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MEMORANDUM

To: Greg Dawson
Yukon Geological Survey

Date: July 06, 2011

From: Ian Kickbush
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Re: Field report – REK Geophysics 2011

This memorandum is a short form geophysical report describing the gravity survey and the magnetic survey conducted north of MacMillan River, Yukon on the REK property. The magnetic survey was designed to provide reference to historic EM anomalies and the gravity survey was provided to gauge the density contrasts of previously known EM anomalies. The surveys were done over Kal and Cave showings. The gravity survey had a total of 431 points taken, 152 on the Cave showing and 279 on the Kal showing, while the magnetic survey had a total of 21.325 line-kms done, 13.525 line-kms for the Kal showing and 7.8 line-kms for the Cave showing. There was one bear incident. On June 20 Joanne Thomas was swiped in the leg by a brown bear and had to be flown out on June 21.

Survey location: The Kal camp was located at 485625E, 6975330N NAD87 Zone 8N on the south western corner of the grid. The Cave camp was located at 481625E, 6976415N NAD87 Zone 8N also on the south western corner of the grid. The project area covers NTS map sheet 115L. The geophysics project extended from June 17 – July 2, 2011. The survey consisted of a 4 man camp with 2 Gravity operators on the Kal showing and a 2 man camp with 1 Gravity operator on the Cave showing. The move and demove of both camps was done through the use of a JetRanger II Helicopter. 11.8 hours of helicopter time was used.

Crew and equipment. The surveys were conducted by the following personnel:

Ian Kickbush	Crew chief (Grav Operator)	Jun17 – Jul 2, 2011
Dave Hildes	Crew chief / Project Manager (Grav Operator)	Jun 17 – Jun 26, 2011
Samuel Tarkalam	GPS Operator	Jun17 – Jun 26, 2011
Joanne Thomas	GPS Operator	Jun 17 – Jun 21, 2011
Cole Plaskett	GPS Operator	Jun26 – Jul 2, 2011
Curt Derbyshire	GPS Operator	Jun21– Jun 26, 2011

The crew was equipped with the following instruments and equipment:

<u>Magnetics</u>	3 - GEM 19 Overhauser precession Magnetometers S/N: 7012207 S/N: 708719 S/N: 510495
<u>Gravity</u>	1– Scintrex CG-5 Gravimeter s/n 961049349 1 – Scintrex CG-5 Gravimeter s/n 911009188
<u>GPS</u>	2 sets–Lieca GS15 RTK/Post Processing carrier phase Differential GPS Receivers and Transmitters. GS15 Base 1 s/n 1502720 Rover 1 s/n 10140548 Rover 2 s/n 1500400
<u>Other:</u>	1 - Laptop with Geosoft, Gravred2, Scintrex Software 1 - Repair tools 1 - Iridium satellite phone 5 - Handheld radios 4 - Garmin handheld GPS 1 - 4 man camp including tents and wood stoves

MAGNETIC SURVEY

The REK Property survey was conducted using GPS track points. Station spacing was 12.5 metres and recorded as UTM NAD83 Zone 8N coordinates.

<u>Station spacing</u>	12.5 metres
<u>Base station</u>	<p>Kal Showing: Installed at NAD 83 8N, UTME UTMN coordinates:485627.6, 6975298.9</p> <p>Cave Showing: Installed at NAD 83 8N, UTME UTMN coordinates:481745.1, 6976554.3</p> <p>Cycled at a 3 second interval. The base station magnetometer and field magnetometers times were synchronized daily prior to surveying.</p>
<u>Corrections</u>	Temporal geomagnetic variation was removed by linear interpolation of drift from the base station magnetometer. Readings were rejected in the base mag if there was a magnetic variation of 10nT under 10 seconds.

GRAVITY SURVEY

Each Gravity station's coordinates were determined from position measurements taken with Post Processed / RTK Differential GPS system and recorded in WGS84 and then transformed into UTM projection in the NAD83 datum. Station spacing was 50metres.

<u>Geographic datum & projection:</u>	UTME, UTMN NAD83 datum, 8N
<u>Elevation datum:</u>	Mean sea level using Geoid EMG96
<u>Station locations:</u>	Stations were located with non-differential GPS receivers.
<u>Station marking:</u>	Stations were marked with tagged and flagged nails driven flush to ground level where possible.
<u>Gravimeter preparation:</u>	The gravimeter was levelled on a cement block and warmed up for a period of 48 hours to stabilize. After the spring stabilized, the instrument was cycled for 12 to 24 hours taking readings for 60 seconds every minute to determine the remnant instrument drift

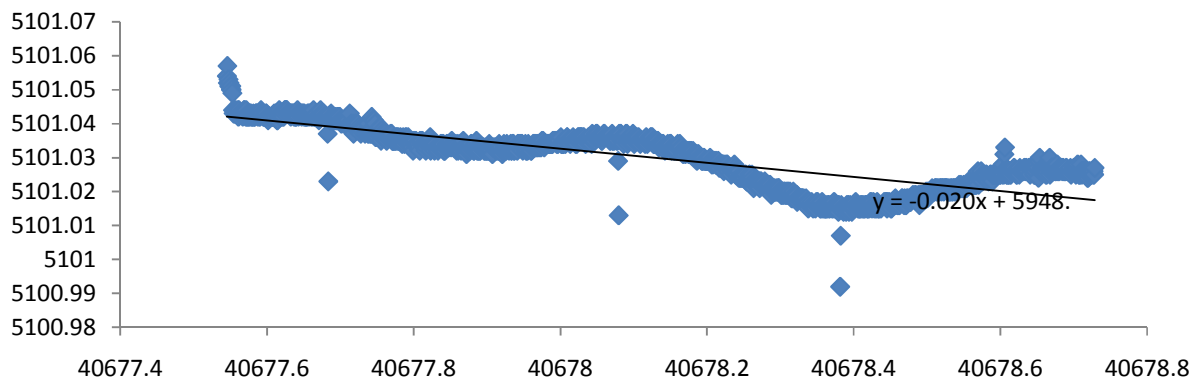
	and to reset instrument drift constants. The instrument remained under power at all times throughout the survey operation.
<u>Gravity readings:</u>	Readings were stacked for 60 s and maximum standard deviation in reading error was kept to less than 50 microGal if possible. When this was not possible, readings were repeated several times to ensure that the data is repeatable. Seismic filters were engaged to remove wind noise.
<u>Gravity Base Station:</u>	Kal Camp: Installed at NAD 83 8N, UTM E UTMN coordinates: 485624.67E, 6975328.85N Cave Camp: Installed at NAD 83 8N, UTM E UTMN coordinates: 481627E, 6976420N

Gravimeter drift for CG-5 961049349 (Grav 01):

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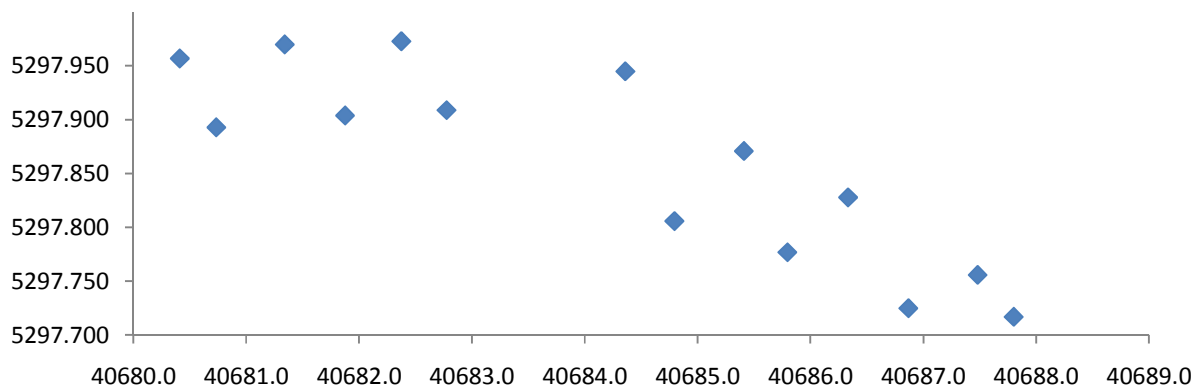
The gravimeter was checked daily for instrument drift prior to surveying by occupying a drift station in camp. During the survey, a minimum initial and final tie-in drift measurement were made prior to and after each day's survey.

Pre-survey:



Graph 1: Shows the linear trend of the springdrift throughout the 24 hours on June 16, 2011, pre-survey. X-axis: time in decimal hours. Y-axis: mGal.

During Survey (Tie File):

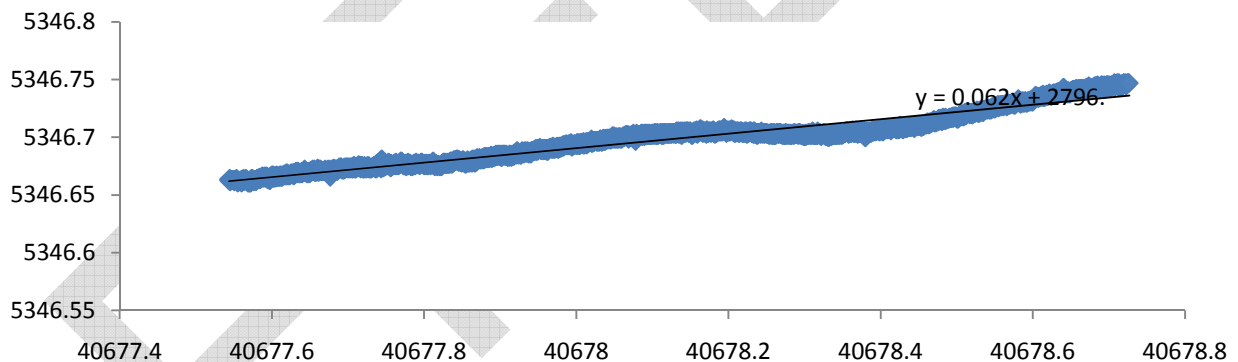


Graph 2: Shows the spring drift throughout the survey from June 17 to June 25 2011. X-axis: time in decimal hours. Y-axis: mGal.

Gravimeters drift for CG-5911009188 (Grav 02):

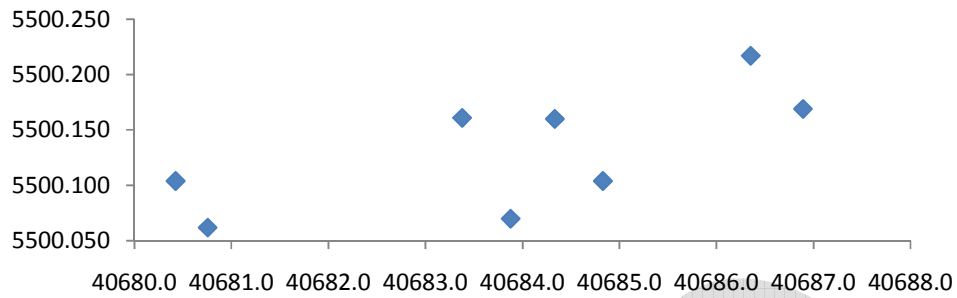
The gravimeter was checked daily for instrument drift prior to surveying by occupying a drift station in camp. During the survey, a minimum initial and final tie-in drift measurement were made prior to and after each day's survey.

Pre-survey:

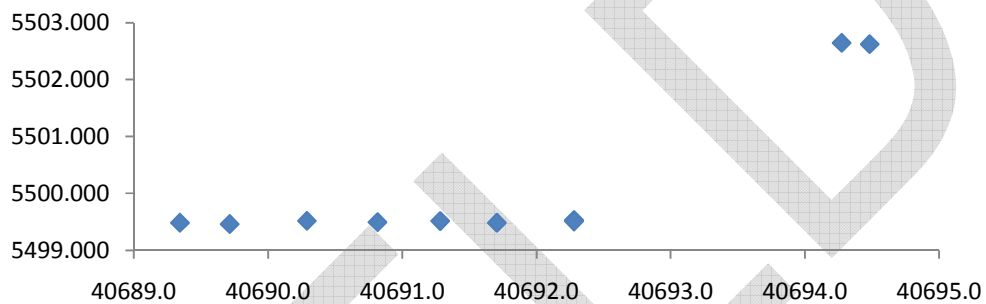


Graph 4: Shows the linear trend of the spring drift throughout the 24 hours on June 16, 2011, pre-survey. X-axis: time in decimal hours. Y-axis: mGal.

During Survey (Tie File):



Graph 5: Shows the spring drift throughout the survey from June 17 to June 25 2011. X-axis: time in decimal hours. Y-axis: mGal. The graph shows Grav 2 spring drift throughout the Kal property survey.



Graph 6: Shows the spring drift throughout the survey from June 25 to July 1 2011. X-axis: time in decimal hours. Y-axis: mGal. The graph shows Grav 2 spring drift throughout the Cave property survey. There is one day of outliers on July 1, due to the memory erased inside the gravimeter.

<u>DGPS survey base station:</u>	<p>The GPS base station was installed to transmit RTK position corrections and record positioning at 1 second epoch intervals.</p> <p>The Kal base was installed at Lat. Long. WGS84 coordinates: 62.54'26.86730" N, 135.16'53.30200" W elevation 835.7666 (m) with base height of 0.811m.</p> <p>The Cave base was installed at Lat. Long. WGS84 coordinates: 62.54'26.86730" N, 135.135.16'53.30200" W elevation 820.6571 (m) with base height of 0.793m.</p> <p>Both base stations are marked with a flagged nail on the exact location. A tripod of pickets was erected on the flagged nail.</p>
<u>DGPS survey rover:</u>	<p>Antenna was placed on the gravity survey station hub and elevations corrected for rover antenna height of 2m. A minimum of 180 coincidental epochs with the base were measured, if no RTK position under a height quality of 0.02m could be obtained.</p>
<u>Post-Processing accuracy for DGPS:</u>	<p>On average the epochs taken per station were between 200 and 180.</p>
<u>Elevation corrections:</u>	<p>Elevation corrections: Free Air, Bullard B, Bouguer; Bouguer density: 2.67, Datum: 0.0 (sea level),</p> <p>Kal Centre of Grid: 485630.0E, 6975330.0N UTM, NAD83 8N was used for on-board Gravimeter tide corrections. For the latitude correction a UTM Declination of 0 was used.</p> <p>Cave Centre of Grid: 481628.0E, 6976421.0N UTM, NAD83 8N was used for on-board Gravimeter tide corrections. For the latitude correction a UTM Declination of 0 was used.</p>
<u>Near station terrain measurement:</u>	<p>Terrain elevations within 20m of the gravity station were directly measured applied to the data as near-station terrain corrections. The offset for the operator height was accounted for: JT (1.7m), ST (1.69m), CP (1.7m).</p>

<u>Inner DTM</u>	Terrain corrections from 20 m to approximately 10 km were calculated. A DEM equivalent to a 1:50 000 NTS topographic map was used modified to be consistent with the GPS data collected over the course of this survey.
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Data processing

The gravity data was downloaded and processed daily in the field using propriety software package 'Gravred2'. All of the field maps and databases were created in Geosoft Oasis Montaj. A first order trend was removed from the data. Gravity data repeats was averaged.

The total magnetic field data were corrected for temporal variations in the earth's magnetic field using the software GEMLINK and entered into a Geosoft database. A base magnetic correction datum of 59000 nT was used. A first-order best-fit polynomial was removed from the data to accentuate property-scale features.

Data formats

The unedited ASCII instrument dump files are named for the date (survey type/day/month /operator's initials) on which they were produced. The RTK GPS dump files include the hyper, rover, base folders and the handheld gps files include letters 'GPS' and the date. The Near Terrain Corrections (NTC) are in an excel spreadsheet. The final processed data are in Geosoft data base (.gdb) format and in ASCII (.xyz) format.

Products.

The following are attached to the digital version of this report

Digital Database:	Geosoft database	gravCave2011.gdb gravKal2011.gdb magCave2011.gdb magKal2011.gdb
	Geosoft .xyz file	gravCave2011.xyz gravKal2011.xyz magCave2011.xyz magKal2011.xyz
	ASCII Raw unedited data	
Processing	Explains channels of database files	Channel.txt

Files:		
Maps:	Gravity and Magnetic colour map .pdf	gravCave2011.pdf gravCave2011_1rst.pdf gravKal2011.pdf gravKal2011_1rst.pdf magCave2011.pdf magCave2011_1rst.pdf magKal2011.pdf magKal2011_1rst.pdf
	Gravity and Magnetic colour map with filter .shp	Same as above except in .shp format
Reports:	Survey and personnel summary for project .pdf	REK Daily report – 2011.pdf
	This report in .pdf format	REK Field Memo – 2011.pdf

Respectfully submitted,
AURORA GEOSCIENCES LTD.

Ian Kickbush, B.Sc.