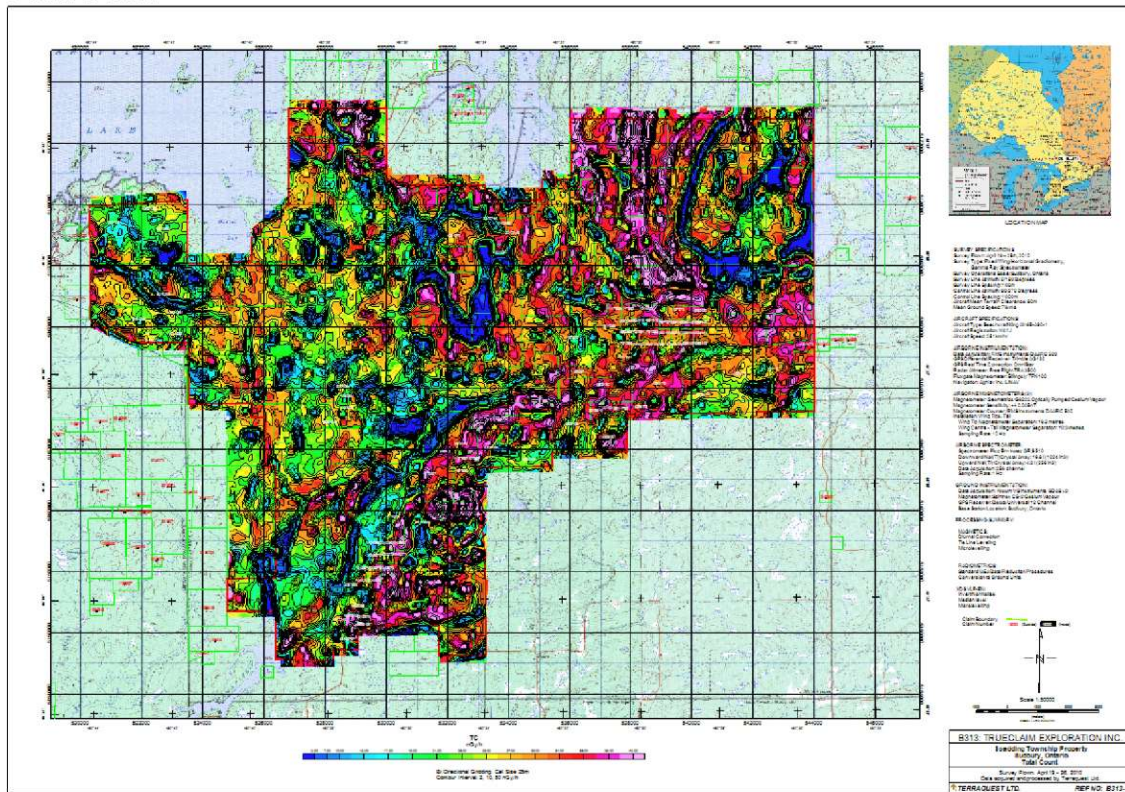
Total Count:	30 - 233
Potassium:	115 - 131
Uranium:	139 - 156
Thorium:	201 - 233
Cosmic (>3 MeV):	255



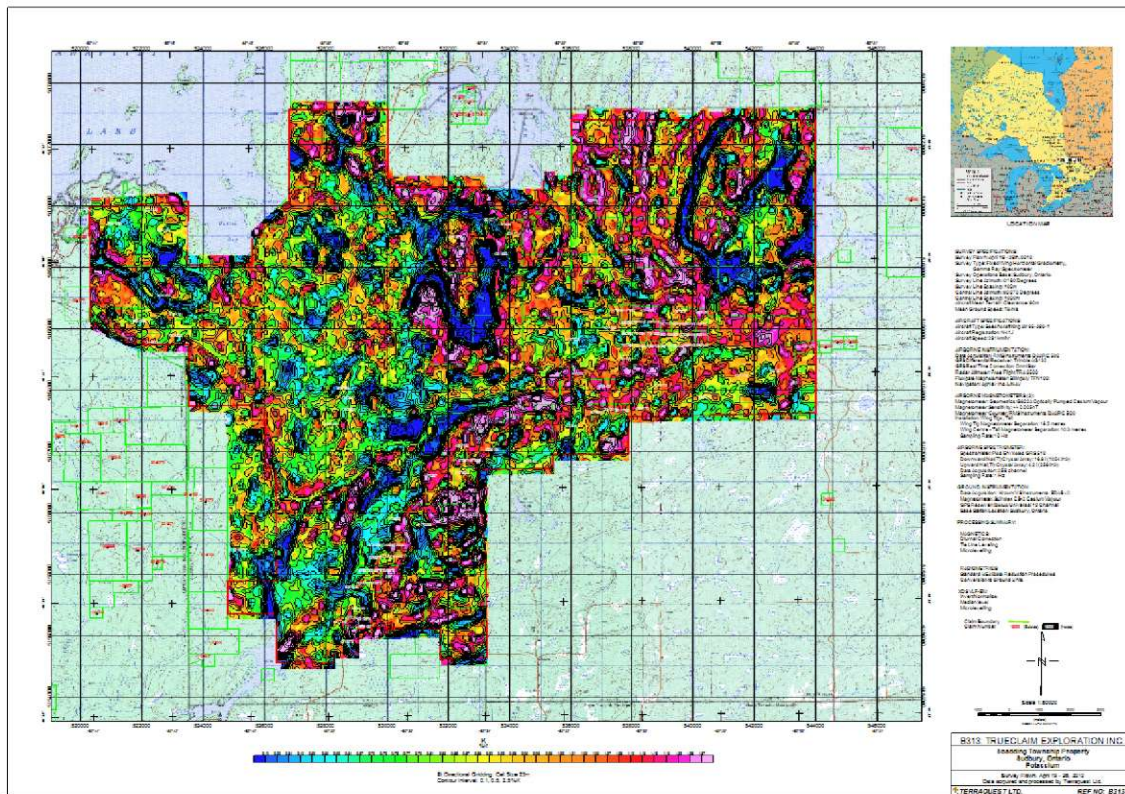
- Since the Pico Envirotec GSR-510 Spectrometer does not suffer from conventional measurement “dead time”, no discrete correction for this effect need be applied.
- The raw count rates were corrected for static and ambient background sources (Aircraft, Cosmic and Radon) by using measurements from the frequent over-water crossings encountered during the survey and from pre- and post- flight over-water ‘background’ lines (where geologic radiation sources are suppressed).
- The background corrected measurements were corrected for Compton Scattering by application of “Stripping Coefficients” experimentally determined in a specific calibration exercise using standard large-scale radio-element sources (see Appendices).
- Count rates were further adjusted by correction to constant terrain clearance (altitude attenuation correction). This correction step includes the application of exponential attenuation coefficients, specific to each of the four integral windows, determined during a specific calibration procedure (see Appendices).
- As additionally recommended by the Geologic Survey of Canada, the final corrected count rates were passed through an optimized filter, sometimes referred to as a ‘Savitsky-Golay’ filter, designed to reduce sample overlap effects. This five-point convolution filter has the following (normalized) coefficients:  
**-0.0857,      0.3429,      0.4857,      0.3429,      -0.0857**
- Corrected radiometric data are delivered both as count rates (counts-per-second) and as effective ground units by application of sensitivity factors determined experimentally over the Geologic Survey of Canada’s test range (Breckenridge Calibration Range, Ottawa - see Appendices). Applicable ground units for each of the four integral windows are as follows:
  - Total Count : Exposure Rate, nanoGray/hour
  - Potassium : Percent (%K)
  - Uranium: Parts per Million equivalent Uranium (ppm eU)
  - Thorium: Parts per Million equivalent Thorium (ppm eTh)

The radiometric data were gridded by minimum curvature method with a cell size of 25 metres and contoured.

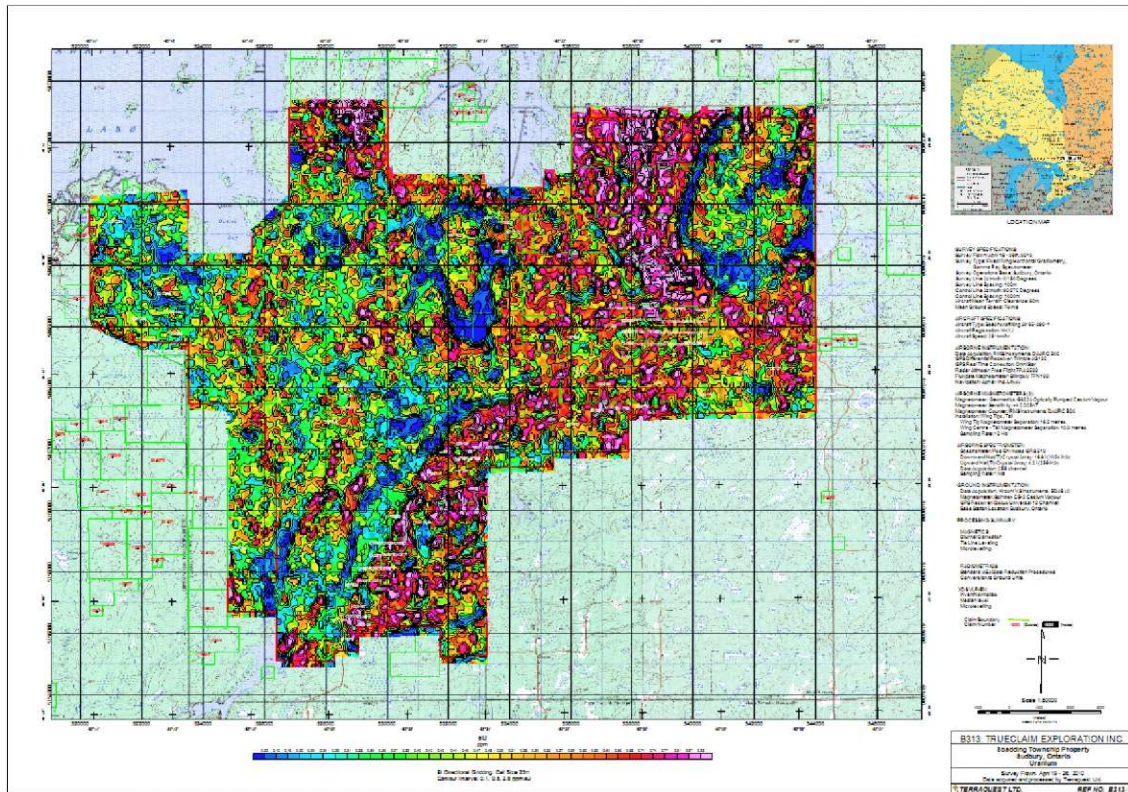
Total Count



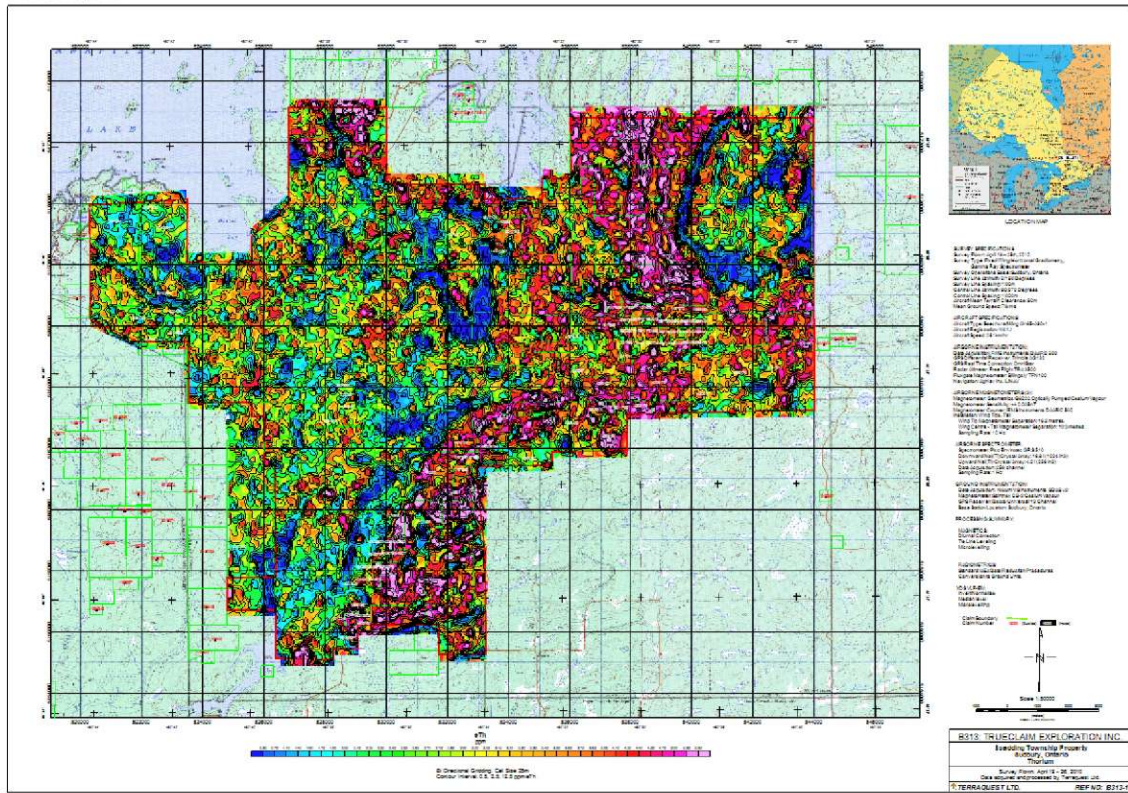
Potassium



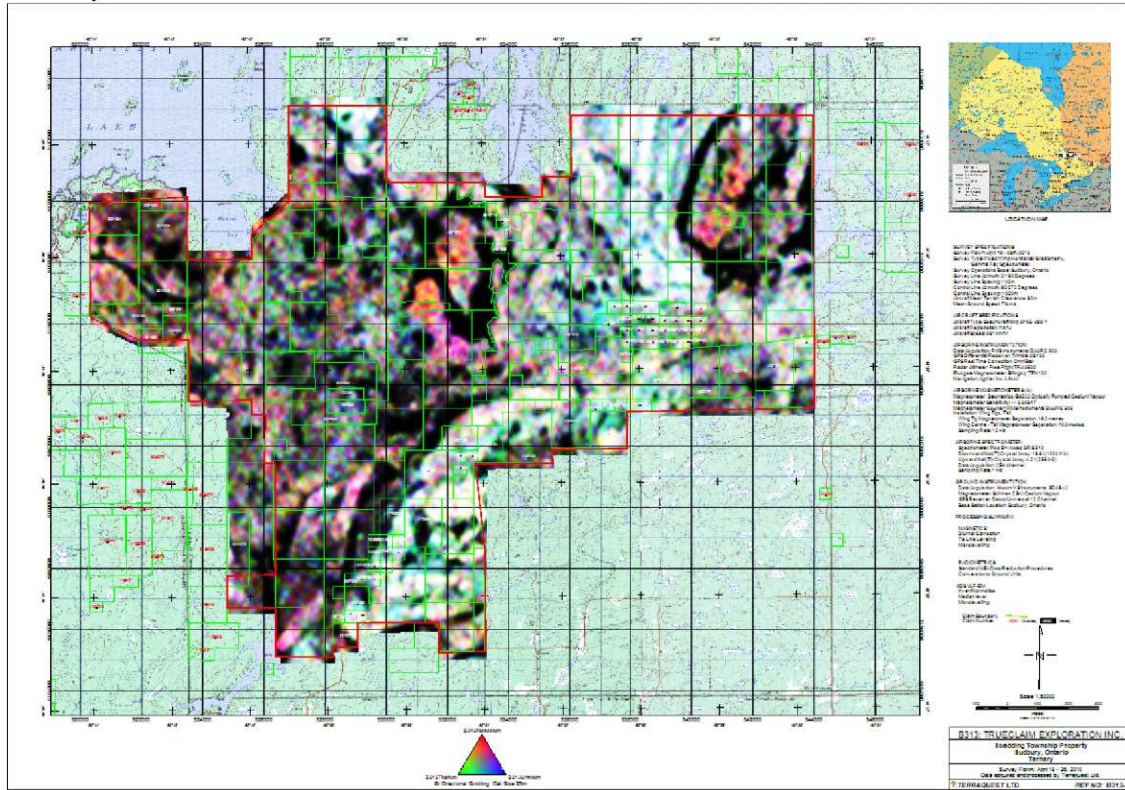
Uranium



Thorium



Ternary



## **7.5. LIST OF FINAL PRODUCTS**

Two copies of the following colour maps were produced at a scale of 1:50,000 with a grid cell size of 25 metres, and projection WGS84, UTM zone 18; the back ground is topography. Claim numbers have been supplied by the client.

- Map 1: Flight Path
  - Map 2: Total Magnetic Intensity of Tail Sensor (nT)
  - Map 3: Calculated Vertical Derivative of Tail Sensor (nT/m)
  - Map 4: Measured Lateral Magnetic Gradient (nT/m)
  - Map 5: Along Line Magnetic Gradient (nT/m)
  - Map 6: Reconstructed Total Magnetic Field (pseudo nT)
  - Map 7: XDS VLF-EM, Line Component
  - Map 8: XDS VLF-EM, Ortho Component
  - Map 9: XDS VLF-EM, Vertical Component
  - Map 10: Total Count (nGy/hr)
  - Map 11: Potassium (%K)
  - Map 12: Uranium (ppm eU)
  - Map 13: Thorium (ppm eTh)
  - Map 14: Ternary
  - Map 15: Digital Terrain Model (m)
- 
- Digital grid archives on CD-ROM in GEOSOFT
  - All GEOSOFT MAP files used to generate the above listed final maps
  - High quality JPEGs and PDF format of all maps
  - Digital Profile Archives on CD-ROM in GEOSOFT GDB format (compatible with 4.1 or higher)

## **8. SUMMARY**

---

An airborne high sensitivity magnetic survey was performed at 80 metre mean terrain clearance, 100 metre line intervals, 1,000 metre tie line interval, and with data sample points at 7-8 metres along the flight lines.

The data were subjected to final processing to produce the following colour maps, with grid cell size of 25 metres, topographic underlay, projection NAD83 UTM zone 17 and scale of 1:50,000  
a) total magnetic intensity and calculated first vertical derivative of tail sensor, b) measured transverse and along-line magnetic gradients and reconstructed total magnetic field, d) Line, Ortho and Vertical components of the XDS VLF-EM system, d) total count, potassium, uranium thorium, and ternary, and e) flight path.

All data have been archived as Geosoft database (GDB) plus all MAP and GRID files used to make the maps. These have also been converted to high quality JPEGS and PDF formats.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read 'C. Barrie', is centered on a light blue rectangular background.

Charles Barrie, M.Sc.  
Vice President  
Terraquest Ltd.

## 9. APPENDICES

---

### 9.1. APPENDIX I - CERTIFICATE OF QUALIFICATION

I, Charles Barrie, certify that I:

- 1) am registered as a Fellow with the Geological Association of Canada and work professionally as a geologist,
- 2) hold an Honours degree in Geology from McMaster University, Canada, obtained in 1977,
- 3) hold an M.Sc. in Geology from Dalhousie University, Canada, obtained in 1980,
- 4) am a member of the Prospectors and Developers Association of Canada,
- 5) am a member of the Canadian Institute of Mining , Metallurgy and Petroleum,
- 6) have worked as a geologist for over thirty years,
- 7) am employed by and am an owner of Terraquest Ltd., specializing in high sensitivity airborne geophysical surveys, and
- 8) have prepared this operations and specifications report pertaining to airborne data collected by Terraquest Ltd..

Markham, Ontario, Canada

Signed



Charles Q. Barrie, M.Sc.  
Vice President, Terraquest Ltd.

## **9.2. APPENDIX II – DAILY LOG**

### **April 18, 2010**

Aircraft and ground crew arrive in Sudbury, set up base station

### **April 19, 2010**

Flight N41J-1: FOM and radiometric calibrations, processed and approved

### **April 20, 2010**

Flight N41J-2: 38 lines, 481.4 km

Digital Camera slipped into video mode this flight

### **April 21, 2010**

Flight N41J-3: aborted due to weather

### **April 22, 2010**

Flight N41J-4: 64 lines, 661.7 km

Flight N41J-5: 54 lines, 696.8 km

### **April 23, 2010**

Flight N41J-6: 45 lines, 753.5 km

Flight N41J-7: 20 lines, 147.5 km

### **April 24, 2010**

Flight N41J-8: 33 lines, 169.4 km

Spectrometer not record properly

### **April 25, 2010**

Standby: assessing data

### **April 26, 2010**

Flight N41J-9: reflights 139.3 km



### 9.3. APPENDIX III– FIGURE OF MERIT

FOM INDEX :N41J - FLIGHT N41J001 19 APR 2010 / BASE:Sudbury, ON														
FOM TEST #1 (MAT1.x)-50pt														
MAG 1														
DIR	TRAV FLG	LINE	PITCH		ROLL		YAW		P	R	Y	SUM		
			MAX	MIN	MAX	MIN	MAX	MIN						
N	*	9000	0.05	-0.05	0.05	-0.04	0.06	-0.03		0.10	0.09	0.09	0.28	
E		9090	0.04	-0.05	0.03	-0.04	0.05	-0.06		0.09	0.07	0.11	0.27	
S	*	9180	0.03	-0.06	0.05	-0.03	0.05	-0.03		0.09	0.08	0.08	0.25	
W		9270	0.05	-0.05	0.05	-0.04	0.05	-0.05		0.10	0.09	0.10	0.29	
										SUM	0.38	0.33	0.38	1.09
										FOM	1.09			
										FOM TRAVERSE ONLY	0.53	(x2 :	1.06	)

MAG 2														
DIR	TRAV FLG	LINE	PITCH		ROLL		YAW		P	R	Y	SUM		
			MAX	MIN	MAX	MIN	MAX	MIN						
N	*	9000	0.11	-0.05	0.08	-0.10	0.09	-0.09		0.16	0.18	0.18	0.52	
E		9090	0.06	-0.09	0.05	-0.10	0.12	-0.12		0.15	0.15	0.24	0.54	
S	*	9180	0.06	-0.10	0.05	-0.08	0.09	-0.07		0.16	0.13	0.16	0.45	
W		9270	0.04	-0.09	0.04	-0.05	0.09	-0.05		0.13	0.09	0.14	0.36	
										SUM	0.60	0.55	0.72	1.87
										FOM	1.87			
										FOM TRAVERSE ONLY	0.97	(x2 :	1.94	)

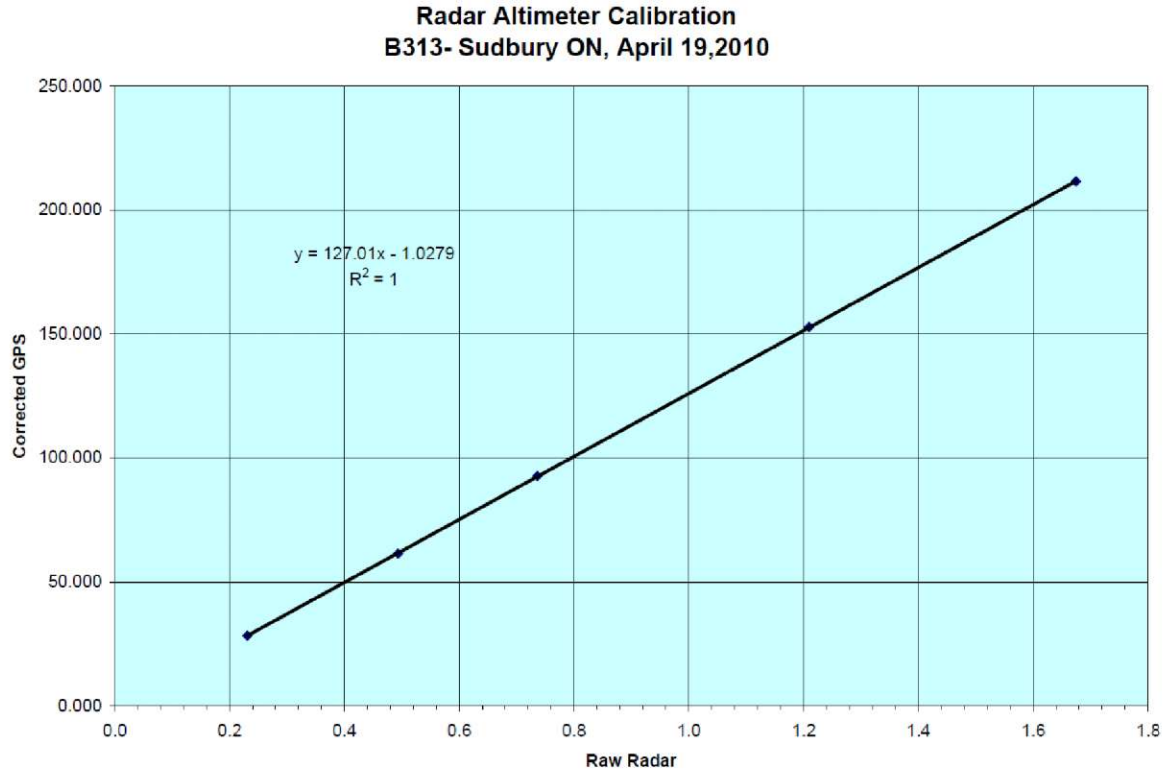
MAG 3														
DIR	TRAV FLG	LINE	PITCH		ROLL		YAW		P	R	Y	SUM		
			MAX	MIN	MAX	MIN	MAX	MIN						
N	*	9000	0.05	-0.03	0.02	-0.01	0.03	-0.02		0.08	0.03	0.05	0.16	
E		9090	0.04	-0.03	0.03	-0.04	0.03	-0.05		0.07	0.07	0.08	0.22	
S	*	9180	0.01	-0.05	0.03	-0.05	0.05	-0.02		0.06	0.08	0.07	0.21	
W		9270	0.04	-0.03	0.02	0.02	0.02	-0.03		0.07	0.00	0.05	0.12	
										SUM	0.28	0.18	0.25	0.71
										FOM	0.71			
										FOM TRAVERSE ONLY	0.37	(x2 :	0.74	)

## 9.4. APPENDIX IV – RADAR ALTIMETER CALIBRATION

Terraquest LTD

Radar Altimeter Calibration

20/04/2010



Terraquest LTD

Radar Altimeter Calibration

20/04/2010

B313: RADAR CALIBRATION DATA SUMMARY						
Calibration performed 19 APR 2010, Sudbury, ON- N41J						
				INTERCEPT	-1.0279	
				SLOPE	127.008579	
LINE	RAW RADAR	GPGGA_ALT	CORRECTED GPS ALT	RAW RADAR	CALIBRATED RADAR	ERROR *
Hold		351.100	0.000			
100	0.231	379.400	28.300	0.231	28.298	-0.002
200	0.493	412.500	61.400	0.493	61.638	0.238
300	0.736	443.800	92.700	0.736	92.476	-0.224
500	1.210	503.900	152.800	1.210	152.652	-0.148
700	1.674	582.600	211.500	1.674	211.635	0.135
900	2.1	618.4				

\* Error estimated as (Calibrated Radar) - (Corrected GPS Alt)

Cal Comparison with Previous Factors	
PREV INT	-0.5648
PREV SLP	0.0219
	DIFF
	-0.58
	-28.9
	-0.55
	-62.2
	-0.55
	-93.0
	-0.54
	-153.2
	-0.53
	-212.2
Comparison data NA	

Imperial Units		
LINE	GPS ALT	CAL RAD
100.0	92.8	92.8
200.0	201.4	202.2
300.0	304.1	303.4
500.0	501.3	500.8

## 9.5. APPENDIX V – RADIOMETRIC ALTITUDE ATTENUATION

TERRAQUEST LTD

Radiometric Procedures and Calibrations

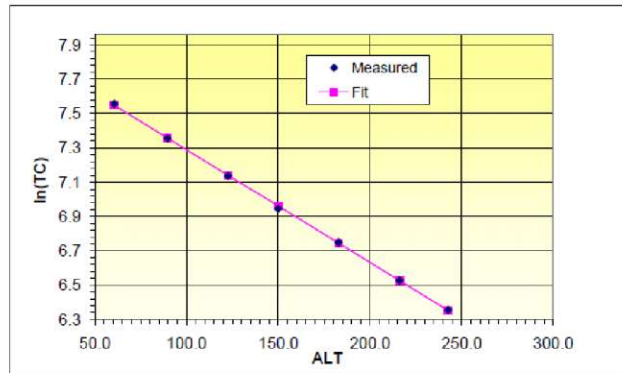
TERRAQUEST N41J / SDAS/PicoEnvirotec RADIOMETRIC ALTITUDE ATTENUATION CALIBRATION Performed : 28 April 2010, Breckenridge Test Range, Ottawa, Canada					
LINE	Average Clearance (metres)	TC (cor. CPS)	K (cor. CPS)	U (cor. CPS)	TH (cor. CPS)
L200:10	60.5	1991.7	209.4	29.5	45.3
L300:10	89.6	1629.5	160.4	24.0	38.2
L400:10	122.6	1310.9	120.7	19.9	30.4
L500:10	149.9	1081.8	96.7	16.0	25.2
L600:10	182.9	888.5	75.7	13.6	20.6
L700:10	216.2	712.1	56.9	11.4	17.1
L800:10	242.7	599.8	45.4	8.1	14.3

ALTITUDE ATTENUATION COEFFICIENTS Calculated by LSQ fit to : $\ln(N) = ALT \cdot \mu + \ln(N_0)$ relation				
TC	$\mu_{TC} =$	-0.006562	$\ln(N_0)_{TC} =$	7.9853
K	$\mu_K =$	-0.008286	$\ln(N_0)_K =$	5.8269
U	$\mu_U =$	-0.006665	$\ln(N_0)_U =$	3.7934
Th	$\mu_{Th} =$	-0.006333	$\ln(N_0)_{Th} =$	4.1953

U (Select)     $\mu_U =$     -0.006697     $\ln(N_0)_U =$     3.7889

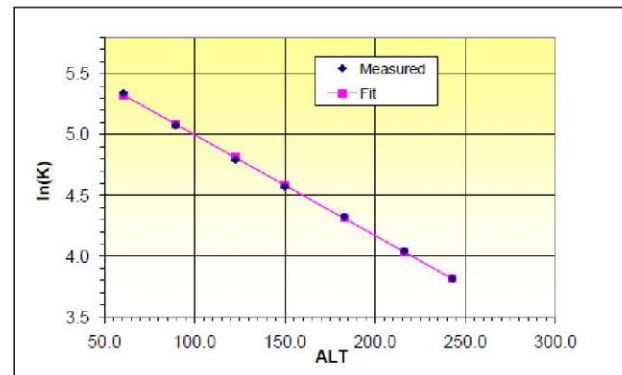
ALTITUDE DEPENDENCE: TOTAL COUNT

ALT	ln(N)	FIT
60.5	7.5968	7.5881
89.6	7.3960	7.3974
122.6	7.1785	7.1807
149.9	6.9863	7.0013
182.9	6.7895	6.7853
216.2	6.5683	6.5668
242.7	6.3966	6.3924



ALTITUDE DEPENDENCE: POTASSIUM

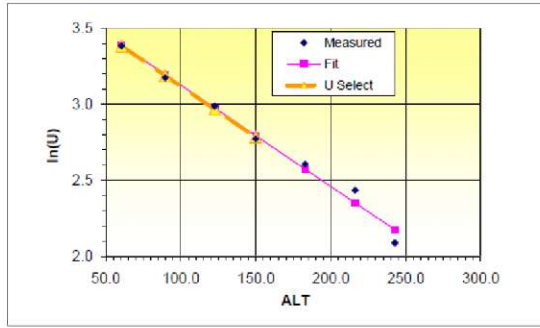
ALT	ln(N)	FIT
60.5	5.3440	5.3254
89.6	5.0774	5.0846
122.6	4.7936	4.8110
149.9	4.5713	4.5845
182.9	4.3265	4.3118
216.2	4.0411	4.0358
242.7	3.8146	3.8156



Operations Report for TRUE CLAIM EXPLORATION INC.  
 Gradient-Magnetic, Radiometric and XDS VLF-EM Survey; SCADDING TOWNSHIP PROPERTY, Sudbury, ON

ALTITUDE DEPENDENCE: URANIUM

ALT	ln(N)	FIT
60.5	3.3854	3.3900
89.6	3.1764	3.1963
122.6	2.9892	2.9762
149.9	2.7738	2.7941
182.9	2.6079	2.6747
216.2	2.4362	2.3527
242.7	2.0906	2.1756

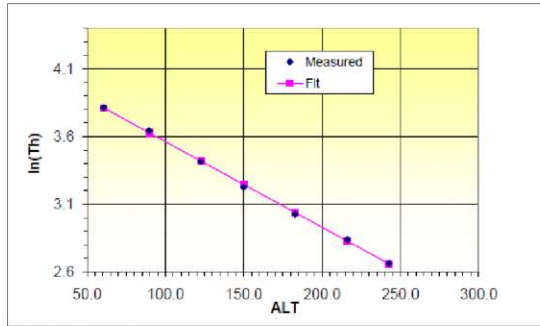


ALTITUDE DEPENDENCE: URANIUM (SELECT)

ALT	ln(N)	FIT
60.5	3.3854	3.3835
89.6	3.1764	3.1869
122.6	2.9892	2.9677
149.9	2.7738	2.7847

ALTITUDE DEPENDENCE: THORIUM

ALT	ln(N)	FIT
60.5	3.8135	3.8120
89.6	3.6434	3.6290
122.6	3.4144	3.4188
149.9	3.2257	3.2457
182.9	3.0272	3.0373
216.2	2.8397	2.8264
242.7	2.6624	2.6581



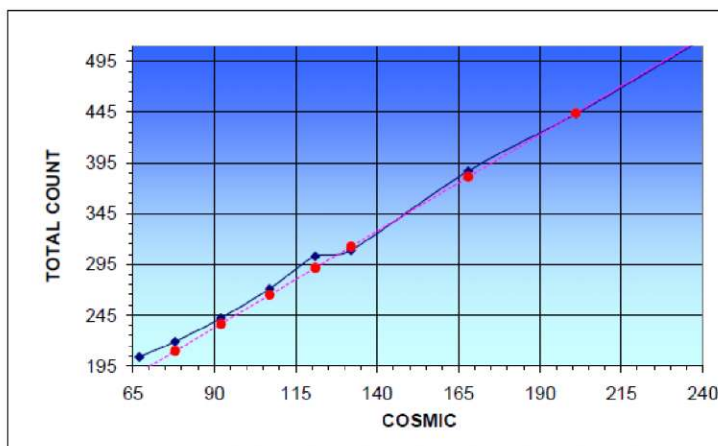
## 9.6. APPENDIX VI – RADIOMETRIC COSMIC CALIBRATION

N41J : COSMIC CALIBRATION							
-performed April 19th, 2010 / Sudbury / Flight N41J001							
LINE	GPS ALT metres	TC cps	K cps	U cps	TH cps	U UP	COSMIC cps
S2000:1	606.3	204.0	16.0	6.0	6.0	1.0	67.0
S3000:1	908.2	219.0	17.0	8.0	7.0	1.0	78.0
S4000:1	1218.9	242.0	17.0	8.0	8.0	1.0	92.0
S5000:1	1528.3	271.0	19.0	9.0	9.0	1.0	107.0
S6000:1	1815.6	303.0	20.0	11.0	11.0	1.0	121.0
S7000:1	2139.1	309.0	20.0	11.0	11.0	1.0	132.0
S8000:1	2436.6	387.0	24.0	14.0	14.0	2.0	168.0
S9000:1	2743.5	443.0	26.0	16.0	17.0	2.0	201.0
S10000:1	3042.0	511.0	30.0	18.0	20.0	3.0	237.0

COSMIC COEFFICIENTS		
$COS\_COMPONENT_n = a_n COSMIC + b_n$		
	Slope ( $a_n$ )	Intercept ( $b_n$ )
Total Count	1.9034	61.3195
Potassium	0.0921	8.0030
Uranium	0.0661	2.5505
Thorium	0.0862	0.0000
Uranium UP	0.0116	-0.1082

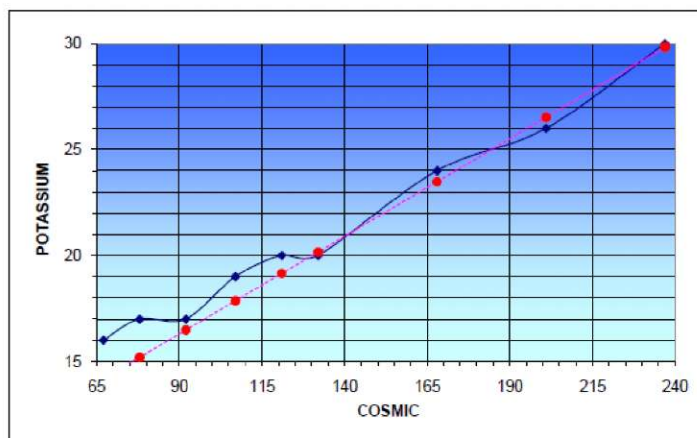
### TOTAL COUNT COSMIC DEPENDENCE

COSMIC	TC	TC FIT
67.0	204.0	188.8
78.0	219.0	209.8
92.0	242.0	236.4
107.0	271.0	265.0
121.0	303.0	291.6
132.0	309.0	312.6
168.0	387.0	381.1
201.0	443.0	443.9
237.0	511.0	512.4



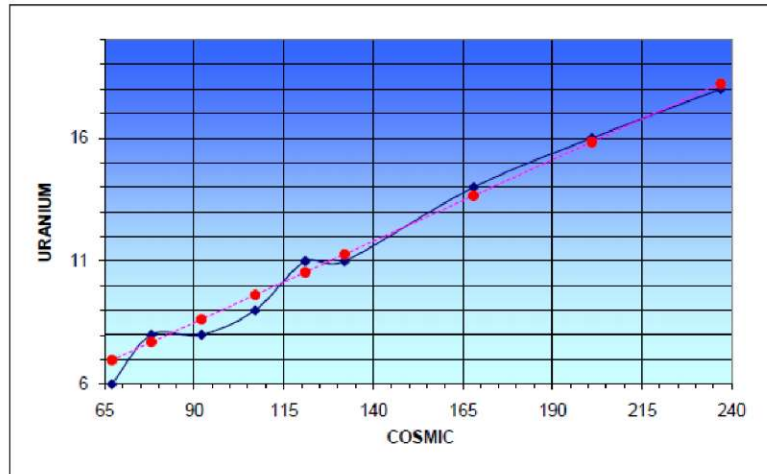
### POTASSIUM COSMIC DEPENDENCE

COSMIC	K	K FIT
67.0	16.0	14.2
78.0	17.0	15.2
92.0	17.0	16.5
107.0	19.0	17.9
121.0	20.0	19.2
132.0	20.0	20.2
168.0	24.0	23.5
201.0	26.0	26.5
237.0	30.0	29.8



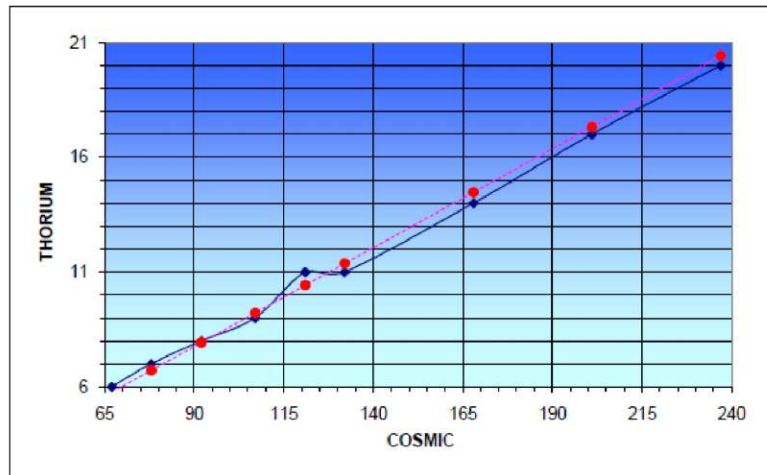
**URANIUM COSMIC DEPENDENCE**

COSMIC	U	U FIT
67.0	6.0	7.0
78.0	8.0	7.7
92.0	8.0	8.6
107.0	9.0	9.6
121.0	11.0	10.6
132.0	11.0	11.3
168.0	14.0	13.7
201.0	16.0	15.8
237.0	18.0	18.2



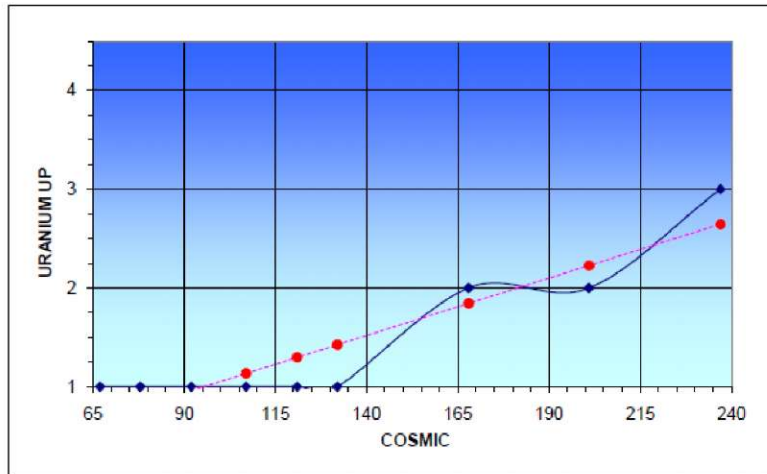
**THORIUM COSMIC DEPENDENCE**

COSMIC	TH	TH FIT
67.0	6.0	5.8
78.0	7.0	6.7
92.0	8.0	7.9
107.0	9.0	9.2
121.0	11.0	10.4
132.0	11.0	11.4
168.0	14.0	14.5
201.0	17.0	17.3
237.0	20.0	20.4



**URANIUM UP COSMIC DEPENDENCE**

COSMIC	UUP	UUP FIT
67.0	1.0	0.7
78.0	1.0	0.8
92.0	1.0	1.0
107.0	1.0	1.1
121.0	1.0	1.3
132.0	1.0	1.4
168.0	2.0	1.8
201.0	2.0	2.2
237.0	3.0	2.6



## 9.7. APPENDIX VII – PAD TESTS: COMPTON COEFFICIENTS

"" CALIBRATION OF K-U-TH WINDOW COUNTS FROM PAD MEASUREMENTS ""

PROGRAM PADWIN

-----

Concentrations of Transportable Pads - Holland Landing - PEI Pads (Kieth

NUMBER OF PADS = 4

PAD CONCENTRATIONS:

	PCT K	PPM EU	PPM TH
B Pad	1.410 ( .010)	.97 ( .03)	2.26 ( .10)
K Pad	8.710 ( .090)	.32 ( .02)	.74 ( .10)
U Pad	1.340 ( .020)	52.90 ( .10)	3.40 ( .14)
T Pad	1.340 ( .020)	2.96 ( .06)	136.00 ( 2.10)

GEOMETRIC CORRECTION FACTORS:

POTASSIUM	URANIUM	THORIUM
1.17	1.17	1.19

"B313 C-GGLS 13APR2010 Holland Landing"

WINDOW COUNTS:

	TIME (M)	K COUNTS	U COUNTS	TH COUNTS
B Pad	660.0	216480.	25740.	23760.
K Pad	647.0	991851.	19410.	19410.
U Pad	656.0	542512.	455920.	56416.
T Pad	527.0	344131.	180761.	519622.

A-MATRIX FROM NONLINEAR REGRESSION:

1.664E+02 (2.080E+00)	9.781E+00 (7.908E-02)	2.372E+00 (4.774E-02)
3.222E-01 (8.815E-02)	1.259E+01 (3.324E-02)	2.086E+00 (3.399E-02)
7.267E-01 (1.480E-01)	8.081E-01 (2.511E-02)	7.092E+00 (1.120E-01)

INVERSE A-MATRIX:

6.020E-03 (7.519E-05)	-4.637E-03 (6.619E-05)	-6.495E-04 (2.717E-05)
-5.288E-05 (3.777E-05)	8.102E-02 (2.062E-04)	-2.381E-02 (1.224E-04)
-6.108E-04 (1.241E-04)	-8.757E-03 (3.149E-04)	1.438E-01 (2.277E-03)

WINDOW SENSITIVITIES FOR SMALL SOURCES:

K SENSITIVITY (A11) = 1.664E+02 (2.080E+00) COUNTS/ M PER PCT K  
U SENSITIVITY (A22) = 1.259E+01 (3.324E-02) COUNTS/ M PER PPM EU  
TH SENSITIVITY (A33) = 7.092E+00 (1.120E-01) COUNTS/ M PER PPM TH

WINDOW SENSITIVITIES FOR INFINITE SOURCES:

K SENSITIVITY (A11) = 1.947E+02 (2.433E+00) COUNTS/ M PER PCT K  
U SENSITIVITY (A22) = 1.473E+01 (3.889E-02) COUNTS/ M PER PPM EU  
TH SENSITIVITY (A33) = 8.439E+00 (1.333E-01) COUNTS/ M PER PPM TH

STRIPPING RATIOS:

TH INTO U (ALPHA = A23/A33) : .2941 ( .0013)  
TH INTO K (BETA = A13/A33) : .3344 ( .0042)  
U INTO K (GAMMA = A12/A22) : .7771 ( .0062)  
U INTO TH (A = A32/A22) : .0642 ( .0020)  
K INTO TH (B = A31/A11) : .0044 ( .0009)  
K INTO U (G = A21/A11) : .0019 ( .0005)

BACKGROUND COUNT RATES:

K WINDOW : 7.848E+01 (3.701E+00) COUNTS/M  
U WINDOW : 2.162E+01 (6.220E-01) COUNTS/M  
TH WINDOW : 1.816E+01 (9.745E-01) COUNTS/M

NUMBERS IN PARENTHESES ARE ESTIMATED STANDARD DEVIATIONS  
Stop - Program terminated.



## 9.8. APPENDIX VIII – SENSITIVITIES BRECKENRIDGE

Measured Ground Values:	
Dose Rate (TC) : nGy/hr	51.730
%K	1.935
ppm U	1.001
ppm Th	7.804

N41J: Ottawa Calibration, Breckendridge Test Line 28 April 2010

Line	Clearance (metres)	TC (cps)	K (cps)	U (cps)	Th (cps)	STC (cps/unit)	SK (cps/unit)	SU (cps/unit)	STH (cps/unit)
L200:10	60.5	1991.72	209.35	29.53	45.31	38.50	108.22	29.51	5.81
L300:10	89.6	1629.52	160.36	23.96	38.22	31.50	82.89	23.95	4.90
L400:10	122.6	1310.88	120.74	19.87	30.40	25.34	62.41	19.86	3.90
L500:10	149.9	1081.76	96.67	16.02	25.17	20.91	49.97	16.01	3.23
L600:10	182.9	888.49	75.68	13.57	20.64	17.18	39.12	13.56	2.64
L700:10	216.2	712.13	56.89	11.43	17.11	13.77	29.41	11.42	2.19
L800:10	242.7	599.83	45.36	8.09	14.33	11.60	23.45	8.09	1.84

Exponential Fit Parameters:		"m"	"b"
		TC	0.9935
	K	0.9917	175.4029
	U	0.9934	44.3812
	TH	0.9937	8.5044

Calculated Sensitivities	
CLEARANCE:	80
TC	33.59
K	90.40
U	26.04
TH	5.12

## 9.9. APPENDIX IX – README FILES

Terraquest Ltd. Aeromagnetic/Radiometrics/XDS-VLF Survey Project B-313 June 10th, 2010

for  
TRUE CLAIM EXPLORATION

DATA ARCHIVE

CONTENTS >>>>>

1. GEOSOFIT OASIS MONTAJ (.GDB) AND BINARY (.GBN) DATABASE CONTENTS
2. DATA GRIDS
4. MAPS
5. JPEGS
6. PDFS
7. README
8. Report

### 1. GEOSOFIT OASIS MONTAJ DATABASE (.GDB) AND BINARY ARCHIVE (.GBN) CONTENTS

Data files for the TRUE CLAIM EXPLORATION project contain the following channels:

UTMX UTM Easting Zone 17N [WGS 84] World / [NAD83] Canada; Central America; Mexico; USA (ex Hawaii Aleutian Islands) (m)  
UTMY UTM Northing Zone 17N [WGS 84] World / [NAD83] Canada; Central America; Mexico; USA (ex Hawaii Aleutian Islands) (m)  
TIME Time (GPS day-sec)  
RADALT Aircraft Radar Terrain Clearance (m)  
GPGGA\_ALT Aircraft Elevation [WGS 84] World (m)  
FNLDTM Digital Terrain Model Zone 17N [WGS 84] World / [NAD83] Canada; Central America; Mexico; USA (ex Hawaii Aleutian Islands) (m)  
GPGGA\_LAT Latitude [WGS 84] World (decimal degrees)  
GPGGA\_LON Longitude [WGS 84] World (decimal degrees)  
DIURNAL Base Station Diurnal TMI (nT)  
VMX X-component of Fluxgate Magnetometer  
VMY Y-component of Fluxgate Magnetometer  
VMZ Z-component of Fluxgate Magnetometer  
TF1UNC Raw Left Wingtip Sensor Total Magnetic Intensity (nT)  
TF2UNC Raw Right Wingtip Sensor Total Magnetic Intensity (nT)  
TF3UNC Raw Tail Sensor Total Magnetic Intensity (nT)  
TF1CMP Compensated Left Wingtip Sensor Total Magnetic Intensity (nT)  
TF2CMP Compensated Right Wingtip Sensor Total Magnetic Intensity (nT)  
TF3CMP Compensated Tail Sensor Total Magnetic Intensity (nT)  
HGXLG Measured Lateral Component of Horizontal Magnetic Gradient (nT/m)

HGYLAG Measured Longitudinal Component of Horizontal Magnetic Gradient (nT/m)  
TF3FNL Levelled, Compensated Tail Sensor Total Magnetic Intensity (nT)  
RTF Reconstructed Total Field (calculated using the measured horizontal gradients)  
SPC\_DOWN Downward Looking Crystal Array 256 channel Radiometric Spectrum  
SPC\_UP Upward Looking Crystal 256 channel Radiometric Spectrum  
RAWTC Raw Total Count integral window  
RAWK Raw Potassium integral window (cps)  
RAWU Raw Uranium integral window (cps)  
RAWTH Raw Thorium integral window (cps)  
RAWCOS Raw Cosmic channel (cps)  
RAWUUP Raw Upward Looking Uranium channel (cps)  
FTC Corrected Total Count in ground units (cps)  
FK Corrected Potassium in ground units (cps)  
FU Corrected Uranium in ground units (cps)  
FTH Corrected Thorium in ground units (cps)  
STC Corrected Total Count in ground units (nGy/hr)  
SK Corrected Potassium in ground units (%K)  
SU Corrected Uranium in ground units (ppm eU)  
STH Corrected Thorium in ground units (ppm eTh)  
LINE\_FNL XDS/VLF LINE Component  
ORTHO\_FNL XDS/VLF ORTHO Component

### 3. DATA GRIDS

The following Geosoft grids have been supplied for the TRUE CLAIM EXPLORATION project:

B313MeasuredTotalMagneticIntensity.grd	25-m cell Final, Levelled Tail TMI (nT)
B313ReconstructedTotalField.grd	25-m cell Reconstructed Total Magnetic Field (using horizontal gradients)
B313MeasuredLateralGradient.grd	25-m cell Lateral Component of Measured Horizontal Gradient (nT/m)
B313MeasuredLongitudinalGradient.grd	25-m cell Longitudinal Component of Measured Horizontal Gradient (nT/m)
B313CalculatedVerticalDerivative.grd	25-m cell Calculated Vertical Derivative of Levelled TMI (nT/m)
B313ReconstructedTotalField	25-m cell Reconstructed Total Magnetic Field (calculated from Horizontal Gradients using "Nelson Method") (pseudo nT)
B313XDS_LineComponent.grd	25-m cell XDS/VLF Line Component (V)
B313XDS_OrthoComponent.grd	25-m cell XDS/VLF Ortho Component (V)
B313TotalCount.grd	25-m cell Total Count (nGy/h)
B313Potassium.grd	25-m cell Potassium (%K)
B313Uranium.grd	25-m cell Uranium (ppm eU)
B313Thorium.grd	25-m cell Thorium (ppm eTh)
B313DigitalTerrainModel.grd	25-m cell Digital Terrain Model (metres)

#### 4. MAPS

The following map products at 1:50,000 scale have been supplied for the TRUE CLAIM EXPLORATION project.

Map images are submitted in Geosoft 'Packed' Map (viewable with the Oasis montaj viewer available as a free download from Geosoft):

B313FlightPath	Flight Path on Topo Base
B313GradientTotalMagneticIntensity	TMI Contoured Colour Image, Flight Path on Topo Base
B313CalculatedVerticalDerivative	Calculated Vertical Magnetic Derivative Contoured Colour Image, Flight Path on Topo Base
B313MeasuredLateralGradient	Lateral Horizontal Magnetic Gradient Contoured Colour Image, Flight Path on Topo Base
B313MeasuredLongitudinalGradient	longitudinal Horizontal Magnetic Gradient Contoured Colour Image, Flight Path on Topo Base
B313ReconstructedTotalField	Reconstructed Total Field Contoured Colour Image, Flight Path on Topo Base
B313XDSLine	Line component Colour Shaded Image, Flight Path on Topo Base
B313XDSOrthogonal	Orthogonal Component Colour Shaded Image, Flight Path on Topo Base
B313TotalCount	Total Count Contoured Colour Image, Flight Path on Topo Base
B313Potassium	Potassium Contoured Colour Image, Flight Path on Topo Base
B313Uranium	Uranium Contoured Colour Image, Flight Path on Topo Base
B313Thorium	Thorium Contoured Colour Image, Flight Path on Topo Base
B313Ternary	Ternary Colour Image, Flight Path on Topo Base
B313DigitalTerrainModel	Digital Terrain Model Contoured Colour Image, Flight Path on Topo Base

#### 5. JPEGs

The following map products at 1:50,000 scale have been supplied for the TRUE CLAIM EXPLORATION Project.

Map images are submitted High Quality JPEG compressed image (150 dpi):

B313FlightPath	Flight Path on Topo Base
B313GradientTotalMagneticIntensity	TMI Contoured Colour Image, Flight Path on Topo Base
B313CalculatedVerticalDerivative	Calculated Vertical Magnetic Derivative Contoured Colour Image, Flight Path on Topo Base
B313MeasuredLateralGradient	Lateral Horizontal Magnetic Gradient Contoured Colour Image, Flight Path on Topo Base
B313MeasuredLongitudinalGradient	longitudinal Horizontal Magnetic Gradient Contoured Colour Image, Flight Path on Topo Base
B313ReconstructedTotalField	Reconstructed Total Field Contoured Colour Image, Flight Path on Topo Base

B313XDSLine	Line component Colour Shaded Image, Flight Path on Topo Base
B313XDSOrthogonal	Orthogonal Component Colour Shaded Image, Flight Path on Topo Base
B313TotalCount	Total Count Contoured Colour Image, Flight Path on Topo Base
B313Potassium	Potassium Contoured Colour Image, Flight Path on Topo Base
B313Uranium	Uranium Contoured Colour Image, Flight Path on Topo Base
B313Thorium	Thorium Contoured Colour Image, Flight Path on Topo Base
B313Ternary	Ternary Colour Image, Flight Path on Topo Base
B313DigitalTerrainModel	Digital Terrain Model Contoured Colour Image, Flight Path on Topo Base

## 6. PDFS

The following map products at 1:50,000 scale have been supplied for the TRUE CLAIM EXPLORATION Project.

B313FlightPath	Flight Path on Topo Base
B313GradientTotalMagneticIntensity	TMI Contoured Colour Image, Flight Path on Topo Base
B313CalculatedVerticalDerivative	Calculated Vertical Magnetic Derivative Contoured Colour Image, Flight Path on Topo Base
B313MeasuredLateralGradient	Lateral Horizontal Magnetic Gradient Contoured Colour Image, Flight Path on Topo Base
B313MeasuredLongitudinalGradient	longitudinal Horizontal Magnetic Gradient Contoured Colour Image, Flight Path on Topo Base
B313ReconstructedTotalField	Reconstructed Total Field Contoured Colour Image, Flight Path on Topo Base
B313XDSLine	Line component Colour Shaded Image, Flight Path on Topo Base
B313XDSOrthogonal	Orthogonal Component Colour Shaded Image, Flight Path on Topo Base
B313TotalCount	Total Count Contoured Colour Image, Flight Path on Topo Base
B313Potassium	Potassium Contoured Colour Image, Flight Path on Topo Base
B313Uranium	Uranium Contoured Colour Image, Flight Path on Topo Base
B313Thorium	Thorium Contoured Colour Image, Flight Path on Topo Base
B313Ternary	Ternary Colour Image, Flight Path on Topo Base
B313DigitalTerrainModel	Digital Terrain Model Contoured Colour Image, Flight Path on Topo Base

## 7. README

README.TXT                      Data Archive delivery documentation (this text file).

## 8. Report

Report\B-313-N41J-Report.pdf

---- Submitted By : ----

Terraquest LTD  
2-2800 John Street,  
Markham, Ontario, Canada  
L3R 0E2

tel. (905) 477-2800  
fax. (905) 477-2820  
eml. [info@terraquest.ca](mailto:info@terraquest.ca)  
web. [www.terraquest.ca](http://www.terraquest.ca)

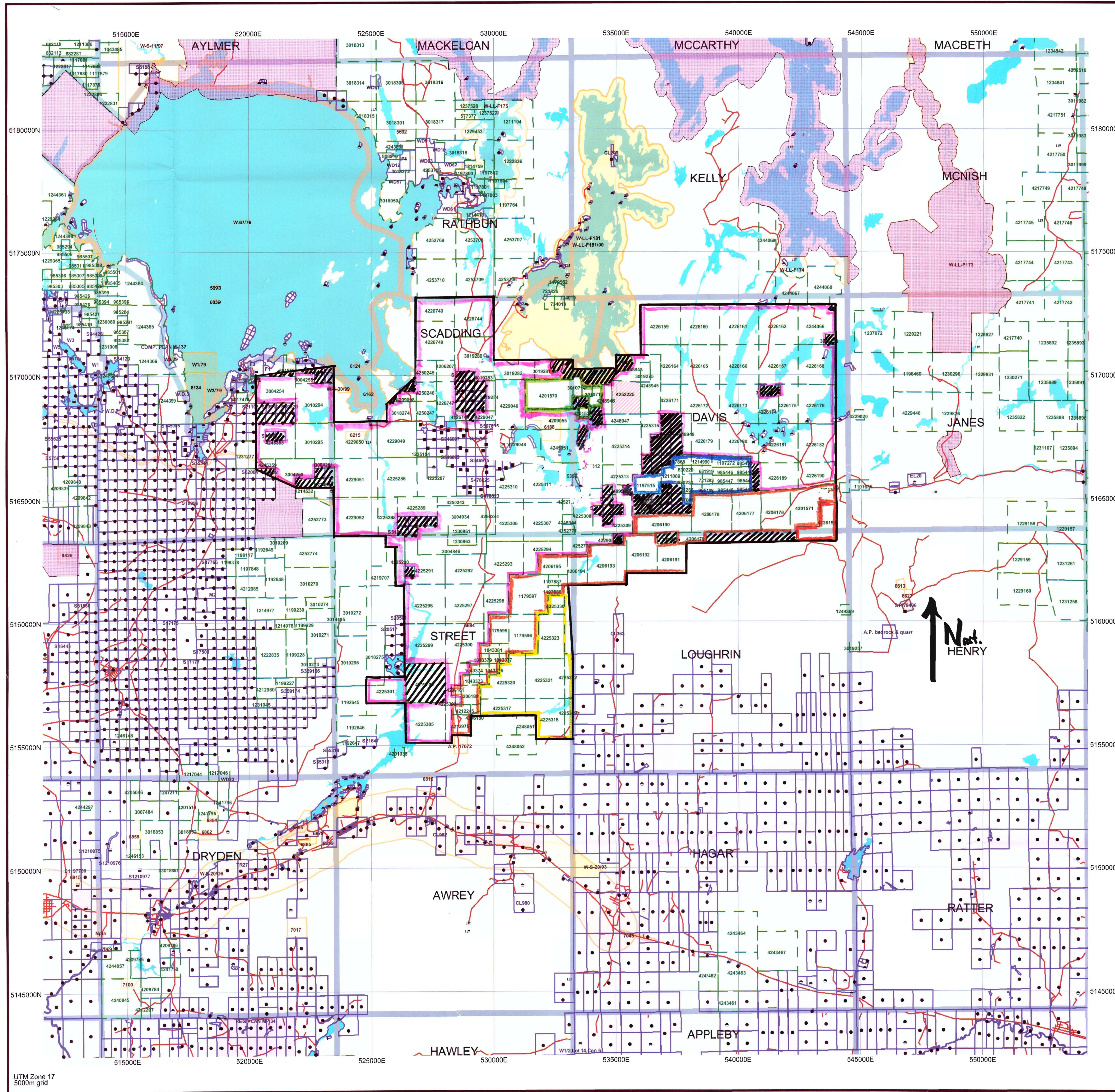
Date / Time of Issue: Tue Jun 15 12:19:55 EDT 2010

TOWNSHIP / AREA  
STREET

PLAN  
G-4109

ADMINISTRATIVE DISTRICTS / DIVISIONS

Mining Division Sudbury  
Land Titles/Registry Division SUDBURY  
Ministry of Natural Resources District SUDBURY



**TOPOGRAPHIC**

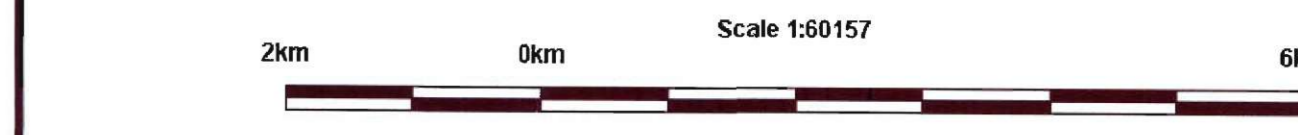
- Administrative Boundaries
- Township
- Concession Lot
- Provincial Park
- Indian Reserve
- Contour
- Mine Shafts
- Mine Headframe
- Railway
- Road
- Trail
- Natural Gas Pipeline
- Utilities
- Tower

**Land Tenure**

- Freehold Patent
  - Surface And Mining Rights
  - Surface Rights Only
  - Mining Rights Only
- Leasehold Patent
  - Surface And Mining Rights
  - Surface Rights Only
  - Mining Rights Only
- Licence of Occupation
  - Uses Not Specified
  - Surface And Mining Rights
  - Surface Rights Only
  - Mining Rights Only
- Land Use Permit
- Order In Council (Not open for staking)
- Water Power Lease Agreement
- Mining Claim
- Filed Only Mining Claims

**LAND TENURE WITHDRAWALS**

- 1234 Areas Withdrawn from Disposition
  - Mining Acts Withdrawal Types
    - Surface And Mining Rights Withdraw
    - Surface Rights Only Withdraw
    - Mining Rights Only Withdraw
  - Order In Council Withdrawal Types
    - Surface And Mining Rights Withdraw
    - Surface Rights Only Withdraw
    - Mining Rights Only Withdraw
- IMPORTANT NOTICES



**LEGEND.**

- BORDER OF GEOPHYSICAL SURVEY
- 6 B. ITEM 1: TRUECLAIM + LONEY
- 6 B. ITEM 2: TRUECLAIM
- BRADLEY CLAIMS
- 6 B. ITEM 3: TRUECLAIM
- MOHAWK GARNET INC. CLAIMS
- BRADY CLAIMS
- OPEN LAND, PATENTS, OTHER CLAIMS

UTM Zone 17  
5000m grid